Idaho Energy Security Plan

Idaho Governor's Office of Energy and Mineral Resources

2024 Edition

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Cover Photo: Rural Distribution Lines, Idaho Governor's Office of Energy and Mineral Resources, 2014.

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EXECUTIVE SUMMARY

The health of Idaho's economy depends on its ability to access reliable energy. While the state's energy industry has a strong track record of maintaining reliable service, emergency events can at times create widespread power outages or fuel shortages and halt major economic activity in the region. Following these events, emergency responders must act safely, swiftly, and methodically to restore service to affected customers and revive economic activity. Energy security planning provides the opportunity to reduce the risk of such emergencies and prepare the state's energy system to respond to disruptions as efficiently as possible.

Minimizing the effects of energy disruptions requires building system resilience against major risks, fostering local talent, and establishing mutual aid partnerships. Restoring energy after a disruptive event is a complex task; a speedy restoration requires significant logistical expertise that includes skilled workers and specialized equipment. Major risks to the state's energy system include natural disasters like storms, wildfires, and droughts; and infrastructure failures due to compromised equipment, accidents, or human error; and cyber and physical attacks. Energy reliability requires utilities to meet energy demand despite these risks and supply energy to Idahoans when they need it.

The Idaho Energy Security Plan (the Plan) aims to provide critical information to support and connect emergency management stakeholders and outlines how communication of this information will be executed in the event of a disruption. Specifically, the Plan:

1. Addresses all energy sources and regulated and unregulated energy providers;
2. Provides a state energy profile, including an assessment of energy production, transmission, distribution, and end use;
3. Addresses potential hazards to each energy sector or system, including physical threats and vulnerabilities, cybersecurity threats and vulnerabilities;
4. Provides a risk assessment of energy infrastructure and cross-sector interdependencies;
5. Provides a risk mitigation approach to enhance reliability and end-use resilience; and
6. Addresses multi-state and regional coordination, planning and response, and coordination with Native American Tribes with respect to planning and response.

The Plan highlights the importance of accurate, consistent, and spatial information on energy disruptions; local stakeholder engagement in preparedness management; and regional knowledge sharing cyber and physical space protection. Having access to a secure spatial database with critical energy infrastructure, including local energy projects that are privately operated as well as utility and industry-provided data could support further analysis and enhance resilience planning in Idaho. Furthermore, improvements in energy efficiency will help reduce energy demand and minimize the impact of energy outages when they occur. Finally, continued participation in emergency response exercises in Idaho and neighboring states will enhance response, prevention, and help stay up to date with modern cyber and physical protection approaches.

The Plan aggregates state and national level information that is publicly available. In particular, the Idaho Emergency Operation Plan, Idaho Energy Landscape, and Idaho Hazard Mitigation Plan (updated in 2020 with dam failure) are valuable for understanding the state's energy system and the associated risks.

GLOSSARY OF TERMS

Several technical terms are used throughout the Plan and are defined below for reference and clarity. These definitions have been adopted from the US Department of Energy (DOE), National Association of State Energy Officials (NASEO), and other major energy security related organizations.

Energy system terms:

BTU – British thermal unit, a measure of quantity of heat that is equal to the amount of heat required to raise the temperature of one pound of water by one degree.

Energy – Power derived from the utilization of physical or chemical resources. In this report, energy includes electricity (and resources used to generate it), natural gas, petroleum, and other liquid fuels. Each resource is referred to specifically when appropriate, whereas the term energy is used specifically when discussing all sources of power.

Energy demand – Energy consumed by human activity.

Spatial information - Data that are representative of a specific geographic location on the surface of the earth.

Resilience and assurance terms:

Cold Weather Protection Measures – Methods to insulate and protect critical energy infrastructure from winter weather conditions that could harm equipment.

Cybersecurity – The protection of computer-based systems such as hardware, software, and data from cyberthreats.

Department of Energy Form OE-417 – The Electric Emergency Incident and Disturbance Report (OE-417) collets information on electric incidents and emergencies. The Department of Energy uses the information to fulfill its overall national security and other energy emergency management responsibilities, as well as for analytical purposes. A digital form can be found at https://www.oe.netl.doe.gov/OE417/Form/Home.aspx.

Energy assurance Planning – System Planning to provide robust, secure, and reliable energy infrastructure that is also resilient — able to restore services rapidly in the event of any disaster.

Energy Security – The uninterrupted availability of energy sources at an affordable price. Energy security has many aspects: long-term energy security mainly deals with timely investments to supply energy in line with economic developments and environmental needs. Short-term energy security focuses on the ability of the energy system to react promptly to sudden changes in the supply-demand balance. Energy security provides a forum for discussing energy data collection and analysis issues and energy assurance.

Extreme Heat & Drought Resistance Measures – Methods to protect critical energy infrastructure from high-temperature damage and maintain reliability if faced with water shortage.

Flood Protection Measures – Methods to protect and harden critical energy infrastructure from flood conditions and events.

Rapid Detection/Recovery – Energy system incorporations that quickly detect outages and/or employ fallback measures until response arrives.

Redundancy – The incorporation of secondary systems that are deployed in the event that primary systems fail.

Resiliency – The ability of energy systems and operations to minimize service interruptions, respond effectively to an energy emergency, and recover quickly from damage.

Robustness – The ability of a system to withstand stresses without losing efficacy and energy service.

Seismic Protection Measures – Methods to protect and make resilient critical energy infrastructure to tectonic activity.

Wildfire Protection Measures – Methods to protect and harden critical energy infrastructure against wildfire.

Wind Protection Measures – Methods to protect and harden critical energy infrastructure against high and damaging wind events.

Terms related to energy outages:

Asset – or energy asset, is used to refer to critical infrastructure for electricity, natural gas, or petroleum energy systems.

Consequence – the effect of the loss or degradation of an energy infrastructure system or asset, including the "immediate" or "direct consequence" and subsequent "indirect consequence".

Critical infrastructure – Systems and assets, whether physical or virtual, so vital to the U.S. that the incapacity or destruction of such systems and assets would have a debilitating impact on security, national economic security, national public health or safety, or any combination of those matters.

Cyberattack – An event occurring on or conducted through a computer network that actually or imminently jeopardizes the integrity, confidentiality, or availability of the energy system. An Information Technology (IT) cyber event is a cyberattack on the business systems/networks. An Operational Technology (OT) cyber event is a cyberattack on systems/networks of industrial control systems (ICS) including Supervisory Control and Data Acquisition (SCADA) and other control system configurations.

Emergency or unusual power outage – Power outages that are reported on the OE-417 form and include events when major interruptions or impacts to infrastructure have occurred.

Energy disruptions due to natural disasters – Disruptions that occur due to severe weather (thunderstorms, ice storms, etc.) or natural disasters (wildfires, hurricanes, floods, tornadoes, etc.).

Energy emergency – An emergency resulting from an energy supply crisis, economic impacts, widespread energy distribution interruptions, and/or energy infrastructure damage.

Energy Provider – Energy providers are companies that produce, transport, store, or distribute energy resources to customers. This may be a company that only distributes energy resources to end-use companies, or a company that produces and delivers energy resources to utilities.

Islanding – Also referred to as Electrical System Separation, where part or parts of a power grid remain(s) operational in an otherwise blacked out area or within the partial failure of an integrated electrical system. Islanding may also refer to the ability of distributed energy resources, such as a microgrid, to provide power to an area otherwise not receiving power during a grid disturbance or event.

Key resources – Publicly or privately controlled resources essential to the minimal operations of the economy and government.

Load shedding – A utility's-controlled reduction of electricity in certain areas to avoid excessive demand on a generating plant. It is reported in the OE-417 if firm load shedding of 100 Megawatts or is under emergency operational policy.

Physical attack – An attack on any part of a system suspected of being a deliberate attack or sabotage that disrupts system operations or has the intent to harm the national security of the U.S. The attacks included in OE-417 are those that caused major interruptions or impacts to critical infrastructure facilities or to operations.

Risk – Overall summary threat probability, vulnerability (duration), and consequence of a scenario.

Threat – Anything that can damage, destroy, or disrupt energy systems, including natural, human/physical, and cybersecurity threats.

Utility – A company responsible for the distribution of energy resources, electricity or natural gas, to end-use customers.

Vulnerability – The susceptibility of an energy infrastructure system to damage, loss, or degradation caused by a threat due to a weakness within the system, or due to the system's dependence on critical supporting systems or material, technical, or workforce resources affected by the threat.

ENERGY AND RISK PROFILES

Idaho Energy System

Idaho consumes 574 trillion BTUs or 168 billion kilowatt hours (kWhs) of energy per year.[1] The industrial sector consumes the largest portion of that energy, followed closely by the transportation and residential sectors. Energy provision can be split into three major categories based on the type of energy: electric power (or electricity), natural gas, and petroleum.

Key Energy Security Planning Considerations:

- Hydroelectric power comprises about 51% of Idaho's in-state electricity generation.
- Petroleum use accounts for 35% of Idaho's total energy use. Idaho is among the 10 states with the lowest total petroleum consumption; however, per capita petroleum use is near the national average.
- All petroleum product supply is provided from out-of-state refineries through the pipeline network. Southern Idaho is supplied from refineries located in Salt Lake City, Utah, and Northern Idaho is predominantly supplied by refineries in Billings, Montana.
- 50.7% of Idaho households use natural gas as their primary source for heating their homes, electricity 35.1%, other sources 7%, propane 5.5%, and fuel oil supplies 1.7%.

Electric power consumed in Idaho is produced both in and out of the state with transmission lines most dense in the southern portion of the state (**Figure 1** and **Figure 2**). Seventy-five percent of electricity consumed in Idaho comes from in-state sources like hydropower, wind, solar, and others. The remaining portion of electricity consumption in Idaho comes from neighboring states like Wyoming, Montana, and Utah, and is generated from hydropower, wind, natural gas, coal, and other sources. The key components of Idaho's electric power system include power generation, transmission lines, and transformers that convert the power transported to the appropriate voltage for transmission and later for end-use consumption. Each of those elements are critical for energy resilience and reliability.

Electric power production and access are supplied by investor-owned utilities (IOUs) and rural cooperative and municipal utilities. Idaho Power, Rocky Mountain Power, and Avista are Idaho's three electric IOUs that serve most of Idaho's population and are regulated by the Idaho Public Utilities Commission (PUC). Idaho has 22 rural electric cooperatives and municipal power utilities that are represented by the Idaho Consumer-Owned

[1] U.S. Energy Information Administration. "2023 Idaho State Energy Profile". https://www.eia.gov/state/print.php?sid=ID

utilities Association (ICUA). These not-for-profit utilities are self-regulated by elected boards of directors and city councils. They provide power at-cost to their members.

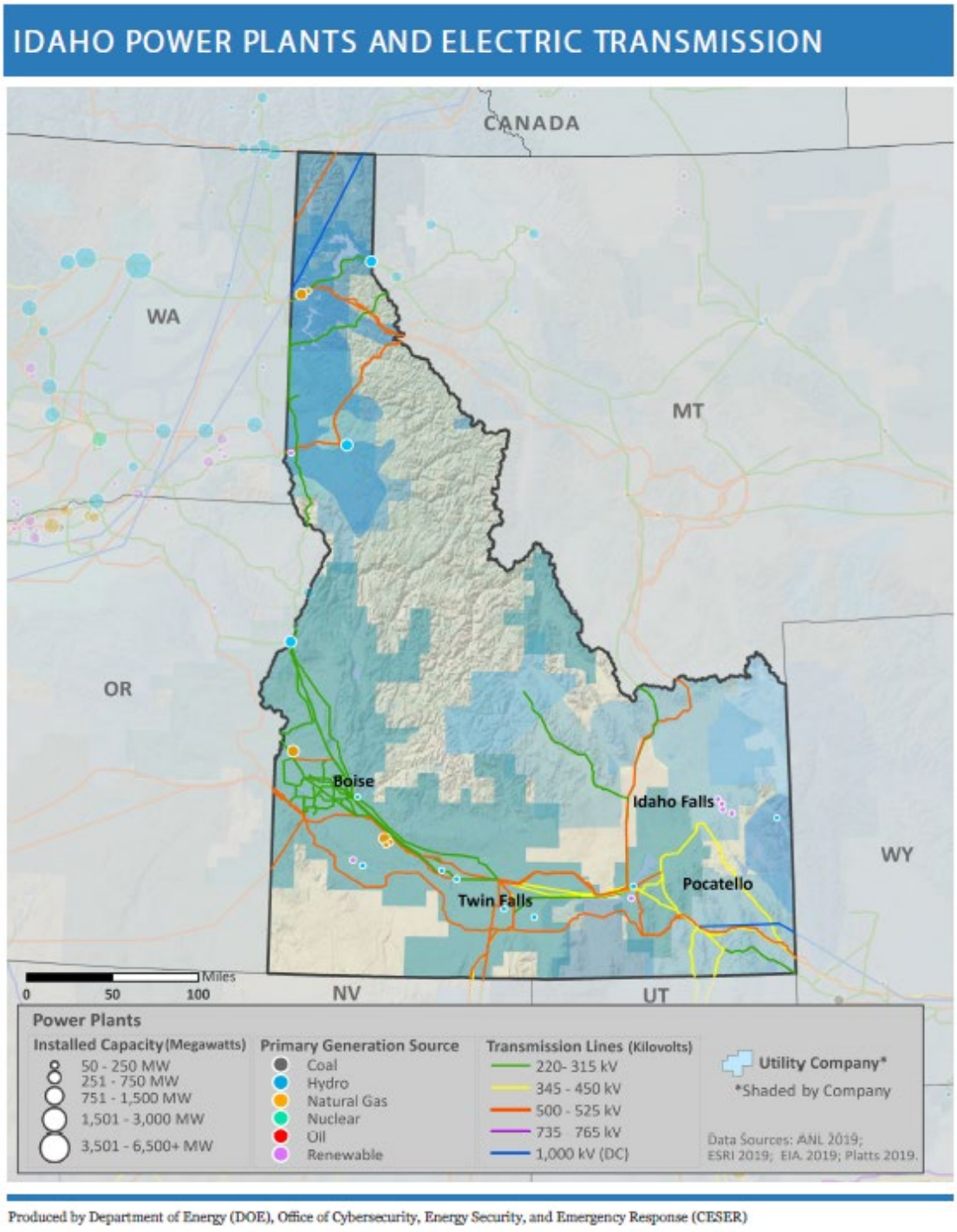

Figure 1. Power Plants and Electric Transmission in Idaho.[2] This figure depicts power plants, including capacity and generation source, and electric transmission lines within the state. **Note*: A section of the Gateway

[2] U.S. Department of Energy Office of Cybersecurity, Energy Security, and Emergency Response. "State and Regional Energy Risk Profiles - Idaho". https://www.energy.gov/ceser/state-and-regional-energy-risk-profiles.

West transmission project depicted on this map in eastern Idaho south of Pocatello is permitted but not yet constructed. Additionally, there are no 1,000 kV (DC) transmission lines in the State of Idaho.

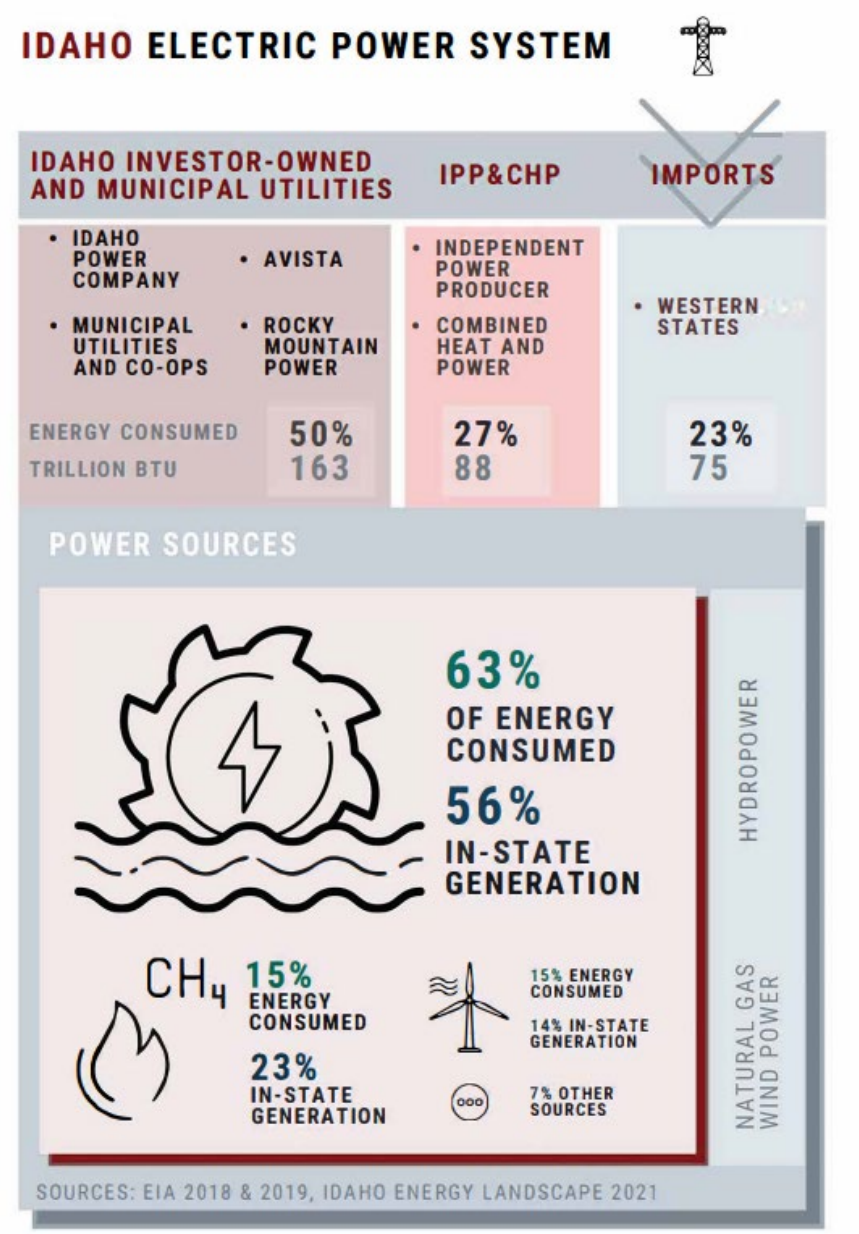

Figure 2. Idaho Electric Power System. The figure depicts Idaho's electricity supply and where it is sourced from. Icon size for each energy source corresponds to the relative amount of contribution of that energy source to the grid.[3]

[3] U.S. Energy Information Administration. "2021 Idaho State Energy Profile." https://www.eia.gov/state/print.php?sid=ID; Idaho Governor's Office of Energy and Mineral Resources, 2021 Idaho Energy Landscape, https://oemr.idaho.gov/wp-content/uploads/Idaho-Energy-Landscape-2021.pdf.

Electric Power Critical Resilience Elements

- Local power generation
- Transmission and power line infrastructure
- Reliable energy access to regional electric power
- Diversity of supply and distributed generation

Petroleum is the primary energy source for the transportation sector in Idaho, and its accessibility is crucial for the functioning of the state. The petroleum consumed in Idaho is imported through two pipelines: the Yellowstone pipeline and the Northwest Products pipeline (**Figure 3**). The movement of petroleum products through the pipes is operated with the help of the electric-powered pumping stations. Based on the 2020 Resiliency Assessment,[4] the critical points in a functioning oil pipeline are the pumping stations. Due to Idaho's petroleum being imported, the resilience of the state's energy can be put further at risk. The only exception is the 60 million gallons/year of ethanol production by Pacific Ethanol in Burley, Idaho, which is blended into petroleum products.[5]

Petroleum Critical Resilience Elements

- Electric-powered pumping stations
- Non-domestic production

Natural gas is the largest source of energy used in Idaho based on total BTU energy consumption,[6] part of that natural gas is used for electricity production. It is primarily used in industry and is the main source of fuel for heating Idaho's industrial, commercial, and residential sectors. Some of the significant elements of the natural gas system include natural gas production (extraction and processing), transmission (in Idaho, using pipelines), and distribution (with storage stations). The natural gas used in Idaho mostly comes from the Rocky Mountain production areas and Canada. It is transported through pipelines and stored in Washington, Idaho, or the border between Utah and Wyoming. The main natural gas pipeline in Idaho is the Williams Northwest pipeline. The second-largest pipeline is TransCanada's Gas Transmission Northwest (GTN) System pipeline (**Figure 4**).

Natural Gas Key Resilience Elements

- Gas production out-of-state
- Gas leakage prevention

[4] U.S. Cybersecurity and Infrastructure Security Agency. "Regional Resiliency Assessment Program." https://www.cisa.gov/regional-resiliency-assessment-program.
[5] 2021 Idaho Energy Landscape, https://oemr.idaho.gov/wp-content/uploads/Idaho-Energy-Landscape-2021.pdf.
[6] U.S. Energy Information Administration. "Idaho Profile Overview". https://www.eia.gov/state/?sid=ID#tabs-1.

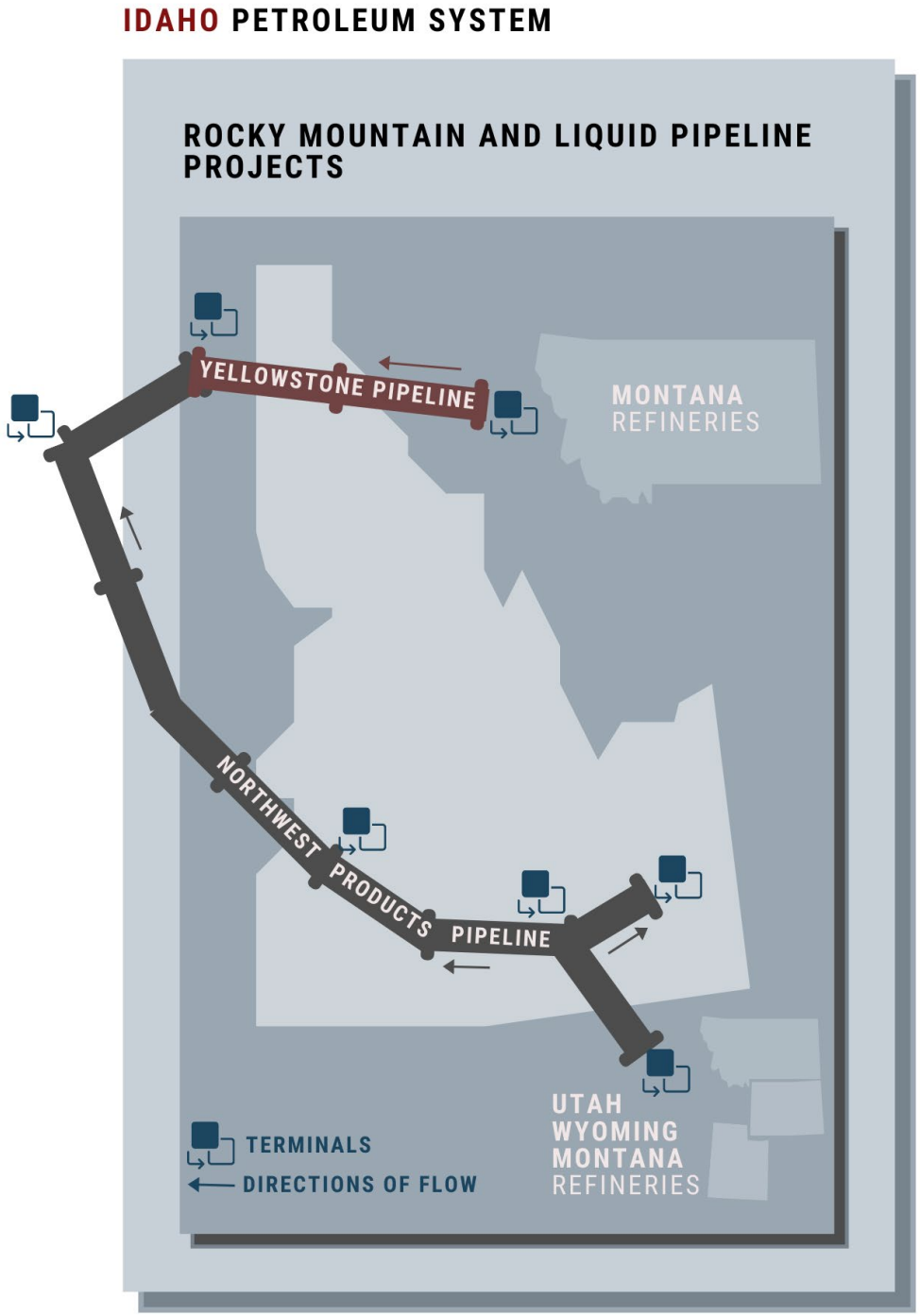

Figure 3. Idaho Petroleum System.[7] This figure depicts Idaho's petroleum pipeline infrastructure throughout the state, including terminals and flow directions.

[7] 2021 Idaho Energy Landscape, https://oemr.idaho.gov/wp-content/uploads/Idaho-Energy-Landscape-2021.pdf.; U.S. Cybersecurity and Infrastructure Security Agency, "Regional Resiliency Assessment Program" https://www.cisa.gov/regional-resiliency-assessment-program.

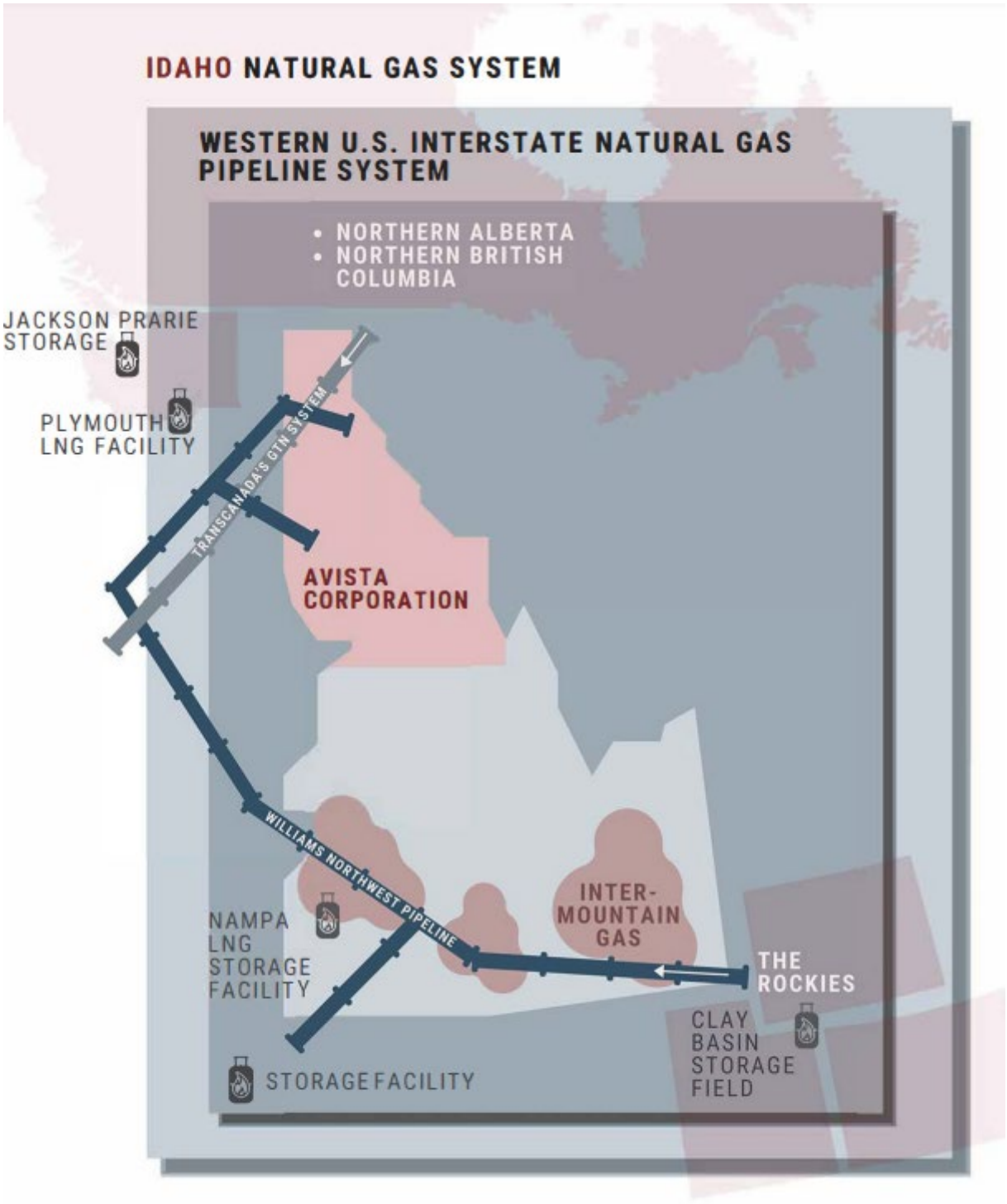

Figure 4. Idaho Natural Gas System.[8] This figure depicts Idaho's natural gas pipeline infrastructure including storage facilities, and storage fields in neighboring states. Note: "LNG" stands for Liquid Natural Gas, "GTN" stands for "Gas Transmission Northwest" and "The Rockies" represents storage fields in Utah, Wyoming, and Colorado.

[8] 2021 Idaho Energy Landscape, https://oemr.idaho.gov/wp-content/uploads/Idaho-Energy-Landscape-2021.pdf.

Overall, Idaho produces about one-quarter of the energy that it consumes and imports all petroleum products.[9] To ensure energy access and availability, transmission lines and pipelines to Utah, Montana, and Wyoming should be maintained, and in-state energy production should continue to be encouraged. For more details on the current state of energy production and consumption in Idaho, please see Appendix A and the *2024 Idaho Energy Landscape*.

Balancing Authorities

In Idaho's energy system, IOUs and municipal and cooperative utilities operate energy production, transmission, and distribution to customers in their specified service territory. Idaho's three electric IOUs — Idaho Power, Rocky Mountain Power, and Avista — are responsible for electric balancing authority services within their service territory. That means that they are responsible for meeting the energy demand with the corresponding energy supply within their designated electric grid territory (**Figure 5**).[10] The BPA also serves as a balancing authority because it provides power and transmission services to municipal and cooperative utilities in the region and throughout the state of Idaho.

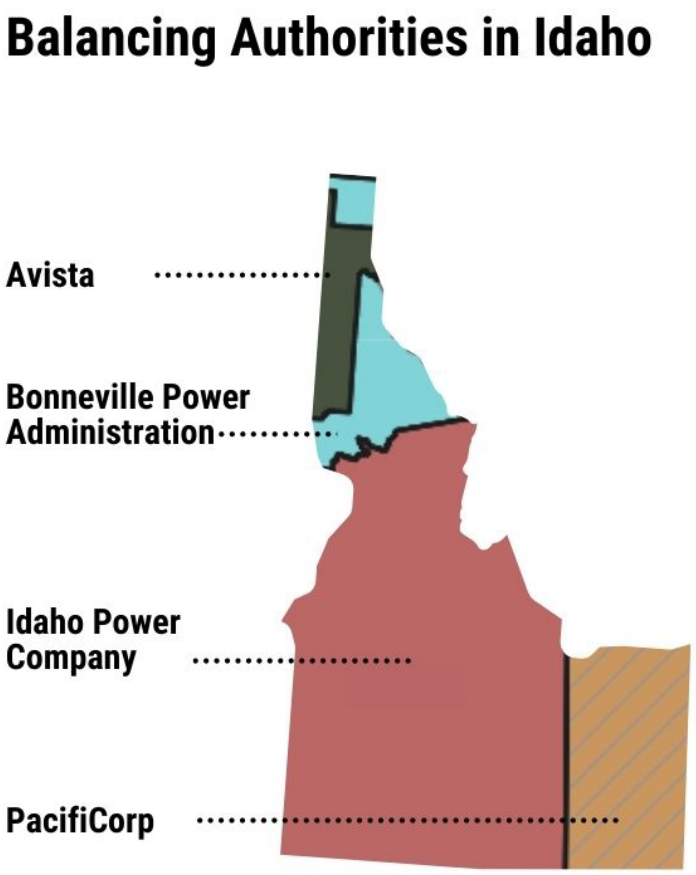

Figure 5. Idaho Balancing Authorities. This figure depicts Idaho's IOU balancing authority services within their service territory. Boundaries are adopted from the Western Electricity Coordination Council (WECC).[10]

[9] 2021 Idaho Energy Landscape, https://oemr.idaho.gov/wp-content/uploads/Idaho-Energy-Landscape-2021.pdf.
[10] Western Electric Coordinating Council, "Western Interconnection Balancing Authorities", *available at* https://www.wecc.org/Administrative/Balancing_Authorities_JAN17.pdf.

Energy Threats, Vulnerabilities, and Interdependencies

Idaho Threat and Outage Overview

Expected threats or risks to Idaho's energy supply forms the basis of all energy security activities across the state. According to the U.S. Department of Energy's (DOE) State of Idaho Energy Sector Risk Profile (Idaho Risk Profile), past energy supply risks in Idaho have typically corresponded with weather-related outages, equipment, or human error-caused outages. Beyond historic threats, new risks to Idaho's energy supply are emerging, such as increased frequency of extreme weather events and cyberattacks. DOE's Idaho Risk Profile specifies that the greatest natural disaster risks in Idaho are winter storms and extreme colds. Other natural hazards are wildfires, thunderstorms and lightning, and floods (**Figure 6**).

Energy transmission, like energy supply, is also subject to diverse risks and hazards. Transmission line faults and overloads have caused the largest number electric power outages in Idaho (**Figure 6**). The Idaho Risk Profile also evaluates risks to petroleum transportation and natural gas transmission, finding that the greatest risks to these systems are derailment, collision, or corrosion; and material and weld failures, respectively (**Figure 7**). More information on the Idaho Risk Profile can be found in Appendix B.

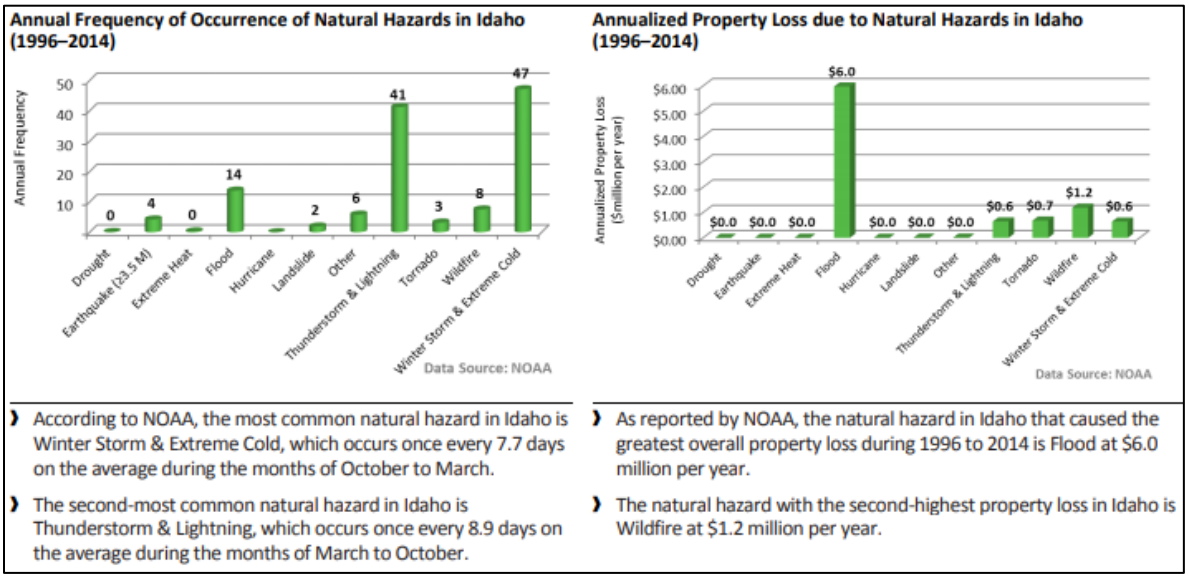

Figure 6. Natural Hazards in Idaho.[11] This figure depicts Idaho's annual frequency of occurrence of natural hazards and annualized property loss due to natural hazards. A combination of equipment failures, severe weather events, and deliberate cyber- and physical attacks pose risks to every part of Idaho's energy system, including energy feedstocks, generation, transmission, and distribution.

[11] "State of Idaho Energy Sector Risk Profile," US Department of Energy, 2016, https://www.energy.gov/sites/prod/files/2016/09/f33/ID_Energy%20Sector%20Risk%20Profile.pdf

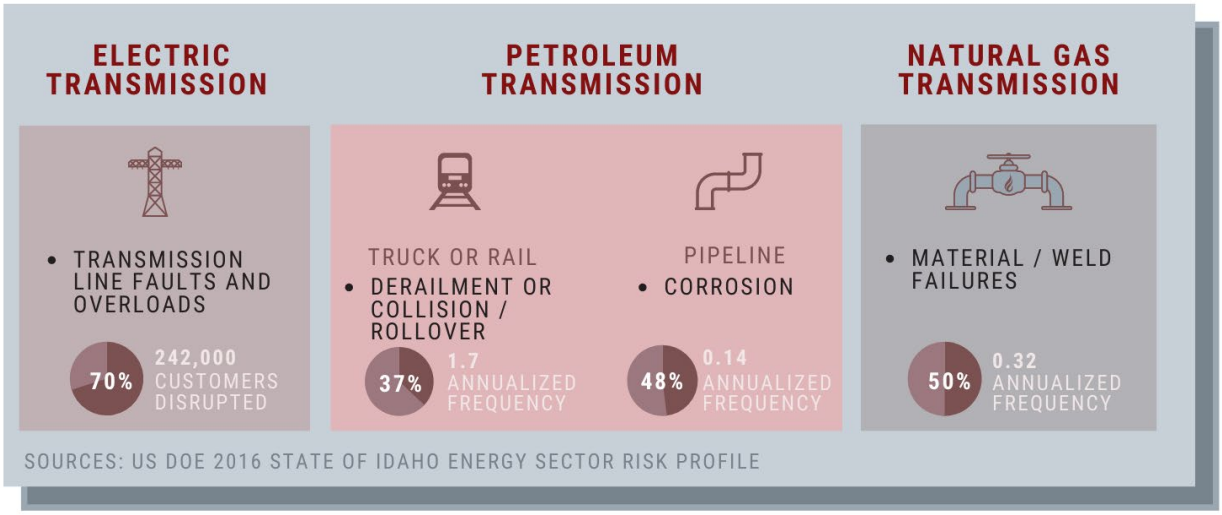

Figure 7. Idaho Energy Transmission Risks.[12] This figure depicts Idaho's major electric, petroleum, and natural gas transmission risks. The values are based on past transmission disruptions.

General Trends Across Idaho

Analyzing the average number, duration, and causes of outages provides insight to understand grid performance and is an important component of energy security planning. Power reliability indicators are one way to evaluate how effective an energy provider is at assuring continuous energy supply. This section focuses on the number and severity of power outages in Idaho between 2013 and 2019.[13] The year 2013 was selected as the starting date because this was the year that EIA-861[14] started collecting the appropriate information from utilities. For clarity, Idaho's IOUs are considered as separate categories from Idaho's cooperative and municipal utilities. Data for Avista's power outages were not available before 2016, the growth in customer disruption duration and frequency can be attributed to new data being available, not a change in operations.

Most power reliability data are presented in System Average Interruption *Duration* Index (SAIDI) and System Average Interruption *Frequency* Index (SAIFI), which are indicators of the duration of outages per customer and the frequency of outages per customer, respectively. **Figures** 7 and 8 below were calculated based on SAIDI and SAIFI. The duration of outages was calculated as the product of SAIDI and the number of customers per utility. Therefore, the duration and SAIDI figures differ as they account for the number of customers experiencing outages.

Idaho Power is the largest electricity provider and serves the largest number of customers in Idaho. Correspondingly, about half of the total number of hours, or duration, of outages are associated with Idaho Power (**Figure 8**). Other utilities experienced more outages per customer (**Figure 9**). Some smaller utilities have experienced major outages due to weather events. For example, the Kootenai Electric Cooperative

[12] "State of Idaho Energy Sector Risk Profile," US Department of Energy, 2016, https://www.energy.gov/sites/prod/files/2016/09/f33/ID_Energy%20Sector%20Risk%20Profile.pdf

[13] U.S. Energy Information Administration, "Annual Electric Power Industry Report, Form EIA-861 detailed data files", https://www.eia.gov/electricity/data/eia861/.

[14] Form EIA-861, Annual Electric Power Industry Report, and Form EIA-861S (the shortform) collect data from distribution utilities and power marketers of electricity. This survey is a census of all United States electric utilities.

(Kootenai) experienced a long outage due to a windstorm which caused a spike in Idaho's power outage duration in 2015 (**Figure 10**). This spike is evident in the SAIDI figure where "other utilities" were included compared to when they were not (**Figure 11**). Since that 2015 event, Kootenai received a Federal Emergency Management Agency (FEMA) grant to bury their transmission lines underground.

Idaho has recently experienced fewer and shorter outages than the U.S., on average. In 2021, Idaho customers reported 1.2 outages and 2.9 hours without power per customer compared with the national average of 2 outages and no power for 5.8 hours. This difference can be attributed to Idaho's power system not being significantly affected by major or emergency outage events. On average, an Idahoan experienced 167 minutes (or 2.8 hours) of power outage in 2019 (**Figure 12**).[15]

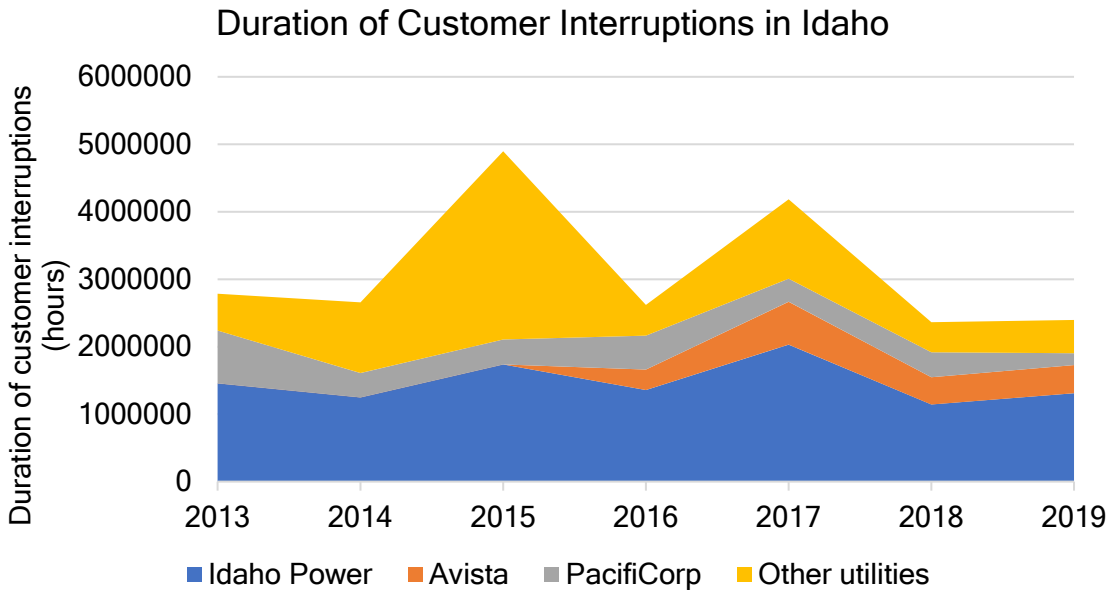

Figure 8. Total duration of Customer Interruptions in Idaho by Utility.[16] Values for each Utility are stacked, beginning with Idaho Power and ending with other utilities.

[15] U.S. Energy Information Administration, "Form EIA-923 detailed data with previous form data (EIA-906/920)", https://www.eia.gov/electricity/data/eia923/; "Table 11.6 CAIDI values of U.S. Distribution System by State, 2013-2020", https://www.eia.gov/electricity/annual/html/epa_11_06.html

[16] Based on the data obtained from the U.S. Energy Information Administration: "Annual Electric Power Industry Report, Form EIA-861 detailed data files". https://www.eia.gov/electricity/data/eia861/

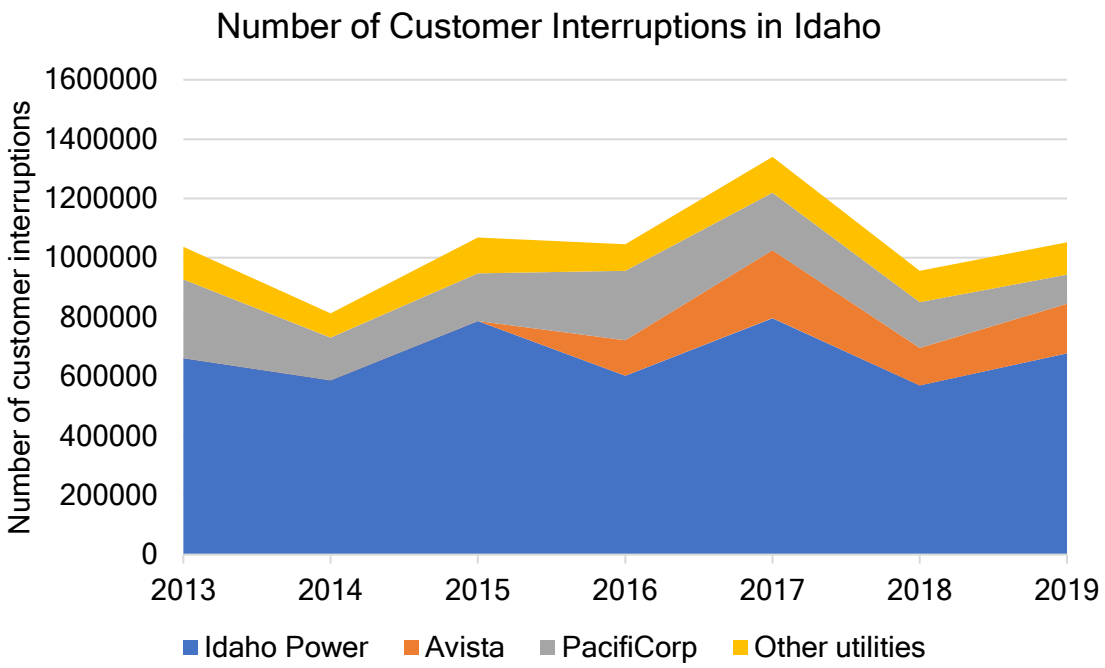

Figure 9. Total number of Customer Interruptions in Idaho by Utility.[17] Values for each Utility are stacked, beginning with Idaho Power and ending with other utilities.

[17] U.S. Energy Information Administration, "Annual Electric Power Industry Report, Form EIA-861 detailed data files", https://www.eia.gov/electricity/data/eia861/.

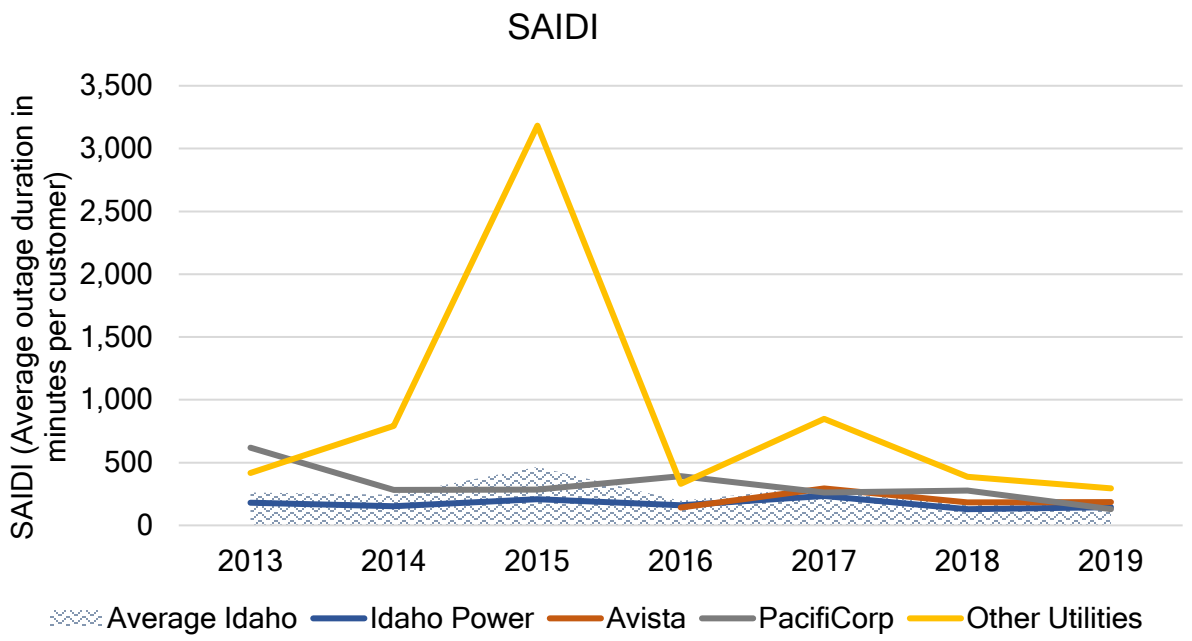

Figure 10. System Average Interruption Duration Index (SAIDI) in Minutes per Customer.[18] This figure depicts the average length, in minutes, of power outages an Idahoan experienced from 2013 to 2019 by utility.

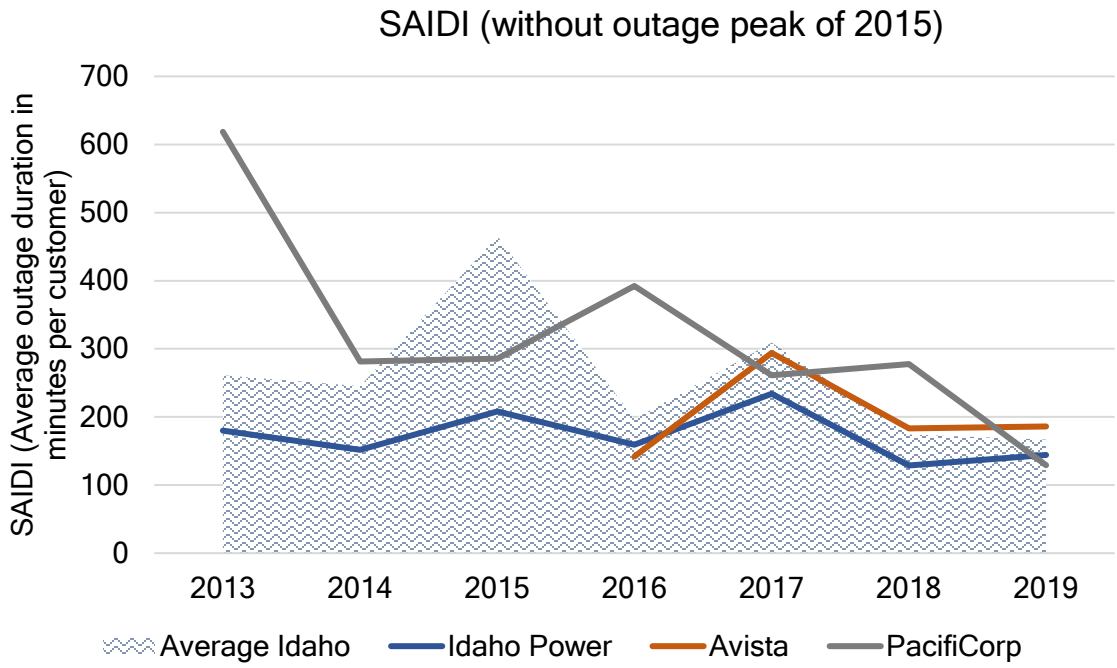

Figure 11. System Average Interruption Duration Index (SAIDI) Excluding Cooperative or Municipal Utilities to Eliminate the Peak in 2015. Data for Avista was not available before 2016.[18]

[18] U.S. Energy Information Administration, "Annual Electric Power Industry Report, Form EIA-861 detailed data files", https://www.eia.gov/electricity/data/eia861/.

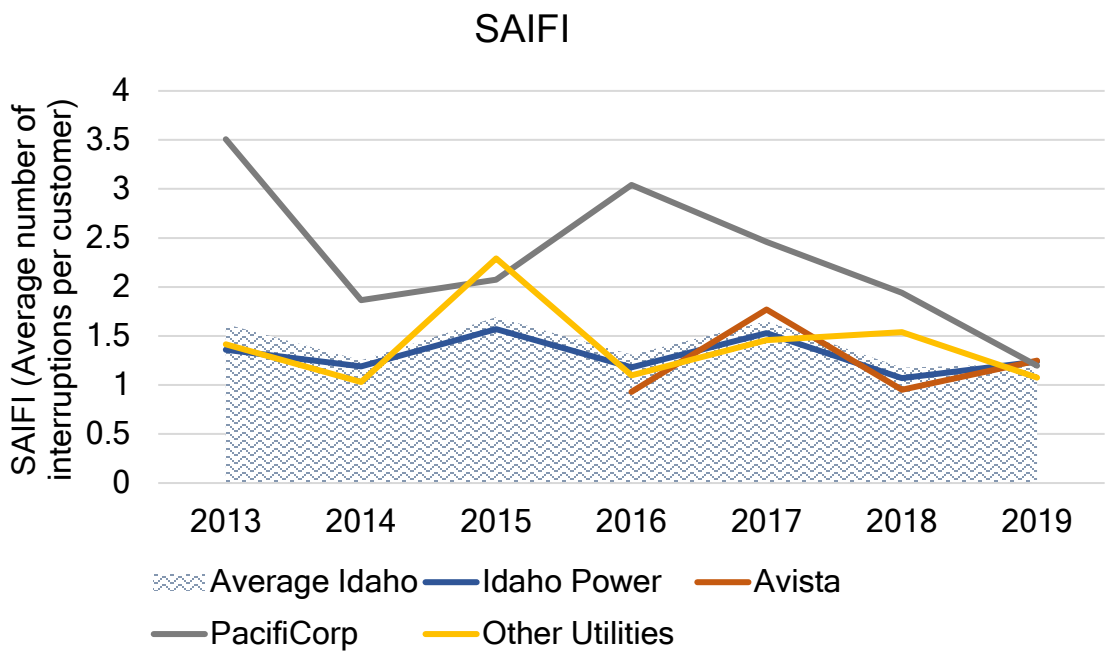

Figure 12. System Average Interruption Frequency Index (SAIFI).[19] This figure depicts the average number of power outages an Idahoan experienced from 2013 to 2019 by utility.

Causes of Energy Outages

The Eaton Blackout Tracker annual report states that between 2008 and 2017, most outages in Idaho had been caused by weather or falling trees (**Figure 13**).[20]

Besides the average outage information, utilities must report emergency and unusual outages to the DOE. The criteria for emergency and unusual outages involves outages caused by a physical attack (a deliberate attack on the energy system), load shedding, islanding, natural disasters, cyberattacks, and others. Those events are collected in the Electric Disturbance Events (OE-417) Annual Summaries[21] which provide continuous data across states on disruption causes. These summaries are the main source of information for major electric outages or unusual occurrences reported by utilities and balancing authorities to DOE as an Electric Emergency Incident and Disturbance.

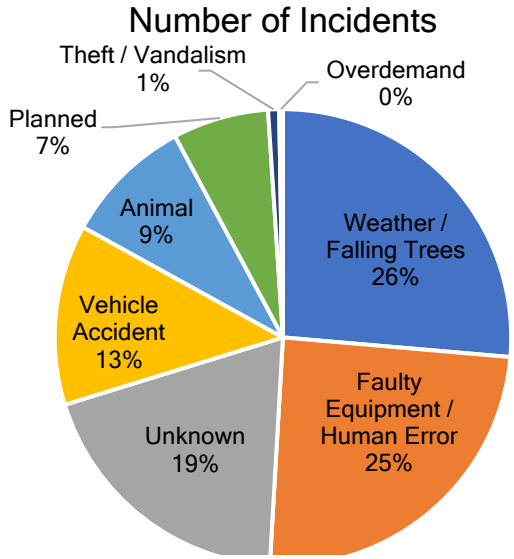

Figure 13. Electric Outages in Idaho and their Causes (2008-2017; Eaton tracking).[20] This figure illustrates the number and type of incidents that led to electricity outages between 2008 and 2017 in Idaho.

[19] U.S. Energy Information Administration, "Annual Electric Power Industry Report, Form EIA-861 detailed data files", https://www.eia.gov/electricity/data/eia861/.

[20] U.S. Department of Energy, "State of Idaho Energy Sector Risk Profile", https://www.energy.gov/sites/prod/files/2016/09/f33/ID_Energy%20Sector%20Risk%20Profile.pdf.

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

Figures 14 and **15** summarize the number and causes of emergency events in Idaho.[22]

The major cause of emergency outages in 2010-2020 in Idaho were caused by physical attacks, including vandalism and theft (**Figure 15** and **16**). Although weather damages and cyberattack threats are an important part of the resiliency discussion, physical threats and attacks persist and can lead to long outages.

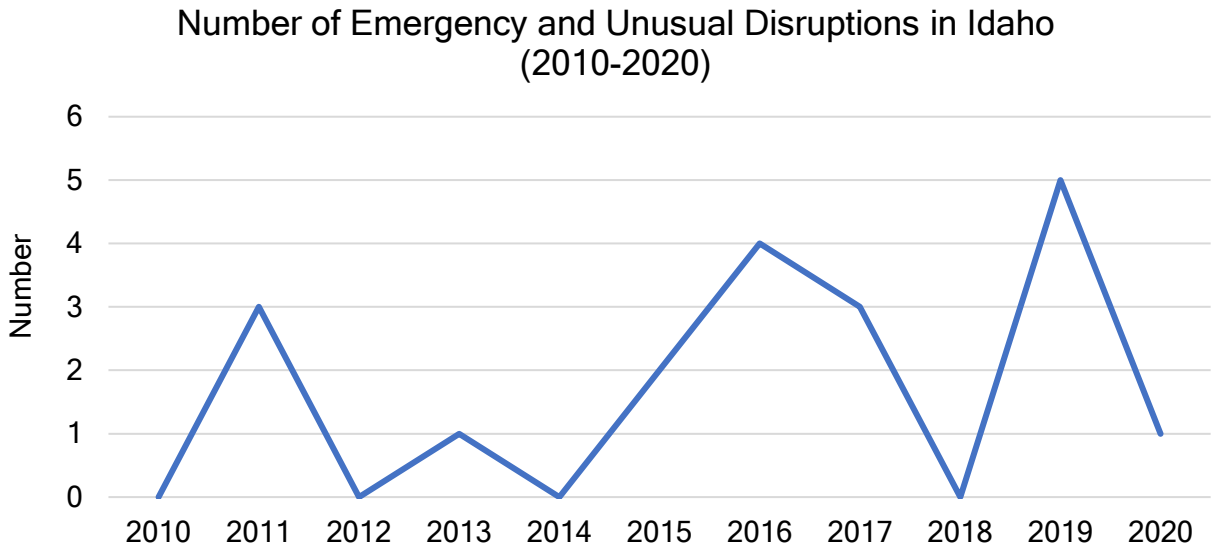

Figure 14. Number of Emergency and Unusual Disruptions leading to outages in Idaho. This figure illustrates cumulative power outages by year over the last decade.

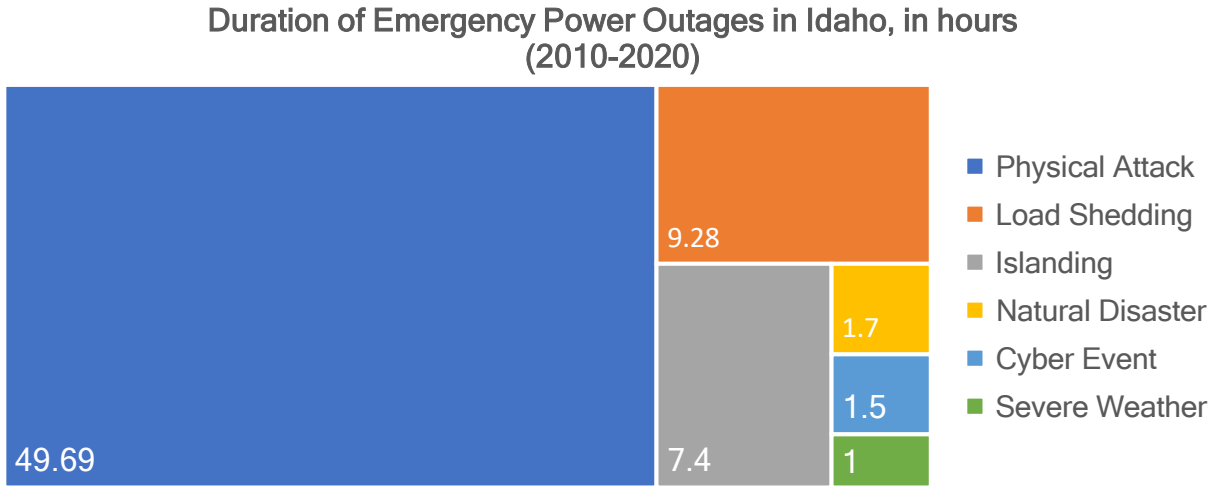

Figure 15. *Total Duration of Emergency Power Outages in Idaho (in hours).[23] This figure illustrates the total hours of emergency power outages and their causes in Idaho over the last decade.*

[22] Figures 19-23 are based on data from: U.S. Department of Energy, Office of Cybersecurity, Energy Security, and Emergency Response, "Electric Disturbance Events (OE-417) Annual Summaries"
[23] "Electric Disturbance Events (OE-417)," US Department of Energy, https://www.oe.netl.doe.gov/OE417_annual_summary.aspx

States across the Northwest region have seen outages with the same causes as Idaho, but the number of outages varied across states (**Figure 17**). Similarly, the number of outages across counties in Idaho have varied (**Figure 18**). Southeast Idaho is noted to have longer durations of major and unusual power outages, which is similar to the average power outage information across utilities. More spatially informed information (via Geographic Information Systems data) could help further understanding of the regionality of power outages.

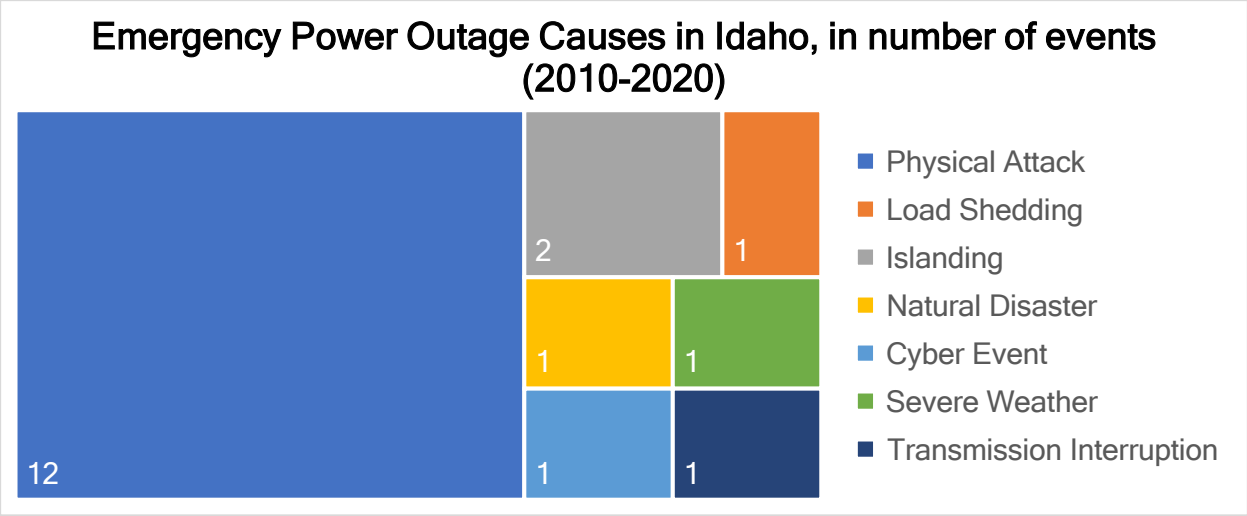

Figure 16. Total Number of Emergency Power Outages in Idaho[24]. This figure illustrates the total number of emergency power outages and their causes in Idaho over the last decade.

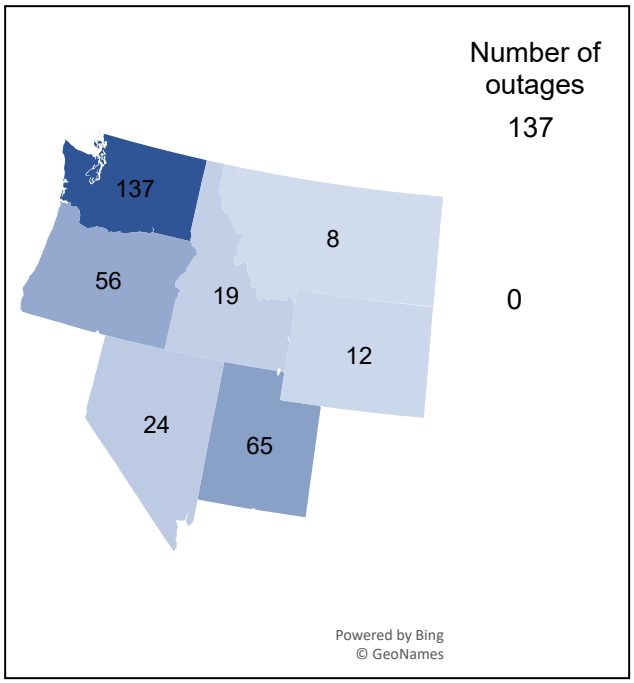

Figure 17. Map of Emergency Power Outage Occurrences in Idaho and Neighboring States. This figure illustrates the total number of emergency power outages in Washington, Oregon, Nevada, Idaho, Utah, Wyoming, and Montana over the last decade.[24]

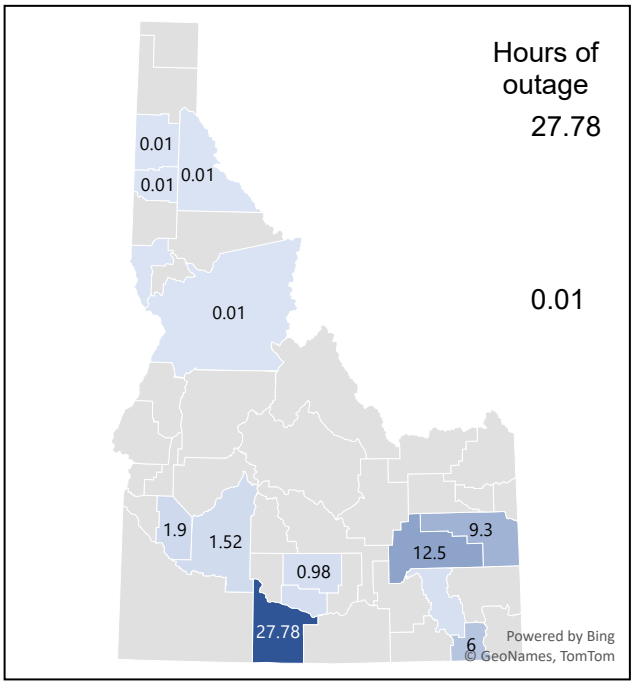

Figure 18. Duration of Emergency Power Outages in Idaho by County (in hours). No data was recorded from other counties in the Archive of power disturbances and emergencies. [24]

[24] "Electric Disturbance Events (OE-417)," US Department of Energy, https://www.oe.netl.doe.gov/OE417_annual_summary.aspx

Disruption Scenarios

To plan for future energy disruptions, energy providers and energy security planners should review historic energy supply disruptions and analyze emerging risks. The following information provides examples of disruption scenarios in Idaho and **Figure 19** depicts electric utility emergency information flows.

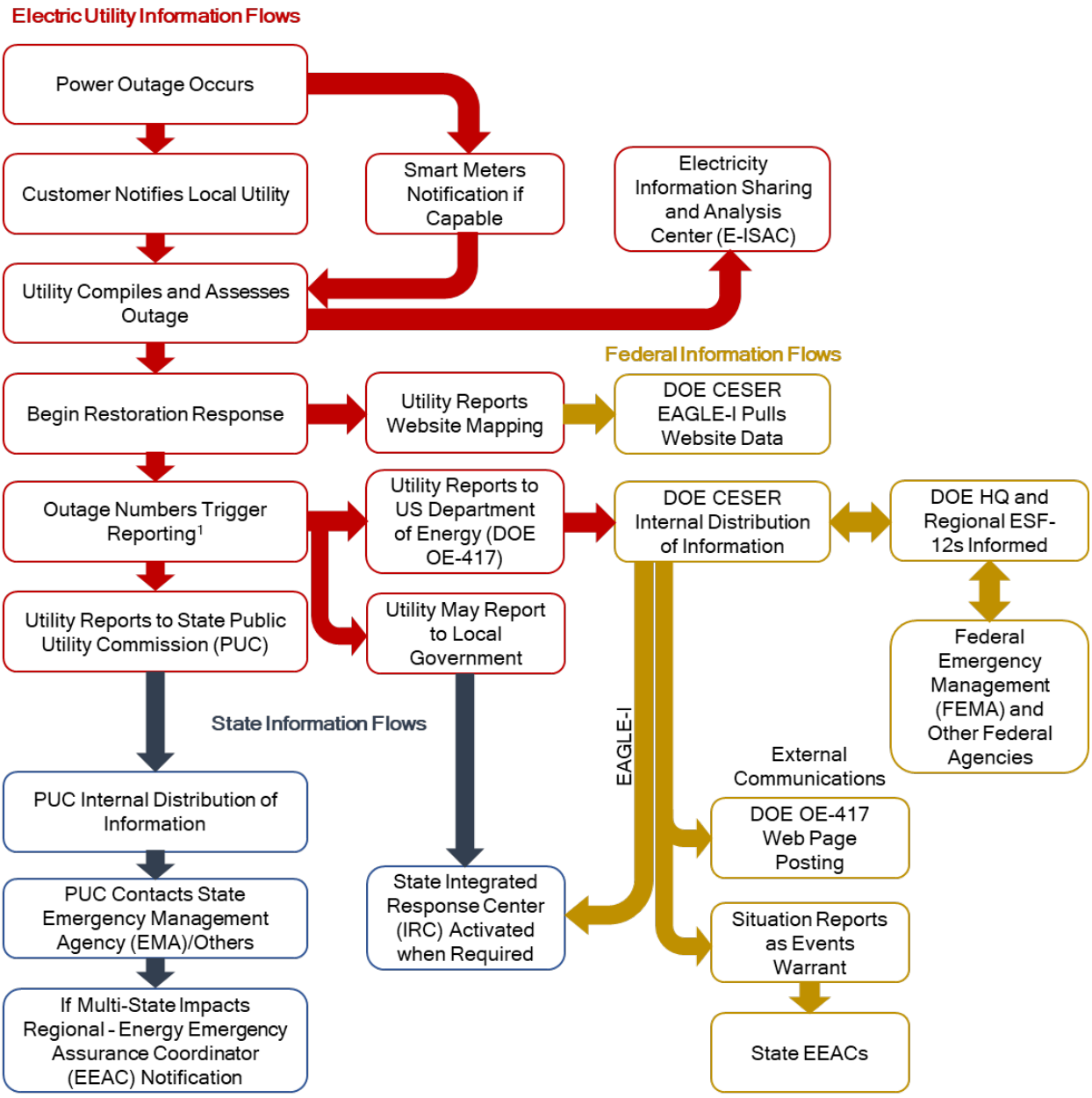

Figure 19. Power Outage Notification. This figure depicts how electric utility information on power outages generally flows through key energy emergency response stakeholders. Triggers and federal reporting may differ between states. *Adapted from:* Initial Power Outage Notifications Information Flow for Local Distribution Company, Local, State, and Federal Governments. National Association of State Energy Officials.

Specific Idaho Energy Threats

Cyberattacks

Cyberattacks pose a significant risk to energy infrastructure and security. As some utilities move toward a decarbonized energy mix, energy infrastructure faces a growing number of operational shifts that increase both opportunities and challenges for grid security. Technological developments, such as distributed generation, demand response, and advanced metering, coupled with regulatory efforts, such as FERC Orders 841 and 2222, are removing barriers which could lead to broad participation by newly aggregated distributed energy resources and microgrids in increasingly complex energy markets. Utilities plan to deploy behind-the-meter (BTM) equipment to achieve real-time awareness and control as the system evolves. The result is a fundamental shift from current protocols and requires novel digital solutions to maintain broader grid reliability and resilience. This enhanced functionality comes at the cost of an escalating cybersecurity threat, owing to the sharp increase in digitization and corresponding attack surface area.

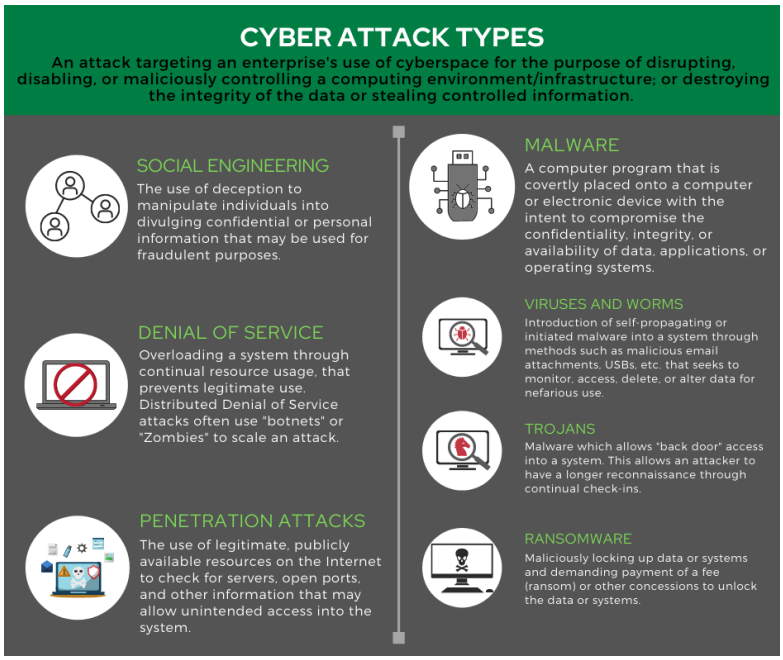

Figure 22. Types of cyberattacks. Being aware of cyberattack methods allow groups to better avoid damage to information technology infrastructure. *DOE CESER Cyber Drop In*

In an increasingly technological environment, cyberattacks grow in pervasiveness and severity. Frequently used methods include phishing, spoofing, malware, and social engineering.[25] The energy sector in particular is vulnerable to cyberattacks due to its decentralized nature, reliance on electronic control mechanisms, and space between physical infrastructure and IT networks.[26] Two-fifths of all energy industry attacks were focused on public-facing applications.[27] Smaller municipal and consumer-owned utilities may be at greater risk compared to investor-owned utilities due to more limited IT resources.

On May 7th, 2021, the Colonial Pipeline became a victim of a ransomware cyberattack. The pipeline connects refineries in Houston, Texas with East Coast consumers as far as Linden, New Jersey, and transports 2.5 million barrels per day to the East Coast. This accounts for nearly half of the East Coast's petroleum products. The attack has been linked to a group, called the DarkSide, which held the pipeline's data hostage and threatened to release those data unless they received a specified ransom amount. Staff received a notice of the attack stating the computers and servers had been encrypted. The pipeline operating company took the cloud system offline in response to the attack to prevent the release of the data held hostage. This resulted in pausing the pipeline's transportation of petroleum products. Colonial Pipeline

[25] "Types of Cyber Attacks You Should Be Aware of in 2023." https://www.simplilearn.com/tutorials/cyber-security-tutorial/types-of-cyber-attacks
[26] "Cyberattacks: Preparing a Defense for Energy Infrastructure." https://www.ge.com/gas-power/resources/articles/2021/energy-cyber-attack
[27] "2022 Industry Threat Recap: Energy." https://securityintelligence.com/articles/2022-industry-threat-recap-energy/

confirmed paying $4.4 million to the group and restored full service of the pipeline after six days of limited to no service.

Analysts report due to the COVID-19 pandemic, more employees of the pipeline company were accessing the control systems remotely from home, which could have made it easier for DarkSide to access the computer system. This example provides an idea of how digitization may escalate system risk for cyberattacks and how areas that rely on a single pipeline can be at risk of similar system disruptions.

Damaging Wind

Flying debris or downed trees can make severe winds a threat to lives, property, and utilities. Windstorms, often accompanying severe thunderstorms, can knock down or blow dry vegetation into power lines, causing faults or outages. If wind gusts are strong enough overhead lines can be completely blown over, leaving dangerous live wires exposed to the public and severe equipment damage. In addition, accompanying lightning could cause faults or outages via strikes on overhead equipment. These storms most often occur in the summer but can also happen in the spring and autumn. They are relatively rare in the winter. Wide-area wind events are less common than localized severe weather, but typically have a larger impact on system performance and operational response because of their larger geographic extent.

In the early morning hours of January 13, 2021, high winds began to impact distribution and transmission circuits throughout the Northern Lights, Inc, (NLI) service area. Those high winds continued throughout the day, with some portions of our service area being impacted by 60+ mph downslope winds that caused significant and widespread damage to energy infrastructure. At the peak of the event, more than 15,000 of NLI's 21,000 service locations were impacted. Restoration efforts were hampered by extensive wind related tree damage and road hazards. Additionally, some locations experienced prolonged outages (up to 3 days) as crews completed time intensive repairs.[28]

During a severe storm event of this nature, when damage exceeds the available field resources, restoration is prioritized by transmission, then the largest distribution outages in terms of service locations affected, and then smaller distribution outages.

Earthquakes and Liquefaction

Earthquakes are common in Idaho, with the central and southeastern portions at most risk. In 1983, the Borah Peak Earthquake rocked the central towns of Challis and Mackay. The geography separated almost 14 feet in some areas.[29] Nationwide, Idaho sits in fifth place for earthquake risk.[30] In the southern part of the state, Utah's Wasatch, Eastern Bear Lake, and Western Cache Fault Zones extend northward past Malad.[31] The next seismic event would most likely shake and damage Pocatello and surrounding areas.[32] The Northwest Products Pipeline also follows a path similar to the fault line and is vulnerable to seismic activity.

[28] "Woman Killed, 100K Without Power in Aftermath of Brutal Windstorm." The Spokesman-Review. January 13, 2021. https://www.spokesman.com/stories/2021/jan/13/wind-knocks-out-power-to-50000-customers-in-spokan/
[29] "Earthquakes," Idaho Office of Emergency Management. https://ioem.idaho.gov/news/a-history-of-idaho-disasters/earthquakes/
[30] "Earthquake," Ada County Emergency Management. https://adacounty.id.gov/emergencymanagement/how-to-prepare-resources/earthquake/
[31] Phillips, Bill, et al. "Earthquake Occurrence in Southeast Idaho." http://learningfromearthquakes.org/2020-03-31_challisidaho/images/2020_03_31_Challis_Idaho/Resources/Idaho_Fact_Sheetv4.pdf
[32] https://www.shakeout.org/idaho/southeast/

Liquefaction occurs when saturated soil loses its structural integrity because of strong earthquakes. The Boise metropolitan area is most susceptible to this occurrence, with both natural gas pump and storage facilities as well as electricity infrastructure vulnerable to damage.[33]

Flooding

Flooding is one of the most common natural hazards in the United States, causing more damage than any other severe weather-related event. In the Northwest, flooding can occur from swollen rivers, heavy rains, tidal surges, spring snowmelt, levee or dam failure, local drainage issues or water distribution main breaks. Impacts to utilities can include damage to assets and dangerous conditions for personnel resulting in prolonged power outages. As storms become more frequent and intense, flooding will be an ongoing challenge for western utilities.

Figure 21: A car buried in snow and ice in the aftermath of the 1984 Salmon Ice Jam Floods. *IOEM*

Flooding has been a reoccurring natural disaster in Idaho. From 2009 to 2019, flooding caused about $9 million in property damage across the state.[34] The 1984 Salmon Ice Jam Floods displaced over 300 residents, damaged over 80 homes, and cost $1,300,000 in disaster relief.[35] The Teton Dam Failure in 1976 also decimated the eastern side of the state, killing 11 individuals and costing almost $2 million in recovery efforts.[36]

Flood waters began rising near the end of April at Riviera Estates in Eagle, ID, which required a shut-in (or closure) of the system serving the area in mid-May 2017. The closure affected approximately 16 customers. Service was restored as the flood waters receded. Most customers had their gas service restored by July 17. Intermountain Gas Company (IGC) Boise District carried out the response.

Frequent communication with affected customers, inclusion of IGC in the Emergency Operations Center (now known as the Idaho Response Center (IRC)), communications, and planning meetings were important factors for success of the response.

Extreme Heat

A heat wave is a period of abnormally and uncomfortably hot weather typically lasting two or more days with temperatures outside the historical averages for a given area.[37] Heat wave events can lead to high demands on the electrical grid that can be difficult to plan for. In addition, warmer temperatures can lower the ability of transmission lines to carry power.

[33] Resiliency Assessment, Idaho Fuels RRAP Project, Cybersecurity and Infrastructure Security Administration, June 2020, p. 30.
[34] Idaho Energy Sector Risk Profile. https://www.energy.gov/sites/default/files/2021-09/Idaho%20Energy%20Sector%20Risk%20Profile.pdf.
[35] "1984 Salmon Ice Jam Floods" https://ioem.idaho.gov/news/a-history-of-idaho-disasters/floods/#:~:text=1984%20Salmon%20Ice%20Jam%20Floods,Salmon%20and%20Lemhi%20rivers%20meet.
[36] "Flooding in Idaho." National Weather Service. https://www.weather.gov/safety/flood-states-id
[37] "Heat Wave," FEMA NRI, accessed September 2024, https://hazards.fema.gov/nri/heat-wave

On July 22, 2024, Idaho Power broke their all-time usage record in three separate times that had been set in 2021, also during a heat wave.[38] The benchmark was hit between 4pm and 5pm, 5pm and 6pm, and again between 6pm and 7pm. Due to investment into peaking resource generation facilities in the past decade, Idaho Power was able to meet demand through additional solar, battery storage, and modifications to existing hydroelectric facilities to increase generation capability.

Human Error

With increased technology, the impact of human error has the potential impact energy systems at a much larger scale. The utility industry workforce must be taught how to avoid risks and proven preventative and corrective measures must be applied.

On May 30, 2012, Williams Northwest Pipeline employees were working at the American Falls Tap at roughly 4:30 pm. The valve, which was supplying gas to IGC for the town of American Falls, was left in the off position, causing an outage to 1,245 customers in American Falls. By the end of the day on June 1st, all but 106 customers had their gas restored. Williams Northwest Pipeline did not monitor pressure long enough to see a pressure drop on IGC's side of that valve. IGC's low pressure auto-dialer did not give a warning to the low-pressure situation because of a lack of maintenance. After this incident, the IGC Pocatello District committed to maintain the pre-emergency warning systems. This includes maintenance to the auto-dialers and making efforts to replace the auto-dialers with SCADA whenever possible. The IGC Pocatello District also committed to working with Williams Northwest Pipeline to ensure that IGC is aware of meter stations that they will be shutting-in. This would allow eIGC can help in monitoring downstream systems and avoid a similar situation in the future.[39]

Lightning

Lightning is a visible electrical discharge or spark of electricity in the atmosphere between clouds, the air and/or the ground often produced by a thunderstorm. Lightning strikes carry the opportunity to ignite wildfires and damage buildings or critical infrastructure.[40]

In May of 2022, lightning struck and downed a power line in Pocatello, Idaho.[41] Consequently over 1,000 customers were powerless for a period of 4 hours.

Pandemics

Pandemics such as the COVID-19 pandemic, may drastically affect society and supply chains. For the energy sector, financial stability is threatened as overall demand drops (Independent System Operators saw a 2-8% demand reduction in April 2020).[42] Contagiousness, severity, and isolation protocols could slow communications and response abilities in the event of an energy emergency. Added pressure to the supply

[38] "Idaho Power sets new all-time record for electricity demand," KTVB 7, July 23, 2024, https://www.ktvb.com/article/news/local/idaho-power-new-all-time-record-electricity-demand/277-cfc16ff3-e5de-4789-bc85-7cc75d1ebe4f

[39] "Hundreds of American Falls Gas Customers Still Without Service." East Idaho News. June 1, 2012. https://www.eastidahonews.com/2012/06/hundreds-of-american-falls-gas-customers-still-without-service/

[40] "Lightning," FEMA NRI, accessed September 2024, https://hazards.fema.gov/nri/lightning

[41] "Idaho Power crews respond to widespread blackout caused by lightning and then downed power line that shut down road," Idaho State Journal, May 29, 2022, https://www.idahostatejournal.com/news/local/idaho-power-crews-respond-to-widespread-blackout-caused-by-lightning-and-then-downed-power-line/article_ed2b26a3-04c1-5879-9758-315162966b86.html

[42] "Impact of COVID-19 on the US Energy Industry." https://www.brattle.com/wp-content/uploads/2021/05/18557_impact_on_covid-19_on_the_us_energy_industry.pdf

chain can create a backflow of orders for critical components for maintenance and restoration efforts when emergencies occur.

Physical Attacks

Domestic violent extremists and racially/ethnically motivated violent extremists present a real and growing threat to grid security.[43] While not all breaches of infrastructure are politically motivated, organized extremism presents a unique risk with the potential to affect large portions of the grid.

On June 9, 2023, Adams County Sheriff's Office arrested a citizen of Meridian, Idaho. The citizen was charged with shooting at power equipment in the Hells Canyon Corridor, Idaho's largest hydroelectric generating facility which produces 1,167 MW of clean electricity.[44] Electric substations have increasingly been seen as targets for extremists aimed at disrupting critical infrastructure, inciting domestic warfare, or overthrowing public organizations. Several substations were damaged by gunfire in North Carolina, Oregon, and Washington State in around the beginning of 2023.[45] Coordinated extremists also pose a rapidly growing threat to pipeline integrity.[46] Attacks on pipeline infrastructure can hamper operations and the release of pipeline products.

Wildfire

Wildfires present a persistent and potentially detrimental threat to Idaho's energy supply. From 2015 to 2020, over 320,000 Idaho acres burned because of lightning-caused fires alone, not accounting for the 180,000 acres of human-caused fires.[47] In Idaho, the cost of replacing the damage caused by wildfires is also the highest out of all other natural hazards.[48] In 2021 alone, Idaho wildfire damages cost between $500 million and $1 billion.[49] The Idaho Governor's 2024 Wildfire Initiative has resulted in the publication of the Wildfire Report Recommendations.[50] This report outlines the foremost recommendations for wildfire mitigation and prevention that should be undertaken in the state. These recommendations range from infrastructure investment, grid hardening, and legislative action to make Idaho more energy resilient.

Wildfires ignite more easily, burn more intensely, and spread faster when wildland fuels are impacted by extended dry spells. Energy providers today face increased risk of catastrophic wildfire being sparked by asset failure. Wildfires that start naturally (by lightning or strong winds knocking down or blowing dry vegetation into power lines) or unnaturally (by humans) can burn through wooden transmission poles and create smoke that ionizes around an overhead conductor causing faults. Fires can have a disproportionate impact on restoration efforts in cases where overhead lines be de-energized to provide safety for fire-fighting crews.

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[43] "Mayhem, Murder, and Misdirection: Violent Extremist Attack Plots Against Critical infrastructure in the United States, 2016-2022."
https://extremism.gwu.edu/sites/g/files/zaxdzs5746/files/CriticalInfrastructureTargeting09072022.pdf
[44] "Idaho Man Charged with Shooting at Power Substations, Possessing 'Destructive Device.'" Blanchard, Nicole. Idaho Statesman (reprinted in yahoo! News), June 12, 2023. https://www.yahoo.com/news/idaho-man-charged-shooting-power-230745176.html
[45] "Another North Carolina Power Substation Was Damaged by Gunfire." Doubek, James, NPR, January 18, 2023. https://www.npr.org/2023/01/18/1149694402/another-north-carolina-power-substation-shot
[46] "Pipeline Physical Security: Federal Efforts." Parfomak, Paul W., CRS Reports, May 2023.
https://crsreports.congress.gov/product/pdf/IN/IN12161
[47] Eastern Idaho Interagency Fire Center, Wildland Fire Statistic Averages,
https://www.idahofireinfo.blm.gov/east/info_statistics.html.
[48] Idaho Risk Profile, https://www.energy.gov/sites/default/files/2021-09/Idaho%20Energy%20Sector%20Risk%20Profile.pdf
[49] "Billion-Dollar Weather and Climate Disasters," National Centers for Environmental Information, National Oceanic and Atmospheric Administration. https://www.ncei.noaa.gov/access/billions/summary-stats/ID/2021
[50] "Wildfire Report Recommendations," Office of the Governor, August 2024, https://gov.idaho.gov/wp-content/uploads/2024/08/2024-wildfire-report.pdf.

Rebuilding efforts after a wildfire can be extensive and contribute to prolonged outage durations. Wildfires generally occur in less densely populated areas where sufficient fuel is present (i.e., range lands or forests). The Idaho Department of Lands provides an Idaho Fire Map that allows the public to track fire activity and restrictions.

Figure 20: Vegetation management and fire-resistant mesh wrapping on Idaho Power transmission poles. This project was funded, in part, through the State of Idaho's Energy Resilience Grant Program.

In July 2021, the Snake River Fire in the Salmon and Snake River drainages threatened a 230 kV transmission line interconnecting Idaho Power and Avista.[51] At the request of the fire incident commander, the line was removed from service to allow for safe firefighting measures to be performed near the line. The loss of this line reduced Idaho Power's ability to import energy from the Northwest at a time of high customer demand. Alternative load service actions were used to prevent loss of service to customers until the line was returned to service. Utility operators and emergency managers learned that close coordination with neighboring utilities is critical to maintain load service during fire season, close coordination with fire incident command is critical for safe and effective firefighting measures. Application of fire-preventative measures is vital – no structures on Avista's line were lost due to a recent application of a fire-resistant paint. Both Avista and Idaho Power are currently utilizing a mesh wrap product on wood poles to help prevent damage from wildfires.

Winter Storm/Extreme Cold

Extreme cold may include freezing temperatures, heavy snowfall and ice incidents that can have multiple impacts on a utility. Extreme cold is typically most damaging to the overhead system when the snow is heavy and wet. Snow and ice can build up on overhead lines and cause faults or outages when it unloads, or on trees causing them to either fall or branches to break and interfere with overhead lines. This happens most frequently in areas with tall evergreen trees that are well above the height of lines. Extreme cold events occur most often in the winter but can occur in late autumn or early spring. These events are most likely to occur in areas with high elevation. Extreme cold and winter storms also lead to poor road conditions and/or low visibility, which can hinder or delay utility operational response. Additionally, some overhead facilities may not be easily accessed during seasons with heavy snow. For those facilities, special equipment such as a snow cat or snow mobiles may be required for access leading to longer outage durations.

Extreme cold and winter storms are a common, yearly occurrence in Idaho. Temperatures often dip into negative values. Severe winters can disrupt transportation and increase energy demand for heating. Snow buildup on trees presents a particular winter risk: coupled with high winds, snow-laden trees are susceptible to

[51] "Containment of Snake River Complex Remains at 87% as Crews Continue to Strengthen and Parol Existing Containment Lines", Big Country News. August 2, 2021. https://www.bigcountrynewsconnection.com/idaho/containment-of-snake-river-complex-remains-at-87-as-crews-continue-to-strengthen-and-patrol/article_ed89012a-f3b3-11eb-8e11-03ec9edd15a4.html

breaking. This can endanger power lines, infrastructure, and normal societal operations. Winter storms and extreme cold caused $10 million in property damage between 2009 and 2019.[52]

Vulnerabilities

Idaho's reliance on out of state imports is one of the largest vulnerabilities to Idaho's energy security. About 38% of electricity consumed in the state comes from out-of-state sources, and all the liquid fuels and natural gas comes from out-of-state sources via pipelines or trucks.[53] Because of this, Idaho's ability to obtain fuels is especially vulnerable to threats such as earthquakes, wildfires, and transportation emergencies (severe road damage, road closure due to severe winter weather). The electricity sector, particularly the transmission network, can be vulnerable to wildfire. In spite of these dangers, utilities have maintained proactive strategies to minimize and neutralize any effects these disasters may have. The following diagrams represent the basic energy supply chains that provide power for Idahoans. Vulnerabilities can exist at each juncture in the supply chain. Identifying weak points in these processes is one of the first steps to grid resilience.

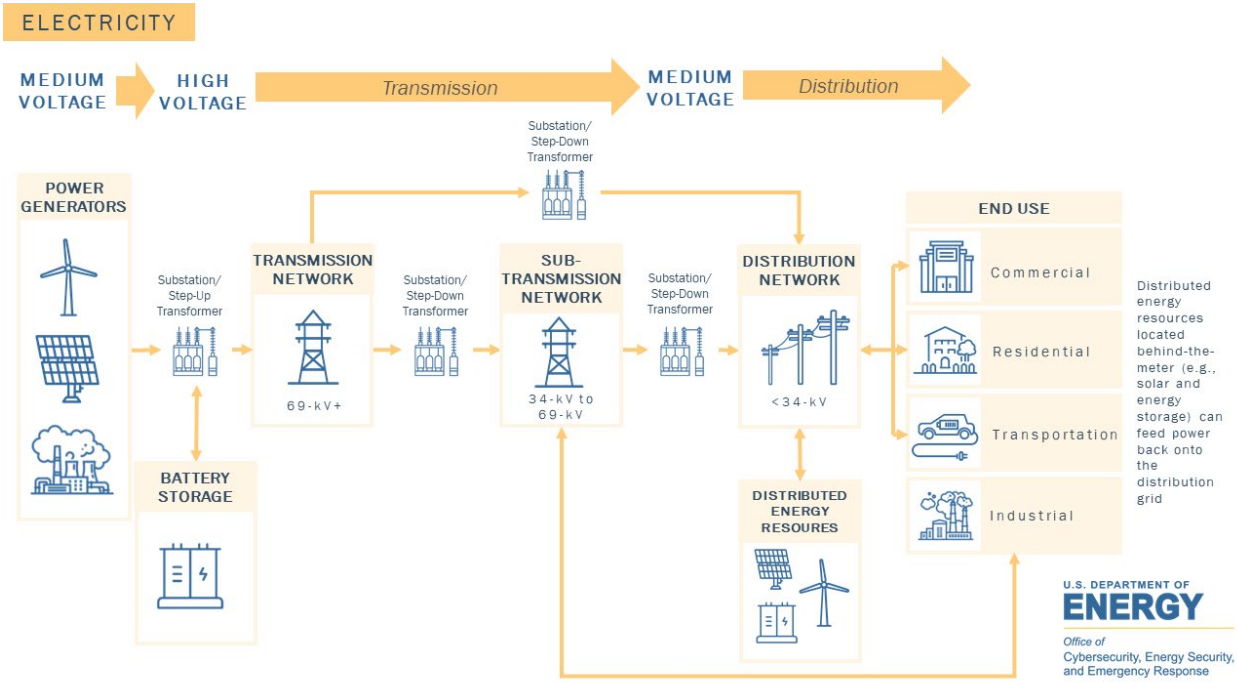

Figure 23. Electricity basic supply chain.[54]

[52] Idaho Energy Sector Risk Profile. https://www.energy.gov/sites/default/files/2021-09/Idaho%20Energy%20Sector%20Risk%20Profile.pdf

[53] "Idaho Electricity Profile 2021," US Energy Information Administration, https://www.eia.gov/electricity/state/idaho/index.cfm

[54] "State Energy Security Plan Optional Drop-In: Energy Supply Chain Diagrams," US Department of Energy, May 2022, https://www.energy.gov/sites/default/files/2022-06/DOE%20CESER%20SESP%20Drop-In_Energy%20Supply%20Chain%20Diagrams_FINAL_508.pdf

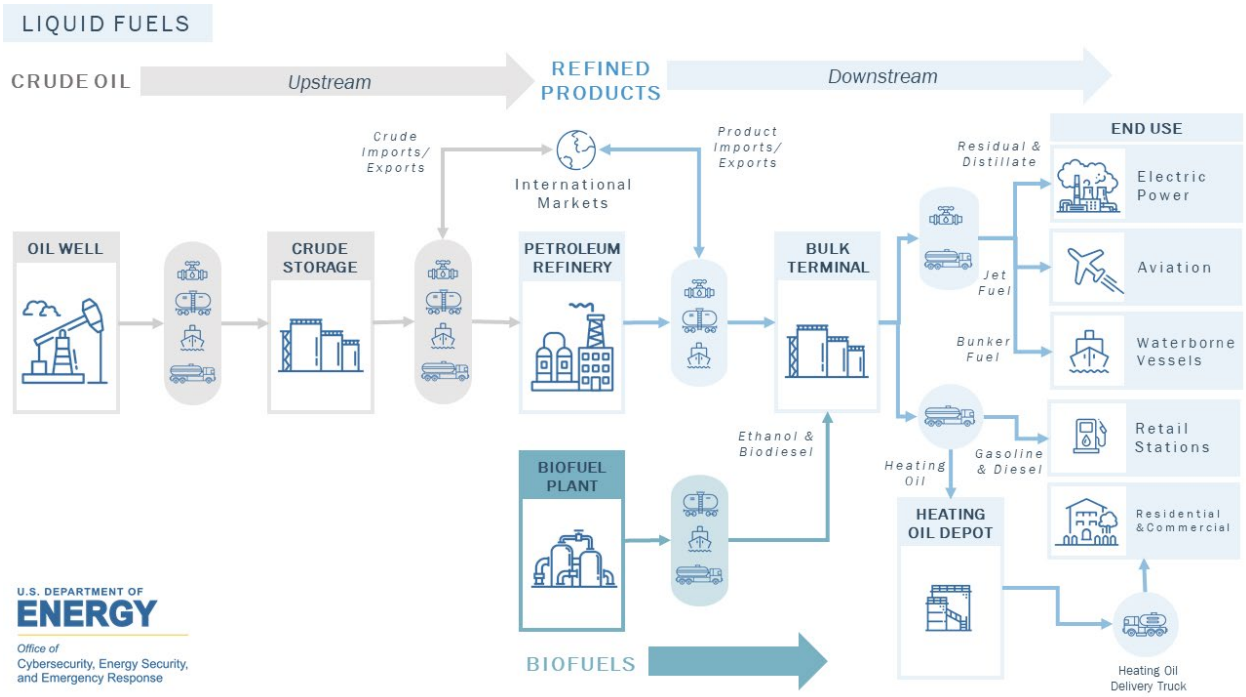

Figure 24. Liquid fuels basic supply chain.[55]

[55] "State Energy Security Plan Optional Drop-In: Energy Supply Chain Diagrams," US Department of Energy, May 2022, https://www.energy.gov/sites/default/files/2022-06/DOE%20CESER%20SESP%20Drop-In_Energy%20Supply%20Chain%20Diagrams_FINAL_508.pdf

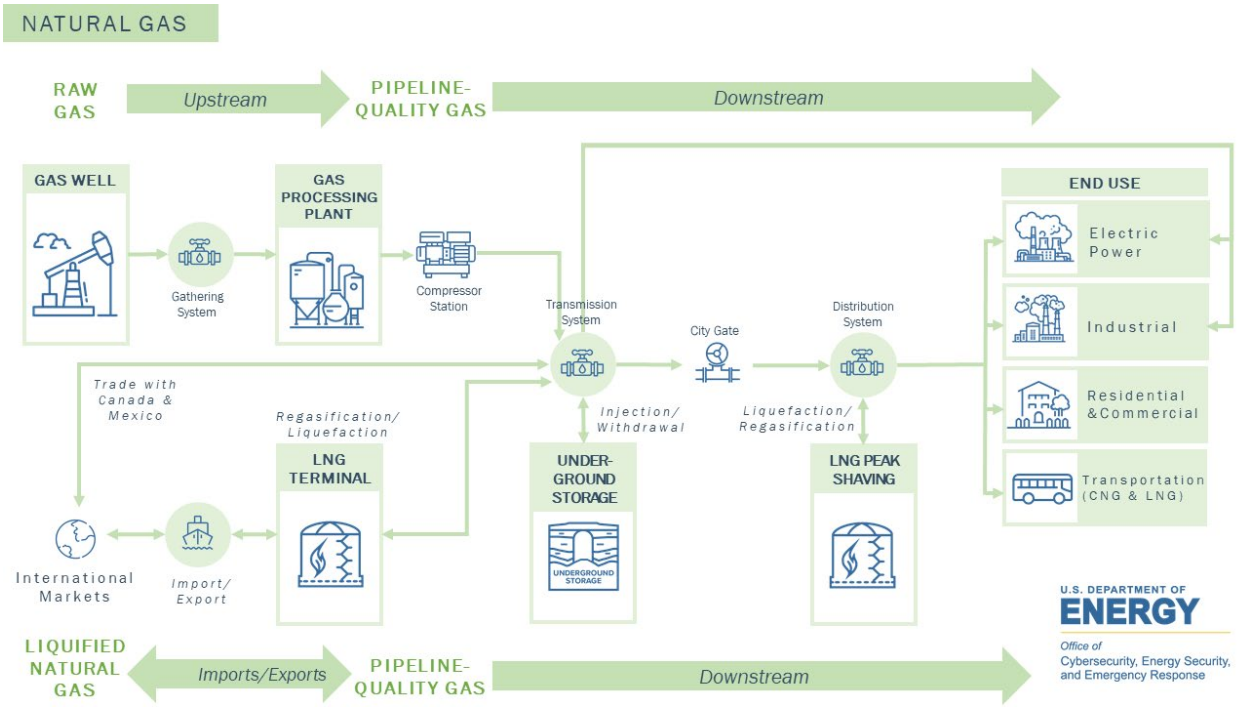

Figure 25. Natural gas basic supply chain.[56]

Resource Adequacy

Effective energy security is predicated on accounting for system threats and vulnerabilities. By identifying recurring and unique hazards, states and utilities can ensure that energy systems are sufficiently hardened to provide reliability to ratepayers.

The State of Idaho, through the Governor's Office of Energy and Mineral Resources (OEMR) and the Public Utilities Commission (PUC), participates in state and regional transmission planning activities through investor-owned utility integrated resource planning processes, the Bonneville Power Administration's transmission planning process, NorthernGrid's regional transmission planning process, the Western Interconnection Regional Advisory Body, the Committee on Regional Electric Power Corporation (CREPC), and other Western Interconnection transmission discussions. The Western Power Pool's Western Transmission Expansion Coalition (WestTEC) is creating a transmission study to identify transmission solutions that enhance grid reliability and resiliency while considering state policy goals. OEMR and the PUC participate in WestTEC through CREPC.

Recent trends in decommissioning thermal plants and increasing renewable integration have enhanced concern over the region's ability to maintain resource adequacy. The Northwest Power and Conservation Council (Council) measures resource adequacy in the Northwest (Idaho, Montana, Oregon, and Washington). Analysts study thousands of potential scenarios, including the streamflow variation to weather, which drives

[56] "State Energy Security Plan Optional Drop-In: Energy Supply Chain Diagrams," US Department of Energy, May 2022, https://www.energy.gov/sites/default/files/2022-06/DOE%20CESER%20SESP%20Drop-In_Energy%20Supply%20Chain%20Diagrams_FINAL_508.pdf

power demand, and the potential for generation or transmission line outages that could keep power from being produced or delivered.

The most recent study completed by the Council shows that energy demand is starting to outpace supply, and the Northwest could experience capacity shortages as soon as 2027.[57] In an effort to manage resource adequacy concerns, the Western Power Pool developed the Western Resource Adequacy Program to address the segmented nature of the region's power grid, where many different entities are responsible for different portions of the grid and have historically completed resource planning on an individual basis. By enhancing regional collaboration on resource adequacy, western states can define how much readily available regional power is needed to meet future demand and explore ways to be more efficient with existing resources.

Cross-Sector Interdependencies

The energy sector is said to be the backbone of society because many industries (healthcare, finance, government, manufacturing, etc.) require reliable and robust power.[58]

[57] "Pacific Northwest Power Supply Adequacy Assessment for 2027," Northwest Power and Conservation Council, January 2023. https://www.nwcouncil.org/fs/18158/2023-1_adequacyassessment.pdf
[58] "Energy," World Band Group, https://www.worldbank.org/en/topic/energy/overview

Electricity

Idaho's power generation comes mostly from hydroelectric dams, renewables (wind, solar, etc.), and natural gas. About 30% of electricity consumed in-state comes from out-of-state sources, making roughly one-third of the state's power dependent on reliable transmission. Moreover, Idaho imports all of its natural gas. For the generation equipment that relies on natural gas, reliable gas transmission systems provide a steady source of electricity for ratepayers.

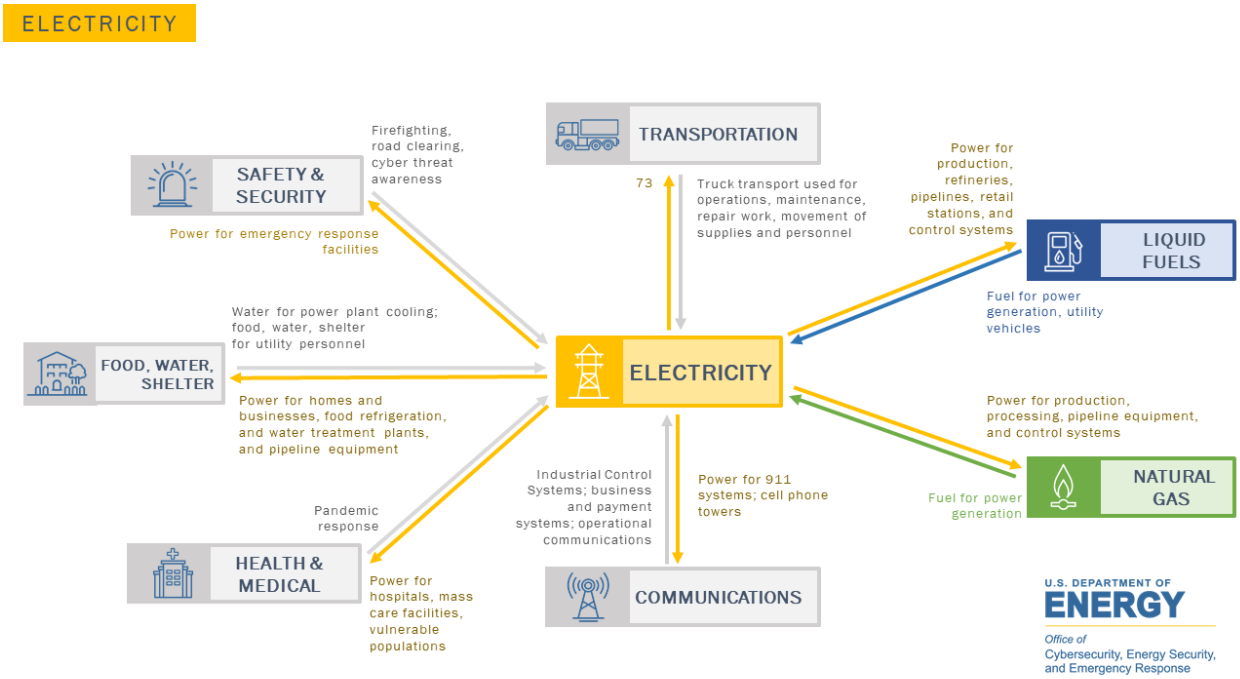

Figure 26. Electricity cross-sector interdependency diagram. *DOE CESER.*[59]

[59] "State Energy Security Plan Optional Drop-In: CrossSector Interdependency Diagrams," US Department of Energy, May 2022, https://www.energy.gov/sites/default/files/2022-06/DOE%20CESER%20SESP%20Drop-In_Cross-Sector%20Interdependency%20Diagrams_FINAL_508.pdf

Liquid Fuels

Idaho has no petroleum refineries in state and is dependent on imports from Utah and Montana. Petroleum is the main transportation fuel source and supports several critical infrastructures and industries. Sector vulnerabilities could include a lack of emergency on-site electricity sources for pumps and substations.

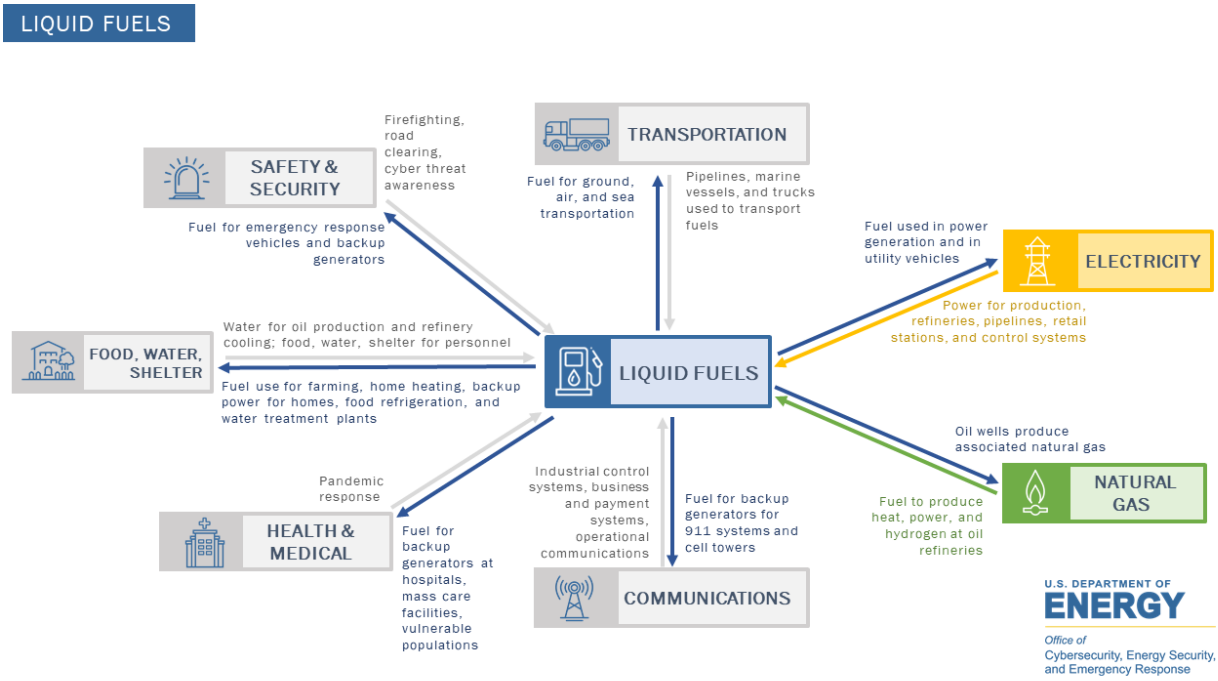

Figure 27. Liquid fuels cross-sector interdependency diagram. *DOE CESER.*[60]

[60] "State Energy Security Plan Optional Drop-In: CrossSector Interdependency Diagrams," US Department of Energy, May 2022, https://www.energy.gov/sites/default/files/2022-06/DOE%20CESER%20SESP%20Drop-In_Cross-Sector%20Interdependency%20Diagrams_FINAL_508.pdf

Natural Gas

As the largest source of energy for Idaho, dependable natural gas sources support several facets of society.[61] Natural gas is used for heating in commercial, industrial, and residential areas. It is transported via pipelines from the Rocky Mountain production areas and Canada. Natural gas also supports electricity generation and heat generation for liquid fuel production at oil refineries. The electric sector provides power for pipeline control and operations; and oil wells produce much of the domestic natural gas for the state, especially in Payette County.

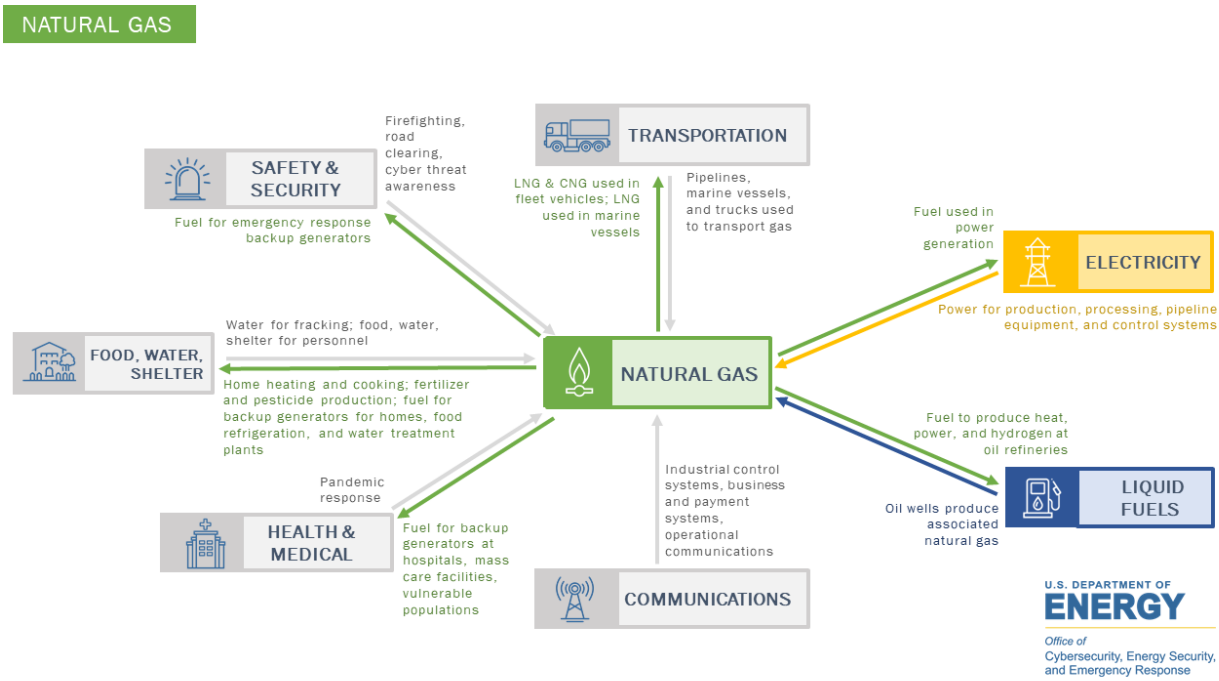

Figure 28. Natural gas cross-sector interdependency diagram, DOE CESER.[62]

[61] "Primary Energy Consumption Estimates," US Energy Information Administration, https://www.eia.gov/state/seds/sep_use/total/pdf_cb/use_tot_IDcb.pdf

[62] "State Energy Security Plan Optional Drop-In: Cross Sector Interdependency Diagrams," US Department of Energy, May 2022, https://www.energy.gov/sites/default/files/2022-06/DOE%20CESER%20SESP%20Drop-In_Cross-Sector%20Interdependency%20Diagrams_FINAL_508.pdf

RISK ASSESSMENT

The risk assessment leverages industry subject matter expertise and recommendations from a stakeholder group to inform Idaho's energy security planning efforts. This section supports the State's emergency planning and response and provides information to energy system asset owners.

Methodology

OEMR facilitated a stakeholder advisory group comprised of energy, agency, Tribal, and community stakeholders who advised, supported, and recommended updates to OEMR for the Plan. OEMR hosted three advisory group meetings. At these meetings, the advisory group selected high priority risks, responded to a risk assessment survey, reviewed the scored risks, and provided feedback on the draft Plan.

Advisory group members:

- Avista (electricity division and natural gas division)
- Idaho Consumer Owned Utility Association
- Idaho Power
- Idaho National Lab (INL)
- Intermountain Gas Company (IGC)
- Idaho Public Utilities Commission
- Marathon
- Nez Perce Tribe
- PacifiCorp
- Williams Companies
- Yellowstone Pipeline Company (Phillips 66)
- TransCanada Energy (TC Energy)

Risk Selection

In the first advisory group meeting, OEMR introduced the Plan and a preliminary plan for completing the risk assessment. Members were asked to nominate threats to their communities or organizations along with threats they perceived to be of greatest concern.

In the second advisory group meeting, the advisory group voted to analyze nine of the threats it deemed most pervasive to Idaho's energy security: cyberattack, physical attack, extreme heat, damaging wind, flooding, earthquake/liquefaction, lightning, winter storm, and wildfire.

Assessment of Vulnerability and Consequence

A survey (attached below as Appendix M) was distributed to energy asset owners to collect information regarding asset vulnerabilities, historical consequences, and future consequences. The survey was developed by OEMR and reviewed by the PUC, DOE CESER, and NASEO before distribution. Annualized frequency maps for natural disaster threats were developed using data from FEMA's National Risk Index (NRI). Survey respondents were asked to distribute the survey to subject matter experts in their organizations and were given a period of one week to respond. Responses were aggregated and integrated into risk assessment matrices.

Scoring

Scores were based on the results of the survey. Only publicly available data and self-reported data was used for scoring. The survey was designed to allow respondents to provide non-sensitive information that can be publicly presented. Using data from the PUC, scores were weighted to reflect the number of customers

served by utilities. For example, Idaho Power serves 48.56% of customers in Idaho. A vulnerability score of 1 for Idaho Power translates to a weighted score of 0.49. By asset type, the scores of each energy provider were combined to create a statewide score. Once scores were developed by asset type, the average vulnerability scores and consequence scores were multiplied by the threat score to calculate overall risk.

Threat Score × Avg. Vulnerability Score × Avg. Consequence Score = Risk Score

The calculations were plotted on a heat map to display the likelihood of threats across the state. Threat score was plotted on the Y axis and the Avg. Vulnerability Score × the Avg. Consequence Score was plotted on the X axis.

In the third advisory group meeting, members were asked to review and comment on the draft risk assessment.

Other Multiple Sector Threats and Additional Conversation

Energy system asset owners were asked to describe historical impacts of cyber and physical attacks on infrastructure. The approach was intended to use responses to project future frequency of threat occurrence and possible consequences. Responses to the survey did not produce data usable for assessing risk as each data point is not correlated and do not produce observable trends. Statistically, the collected data is random.

In the past five years, the State of Idaho has had cases of vandalism and theft from infrastructure sites. One event was an intentional effort to damage the facility with ballistics. A citizen from Meridian, Idaho, drove to the Hells Canyon Complex and shot at substation infrastructure resulting in damages totaling $546,982.46 and a short disruption of production capability from the Hells Canyon and Brownlee Dams.[63]

Regarding cyberattacks, responses varied in historical exposure to cyberattacks. Of the eight organizations surveyed, three indicated there have been attempts to infiltrate their systems in the past five years. One of the responding organizations indicated that they were aware of daily attempts to breach their systems. Of those three, only one indicated there was a successful attack. In December 2023, Lower Valley Energy, based in Wyoming and serving a small portion of Idaho customers, fell victim to a ransomware attack.[64] The investigation into the incident did not find evidence that personal information of customers was impacted.

These cyber and physical attacks are becoming more prevalent in the threat landscape. Understanding the potential impact to infrastructure, OT, and IT systems is imperative for utilities' preparedness and planning efforts.

Recommendations for Future Risk Assessments

OEMR has identified areas to build upon in future versions of the Plan:

- Refine survey used to assess vulnerability and consequence
- Continue to obtain useful threat data
- Assess threats by region to account for regional differences, such as climate
- Fine-tune natural gas and petroleum methodology

[63] Meridian man sentenced for shooting multiple power stations at Idaho dams in 2022," KTVB 7, June 2024, https://www.ktvb.com/article/news/crime/meridian-man-sentenced-shooting-power-stations-hells-canyon-brownlee-dams/277-2a3a0451-aab2-4f86-9c63-42cf30b50028

[64] "Cybersecurity Incident Update," Lower Valley Energy, December 2023, https://www.lvenergy.com/2023/12/28/cybersecurity-incident-update/

Risk Data

Survey respondents identified the portion of their energy system and the number of customers located in the identified risk regions.

Threats were scored based solely on FEMA's NRI annual frequency data.[65] This data is available by county and was translated into a county level heat map displaying the most at-risk counties in the state. These heatmaps are available in Appendix M.

For exposure to the threat, or vulnerability, respondents could select tiered options of 50% or more, 20% - 49%, 1% - 19%, and 0% of their system. A score of 1 was allocated to the 1% - 19% option, a score of 2 was given to the 20% - 49% option, and a score of 3 was given to the 50% or more option.

Similarly, respondents had the option to select 20% or more, 5% - 19%, less than 5%, or 0% of customers would lose service should their system be impacted by a threat. A score of 1 was allocated to the less than 5% option, a score of 2 was given to the 5% - 19% option, and a score of 3 was given to the 20% or more option.

Electricity

Using data from the PUC, OEMR calculated the total percentage of utility service to Idaho. There is a base number of 1,216,667 electricity customers in the State of Idaho. Idaho Power serves 48.56%, Avista serves 33.48%, Rocky Mountain Power serves 7.27%, and other electricity providers serve 10.69%.[66] The scores from the survey responses were weighted by multiplying the score by the percentage of customers served. To generate a statewide score, the weighted scores were added together. The scores are shown below.

Annual Frequency	Ranking	Threat Score
0.00 – 0.200	Very Low	1
0.200 - 0.400	Low	1.5
0.400 – 0.600	Moderate	2.0
0.600 - 0.800	High	2.5
0.800 – 1.000	Very High	3.0

Threat	State Average Annual Frequency	Overall Rating	Threat Score
Damaging Wind	.2081	Low	1.5
Earthquakes/Liquefaction	.6207	High	2.5
Extreme Heat	.3872	Low	1.5
Flooding	.2966	Low	1.5
Lightning	.2672	Low	1.5
Wildfire	.8310	Very High	3.0
Winter Storm	.4561	Moderate	2.0

Statewide Vulnerability and Consequence Score	Ranking
0 - 0.60	Very Low

[65] "Data Resources," FEMA, 2024, https://hazards.fema.gov/nri/data-resources
[66] "Idaho Public Utilities Commission Annual Report 2023," IPUC, 2023, https://puc.idaho.gov/Fileroom/PublicFiles/annualreports/ar2023/ar2023.html

0.61 – 1.20	Low
1.21 – 1.80	Moderate
1.81 – 2.40	High
2.41 – 3.0	Very High

Vulnerability Scores	Production	Transmission	Storage	Distribution Network	Overall Rating
Damaging Wind	1.1893	1.4030	1.1893	1.4030	1.30
Earthquakes/Liquefaction	1.1893	1.1893	1.1893	1.1893	1.19
Extreme Heat	0.9713	1.3061	0.9713	1.3061	1.14
Flooding	1.6023	1.6023	1.6023	1.6023	1.60
Lightning	1.1893	1.8447	1.1893	1.8447	1.52
Wildfire	0.7281	2.1850	0.0727	2.1850	1.29
Winter Storm	0.5529	1.3591	0.2180	1.3591	0.87

Consequence Scores	Production	Transmission	Storage	Distribution Network	Overall Rating
Damaging Wind	1.6750	2.5583	1.6750	2.5583	2.12
Earthquakes/Liquefaction	1.6750	1.6750	1.6750	1.6750	1.67
Extreme Heat	1.6750	2.0098	1.6750	2.0098	1.84
Flooding	1.6023	1.6023	1.6023	1.6023	1.60
Lightning	1.6023	2.1508	1.6023	2.1508	1.88
Wildfire	0.6939	2.1508	0.1454	2.1508	1.29
Winter Storm	0.8150	2.0000	0.1454	2.0000	1.24

Damaging Wind:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of damaging wind to the State of Idaho's electricity infrastructure, the formula would be 1.5 (Threat Score) * 1.30 (Vulnerability Score) * 2.12 (Consequence Score) = 4.12 points out of 9 possible (Risk Score).

Flooding:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of flooding to the State of Idaho's electricity infrastructure, the formula would be 1.5 (Threat Score) * 1.60 (Vulnerability Score) * 1.60 (Consequence Score) = 3.85 points out of 9 possible (Risk Score).

Earthquake and Liquefaction:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of earthquakes and liquefaction to the State of Idaho's electricity infrastructure, the formula would be 2.5

(Threat Score) * 1.19 (Vulnerability Score) * 1.67 (Consequence Score) = 4.98 points out of 9 possible (Risk Score).

Extreme Heat:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of extreme heat to the State of Idaho's electricity infrastructure, the formula would be 1.5 (Threat Score) * 1.14 (Vulnerability Score) * 1.84 (Consequence Score) = 3.15 points out of 9 possible (Risk Score).

Lightning:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of lightning to the State of Idaho's electricity infrastructure, the formula would be 1.5 (Threat Score) * 1.52 (Vulnerability Score) * 1.88 (Consequence Score) = 4.27 points out of 9 possible (Risk Score).

Wildfire:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of wildfire to the State of Idaho's electricity infrastructure, the formula would be 3.0 (Threat Score) * 1.29 (Vulnerability Score) * 1.29 (Consequence Score) = 4.98 points out of 9 possible (Risk Score).

Winter Storms:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of winter storms to the State of Idaho's electricity infrastructure, the formula would be 2.0 (Threat Score) * 0.87 (Vulnerability Score) * 1.24 (Consequence Score) = 2.16 points out of 9 possible (Risk Score).

Natural Gas

Data from both the PUC and self-reported data from natural gas service providers and product suppliers informed the weighting and development of statewide scores for asset types across threats. In contrast to the assessment conducted for electricity, the natural gas section analyzes threats by the total volume of natural gas serviced. PUC's 2023 Annual Report indicates the State of Idaho consumed about 1,020,000,000 therms of natural gas.[67] Of this number, Avista distributed 154,280,000 therms, or 15.12% of the market. Correspondingly, IGC distributed 862,600,000 therms, or 84.56% of the market.

Due to the sensitivity of some of the data used for score calculation, a detailed description is not shared.

Overall, scoring followed a procedure similar to the electricity scoring. Natural gas companies such as Avista, Dominion, and IGC are not responsible for the production, transmission, or storage of natural gas. Instead, they purchase the product from companies like Williams and TC Energy where natural gas is then pumped into distribution systems. To analyze the consequence of threats to assets, OEMR analyzed the total volume of natural gas TC Energy and Williams distributed to Avista and MDU. From this, OEMR calculated the number of customers that could be impacted. For example, if Avista received 40% of its natural gas for distribution from the Williams Pipeline, and IGC received 50% of its natural gas for distribution from the

[67] "Idaho Public Utilities Commission Annual Report 2023," IPUC, https://puc.idaho.gov/Fileroom/PublicFiles/annualreports/ar2023/ar2023.html

Williams Pipeline, the consequence of the Williams Pipeline being taken offline would be 40% of Avista's service in therms plus 50% of IGC's service.

Annual Frequency	Ranking	Threat Score
0.00 – 0.200	Very Low	1
0.200 - 0.400	Low	1.5
0.400 – 0.600	Moderate	2.0
0.600 - 0.800	High	2.5
0.800 – 1.000	Very High	3.0

Threat	State Average Annual Frequency	Overall Rating	Threat Score
Damaging Wind	.2081	Low	1.5
Earthquakes/Liquefaction	.6207	High	2.5
Extreme Heat	.3872	Low	1.5
Flooding	.2966	Low	1.5
Lightning	.2672	Low	1.5
Wildfire	.8310	Very High	3.0
Winter Storm	.4561	Moderate	2.0

Statewide Vulnerability and Consequence Score	Ranking
0 - 0.60	Very Low
0.61 – 1.20	Low
1.21 – 1.80	Moderate
1.81 – 2.40	High
2.41 – 3.0	Very High

Vulnerability Scores	Production	Transmission	Storage	Distribution Network	Overall Rating
Damaging Wind	0	0.0695	0	2.9904	0.76
Earthquakes/Liquefaction	0.9272	0	0.9272	1.6912	0.89
Extreme Heat	0.9272	0.9272	0.9272	0	0.70
Flooding	0.9272	0	0	2.6880	0.90
Lightning	0.9272	0.9272	0.9272	0	0.70
Wildfire	2.7817	2.8513	2.7817	2.5368	2.74
Winter Storm	0.9272	0.9272	0	1.2992	0.79

Consequence Scores	Production	Transmission	Storage	Distribution Network	Overall Rating
Damaging Wind	0.0000	0.0000	0.0000	0.9968	0.25
Earthquakes/Liquefaction	0.927248	0	0.927248	0.8456	0.68
Extreme Heat	0.927248	0.927248	0.927248	0	0.70
Flooding	0.927248	0	0	0.8456	0.44
Lightning	0.927248	0.927248	0.927248	0.1512	0.73
Wildfire	0.927248	0.9968	0.927248	0.9968	0.96
Winter Storm	0.927248	0.927248	0.0000	0.9968	0.71

Damaging Wind:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of damaging wind to the State of Idaho's natural gas infrastructure, the formula would be 1.5 (Threat Score) * 0.76 (Vulnerability Score) * 0.25 (Consequence Score) = 0.29 points out of 9 possible (Risk Score).

Flooding:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of flooding to the State of Idaho's natural gas infrastructure, the formula would be 1.5 (Threat Score) * 0.90 (Vulnerability Score) * 0.44 (Consequence Score) = 0.60 points out of 9 possible (Risk Score).

Earthquake and Liquefaction:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of earthquakes and liquefaction to the State of Idaho's natural gas infrastructure, the formula would be 2.5 (Threat Score) * 0.89 (Vulnerability Score) * 0.68 (Consequence Score) = 1.50 points out of 9 possible (Risk Score).

Extreme Heat:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of extreme heat to the State of Idaho's natural gas infrastructure, the formula would be 1.5 (Threat Score) * 0.70 (Vulnerability Score) * 0.70 (Consequence Score) = 0.73 points out of 9 possible (Risk Score).

Lightning:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of lightning to the State of Idaho's natural gas infrastructure, the formula would be 1.5 (Threat Score) * 0.70 (Vulnerability Score) * 0.73 (Consequence Score) = 0.76 points out of 9 possible (Risk Score).

Wildfire:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of wildfire to the State of Idaho's natural gas infrastructure, the formula would be 3.0 (Threat Score) * 2.74 (Vulnerability Score) * 0.96 (Consequence Score) = 7.90 points out of 9 possible (Risk Score).

Winter Storms:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of winter storms to the State of Idaho's natural gas infrastructure, the formula would be 2.0 (Threat Score) * 0.79 (Vulnerability Score) * 0.71 (Consequence Score) = 1.12 points out of 9 possible (Risk Score).

Petroleum

Due to availability of data, vulnerability to the Southern part of Idaho's petroleum sector is based on natural gas transmission because of similarities such as geographic location and age of the assets. Risks to the distribution system were not analyzed.

The Idaho Fuels Regional Resilience Assessment Program (RRAP) Project from June, 2020 indicates that 70% of fuel coming into Idaho is delivered on the Marathon Pipeline or truck deliveries originating from the cluster of five refineries and pipeline inputs in Salt Lake City, UT. The balance of required fuels comes from terminals in Montana and eastern Washington served by the Yellowstone Pipeline (about 20%) and a small portion delivered by rail and barge from various sources (about 10%).[68]

Annual Frequency	Ranking	Threat Score
0.00 – 0.200	Very Low	1
0.200 - 0.400	Low	1.5
0.400 – 0.600	Moderate	2.0
0.600 - 0.800	High	2.5
0.800 – 1.000	Very High	3.0

Threat	State Average Annual Frequency	Overall Rating	Threat Score
Damaging Wind	.2081	Low	1.5
Earthquakes/Liquefaction	.6207	High	2.5
Extreme Heat	.3872	Low	1.5
Flooding	.2966	Low	1.5
Lightning	.2672	Low	1.5
Wildfire	.8310	Very High	3.0
Winter Storm	.4561	Moderate	2.0

Statewide Vulnerability and Consequence Score	Ranking
0 - 0.60	Very Low
0.61 – 1.20	Low
1.21 – 1.80	Moderate
1.81 – 2.40	High
2.41 – 3.0	Very High

Vulnerability Scores	Production	Transmission	Storage	Overall Rating
Damaging Wind	0.2	0.2	0	0.13
Earthquakes/Liquefaction	0.7	0	0.7	0.47
Extreme Heat	0.7	0.7	0.7	0.70
Flooding	0.9	0.2	0	0.37
Lightning	0.7	0.9	0.9	0.83
Wildfire	2.1	2.3	2.1	2.17
Winter Storm	0.7	0.9	0	0.53

[68] "Resilience Assessment Idaho Fuels RRAP Project," CISA, June 2020, Pages 5-6.

Consequence Scores	Production	Transmission	Storage	Overall Rating
Damaging Wind	0.20	0.20	0.00	0.13
Earthquakes/Liquefaction	1.30	0.60	1.30	1.07
Extreme Heat	0.70	0.70	0.70	0.70
Flooding	1.30	0.60	0.00	0.63
Lightning	0.70	1.30	0.70	0.90
Wildfire	0.70	1.30	0.70	0.90
Winter Storm	0.70	1.30	0.00	0.67

Damaging Wind:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of damaging wind to the State of Idaho's petroleum infrastructure, the formula would be 1.5 (Threat Score) * 0.13 (Vulnerability Score) * 0.13 (Consequence Score) = 0.03 points out of 9 possible (Risk Score).

Flooding:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of flooding to the State of Idaho's petroleum infrastructure, the formula would be 1.5 (Threat Score) * 0.37 (Vulnerability Score) * 0.63 (Consequence Score) = 0.35 points out of 9 possible (Risk Score).

Earthquake and Liquefaction:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of earthquakes and liquefaction to the State of Idaho's petroleum infrastructure, the formula would be 2.5 (Threat Score) * 0.47 (Vulnerability Score) * 1.07 (Consequence Score) = 1.24 points out of 9 possible (Risk Score).

Extreme Heat:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of extreme heat to the State of Idaho's petroleum infrastructure, the formula would be 1.5 (Threat Score) * 0.70 (Vulnerability Score) * 0.70 (Consequence Score) = 0.74 points out of 9 possible (Risk Score).

Lightning:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of lightning to the State of Idaho's petroleum infrastructure, the formula would be 1.5 (Threat Score) * 0.83 (Vulnerability Score) * 0.90 (Consequence Score) = 1.13 points out of 9 possible (Risk Score).

Wildfire:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of

wildfire to the State of Idaho's petroleum infrastructure, the formula would be 3.0 (Threat Score) * 2.17 (Vulnerability Score) * 0.90 (Consequence Score) = 5.85 points out of 9 possible (Risk Score).

Winter Storms:

To calculate Statewide Risk, the Threat Score is multiplied by the average Vulnerability Score across asset types and the average Consequence Score across asset types. To this end, to calculate the Risk Score of winter storms to the State of Idaho's petroleum infrastructure, the formula would be 2.0 (Threat Score) * 0.53 (Vulnerability Score) * 0.67 (Consequence Score) = 0.71 points out of 9 possible (Risk Score).

Final Risk Ranking and Scoring Results

Using the corresponding threat and impact scores, threats were placed on the heatmaps below according to the legend. Additionally, the colors in the heat maps denote overall risk of a threat to the state. Green is Low Risk, Yellow is Medium Risk, Red is High Risk, and Purple is Very High Risk. Comparing scores across resources is generally discouraged since each scoring methodology is different.

Legend	Symbol
Damaging Wind	DW
Earthquakes/Liquefaction	E/L
Extreme Heat	EH
Flooding	F
Lightning	L
Wildfire	WF
Winter Storm	WS

Electricity

Threat						
	3 (Very High)		WF			*Very High Risk*
	2.5 (High)		E/L			
	2.0 (Moderate)	WS				
	1.5 (Low)		EH	DW, F, L		*High Risk*
	1.0 (Very Low)	*Low Risk*				*Medium Risk*
		0.00 - 1.20 (Very Low)	1.20 – 2.40 (Low)	2.40- 3.60 (Moderate)	3.60 – 4.80 (High)	4.80 - 6.00 (Very High)
		Impact (Vulnerability x Consequence)				

Natural Gas

Threat						
	3 (Very High)			WF		*Very High Risk*
	2.5 (High)	E/L				
	2.0 (Moderate)	WS				
	1.5 (Low)	DW, EH, F, L				*High Risk*
	1.0 (Very Low)	*Low Risk*				*Medium Risk*
		0.00 - 1.20 (Very Low)	1.20 – 2.40 (Low)	2.40- 3.60 (Moderate)	3.60 – 4.80 (High)	4.80 - 6.00 (Very High)
		Impact (Vulnerability x Consequence)				

Petroleum

Threat	3 (Very High)		WF			*Very High Risk*
	2.5 (High)	E/L				
	2.0 (Moderate)	WS				
	1.5 (Low)	DW, EH, F, L				*High Risk*
	1.0 (Very Low)	*Low Risk*				*Medium Risk*
		0.00 - 1.20 (Very Low)	1.20 – 2.40 (Low)	2.40- 3.60 (Moderate)	3.60 – 4.80 (High)	4.80 - 6.00 (Very High)
		Impact (Vulnerability x Consequence)				

ENERGY SECURITY AND EMERGENCY RESPONSE AUTHORITIES AND ROLES

Multiple federal agencies are involved in energy security, playing a variety of 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, state, local, tribal, and territorial (SLTT) officials in 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. A full list of the policies authorizing federal planning and response roles can be found in Appendix A.

Emergency Support 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 a number of 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. 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. The Office of Cybersecurity, Energy Security, and Emergency Response (CESER) manages DOE's SRMA and ESF #12 responsibilities. During events requiring a federal response, 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. Note that CESER's role is continually evolving, so please check the CESER website for up-to-date information.

Major Federal and State Statutes

The following statutes describe several high-level federal and state governing emergency management authorities. More statutes can be found in Appendix J.

Federal

Homeland Security Act of 2002 (codified predominantly at 6 USC §§ 101-557): Established the Department of Homeland Security and requires the creation of the National Response Plan and the National Incident Management System.[69]

The Robert T. Stafford Disaster Relief and Emergency Assistance Act (42 USC §§ 5121-5206): Describes programs and processes by which the Federal Government provides disaster and emergency assistance to

[69] https://www.fema.gov/pdf/emergency/nrf/nrf-authorities.pdf

State and local governments, tribal nations, eligible private nonprofit organizations, and individuals affected by a declared major disaster or emergency.[70]

Federal Power Act (16 USC §§ 791a-828c): Authorizes the Secretary of Energy to order temporary interconnections of facilities and/or the generation and delivery of electric power to alleviate an emergency.[71]

State

Executive Order 2019-15: Delineates the responsibilities of local and state governments as it relates to emergency response.

Idaho State Disaster Preparedness Act (Idaho Code Title 46, Chapter 10, including §46-1006): Creates the Idaho Office of Emergency Management and outlines disaster response policies such as mutual assistance and municipal responsibilities.

Idaho Code Title 61, Chapter 5: Outlines powers and duties of the Public Utilities Commission (PUC). Idaho Code § 61-515 provides the PUC with the authority to require every utility to maintain and operate its line, plant, system, equipment, apparatus, and premises in a manner as to promote and safeguard the health and safety of its employees, customers, and the public.

Idaho Code Title 39, Chapter 71: Provides guidance for state and local entities in response to hazardous substance emergencies.

Federal Energy Security and Emergency Response Roles

Below is an overview of the many federal departments and agencies that play a role in energy security. Many of these agencies have roles and responsibilities that extend beyond the energy sector. Each agency's energy-related activities have been categorized as applying to electricity, liquid fuels, or natural gas. Agencies that safeguard the cybersecurity and physical security of energy infrastructure are also indicated. Agencies' energy security activities may involve:

- Energy emergency preparedness and response, including hosting and participating in preparedness planning and exercises and deploying responders or resources during an emergency event.
- Information sharing and situational awareness, including publishing data and threat information and issuing situation reports during emergency events.
- Development and enforcement of standards and regulations for energy industry safety and security. During emergency events some of these standards and regulations may be waived to facilitate faster response and restoration.

[70] Ibid.
[71] Ibid.

Department or Agency		Sector	Preparedness & Response	Situational Awareness	Standards & Regulations
White House		⚡ ⛽ 🔥 🔒	✓	✓	
DHS	FEMA	⚡ ⛽ 🔥	✓	✓	
	CISA	🔒	✓	✓	
	Coast Guard	⛽ 🔥	✓		✓
	TSA	⛽ 🔥 🔒	✓		✓
	CBP	⚡ ⛽ 🔥			✓
DOE	CESER	⚡ ⛽ 🔥 🔒	✓	✓	
	OE	⚡		✓	✓
	EIA	⚡ ⛽ 🔥		✓	
	FERC	⚡ ⛽ 🔥			✓
DOT	FMCSA	⚡ ⛽			✓
	PHMSA	⛽ 🔥	✓		✓
EPA		⚡ ⛽ 🔥			✓
IRS		⛽			✓
DOD	USACE	⚡ ⛽ 🔥	✓		✓
NRC		⚡	✓	✓	✓
DOJ	FBI	🔒	✓		
DOI	DOI BSEE	⛽ 🔥		✓	✓

⚡ Electricity ⛽ Liquid Fuel 🔥 Natural Gas 🔒 Cyber and physical security

Figure 29 and the following information was developed by US Department of Energy, Office of Cybersecurity, Energy Security, and Emergency Response.[72]

[72] State Energy Security Plan Optional Drop-In: Federal Authorities." USDOE CESER, May 2022, https://www.energy.gov/sites/default/files/2022-06/DOE%20CESER%20SESP%20Drop-In_Federal%20Authorities_FINAL_508.pdf

White House: 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.

Department of Homeland Security

- Federal Emergency Management Agency (FEMA): 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.
- Cybersecurity and Infrastructure Security Agency (CISA): 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 Coast Guard: The U.S. Coast Guard is the principal federal agency responsible for maritime safety, security, and environmental stewardship in U.S. ports and inland waterways used for the movement of energy products, including petroleum, natural gas, and coal. The Coast Guard reviews and approves security assessments and security plans developed by vessel owners and terminal operators and inspects terminals for compliance with security requirements. The Coast Guard's role is particularly important during hurricanes and other severe weather that can disrupt energy supplies (primarily liquid fuels) into and out of U.S. ports.
- Transportation Security Administration (TSA): 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. TSA also oversees security at marine ports, where oil and gas marine terminals, petroleum refineries, and other energy infrastructure may be located. TSA conducts background checks and issues federal identification cards (called TWIC® cards) to workers accessing secure areas within port boundaries, including fuel truck drivers, refinery workers, and other energy industry workers. TSA may waive TWIC requirements during energy emergencies to facilitate energy restoration and response activities.
- US Customs & Border Protection (CBP): CBP is the primary federal agency tasked with ensuring the security of the nation's borders. CBP is responsible for enforcing and administering laws and regulations to control and oversee vessel movements in to, out of, and between U.S. ports. CBP enforces the Merchant Marine Act of 1920, also called the Jones Act, which generally prohibits the transportation of merchandise between two U.S. ports in any vessel not built in, documented under the laws of, and owned by citizens of the United States. Applications may be made to CBP for the Secretary of Homeland Security to grant a Jones Act waiver, which can help facilitate the delivery of fuel and equipment during energy shortages.

US Department of Energy

- Office of Cybersecurity, Energy Security, and Emergency Response (CESER): 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 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.
  - The Northeast Home Heating Oil Reserve and Northeast Gasoline Supply Reserve provide emergency supplies of heating oil and gasoline, respectively.
- Office of Electricity (OE): 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.
- Office of Enterprise Assessments: The Office of Enterprise Assessments oversees four federal Power Marketing Administrations (PMAs) - Bonneville Power Administration (BPA), Southeastern Power Administration (SEPA), Southwestern Power Administration (SWPA) and Western Area Power Administration (WAPA) – that operate electric systems and sell the electrical output of federally owned and operated hydroelectric dams in 34 states.
- US Energy Information Administration (EIA): 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.
- Federal Energy Regulatory Commission (FERC): FERC is an independent agency 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 Department of Transportation

- Federal Motor Carrier Safety Administration (FMCSA): 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.
- Pipeline and Hazardous Materials Safety Administration (PHMSA): 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, 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): 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.

Internal Revenue Service (IRS): IRS collects federal motor taxes on diesel fuel used for on-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 to not collect the penalty typically imposed on using non-highway diesel in on-road vehicles (although the IRS still collects tax on this fuel).

US Department of Defense

- US Army Corps of Engineers (USACE): 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.

US Nuclear Regulatory Commission (NRC): The NRC is involved in emergency preparedness and response involving nuclear facilities or materials. The NRC also publishes a daily status report on all nuclear power reactors.

US Department of Justice

- Federal Bureau of Investigation (FBI): 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.

US Department of the Interior

- Bureau of Safety and Environmental Enforcement (BSEE): BSEE has responsibility for the safety of the environment and conservation of offshore resources. BSEE administers the Oil Spill Preparedness Program and provides support for oil spill response efforts. During hurricanes and other inclement weather in the Gulf of Mexico, BSEE publishes data on the offshore oil and gas rigs that have been evacuated, as well as the amount of production that has been temporarily shut in. BSEE also leads the development of workplace safety and environmental compliance strategies for offshore renewable energy projects on the Federal Outer Continental Shelf.

Bonneville Power Administration

- The Bonneville Power Administration (BPA): BPA is one of four federal Power Marketing Administrations (PMAs). BPA is responsible for marketing wholesale electrical power generated from 31 federally owned hydroelectric dams in the Pacific Northwest. These dams are operated by the US Army Corps of Engineers and the Bureau of Reclamation. By utilizing its 14,000-mile high-voltage transmission network, BPA provides clean and reliable power to eight states in the region.

Idaho State Energy Security and Emergency Response Roles

Governor's Office: During the continuance of any state of disaster emergency the Governor is Commander-in-Chief of the militia and may assume command of all other forces available for emergency duty. To the greatest extent practicable, the Governor shall delegate or assign command authority by prior arrangement embodied in Idaho Code Title 46, Chapter 6 and Idaho Code §46-1006 and appropriate executive orders or regulations, but nothing therein restricts the Governor's authority to do so by orders issued at the time of the disaster emergency. As provided by Idaho Code §46-1006, the Governor retains authority at the state level to issue evacuation orders.[73]

Adjutant General: The Adjutant General serves as the Chief of Staff to the Commander-in-Chief (the Governor) and administrative head of the Military Division of the Office of the Governor. In accordance with Idaho Code §46-1006, when an extreme emergency has been declared and the Governor has ordered the active service of the state National Guard, or any part thereof, and the organized militia, or any part thereof, or both as deemed proper, the Adjutant General is the commanding general of these forces.[74]

Idaho Office of Emergency Management (IOEM): As provided in Idaho Code §46-1006, IOEM is responsible for coordinating state and federal emergency response, recovery, and mitigation operations during emergencies and disasters in the State of Idaho. The office is responsible for coordinating collaborative emergency management and homeland security efforts with federal agencies, other state governments, Idaho state agencies, tribal governments, local governments, private sector entities, and non-governmental organizations.

IOEM coordinates all requests from state agencies and local governments for disaster emergency assistance, provides technical support to local jurisdictions involved in local emergencies and disasters that do not require state resources, and under disaster declarations provides state assistances that does require state resources in line with the processes defined in the Disaster Emergency Declaration Process section.

IOEM supports the State Emergency Response Team (SERT) and maintains the Idaho Response Center (IRC) for directing the coordination of emergency and disaster operations and information management

[73] "State of Idaho Emergency Operations Plan", BP-p.17. http://ioem.idaho.gov/wp-content/uploads/2023/01/Idaho-Emergency-Operations-Plan.pdf
[74] Ibid.

activities. The office also coordinates the use of specialized team response programs in support of state and local emergency and disaster prevention, protection, mitigation, response, and recovery objectives. The office also manages the use of state emergency communications and alert and warning systems and integrates auxiliary communications and other volunteer communications programs and organization into the state systems or networks.

IOEM functions as the State Administrative Agency for federal emergency management and homeland security grant programs and administers federal programs for disaster emergency planning, an assistance pertinent to state and local governments. The office also provides technical assistance to emergency response agencies in recovering hazardous materials emergency response costs under state and federal laws.

Finally, IOEM is responsible for developing and coordinating the preparation and implementation of plans and programs for prevention, protection, and mitigation to reduce the harmful consequences of disasters, including the provision of training for state agency personnel who service to support Idaho Emergency Support Functions (ID-ESFs). The office helps ensure state and local prevention, protection, mitigation, response, and recovery plans are consistent with national plans and programs and that state agency plans are consistent with the state's emergency management goals and procedures. IOEM also assists local governments with the development of all-hazard mitigation, preparedness, response, and recovery plans, training, and exercises.[75]

Idaho Public Utilities Commission (PUC): The PUC is Idaho's ESF #12 Coordinating Agency. PUC is responsible for leading coordination of the restoration and protection of Idaho's critical electricity, natural gas, and transportation fuel infrastructure during emergencies and disaster incidents or in preparation for a threat with the potential to significantly affect the State of Idaho. The coordinating agency organizes and integrates the state's overall efforts to restore and protect Idaho's energy systems and infrastructure through the following responsibilities:

- Organize an in-house team to help coordinate a response to emergencies involving electricity and natural gas.
- May order curtailment programs and energy-reduction measures by consumers during energy emergencies (see Idaho Code §61-535).
- Provide ID-ESF #12 (Energy) staff to the IRC if requested by IOEM.
- Coordinate with electric and natural gas and other energy providers to determine emergency response and recovery needs.
- Monitor and analyze potential and existing energy emergencies and shortages and regularly report to the IRC and other relevant agencies as requested.[76]

Idaho Governor's Office of Energy and Mineral Resources (OEMR): OEMR works closely with the PUC on energy-sector issues that may affect energy preparedness and response. The Office coordinates response measures during transportation fuel emergencies and coordinates the Idaho State Energy Assurance and Emergency Standard Operations Petroleum Plan. OEMR also works closely with the IPUC to coordinate with electric, natural gas, and other energy providers to determine emergency response and recovery needs. OEMR monitors and analyzes potential and existing energy emergencies and regularly reports to the State Emergency Response Team (SERT) and other relevant agencies as required. The Office also uses WebEOC, an online information-sharing platform, and other appropriate resources to stay abreast of potential and existing energy emergencies and shortages.[77]

[75] Ibid.
[76] Ibid, ESF #12 – Page 12
[77] Ibid, ESF #12 – Page 13

Idaho Department of Environmental Quality (IDEQ): IDEQ manages the emergency environmental response to fuel spills and other environmental hazards stemming from the flow and use of energy resources.[78]

- Idaho National Laboratory Oversight Program (INL OP): DEQ's INL OP maintains an environmental monitoring network on and around the INL to verify and supplement monitoring activities carried out by the US Department of Energy (DOE).[79]

Idaho Department of Water Resources (IDWR): IDWR provides GIS/ArcMap imagery analysis and disseminates incident information and mapped areas of inundation. IDWR assists by providing Hazards United States (Hazus-MH) Level II seismic- and flood-damage models. The Department also provides GIS/ArcMap support functions for first response, routing and analysis for development of assets, evacuation analysis, and recovery analysis.[80]

Idaho Office of the Attorney General (AG): The AG's Office provides legal review of proposed emergency operations action and orders and drafts orders as needed for high-level emergency managers.

Idaho State Police (ISP): The ISP provides or assists with traffic control, road closures, and emergency communications. ISP also assists with energy related transportation issues through ESF #1 – Transportation and ESF #13 – Public Safety and Security, as appropriate.[81]

Idaho Department of Transportation (IDT): ITD obtains and disseminates information to Idaho ESF #12 regarding roadways critical to fuel restoration.[82]

Public Utility Companies and Other Electric Energy and Hazardous Liquid Suppliers in Idaho: All notify and provide pertinent energy supply, response, or recovery information to IOEM, IPUC, OEMR, and support agencies in the event of an emergency or possible emergency situation. Company officials ensure emergency preparedness, mitigation, and resilience activities meet all federal, state, and local requirements.[83]

Idaho Criminal Intelligence Center (ICIC): Idaho's fusion center is the Idaho Criminal Intelligence Center. Fusion centers are a network of state and major urban area organizations that act as hubs for information gathering, intelligence analysis, and sharing of threat-related information. ICIC acts as the state's center for integrating, analyzing, producing, and disseminating actional criminal intelligence to combat terrorism and criminal activity in an all-crimes approach.[84]

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[78] Ibid, ESF #12 – Page 14
[79] "Monitoring Activities", ID Department of Environmental Quality, accessed July 13, 2023. https://www.deq.idaho.gov/idaho-national-laboratory-oversight/inl-oversight-program/monitoring-activities/#:~:text=DEQ's%20Idaho%20National%20Laboratory%20Oversight,Department%20of%20Energy%20(DOE).
[80] "State of Idaho Emergency Operations Plan", ESF #12 – Page 14. http://ioem.idaho.gov/wp-content/uploads/2023/01/Idaho-Emergency-Operations-Plan.pdf
[81] Ibid.
[82] Ibid.
[83] Ibid.
[84] "Idaho Criminal Intelligence Center." https://isp.idaho.gov/icic/

Idaho local government entities are the primary authorities in emergency response.[85] A city mayor or county executive are authorized to declare local emergencies.[86] Once local response resources are overwhelmed, the city mayor or county executive may request assistance from the State in accordance with state law. Idaho does not maintain a state emergency activation system based on the number of individuals or households affected by an emergency; such activation can only occur in response to a local request for assistance.

Today, the State of Idaho exists on the land of five federally recognized tribal nations: the Shoshone-Bannock, the Shoshone-Paiute, the Nez Perce, the Coeur d'Alene, and the Kootenai Tribes. Each tribe maintains its own emergency management teams with response plans. In the event of an emergency, these teams will mobilize and respond. If these resources are overwhelmed, a tribe does not have to appeal to the state for assistance. The Tribal Chief Executive Officer may seek assistance from cities, counties, states, or the federal government directly, in accordance with mutual assistance compacts.[87] As with local governments, the state emergency response will not activate until requested by the tribal government.

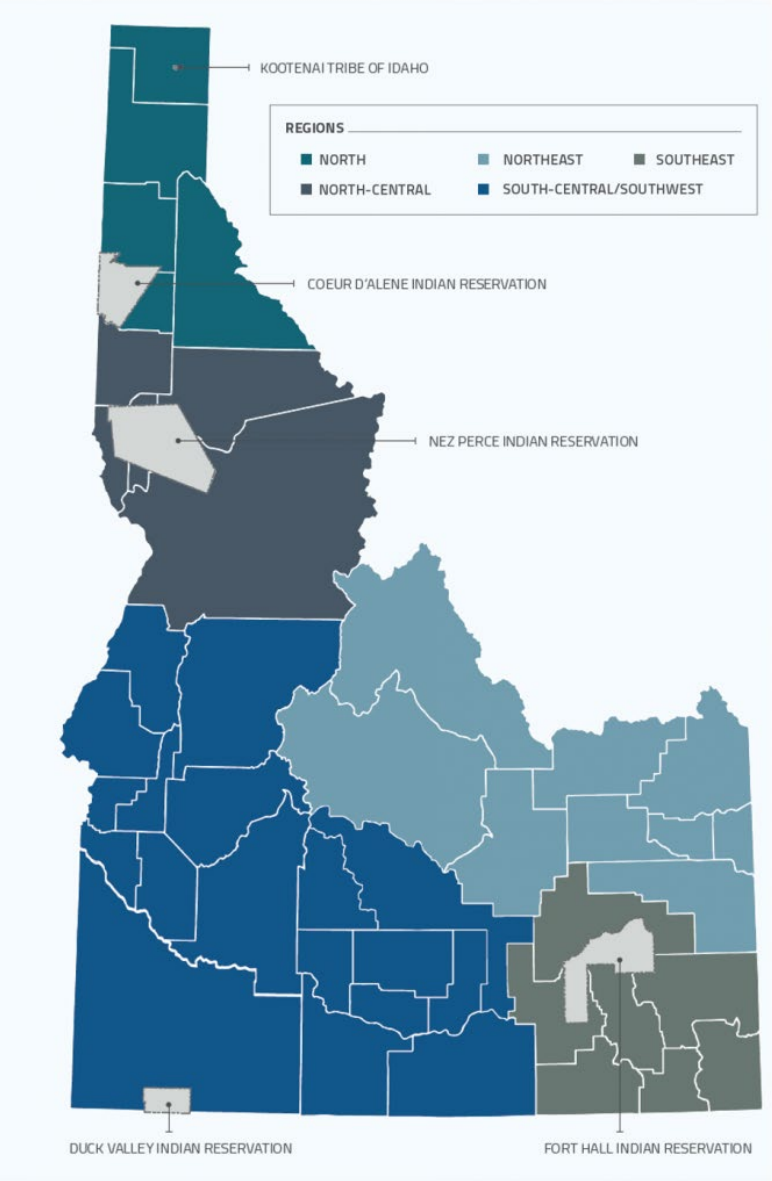

Figure 30. IOEM Area Field Office jurisdictions and locations of federally recognized indigenous tribal communities.

The Idaho Office of Emergency Management maintains five Area Field Office Regions in the state. Each Area Field Officer (AFO) assists local jurisdictions and tribal communities in a variety of ways. AFOs help maintain situational awareness, increase public emergency response awareness, facilitate local training and exercises.[88] A current list of AFOs and their contact information can be found at https://ioem.idaho.gov/about/area-field-officers/.

[85] Idaho EO 2019-15
[86] Idaho Code Title 46, Chapter 10 at § 46-1011.
[87] Idaho Emergency Operations Plan, BP-Page 19.
[88] "Area Field Officers," Idaho Office of Emergency Management. https://ioem.idaho.gov/about/area-field-officers/

ENERGY EMERGENCY RESPONSE

Emergency response is an ongoing process of preparation, anticipation, mitigation, and reaction to disasters. The response portion of emergency management involves a three-step cycle of situational awareness, consequence assessment, and response actions. This cycle adapts as the situation changes and continues until the situation is stabilized.

Figure 31. Emergency Response Cycle

Situational Awareness

Situation awareness is critical to timely and effective response. Idaho agencies employ a variety of tools to maintain awareness of energy-related disruptions or disasters. DOE, the Energy Information Institute (EIA), FEMA, and many private partners have created situational awareness tools for energy emergency managers. The tables below list these awareness tools organized by agency. For each tool, the table describes more about the specific energy source information it provides.

DOE Situational Awareness Resources

Tool	Power	Liquid Fuels	Natural Gas
DOE Emergency Situation Reports	Customer outages and summaries of electric system damage and estimate restoration timelines. Level of resources committed for restoration	Refinery status, capacity, and output, petroleum terminal status, regional product inventories, offshore crude oil production impacts	Natural gas pipeline status, gas utility customer outages, onshore and offshore natural gas production impacts
DOE EAGLE-I	Power outages by utility and by county in near real time	Refinery process unit status alerts	Natural gas pipelines critical notices
DOE Estimated Customer Power Outages	Predicted customer outages based on strength and track of hurricane or major storms	Can be used to identify the critical petroleum infrastructure that may be impacted by the storm or by power outages	Predict the degree that electrically powered compressors, if used, may be affected

EIA Situational Awareness Resources

Tool	Electricity	Liquid Fuels	Natural Gas
EIA Energy Atlas	Electricity infrastructure: power plants, substations, transmission lines, electric retail service territories	Liquid fuels infrastructure: oil wells, platforms, pipelines, biofuel plants, terminals, refineries (locations and capacities)	Natural gas infrastructure: gas wells and platforms, pipelines, natural gas processing plants, underground storage
EIA Hourly Grid Monitor	Hourly electricity generation by fuel type, interchange, and day-ahead demand forecasts	Hourly oil-fired generation	Hourly natural gas-fired generation
EIA Weekly Petroleum Status Report	-	Weekly supply, demand, inventory, and import data	-
EIA Winter Heating Fuels	Electric generation and prices	Propane and heating oil inventories and prices	Natural gas inventories and gas prices
EIA SHOPP	-	State weekly residential heating oil and propane prices	-
EIA Natural Gas Storage Dashboard	-	-	Evaluate natural gas storage activity, consumption by sector, exports, and prices

EIA Daily Prices	Daily electricity prices	Daily crude, gasoline, diesel, and propane prices	Daily natural gas spot prices

Other Federal Agency Situational Awareness Resources

Tool	Electricity	Liquid Fuels	Natural Gas
U.S. Coast Guard Homeport	-	Operational status of ports that import/export oil	Operational status of ports that import/export liquified natural gas (LNG)
NPMS PIMMA	-	Crude oil and petroleum product pipeline locations	Natural gas pipeline and LNG plant locations
BSEE Activity Statistics Update	-	Oil production shut-in and rig activity	Natural gas production shut-in and rig activity
HHS emPOWER Map	Locations of electricity-dependent individuals with medical needs	-	-

Private Sector Situational Awareness Resources

Tool	Electricity	Liquid Fuels	Natural Gas
GasBuddy	Power outages at gas stations	Gas station operational status (without fuel or without power) and real time retail prices	-
Company Websites/ Social Media	Estimated restoration timelines	Updates on infrastructure status, usually via press releases	Critical notices on natural gas company websites, daily gas flows to delivery points
RTO/ISO Websites RTO ISO Locational Marginal Pricing	Power grid operational alerts, current and projected supply and demand, and locational marginal pricing	-	-
Trade Press	Customer outages for small utilities and estimated restoration times	Refinery, pipeline, and terminals status updates	Natural gas pipeline and LNG terminal status updates

Federal Weather Situational Awareness Resources

Threat Forecasts	Description	Frequency of Updates
NOAA's National Weather Service	Weather warnings, watches, alerts, and advisories across the United States.	Every five minutes
NOAA 6- to 10-Day Outlook	Weather and precipitation forecast confidence intervals across the United States looking out 6 to 10 days.	Daily
National Hurricane Center Tropical Weather Outlook	Identifies hurricanes, tropical storms, and tropical disturbances and their potential for development over the next five days.	Approximately 2:00 a.m., 8:00 a.m., 2:00 p.m., and 8:00 p.m. ET from May 15 to Nov. 30
EIA Energy Atlas Disruptions	Weather threats (e.g., hurricanes, wildfires, flooding) mapped against selected energy infrastructure.	Layers vary
DOE EAGLE-I Mapper	Weather threats (e.g., hurricanes, wildfires, flooding, drought, earthquakes) mapped against selected energy infrastructure and/or state- or county-level electric customer outages.	Layers vary
NASA and USDA's Fire Information Resource Management System	Identify the location, extent, and intensity of wildfire activity using satellite monitoring.	Twice per day

NOAA's River Observations and Forecasts	Identifies current and forecast water levels at river gauges across the United States.	Every five minutes

State of Idaho Situational Awareness Resources[89]

Tool	Description
WebEOC	WebEOC is a situational awareness software program designed for incident information sharing and management. This web-based tool is designed to connect crisis response teams and decision makers at the federal, state, tribal and local levels by providing access to real-time information for a common operating picture during an event or daily operations.
Homeland Security Information Network (HSIN)	HSIN is a US Department of Homeland Security national secure and trusted web-based system designed for sharing sensitive but unclassified information among international, federal, state, tribal, local, and private sector partners. HSIN is particularly useful for sharing information related to incident response with FEMA Region10 and neighboring states. HSIN is made up of a network of communities, called Communities of Interest (COI), which are organized by federal organizations, state agencies, or mission areas, such as emergency management, law enforcement, critical sectors, and intelligence. Users can securely share within their communities or reach out to other communities as needed. HSIN provides secure, real-time collaboration tools, including a virtual meeting space, instant messaging, and document sharing. HSIN allows partners to work together instantly, regardless of their location, to communicate, collaborate, and coordinate.
EAGLE-I	EAGLE-I is a DOE-led program that uses Geographic Information System (GIS) to view and map energy infrastructure and obtain near real-time information regarding electric, natural gas, and petroleum sectors on a single platform.

Response Framework

In the event of an unfolding or imminent natural disaster, local/tribal authorities maintain the primary responsibility for preserving and protecting their communities. Localities can issue City/Tribal Declarations of Emergency. If these groups cannot adequately meet the required response, counties may issue a County Declaration of Emergency. If these county resources are still overwhelmed by the disaster, the governor may issue their own State Declaration of Emergency. This is when state emergency response resources may be fully deployed. State emergency response operations follow both the National Incident Management System and Incident Command System guidelines. In the event of a statewide energy emergency, Emergency Support Function #12 – Energy (ESF #12) coordinating agencies would be activated. ESF #12 primary and support agencies would be mobilized as needed.

The State Emergency Response Team (SERT) is the agencies and groups dispatched to respond to a state emergency. The Idaho Response Center (IRC) is a complex located at the Idaho State Chinden Campus. IOEM operates in a 24/7/365 Monitoring State to ensure immediate response to incidents, assistance requests, and other responses to threats and hazards. As situations evolve, parts of or the whole SERT and IRC may be activated. The Idaho Emergency Operations Plan best explains this activation process:

> The SERT, or parts of the SERT, can be activated without activating the IRC (the facility) to address initial actions when a proclamation declaration is anticipated, to address life safety issues, or to provide assistance not tied to funding requirements. When the SERT, or parts of the SERT, are activated, these elements most commonly operate in the IRC, but in some cases, team members may operate from remote locations (e.g., normal work locations) and coordinate virtually. The SET and IRC are activated at a level appropriate to the situation in preparation for or in response to an emergency or disaster as shown in Table 1. The particular

[89] Idaho Emergency Operations Plan, p. 12

elements of the SERT, including specific ID-ESFs, may be driven by [Requests for Assistance] and document impacts to community lifelines or their underlying components.[90]

SERT and IRC may be activated along three different levels (**Figure 32**), depending on the severity of the incident and the response needed.

Monitoring (IOEM)	Level 3: Enhanced Monitoring and Support (SERT/IRC)	Level 2: Elevated Activation (SERT/IRC)	Level 1: Full Activation (SERT/IRC)
There is no large-scale emergency or disaster incident, and the likelihood of such an incident is low.	There is no large-scale emergency or disaster incident, but an incident is likely to occur or has occurred with impacts to only a small number of jurisdictions.	Multiple ongoing incidents or a large-scale (multi-jurisdictional or statewide) incident is likely to occur or has occurred.	Multiple ongoing incidents or a large-scale (multi-jurisdictional or statewide) incident is likely to occur or has occurred that overwhelms the state's ability to response effectively without external assistance.

Figure 32. SERT and IRC Activation Levels.[91]

In energy security planning, strong engagement with local stakeholders is critical to preventing energy disruptions and efficiently responding to crises. While national entities may provide financial, regulatory, and educational support for energy security planning and response, local entities have on-the-ground knowledge that is crucial for effective emergency management. Regular and constructive communication between national, regional, state, and local stakeholders is vital to optimal emergency preparedness, prevention, and response. Furthermore, it is important to develop the expertise of internal staff in all positions responsible for emergency management.

An energy emergency can happen at different scales – impacting a single community or spanning across an entire state. If a disruption is limited to energy and energy-specific infrastructure without damaging other systems, the energy provider, such as a utility company or a pipeline operator, will be the first to respond and restore energy supply and access (**Figure 33**). If the resources of an energy provider are overwhelmed, or if the disruption is causing outages for more than 500 customers, the providers are encouraged to inform local and state stakeholders about the incident. The energy providers are obligated to formally report the disruption if there are any fatalities/injuries[92] or if there is a need to involve police and other security officials.

Energy emergencies are of particular concern if they threaten critical infrastructure or key resources. According to the U.S. Cybersecurity and Infrastructure Security Agency[93], 16 sectors are classified as critical infrastructure in the U.S. and are listed in Appendix C. Depending on the scale and infrastructure that was (or can be) impacted, different agencies are responsible for responding to an incident. To respond to an emergency, Idahoans are encouraged to contact local utility provides and keep up to date with current emergency information (**Figure 33**). The following figures illustrate the general process of response for an energy emergency incident in Idaho (**Figure 34**). Public-specific Appendices outline the emergency contact order and the contact information that can be useful in case of an emergency (**Appendix D**). Energy

[90] Idaho Emergency Operations Plan, Basic Plan, p. 13.
[91] Idaho Emergency Operations Plan, Basic Plan, p. 14.
[92] Commission Order No. 35095. "Adopting the Commission's Safety Regulations by Order", *available at* https://puc.idaho.gov/Fileroom/PublicFiles/Multi/GNR/GNRU2101/OrdNotc/20210630Order_No_35095.pdf
[93] U.S. Cybersecurity and Infrastructure Security Agency, "Critical Infrastructure Sectors," https://www.cisa.gov/critical-infrastructure-sectors.

stakeholders should contact energy emergency responders as appropriate based on the affected area and critical infrastructure or key resources that may be threatened or damaged.

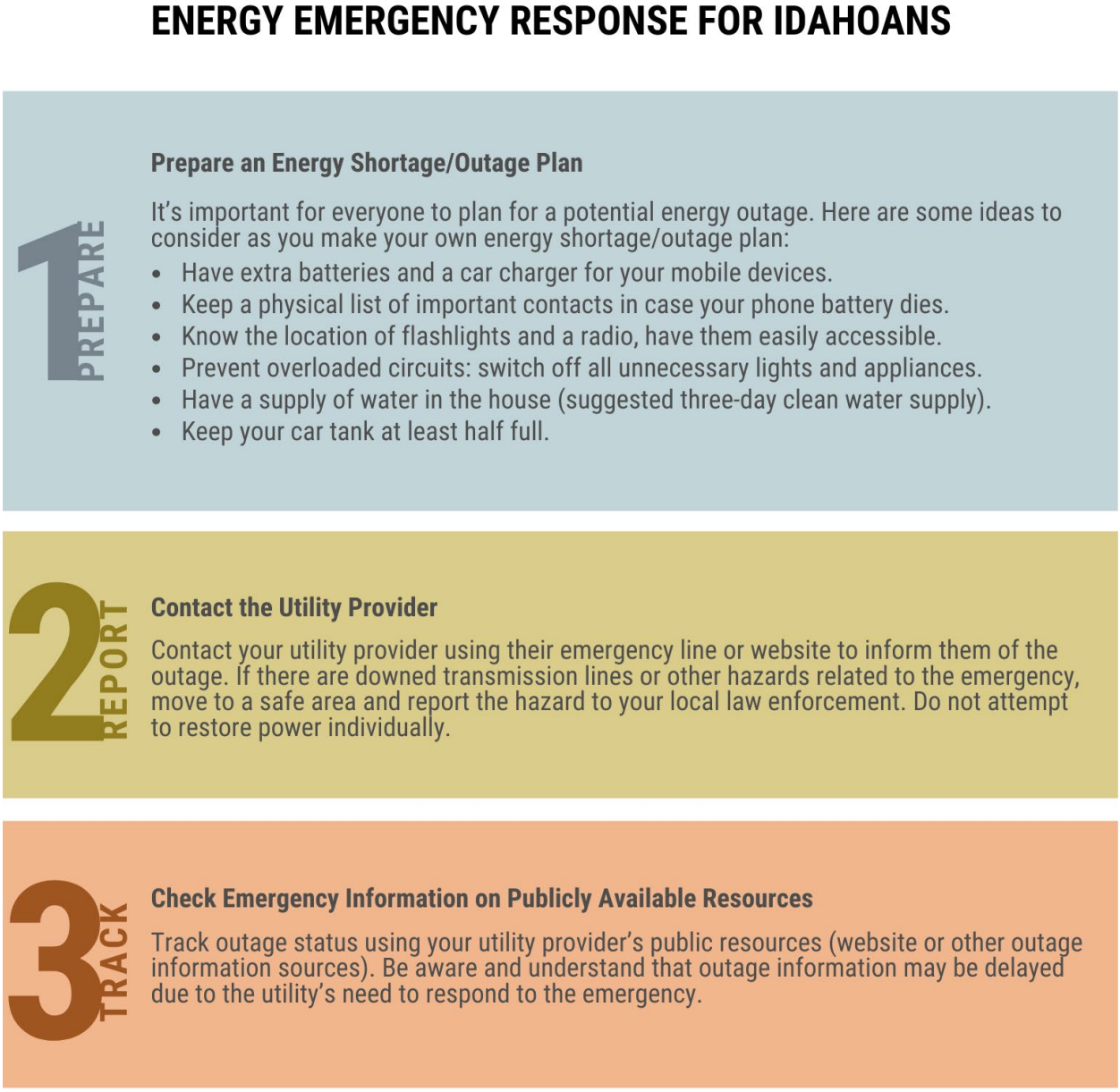

Figure 33. Energy Emergency Response for Idahoans. This figure illustrates steps Idahoans can take to prepare for, respond to, and track energy outages. Please refer to Appendix D for contact information that can be useful during an energy emergency.

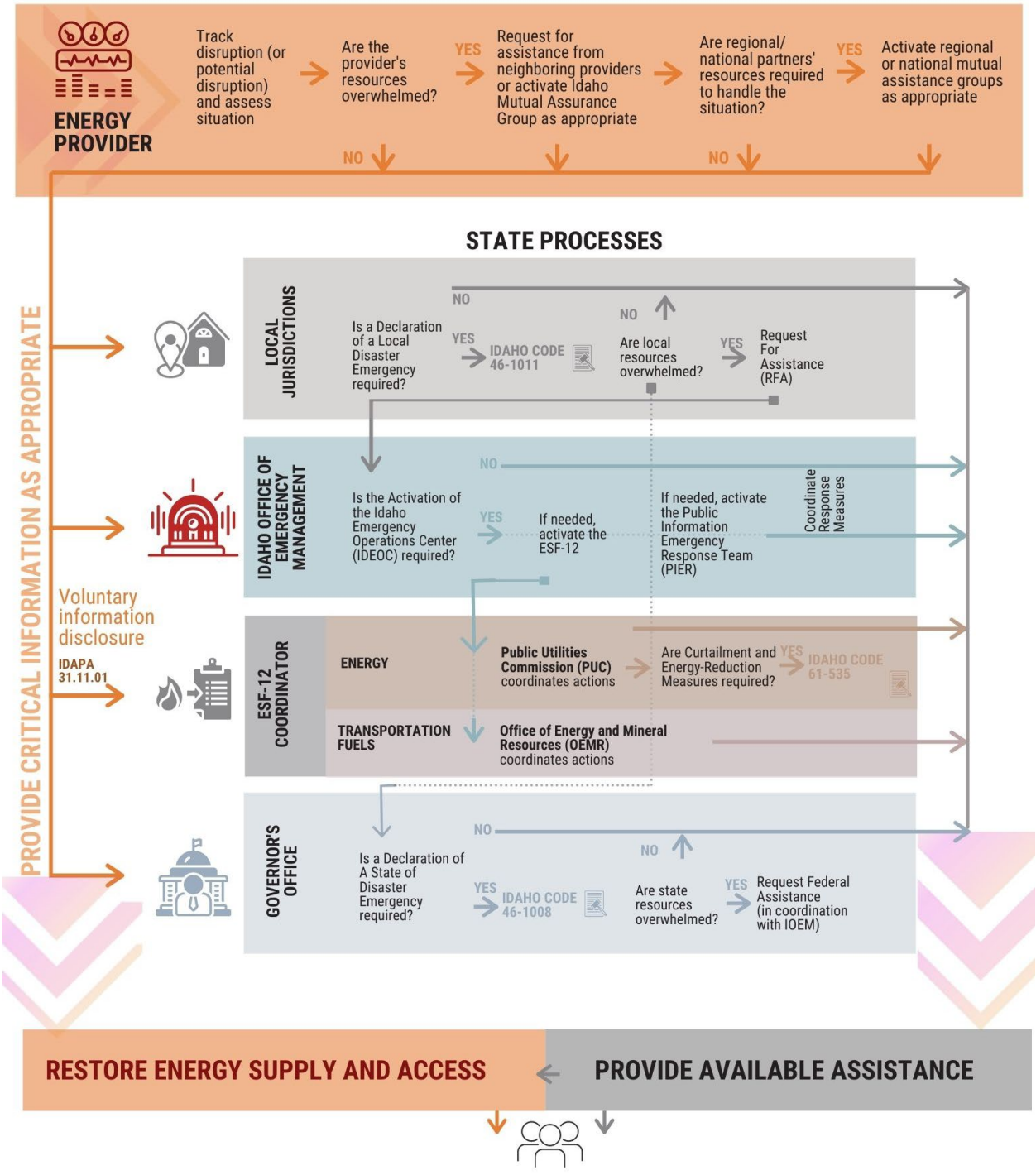

Figure 34. Energy Emergency Decision Tree. This figure illustrates the general process of response for key emergency managers during an energy emergency incident in Idaho. Idaho's emergency response strategy follows a bottom-up approach, in which additional response assistance (from the state or federal government) is only available once local responders are overwhelmed.

Idaho Response Center[94]

When disaster emergency conditions of any kind appear likely to exceed the combined capabilities of a local jurisdiction and mutual aid compact signatories, local governments will request the support of the state through the IRC managed by the Idaho Office of Emergency Management (IOEM). State resources coordinated via the IRC are supplemental to local resources.

The IRC evaluates local requests for assistance based on the level of local resource commitment and availability of state resources. All state resources are committed through the IRC. If the Governor determines local assets and resources have been fully utilized and state resources are available, he/she will authorize their commitment to the emergency. The Governor may then proclaim a "State of Emergency" and the provisions of the Idaho Emergency Operations Plan (IDEOP)[95] will be invoked. More information on the IDEOP can be found in **Appendix E**.

State disaster relief can be provided to local governments without a declaration of a "State of Emergency" when such resources are needed for life saving missions or to relieve suffering and hardship. If state capabilities are overwhelmed, the state can request assistance from other states under provisions of the Emergency Management Assistance Compact (EMAC)[96] or any existing mutual aid compacts. Requests for EMAC assistance will be coordinated through the IRC.

If capabilities (financial or operational) of state government are overwhelmed, or if an eminent threat is such that it will overwhelm available state resources, the Governor can request federal disaster emergency assistance. In the case of a disaster in which additional disaster assistance is required beyond that generally administered by individual federal agencies, the Governor may make a request for federal emergency, major disaster, or fire

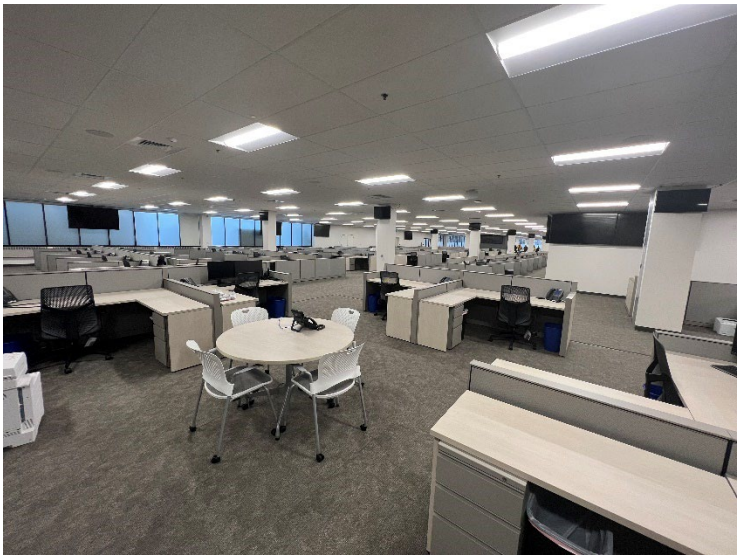

Figure 35: The new Idaho Response Center can house federal, state, county, local, tribal, and private partner emergency managers all under one roof.

Figure 34: Idaho Response Center working to respond to an emergency.

[94] The Idaho Response Center, or IRC, may be referred to as the Idaho Emergency Operations Center (EOC), or IDEOC. The IRC replaced the EOC in 2021.

[95] Idaho Office of Emergency Management, "Idaho Emergency Operations Plan", https://ioem.idaho.gov/wp-content/uploads/sites/57/2018/12/2017-IDEOP.pdf.

[96] EMAC. https://www.emacweb.org/index.php/learn-about-emac/what-is-emac.

suppression assistance under the authority of the Stafford Act, PL 93-288 as amended, to the President through the Region-X Director of the Federal Emergency Management Agency (FEMA).

Communication During an Emergency

Beyond communicating with the agencies or groups that provide emergency response and support, communicating with the public during an energy emergency is critical. Preparing a press release during an emergency can be challenging due to staffing and other constraints. Readily available templates for press releases will help streamline communications without overburdening emergency responders. The press release template's purpose is to answer the basic questions: who, what, where, when. The state agency-specific Appendix F includes recommendations for steps that state agencies can take to communicate about an emergency and provides templates for press releases.

Assessment

During and after an emergency, the level of emergency and its consequences should be assessed. Assessing the extent of an emergencies' impact helps streamline emergency response and summarize lessons learned. The extent of an emergency can be measured using Emergency Levels, classified as Levels 1 through 4 (**Figure 32**). Declaring a level of emergency (on the utility, local, or state level) can help communicate response status and describe the current situation to emergency responders and the public.

Recovery and Deactivation

During response efforts, leaders should plan for demobilization and deactivation of response units. Command staff actively analyze the resources needed for proportional response. Since the ICS command structure is meant to be scalable, units and resources can be deactivated as successful response neutralizes threats and community lifelines stabilize. As recovery efforts scale down, SERT and IRC teams deactivate. Any outstanding items are then transferred to the Long-term Recovery Committee (LTRC) or IOEM's Recovery Section; situation factors such as severity inform whether the LTRC or the Recovery Section will lead recovery efforts. Please see the State of Idaho Disaster Recovery Plan for more information.

After an emergency, the incident response team is responsible for documenting the incident as well as meeting with the appropriate parties to discuss lessons learned and other major takeaways from the incident.[97] This document can be known as the after-action report (AAR) or an incident assessment. The purpose of an AAR is to analyze the management or response to an incident, exercise, or event by identifying strengths to be maintained and built upon, as well as identifying potential areas of improvement. Review and assessment questions[98] that can be used for an AAR or incident assessment include:

- Exactly what happened, and at what times? How well did staff and management perform in dealing with the incident?
- Were the documented procedures followed; were they adequate? What information was needed sooner?
- Were any steps or actions taken that might have inhibited the recovery? What would the staff and management do differently the next time a similar incident occurs?

[97] Idaho Office of Emergency Management, "Emergency Operations Plan", https://ioem.idaho.gov/wp-content/uploads/sites/57/2020/07/2019-Idaho-Emergency-Operations-Plan.pdf

[98] Scarfone et al. 2008, https://csrc.nist.rip/library/NIST%20SP%20800-061r1%20Computer%20Security%20Incident%20Handling%20Guide,%202008-05.pdf.

- What was the root cause of the incident and what corrective actions can prevent similar incidents in the future?

Mutual Assistance Groups

Mutual assistance refers to voluntary partnerships among utilities in the same region, where utilities can get help from other utilities in the same mutual assistance network. Utilities may also belong to two or more regional networks (**Figure 35**). Partnerships such as these save utilities from having to keep large numbers of emergency crews on staff all the time. Generally, the items that are shared include utility employees and contractors, specialized equipment, supplies, and information.[99]

American Public Power Association (APPA)

- APPA is a national organization committed to advocating for public power and collaborating among state and national partners. Founded in 1940, APPA's members include not-for-profit, community-owned municipal power utilities. APPA also provides mutual assistance for its members.
- The Idaho Consumer Owned Utilities Association is Idaho's municipal and cooperative utility organization and is a member of APPA.[100]

Idaho Mutual Assistance Agreement (IMAA)

- IMAA's Agreement defines the terms and conditions for voluntary assistance and states that in case of an emergency one of the 18 company signatories can request other parties for assistance, either verbally or in writing.
- The IMAA also formed the Idaho Mutual Assistance Group (IMAG).

Northwest Mutual Assistance Agreement (NWMAA)

- NWMAA's Agreement defines the terms and conditions for voluntary assistance and maintains communication between members for emergency planning and incident response.
- If a major emergency occurs in the Pacific Northwest, it is expected that the signatories provide assistance. All three of Idaho's IOUs are members.

National Mutual Assistance Agreement (NMAA)

- NMAA is only activated if additional resources are unattainable regionally. NMAA is facilitated by the American Gas Association, the American Public Gas Association, the Northeast Gas Association, the Southern Gas Association, and the Midwest Energy Association (MEA).

National Rural Electric Cooperative Association (NRECA)

- NRECA is a national organization committed to advocating for America's cooperative utilities. NRECA's members include rural cooperative electric companies which provide power to over 42 million Americans. NRECA maintains mutual assistance agreements for its members.
- The Idaho Consumer Owned Utilities Association and each of Idaho's 12 electric cooperative utilities are members.[101]

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[99] Edison Electric Institute, "Understanding the Electric Power Industry's Response and Restoration process." http://www.eei.org/issuesandpolicy/electricreliability/mutualassistance/Documents/MA_101FINAL.pdf.
[100] "About," American Public Power Association. https://www.publicpower.org/about
[101] "Our Mission," National Rural Electric Cooperative Association. https://www.electric.coop/our-mission.

Pacific Northwest Emergency Management Arrangement (PNEMA)

- The governments of the State of Alaska, the State of Idaho, the State of Oregon, the State of Washington, the Province of British Colombia, and the Yukon Government are signatories to the PNEMA.
- The purpose of this arrangement is to provide for the possibility of mutual aid assistance among the signatories entering into this arrangement in managing any emergency or disaster when affected signatory or signatories ask for assistance, whether arising from a natural disaster, accidental or intentional events or the civil emergency aspects of resource shortages. An advisory committee named the Western Regional Emergency Management Advisory Committee (W-REMAC) shall be established which will include one member appointed by each signatory.[102]

Western Region Mutual Assistance Group (WRMAG)

- WRMAG's Agreement states that in case of an emergency one of the signatories can request assistance from other parties, either verbally or in writing. This includes Bonneville Power Administration (BPA), Idaho Power Company, Intermountain Gas Company, PacifiCorp, and many others, totaling nearly 50 utilities.
- The group is convened if two or more states require mutual assistance support and the resources needed are greater than what two utilities can coordinate.

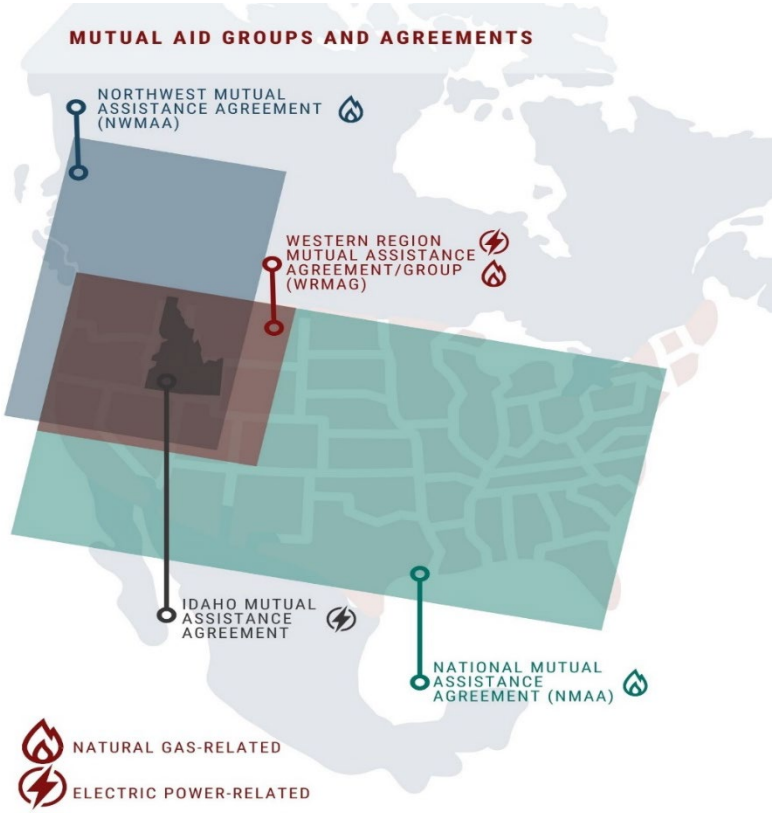


Figure 35. Diagram of regional and national mutual aid groups and agreements.

[102] Idaho Emergency Operations Plan, Basic Plan, p. 28.

Regional Partnerships and Communications

Regional situational awareness is necessary to anticipate emergencies and prepare to assist regional partners in the event of a disaster. The State of Idaho maintains several communication channels with other states and regional emergency management entities. National, regional, and state energy security planning groups and stakeholders serve as primary resources and critical communicators during an emergency occurrence. The following information lists some key stakeholders and their roles in energy security planning and decision-making.

Federal Emergency Management Agency (FEMA): FEMA's National Response Framework includes Emergency Support Functions (ESF) that describe federal coordinating structures that group resources and capabilities into functional areas most frequently needed in a national response, and Support Annexes that describe how support is organized among private sector, non-government organizations and federal partners. FEMA's capstone doctrine, Publication 1, further details the history, mission, and core values of the agency.

National Association of State Energy Officials (NASEO): NASEO helps to advance national and state energy goals by assisting states in ensuring the energy system is reliable, affordable, and secure. NASEO supports these objectives by delivering state energy policy and program expertise, facilitating peer learning among state energy officials, assessing states' energy security needs, and developing tools and resources for state energy office use. OEMR policy analysts are members of the NASEO Energy Security Committee. This platform allows Idaho officials to network with other state energy offices, elevate localized trends to a national level, and gain a broader understanding of the state of energy assurance in the nation.

North American Electric Reliability Corporation (NERC): NERC's major responsibilities include developing standards for power system operations, monitoring and enforcing compliance with those standards, assessing resource adequacy, and providing educational and training resources as part of an accreditation program to ensure power system operators remain qualified and proficient. NERC's Electricity Information Sharing and Analysis Center (E-ISAC) provides its members and partners with resources to prepare for and reduce cyber and physical security threats to the North American electricity industry.

National Emergency Management Association (NEMA): NEMA provides national leadership and expertise in comprehensive emergency management; serves as a vital emergency management information and assistance resource; and advances continuous improvement in emergency management through strategic partnerships, innovative programs, and collaborative policy positions.

State Energy Emergency Assurance Coordinators (EEAC): EEAC is a network of state or territory representatives that serve as points of contact for energy emergency communication between states and federal government. EEACs in Idaho are typically the designated ESF #12 representatives, or employees of the OEMR, the PUC, and the IOEM.

U.S. DOE Office of Cybersecurity, Energy Security, and Emergency Response (CESER): CESER plays a critical role in maintaining situational awareness, discovering, and mitigating cyberthreats, and orchestrating response and recovery operations. CESER's responsibilities are established through various authority statements passed down by both the executive branch and DOE.

Western Petroleum Shortage Response Collaborative (WPSRC): WPSRC collaborates with western states to provide education, training, and other emergency preparedness activities to ensure states are prepared to prevent and efficiently respond to potential fuel shortages. WPSRC's primary stakeholders are State Energy Offices and State Emergency Management.

ENERGY RESILIENCY & HAZARD MITIGATION

Resiliency and hardening efforts provide stability and progress for the people of Idaho. As the threat landscape evolves, response and mitigation techniques must adapt quicker. Employing a variety of risk mitigation measures not only strengthens infrastructure, but it also ensures systems are not reduced to a single point of failure. Public agencies and private utilities should collaborate on effective and economical strategies to ensure reliability for ratepayers. These multitude of options are described below.

Robustness

Measure	Description	Sector
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 subdivided 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
Underground 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
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 equipment are staged). Backup generators require adequate fuel supply to operate.	Electricity Liquid Fuels Natural Gas
Battery Storage	Battery energy storage can be used to provide limited duration 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
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 Fuels 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 Fuels Natural Gas
LIDAR for vegetation management	Vegetation is the primary cause of overhead power line outages. "Light Detection and Ranging" (LiDAR), is remote-sensing technology that can measure how close vegetation is to power lines. LiDAR units can be deployed on the ground, drones or aircraft, to enable more effective vegetation management reducing the impact of storms on electric infrastructure.	Electricity
Remote-operated valves	Remote-operated valves more efficiently isolate systems during disruptions or peak event load management (e.g., temporarily disconnecting gas customers).	Liquid Fuels Natural Gas
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 Fuels Natural Gas

Cold Weather Protection Measures

Measure	Description	Sector
Pipeline Insulation & 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 Fuels 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	Liquid Fuels Natural Gas

	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.	
Heating & 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 Fuels Natural Gas

Extreme Heat & Drought Resistance Measures:

Measure	Description	Sector
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
Hydropower Reservoir Capacity	Increasing reservoir storage capacity at hydroelectric power plants can offset the effects of precipitation variability.	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
Elevate Equipment	Elevating equipment located in low-lying areas can protect it from flooding that would otherwise damage or destroy it.	Electricity Liquid Fuels 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 Fuels 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 Fuels Natural Gas
Stormwater Pumps	Stormwater pumps can remove flood water and help prevent equipment from being submerged.	Electricity Liquid Fuels 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 Fuels Natural Gas
Vent line Protectors	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
Vented Manhole Covers	In flooding scenarios, manhole covers can dislodge, and the exposed manhole creates a hazard for pedestrians and vehicles. Proper vent design can allow for the flow of excess water without dislodging the cover	Electricity

Seismic Protection Measures

Measure	Description	Sector
Base Isolation Transformer Platform	Substation transformers can be placed on platforms designed to absorb the shaking from earthquakes that would otherwise damage the equipment.	Electricity
Culverts	Placing fuel pipelines within buried concrete trenches, called culverts, significantly reduces the fracturing, buckling, and other damage caused to buried pipelines during an earthquake	Liquid Fuels Natural Gas
Flexible Joints	Flexible joints between steel pipe segments absorb the deformations caused during an earthquake and lessen the damage caused to pipeline infrastructure	Liquid Fuels Natural Gas

Wildfire Protection Measures

Measure	Description	Sector
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
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 receptable. Meter receptables are not owned by the utility, and a private electrician is needed to first make repairs, delaying service restoration	Electricity
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 topple, 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

APPENDIX A: IDAHO ENERGY LANDSCAPE

The most recent version of the Idaho Energy Landscape can be found on the Idaho Governor's Office of energy and Mineral Resources' website (www.oemr.idaho.gov). The 2023 edition is available via this link: https://oemr.idaho.gov/wp-content/uploads/2023-Idaho-Energy-Landscape-MASTER-FILE.pdf

The goal of the Idaho Energy Landscape is to provide an accurate and up-to-date resource that enables stakeholders and the public to gain a deeper understanding of the current state of energy in Idaho. This document covers

- The role energy plays in Idaho's economy,
- Current trends in Idaho energy consumption, production, and prices,
- State, Regional, and Federal energy regulators and coordinators,
- Idaho's energy sources,
- Conservation, energy efficiency, and energy storage,
- Idaho's energy outlook, and
- Energy research and education entities in Idaho.

APPENDIX B: IDAHO RISK PROFILE

The US Department of Energy (DOE) Office of Cybersecurity, Energy Security, and Emergency Response (CESER) published a series of State and Regional Energy Risk Profiles, developed in collaboration with Argonne National Laboratory (ANL), to support state energy security planning. The updated and streamlined profiles examine the causes, frequency, and history of energy disruptions for the 50 states and the District of Colombia. The regional profiles provide a multi-state view and were restricted to align with the 10 regions defined by the Federal Emergency Management Agency (FEMA).

The profiles include state energy facts, an overview of hazards and economic property loss, and key energy infrastructure trends and impacts across the electric, petroleum, and natural gas sectors. They enable states to better prepare for any potential infrastructure risks or disruptions.

The State and Regional Energy Risk Profiles are a critical component of CESER's State, Local, Tribal, and Territorial (SLTT) Program, advancing SLTT government officials' risk awareness, and informing policy and investment decisions as well as mitigation strategies. Governors, state energy office directors, public utility commissioners, and emergency managers have utilized past profile data in their state energy security plans, stakeholder presentations, and tabletop exercises.

State and Regional Energy Risk Profiles can be found on the DOE's website or via this link: https://www.energy.gov/ceser/state-and-regional-energy-risk-profiles

State of Idaho
ENERGY SECTOR RISK PROFILE

U.S. DEPARTMENT OF ENERGY
Cybersecurity, Energy Security, and Emergency Response

Idaho State Facts

POPULATION	HOUSING UNITS	BUSINESS ESTABLISHMENTS
1.75 M	0.74 M	0.05 M

ENERGY EMPLOYMENT: 13,298 jobs
PUBLIC UTILITY COMMISSION: Idaho Public Utilities Commission
STATE ENERGY OFFICE: Idaho Governor's Office of Energy and Mineral Resources
EMERGENCY MANAGEMENT AGENCY: Idaho Homeland Security and Emergency Management Agency
AVERAGE ELECTRICITY TARIFF: 8.17 cents/kWh
ENERGY EXPENDITURES: $3,672/capita
ENERGY CONSUMPTION PER CAPITA: 322 MMBtu
(22nd highest out of 50 states and Washington, D.C.)
GDP: $77.1 billion

Data from 2020 or most recent year available.
For more information, see the Data Sources document.

ANNUAL ENERGY CONSUMPTION

ELECTRIC POWER: 23,750 GWh
COAL: 100 MSTN
NATURAL GAS: 120 Bcf
MOTOR GASOLINE: 18,100 Mbbl
DISTILLATE FUEL: 13,000 Mbbl

ANNUAL ENERGY PRODUCTION

ELECTRIC POWER GENERATION: 138 plants, 18.4 TWh, *5.3 GW total capacity*
- **Coal:** 1 plant, 0.0 TWh, *0.0 GW total capacity*
- **Hydro:** 74 plants, 10.3 TWh, *2.7 GW total capacity*
- **Natural Gas:** 7 plants, 4.3 TWh, *1.2 GW total capacity*
- **Nuclear:** 0 plants
- **Petroleum:** 1 plant, 0.0 TWh, *0.0 GW total capacity*
- **Wind & Solar:** 41 plants, 3.1 TWh, *1.2 GW total capacity*
- **Other sources:** 14 plants, 0.7 TWh, *0.2 GW total capacity*

COAL: 0 MSTN
NATURAL GAS: 0 Bcf
CRUDE OIL: 0 Mbbl
ETHANOL: 1,500 Mbbl

Data from EIA (2018, 2019).

This State Energy Risk Profile examines the relative magnitude of the risks that the state of Idaho's energy infrastructure routinely encounters in comparison with the probable impacts. Natural and man-made hazards with the potential to cause disruption of the energy infrastructure are identified. Certain natural and adversarial threats, such as cybersecurity, electromagnetic pulse, geomagnetic disturbance, pandemics, or impacts caused by infrastructure interdependencies, are ill-suited to location-based probabilistic risk assessment as they may not adhere to geographic boundaries, have limited occurrence, or have limited historic data. Cybersecurity and other threats not included in these profiles are ever present and should be included in state energy security planning. A complete list of data sources and national level comparisons can be found in the Data Sources document.

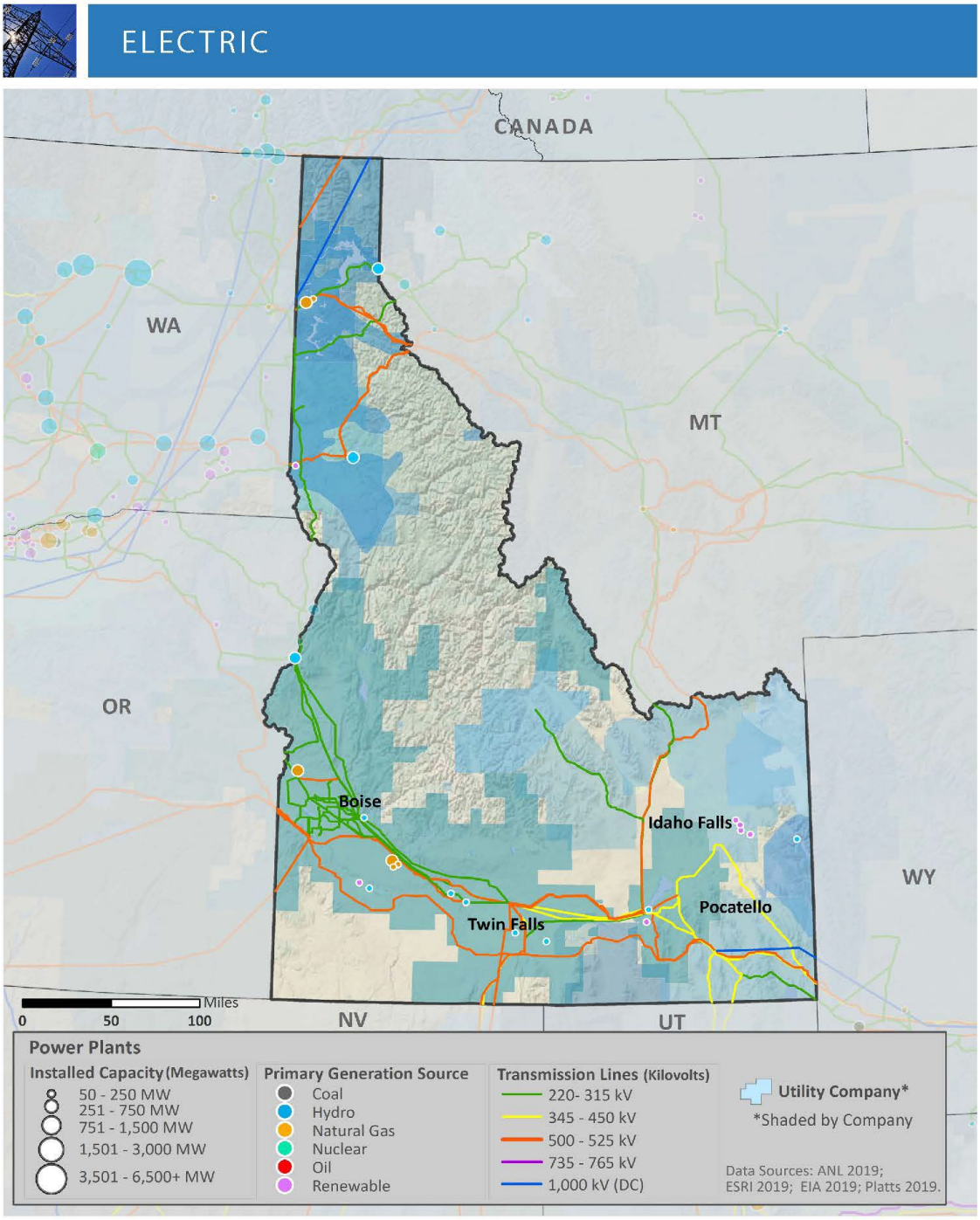
Idaho Risks and Hazards Overview

- The natural hazard that caused the greatest overall property loss between 2009 and 2019 was **Wildfires** at $51 million per year *(3rd leading cause nationwide at $2.1 billion per year).*
- Idaho had 41 Major Disaster Declarations, 0 Emergency Declarations, and 11 Fire Management Assistance Declarations for 15 events between 2013 and 2019.
- Idaho registered 2% fewer Heating Degree Days and 13% greater Cooling Degree Days than average in 2019.
- There is 1 Fusion Center located in Meridian.

Annualized Frequency of and Property Damage Due to Natural Hazards, 2009–2019

	HAZARD FREQUENCY – Annualized	PROPERTY DAMAGE – Annualized ($Million per year)
Drought	0	$0
Earthquake (≥ 3.5 M)	11	$0
Extreme Heat	<1	$0
Flood	18	$9
Hurricane	0	$0
Landslide	5	$1
Thunderstorm & Lightning	44	$4
Tornado	6	$0
Wildfire	17	$51
Winter Storm & Extreme Cold	47	$10

Data Sources: NOAA and USGS



*Note: A section of the Gateway West transmission project depicted on this map in eastern Idaho south of Pocatello is permitted but not yet constructed. Additionally, there are no 1,000 kV (DC) transmission lines in the State of Idaho.

Electric Infrastructure

- Idaho has 26 electric utilities:
  - *3 Investor owned*
  - *13 Cooperative*
  - *10 Municipal*
  - *0 Other utilities*

- Plant retirements scheduled by 2025: 3 electric generating units totaling 5 MW of installed capacity.

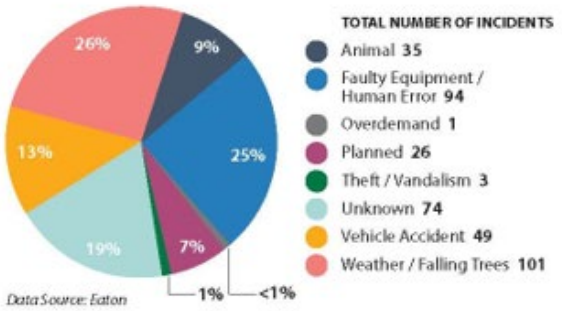
- In 2018, the average Idaho electric customer experienced 1.2 service interruptions that lasted an average of less than 1 hour.
- In Idaho, between 2008 and 2017:
  - *The greatest number of electric outages occurred in **July** (leading month for outages nationwide)*
  - *The leading cause of electric outages was **Weather or Falling Trees** (leading cause nationwide)*
  - *Electric outages affected 117,219 customers on average*

Electric Customers and Consumption by Sector, 2018

	CUSTOMERS	CONSUMPTION
Residential	84%	35%
Commercial	13%	27%
Industrial	3%	37%
Transportation	<1%	<1%

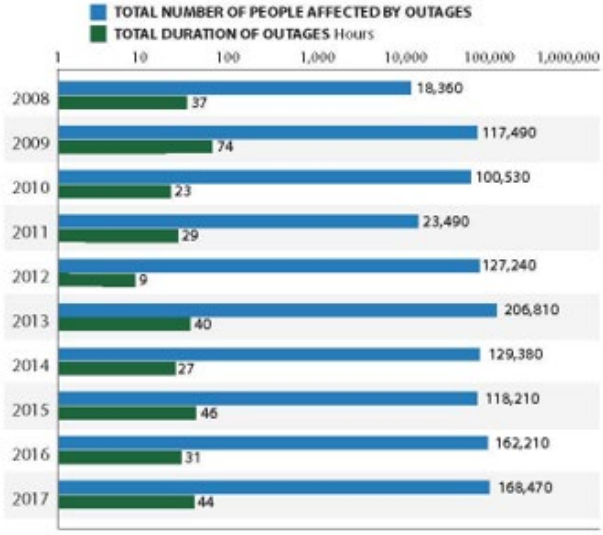
Data Source: EIA

Electric Utility-Reported Outages by Cause, 2008–2017



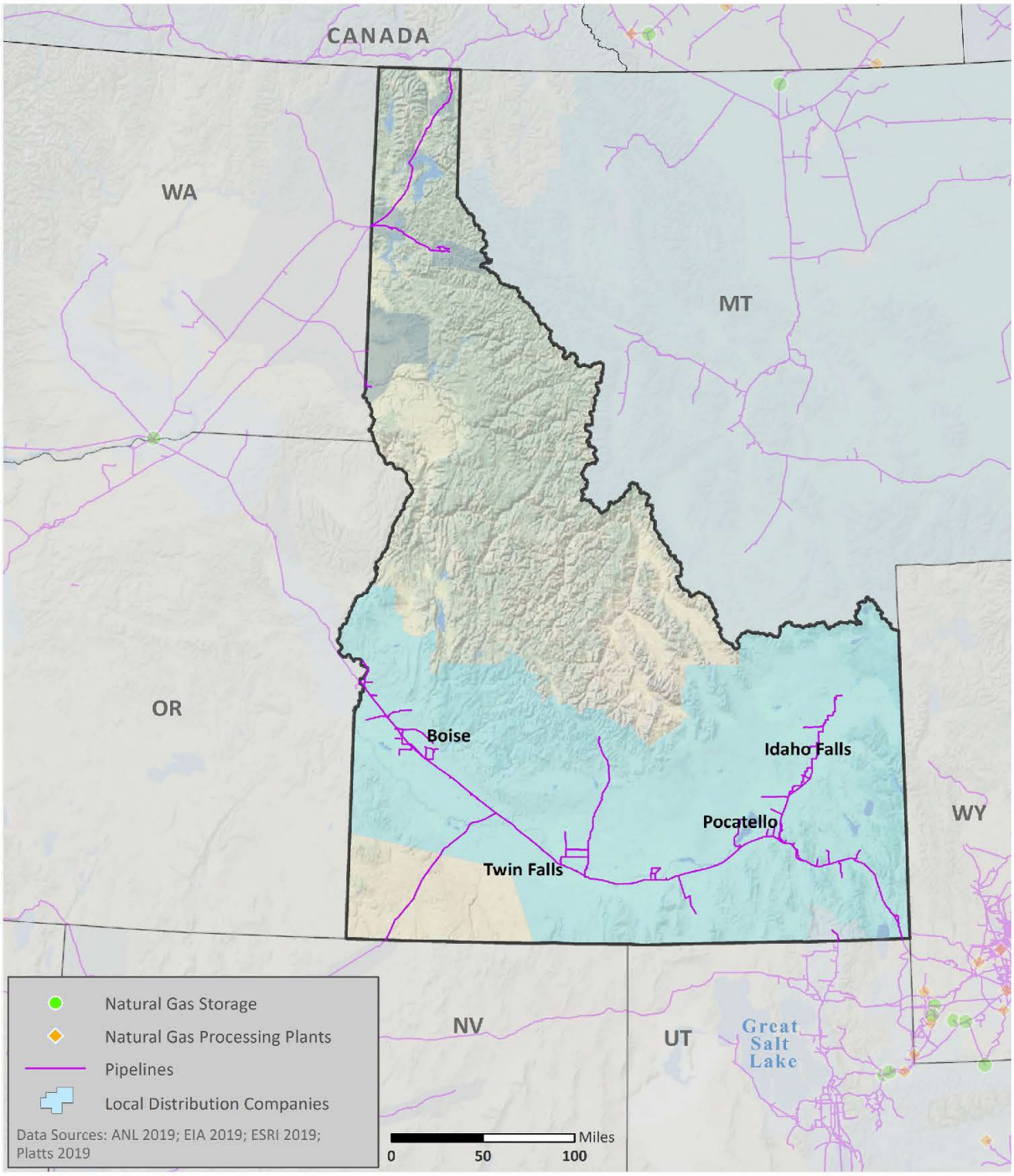
Data Source: Eaton

Electric Utility Outage Data, 2008–2017



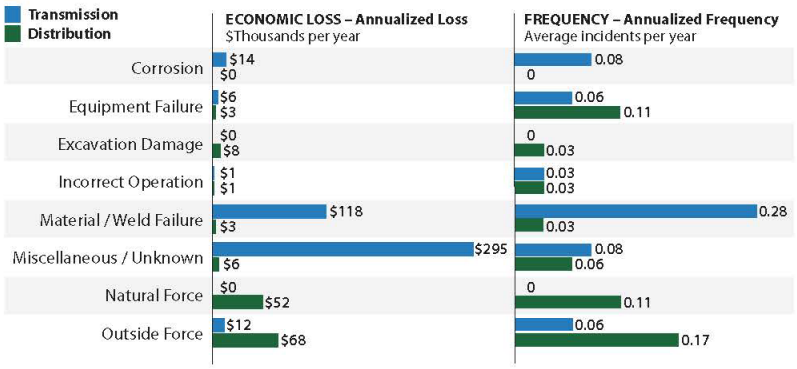
Note: This chart uses a logarithmic scale to display a very wide range of values.
Data Source: Eaton

NATURAL GAS


CANADA
WA
MT
OR
WY
NV
UT
Boise
Idaho Falls
Pocatello
Twin Falls
Great Salt Lake
Natural Gas Storage
Natural Gas Processing Plants
Pipelines
Local Distribution Companies
Data Sources: ANL 2019; EIA 2019; ESRI 2019; Platts 2019
0
50
100
Miles

Natural Gas Transport

Top Events Affecting Natural Gas Transmission and Distribution, 1984–2019



Data Source: DOT PHMSA

- As of 2018, Idaho had:
  - *1,480 miles of natural gas transmission pipelines*
  - *8,692 miles of natural gas distribution pipelines*
- 50% of Idaho's natural gas transmission system and 12% of the distribution system were constructed prior to 1970 or in an unknown year.
- Between 1984 and 2019, Idaho's natural gas supply was most impacted by:
  - ***Miscellaneous or Unknown*** *events when transported by transmission pipelines (5th leading cause nationwide at $16.77M per year)*
  - ***Outside Forces*** *when transported by distribution pipelines (leading cause nationwide at $76.59M per year)*

Natural Gas Processing and Liquefied Natural Gas

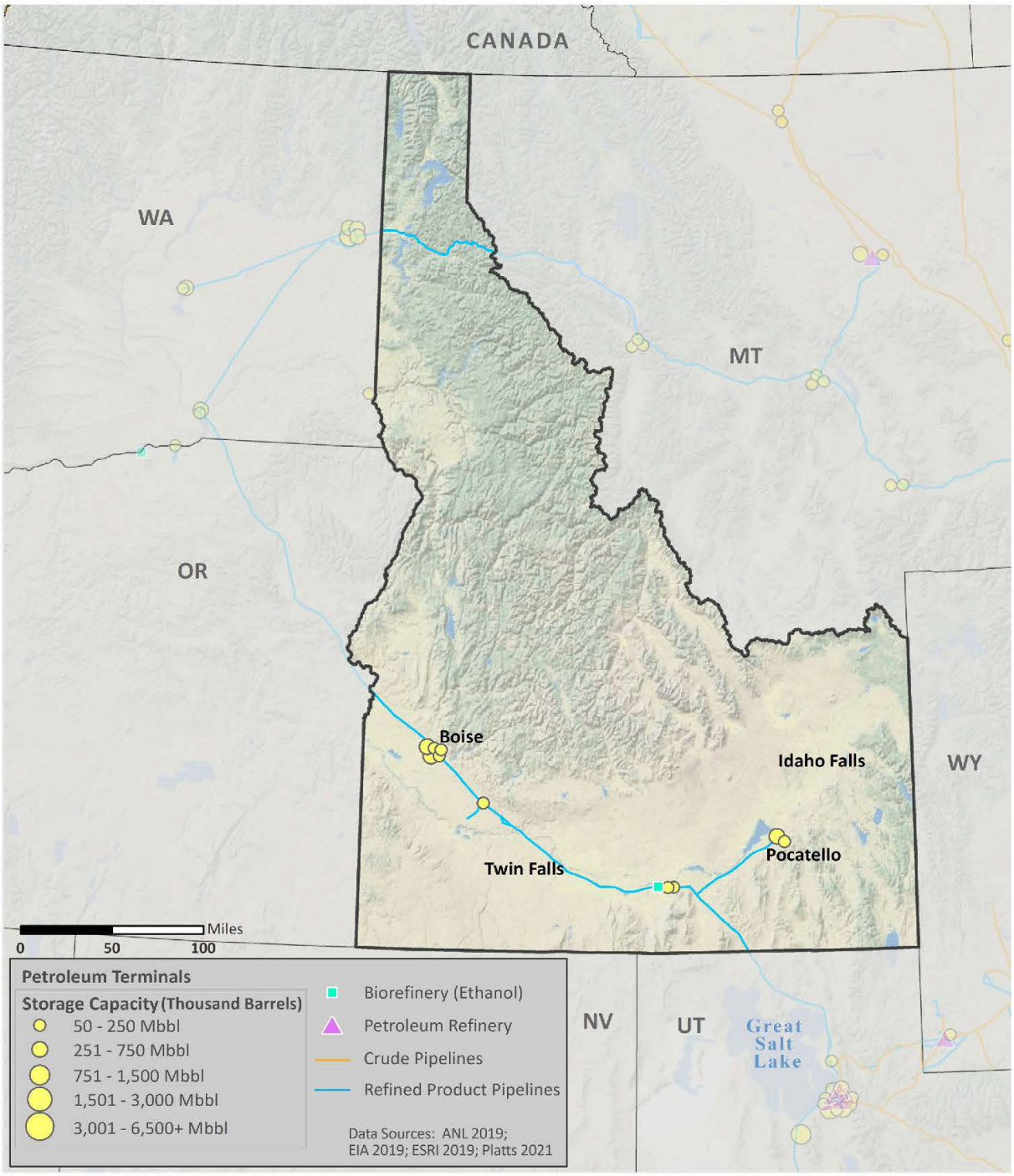
Natural Gas Customers and Consumption by Sector, 2018

	CUSTOMERS	CONSUMPTION
Residential	90%	26%
Commercial	9%	18%
Industrial	<1%	33%
Transportation	<1%	<1%
Electric Power	<1%	22%
Other	<1%	<1%

Data Source: EIA

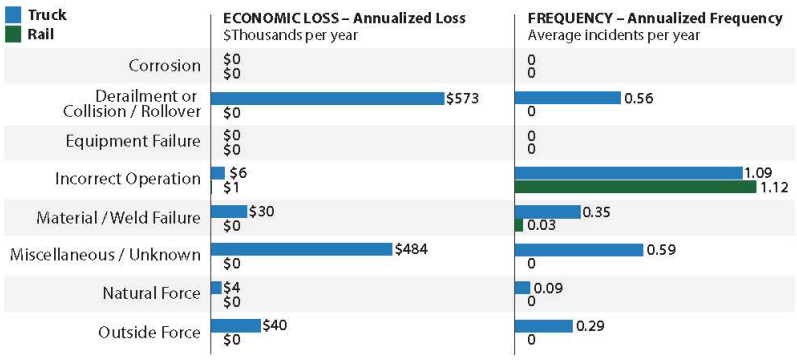
- Idaho has 0 natural gas processing facilities.
- Idaho has 2 liquefied natural gas (LNG) facilities with a total storage capacity of 176,666 barrels.

PETROLEUM


CANADA
WA
MT
OR
WY
NV
UT
Great Salt Lake
Boise
Idaho Falls
Pocatello
Twin Falls
Miles
0
50
100
Petroleum Terminals
Storage Capacity (Thousand Barrels)
50 - 250 Mbbl
251 - 750 Mbbl
751 - 1,500 Mbbl
1,501 - 3,000 Mbbl
3,001 - 6,500+ Mbbl
Biorefinery (Ethanol)
Petroleum Refinery
Crude Pipelines
Refined Product Pipelines
Data Sources: ANL 2019; EIA 2019; ESRI 2019; Platts 2021

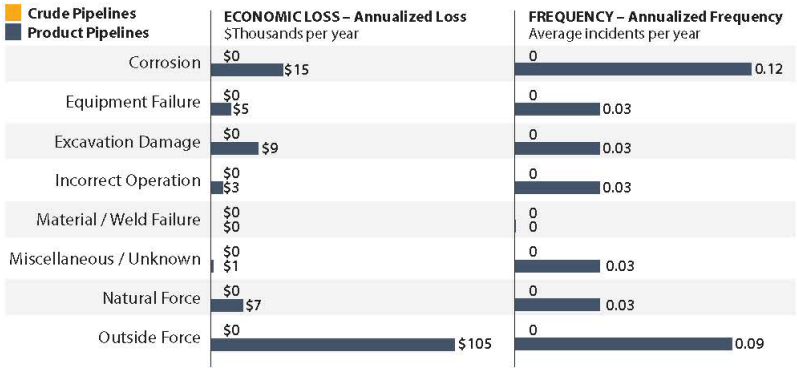
Petroleum Transport

Top Events Affecting Petroleum Transport by Truck and Rail, 1986–2019



Data Source: DOT PHMSA

Top Events Affecting Crude Oil and Refined Product Pipelines, 1986–2019



Data Source: DOT PHMSA

- As of 2018, Idaho had:
  - *11 miles of crude oil pipelines*
  - *648 miles of refined product pipelines*
  - *0 miles of biofuels pipelines*
- 94% of Idaho's petroleum pipeline systems were constructed prior to 1970 or in an unknown year.
- Between 1986 and 2019, Idaho's petroleum supply was most impacted by:
  - ***Derailments, Collisions, or Rollovers*** *when transported by truck (8th leading cause nationwide at $0.07M per year)*
  - ***Incorrect Operations*** *when transported by rail (4th leading cause nationwide at $2.02M per year)*
  - ***Outside Forces*** *when transported by product pipelines (leading cause nationwide at $19.06M per year)*
- Disruptions in other states may impact supply.

Petroleum Refineries

- There are no operating petroleum refineries in Idaho.

APPENDIX C: CRITICAL INFRASTRUCTURE

Energy is the basis of operation for much of the critical infrastructure. According to the US Cybersecurity and Infrastructure Security Agency (CISA), sixteen sectors are classified as critical infrastructure in the US.[103] Those sectors are listed below and many of them are present in Idaho.

1. Chemical Sector
    a. Basic chemicals
    b. Specialty chemicals
    c. Agricultural chemicals
    d. Pharmaceuticals
    e. Consumer Products
2. Commercial Facilities Sector
    a. Entertainment and Media
    b. Gaming
    c. Lodging
    d. Outdoor activities
    e. Public assembly
    f. Real estate
    g. Retail
    h. Sports leagues
3. Communications Sector
4. Critical Manufacturing Sector
    a. Primary metals manufacturing
    b. Machinery manufacturing
    c. Electrical equipment, appliance, and component manufacturing
    d. Transportation equipment manufacturing
5. Dams Sector
6. Defense Industrial Base Sector
7. Emergency Services Sector
    a. Law enforcement
    b. Fire and rescue services
    c. Emergency medical services
    d. Emergency management
    e. Public Works
8. Energy Sector
9. Financial Services Sector
10. Food and Agriculture Sector
11. Government Facilities Sector
12. Healthcare and Public Health Sector
13. Information Technology Sector
14. Nuclear Reactors, Materials, and Waste Sector
15. Transportation Systems Sector
    a. Aviation
    b. Highway and motor carrier
    c. Maritime transportation system
    d. Mass transit and passenger rail
    e. Pipeline systems
    f. Freight rail
    g. Postal and shipping
16. Water and Wastewater Systems Sector

[103] "Critical Infrastructure Sectors." US Cybersecurity and Infrastructure Security Agency, August 2023, https://www.cisa.gov/topics/critical-infrastructure-security-and-resilience/critical-infrastructure-sectors.

APPENDIX D: PUBLIC ENERGY EMERGENCY CONTACT LIST

REDACTED

APPENDIX E: IDAHO EMERGENCY OPERATIONS PLAN

The most recent version of the Idaho Emergency Operation Plan can be found on the Idaho Office of Emergency Management's website (www.ioem.idaho.gov) and the 2021 version is available via this link: http://ioem.idaho.gov/wp-content/uploads/2023/01/Idaho-Emergency-Operations-Plan.pdf. The following information provides an abridged overview of the 2021 Idaho Emergency Operation Plan, Emergency Support Function Annex #12: Energy (ID-ESF #12).

I. Purpose

The purpose of the ID-ESF #12 is to coordinate the restoration and protection of Idaho's critical electricity, natural gas, and transportation fuel infrastructure, and provide a systematic framework for managing energy emergencies and for preventing shortfalls from escalating to crisis situations whenever possible.

The ID-ESF #12 Coordinating and Primary Agencies work closely with Support Agencies, local government, private sector, other suppliers, and federal agencies to gather, assess, and share necessary information on energy system damage. The governmental agencies assigned to perform ID-ESF #12 work with utilities to evaluate the full impact and interdependencies of energy system outages in the State. Additionally, implementation of the ID-ESF #12 can assist utilities, State, and Local Governments if combined efforts are required to restore energy systems.

II. Scope

ID-ESF #12 addresses the response and recovery efforts dealing with significant disruptions in energy supplies for all hazardous emergencies. Specifically, it is applicable to transporting, generating, transmitting, conserving, building, and maintaining bulk systems for electricity, natural gas, and transportation fuels; is not applicable to emergency electricity (refer to ID-ESF #3); should be implemented upon notification of a potential for, or occurrence of, a major disaster or emergency that affects the critical infrastructure energy systems in Idaho.

The Idaho Public Utilities Commission (IPUC) is the designated ID-ESF #12 (Energy) Coordinating Agency. The Idaho Office of Energy and Mineral Resources (OEMR) is the State's ID-ESF #12 Primary Agency, and it supports the IPUC in performing ID-ESF #12. The IPUC and the OEMR will work closely with state and federal agencies, including Idaho Office of Emergency Management (IOEM) and the U.S. Department of Energy (DOE), in sharing energy emergency and shortage information and seeking technical support. The roles and responsibilities of Public Utilities and Other Suppliers of energy in Idaho are emphasized to provide information, conduct assessments, prioritize their response and restoration efforts, and conduct restoration efforts. The ID-ESF #12 Coordinator and Primary Agencies are required to receive timely and accurate information from all affected energy suppliers in Idaho if an energy emergency arises.

III. Concept of Operations

a. General
Energy-facility owners and operators are primarily responsible for restoring normal operations at their facilities. ID-ESF #12 Coordinating, Primary, and Support Agencies provide supplemental State assistance and resources to facilitate restoration in a timely manner. Key functions under ID-ESF #12 are as follows:

- The IPUC will serve as the Coordinating Agency within the State Government for receipt of information on actual or potential damage to energy supply and distribution systems, and on procedures for preparedness, prevention, recovery, and restoration

- The OEMR, as Primary Agency, will assist the IPUC in planning, executing, and reconciling the above-mentioned activities.
- The Support Agencies will provide the IPUC and OEMR with the specified capabilities or resources to support the mission.
- Public Utilities and Other Suppliers of energy in Idaho
  - shall be responsible for activating emergency response plans and appropriately allocating resources, personnel, equipment and services to maintain or restore energy service under their control.
  - will provide the IPUC and OEMR with the specified capabilities or resources to support the mission identified in Sections II and III.

b. Initial Actions for Coordinator, Primary, and Support Agencies

Communication and Coordination: Establish lines of communication and coordination with the Idaho Response Center (IRC) (formerly known as the Emergency Operations Center) and ID-ESF #12 actors listed above to mitigate the effects of the disaster and enhance recovery.

Damage Assessment: Assess the energy emergency to gather accurate and useful information, such as:

- The energy type resource involved/affected (i.e., electricity, natural gas, etc.)
- The type of energy emergency (i.e. outage, shortage)
- The energy system critical infrastructure involved/affected (i.e. pipeline, transmission line, energy facility, etc.)
- The geographic area involved/affected
- All possible interdependencies affected
- Business, industry, institutions, and/or government operations, and the public affected
- The magnitude of the damage or problem and estimated shortage/outage timeframe
- The estimated restoration timeframe, if possible.

This information can be utilized to establish situation awareness and to communicate the emergency response efforts as they develop with the Web Emergency Operations Center (WebEOC) and other appropriate resources.

Response Actions:

The Coordinating, Primary, and Support Agencies will work with applicable State and Local Emergency Management Officials and private industry response personnel to:

- Assist with the identification and coordination of temporary, alternate, or interim energy solutions/sources of natural gas, electricity, and transportation fuels
- Identify requirements and establish priorities to repair damaged energy systems
- Develop an objective-based action plan to respond and recover from the energy emergency
- Coordinate the implementation of proposed response actions with the IRC
- Coordinate the distribution, conservation, curtailment, and restoration of Idaho's energy resources as needed

Public Information:

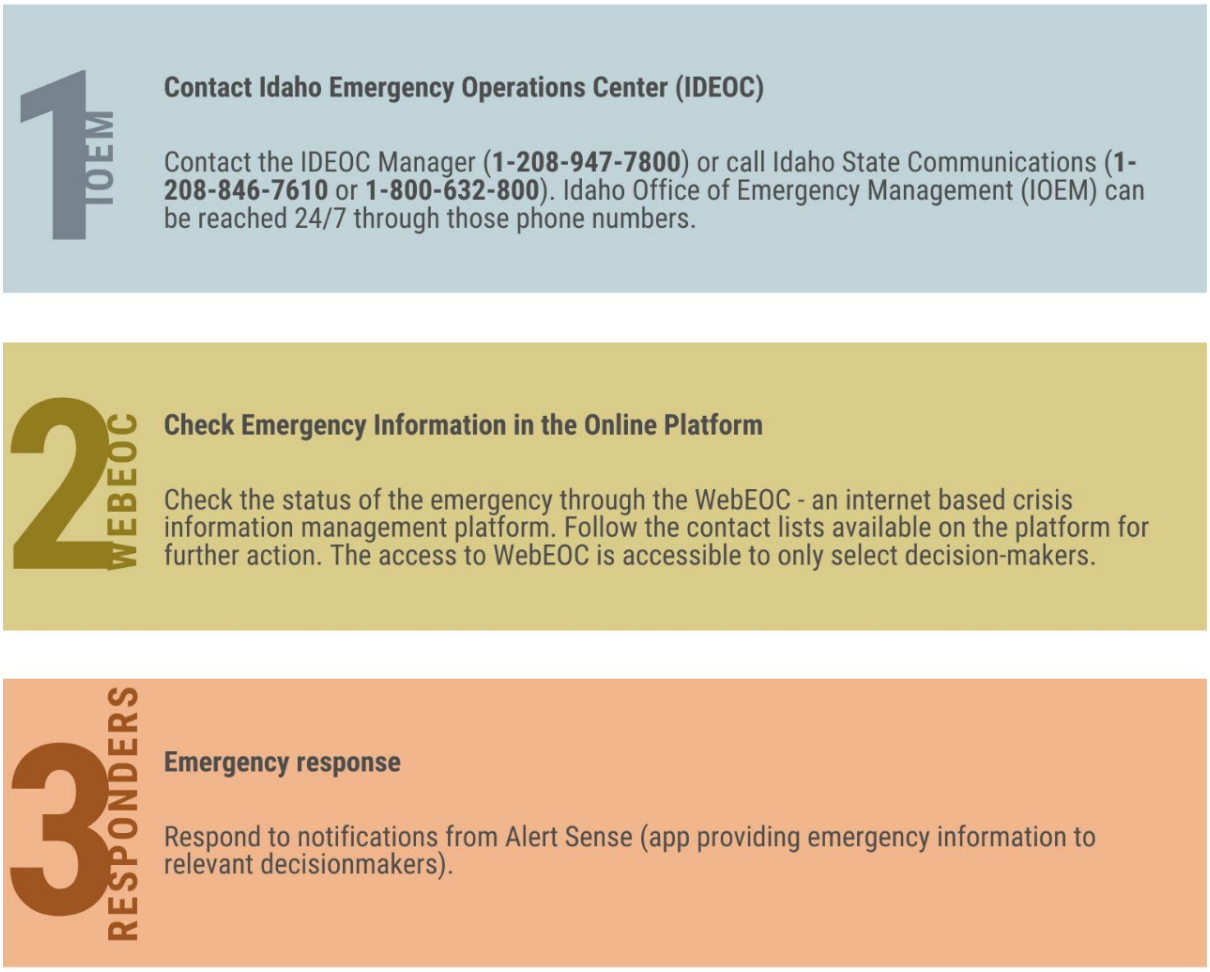
The Coordinating, Primary, and Support Agencies will work closely with ID-ESF #15 Public Information and External Affairs, to help ID-ESF #15 develop press releases or other public information and data relating to:

- Estimations on the impact of energy system outages within affected areas, estimated outage time, estimated restoration time
- What the public should do, including recommendations for meeting basic survival needs as related to the energy sector

APPENDIX F: STATE AGENCY RESOURCES

Emergency Contact Order

EMERGENCY CONTACT ORDER



First 48 Hour Response Checklist

Notification:

1. Use your Energy Security Plan and Idaho Emergency Operations Plan's notification list to ensure all the communication chain of command is aware and know you are involved.

2. Ensure your leadership is aware (especially if it comes from the media and not the IOEM) of the emergency and that they know you are involved.

3. Give leadership your first assessment of the emergency from a communication perspective and inform them of the next steps you are taking. Remember: Be first, be right, be credible.

Coordination:

1. Contact local, state, federal partners now. Contact other potential impacted states in the region through the EEAC points of contact to determine how they may have been affected and what actions they have taken.

2. If potential criminal investigation, contact FBI counterpart now.

3. Secure spokesperson as designated in the Idaho Emergency Operations Plan.

4. Initiate alert notification and call-in extra communication staff, per the IEOP.

5. Connect with the IOEM, make your presence known.

Media:

1. Be first: Provide a statement that your agency is aware of the emergency and is involved in the response. (Use the templates in the "Public Information" section)

2. Be credible: Give directions to media about when and where to get updates from your agency.

3. Be right: Start media monitoring for misinformation that must be corrected now.

Public:

1. Trigger your public information number operation now if you anticipate the public will be seeking reassurance or information directly from your organization. (You can adjust hours of operation and number of call managers as needed.)

2. Use your initial media statement as first message to the public.

3. Ensure your statement expresses empathy and acknowledges their concern about the uncertainty.

4. Give the pre-cleared facts you have and refer them to other information sites as appropriate.

5. Remind them that your agency has a process in place to mitigate the crisis.

6. Start public call monitoring to catch trends or rumors now.

Partner/Stakeholders:

1. Send basic statement to partners (same as media) to let them know you are thinking about them.

2. Use pre-arranged notification systems (preferably email listserv).

3. Engage leadership to make important first phone calls to partners and key stakeholders to let them know your agency is responding.

4. Use the internal communication system (email) to notify employees that their agency is involved in the response and that updates will follow. Ask for their support.

Emergency Contact List

REDACTED

Press Release Template

Table 1. Press Release Template (adopted from CDC energy)

FOR IMMEDIATE RELEASE

CONTACT: (name of contact)

PHONE: (number of contact)

Date of release: (date)

Headline—Insert your primary message to the public

Dateline (your location)—Two-three sentences describing current situation

_____

_____

Insert quote from an official spokesperson demonstrating leadership and concern for victims.

"_____

_____

_____"

Insert actions being taken.

_____

_____

_____

List actions that will be taken.

_____

_____

_____

List information on possible reactions of public and ways citizens can help.

_____

_____

_____

Insert quote from an official spokesperson providing reassurance.

_____

_____

_____

List contact information, ways to get more information, and other resources.

_____

_____

_____

_____

Table 2. Emergency Messaging Template (adopted from CDC energy)

First, consider the following:

Audience:	Purpose of Message:	Method of delivery:
❑ Relationship to event ❑ Demographics (age, language, education, culture) ❑ Level of outrage (based on risk principles)	❑ Give facts/update ❑ Rally to action ❑ Clarify event status ❑ Address rumors ❑ Satisfy media requests	❑ Print media release ❑ Web release ❑ Through spokesperson (TV or in-person appearance) ❑ Radio ❑ Other (e.g., recorded phone message)

Six Basic Emergency Message Components:

1. Expression of empathy:

_____

2. Clarifying facts/Call for Action:

Who_____

What_____

Where_____

When_____

Why_____

How_____

Add information on what residents should do or not do at this time _____

_____

3. What we do not know:

_____

4. Process to get answers:

_____

5. Statement of commitment:

_____

6. Referrals:

For more information _____

Next scheduled update _____

Finally, check your message for the following:

Positive action steps	Avoid jargon
Honest/open tone	Avoid judgmental phrases
Applied risk communication principles	Avoid humor
Test for clarity	Avoid extreme speculation
Use simple words, short sentences	

APPENDIX G: IDAHO EMERGENCY FUEL SHORTAGE PLAN

OEMR is actively updating the Idaho Emergency Fuel Shortage Plan (Plan) which was last published in 2008. The following information provides an abridged overview of the 2008 Idaho State Energy Assurance and Emergency Standard Operations Procedure Plan (Petroleum).

PURPOSE

The Plan is intended to lessen the potential adverse impacts of a petroleum shortage or emergency by providing the Governor with accurate and timely information for decision-making. As a basis for decision, it provides an overview of petroleum use in Idaho and possible risk scenarios. It also provides a documented process to coordinate the protection and restoration of Idaho's petroleum fuel supply levels that are critical to saving lives and protecting public health, safety and property. This plan specifically attempts to provide a process for logistical recovery from any petroleum incident that would precipitate a shortage of needed motor fuel and other petroleum resources.

The Plan relies upon a mixed strategy response to a petroleum shortage, using a free market approach with government intervention only to the extent necessary to protect the interests of public health, safety and welfare. Activation of the management and information system and the implementation of actions described most specifically under Section V., Petroleum Shortage and Emergency Response, occur only when a petroleum emergency directly or indirectly threatens the life safety and health of Idaho citizens or the natural environment or when a supply shortage substantially disrupts Idaho's economy and normal operation. Activities such as supply monitoring are ongoing, as emergencies may not only manifest as a single point disaster but through a disruption of critical services such as security, healthcare and food distribution.

The Plan seeks to provide a clear and simple process that will achieve results in a time frame appropriate to the level of shortage or emergency experienced. Actions under this plan need to be obvious and achievable through the efforts of agencies designated by the Idaho Governor's Office such as the Idaho Bureau of Homeland Security and the Office of Energy and Mineral Resources and through other government agencies or private market concerns as necessary.

The primary responsibility of the state government is to gather, assess, and share information on petroleum system damage and estimations of the impact of petroleum shortfalls within affected areas. Additionally, the Idaho Bureau of Homeland Security will work closely with local petroleum suppliers and deliverers to facilitate restoration and protection efforts. The emergency response activities addressing petroleum emergencies and shortfalls will be implemented to correspond with the level of severity. This plan provides a simple and systematic framework for actions to be taken should a petroleum shortage or emergency occur (see mitigation strategies page 22). The emergency response identifies implementation during each phase of an event.

The Plan also provides information and guidelines delineating protocols that can be viewed by interested parties, industry and executors, in an effort to understand the way in which the state will address a petroleum emergency. These protocols, listed below, are expanded under this plan in Section IV -Supply Monitoring and Shortage Avoidance and Section V -Petroleum Shortage and Emergency Response.

<u>Section IV</u>

- Monitoring Petroleum Supplies and Issues and Trends that Affect the Idaho Supply
- Preparation of Strategies for Possible Supply Shortage

<u>Section V</u>

- Petroleum Emergency Response
    - General approach to the emergency response
    - Actors, roles and responsibilities
    - Actions
- Petroleum Emergency Recovery

Idaho's use for petroleum is in the private and public sectors and includes transportation, agriculture, residential and commercial heating oil and some commercial/industrial processes as varied as mining and road building. Idaho does not utilize petroleum for electric generation.

December 2007 stocks of motor gasoline were 252 thousand barrels -a 0.04 percent share of U.S. stock. Distillate fuel oil stock (excluding pipelines) was 258 thousand barrels as of December 2007 -a 0.03 percent share of U.S. stock.

There are no petroleum refineries in Idaho and no crude stocks enter the state.

APPENDIX H: STATE OF IDAHO HAZARD MITIGATION PLAN

The most recent version of the State of Idaho Hazard Mitigation Plan can be found on the Idaho Office of Emergency Management's website (www.ioem.idaho.gov) or via this link: https://ioem.idaho.gov/preparedness-and-protection/mitigation/state-hazard-mitigation-Plan/. The following information provides excerpts of the 2018 State of Idaho Hazard Mitigation Plan, Executive Summary. This plan was updated in 2020 to include dam failure.

Executive Summary

In a time of growing challenges and fiscal constraint, we must advance mitigation planning that saves lives, reduces injuries, and decreases financial losses. This plan serves as the strategy document for Idaho's Hazard Mitigation Program. Idaho's State Hazard Mitigation Plan (SHMP) identifies the hazards affecting Idaho, analyzes risks and vulnerabilities, determines potential losses, and develops strategies to reduce impacts. Mitigation measures range from public education and land use planning to specific construction actions that reduces hazard losses. The SHMP is revised every five years in compliance with appropriate laws and regulations.

The 2018 revision to the 2013 SHMP improves scientific information on natural hazards and human-caused threats, incorporates the Idaho Multi-Hazard Risk Portfolio (IMHRP) into the State's risk assessment, updates disaster events, and summarizes vulnerability assessment information by county and Tribal Nation. Data sources include a State-building (owned and leased) spatial inventory for an in-depth review of State asset vulnerability to identified hazards, an updated and expanded critical facility spatial dataset, as well as U.S. Census block level aggregate building inventory and demographic data for loss estimation. The SHMP provides strategic direction to mitigate hazards, identifies potential funding resources, and guides decision makers in prioritizing assistance to local entities.

Hazard information from 47 Tribal and county all-hazard mitigation plans are integrated into the SHMP. With the support of various federal and state agencies, local officials, the State of Idaho, and the Federal Emergency Management Agency (FEMA), the SHMP is a resource to guide the State toward greater disaster resilience.

The strategic section of the SHMP includes the State of Idaho's hazard mitigation goals:

1. Save lives and reduce public exposure to risk from natural, technological, and human-caused hazard events.
2. Reduce or prevent damage to public and private property from natural, technological, and human-caused hazard events.
3. Enhance coordination between Federal, State, Tribal, regional, local agencies, and non-governmental organizations and consistency of hazard impact reduction policy.
4. Reduce the adverse economic and environmental impacts of natural, technological, and human-caused hazard events.
5. Enhance vulnerability and risk assessments through the development and collection and analysis of data.

The State evaluates potential losses and prioritizes mitigation actions based on the risk and vulnerability assessments. The SHMP analyzes risk by determining each hazard's vulnerability, impact, and to what degree they can be found in our environment. Updated techniques to understand potential damages,

loss, and impacts to assets and capabilities are used in the SHMP. The 2018 SHMP profiles 13 hazards and threats: flood (including dam/levee/canal failure), wildfire, earthquake, landslide, avalanche, drought, severe storm (including lightning, hail, and wind/tornado), volcanic eruption, cyber disruptions, pandemic, radiological, civil disturbances, and hazardous materials. While human-caused threats as described in the Idaho Threat and Hazard Identification and Risk Assessment (THIRA) are not required by FEMA to be included in state hazard mitigation plans, it is suggested and considered prudent to include all hazards. The SHMP and the county multi-jurisdictional all-hazard mitigation plans contribute to the THIRA risk assessments.

During the 2018 SHMP update, the three natural hazards which ranked highest are:

- Wildfire; Flood; Severe Storms

In the past five years, Idaho has declared nineteen State disasters resulting in six Federal declarations from floods and severe weather, and seven Fire Mitigation Assistance Grants (approved by the FEMA Regional Administrator) for wildfires. Recent disasters have damaged property, caused injuries and death, and interrupted business and government services. The toll on individuals, families, and businesses can be immense. The time, money, and effort to respond to and recover from these disasters divert shrinking public resources and attention from other important programs and issues.

Since 2013 significant mitigation actions have been completed in Idaho. Nearly $16.5 million in combined federal funding has been awarded for projects such as upgrading infrastructure to make it more resilient from flooding (bridge and culvert upsizing, storm water management systems), wildfire mitigation projects (fuels reduction, outreach, etc.), volunteer fire assistance, hazard warning systems, and seismic research and mapping. National studies indicate that investments in hazard mitigation will pay dividends in the future – for every dollar spent on a hazard mitigation activity, there are six dollars in losses avoided.

The Idaho Office of Emergency Management is dedicated to fostering a culture of preparedness centered on risk and resilience. The SHMP focuses on understanding the risks we face; collaboration to recognize the interdependent nature of the economy, health and social services, housing infrastructure, and natural and cultural resources; and empowering communities to take actions that put them in the best position to bounce back quickly and effectively when disasters occur. Resiliency covers the capabilities necessary to reduce the loss of life and property by lessening the impact of disasters. The 2018 mitigation strategy to achieve resilience includes the valuable role of local leadership, collaboration among various parts of the whole community, and education to ensure the capabilities continually develop.

APPENDIX I: WESTERN PETROLEUM SHORTAGE RESPONSE COLLABORATIVE (WPSRC) – COLLOBORATIVE REGIONAL FRAMEWORK AND COLLABORATIVE DEVELOPMENT GUIDE

The Western Petroleum Shortage Response Collaborative (WPSRC) initiative was formed and led through a partnership between DOE, the National Association of State Energy Officials (NASEO), the National Emergency Management Association (NEMA), and Hagerty Consulting. The WPSRC was created to facilitate the coordination and development of a regional catastrophic fuel response framework among a subset of western states' emergency management and energy offices. This initiative is a state-driven acknowledgment of the need to work together and share resources to best address state and regional petroleum shortage preparedness and response needs. Additionally, this effort satisfies the recommendations put forth by federal statutes (Energy Policy and Conservation Act, Section 363, 42 U.S.C. 6322(e)) that encourage regional coordination. WPSRC states include Alaska, Arizona, California, Colorado, Idaho, Montana, Nevada, Oregon, Utah, Washington, and Wyoming.

The purpose of the WPSRC Regional Framework is to codify guidance for coordinated response, prioritize response actions and measures, standardize information flows, and pre-identify tools and templates that may be necessary to respond to a petroleum shortage.

The following information provides an abridged overview of the WPSRC Collaborative Regional Framework. This material is based on work supported by the U.S. Department of Energy (DOE), Office of Cybersecurity, Energy Security, and Emergency Response (CESER) under Award Number DE-OE0000748.

Waiver of the Federal Motor Carrier Safety Administration (FMCSA) Safety Regulations

This program is automatically triggered for the majority of states under a declared state of emergency and typically does not require additional actions by states to implement. States may have additional legislation or rules that requires state-specific approvals. States should be familiar with the operating procedures and necessary approvals within their states. The program waives the Federal Motor Carrier Safety Administration safety rules which include limits on the number of hours a driver can operate. This allows drivers to make more fuel deliveries and allows fuel to be transported over longer distances to help alleviate the shortage.

Executive Order [insert number and year]

State of [Energy] Emergency [or Disaster]

Waiver of Select Regulations Covering Motor Carriers and Driver

Transporting [insert fuels covered by the order, e.g., gasoline, diesel fuel, propane, Number 2 home heating oil, etc.]

WHEREAS, [insert citation to legal authorities that give the governor the authority to take the actions contained in the order];

WHEREAS, [insert a brief description of the event(s) that have required this action]; and

WHEREAS, [insert a brief description of the consequences and impacts of the event(s)]; and

WHEREAS, it is in the best interests of the State of [insert name] to provide for the safe transportation of petroleum products within this State, and to assure that petroleum product supplies will remain sufficient to protect the health, safety, and economic well-being of the State's residents and visitors; and

WHEREAS, this declaration of emergency [disaster] is recognized by the Federal Motor Carrier Safety Administration (FMCSA) to cause and to place into immediate effect relief from Federal Motor Carrier Safety Regulations contained in 49 CFR Parts 390-399; and [if applicable, insert any corresponding or equivalent reference in state law].

WHEREAS, all of the safety regulations contained in 49 CFR Parts 390-399 are waived, including Driver Hours of Service; however, motor carriers are encouraged to comply with the safety regulations that do not otherwise restrict or impede their ability to assist in the recovery effort in the area for which an emergency has been declared.

NOW, THEREFORE, I, [insert governor's name], Governor of the State of [insert state name], by virtue of the power and authority vested in the Governor by [insert legal reference to authorities], order the following:

1) A State of [Energy] Emergency [Disaster] is declared in the State of [insert state name] for [insert the names of the counties in which this declaration applies or specify that it is a statewide declaration].

2) Relief from Federal Motor Carrier Safety Regulations contained in 49 CFR Parts 390-399; and [if applicable, insert any corresponding or equivalent reference in state law as may be needed].

3) This order applies only to [insert fuels to be covered by this order, e.g., gasoline, diesel fuel, Number 2 home heating oil, propane, biofuels, etc.]. No other petroleum products or other fuels are covered by the exemption and suspension under this Order.

4) The relief from these regulations shall remain in effect for the duration of the emergency or thirty (30) days, whichever is less. Only the FMCSA Field Administrator can extend the thirty (30) day limit for an extension of relief from the federal safety regulations.

5) Nothing in this Order shall be construed as an exemption from applicable controlled substances and alcohol use and testing requirements (49 CFR Part 382 and [insert applicable state statute, order, and/or rule]), the commercial driver's license requirements (49 CFR Part 383 and [insert applicable state statute, order, and/or rule]), the financial responsibility requirements (49 CFR Part 387 and [insert applicable state statute, order, and/or rule]), applicable size and weight requirements, or any portion of federal and State regulations not specifically identified.

6) Motor carriers or drivers currently subject to an out-of-service order are not eligible for the exemption and suspension until the out-of-service order expires or the conditions for rescission have been satisfied.

Governor: _____

Dated: _____ [Insert location]

File with [insert name of the state office, department, or legislative body with which the order may need to be filed].

Petroleum Priorities for Essential Services Programs

This priority end-user program would require petroleum suppliers to provide sufficient liquid fuels to meet the needs of critical end-users such as first responders: law enforcement, fire, and emergency medical services, and any other essential service providers determined by the state or other legal authorities. This program should only be used in more serious, longer-term shortages. Use of this program requires the state to identify critical end users for priority service.

Template: Executive Order Essential Services Program

Executive Order [insert number and year]

State of [Energy] Emergency [or Disaster]

Implementation of Priorities for Essential Services

WHEREAS, [insert citation to legal authorities that give the governor the authority to take the actions contained in the order];

WHEREAS, [insert a brief description of the event(s) that have required this action]; and

WHEREAS, [insert a brief description of the consequences and impacts of the event(s)]; and

WHEREAS, it is in the best interests of the State of [insert name] to provide priority to emergency responders for petroleum product supplies needed to protect the health, safety, and economic well-being of the state's residents and visitors.

NOW, THEREFORE, I [insert governor's name] Governor of the State of [insert state name], by virtue of the power and authority vested in the Governor by [cite statute] upon declaration of a state of emergency in the Executive Proclamation [insert number] under this act, I, [insert governor's name], Governor, hereby implement a Priority End-User Program, [statewide, in the state of, or to become effective in the counties of] as set forth below on [insert time, month, day, year].

Priority End Users

Petroleum suppliers shall supply 100 percent of the current fuel requirements to emergency responders (law enforcement, firefighting units, and emergency medical services) upon certification. This certification, to be submitted from a priority end-user to their supplier, shall contain:

1) Statement of the most recent 12 months of purchases in gallons.
2) Anticipated requirements for each of the next 12 months.
3) Written justification explaining the need for any volumes in excess of historical or contractual purchases.
4) A sworn statement by the responsible party that the information contained in the certification is true and accurate and that the petroleum product to be provided will only be used for priority use as indicated by the emergency responders.

Suppliers will have ten (10) workdays to begin supplying a priority account with the current requirements upon submission of the certificate of need.

I hereby designate the [insert state agency name], as the state office responsible for the administration of this program. As such, the [insert state agency name] shall provide for a mechanism that will allow for the resolution of any dispute arising out of the imposition of the Priority End-User Program.

Violation of Order

Any person who knowingly violates this directive is guilty of a [insert any penalties that may be provided by state law. For example, this might be "a misdemeanor punishable by a fine of not more than [insert number of dollars]. Each day a violation continues is a separate offense. The Attorney General or a Prosecuting Attorney of a county may bring an action in a court of competent jurisdiction to prevent a violation of this order or to compel a person to perform a duty imposed on the person under this Executive Order.

Duration of Order

This order shall remain in effect for [insert number of] days from its effective date unless amended, superseded, or rescinded by further Executive Order [or Proclamation]. It shall expire in [insert number of] days after the proclamation of a state of emergency unless extended as provided for in [insert reference to the statute under which this action is based. Alternatively, it could say until such time as supply conditions improve and the Plan is no longer needed and the governor issues an order rescinding the Plan.].

Governor: _____

Dated: _____ [Insert location]

File with [insert name of the state office, department, or legislative body with which the order may need to be filed].

Template: Priority End-Use Certificate Form

Department of: [Insert Name]

[Insert Agency Name]

[Insert Agency Address]

CERTIFICATE OF PRIORITY END-USE

Please Print or Type – Application Must Be Legible and Signed. Return To Above Address.

Part 1: Identification

1. Date of Request:	Month / Day / Year
2. EIN Number:	
3. Name of Company / Applicant Submitting Request: *(Last name first if individual)*	
4. Mailing Address of Company / Applicant: *(Street, City, State, Zip Code, County)*	
5. Name and Phone of Contact Person *(Including area code)*	
6. Name of Delivery Location	

(If different from 4)	

7. Applicant's Classification:

☐ a) Police Agency	☐ b) Fire Fighting Units	☐ c) Emergency Medical Services
☐ d) Other / Explain:		

Part II: Supplier / Supply Data

Supply Volumes for Requested Product: *(in Gallons)*				
Month:	Current Requirements:		Actual Purchases for the Last Twelve Months:	
	Year:	Purchases:	Year:	Volume:
1) JAN				
2) FEB				
3) MAR				
4) APR				
5) MAY				
6) JUN				
7) JUL				
8) AUG				
9) SEP				
10) OCT				
11) NOV				
12) DEC				
13) TOTAL	-		-	

Part III: Supply / Supply data storage capacity

8. Supplier Information *(Enter the information requested below for each current supplier for motor gasoline. List on the first line the principal immediate supplier. If more than three, use an additional sheet.)*				
a) Name and Mailing *(Street)* Address	b) City, State and Zip Code	c) Supplier's Name	d) % of Volume	e) Name and Phone Number of Contact Person *(including area code)*

9. Justification of Volumes Requested *(Describe in detail the reasons justifying the requested volumes as normal and reasonable for intended use, and provide reasons why the product is needed. Use additional sheets as needed.)*

Part IV: Certification (To be completed by all applicants)

I hereby certify that all information submitted as part of this application is true, accurate and complete to the best of my knowledge, that any quantity requested for priority use will be used only for that requested use, and that an amended application for a downward base period adjustment will be filed if the need for the volume assigned pursuant to this application declines.			
Name of Applicant or Company *(Official)*	Title of Applicant or Company *(Official)*	Signature	Date Signed *(Month Day Year)*

Template: Emergency Rule Procedure and Appeals Process

These rules take effect upon filing with the [insert name of the appropriate state agency should your state have a requirement for the filing of administrative rules].

By authority conferred on [insert state agency name], by the Governor upon the proclamation of an emergency and by Executive Order [insert number] on [insert month, day, year] under [insert full legal citation to the act and section of the act upon which this authority is based].

Finding of Emergency

By executive order the Governor has declared that a state of [energy] emergency exists. Under powers granted to the Governor during a declared state of energy emergency, Executive Order [insert number and year] was issued establishing a Priority End-User Program. In this order, the Governor designated [insert state agency name], as the agency responsible for the administration of this program. Further, it required a mechanism to resolve any disputes arising out of the use of this plan. The following rules are intended to outline an appeals procedure to provide this mechanism.

Delay in establishing rules of procedure to effectively carry out the duties delegated to the [insert state agency name] regarding the administration of the Priority End-User Program might well constitute a threat to the citizens of the state due to the lack of petroleum products. To avoid this threat and to assure that essential public needs are met [insert state agency name] finds the following rules are needed for the preservation of public health, safety, and welfare and that an emergency exists within the meaning of [insert the legal reference to the state law and executive order under which it is to be implemented].

Rule 1: Definitions

5) As used in these rules:

1. "Current requirements" means the supply of motor gasoline, distillate fuel oil and propane needed by an end-user or wholesale purchaser to meet its present priority end-use needs.
2. "Department" means the [insert state department name].
3. "Designated Supplier" (See Supplier below).
4. "Director" means the director of the [insert state agency name], or the designee thereof.
5. "Distillate Fuel Oil" means a general classification for one of the petroleum fractions produced in conventional distillation operations. It includes diesel fuels and fuel oils. Products known as Number 1, Number 2, and Number 4 diesel fuel are used in on-highway diesel engines, such as those in trucks and automobiles, as well as off-highway engines, such as those in railroad locomotives and agricultural machinery. Products known as Number 1, Number 2, and Number 4 fuel oils are used primarily for space heating and electric power generation.
6. "End-User" means any person who is an ultimate consumer of a petroleum product other than a wholesale purchaser-consumer.
7. "Motor Gasoline" means a complex mixture of relatively volatile hydrocarbons with or without small quantities of additives, blended to form a fuel suitable for use in spark-ignition engines. Motor gasoline, as defined in ASTM Specification D 4814 or Federal Specification

VV-G1690C, is characterized as having a boiling range of 122 to 158 degrees Fahrenheit at the 10-percent recovery point to 365 to 374 degrees Fahrenheit at the 90-percent recovery point. "Motor gasoline" includes conventional gasoline; all types of oxygenated gasoline, including gasohol; and reformulated gasoline; but excludes aviation gasoline.

8. "Person" means an individual, corporation, firm, government unit, organization, or any other establishment whatsoever.
9. "Propane, Consumer Grade" means a normally gaseous paraffinic compound (C3H8) that includes all products covered by Natural Gas Policy Act specifications for commercial use and HD-5 propane and ASTM Specification D 1835. It is a colorless paraffinic gas that boils at a temperature of -43.67 degrees Fahrenheit. It does not include the propane portion of any natural gas liquid mixes, e.g., butane-propane mix.
10. "Supplier" means a firm, or a part or subsidiary of a firm (not including the U.S. Department of Defense) that presently or during the last 12 months supplies, sells, transfers, or otherwise furnishes, such as by consignment, motor gasoline, distillate oil and propane to wholesale purchasers or end-users, including but not limited to refiners, importers, resellers, jobbers, or retailers.

Rule 2: Appeals – Petition; Stay Order; Response; Decision

6) person aggrieved by a certification of priority end-use may file a written petition of appeal to the [insert state name]. The petition shall include:

   1. Name and address of the petitioner.
   2. A concise statement of facts surrounding the case, including the reason for the appeal and relief sought.
   3. Names and addresses of persons known to petitioner who may be affected adversely by the outcome of the appeal. The petitioner shall attach a sworn statement to the petition that states that the information provided in the petition is true to the best of the petitioner's knowledge.

7) [Insert state agency name] shall, within three workdays after the filing of a petition, serve a copy of the petition on known persons who might be affected adversely by the outcome of the appeal. Persons served with a petition may, not later than five workdays from service of the petition, file a written reply, supported by a sworn statement to the effect that the information in the reply is true to the best of the respondent's knowledge. A copy of the response shall be made available to the petitioner.

8) Within 20 workdays after the petition of appeal is filed, the [insert state agency name] shall render a decision on the appeal and serve it upon all persons who participated in the appellate proceeding and any other person who is aggrieved by the decision and order. A person is deemed to have exhausted their administrative remedies once a decision has been rendered on the appeal.

License Plate Sequencing

Mandates that gasoline and/or diesel fuel will be dispensed to vehicle owners whose license plates end in an odd number only on odd numbered days of the month. Those with vehicle license plates that end in even numbers can purchase gasoline and/or diesel fuel only on even numbered days of the month. Personalized

license plates and those without numbers will be considered as "odd numbered." Governors may implement this program by issuing and publicizing an executive order outlining the stipulations of the program. Please note, this framework references this program as "License Plate Sequencing" to accommodate for the varying policies within the WPSRC states. The program may be referred to as the "Odd/Even Program" in other states and in the NASEO guidance.

Template: Executive Order

Executive Order [insert number and year]

State of [Energy] Emergency [or Disaster]

Implementation of Odd-Even Purchase Plan

WHEREAS, [insert citation to legal authorities that give the governor the authority to take the actions contained in the order];

WHEREAS, [insert a brief description of the event(s) that have required this action]; and

WHEREAS, [insert a brief description of the consequences and impacts of the event(s)]; and

WHEREAS, it is in the best interests of the State of [insert name] to provide priority to emergency responders for petroleum product supplies needed to protect the health, safety, and economic well-being of the state's residents and visitors.

NOW, THEREFORE, I [insert governor's name] Governor of the State of [insert state name], by virtue of the power and authority vested in the Governor by [cite statute] upon declaration of a state of emergency in the Executive Proclamation [insert number] under this act, I, [insert governor's name], Governor, hereby implement a Priority End-User Program, [statewide, in the state of, or to become effective in the counties of] as set forth below on [insert time, month, day, year].

Odd-Even Gasoline Purchase Requirements

If a state has other unique means used in license plate identification, the following should be adapted to be consistent with the plate numbering and lettering used in the state.

At the retail level, gasoline (and/or) diesel fuel shall be dispensed into vehicles with a license plate ending in an odd number (1, 3, 5, 7 and 9) only on odd numbered days of the month (first, third, fifth, seventh, and ninth). Personalized license plates and any other license plates without numbers shall be defined as odd. Examples of odd day license plates are: BBB 1333, KBC 475, and BERTHA.

1) At the retail level, gasoline (and/or) diesel fuel shall be dispensed into vehicles with a license plate ending in zero or an even number (0, 2, 4, 6 and 8) only on even numbered days of the month (second, fourth, sixth, eighth, and tenth (zero)). Examples of even day license plates are: BBB 020, RMP 768, and KBC 776.

2) If a vehicle license plate contains both letters and numbers and the last digit is a letter, the last or only number digit will determine whether sale of gasoline is eligible on an odd or even day. Examples of license plates containing letters as last digits are 123 FT (odd day), 764 NT (even day), and 468 GN (even day).

3) For any calendar month in which there are 31 days, and in February of a leap year, sales shall be made on the last day of the month without regard to the digits of the license plates.

Exemptions

Retailers must exempt the following types of motor vehicles from these regulations:

1) Police, fire, ambulance, or other emergency vehicles.
2) Buses, taxis, vanpools, or other commercial passenger carriers.
3) U.S. Postal Service vehicles.
4) Motorcycles or mopeds, and similar two-wheel vehicles.
5) Vehicles bearing out-of-state license plates.
6) Vehicles registered or operated by a person with a current valid driver's license from outside the area under the odd-even purchase plan.
7) Local, county, state, and federal government vehicles that provide essential services for the health, safety, and well-being of citizens.
8) Vehicles operating in an unusual emergency situation in the judgment of retailers.
9) Vehicles with license plates with handicap designation.

Violation of Order

Any person who knowingly violates this directive is guilty of [insert any penalties that may be provided by state law. For example, this might be something like a misdemeanor punishable by a fine of not more than [insert number of dollars].] Each day a violation continues is a separate offense. The Attorney General or a Prosecuting Attorney of a county may bring an action in a court of competent jurisdiction to prevent a violation of this order or to compel a person to perform a duty imposed on the person under this Executive Order.

Duration of Order

This order shall remain in effect for [insert number of] days from its effective date unless amended, superseded, or rescinded by further Executive Order. It shall expire [insert number of] days after the proclamation of a state of energy emergency unless extended as provided for in [insert reference to the statute under which this action is based. Alternatively, it could say until such time as supply conditions improve and the plan is no longer needed and the governor issues an order rescinding the plan.].

Governor: _____

Dated: _____ [Insert location]

File with [insert name of the state office, department, or legislative body with which the order may need to be filed].

Request Emergency Fuel from the Defense Logistics Agency

Under this measure, the Defense Logistics Agency (DLA) can leverage existing fuel transportation resources to reposition fuel stored at other US Department of Defense (DOD) installations in support of any US Northern Command disaster response. The DLA uses existing bulk fuel contracts to deliver and store energy products at National Guard locations and other designated refueling locations. The DLA can use this measure for fuel deliveries to resupply DOD or National Guard locations supported by existing DLA contracts. States including this measure as part of their petroleum contingency plans need to assess the petroleum supply situation in a disaster and determine fuels and quantities needed, delivery locations, and available storage capacities. This measure is usually only available when a federal disaster has been declared.

Request IRS Dyed Diesel Fuel Excise Tax Waiver

Under this measure, states can request that the Internal Revenue Service (IRS) temporarily waive the tax penalty for dyed diesel fuel to be sold for use on the highway, creating greater supply of useable fuel. Dyed diesel fuel is only for use in off-road vehicles or non-highway use, such as farm tractors, heavy construction equipment, home heating, and generators. The IRS imposes a highway excise tax of 24.4 cents per gallon on diesel fuel sold for on-road use; dyed diesel fuel used is not ordinarily subject to this tax. States can implement this waiver by coordinating with the IRS in the case of a major shortage. Additional information on the IRS Dyed Diesel Fuel Excise Tax Waiver can be found on CESER's Energy Waiver Library.

Waivers for State Weight Limits for Petroleum Tanker Trucks

Under a governor declared emergency declaration, weight limits for petroleum tanker trucks may be waived. Such measures would only apply on a state-by-state basis and should trucks have to go out of state for fuel supplies, they would be subject to weight limits in the states through which they would need to pass.

Public Information Programs

Provides the public with ways they can curtail their fuel use and requests for conservation. This could include issuing press releases, making information available on websites, outreach through social media, and public service announcements. These programs can be implemented using existing communications channels and resources in coordination with energy partners.

Establish Retail Gas Station Priorities for Essential Services

Prioritizes gas station supplies for essential services. In recent years, some state and local governments have become more reliant, or entirely reliant, on retail gas stations to meet their needs. Prioritizing gas station supplies for essential services may help ensure that essential public service needs can be met during a serious fuel shortage. In order to implement this measure, states must identify essential services to be prioritized and coordinate messaging related to prioritization. Please reference page 70 of the NASEO Guidance for States on Petroleum Shortage Response Planning for additional information on designating and establishing priorities for retail gas stations.

Appendix J: Summary of Laws and Regulations on Energy Security and Energy Emergency Planning

Executive

Idaho Code § 40-310 authorizes the Idaho Transportation Board (ITB) to regulate access to state highways and close or restrict use when it is deemed necessary for the protection of the public or to protect the highway from damage.

Idaho Code § 40-312 defines the powers and duties of the ITB. The Board may establish a statewide comprehensive plan for public transportation and prescribe regulations affecting state highways and turnpike projects and to enforce compliance.

Idaho Code § 40-505 defines the powers and duties of the Director of the Idaho Transportation Department. The Director is the technical and administrative officer of the ITB and has general supervision and control of all activities, functions, and employees of the department and shall enforce all provisions of laws relating to the department and regulations of the ITB.

Idaho Code § 40-1201 makes the ITB responsible for the control, operation, and maintenance of the portions of bridges within Idaho that adjoin another state.

Idaho Code § 46-1006 defines the powers and duties of the adjutant general at the IOEM. The adjutant general, in all disaster services, shall represent the governor, and on behalf of the governor, coordinate all activities of state agencies in disaster services.

Idaho Code § 46-1008 defines the Governor's powers and responsibilities during an emergency. The Governor may issue executive orders, proclamations with the force and effect of law. The governor may declare a disaster emergency if s/he finds a disaster has occurred or a disaster or threat of disaster is imminent.

Idaho Code § 46-1010 authorizes the Governor to make interstate emergency or disaster service compacts with any state if it is desirable to meet problems of emergency or disaster planning, prevention, response, or recovery. The Governor may, subject to the limitations of law, enter into intergovernmental arrangements with neighboring provinces of Canada for the purpose of exchanging disaster or emergency services.

Legislature

Idaho Code § 46-1008 allows the legislature, by concurrent resolution, to terminate a state of disaster at any time. If the legislature does terminate a disaster, the Governor shall issue an executive order ending the state of emergency.

Local Jurisdictions

Idaho Code § 46-1009 requires each county to maintain a disaster agency or participate in an intergovernmental disaster agency that has jurisdiction over the entire county to facilitate the cooperation and protection of the county in disaster prevention, preparedness, response, and recovery.

Idaho Code § 46-1011 provides the mayor or chairman of county commissioners, within their political subdivision, the sole authority to declare a local disaster emergency and such declaration will be promptly filed with the local county recorder. The purpose of the declaration of a local disaster emergency is to activate the response and recovery aspects of any local or intergovernmental disaster emergency plans and furnishing of aid and assistance.

Idaho Public Utility Commission

Idaho Code § 61-509 authorizes the Idaho PUC to direct railroad corporations to increase the number of trains, cars, or motive power or change timing of trains or cars, change the time schedule for their running, or change the stopping places it thinks reasonable to accommodate, transport traffic or freight transported or offered for transportation.

Idaho Code § 61-533 authorizes the Idaho PUC to declare an emergency, with or without notice, upon finding that an inadequacy or insufficiency of electric power and energy or natural or manufactured gas that threatens the health, safety, or welfare of citizens of Idaho.

Idaho Code § 61-534 authorizes the Idaho PUC, upon declaration of an emergency, to require suppliers of electrical power and energy or natural or manufactured gas to curtail service in accordance with PUC approved curtailment plans.

Idaho Code § 61-535 authorizes the Idaho PUC, upon declaration of an emergency, to order the curtailment of electric power and gas consumption by consumers as the PUC finds reasonable and necessary.

Idaho Administrative Procedures

IDAPA 11.13.01 incorporates federal regulations 49 CFR § 390.23 allowing a motor carrier or driver operating a commercial motor vehicle to apply for a waiver from regulations 49 CFR § 390 through 399 during an emergency.

Federal

49 USC § 108 defines the powers and duties of the administrator at the Pipeline and Hazardous Materials Safety Administration (PHMSA). The administrator shall carry out duties and powers to protect against the risks to life, property, and the environment that are inherent in the transportation of hazardous material in intrastate, interstate, and foreign commerce.

49 CFR § 390.23 affords any motor carrier or driver operating a commercial motor vehicle to provide emergency relief during an emergency an exemption from regulations in 49 CFR §§ 390 through 399, including but not limited to vehicle weight limits and hours-of-service of drivers. The exemption is only effective when a regional emergency has been declared by the President of the United States, the Governor of a State, or their authorized representative, a local emergency has been declared by a Federal, State, or local government official with the authority to declare an emergency, or the Federal Motor Carrier Safety Administration (FMCSA) has declared that an emergency exists that justifies an exemption.

49 CFR § 390.25 authorizes the FMCSA to extend the 30-day time period of an exemption for a regional emergency after approval from the Regional Director in the region.

6 USC § 313 defines the powers and duties of the administrator of the Federal Emergency Management Agency (FEMA). The administrator is responsible for working with State, local, and tribal governments, Federal agencies, emergency response providers, and nongovernmental organizations to build a national emergency management system to prepare for, protect against, respond to, recover from, and mitigate against the risk of natural disasters, acts of terrorism, and man-made disasters.

42 USC § 6326 contains the Energy Conservation and Policy Act (EPCA), as amended by the Infrastructure Investment and Jobs Act (IIJA) of 2021. This section of code outlines the statutory requirements for state energy security plans.

Appendix K: Updating the Idaho Energy Security Plan

Plan Maintenance Process

The oversight and maintenance of the Idaho Energy Security Plan (Plan) is the responsibility of the Idaho Governor's Office of Energy and Mineral Resources (OEMR). OEMR coordinates the plan review and update processes, including documenting changes to this plan, distributing this plan to key stakeholders, submitting the updated Plan for appropriate review, and storing a paper and electronic version of this plan for archival purposes. The Plan must meet all statutory requirements laid out in Section 366(c) of the Energy Policy and Conservation Act (EPCA), as amended by the Infrastructure Investment and Jobs Act (IIJA) of 2021, Section 40108.

Review and Evaluation Schedule

The Plan will be reviewed and revised on an annual basis to ensure the documented preparedness and response activities reflect current policies, roles, and responsibilities.

Evaluation and Revision Method

OEMR will complete an initial review of the Plan to identify potential updates or informational gaps. If an update is deemed necessary by OEMR, a lead coordinator from OEMR staff will be assigned primary responsibility to ensure the Plan review and update is conducted responsibly and completed on time. OEMR will administer a standing plan advisory group composed of pertinent stakeholders. This group will participate in the revision process, propose changes, and facilitate energy security information sharing. Upon fully addressing the six SEP Bipartisan Infrastructure Law elements required by Congress, OEMR will submit a Governor's certification in lieu of a Plan. The Plan will be posted publicly on OEMR's website and distributed to coordinating agencies. Any public-facing versions must redact any sensitive contact, critical infrastructure, and otherwise proprietary information.

2024 Update Process

The 2024 Idaho Energy Security Plan evaluation and revision process started an initial review by OEMR staff and a gap analysis against the DOE CESER feedback received in February 2023. Several meetings and workshops with the National Association of State Energy Offices, the Idaho Public Utilities Commission, the Idaho Office of Emergency Management, the state investor-owned utilities, and other key stakeholders provided critical perspectives and Plan updates. The Plan in entirety, with a summary of updates, was submitted to DOE CESER in September 2024.

The 2024 Edition of the Idaho Energy Security Plan updates and replaces in full the Idaho Energy Security Plan that was published in 2023 or any other preceding edition.

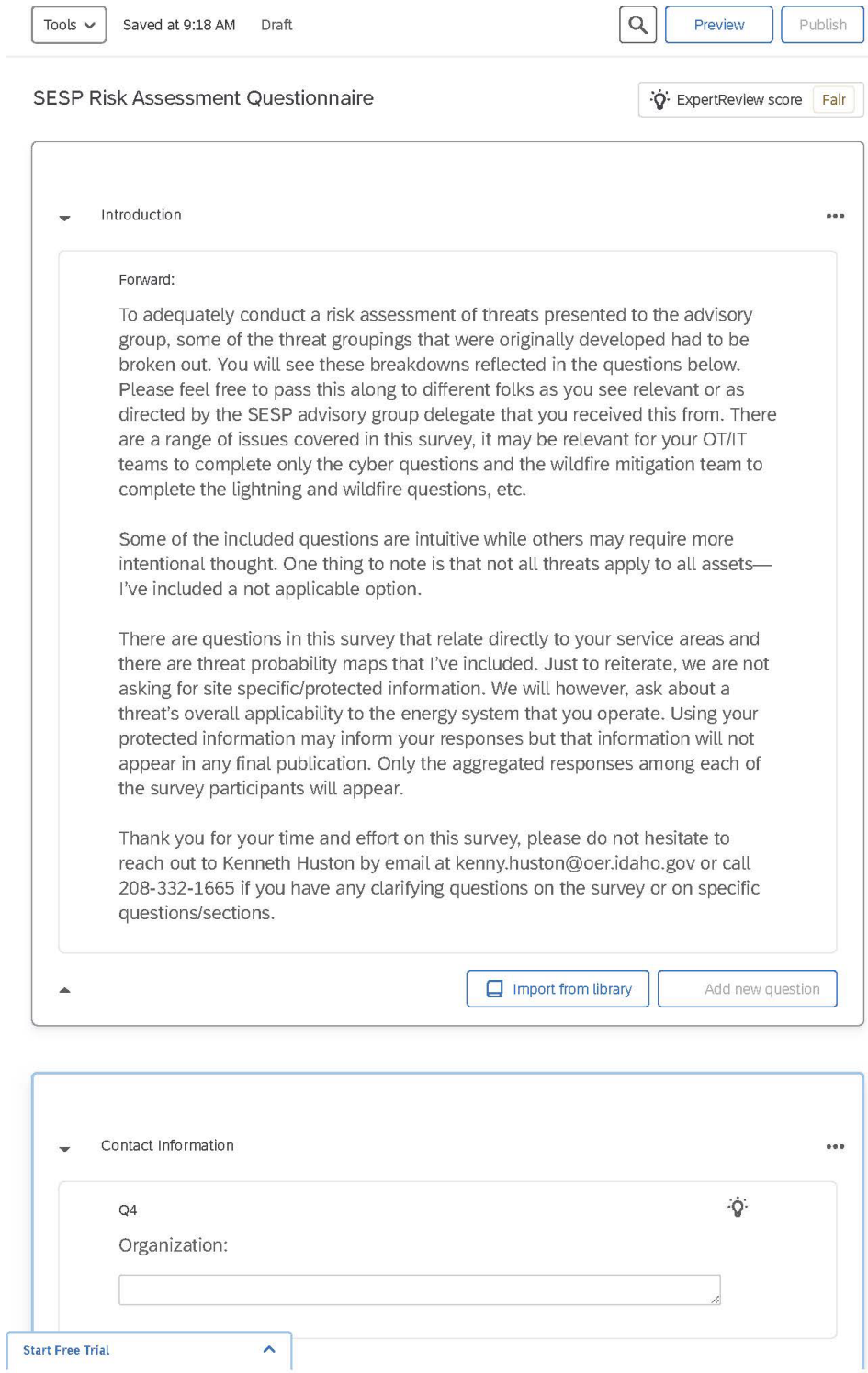
Appendix L: Summary of Major Updates to the 2024 Edition

The following summarizes the updates to the 2023 Idaho Energy Security Plan that were included in the 2024 Idaho Energy Security Plan.

- Conduction and of risk assessment for identified threats to critical infrastructure.
- Detailed methodology for risk assessment approach.
- Inclusion of key recommendations for future risk assessments and next steps for the Idaho Plan.
- Updates throughout Plan for consistency and update to glossary of terms.

Appendix M: Risk Assessment Survey

The survey content begins on the next page.


Tools
Saved at 9:18 AM
Draft
Preview
Publish
SESP Risk Assessment Questionnaire
ExpertReview score
Fair
Introduction
Forward:
To adequately conduct a risk assessment of threats presented to the advisory group, some of the threat groupings that were originally developed had to be broken out. You will see these breakdowns reflected in the questions below. Please feel free to pass this along to different folks as you see relevant or as directed by the SESP advisory group delegate that you received this from. There are a range of issues covered in this survey, it may be relevant for your OT/IT teams to complete only the cyber questions and the wildfire mitigation team to complete the lightning and wildfire questions, etc.
Some of the included questions are intuitive while others may require more intentional thought. One thing to note is that not all threats apply to all assets—I've included a not applicable option.
There are questions in this survey that relate directly to your service areas and there are threat probability maps that I've included. Just to reiterate, we are not asking for site specific/protected information. We will however, ask about a threat's overall applicability to the energy system that you operate. Using your protected information may inform your responses but that information will not appear in any final publication. Only the aggregated responses among each of the survey participants will appear.
Thank you for your time and effort on this survey, please do not hesitate to reach out to Kenneth Huston by email at kenny.huston@oer.idaho.gov or call 208-332-1665 if you have any clarifying questions on the survey or on specific questions/sections.
Import from library
Add new question
Contact Information
Q4
Organization:
Start Free Trial

Q5

Name:

Q6

Email:

Import from library Add new question

Exposure to Risks:

Q6

Of the following threats, which are your organization's energy system assets exposed to?

	Yes	No
Cyber Attack	○	○
Damaging Wind	○	○
Earthquakes (including liquefaction)	○	○
Extreme Heat	○	○
Flooding	○	○
Lightning	○	○
Physical Attacks	○	○
Wildfire	○	○
Winter Storm	○	○

Import from library Add new question

Cyber Attacks

Q7

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Cyber Attack - Yes Is Selected

What percentage of your organization's energy system assets have been affected by a cyber attack in the past five years? (Note: include attacks that have been thwarted by mitigation measures your organization implements)

- More than 50% of energy system assets have been affected by this threat in the past 5 years
- Between 20% and 49% of energy system assets have been affected by this threat in the past 5 years
- Between 1% and 19% of energy system assets have been affected by this threat in the past 5 years
- 0% of energy system assets have been affected by this threat in the past 5 years
- unknown

Q8

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Cyber Attack - Yes Is Selected

Provide your best estimate of the frequency your organization's energy system has historically been affected by cyber attacks over the past five years. (Note: include attacks that have been thwarted by mitigation measures your organization implements)

- Daily to monthly basis of recurrence
- Twice or three times per year
- Annual basis of recurrence
- Energy system has never been impacted by this threat
- unknown

Q10

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Cyber Attack - Yes Is Selected

Provide an estimate of the percentage of customers that experienced a disruption to service due to a cyber attack in the past five years.

- More than 20%
- Between 5% and 19%
- Less than 5%
- 0%
- unknown

Q11

Display this question

If Provide your best estimate of the frequency your organization's energy system has historically be... Daily to monthly basis of recurrence Is Selected

And Provide your best estimate of the frequency your organization's energy system has historically be... Twice or three times per year Is Selected

And Provide your best estimate of the frequency your organization's energy system has historically be... Annual basis of recurrence Is Selected

Of the cyber attacks you have experienced, about how much time did it take to restore service to customers?

- ○ Service was restored in months
- ○ Service was restored in weeks
- ○ Service was restored in hours to days

Q12

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Cyber Attack - Yes Is Selected

Please describe any cyber attacks your organization has experienced in the past five years, including a brief description of the type of attack and assets impacted. If your organization has not experienced a cyber attack, please indicate this.

Import from library Add new question

Earthquakes including liquefaction

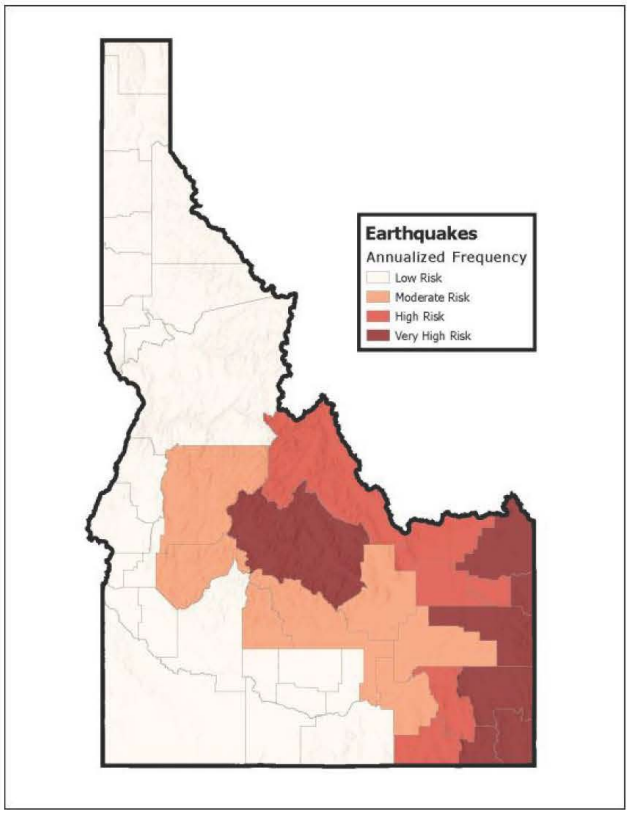
Start Free Trial

Q13

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Earthquakes (including liquefaction) - Yes Is Selected

Exposure: Earthquake (including liquefaction) hazard map



Q14

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Earthquakes (including liquefaction) - Yes Is Selected

The maps above delineate areas that are high risk for earthquakes and liquefaction across the State of Idaho. What percentage of your organization's energy system are located in these areas?

- ○ More than 50% of energy system assets are located in the hazardous zones delineated in the maps
- ○ Between 20% and 49% of energy system assets are located in the hazardous zones delineated in the maps
- ○ Between 1% and 19% of energy system assets are located in the hazardous zones delineated in the maps
- ○ 0% of energy system assets are located in the hazardous zones delineated in the maps
- ○ unknown

Q15

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Earthquakes (including liquefaction) - Yes Is Selected

Provide your best estimate of the frequency your energy system has historically been exposed to earthquakes and liquefaction.

- ○ Daily to monthly basis
- ○ Twice or three times per year
- ○ Annual basis
- ○ Energy system has never been impacted by this threat
- ○ unknown

Q18

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Earthquakes (including liquefaction) - Yes Is Selected

Sensitivity is defined as energy assets or system elements that could be affected by exposure to a certain hazard or threat due to their characteristics. This includes physical sensitivity (i.e., type of materials of an asset could be sensitive to a lightning strike) and technological sensitivity (i.e., type of software used by an asset could be sensitive to a cyber attack).

• Materials: if the asset or element material types are combustible, corrosive, fragile, inflexible, and/or non-durable, it makes them sensitive to specific hazards or threats (i.e., combustible is sensitive to wildfire, while fragile or inflexible elements are sensitive to shaking from seismic).

• Age: if the asset or element includes older components; was built prior to current building codes and/or knowledge of the hazard or threat risks; or it has exceeded its standard life cycle, it makes them sensitive to specific hazards or threats (i.e., storage tanks built 100 years ago before seismic risks were identified; or transmission lines are past their standard life cycle and due for replacement) .

• Elevation: if the asset or element has a specific elevation-driven sensitivity, it makes them sensitive to specific hazards or threats (i.e., located in flood plain and has not been elevated to reduce exposure) .

• Geographic Location: if the asset or element is located in an area that is vulnerable to specific hazards or threats (i.e., earthquake, floods, wildfire) .

• Weatherization/Hardening: if the asset or element has little or no weatherization or hardening put in place, it makes them sensitive to specific hazards or threats (i.e., no weatherization by coating pipes; lack of seismic retrofit or foundation improvements; no established defensible space for wildfire) . • Redundancies: if the asset or element is limited, damaged, or disrupted, it makes them sensitive to specific hazards or threats (i.e., only one transmission element in a specific region; no backup generator at a critical facility).

Q16

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Earthquakes (including liquefaction) - Yes Is Selected

Based on the type of asset and the characteristics defined above, does your organization consider at least one asset/facility to be at risk of failure as a result of earthquakes or liquefaction?

Characteristics: Materials, Age, Elevation, Geographic Location, Weatherization/Hardening, and Redundancies

	Yes	No	Does not apply
Production: (e.g. Dams, Power Plants, Wind Turbines, Solar Farms, Pipeline Receipt Points)	○	○	○
Transmission: (e.g. Transmission Supported Line, Substation, or equipment >36kV, High Pressure Transmission Pipelines, Compressor Stations, Market Hubs, Pipeline Receipt Points, Pipeline Delivery Points)	○	○	○
Storage: (e.g. Battery, Hydroelectric Reservoirs, Underground Storage Reservoirs/Facilities, Aboveground and Underground Storage Tanks)	○	○	○
End User Distribution Network: (e.g. Distribution lines, Substation, or equipment <36 kV, Distribution Centers, Peak Shaving Facilities, Local Distribution Pipelines, Natural Gas Mains, Natural Gas Service Lines)	○	○	○

Start Free Trial

Q18

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Earthquakes (including liquefaction) - Yes Is Selected

Potential impact, or consequence, is defined as the effects on an energy system and those who depend upon the system as a result of a hazard or threat (e.g., a windstorm knocks down power lines and damages transmission lines causing a power outage for 10,000 customers). Potential Impact is NOT the same as exposure.

Q19

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Earthquakes (including liquefaction) - Yes Is Selected

Provide your best estimate of the percentage of your customers that may experience a disruption to service due to an earthquake or liquefaction.

- ○ More than 20%
- ○ Between 5% and 19%
- ○ Less than 5%
- ○ Unknown

Q20

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Earthquakes (including liquefaction) - Yes Is Selected

Provide your best estimate of the time required to restore service after a disruption due to an earthquake or liquefaction.

- ○ Months
- ○ Weeks
- ○ Hours to Days

Import from library Add new question

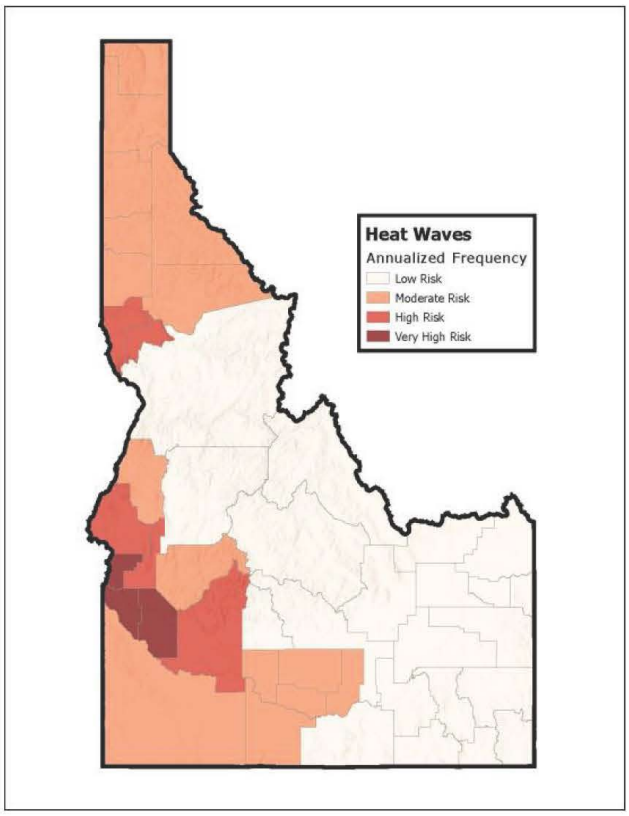
Extreme Heat

Q26

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Extreme Heat - Yes Is Selected

Exposure: Extreme Heat/ Heat Wave hazard map



Q27

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Extreme Heat - Yes Is Selected

The map above delineate areas that are high risk for extreme heat/heat wave across the State of Idaho. What percentage of your organization's energy system are located in these areas?

- ○ More than 50% of energy system assets are located in the hazardous zones delineated in the maps
- ○ Between 20% and 49% of energy system assets are located in the hazardous zones delineated in the maps
- ○ Between 1% and 19% of energy system assets are located in the hazardous zones delineated in the maps
- ○ 0% of energy system assets are located in the hazardous zones delineated in the maps
- ○ unknown

Q28

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Extreme Heat - Yes Is Selected

Provide your best estimate of the frequency your energy system has historically been exposed to extreme heat/heat wave

- ○ Daily to monthly basis
- ○ Twice or three times per year
- ○ Annual basis
- ○ Energy system has never been impacted by this threat
- ○ unknown

Q29

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Extreme Heat - Yes Is Selected

Sensitivity is defined as energy assets or system elements that could be affected by exposure to a certain hazard or threat due to their characteristics. This includes physical sensitivity (i.e., type of materials of an asset could be sensitive to a lightning strike) and technological sensitivity (i.e., type of software used by an asset could be sensitive to a cyber attack).

• Materials: if the asset or element material types are combustible, corrosive, fragile, inflexible, and/or non-durable, it makes them sensitive to specific hazards or threats (i.e., combustible is sensitive to wildfire, while fragile or inflexible elements are sensitive to shaking from seismic).

• Age: if the asset or element includes older components; was built prior to current building codes and/or knowledge of the hazard or threat risks; or it has exceeded its standard life cycle, it makes them sensitive to specific hazards or threats (i.e., storage tanks built 100 years ago before seismic risks were identified; or transmission lines are past their standard life cycle and due for replacement) .

• Elevation: if the asset or element has a specific elevation-driven sensitivity, it makes them sensitive to specific hazards or threats (i.e., located in flood plain and has not been elevated to reduce exposure) .

• Geographic Location: if the asset or element is located in an area that is vulnerable to specific hazards or threats (i.e., earthquake, floods, wildfire) .

• Weatherization/Hardening: if the asset or element has little or no weatherization or hardening put in place, it makes them sensitive to specific hazards or threats (i.e., no weatherization by coating pipes; lack of seismic retrofit or foundation improvements; no established defensible space for wildfire) . • Redundancies: if the asset or element is limited, damaged, or disrupted, it makes them sensitive to specific hazards or threats (i.e., only one transmission element in a specific region; no backup generator at a critical facility).

Q30

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Extreme Heat - Yes Is Selected

Based on the type of asset and the characteristics defined above, does your organization consider at least one asset/facility to be at risk of failure as a result of extreme heat?

Characteristics: Materials, Age, Elevation, Geographic Location, Weatherization/Hardening, and Redundancies

	Yes	No	Does not apply
Production: (e.g. Dams, Power Plants, Wind Turbines, Solar Farms, Pipeline Receipt Points)	○	○	○
Transmission: (e.g. Transmission Supported Line, Substation, or equipment >36kV, High Pressure Transmission Pipelines, Compressor Stations, Market Hubs, Pipeline Receipt Points, Pipeline Delivery Points)	○	○	○
Storage: (e.g. Battery, Hydroelectric Reservoirs, Underground Storage Reservoirs/Facilities, Aboveground and Underground Storage Tanks)	○	○	○
End User Distribution Network: (e.g. Distribution lines, Substation, or equipment <36 kV, Distribution Centers, Peak Shaving Facilities, Local Distribution Pipelines, Natural Gas Mains, Natural Gas Service Lines)	○	○	○

Q31

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Extreme Heat - Yes Is Selected

Potential impact, or consequence, is defined as the effects on an energy system and those who depend upon the system as a result of a hazard or threat (e.g., a windstorm knocks down power lines and damages transmission lines causing a power outage for 10,000 customers). Potential Impact is NOT the same as exposure.

Q32

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Extreme Heat - Yes Is Selected

Provide your best estimate of the percentage of your customers that may experience a disruption to service due to extreme heat/heat wave.

- ○ More than 20%
- ○ Between 5% and 19%
- ○ Less than 5%
- ○ Unknown

Q33

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Extreme Heat - Yes Is Selected

Provide your best estimate of the time required to restore service after a disruption due to extreme heat/heat wave.

- ○ Months
- ○ Weeks
- ○ Hours to Days

Import from library | Add new question

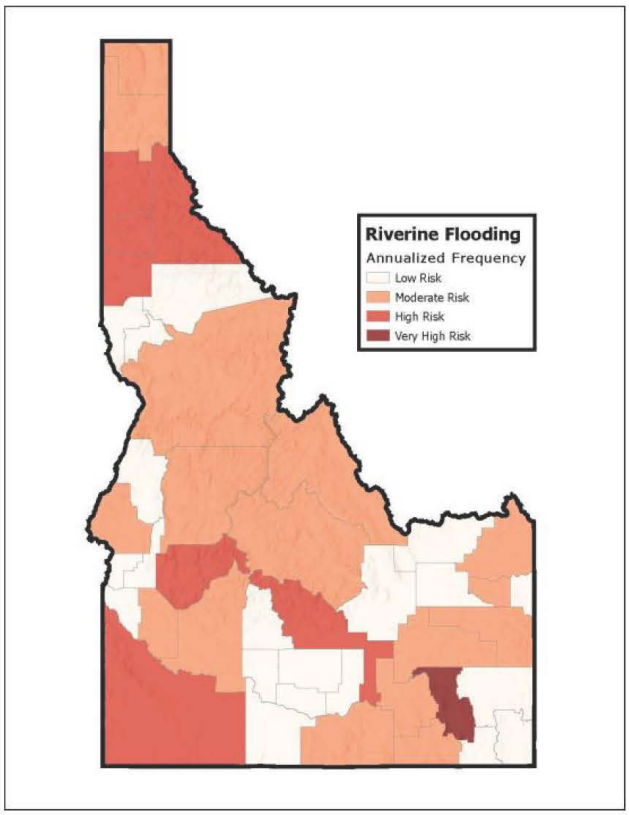
Flooding

Q50

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Flooding - Yes Is Selected

Exposure: Flood hazard map



Q51

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Flooding - Yes Is Selected

The map above delineate areas that are high risk for flooding across the State of Idaho. What percentage of your organization's energy system are located in these areas?

- ○ More than 50% of energy system assets are located in the hazardous zones delineated in the maps
- ○ Between 20% and 49% of energy system assets are located in the hazardous zones delineated in the maps
- ○ Between 1% and 19% of energy system assets are located in the hazardous zones delineated in the maps
- ○ 0% of energy system assets are located in the hazardous zones delineated in the maps
- ○ unknown

Q52

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Flooding - Yes Is Selected

Provide your best estimate of the frequency your energy system has historically been exposed to flooding.

- ○ Daily to monthly basis
- ○ Twice or three times per year
- ○ Annual basis
- ○ Energy system has never been impacted by this threat
- ○ unknown

Q53

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Flooding - Yes Is Selected

Sensitivity is defined as energy assets or system elements that could be affected by exposure to a certain hazard or threat due to their characteristics. This includes physical sensitivity (i.e., type of materials of an asset could be sensitive to a lightning strike) and technological sensitivity (i.e., type of software used by an asset could be sensitive to a cyber attack).

• Materials: if the asset or element material types are combustible, corrosive, fragile, inflexible, and/or non-durable, it makes them sensitive to specific hazards or threats (i.e., combustible is sensitive to wildfire, while fragile or inflexible elements are sensitive to shaking from seismic).

• Age: if the asset or element includes older components; was built prior to current building codes and/or knowledge of the hazard or threat risks; or it has exceeded its standard life cycle, it makes them sensitive to specific hazards or threats (i.e., storage tanks built 100 years ago before seismic risks were identified; or transmission lines are past their standard life cycle and due for replacement) .

• Elevation: if the asset or element has a specific elevation-driven sensitivity, it makes them sensitive to specific hazards or threats (i.e., located in flood plain and has not been elevated to reduce exposure) .

• Geographic Location: if the asset or element is located in an area that is vulnerable to specific hazards or threats (i.e., earthquake, floods, wildfire) .

• Weatherization/Hardening: if the asset or element has little or no weatherization or hardening put in place, it makes them sensitive to specific hazards or threats (i.e., no weatherization by coating pipes; lack of seismic retrofit or foundation improvements; no established defensible space for wildfire) . • Redundancies: if the asset or element is limited, damaged, or disrupted, it makes them sensitive to specific hazards or threats (i.e., only one transmission element in a specific region; no backup generator at a critical facility).

Q54

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Flooding - Yes Is Selected

Based on the type of asset and the characteristics defined above, does your organization consider at least one asset/facility to be at risk of failure as a result of flooding?

Characteristics: Materials, Age, Elevation, Geographic Location, Weatherization/Hardening, and Redundancies

	Yes	No	Does not apply
Production: (e.g. Dams, Power Plants, Wind Turbines, Solar Farms, Pipeline Receipt Points)	○	○	○
Transmission: (e.g. Transmission Supported Line, Substation, or equipment >36kV, High Pressure Transmission Pipelines, Compressor Stations, Market Hubs, Pipeline Receipt Points, Pipeline Delivery Points)	○	○	○
Storage: (e.g. Battery, Hydroelectric Reservoirs, Underground Storage Reservoirs/Facilities, Aboveground and Underground Storage Tanks)	○	○	○
End User Distribution Network: (e.g. Distribution lines, Substation, or equipment <36 kV, Distribution Centers, Peak Shaving Facilities, Local Distribution Pipelines, Natural Gas Mains, Natural Gas Service Lines)	○	○	○

Q55

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Flooding - Yes Is Selected

Potential impact, or consequence, is defined as the effects on an energy system and those who depend upon the system as a result of a hazard or threat (e.g., a windstorm knocks down power lines and damages transmission lines causing a power outage for 10,000 customers). Potential Impact is NOT the same as exposure.

Q56

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Flooding - Yes Is Selected

Provide your best estimate of the percentage of your customers that may experience a disruption to service due to flooding.

- More than 20%
- Between 5% and 19%
- Less than 5%
- Unknown

Q57

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Flooding - Yes Is Selected

Provide your best estimate of the time required to restore service after a disruption due to flooding.

- Months
- Weeks
- Hours to Days

Import from library | Add new question

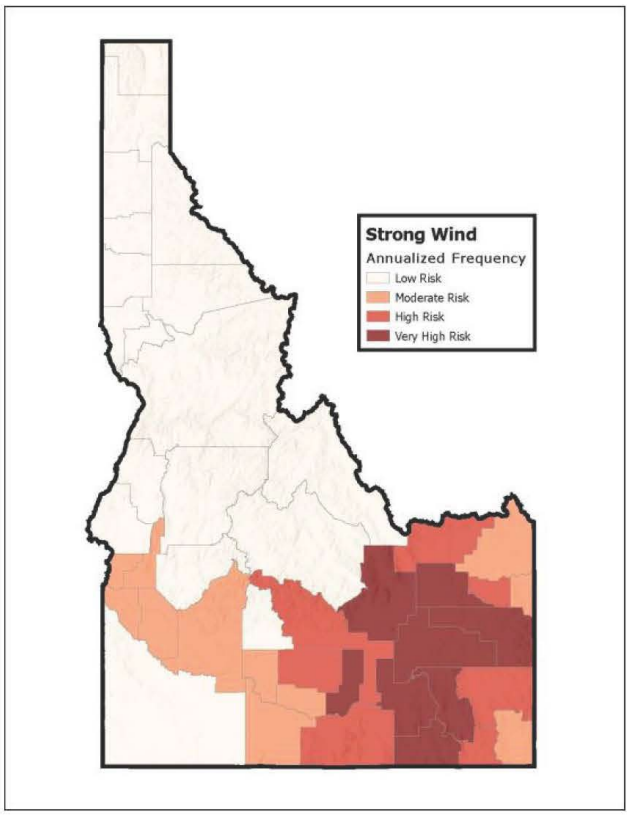
High Winds

Q34

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Damaging Wind - Yes Is Selected

Exposure: High Wind hazard map



Start Free Trial

Q35

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Damaging Wind - Yes Is Selected

The map above delineate areas that are high risk for high wind across the State of Idaho. What percentage of your organization's energy system are located in these areas?

- ○ More than 50% of energy system assets are located in the hazardous zones delineated in the maps
- ○ Between 20% and 49% of energy system assets are located in the hazardous zones delineated in the maps
- ○ Between 1% and 19% of energy system assets are located in the hazardous zones delineated in the maps
- ○ 0% of energy system assets are located in the hazardous zones delineated in the maps
- ○ unknown

Q36

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Damaging Wind - Yes Is Selected

Provide your best estimate of the frequency your energy system has historically been exposed to high wind

- ○ Daily to monthly basis
- ○ Twice or three times per year
- ○ Annual basis
- ○ Energy system has never been impacted by this threat
- ○ unknown

Q37

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Damaging Wind - Yes Is Selected

Sensitivity is defined as energy assets or system elements that could be affected by exposure to a certain hazard or threat due to their characteristics. This includes physical sensitivity (i.e., type of materials of an asset could be sensitive to a lightning strike) and technological sensitivity (i.e., type of software used by an asset could be sensitive to a cyber attack).

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• Age: if the asset or element includes older components; was built prior to current building codes and/or knowledge of the hazard or threat risks; or it has exceeded its standard life cycle, it makes them sensitive to specific hazards or threats (i.e., storage tanks built 100 years ago before seismic risks were identified; or transmission lines are past their standard life cycle and due for replacement) .

• Elevation: if the asset or element has a specific elevation-driven sensitivity, it makes them sensitive to specific hazards or threats (i.e., located in flood plain and has not been elevated to reduce exposure) .

• Geographic Location: if the asset or element is located in an area that is vulnerable to specific hazards or threats (i.e., earthquake, floods, wildfire) .

• Weatherization/Hardening: if the asset or element has little or no weatherization or hardening put in place, it makes them sensitive to specific hazards or threats (i.e., no weatherization by coating pipes; lack of seismic retrofit or foundation improvements; no established defensible space for wildfire) . • Redundancies: if the asset or element is limited, damaged, or disrupted, it makes them sensitive to specific hazards or threats (i.e., only one transmission element in a specific region; no backup generator at a critical facility).

Q38

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Damaging Wind - Yes Is Selected

Based on the type of asset and the characteristics defined above, does your organization consider at least one asset/facility to be at risk of failure as a result of high wind?

Characteristics: Materials, Age, Elevation, Geographic Location, Weatherization/Hardening, and Redundancies

	Yes	No	Does not apply
Production: (e.g. Dams, Power Plants, Wind Turbines, Solar Farms, Pipeline Receipt Points)	○	○	○
Transmission: (e.g. Transmission Supported Line, Substation, or equipment >36kV, High Pressure Transmission Pipelines, Compressor Stations, Market Hubs, Pipeline Receipt Points, Pipeline Delivery Points)	○	○	○
Storage: (e.g. Battery, Hydroelectric Reservoirs, Underground Storage Reservoirs/Facilities, Aboveground and Underground Storage Tanks)	○	○	○
End User Distribution Network: (e.g. Distribution lines, Substation, or equipment <36 kV, Distribution Centers, Peak Shaving Facilities, Local Distribution Pipelines, Natural Gas Mains, Natural Gas Service Lines)	○	○	○

Q39

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Damaging Wind - Yes Is Selected

Potential impact, or consequence, is defined as the effects on an energy system and those who depend upon the system as a result of a hazard or threat (e.g., a windstorm knocks down power lines and damages transmission lines causing a power outage for 10,000 customers). Potential Impact is NOT the same as exposure.

Q40

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Damaging Wind - Yes Is Selected

Provide your best estimate of the percentage of your customers that may experience a disruption to service due to high wind.

- ○ More than 20%
- ○ Between 5% and 19%
- ○ Less than 5%
- ○ Unknown

Q41

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Damaging Wind - Yes Is Selected

Provide your best estimate of the time required to restore service after a disruption due to high wind.

- ○ Months
- ○ Weeks
- ○ Hours to Days

Import from library | Add new question

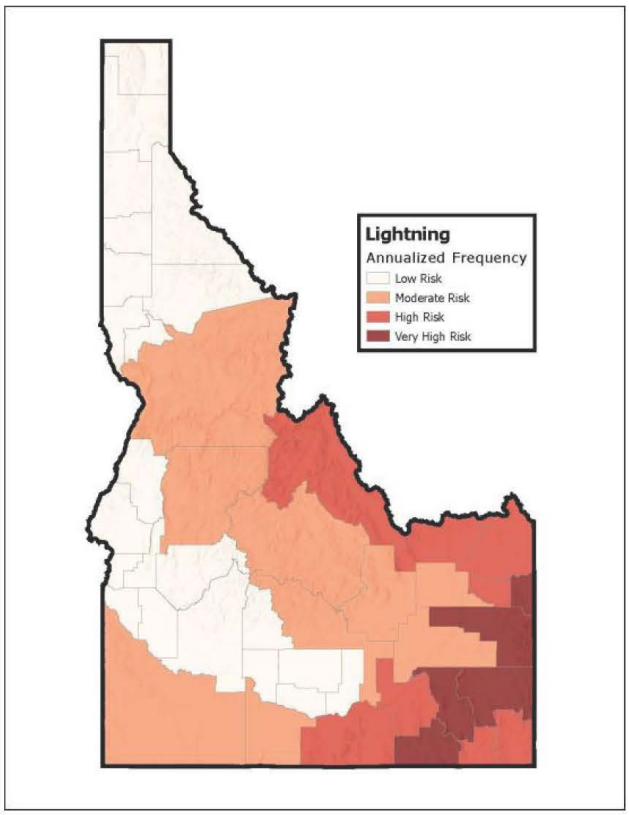
Lightning

Q58

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Lightning - Yes Is Selected

Exposure: Lightning hazard map



Start Free Trial

Q59

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Lightning - Yes Is Selected

The map above delineate areas that are high risk for lightning strikes across the State of Idaho. What percentage of your organization's energy system are located in these areas?

- ○ More than 50% of energy system assets are located in the hazardous zones delineated in the maps
- ○ Between 20% and 49% of energy system assets are located in the hazardous zones delineated in the maps
- ○ Between 1% and 19% of energy system assets are located in the hazardous zones delineated in the maps
- ○ 0% of energy system assets are located in the hazardous zones delineated in the maps
- ○ unknown

Q60

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Lightning - Yes Is Selected

Provide your best estimate of the frequency your energy system has historically been exposed to lightning strikes (Note: for the purpose of this question, exclude events where wildfire that was caused by a lightning strike impacted the system).

- ○ Daily to monthly basis
- ○ Twice or three times per year
- ○ Annual basis
- ○ Energy system has never been impacted by this threat
- ○ unknown

Q61

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Lightning - Yes Is Selected

Sensitivity is defined as energy assets or system elements that could be affected by exposure to a certain hazard or threat due to their characteristics. This includes physical sensitivity (i.e., type of materials of an asset could be sensitive to a lightning strike) and technological sensitivity (i.e., type of software used by an asset could be sensitive to a cyber attack).

• Materials: if the asset or element material types are combustible, corrosive, fragile, inflexible, and/or non-durable, it makes them sensitive to specific hazards or threats (i.e., combustible is sensitive to wildfire, while fragile or inflexible elements are sensitive to shaking from seismic).

• Age: if the asset or element includes older components; was built prior to current building codes and/or knowledge of the hazard or threat risks; or it has exceeded its standard life cycle, it makes them sensitive to specific hazards or threats (i.e., storage tanks built 100 years ago before seismic risks were identified; or transmission lines are past their standard life cycle and due for replacement) .

• Elevation: if the asset or element has a specific elevation-driven sensitivity, it makes them sensitive to specific hazards or threats (i.e., located in flood plain and has not been elevated to reduce exposure) .

• Geographic Location: if the asset or element is located in an area that is vulnerable to specific hazards or threats (i.e., earthquake, floods, wildfire) .

• Weatherization/Hardening: if the asset or element has little or no weatherization or hardening put in place, it makes them sensitive to specific hazards or threats (i.e., no weatherization by coating pipes; lack of seismic retrofit or foundation improvements; no established defensible space for wildfire) . • Redundancies: if the asset or element is limited, damaged, or disrupted, it makes them sensitive to specific hazards or threats (i.e., only one transmission element in a specific region; no backup generator at a critical facility).

Q62

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Lightning - Yes Is Selected

Based on the type of asset and the characteristics defined above, does your organization consider at least one asset/facility to be at risk of failure as a result of lightning strikes?

Characteristics: Materials, Age, Elevation, Geographic Location, Weatherization/Hardening, and Redundancies

	Yes	No	Does not apply
Production: (e.g. Dams, Power Plants, Wind Turbines, Solar Farms, Pipeline Receipt Points)	○	○	○
Transmission: (e.g. Transmission Supported Line, Substation, or equipment >36kV, High Pressure Transmission Pipelines, Compressor Stations, Market Hubs, Pipeline Receipt Points, Pipeline Delivery Points)	○	○	○
Storage: (e.g. Battery, Hydroelectric Reservoirs, Underground Storage Reservoirs/Facilities, Aboveground and Underground Storage Tanks)	○	○	○
End User Distribution Network: (e.g. Distribution lines, Substation, or equipment <36 kV, Distribution Centers, Peak Shaving Facilities, Local Distribution Pipelines, Natural Gas Mains, Natural Gas Service Lines)	○	○	○

Q63

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Lightning - Yes Is Selected

Potential impact, or consequence, is defined as the effects on an energy system and those who depend upon the system as a result of a hazard or threat (e.g., a windstorm knocks down power lines and damages transmission lines causing a power outage for 10,000 customers). Potential Impact is NOT the same as exposure.

Start Free Trial

Q64

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Lightning - Yes Is Selected

Provide your best estimate of the percentage of your customers that may experience a disruption to service due to lightning strikes (Note: for the purpose of this question, exclude events where a wildfire caused by a lightning strike impacts customer service).

- More than 20%
- Between 5% and 19%
- Less than 5%
- Unknown

Q65

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Lightning - Yes Is Selected

Provide your best estimate of the time required to restore service after a disruption due to a lightning strike (Note: for the purpose of this question, exclude events where a wildfire caused by a lightning strike impacts energy system assets).

- Months
- Weeks
- Hours to Days

Import from library Add new question

Physical Attacks

Q66

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Physical Attacks - Yes Is Selected

What percentage of your organization's energy system assets have been affected by a physical attack in the past five years? (Note: Include attempts that have been thwarted by mitigation measures your organization implements)

- ○ More than 50% of energy system assets have been affected by this threat in the past 5 years
- ○ Between 20% and 49% of energy system assets have been affected by this threat in the past 5 years
- ○ Between 1% and 19% of energy system assets have been affected by this threat in the past 5 years
- ○ 0% of energy system assets have been affected by this threat in the past 5 years
- ○ unknown

Q67

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Physical Attacks - Yes Is Selected

Provide your best estimate of the frequency your organization's energy system has historically been affected by physical attacks over the past five years. (Note: include attacks that have been thwarted by mitigation measures your organization implements)

- ○ Daily to monthly basis of recurrence
- ○ Twice or three times per year
- ○ Annual basis of recurrence
- ○ Energy system has never been impacted by this threat
- ○ unknown

Q68

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Physical Attacks - Yes Is Selected

Provide an estimate of the percentage of customers that experienced a disruption to service due to a physical attack in the past five years.

- ○ More than 20%
- ○ Between 5% and 19%
- ○ Less than 5%
- ○ 0%
- ○ unknown

Q69

Display this question

If Provide your best estimate of the frequency your organization's energy system has historically be... Daily to monthly basis of recurrence Is Selected

And Provide your best estimate of the frequency your organization's energy system has historically be... Twice or three times per year Is Selected

And Provide your best estimate of the frequency your organization's energy system has historically be... Annual basis of recurrence Is Selected

Of the physical attacks you have experienced, about how much time did it take to restore service to customers?

- ○ Service was restored in months
- ○ Service was restored in weeks
- ○ Service was restored in hours to days

Q70

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Physical Attacks - Yes Is Selected

Please describe any physical attacks your organization has experienced in the past five years, including a brief description of the type of attack and assets impacted. If your organization has not experienced a cyber attack, please indicate this.

Import from library Add new question

Wildfire

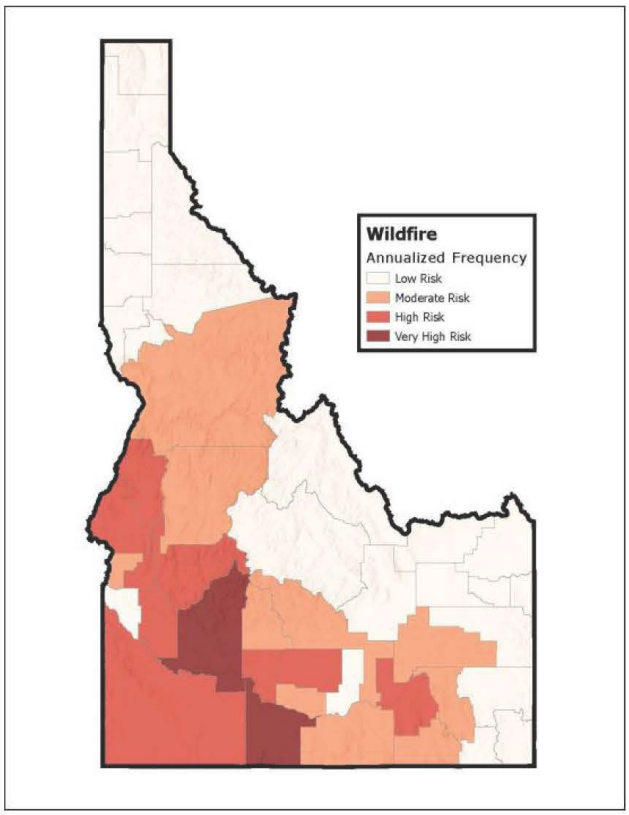
Start Free Trial

Q71

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Wildfire - Yes Is Selected

Exposure: Wildfire hazard map



Q72

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Wildfire - Yes Is Selected

The map above delineate areas that are high risk for wildfire across the State of Idaho. What percentage of your organization's energy system are located in these areas?

- ○ More than 50% of energy system assets are located in the hazardous zones delineated in the maps
- ○ Between 20% and 49% of energy system assets are located in the hazardous zones delineated in the maps
- ○ Between 1% and 19% of energy system assets are located in the hazardous zones delineated in the maps
- ○ 0% of energy system assets are located in the hazardous zones delineated in the maps
- ○ unknown

Q73

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Wildfire - Yes Is Selected

Provide your best estimate of the frequency your energy system has historically been exposed to wildfire.

- ○ Daily to monthly basis
- ○ Twice or three times per year
- ○ Annual basis
- ○ Energy system has never been impacted by this threat
- ○ unknown

Q74

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Wildfire - Yes Is Selected

Sensitivity is defined as energy assets or system elements that could be affected by exposure to a certain hazard or threat due to their characteristics. This includes physical sensitivity (i.e., type of materials of an asset could be sensitive to a lightning strike) and technological sensitivity (i.e., type of software used by an asset could be sensitive to a cyber attack).

• Materials: if the asset or element material types are combustible, corrosive, fragile, inflexible, and/or non-durable, it makes them sensitive to specific hazards or threats (i.e., combustible is sensitive to wildfire, while fragile or inflexible elements are sensitive to shaking from seismic).

• Age: if the asset or element includes older components; was built prior to current building codes and/or knowledge of the hazard or threat risks; or it has exceeded its standard life cycle, it makes them sensitive to specific hazards or threats (i.e., storage tanks built 100 years ago before seismic risks were identified; or transmission lines are past their standard life cycle and due for replacement) .

• Elevation: if the asset or element has a specific elevation-driven sensitivity, it makes them sensitive to specific hazards or threats (i.e., located in flood plain and has not been elevated to reduce exposure) .

• Geographic Location: if the asset or element is located in an area that is vulnerable to specific hazards or threats (i.e., earthquake, floods, wildfire) .

• Weatherization/Hardening: if the asset or element has little or no weatherization or hardening put in place, it makes them sensitive to specific hazards or threats (i.e., no weatherization by coating pipes; lack of seismic retrofit or foundation improvements; no established defensible space for wildfire) . • Redundancies: if the asset or element is limited, damaged, or disrupted, it makes them sensitive to specific hazards or threats (i.e., only one transmission element in a specific region; no backup generator at a critical facility).

Q75

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Wildfire - Yes Is Selected

Based on the type of asset and the characteristics defined above, does your organization consider at least one asset/facility to be at risk of failure as a result of wildfire?

Characteristics: Materials, Age, Elevation, Geographic Location, Weatherization/Hardening, and Redundancies

	Yes	No	Does not apply
Production: (e.g. Dams, Power Plants, Wind Turbines, Solar Farms, Pipeline Receipt Points)	○	○	○
Transmission: (e.g. Transmission Supported Line, Substation, or equipment >36kV, High Pressure Transmission Pipelines, Compressor Stations, Market Hubs, Pipeline Receipt Points, Pipeline Delivery Points)	○	○	○
Storage: (e.g. Battery, Hydroelectric Reservoirs, Underground Storage Reservoirs/Facilities, Aboveground and Underground Storage Tanks)	○	○	○
End User Distribution Network: (e.g. Distribution lines, Substation, or equipment <36 kV, Distribution Centers, Peak Shaving Facilities, Local Distribution Pipelines, Natural Gas Mains, Natural Gas Service Lines)	○	○	○

Q76

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Wildfire - Yes Is Selected

Potential impact, or consequence, is defined as the effects on an energy system and those who depend upon the system as a result of a hazard or threat (e.g., a windstorm knocks down power lines and damages transmission lines causing a power outage for 10,000 customers). Potential Impact is NOT the same as exposure.

Q77

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Wildfire - Yes Is Selected

Provide your best estimate of the percentage of your customers that may experience a disruption to service due to wildfire.

- More than 20%
- Between 5% and 19%
- Less than 5%
- Unknown

Q78

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Wildfire - Yes Is Selected

Provide your best estimate of the time required to restore service after a disruption due to wildfire.

- Months
- Weeks
- Hours to Days

Import from library | Add new question

Winter Storms

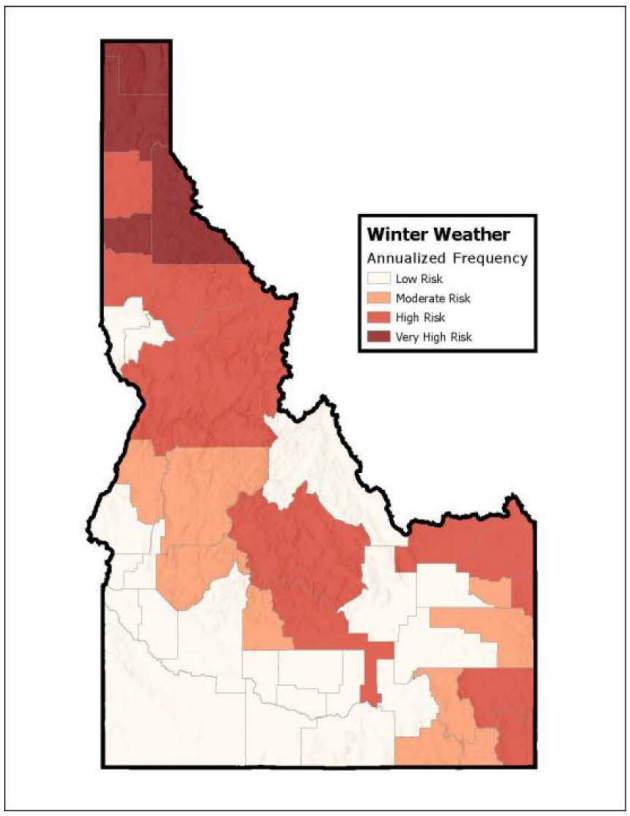
Start Free Trial

Q42

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Winter Storm - Yes Is Selected

Exposure: Winter Storm hazard map



Q43

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Winter Storm - Yes Is Selected

The map above delineate areas that are high risk for winter storms wave across the State of Idaho. What percentage of your organization's energy system are located in these areas?

- ○ More than 50% of energy system assets are located in the hazardous zones delineated in the maps
- ○ Between 20% and 49% of energy system assets are located in the hazardous zones delineated in the maps
- ○ Between 1% and 19% of energy system assets are located in the hazardous zones delineated in the maps
- ○ 0% of energy system assets are located in the hazardous zones delineated in the maps
- ○ unknown

Q44

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Winter Storm - Yes Is Selected

Provide your best estimate of the frequency your energy system has historically been exposed to winter storms.

- ○ Daily to monthly basis
- ○ Twice or three times per year
- ○ Annual basis
- ○ Energy system has never been impacted by this threat
- ○ unknown

Q45

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Winter Storm - Yes Is Selected

Sensitivity is defined as energy assets or system elements that could be affected by exposure to a certain hazard or threat due to their characteristics. This includes physical sensitivity (i.e., type of materials of an asset could be sensitive to a lightning strike) and technological sensitivity (i.e., type of software used by an asset could be sensitive to a cyber attack).

• Materials: if the asset or element material types are combustible, corrosive, fragile, inflexible, and/or non-durable, it makes them sensitive to specific hazards or threats (i.e., combustible is sensitive to wildfire, while fragile or inflexible elements are sensitive to shaking from seismic).

• Age: if the asset or element includes older components; was built prior to current building codes and/or knowledge of the hazard or threat risks; or it has exceeded its standard life cycle, it makes them sensitive to specific hazards or threats (i.e., storage tanks built 100 years ago before seismic risks were identified; or transmission lines are past their standard life cycle and due for replacement) .

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• Geographic Location: if the asset or element is located in an area that is vulnerable to specific hazards or threats (i.e., earthquake, floods, wildfire) .

• Weatherization/Hardening: if the asset or element has little or no weatherization or hardening put in place, it makes them sensitive to specific hazards or threats (i.e., no weatherization by coating pipes; lack of seismic retrofit or foundation improvements; no established defensible space for wildfire) . • Redundancies: if the asset or element is limited, damaged, or disrupted, it makes them sensitive to specific hazards or threats (i.e., only one transmission element in a specific region; no backup generator at a critical facility).

Q46

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Winter Storm - Yes Is Selected

Based on the type of asset and the characteristics defined above, does your organization consider at least one asset/facility to be at risk of failure as a result of winter storms?

Characteristics: Materials, Age, Elevation, Geographic Location, Weatherization/Hardening, and Redundancies

	Yes	No	Does not apply
Production: (e.g. Dams, Power Plants, Wind Turbines, Solar Farms, Pipeline Receipt Points)	○	○	○
Transmission: (e.g. Transmission Supported Line, Substation, or equipment >36kV, High Pressure Transmission Pipelines, Compressor Stations, Market Hubs, Pipeline Receipt Points, Pipeline Delivery Points)	○	○	○
Storage: (e.g. Battery, Hydroelectric Reservoirs, Underground Storage Reservoirs/Facilities, Aboveground and Underground Storage Tanks)	○	○	○
End User Distribution Network: (e.g. Distribution lines, Substation, or equipment <36 kV, Distribution Centers, Peak Shaving Facilities, Local Distribution Pipelines, Natural Gas Mains, Natural Gas Service Lines)	○	○	○

Q47

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Winter Storm - Yes Is Selected

Potential impact, or consequence, is defined as the effects on an energy system and those who depend upon the system as a result of a hazard or threat (e.g., a windstorm knocks down power lines and damages transmission lines causing a power outage for 10,000 customers). Potential Impact is NOT the same as exposure.

Q48

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Winter Storm - Yes Is Selected

Provide your best estimate of the percentage of your customers that may experience a disruption to service due to extreme winter storms.

- ○ More than 20%
- ○ Between 5% and 19%
- ○ Less than 5%
- ○ Unknown

Q49

Display this question

If Of the following threats, which are your organization's energy system assets exposed to? Winter Storm - Yes Is Selected

Provide your best estimate of the time required to restore service after a disruption due to winter storms.

- ○ Months
- ○ Weeks
- ○ Hours to Days

Import from library | Add new question

Add Block

End of Survey

We thank you for your time spent taking this survey.

Your response has been recorded.

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Idaho Governor's Office of Energy and Mineral Resources

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