National Laboratory of the Rockies

Energy Technology Innovation Partnership Project Strategic Energy Plan for Washington County, Maine

Neah Downs Dybas,[1] Brenna Cohen,[2] and Amber Blum[2]

1 National Laboratory of the Rockies
2 Island Institute

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August 2026

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List of Acronyms

CAIDI	Customer Average Interruption Duration Index
DOE	U.S. Department of Energy
EIA	U.S. Energy Information Administration
ETIPP	Energy Technology Innovation Partnership Project
HHS	U.S. Department of Health and Human Services
MEMA	Maine Emergency Management Agency
NLR	National Laboratory of the Rockies
SAIDI	System Average Interruption Duration Index
SAIFI	System Average Interruption Frequency Index
SCEC	Sunrise County Economic Council
SEP	strategic energy plan
VEIC	Vermont Energy Investment Corporation

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Executive Summary

The Sunrise County Economic Council (SCEC), an economic and community development nonprofit in—and Regional Planning Organization for—Washington County, Maine, sought assistance through the Energy Technology Innovation Partnership Project (ETIPP), supported by the U.S. Department of Energy (DOE), to address community energy challenges. Focused on community and economic impact, SCEC envisioned a strategic energy plan (SEP) that would strengthen collaboration with its local utility, Versant Power. The organization also sought to empower residents and town leaders to better understand energy challenges and participate in actions that reduce outage risk, address rising electricity costs, and improve public safety and disaster preparedness.

This SEP development followed the multistage approach established by ETIPP, which included organizing a team of local leaders and partners, facilitating regular project action meetings and an on-site community workshop, data collection and baselining, and identifying and analyzing the feasibility of project options. The local partners included SCEC and the local utility, Versant Power. The regional partner was the Island Institute, and the national laboratory partner was the National Laboratory of the Rockies (NLR). The project kicked off at the end of November 2024, with one on-site workshop held March 24–27, 2025. The team met once or twice per month virtually from January to December 2025 to develop and draft the SEP which concluded early 2026.

Data analysis included electricity reliability at the grid feeder level from 5-year consecutive data provided by Versant Power (2025): CAIDI (Customer Average Interruption Duration Index), SAIDI (System Average Interruption Duration Index), and SAIFI (System Average Interruption Frequency Index), outage causes were also provided. Versant also provided data and details of rate history, its vegetation management program, and its low-income assistance program. Open data sources included utility rates, the U.S. Department of Agriculture Forest Inventory and Analysis (U.S. Department of Agriculture 2025), Maine Public Utilities Commission electricity source disclosures, the U.S. Department of Health and Human Services emPOWER Program data for electricity-dependent durable medical equipment dependence, and hospital encounter data from Main Health Data Organization.

This plan introduces a “relational infrastructure” approach, recognizing improved energy outcomes depend as much on coordination and trust as on physical grid investments. Examples of practice used in this relational infrastructure approach include beginning with and sustaining two-way communication and engagement between the public and project planners, and outcomes-based strategies (Ansell & Gash, 2008; Arnstein, 1969; Bryson et al., 2013; Fung, 2015).

The projects prioritized by SCEC (Sec. 3.2) focus on the reduction of outage risk and the increase of public safety. Examples include a public awareness and safety campaign, “Power to the People (P2P),” which includes community outreach at public events, town meetings, and a webpage providing a public channel for current and future information on safety and vegetation management and amplifying important communication links from Versant Power. SCEC also plans to develop resilience tools and guidance for residents, town leadership, and public works

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staff. Another potential project includes risk analysis of Washington County residents reliant on electricity-dependent medical equipment, including variables of outage history, access to generators and fuel, and remoteness of residences.

This SEP summarizes the data, actions, vision and goals developed through the planning process, and potential funding streams. It is intended as a public document that SCEC can share with existing and potential partners—and Washington County, Maine residents—to adopt and implement. It provides a starting structure to build on as SCEC scales its economic and community development in terms of energy reliability, resilience, safety, and affordability. With new information and initiatives, this document should be revisited and updated.

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Introduction

1.1 Energy Technology Innovation Partnership Project

This Strategic Energy Planning Project was developed as a part of the Energy Technology Innovation Partnership Project (ETIPP), supported by the U.S. Department of Energy (DOE). ETIPP is a community-led technical support program to help coastal, remote, and island communities build resilient and sustainable energy systems. These communities have unique physical and geographic features that influence energy security and resilience and limited access to the available solutions that can support community energy goals.

The Sunrise County Economic Council (SCEC) applied to ETIPP seeking to increase understanding of electrical outages, electricity rates, and grid instability for themselves and for Washington County residents, business owners, and town leadership. SCEC envisioned a county that would increase its agency to improve its electricity reliability and rates, and reduce health and safety risks from power outages and downed lines.

1.2 Community Overview

The Indigenous Peoples of Maine are collectively known as the Wabanaki "People of the Dawnland," of which today there are four federally recognized tribal nations: the Houlton Band of Maliseet, the Mi'kmaq Nation, the Penobscot Nation, and the Passamaquoddy Tribe (About the Wabanaki Nations 2025). For thousands of years, the Wabanaki people have been sustained by the vast resources of forest and sea. Today, Maine relies on these same environments to support its primary industries of lumber, shipbuilding, and fishing.

Maine is proportionally the most rural and forested state in the nation (Woodall et al. 2022) with 88% forest land (USDA 2025). Forests are dense, with fast-growing trees such as the eastern white pine, that can scale up to 3 feet per year (Wendel and Smith, 1990). The state endures extreme weather exposure, including along the approximately 3,500 miles of coastline when counting all coves, bays, and islands (National Oceanic and Atmospheric Administration 2025). Washington County, in eastern Maine, is situated along nearly 20% of Maine's coastland and shares its northeastern border with New Brunswick, Canada. Most of the county's population live along the coast and 100% of the population is classified as rural by the U.S. Census (U.S. Census Bureau 2020). Weather events—especially high wind and ice storms that take place across dense forest coverage—are significant contributors to Maine having the highest outage risk in the United States (U.S. Energy Information Administration [EIA] 2024). With 90% forest land, higher than the Maine average (USDA 2025), Washington County residents experience an average of 33 hours of outages per year. Two out of three power outages are caused by falling trees (Versant Power 2025).

The electricity received by Washington County residents is provided through two utilities: 1) the nonprofit, Eastern Maine Electric Cooperative, serving approximately 13,000 accounts in Washington County and two other counties, and 2) Versant Power, an investor-owned utility, serving 165,000 accounts.

Washington County demographics are listed in Table 2.

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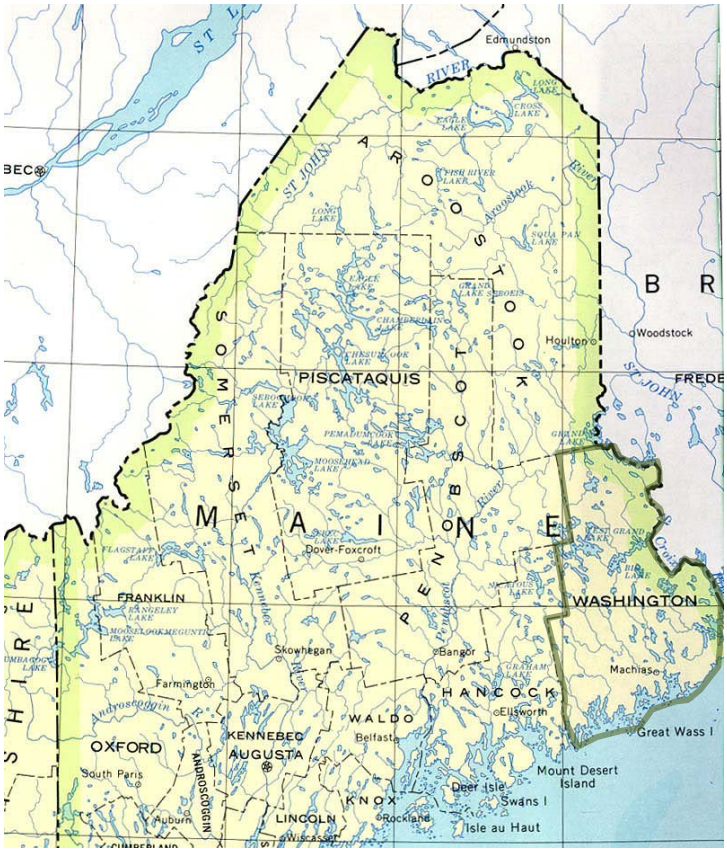
Table 1. Washington County Demographics

Variable	Count
Population (U.S. Census Bureau 2024)	31,331
Population per square mile	12.2
Persons 65 years and older (U.S. Census Bureau 2024)	23.5%
Persons 65 years and older and living alone*	31.9%
Persons with a disability	22.6%
Median household Income	$56,024
Persons in poverty	17.1%



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* Maine Shared Community Health Needs Assessment

Project Team

The SCEC initiated this community-driven strategic energy plan (SEP). Tora Johnson and Crystal Hitchings, both of SCEC, were integral in identifying the community-specific challenges and ways to address them. Technical expertise was provided by the National Laboratory of the Rockies (NLR), and additional support and local knowledge was provided by the Island Institute. See Table 1.

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Table 2. Project Team

Name	Organization	Role
Tora Johnson	Sunrise County Economic Council	Community Leader
Crystal Hitchings	Sunrise County Economic Council	Community Leader
Charles Rudelitch	Sunrise County Economic Council	Community Leader
Jennifer Peters	Sunrise County Economic Council	Community Leader
Bryan Mentlik	National Lab of the Rockies	Regional Lead
Neah Downs Dybas	National Lab of the Rockies	Laboratory Lead
Brenna Cohen	Island Institute	Regional Partner
Amber Blum	Island Institute	Regional Partner

1.3 Energy Accomplishments

Recent statewide efforts demonstrate strong alignment with a community-driven strategy centered on hazard mitigation, safety and emergency readiness, and energy assistance. This plan complements—but does not duplicate—utility capital planning and state energy policy by focusing on the community-level actions that influence reliability, safety, and affordability outcomes. Future coordination with county planning efforts, commissioners, and managers would strengthen the implementation of this plan.

The *Maine Won't Wait* report (Maine Climate Council 2024) advances energy efficiency, electrification, and grid modernization to improve reliability, safety, and affordability. Through the Maine Community Resilience Partnership, it directly supports local emergency preparedness and infrastructure resilience—providing a foundation for collaborative hazard mitigation and community-informed outreach.

The Maine Energy Plan (Maine Governor's Energy Office 2025) reinforces these priorities by emphasizing efficiency upgrades, diversified energy resources, and grid modernization. Its focus on infrastructure resilience and emergency preparedness strengthens utility-community coordination, particularly in reducing outage risks and improving system safety under extreme conditions.

The Maine Infrastructure Resilience Plan (Maine Infrastructure Rebuilding and Resilience Commission 2025) further operationalizes these goals through investments in risk reduction, resilient rebuilding, and coordinated response systems. Its emphasis on data, communication, and local capacity-building directly supports enhanced outage preparedness, including proactive communication strategies and community-level emergency planning.

Finally, legislation H.P. 1311/L.D. 1967 establishes a community-based energy coaching pilot that improves access to efficiency programs, reduces energy burden (a household's residential energy costs, divided by household income), and promotes safer energy use. This model is highly relevant to advancing energy assistance and thermal safety by helping residents prioritize weatherization, navigate incentives, and adopt technologies in a safe and cost-effective sequence.

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Together, these efforts demonstrate a clear pathway for collaboration between utilities and community organizations. Initiatives such as vegetation management outreach, expanded emergency communication, and targeted energy coaching can amplify existing utility actions while ensuring communities are informed, prepared, and able to access critical resources—ultimately strengthening system resilience, public safety, and energy security.

1.4 Energy Vision, Goals, and Focus Areas

Challenges

Foundational challenges for Washington County in terms of energy strategy include limited resources for governance at both county and town levels. Of the 34 municipalities in Versant's Washington County service area, 1/4 are unincorporated townships governed by the state's Land Use Planning Commission. In addition, Washington County is a rural environment with a majority remote population, with many residents falling below the poverty line (17.1% in 2022 [U.S. Census 2024]) and a large population of citizens aged 65 and older—many of whom are aging in place in rural areas.

Another challenge is the high occurrence of natural disasters, especially during the winter months with wind and ice storms. Nine such disasters from March 2022 and May 2024 merited presidential disaster or emergency declarations (Maine Infrastructure Rebuilding and Resilience Commission 2025).

Other potential rate-impacting challenges that cascade down from the state level include energy market policies that determine responsibilities for transmission costs and structures for compensation such as net energy meeting for distributed energy generation. Customers in Maine are also billed for programs to promote energy efficiency and conservation (via Efficiency Maine Trust), to support state policies (e.g., the low-income assistance programs), and to recover costs associated with the restructuring of the electricity industry. Other rate-impacting drivers include market fluctuations, especially for the primary energy source for New England: natural gas.

Opportunities

The opportunities that emerged from extended workshop conversations included encouraging more actions with small local governments noted as effective stakeholders, there are a total of 44 local government entities in Washington County. In addition, explaining the economics of electricity was suggested as an opportunity to get people's attention and trust because, according to SCEC, mistrust of the utilities in Washington County has grown as renewable energy generation has increased. The concern that outsiders are profiting by siting renewable generation projects in Maine and exporting power to other states—while electricity rates are increasing for the residents of Maine—is voiced often by the County's residents.

Opportunities to partner with Versant Power included collaborating on vegetation maintenance education and town ordinances, coordinating messaging and public outreach on electric and outage safety, amplifying messaging through coordinated campaigns including web resources, and gathering and assessing data on outage risk in the county.

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Coordinating with the utilities and emergency responders presents an opportunity to plan for the needs of energy vulnerable residents, those with dependence on electricity to power medical equipment, lack of backup power, economic hardship, and remoteness.

An opportunity to partner with Washington County Community College for workforce development in energy trades was suggested as well as coordination with Washington County on emergency operations. It was noted that more skilled tradespeople were needed to install, maintain, and fix heat pumps and heat pump water heaters because of the increase in adoption prompted by Maine's energy goals and incentives (Maine Governor's Energy Office 2025).

Finally, there was urging for a partnership with, or funding from, the Maine Office of Community Affairs' Community Resilience Partnership and possible Efficiency Maine Trust.

Focus Areas that were discussed but relegated to future planning phases and projects include energy efficiency because it has already received much focus from state and county strategy. On-site generation assets and resilience hubs were also discussed and held for the future in anticipation that initial SEP projects will increase participation and improve understanding, perception, and adoption of energy issues among members of Washington County. Impacts of energy interruption, outages, and cost on the fishing industry was another topic held for future consideration. The economic well-being of Washington County depends significantly on the fishing industry. Fishing and related industry services such as ice and cold storage, fuel and bait, and all logistics for processing and distribution make up a waterfront that faces numerous risks.

Responding to themes that emerged in the March 2025 community workshop in Washington County, the energy vision statement was finalized by SCEC from which to root its strategic energy priorities, projects, and goals. In most ETIPP projects, it is common for energy visioning to happen after a baseline assessment of potential energy technology is provided. However, with SCEC's unique interest in a relationship-based energy strategy, the visioning preceded most of the data baselining.

Energy Vision Statement

The people of Washington County, Maine, have the information and resources they need to actively influence decisions that increase safety, affordability, and reliability of the electrical grid now and in the future.

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2 Baseline Assessment

Determining an energy baseline is a key step in the ETIPP Strategic Energy Plan development. Baselining helps quantify risk, prioritize projects, understand feasibility, set goals, and measure results.

Based on the energy priorities of SCEC, the analysis effort focused on information that could improve public knowledge on the energy landscape in Washington County and present educational, empowering, influential, and impactful solutions

For Washington County, the energy baseline focused on electrical system reliability and resilience, energy affordability, and electric and outage safety.

Data that could inform or improve institutional planning such as outage readiness, emergency response, and vegetation management were determined to be of the highest value and historically unavailable to SCEC at a level more granular than ZIP Code.

2.1 Baselining Electrical System Reliability and Resilience

Baselining of reliability and resilience for this plan is high level, not a full assessment. Reliability focuses on higher-probability and lower-consequence everyday disruptions, and in the electricity sector is defined as "the ability to meet the electricity needs of end-use customers, even when events reduce the amount of available electricity" (National Infrastructure Advisory Council 2010). Resilience focuses on disruptions that are lower probability but higher consequence and cause outages lasting days or months, and the power system's ability to "anticipate, prepare for, and adapt to changing conditions and to withstand, respond to, and recover rapidly from disruptions" (Hotchkiss and Dane 2019).

To guide infrastructure investments and improve both reliability and resilience, utilities consider risks of threat, potential damage that could be caused, and the consequences of the damage. Resilience practices vary because of service area circumstances. In Washington County, below-ground mitigation—i.e. burying lines—is limited by environmental and geologic factors such as hard bedrock inland and erosion at the coastline present. Another barrier making undergrounding cost-prohibitive is sparse, rural population. Versant has 6,400 miles of primary distribution lines and 1,275 miles of transmission lines in its service territory with 165,000 customers, which is about 22 customers per mile of line (Versant Power 2026). This means high infrastructure costs relative to the base rate collected (Ross et al. 2018). This cost dynamic is further covered in Section 2.3, Energy Analysis.

From Versant's 2026 Integrated Grid Plan (Versant Power 2026), a primary reliability and resilience initiative is a comprehensive cycle- and risk-based vegetation management program, critical for Washington County, which is 90% forest land (USDA 2025). Guided by arborists, in 2025, 650 risk trees were removed by Versant in Washington County, and vegetation was trimmed along 250 miles of primary line and 250 miles of secondary line (Versant Power 2025). Actions such as these are shown to reduce outages and quicken restoration times (Lawrence Berkeley National Laboratory 2024; Taylor et al. 2022) but are limited by right of way, which in Maine is a significant barrier because forest land ownership is 91.74% private (USDA 2025). In

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Versant's territory, two-thirds of outages are caused by falling trees, and 75% of outages are from trees outside of Versant's right of way (Versant Power 2025).

Other above-ground mitigation measures recently implemented by Versant include installing compact modular reclosers that connect to power lines and monitor and manage faults and, in some cases, restore power automatically. Versant has also been insulating power lines to prevent short circuiting. Further details on Versant's actual capital investments for 2021–2025 and projected for 2026–2030 are provided in its 2026 Integrated Grid Plan (Versant Power 2026).

For this Washington County baseline, Versant Power provided 5-year (2020–2024) outage data at the grid feeder level through standard power interruption indices: CAIDI (Customer Average Interruption Duration Index), SAIDI (System Average Interruption Duration Index), and SAIFI (System Average Interruption Frequency Index); see Table 3 and Figure 1. The data included major event days, where a utility operates in crisis mode rather than standard operations, defined by a standardized industry statistic (IEEE 2012, 2022).

Table 3. Versant Power 5-Year Average Power Reliability, Washington County (2020–2024)

Metric Acronym	Description of Power Reliability Metric	Average for Metric, Including all Feeders	Average for Lowest Performing Feeder	Average for Highest Performing Feeder
CAIDI	The average time it takes to restore power after an outage; SAIDI divided by SAIFI.	6 hours	16.56 hours	0.78 hours
SAIDI	The average total duration of outages (in minutes or hours) that a customer experiences in a given year.	25 hours	68.77 hours	0.16 hours
SAIFI	The average number of sustained outages (lasting longer than 5 minutes) a customer experiences in a given year.	4 sustained outages	8.96 hours	0.20 hours

U.S. Energy Information Administration SAIDI data, including major event day (Poudyal 2025), indicate the residents of Maine—along with Louisiana—experience the highest total duration of outages annually in the United States: 2,000 minutes/33 hours or more a year. Most often in Maine, these outages are caused by severe weather such as icing, heavy snow, and wind that results in contact between vegetation and power lines. A single-year comparison of SAIDI data (2024) including major event days shows the national average for total duration of outages a customer experienced was 10.18 hours, Maine 29.1 hours (EIA 2024), and Washington County 23.2 hours (Versant Power 2025).

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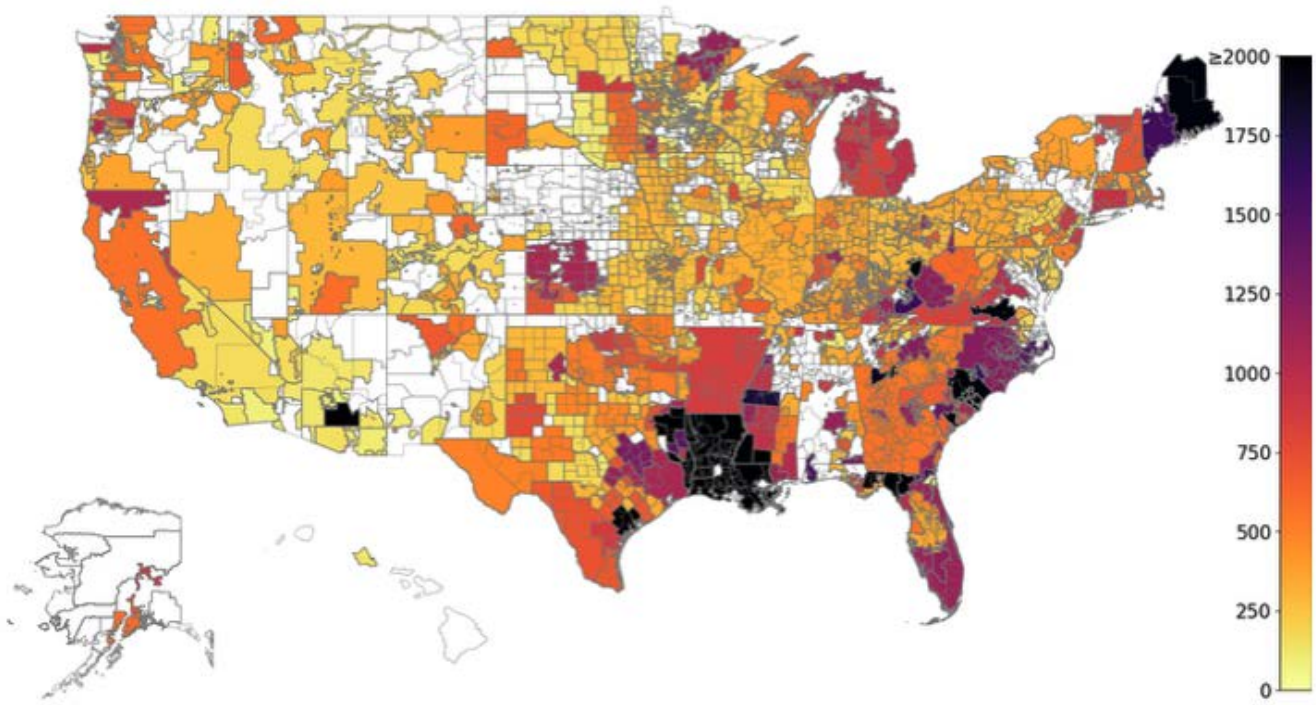

Figure 1. Variation of grid reliability: Average of SAIDI in minutes with major event days, using EIA-861 data from 2013 to 2023

White indicates utilities that do not report data to the EIA.

Graphic and analysis by Poudyal (2025)

Table 4. Versant Power's 5-Year Distribution Reliability Averages (2020–2024) for Washington County, ME

SAIFI (outages/year)	CAIDI (hours/outage)	SAIDI (hours/year)
Intervals	Intervals	Intervals
0.20–2.39	0.78–4.725	0.15–17.313
2.40–4.59	4.73–8.67	17.314–34.47
4.60–6.79	8.68–12.65	34.48–51.63
6.8–9	12.66–16.60	51.64–68.79

Making baselining actionable for SCEC, using 5-year SAIFI, CAIDI, and SAIDI data (Versant Power 2025), NLR ranked Washington County's "hot spots" or lowest-performing circuits across four intervals and then mapped the lowest-performing interval to the circuits in Versant's

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territory. The output of this analysis was reviewed by Versant and provided to SCEC to inform a schedule of town meetings, prioritizing towns with the lowest-performing circuits. Targeted engagement in the lowest-performing circuits could yield disproportionately high improvements in outage experience relative to county-wide approaches.

Baselining Electrical and Outage Safety

A main dimension of electrical and outage safety is power system reliability. Table 3 provides the standard power interruption indices—CAIDI (Customer Average Interruption Duration Index), SAIDI (System Average Interruption Duration Index), and SAIFI (System Average Interruption Frequency Index)—using data from Versant Power (2025). Table 4 provides averages at four interval levels for how often and how long power outages last historically for their Washington County service area. Based on these data, the overall averages indicate 1) residents could expect four outages a year that last longer than 5 minutes, 2) the total duration of outages one experiences in a given year could average 25 hours, and 3) restoration can take up to 6 hours. Reliability estimates differ by grid feeder line performance.

A utility's power outage restoration protocol—Versant Power included—prioritizes critical facilities such as hospitals and first responders and hazardous downed power lines first, then main transmission line equipment and infrastructure repairs followed by distribution lines that bring power back to the highest concentration of customers first (Versant n.d.b). Typically, the last to have power restored are the remote, difficult-to-reach areas—like much of Washington County, which is sparsely populated at just 12 people per square mile (U.S. Census Bureau 2020). In anticipation of outages, Versant Power provides practical preparation tips to customers, for example, its Winter Safety Flyer, 2025–2026 for sustained electrical outages (see Appendix A).

For standard operation, Versant's LifeLight Program aims to prevent the unnecessary or accidental disconnection of electric service for people who use electricity and battery-dependent assistive technology and medical devices. Customers reliant on medical equipment can confirm their needs, verified by a health-care provider, with Versant (Versant 2026). This does not prioritize a customer during nonstandard events such as weather-caused outages.

For nonstandard power outage events, this section baselines Washington County's most vulnerable customers to sustained service interruptions. According to the U.S. Department of Health and Human Services (HHS) emPOWER program (HHS emPOWER 2025), an estimated 480 residents rely on electricity-dependent durable medical equipment such as ventilators, oxygen concentrators, or wheelchairs to live independently. Beyond the immediate failure of life-sustaining equipment, prolonged outages increase the risk of temperature-related mortality—a danger that is heightened by age, disability, and poverty (Anderson and Bell 2009; Klinger et al. 2014). These risk factors are significantly more prevalent in Washington County than the national average. According to the 2024 American Community Survey 5-year data, the percent of persons aged 65 and older is 26% of residents (1.5x the national average), the percent of persons with disabilities is 22% of residents (1.7x the national average), and residents living in poverty was 17% in 2022 (U.S. Census 2024), 1.4x higher than the national average.

Cooling and warming centers are a common resource for people during extended outages. Daytime capacity is generally higher than overnight. Maine Emergency Management Agency's

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(MEMA) Response and Recovery oversight provides a list of warming centers by county posted on its Mass Care webpage (MEMA 2020). As of April 2026, there were only two for Washington County. Due to the number being so low, it is unlikely the most current or complete source of information. Leaving the home for safe shelter during extended outages is hampered by limited shelter space (real or perceived); winter storm conditions such as high wind, snow, and ice that make travel dangerous especially across long rural distances; the cost of gasoline (Aguilar & Fuentos-Albero 2025); and a lack of transportation. Many households in Washington County do not have a vehicle; that number is estimated between 7.4% (Grow Smart Maine 2024) and 15% (Maine Council on Aging 2024).

Evaluating electrical outage impact is advancing to characterize the consequences to customers from interruption of service. Recent research on electrical resilience in rural Minnesota introduces a new metric that includes the impact on community critical services including residential access to safe temperatures and refrigeration for food and medication. This metric—critical service access—and the results could be used to inform the prioritization of utility investments and increase outage safety (Matsuda-Dunn et al. 2025).

The following additional data could be used to further baseline or inform electrical and outage safety projects:

- Centers for Medicare and Medicaid Datalink Project: Near-real-time data on durable medical equipment users may be available through the local health department: https://www.cdc.gov/nchs/linked-data/medicare/index.html.
- U.S. Department of Health and Human Services, Empower Map tool: https://empowerprogram.hhs.gov/empowermap.
- ICERx (in case of emergency prescription database): A collaborative platform that allows healthcare providers to access patient prescription information during disasters; particularly useful in situations where medical records might be unavailable: https://www.icerx.org/.
- Maine Health Data Organization: Hospital inpatient and outpatient encounter data: https://mhdo.maine.gov/tableau/data.cshtml#hospitalencdata.

2.2 Existing Energy Infrastructure

The electricity received by Washington County residents is provided through two utilities: 1) the nonprofit, Eastern Maine Electric Cooperative, serving approximately 13,000 accounts in Washington county and two other counties, and 2) Versant Power, an investor-owned utility, serving 165,000 accounts. Future engagement with Eastern Maine Electric Cooperative is ideal; however, with most Washington County residents serviced by Versant Power, this planning process began with them.

This plan does not provide a detailed engineering assessment of power system infrastructure. Instead, it focuses on equipping communities and utilities with shared technical understanding to strengthen coordination—recognizing improved outcomes depend not only on infrastructure but also on the effectiveness of these relationships.

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Electric Infrastructure Description

The Versant Power Integrated Grid Plan (2026) and supporting studies describe a system where Versant operates transmission and distribution infrastructure—more than 1,200 miles of transmission and 6,000 miles of distribution lines serving more than 160,000 customers—whereas electricity supply is sourced externally, with a mix of gas, hydro, nuclear, wind, solar, biomass, and limited oil and coal. The system is largely a simple radial design, like a hub and spoke, where the power flows one way from the main source. It is geographically dispersed, and overhead, creating exposure to weather-related disruptions. In their Integrated Grid Plan, Versant outlines power quality challenges including voltage variability, equipment stress, and load sensitivity, compounded by increasing electricity demand and energy variability from an increase in power sources . Reliability is highly influenced by winter weather and high winds, with documented vulnerabilities across distribution lines, substations, and operational processes—including vegetation management and emergency response.

Heating and Gas Description

Maine is unique nationally with more than half of homes still relying on heating oil, with propane, electricity (rapidly growing via heat pumps), and wood as secondary fuels. There is limited natural gas, and homes often use multiple fuels for backup in extreme cold. Commercial and government buildings are more diversified (oil, gas, electricity), but fuel price volatility and rural delivery logistics are defining constraints across the state.

Additional Infrastructure Description

Fuel supply logistics and risks are largely external to Versant Power's operations as they are a transmission and distribution utility. Critical infrastructure includes transmission and distribution lines, substations, transformers, poles, and system control functions, all of which face increasing risk from extreme weather hazards such as ice, wind, and heavy precipitation (Department of Energy 2021). Anticipated changes include grid modernization, distribution hardening, automation, and enhanced vegetation management to improve resilience, safety, and system reliability (Versant Power 2026).

2.3 Energy Analysis

Electricity Consumption

Based on the Versant Power Integrated Grid Plan (2026), system peak demand is around 364 MW, and electricity consumption in Washington County reflects a low-growth, weather-driven rural load profile. Historical trends show relatively flat demand with modest growth, with usage peaking in winter months because of electric heating and declining in shoulder seasons. Peak demand is largely noncoincident and winter-driven, varying by circuit and substation.

Load is dominated by residential customers, with smaller commercial and limited industrial presence. Seasonal variation is noticeable; with higher winter loads and lower summer demand compared to more urban regions.

Versant Precent load forecasts indicate gradual growth across numerous scenarios (Versant Power 2026) driven by electrification (heat pumps, electric vehicles) and distributed energy resources. Versant incorporates substation- and circuit-level hourly data to capture noncoincident

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peaks and variability, supplementing regional forecasts with more granular system measurements for planning accuracy.

Energy Costs

Methods for characterizing the cost of household energy typically start with an absolute economic ratio: percentage of household income spent on energy bills (Boardman 1991). This method should be considered a minimum for baselining home energy costs because it is limited in expressing the relative ability a household has to maintain a safe and comfortable home environment.

When data are available, assessments of energy affordability should consider both physical and behavioral dimensions of energy burden (Hernández, 2016). Physical dimensions include housing deficiencies, such as inadequate insulation, that increase energy costs. Behavioral dimensions include actions households take to cope with those costs, such as reducing electricity or heating use, limiting appliance use, or making difficult trade-offs between utility bills and other necessities, including food and medication. These considerations are particularly relevant in Maine, where much of the housing stock lacks adequate weatherization, making homes more difficult and expensive to heat and cool. Research also indicates that, compared to the national average, Maine households are more likely to struggle with electricity costs and, at times, must make trade-offs among basic needs because of financial constraints (VEIC & Beech Hill Research, 2024).The cost of energy has been rising nationwide. U.S. Energy Information Administration electricity data show the average retail price of electricity (cents per kilowatt hour) in the United States was 13.66¢ in 2021, and 16.48¢ in 2024—a 20% increase in 3 years—whereas Maine residents experienced a 43% increase (17.02¢ to 24.29¢; EIA 2026). Versant's 10-year rate history, 2014–2023 (Versant Power 2023) is provided later in Figure 3.

On average, Washington County residents spend about $254 per month on electricity, which is 15% higher than the national average electric bill. These rates are difficult for the energy burdened, those whose residential energy costs are a high percentage of their household income, which for Washington County is estimated at 19% (VEIC and Beech Hill Research 2024). The U.S. Census Household Pulse Survey 2024 data indicate on average 25% of Maine residents were unable to pay their utility bill at least once in the previous 12 months (U.S. Census 2024).

Assistance to pay for heating costs is sought by many in Washington County. As of July 2025, more than 1,100 households in Washington County—8% of Versant's residential customers (Versant Power 2025)—were participating in Versant Power's Low Income Assistance Program. In addition, Maine's Energy Crisis Intervention Program provides up to $500 for fuel delivery or utility reconnection fees as well as the Home Energy Assistance Program, which can be used for heating costs or weatherization. According to Maine State Housing Authority, Home Energy Assistance Program benefits in 2025 were $780,570, and Energy Crisis Intervention Program were $88,861 (see Figure 2).

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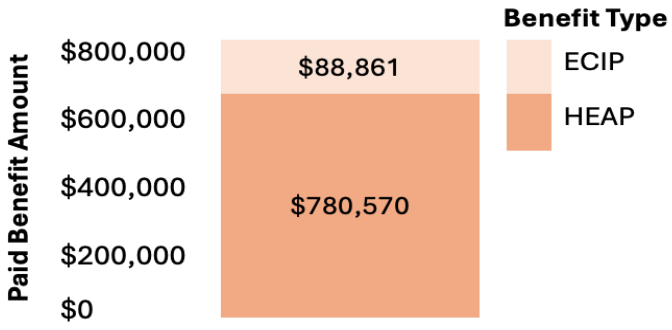

Figure 2. Benefits by type in Washington County, Maine

Source: Maine State Housing Authority (2025)

Residential rates have risen more quickly than industrial or commercial rates in recent years (Wiser et al. 2025). Grid infrastructure upgrades generally comprise the highest percentage of a rate increase and, for Maine, according to recent data analysis (Wiser et al. 2025), additional variables shown to have increased cost per kilowatt-hour from 2019 to 2024 include load growth (+3.0¢ per kWh) and an increase in net-metered, behind-the-meter solar—that is, customer homes or businesses (+0.03¢ per kWh)—and utility-scale solar (+2.8¢ per kWh). Data points such as these support Washington county residents' concern that Maine's Renewable Portfolio Standards (RPS)—which set the minimum amounts of electricity sold required from sources such as solar, wind, hydro, and biomass—may cause rate increases. SCEC can guide further exploration of these data as well as aggregated data that show a net annual benefit of approximately $21.5 million attributed to Maine's RPS for ratepayers for the period from 2011 to 2022 (Maine Governor's Energy Office 2024). State averages may not be representative of the full costs borne by the residents of Washington County.

In addition, storm recovery costs have increased rates (+1.8¢ per kWh in 2024) in Maine. These cost drivers are not strictly additive and reflect modeled contributions within broader rate-setting dynamics.

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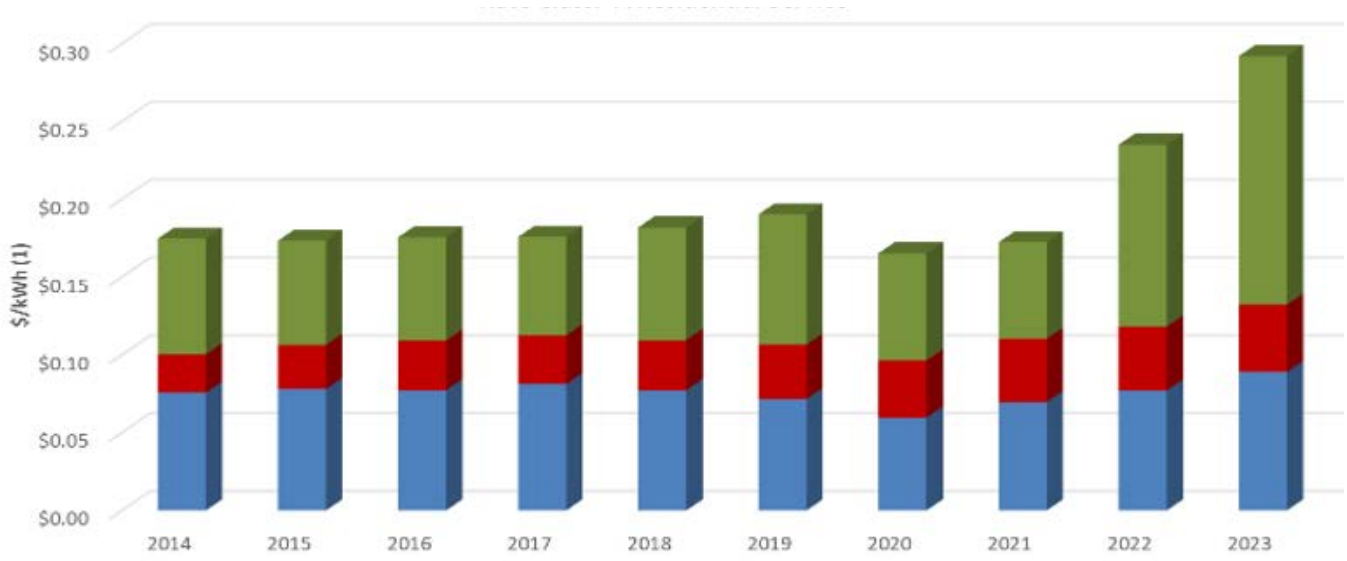

Standard offer rates increased 114.99% from $0.07429 to $0.15972 between 2014 and 2023.

Transmission rates increased 74.73% from $0.02476 to $0.04326 between 2014 and 2023.

Distribution/Other[2] rates increased 17.68% from $0.07561 to $0.08898 between 2014 and 2023.

[1] $/kWh is annual revenue per kWh amounts inclusive of all fixed, demand and per-kWh charges.

[2] "Other" includes costs associated with state policy programs, including funding for Efficiency Maine, low-income programs, net energy billing, and Maine's Renewable Portfolio Standard (RPS).

Figure 3. 2014–2023 10-year rate history, residential, Versant Power, Bangor Hydro District

Energy Efficiency

Washington County faces persistent and interrelated challenges around residential energy efficiency and weatherization, driven by climate, housing characteristics, and fuel dependence. A significant impact on energy costs in Maine are the physical deficiencies in housing stock. Much of the state's housing stock predates modern standards for insulation, air sealing, and energy-efficient construction. Many homes—particularly in coastal and rural areas—were originally built as seasonal or second homes and were never designed or retrofitted for year-round occupancy, leaving them poorly weatherized and costly to heat. According to the U.S. Census Bureau's 2018–2022 American Community Survey data, nearly one-fourth of Maine's 741,803 housing units—23.4%—were built before 1940.

Energy upgrades or retrofitting are financially burdensome and, in mobile homes, which represent 17.9% of housing stock in Washington County (U.S. Census Bureau 2020), additional restrictions related to structure, ownership, and allowable measures further limit weatherization or efficiency investments.

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The cold, prolonged winters create exceptionally high heating demand, and about two-thirds of Maine households rely on delivered heating fuels such as oil and propane (EIA 2025). Maine has no significant reserves of coal, natural gas, or crude oil and therefore relies on imported fuels to meet its overall energy needs. (EIA 2025). These fuels are expensive and represent a critical point of failure for household energy security during winter storms or supply disruptions. Survival on delivered fuels remains common, especially in rural areas.

Key Findings

The baseline highlights that reliability and resilience challenges are primarily vegetation- and weather-driven, with two-thirds of outages caused by falling trees and 75% originating outside utility rights of way (Versant Power 2025). Washington County experiences high outage duration and frequency far exceeding national benchmarks. Characteristics such as low customer density and rocky terrain make undergrounding cost-prohibitive and restoration slower. Given the structural constraints on traditional infrastructure solutions such as undergrounding, SCEC's strategy emphasizes distributed, community-based risk reduction and preparedness.

There is also a clear concentration of vulnerability among specific populations, including residents dependent on electricity-powered medical equipment and higher-than-average elderly, disabled, and low-income populations. The cost of energy is a major issue, with high energy burden and rising electricity costs. Housing inefficiency and reliance on delivered fuels further compounds risk.

The baseline assessment identifies several important gaps, uncertainties, and data needs that limit more targeted planning. Historically, data have not been available below the ZIP Code level, and although feeder-level outage data could be available through collaboration with Versant, further granularity is still needed to support localized decision-making. Some infrastructure details are lacking, and data from Eastern Maine Electric Cooperative have not yet been incorporated—leaving an incomplete picture of the full system. There are also gaps in outage preparedness information, including an incomplete or potentially outdated inventory of warming centers and limited real-time data on medically vulnerable populations who rely on electricity-dependent equipment.

Uncertainty exists in key socioeconomic indicators, such as the percentage of households without vehicles, which affects emergency response planning. In addition, the baseline does not include detailed analysis of fuel supply logistics, heat recovery systems, or comprehensive outage impact metrics such as "critical service access." Overall, improved data integration, validation, and accessibility across utilities, health systems, and community services would improve the execution of the community's priority actions.

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3 Strategy Analysis

3.1 Options and Feasibility Analysis

This strategic energy plan outlines a potential collaborative roadmap for Washington County, Maine, to embark on high-impact projects that address priorities of power reliability, resilience, safety, and affordability. Execution depends on funding, staffing, and collaboration with other organizations. Collaborative action between the community and utility has expected outcomes of reaching more people with education and an increase in appropriate and safe vegetation mitigation and power safety actions among residents, business owners, and town leadership. In addition to Versant Power, other organizations are named in Section 5 of this report as potential collaborators.

3.2 Project Priorities

Resulting from the workshop, data baseline, and stakeholder discussions, this plan is grounded in a central premise: *relational infrastructure*. This approach recognizes improved energy outcomes in Washington County depend not only on electrical system investment but also on strengthening trust, transparency, and coordination between the utility and the communities it serves. Three priority areas were identified to operationalize this approach.

Priority Areas 1 and 2 focus on reducing outage risk where it is not fully within utility control. In Washington County, approximately two-thirds of outages are caused by vegetation, and 75% of that vegetation originates outside utility rights of way. Accordingly, these priorities emphasize increasing private landowner participation and municipal coordination in hazard mitigation (Priority 1; see Table 5) and outage safety and preparedness (Priority 2), directly targeting a primary driver of outages. Although these actions will not eliminate outages, they are expected to reduce the frequency and severity of vegetation-related disruptions at the local level.

Given that high energy burden and inefficient housing increase vulnerability during outages—particularly during extreme temperatures—Priority Area 3 addresses the underlying conditions that amplify outage impacts, such as inefficient housing stock, and a disproportionately large population of elderly and disabled residents. This priority focuses on reducing vulnerability by improving access to energy assistance, weatherization, and informed decision-making around home energy use.

To increase public safety and electricity reliability, SCEC has focused energy planning priorities where they can empower members of Washington County to work with Versant Power, the primary utility, through collaborative infrastructure hazard mitigation, safety and emergency readiness, and energy assistance. SCEC's approach is repeatable, scalable, and necessary for a state that has been experiencing a high occurrence of natural disasters. SCEC's "Power to the People" approach aligns with a key strategy of Maine's Infrastructure Rebuilding and Resilience Commission (subsequently "The Commission"), which is to become "more active, capable, and self-resourced in hazard mitigation and disaster recovery" (The Commission 2025).

SCEC determined collaborative actions for communities and utilities across three priority areas: hazard mitigation for energy infrastructure, safety and emergency readiness, and energy assistance. Examples of the collaboration for each area include the following:

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- **Hazard mitigation for energy infrastructure.** A key focus of Versant's infrastructure hazard mitigation is reducing vegetation contact with distribution lines caused by wind, winter weather, extreme events, and human error—all of which can cause damage to lines and asset failure. SCEC's Power to the People initiative intersects with Versant's vegetation management at power distribution lines. SCEC's community outreach, education, and tools will amplify Versant's key actions to mitigate, which include "more aggressive risk tree removal, widening of clearance zones where permission can be secured, widening of transmission rights-of-way where possible, and pre-planning of work with increased tree and limb removal on highest priority line segments" (Versant Power 2024).
- **Outage safety and emergency readiness.** Versant's Communication Department is establishing "more frequent and proactive communication with customers regarding advanced warning systems, outages, restoration time estimates, and public safety announcements" (Versant Power 2024). Through town meetings and web communications, SCEC will expand the reach of Versant's information distribution to educate the community on home emergency preparedness tips and emergency power planning for people who use electricity and battery-dependent assistive technology and medical devices as well as Versant's LifeLight Program.
- **Energy assistance and thermal safety.** Maine faces persistent and interrelated challenges around residential energy efficiency and weatherization, driven by cold prolonged winters, housing characteristics, fuel dependence, and structural barriers within existing energy programs. A key component to address this issue is the need for prioritization of energy efficiency measures. Residents must understand weatherization should come before the adoption of heat pumps. Residents also must be made aware of Efficiency Maine, which offers various incentive programs ranging from insulation, heat pump water heaters, heat pumps, window dressers, and home energy loans.

In addition to educating and empowering residents, SCEC is aiming to increase the institutional capacity of Washington County town leadership and public works' staff through electricity reliability and resilience education as well as tools that fit the unique landscape, economy, and history of the region.

To ensure delivery of strategic energy planning priorities, SCEC has defined community-driven actions that can complement utility-led system improvements through objectives, goals, actions, details, and expected outcomes for each of the three priority areas. As SCEC moves forward with the community and collaborators, there is an opportunity to engage with the Washington County Emergency Management Agency who is responsible for the county's hazard mitigation planning to discuss seasonal weather hazards that can impact the power system. There is also much to gain from further focus on measures of success such as reduction in outage incidents linked to vegetation, percent of medically vulnerable residents with preparedness plans, or increased enrollment in weatherization assistance programs.

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Table 5. Priority Area 1: Hazard Mitigation for Energy Infrastructure

Priority 1 Objective: In collaboration with the utilities, empower Washington County residents to take actions that increase electrical system reliability and safety.		
Goal 1: A partnership between SCEC and Versant will be established through a year of collaboration and coordinated actions. A summary of this partnership and important community resources will be shared on the Power to the People website by Sept. 30, 2026.		
Goal 1 Actions	**Goal 1 Details**	**Goal 1 Expected Outcomes**
Build a collaborative partnership through: • Quarterly meetings • Coordination between education and outreach teams • Co-presenting at town meetings • Material development and distribution.	• SCEC and Versant grow and sustain a partnership through regular collaboration on public education and outreach on topics including resilience, safety, emergency readiness, and energy assistance. • SCEC and Versant coordinate to help people connect with Versant's resources and programs to build community awareness of the work Versant has completed in Washington County and its commitment to continue making the grid more resilient.	• SCEC applies its understanding of electricity reliability, resilience, affordability, and safety to its programs, including public education and long-range community planning. • Versant increases its understanding of public opinion and how the public prioritizes needs. • Washington County residents and utilities increase trust and understanding. • SCEC and Versant Power model a partnership that other Maine communities can learn and benefit from.
Goal 2: A multigenerational, multichannel outreach campaign will provide 50% of Washington County's full-time residents (~15,000) with three actions to increase electrical system resilience and personal safety by Aug. 30, 2025.		
Goal 2 Actions	**Goal 2 Details**	**Goal 2 Expected Outcomes**
Make education and participation in electrical system resilience and safety accessible through: • Events • Websites • Social media channels • E-newsletters • Town meetings.	• SCEC cross-promotes Versant's programs such as tree trimming, power line protection, and safety education through its in-person and digital outreach, empowering residents to help themselves and their neighbors and know where to get help. • Vegetation management guidance is provided to residents, town leaders, and public works departments.	• Property owners are increasingly engaged in safely decreasing risk trees and managing other vegetation that is outside Versant's right of way safely on their own or through Versant's Private Line Utility Support program (P.L.U.S. Program n.d.). • More educators are engaging with Versant's safety education program and school resources. • Versant's Boltz the Bear and SCEC's Buzz the Beaver team up on safety messaging and appearances.

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		• Public works personnel are managing vegetation safely in accordance with their role and best practices.
Goal 3: One municipal and utility vegetation management policy meeting will be co-hosted by SCEC and Versant for all town leadership and public works departments in summer 2026.		
Goal 3 Actions	**Goal 3 Details**	**Goal 3 Expected Outcomes**
Initiate coordination between municipal and utility vegetation management education, practices, and policies: • Versant provides its vegetation management plan, practices, and policy to municipal leadership and public works departments. • SCEC provides sample vegetation ordinances to Versant, municipal leadership, and public works departments.	• Versant to increase municipal leadership and public works departments' understanding of vegetation impacts on grid reliability and resilience and present its vegetation management plan, practices, and policy at the policy meeting. • SCEC to educate municipal leadership and public works departments on municipal vegetation, ordinances, and potential benefits of adoption. • Local arborists educate all on local vegetation characteristics and management.	• Town leadership is educated on grid reliability and resilience in the context of vegetation management. • Municipal vegetation ordinances have been discussed and are under consideration. • Versant identifies areas of policies and practices that could be amended to coordinate with municipal policies and practices. • Potential for widening rights of way is understood. • Next steps in coordination on vegetation management practices and policies are set.

During the ETIPP planning process, SCEC made gains with Priority Area 1, including kicking off the Power to the People outreach campaign and establishing a relationship with Versant Power through virtual meetings during 2025 and an on-site workshop in March 2025.

During summer 2025, SCEC got an early start on its SEP community outreach goal of reaching 15,000 people—half of the number of people in all Washington County towns combined—with energy literacy by tabling at the Machias Wild Blueberry Festival (Aug. 15–17, 2025), where it reached 200–300 people, followed by the Eastport Pirate Festival (Sept. 5–7, 2025), where it reached more than 100 people. At these events (see Figures 4, 5, and 6), SCEC introduced community members to the Power to the People mascot—Buzz the Beaver—and provided Buzz's power outage safety tips through refrigerator magnets, brochures, and games. The Power to the People table included a model of a house connected to the grid; youth attendees were encouraged to "be a big storm" and knock a model tree onto a power line. Sometimes the tree broke the power line completely; sometimes it stayed caught on the line. These scenarios provided an opportunity to discuss safety issues, tree health, and safe planting distances. Buzz the Beaver, educational activities, trivia questions, and a photo station to pose with Buzz while wearing a hard hat and wielding a (toy) chainsaw attracted youth and adults to the table and, in just 6 days, SCEC achieved 3% of its outreach goal.

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The graphics that inspired Buzz the Beaver were submitted by students through an art contest SCEC held at the end of the 2023/2024 school year with local schools. Students were asked to illustrate the various lessons of the Power to the People concept. Students were also invited to develop a superhero that personified these lessons and helped spread the messages. The winning student's artwork included the power line, roadway, trees, safety cones, and chainsaw. Although no students submitted a superhero persona, SCEC staff created the Power to the People mascot—Buzz the Beaver, a certified Maine Arborist who spreads messages of safety and encourages people to look for risk trees and contact an arborist to remove them. Buzz's message carries through the Power to the People logo, webpage, and educational fact sheets.

SCEC partnered with the College of the Atlantic, a small private college in Bar Harbor, Maine, to create educational fact sheets. For their class on "communicating science" students worked with SCEC to design fact sheets that communicated various safety and preparedness concepts to three audiences: youth, adult community members, and municipal leaders. These students created four fact sheets, which SCEC will print and distribute at municipal offices and any other appropriate public spaces.

These outreach efforts serve as early pilots of the relational infrastructure approach, translating technical risk into accessible community action.

Figure 4. Crystal Hitchings, SCEC, Co-Director of the Sustainable Prosperity Initiative, and Brenna Cohen, Island Institute, Community Development Officer ready at the Blueberry Festival

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Figure 5. Tora Johnson, SCEC, Co-Director of the Sustainable Prosperity Initiative, teaching a young pirate about grid outages caused by downed trees along with power safety

Figure 6. Student who designed Buzz the Beaver with Buzz the Beaver's Power Outage Safety Tips and Power to the People promotion banner

In 2026, SCEC will continue to use its list of 2,000 contacts, E-newsletters, and social media to drive traffic to the Power to the People webpage where information can be found on safety tips as well as links to storm preparation, vegetation management, and safety education from local utilities. One idea is for SCEC's Buzz the Beaver and Versant's Boltz the Bear to co-brand community education materials or programs.

Beginning summer 2026, SCEC began to attend Washington County towns' Select Board Meetings to discuss this strategic energy initiative and educate residents, business owners, municipal officials, and public works crews on the actions they can take to increase electrical system reliability and safety. This outreach is an opportunity for SCEC to dovetail with Versant

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Power's stakeholder engagement process to collaboratively present and provide materials and offer the community two-way communication opportunities for sharing and discussing energy-related priorities. Additional meetings with Public Works, Road Commissioners, and other agencies and departments will be sought as they would be beneficial planning and implementation contributors

For Priority 2 (see Table 6), potential resources for support or collaboration are as follows:

- Maine Energy Management Agency.
- Local Leads the Way: a network of community representatives from around Maine who meet monthly and share resources and trainings on energy coaching and other home energy improvements.
- State policy to design a home energy navigator and coaching pilot: LD 1967.
- Southern Maine Energy Navigator: originated this concept in Maine, including weatherization, insulation, and heat pumps.
- The City of Eastport, located in Washington County, has an energy navigator who coordinates energy audits and weatherization initiatives and helps residents understand and access technical solutions to improve heating and cooling. The Eastport Energy Committee works with the energy navigator and hosts annual community weatherization events through Window Dressers

Table 6. Priority Area 2: Outage Safety and Emergency Readiness

Priority 2 Objective: Empower Washington County residents to take actions that increase electrical system reliability and safety.		
Goal 4: Conduct a risk analysis of Washington County residents and provide the results to utilities, municipal leaders, and emergency response planners (depends on funding, staffing, and collaboration with key partners, e.g., MEMA).		
Goal 4 Actions	**Goal 4 Details**	**Goal 4 Expected Outcomes**
Conduct a risk analysis that will include variables such as: • Those reliant on electricity-dependent medical equipment • Electricity outage history • Individuals who live alone • Access to generators and fuel • Remoteness of residences.	• Starting from existing risk analysis for Washington county, SCEC will analyze additional sources of public data such as HHS emPOWER, Maine Health Data Organization, and the Maine CDC Extreme Temperature Community Resilience Guidebook (Jarvis, 2022). • SCEC will identify populations who face increased risk from extreme weather events with emphasis on extreme heat and cold.	• Versant will use the analysis to inform its planned outage protocol and communications and emergency response. • Versant will use the analysis to cross-reference with lowest-performing circuits to inform grid repair and improvement planning. • SCECs will use the analysis to inform the creation of more resources to inform municipal and county agencies on risk and resilience.

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Goal 5: By Sept. 1, 2026, SCEC will complete a targeted awareness campaign to educate residents of Washington County on ways to increase health and safety outcomes for themselves and others during prolonged outages.		
Goal 5 Actions	**Goal 5 Details**	**Goal 5 Expected Outcomes**
Make education and participation in outage safety preparation accessible through: • Mailer in the utility bill • SCEC and utility websites • Social media channels • E-newsletters • Town meetings • Flyers/brochures in public spaces.	• Education and outreach. • Develop a toolkit and raise awareness to plan and prepare homes for health and safety during power outages. • SCEC, Washington County Emergency Management Agency, and Versant Power coordinate outreach to Washington County residents who rely on electrically operated medical equipment and other life support resources for additional measures, including Versant Power's LifeLight program.	• Versant includes a winter-prep tip sheet in utility bills that provides guidance on preparation, proper use of backup heating sources, information on weatherizing, and numbers to call for assistance. • Residents who qualify for Versant Power LifeLight will understand the program and submit the application completed by their health provider. • Residents who are homebound with a disability, dependent on durable medical equipment, lack transportation, or unlikely to leave their home during an outage will have a safety plan in place.

Because SCEC is not resourced to lead Priority 3 (which is detailed in Table 6), potential owners of this priority and goals could be one or a combination of these organizations:

- Efficiency Maine Trust (commonly known as Efficiency Maine) is a quasi-state agency that administers programs designed to help residents reduce energy use, lower costs, and increase efficiency through rebate, incentives, technical assistance, and financing. The digital literacy needed to complete the online application and rebates forms can be a barrier for many older residents of Washington County.
- MaineHousing, a program from the independent state agency under Maine State Housing Authority, offers several home energy assistance programs as well. The application process involves the application itself as well as, in some cases, an interview to help determine eligibility and the level of benefit. The amount of benefit received by eligible households varies depending on household size, income, and other household expenses. In some instances, residents may find this process to be invasive and would prefer not to take advantage of program offerings.
- An increasing number of energy coaching programs is appearing across the state. The Maine Department of Energy Resources and the Governor's Office of Policy Innovation and the Future—in consultation with Efficiency Maine Trust, MaineHousing, and the Maine Office of Community Affairs—are required to provide designs for a Maine home energy navigator and coaching pilot program (pilot program), pursuant to Resolves 2025, Ch. 86, "Resolve, to Design a Maine Home Energy Navigator and Coaching Pilot Program." Energy coaching initiatives are typically designed to train volunteers or paid

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staff to help community members identify opportunities to meet their energy needs in a low-barrier setting.

- The Community Resilience Partnership is a community-driven partnership that has funded projects reducing energy costs and helping communities become resilient to severe weather and changing environments. Five Washington County communities have already received Community Action Grants, and the program has leveraged another $5.5 million for infrastructure upgrades and habitat improvement in the region.

Table 7. Priority Area 3: Energy Assistance and Thermal Safety

Priority 3 Objective: Be an energy affordability and thermal safety advocate for Washington County residents by educating on energy efficiency and weatherization and promoting funding opportunities and utility bill assistance.		
Goal 6: Compile a clear, complete, accurate, and current inventory of energy assistance accessible to residents of Washington County, Maine, by Mar. 31, 2026.		
Goal 6 Actions	**Goal 6 Details**	**Goal 6 Expected Outcomes**
Inventory energy assistance organizations, offices, contacts, and programs: • Desktop research • Coordinate with energy assistance partners and utilities through phone calls and meetings.	Changes in funding and policy at the national, state, and local levels inhibit the understanding of available assistance for Washington County residents who would benefit from assistance in implementing energy efficiency measures, weatherization, or paying their energy bills.	An inventory that is clear, complete, accurate, announced, accessible, and has a clear owner and schedule for keeping current
Goal 7: The energy assistance inventory is developed into public-facing materials and a process of keeping the inventory current and the public notified of available assistance are coordinated, defined, and owned by April 28, 2026.		
Goal 7 Actions	**Goal 7 Details**	**Goal 7 Expected Outcomes**
Compile and make available clear and accessible resources explaining all energy assistance available to residents of Washington County: • Mailer in the utility bill • SCEC and utility websites • Social media channels • E-newsletters.	• Collaborative planning on the education and notification of energy assistance is absent. • Energy assistance stakeholders have multiple channels through which to cross-promote assistance such as low-income assistance, budget billing, and balance forgiveness Versant Power n.d.). • Increased outreach can empower residents to help themselves and	• Washington County residents have three or more access points for information on energy assistance, including websites, inserts in their bills, and a phone contact. • An “owner” of the inventory “product” and process to ensure the inventory is kept current, accessible, and distributed.

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	their neighbors and know where to get help.	
Goal 8: Replicate the experience and resources of existing energy coaching programs in other Washington County towns in two additional towns by Mar. 31, 2026.		
Goal 8 Actions	**Goal 8 Details**	**Goal 8 Expected Outcomes**
• Prepare Washington County for an energy coaching program. • Support the dissemination of curated information from existing Washington County energy coaching programs from Eastport and the Passamaquoddy Tribe. • Coordinate community outreach schedules around town meetings and events. • Follow the fulfilment requirements of LD 1967, Resolve, to Design a Maine Home Energy Navigator and Coaching Pilot Program.	• Promote knowledge sharing around building science principles that enhance home comfort through energy efficiency. • Neighbor-to-neighbor energy coaching programs often remove social barriers such as distrust in development organizations. • By teaching the prioritization of efficiency upgrades, community members will be better able to take a phased approach toward efficiency upgrades, abating the often large costs associated with weatherizing a home.	• A permanent energy coaching program supports thermal safety as a public health priority, strengthens trust in energy programs, and enables residents to make informed, phased improvements to their homes—ensuring safe, comfortable, and affordable housing. • Additional resources that lower the costs of home improvement measures.

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4 Implementation Plan

4.1 Near-Term Actions

Summer 2025–Fall 2026: Power to the People awareness campaign—SCEC will educate 15,000 county residents about prevention of and safety during power outages and vegetation management, such as culling risk trees near power lines. (Supports goals 1, 2, & 3).

- Present table at public events, present at schools, and launch and maintain website.
- Support Versant's community meetings and public education.

Winter 2025–Fall 2026: Utility and community partner collaboration—SCEC and Versant collaborate to identify the most vulnerable residents and critical sites, based on Versant's grid reliability data, and increase utility customers' understanding of the local grid and their role in strengthening it. (Supports goals 1, 2, & 3).

- Meetings, co-presentations, and summary of lessons from collaboration.

Winter 2025–Winter 2026: Municipal engagement—develop and present information for select board members and town officials to incorporate vegetation management into municipal planning and policy to encourage private landowners to participate in Versant's program or hire a licensed arborist to remove at-risk trees. (Supports goals 1, 2, & 3).

- Present at eight select board meetings, focusing engagement around the lowest-performing circuits where improvements are likely to have the greatest impact.
- Integrate vegetation management into five comprehensive plans and/or hazard mitigation plans.

Winter 2026–Fall 2027: Emergency response planning if SCEC can staff or otherwise engage with other organizations for potential continuation of the effort—collect data on homes, businesses, and public sites with electricity-dependent medical equipment and related risks by communicating with county and town emergency management and health personnel to reduce power outages and minimize impacts from storms and extreme weather events. (Supports goal 4, 5, 6, & 7).

- Convene emergency management personnel and summarize findings.
- Conduct outage risk analysis.
- Inventory resources for assistance with energy expenses; disseminate relevant information.

Winter 2026–Fall 2027: Develop energy coaching model if SCEC can staff, otherwise engage with other organizations for potential continuation of the effort—draw upon resources and lessons from existing state and regional energy coaching programs to tailor a coaching plan for Washington County residents. (Supports goal 8).

- Develop energy coaching program for two towns within the county.

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4.2 Funding Landscape

The ETIPP program has provided the technical assistance to complete this strategic energy plan and includes potential funding opportunities for implementation.

State funding is available through several sources listed in Table 8, which SCEC could pursue on its own or collaborate as a services wrap-around partner with others who have existing funding or are seeking funding for similar efforts. One option for collaboration is the Washington County Emergency Management Agency. Historically in Maine, emergency management agencies have managed federal funding, such as the Emergency Management Performance Grants from FEMA for preparedness, response, recovery, and mitigation planning.

There is also foundation funding, some included in Table 8, with other private grant sources listed in Maine Philanthropy Center's Directory of Maine Grantmakers (Directory of Maine Grantmakers, 2024), available to members only.

For federal funding, opportunities can be tracked on Grants.gov.

Table 8. Funding Opportunities by the Maine State Government

Fund Name	Funder	Details	Process/Deadlines
Community Action Grant	State of Maine, Governor's Office of Policy, Innovation, and the Future: *Community Resilience Partnership* https://www.maine.gov/future/climate/community-resilience-partnership	SCEC is already one of the regional coordinators for this program. There are specific Community Resilience Partnership Community Actions listed that are eligible for no-match grants. Others qualify for a 10% match. Strategy Area F: *Build Healthy & Resilient Communities*, aligns with projects in this SEP, such as vulnerability assessment and risk reduction planning.	Community Action Grant Round 7 was due June 2026. Round 8 is expected to open spring of 2027, subject to funding. The community must be enrolled. Joint applications are encouraged. When Round 7 recipients are announced, SCEC could inquire with awardees outlining similar initiatives about potential collaboration.
Community Development Block Grant Program, Public Service Grant	Maine Department of Economic and Community Development https://www.maine.gov/decd/community-development/cdbg-program	Provides operating expenses, equipment, and program materials for activities that will provide a new service to the community and benefit low- to moderate-income persons. Public safety programs are eligible. Maximum amount $50,000.	CDBG 2027 funding announcement anticipated winter 2027 based on previous grant cycles.

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Fund Name	Funder	Details	Process/Deadlines
2026 Community Building Program	Maine Community Foundation https://www.mainecf.org/apply-for-a-grant/available-grants-deadlines/community-building-grants/	For organizations with annual expenses below $500,000, a maximum of $10,000; for organizations with annual expenses above $500,000, a maximum of $100,000. For community improvement, capacity building, and investing in people's well-being.	Application deadline is Feb. 17, 2026.

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5 Conclusion

The Washington County strategic energy plan represents a foundational shift toward a more informed, engaged, and resilient energy future—one that is rooted in the lived realities of a rural, forested, and weather-exposed region. Through the ETIPP process, the Sunrise County Economic Council has not only developed a data-informed understanding of reliability, affordability, and safety challenges but has also established the critical relationships and community-centered approach necessary to address them.

This plan underscores that improving energy outcomes in Washington County is not solely a function of infrastructure investment but of coordination, trust-building, and shared responsibility among utilities, local leadership, and residents. By prioritizing hazard mitigation, outage safety and emergency readiness, and energy assistance, SCEC has identified actionable pathways that empower individuals and institutions alike to reduce risk and improve preparedness. The Power to the People initiative exemplifies this approach—translating technical challenges into accessible, community-driven solutions that can scale over time.

Importantly, this SEP acknowledges Washington County's energy challenges are deeply interconnected with broader socioeconomic conditions, including aging populations, housing quality, and economic vulnerability. As such, the strategies outlined herein are designed not only to improve grid performance but to enhance public health, economic stability, and quality of life. The emphasis on education, outreach, and energy coaching reflects a long-term investment in local capacity—ensuring residents are equipped to make informed decisions and advocate for their needs.

Although this plan provides a clear roadmap, its success will depend on sustained collaboration, funding, and adaptive implementation. The relationships established with Versant Power and regional partners—along with identified funding pathways—position SCEC to move from planning to action. As emphasized by SCEC's Tora Johnson, "I've learned a colossal amount from Versant and I appreciate that immensely. Now SCEC understands at a more technical level, and that will be very helpful as we do our town meetings to discuss electrical systems." Equally important, this report is intended to evolve—serving as a living framework that can be revisited as new data, technologies, and opportunities emerge.

Ultimately, this SEP affirms a central premise: Resilient energy systems are built not only through engineering but also through empowered communities. By advancing a model of partnership, transparency, and shared accountability, Washington County is positioned to strengthen its energy future in a way that is equitable, practical, and enduring.

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References

About the Wabanaki Nations. n.d. Abbe Museum. Retrieved December 29, 2025, from https://www.abbemuseum.org/about-the-wabanaki-nations.

Aguilar, O. M., and Fuentes-Albero, C. 2025. *Energy consumption and inequality in the U.S.: Who are the energy burdened?* Finance and Economics Discussion Series 2025–26. Washington: Board of Governors of the Federal Reserve System. https://doi.org/10.17016/FEDS.2025.026.

Anderson, B. G., and Bell, M. L. 2009. Weather related mortality: How heat, cold, and heat waves affect mortality in the United States. *Epidemiology 20*(2), p 205-213. DOI: 10.1097/EDE.0b013e318190ee08.

Ansell, C., and Gash, A. 2008. Collaborative governance in theory and practice. *Journal of Public Administration Research and Theory*, *18*(4), p 543–571. https://doi.org/10.1093/jopart/mum032

Arnstein, S. R. 1969. A ladder of citizen participation. *Journal of the American Institute of Planners*, *35*(4), p 216–224. https://doi.org/10.1080/01944366908977225

Boardman, B. 1991. *Fuel poverty: From cold homes to affordable warmth.* Belhaven Press.

Bryson, J. M., Quick, K. S., Slotterback, C. S., and Crosby, B. C. 2013. Designing public participation processes. *Public Administration Review*, *73*(1), p 23–34. https://doi.org/10.1111/j.1540-6210.2012.02678.

Directory of Maine Grantmakers. 2024. Maine Philanthropy Center. Retrieved December 30, 2025, from https://mainephilanthropy.org/maine-grantmakers/about.

Eastern Research Group, Inc. 2020. *Maine Vulnerability Mapping: Volume 1.* Presentation slides. State of Maine, Department of the Governor's Office of Policy Innovation and the Future. https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/ERG_MCC_Vol1_VulnMapping_9-1-2020.pdf.

Efficiency Maine Trust. 2026. *Saving energy, reducing energy costs, and improving energy conservation.* Efficiency Maine. https://www.efficiencymaine.com/.

Fung, A. 2006. Varieties of participation in complex governance. *Public Administration Review*, *66*(s1), p 66–75. https://doi.org/10.1111/j.1540-6210.2006.00667.

Grow Smart Maine. 2024. Volunteer transportation programs and access to vehicles. Map. Grow Smart Maine: Mapping Maine. https://growsmartmaine.org/mapping-maine/#:~:text=This%20series%20of%20infrastructure%20maps%2C%20plus%20a,%E2%80%9Ctheir%20place%E2%80%9D%2C%20is%20intended%20to%20spark%20conversations.

Hernández, D. 2016. Understanding 'energy insecurity' and why it matters to health. *Social Science & Medicine Journal 167* (September 2016). https://pubmed.ncbi.nlm.nih.gov/27592003/.

This report is available at no cost from the National Laboratory of the Rockies (NLR) at www.nlr.gov/publications.

Hotchkiss, E., and Dane, A. 2019. *Resilience roadmap: A collaborative approach to multi-jurisdictional resilience planning*. Golden, CO: National Renewable Energy Laboratory. NREL/TP-6A20-73509. https://www.nlr.gov/docs/fy19osti/73509.pdf.

The Institute of Electrical and Electronics Engineers, Inc. Standards Association. 2022. *IEEE guide for collecting, categorizing, and utilizing information related to electric power distribution interruption events: IEEE 1782-2022, revision of IEEE Std 1782-2014.*

The Institute of Electrical and Electronics Engineers, Inc. 2012. *IEEE guide for electric power distribution reliability indices: IEEE 1366-2022, revision of IEEE Std 1366-2012.* https://doi.org/10.1109/IEEESTD.2012.6209381.

Thanex Louis, J. 2022. *Maine CDC extreme temperature community resilience guidebook*. Muskie School Capstones and Dissertations. 174. https://digitalcommons.usm.maine.edu/muskie_capstones/174

Klinger, C., Landeg, O., and Murray, V. 2014. Power outages, extreme events and health: A systematic review of the literature from 2011-2012. *PLoS Currents, 6*, ecurrents.dis.04eb1dc5e73dd1377e05a10e9edde673. https://doi.org/10.1371/currents.dis.04eb1dc5e73dd1377e05a10e9edde673.

Lawrence Berkeley National Laboratory. 2024. *Vegetation management: Resilience investment guide.* https://www.energy.gov/sites/default/files/2024-11/111524_Vegetation_Management.pdf.

Maine Climate Council. 2024. *Maine won't wait: A four-year plan for climate action.* https://www.maine.gov/climateplan/sites/maine.gov.climateplan/files/2024-11/MWW_2024_Book_112124.pdf.

Maine Emergency Management Agency. 2020. Response and recovery: Mass care. https://www.maine.gov/mema/response-recovery/mass-care.

Maine Governor's Energy Office. 2025. *Maine energy plan: Advancing affordable, reliable, and clean energy for Maine.* https://www.maine.gov/energy/sites/maine.gov.energy/files/2025-01/Maine%20Energy%20Plan%20January%202025.pdf.

Maine Governor's Energy Office. (2024). *An assessment of Maine's renewable portfolio standard.* https://www.maine.gov/energy/sites/maine.gov.energy/files/inline-files/Maine-RPS-Impacts-and-Procurement-Policy-Options-Report-Master-FINAL.pdf

Maine Infrastructure Rebuilding and Resilience Commission. 2025. *Final report: A plan for infrastructure resilience*. https://www.maine.gov/future/sites/maine.gov.future/files/inline-files/Maine%20Infrastructure%20Resilience%20Plan_May2025.pdf.

Maine Public Utilities Commission. 2021. *Electricity Delivery*. Regulated Utilities. https://www.maine.gov/mpuc/regulated-utilities/electricity?utm_source=chatgpt.com.

This report is available at no cost from the National Laboratory of the Rockies (NLR) at www.nlr.gov/publications.

Maine Public Utilities Commission. 2025. *Residential and small non-residential standard offer service: Consumer information about your electricity supply.* January. Standard Offer Disclosure Labels. https://www.maine.gov/mpuc/regulated-utilities/electricity/standard-offer/disclosure-labels.

Maine Public Utilities Commission. 2024. *Proceedings to identify priorities for grid planning: Versant Power written comments*. January. Procedural Order, Docket No. 2022-00322. https://mpuc-cms.maine.gov/CQM.Public.WebUI/Common/CaseMaster.aspx?CaseNumber=2022-00322.

Maine Shared Community Health Needs Assessment. 2025. Washington County: *Maine shared community health needs assessment report.* https://www.maine.gov/dhhs/mecdc/sites/maine.gov.dhhs.mecdc/files/chna/2025%20Washington%20County%20Report%20Final%204.8.25.pdf#:~:text=In%20Washington%20County%2C%207.4%25%20of,CHNA%20survey%20respondents%20said%20.

Maine State Housing Authority. 2025. Home Energy Assistance Program (HEAP) data. Washington County, Maine. Maine Housing. https://mainehousing.org/data-research/program-data/heap-program-metrics.

Matsuda-Dunn, R., Burns, J., Poudyal, A., Fein-Cole, M., Dugan, J., Peterson, S., Krishnamoorthy, G., and Cutlip-Gorman, J. 2025. *Guidance for grid resilience decisions in rural Minnesota.* Golden, CO: National Renewable Energy Laboratory. https://docs.nlr.gov/docs/fy26osti/92973.pdf.

National Infrastructure Advisory Council. 2010. A framework for establishing critical infrastructure resilience goals: Final report and recommendations by the Council. https://www.dhs.gov/xlibrary/assets/niac/niac-a-framework-for-establishing-critical-infrastructure-resilience-goals-2010-10-19.pdf.

National Oceanic and Atmospheric Administration. 2025. Maine, Office for Coastal Management. December 9. https://coast.noaa.gov/states/maine.html.

P.L.U.S. Program. n.d. Versant Power. Retrieved December 30, 2025, from https://www.versantpower.com/programs/plus-program.

Poudyal, A. 2025. *Utility and grid operator resources for future power systems webinar series: Weather-driven resilience for distribution systems.* Presentation slides. NREL. https://docs.nlr.gov/docs/fy25osti/93953.pdf.

Resolve, to design a Maine home energy navigator and coaching pilot program, ME H.P. 1311 - L.D. 1967. https://legislature.maine.gov/legis/bills/display_ps.asp?LD=1967&snum=132.

Ross, L., Drehobl, A., and Stickles, B. 2018. The high cost of energy in rural America. American Council for an Energy-Efficient Economy.

This report is available at no cost from the National Laboratory of the Rockies (NLR) at www.nlr.gov/publications.

Taylor, W. O., Watson, P. L., Cerrai, D., and Anagnostou, E. N. 2022. Dynamic modeling of the effects of vegetation management on weather-related power outages. *Electric Power Systems Research, 207* (Article 0171840). https://doi.org/10.1016/j.epsr.2022.107840.

U.S. Census Bureau. 2024. American community survey five-year estimates: Poverty status [Data set]. U.S. Department of Commerce. https://data.census.gov/all?q=poverty+Washington+County+maine.

U.S. Census Bureau. 2020. Decennial census. Population and Housing. U.S. Department of Commerce. https://www.census.gov/programs-surveys/decennial-census/decade.2020.html#list-tab-693908974.

U.S. Department of Agriculture. 2025. Forest inventory and analysis (FS 659): Forests of Maine, 2024 FIA annual snapshot. Dataset. United States Department of Agriculture. https://public.tableau.com/views/FIA_OneClick_V2/Pageone?%3Aorigin=viz_share_link&%3AshowVizHome=no#2.

U.S. Department of Energy Office of Cybersecurity, Energy Security, and Emergency Response (CESER). 2021. *State of Maine: Energy sector risk profile.* https://www.energy.gov/sites/default/files/2021-09/Maine%20Energy%20Sector%20Risk%20Profile.pdf

U.S. Department of Health and Human Services (HHS) emPOWER Program. 2025. *Medicare at-risk populations by Geography, Washington County, Maine*. Dataset.

U.S. Energy Information Administration (EIA). 2026. *Retail Sales of Electricity dataset*. Dataset. https://www.eia.gov/electricity/data/browser/.

U.S. Energy Information Administration (EIA). 2025. Analysis of the state of Maine. Independent statistics and analysis. https://www.eia.gov/states/ME/analysis.

U.S. Energy Information Administration (EIA). 2024. Annual electric power industry report, Form EIA-861 detailed data files. https://www.eia.gov/electricity/data/eia861/.

U.S. Energy Information Administration (EIA). 2020. *2020 Residential Energy Consumption Survey (RECS)*. https://www.eia.gov/todayinenergy/detail.php?id=56640&src=%E2%80%B9%20Consumption%20%20%20%20%20%20Residential%20Energy%20Consumption%20Survey%20(RECS)-b5#.

Vermont Energy Investment Corporation (VEIC) and Beech Hill Research. 2024. *Quantifying Maine's household energy burden and affordability gap*. https://www.maine.gov/meopa/sites/maine.gov.meopa/files/inline-files/VEIC_Maine%20Energy%20Burden%20and%20Affordability%202024_2.pdf.

Versant Power. 2026. *LifeLight Program*. https://www.versantpower.com/programs/lifelight-program.

This report is available at no cost from the National Laboratory of the Rockies (NLR) at www.nlr.gov/publications.

Versant Power. n.d.b *Restoration process and time.* https://www.versantpower.com/outages-restoration/restoration-process-time.

Versant Power. n.d. *Programs.* Retrieved December 30, 2025, from https://www.versantpower.com/programs.

Versant Power. 2026. Integrated grid plan: Planning a resilient grid for a sustainable future. https://www.versantpower.com/docs/default-source/environmental/versant-power-igp-report-01122026.pdf?sfvrsn=db08dda1_1.

Versant Power. 2025. Washington County Circuit data 2020–2024. Unpublished raw data. Versant Power (data accessed with permission; restricted use).

Versant Power. 2024. *Climate vulnerability study*. https://www.versantpower.com/docs/default-source/environmental/12-20-2024-versant-ccvs-report-v1.pdf?sfvrsn=34fbaa1a_1.

Versant Power. 2023. Versant Power Bangor Hydro District, Residential Service. Dataset, 2014–2023. Historical data. Versant Power. https://www.versantpower.com/rates/historical-rates.

Wendel, G. W., and Smith, H. C. 1990. *Silvics of North America: Eastern white pine.* U.S. Department of Agriculture, Forest Service Research & Development. December 1. https://research.fs.usda.gov/silvics/eastern-white-pine#:~:text=Annual%20precipitation%20ranges%20from%20about,and%20southern%20Canada%20(51).

Wiser, R., O'Shaughnessy, E., Barbose, G., Cappers, P., and Gorman, W. 2025. "Factors influencing recent trends in retail electricity prices in the United States." *The Electricity Journal 38*(4). https://doi.org/10.1016/j.tej.2025.107516.

Woodall, Christopher W.; Albright, Thomas; Butler, Brett J.; Crocker, Susan J.; Frank, Jereme; Goff, Thomas C.; Gormanson, Dale D.; Kenefic, Laura S.; Kurtz, Cassandra M.; Lister, Tonya W.; Miles, Patrick D.; Morin, Randall S.; Nelson, Mark D.; Piva, Ronald J.; Riemann, Rachel I.; Schanning, Sjana L.; Walters, Brian F.; and Westfall, James A. 2022. *Maine forests 2018: summary report.* U.S. Department of Agriculture, Forest Service, Northern Research Station. https://www.fs.usda.gov/nrs/pubs/rb/rb_nrs126.pdf.

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Appendix A. Additional Supporting Context

Community Energy Planning Process Through ETIPP

Strategic energy plans are designed to meet the needs and goals of the community. Multiple discussions with Sunrise County Economic Council (SCEC), Versant Power, and other members of the community allowed time to discuss Washington County, Maine's, unique energy circumstances, challenges, opportunities, and priorities. The themes that arose from these discussions provided the starting point for the vision statement. Much of the visioning process took place at the on-site workshop in March 2025.

Workshop

The SCEC and the Island Institute hosted a community workshop March 24–27, 2025, to discuss the energy needs and resources in Washington County. Focus areas included energy affordability, efficiency, reliability, and resilience. The objective was for residents to learn about energy planning and systems and to develop focus areas that are the highest priority to the people of Washington County, Maine.

There were 22 participants who took part, in addition to members from the National Laboratory of the Rockies (NLR), Island Institute, and Versant Power.

The workshop began with an introduction of Energy Technology Innovation Partnership Project (ETIPP) by Bryan Mentlik, ETIPP Northeast Regional Lead at NLR, followed by a presentation by NLR researcher, Neah Downs Dybas, on the power grid, sources of electricity in Maine, power reliability, and resilience. Judy Long, Senior Manager, Communications & Brand at Versant Power, then gave a presentation on Versant's role in transmission and distribution, grid planning and resilience measures, and the unique regional challenges to delivering electricity including rural/forested geography, island communities, and aging infrastructure.

Key takeaways included the reliability challenges with electrical service, including frequent and long outages—especially in remote areas of Washington County. In addition, municipal capacity challenges are significant because of a lack of planning staff and limited resilience planning expertise (Eastern Research Group 2020).

Community priorities focused on electricity affordability, reliability, and resilience—especially in remote areas—and economic development opportunities related to energy, including jobs and attracting business. There appeared to be sustained interest in energy efficiency and electrification (heat pumps, electric vehicles) but concerns about grid capacity. It was also expressed that education was needed on energy options, the economics of electricity, and how energy decisions are made in Maine and in Washington County.

Challenges and Opportunities

After the morning presentations, participants were engaged in an energy vision activity to articulate local challenges, opportunities, and energy priorities that were later used to guide the development of the vision statement. The activity aligned with the objectives of Maine's Energy Plan (Maine Governor's Energy Office 2025), which emphasizes affordable, reliable, and

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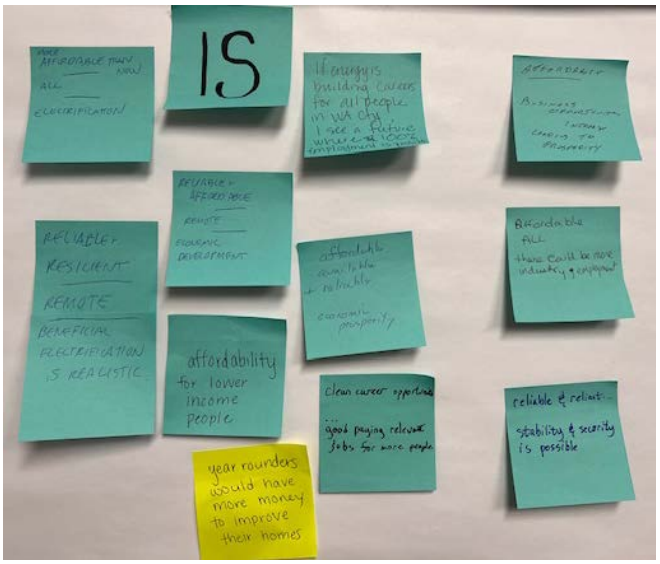
resilient energy; advancing energy technology responsibly, and increasing energy career opportunities.

The energy vision activity paired up workshop attendees and asked them to answer two prompts on sticky notes: 1) if energy **is** _____ for _____ people in Washington County, I see a future where _____ is possible, and 2) if energy **is not** _____ for _____ people in Washington County, I see a future where _____ is possible.

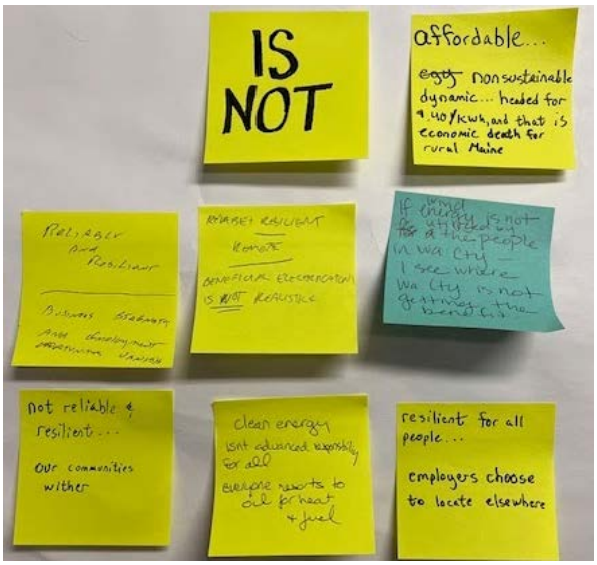
After the notes were collected and organized, the group discussed the responses to clarify and validate themes. Figures A-1 presents photographs of the responses from the visioning activity, which included the following:

- If energy is building careers for all people, I see a future where 100% employment is possible.
- If energy is reliable and resilient, stability and security are possible.
- If energy is affordable, available, and reliable, I see a future of economic prosperity.
- If energy is not resilient for all people, employers will choose to locate elsewhere.
- If energy is not affordable, we are headed for economic death for rural Maine.
- If energy is not reliable and resilient, our communities will wither.



Local Energy Priorities Activity A

"If energy is…" responses from the March 2025 workshop.



Local Energy Priorities Activity B

"If energy is not…" responses from the March 2025 workshop.

Figure A-1. Local energy priorities activities responses

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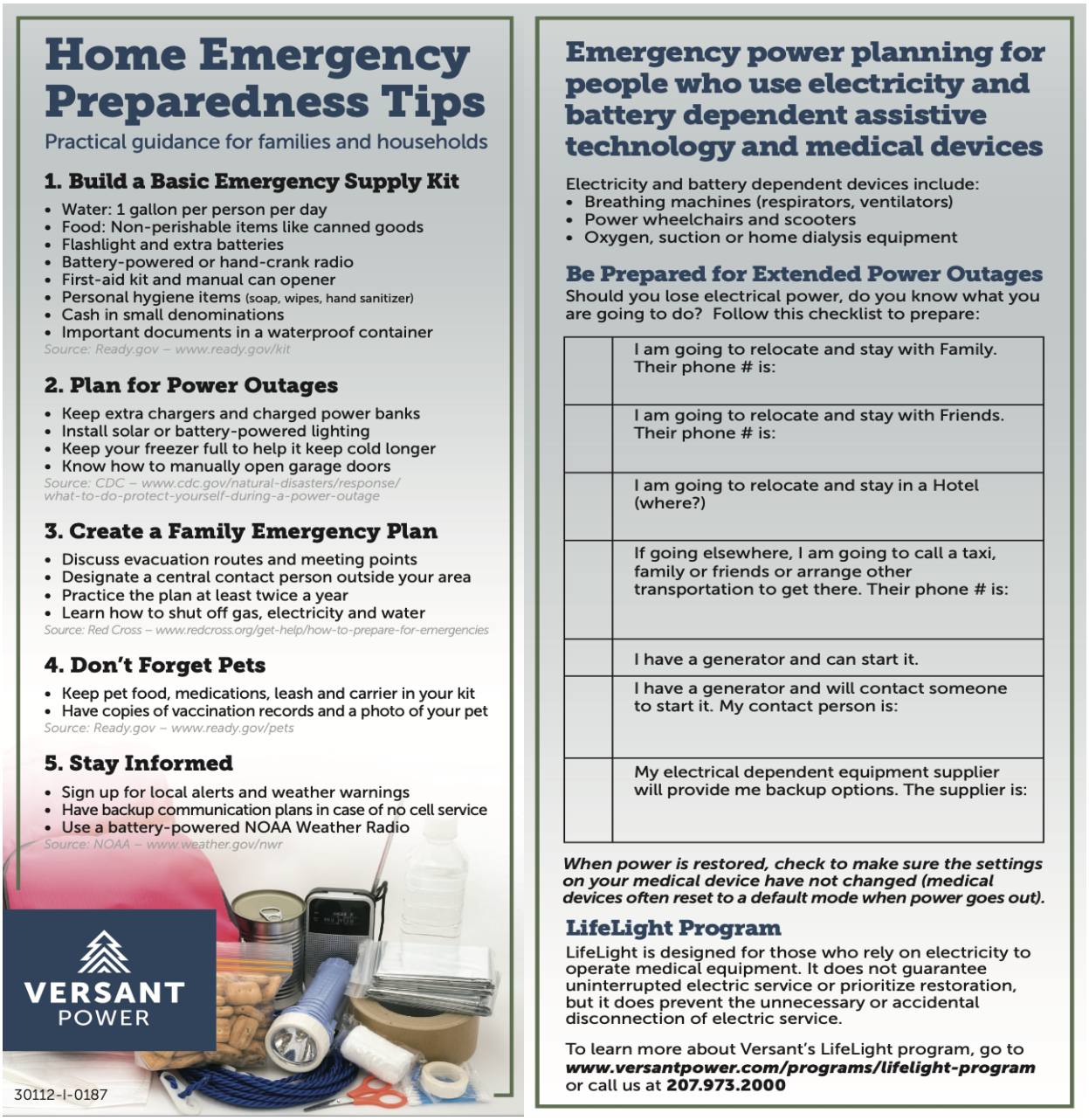
SCEC and Versant Power's Community Outreach Assets



Home Emergency Preparedness Tips

Practical guidance for families and households

1. Build a Basic Emergency Supply Kit

- Water: 1 gallon per person per day
- Food: Non-perishable items like canned goods
- Flashlight and extra batteries
- Battery-powered or hand-crank radio
- First-aid kit and manual can opener
- Personal hygiene items (soap, wipes, hand sanitizer)
- Cash in small denominations
- Important documents in a waterproof container

Source: Ready.gov – www.ready.gov/kit

2. Plan for Power Outages

- Keep extra chargers and charged power banks
- Install solar or battery-powered lighting
- Keep your freezer full to help it keep cold longer
- Know how to manually open garage doors

Source: CDC – www.cdc.gov/natural-disasters/response/what-to-do-protect-yourself-during-a-power-outage

3. Create a Family Emergency Plan

- Discuss evacuation routes and meeting points
- Designate a central contact person outside your area
- Practice the plan at least twice a year
- Learn how to shut off gas, electricity and water

Source: Red Cross – www.redcross.org/get-help/how-to-prepare-for-emergencies

4. Don't Forget Pets

- Keep pet food, medications, leash and carrier in your kit
- Have copies of vaccination records and a photo of your pet

Source: Ready.gov – www.ready.gov/pets

5. Stay Informed

- Sign up for local alerts and weather warnings
- Have backup communication plans in case of no cell service
- Use a battery-powered NOAA Weather Radio

Source: NOAA – www.weather.gov/nwr

VERSANT POWER

30112-I-0187

Emergency power planning for people who use electricity and battery dependent assistive technology and medical devices

Electricity and battery dependent devices include:

- Breathing machines (respirators, ventilators)
- Power wheelchairs and scooters
- Oxygen, suction or home dialysis equipment

Be Prepared for Extended Power Outages

Should you lose electrical power, do you know what you are going to do? Follow this checklist to prepare:

	I am going to relocate and stay with Family. Their phone # is:
	I am going to relocate and stay with Friends. Their phone # is:
	I am going to relocate and stay in a Hotel (where?)
	If going elsewhere, I am going to call a taxi, family or friends or arrange other transportation to get there. Their phone # is:
	I have a generator and can start it.
	I have a generator and will contact someone to start it. My contact person is:
	My electrical dependent equipment supplier will provide me backup options. The supplier is:

When power is restored, check to make sure the settings on your medical device have not changed (medical devices often reset to a default mode when power goes out).

LifeLight Program

LifeLight is designed for those who rely on electricity to operate medical equipment. It does not guarantee uninterrupted electric service or prioritize restoration, but it does prevent the unnecessary or accidental disconnection of electric service.

To learn more about Versant's LifeLight program, go to ***www.versantpower.com/programs/lifelight-program*** or call us at **207.973.2000**

Figure A-2. Versant Power's winter safety flyer, 2025–2026

This report is available at no cost from the National Laboratory of the Rockies (NLR) at www.nlr.gov/publications.

You Can Prevent Trees From Overpowering the Lines

Sunrise County Economic Council
sunrisecounty.org/power-to-the-people/

Don't Let a Tree on Your Property Cause the Next Power Outage!

Look for the Signs!

What is a Risk Tree?

Take stock of potential risks on trees along town roads and right of ways.

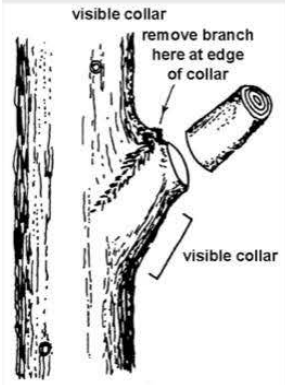
Look for indicators of decay:

- Dying limbs
- Missing leaves
- Loose bark
- Conks/mushrooms near the trunk

Co-dominant stems that make a "V" union (such as shown in the images) are prone to breaking at their meeting point in high winds.

Preventative Pruning

You can prune small trees growing toward power lines as long as they are more than 10 feet from the line.
Directional pruning is the most effective method for keeping trees healthy and away from lines.



Directional pruning:

- Remove branches that are growing toward the line
- Avoid pruning other branches to direct new growth away from the line
- Use a collar cut to avoid sprouts or decay

When To Call An Arborist

Trees less than 10 feet from a power line need to be pruned by an OSHA Certified Arborist. If it doesn't feel safe, call an arborist!

An OSHA Certified Arborist in Maine usually costs between $145 - $180 /hour for pruning depending on location and urgency. Pruning before they become a problem is the best way to save money.

Regularly pruning trees to keep them away from power lines and to remove dead limbs will reduce storm damage and keep your lights on!

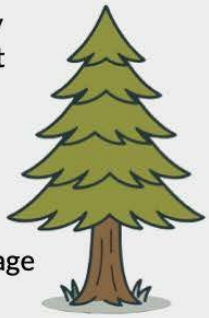


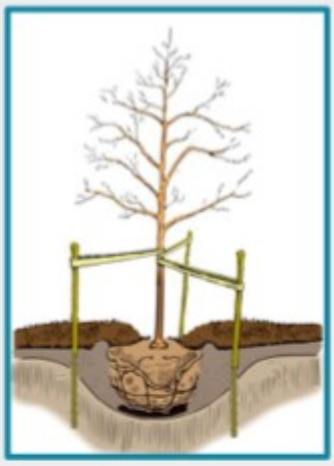
Figure A-3. The College of the Atlantic student project fact sheet, front

This report is available at no cost from the National Laboratory of the Rockies (NLR) at www.nlr.gov/publications.

How to Properly Plant Trees

Plan ahead when planting new trees to avoid future pruning expenses! Make sure you fulfill these requirements when planting trees:

- Plant after the ground thaws in spring and before the first leaves fall
- Choose a tree that is suited to your hardiness zone and planting location.
- Use native soil and minimal additives. Look to Maine's invasive species registry to know what to avoid!
- Dig your planting hole to be at least three times as wide as the root ball, but no deeper than it!
- Care for your planted tree for the first three seasons of growth, water it regularly.
- Another way of prevention is *tree zoning:*



Tree Zoning

Tall Zones

Tall zones include trees that are 60 feet tall or above. Trees in this zone should planted be 35 feet away from any house to avoid damage. Ex: Yellow birch (*Betula sp.*) and Black Cherry (*Prunus sp.*).

Medium Zones

Medium zones include trees that are 40 feet tall or under, planted around your house. When landscaping, these trees should be short enough to avoid damage if they fall. Remember that there might be underground lines. Ex: Flowering Crabapple (*Malus sp.*).

Low Zones

Low zones include trees that are no taller than 25 feet. Low zones are located near sidewalks and roads, ending 25 feet away from power lines. This prevents trees from causing power outages. Ex: American Elder (*Sambucus sp.*) and Smooth Sumac (*Rhus sp.*).

More info: UMaine Cooperative Ext. Plants for the Maine Landscape

Figure A-4. The College of the Atlantic student project fact sheet, back

This report is available at no cost from the National Laboratory of the Rockies (NLR) at www.nlr.gov/publications.

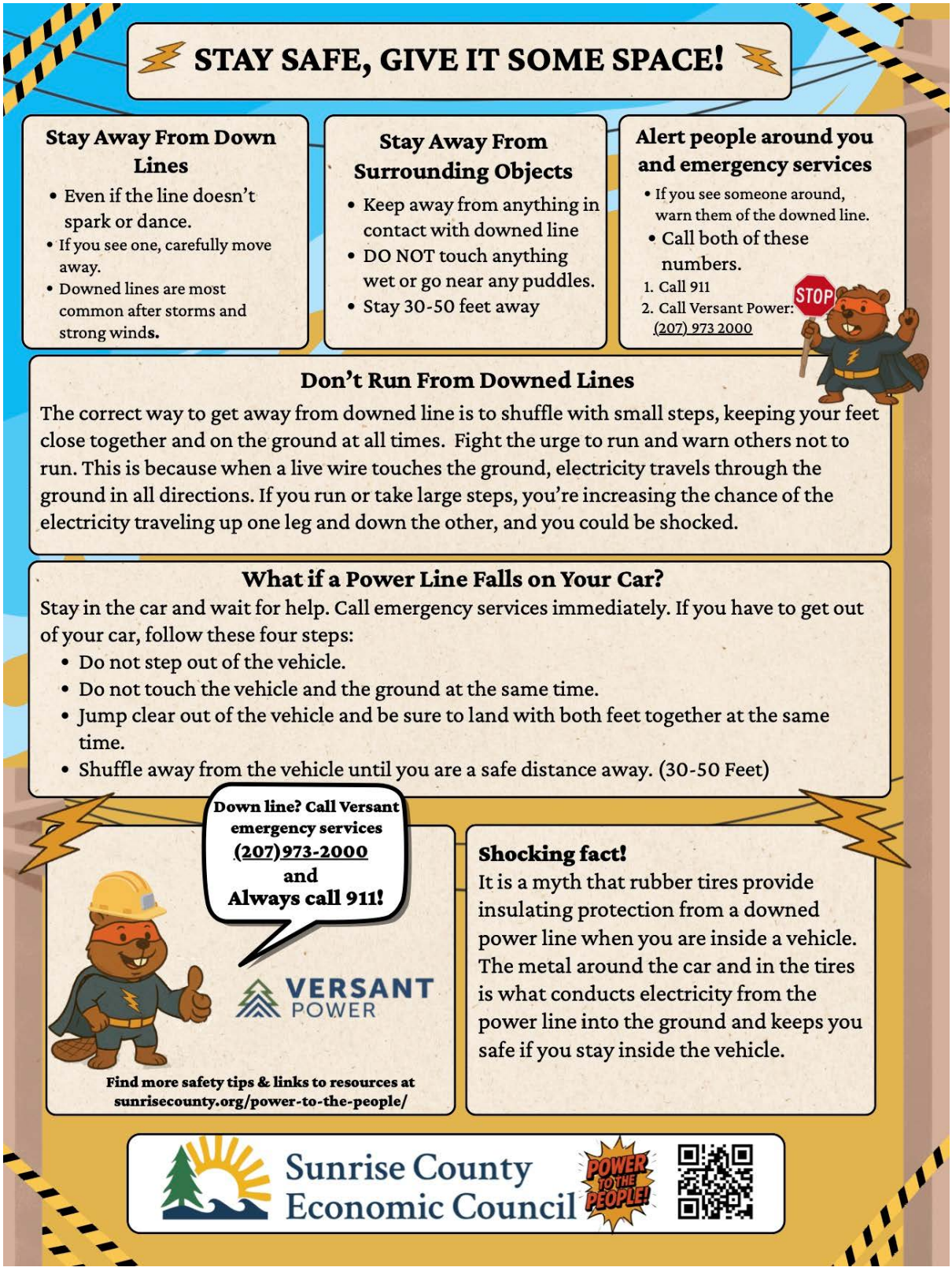


Figure A-5. SCEC's Power to the People fact sheet

This report is available at no cost from the National Laboratory of the Rockies (NLR) at www.nlr.gov/publications.

Figure A-6. SCEC's municipal information poster, front

This report is available at no cost from the National Laboratory of the Rockies (NLR) at www.nlr.gov/publications.

Figure A-7. SCEC's municipal information poster, back

This report is available at no cost from the National Laboratory of the Rockies (NLR) at www.nlr.gov/publications.

Current Electricity Rates, Incentives, and Legislation

Understanding current electricity rates, available incentives, and relevant legislation is critical to evaluating the total cost of energy for Washington County residents and informing community and utility decision-making. These factors are variable and subject to change based on market conditions, regulatory decisions, and policy updates and should be reviewed regularly.

Electricity Rates

Electricity rates in Washington County are determined by multiple components, including supply (standard offer), transmission, distribution, and policy-related charges, which are regulated or administered by the Maine Public Utilities Commission. Distribution service is provided by Versant Power, whereas supply rates are set through standard offer procurements administered by the Commission (Maine PUC 2025).

According to the U.S. Energy Information Administration, the average residential retail electricity price in Maine was 24.29¢/kWh in 2024, compared to the national average of 16.48¢/kWh, representing a 43% increase from 2021 levels (U.S. Energy Information Administration n.d.). Historical data from Versant Power indicate between 2014 and 2023, standard offer (supply) rates increased from $0.0743/kWh to $0.1597/kWh, transmission rates increased from $0.0248/kWh to $0.0433/kWh, and distribution and other charges increased from $0.0756/kWh to $0.0890/kWh (Versant Power 2023).

These trends reflect underlying cost drivers. In Maine, recent electricity cost increases reflect a combination of region-specific and broader market factors. State and regional sources indicate transmission investment, storm recovery costs, and supply price volatility—driven in part by New England's reliance on natural gas—have contributed to rising rates (Maine Public Utilities Commission 2025; U.S. Energy Information Administration 2025). National analyses of electricity pricing trends similarly identify load growth and expansion of distributed and utility-scale generation as contributing factors in some regions, though these effects vary by state and are not uniformly applied (Wiser et al. 2025). These cost drivers are not strictly additive and reflect broader rate-setting dynamics.

Incentives and Assistance Programs

Several programs are available to reduce energy costs and improve efficiency. The Efficiency Maine Trust administers incentives for heat pumps, insulation, heat pump water heaters, and other efficiency measures as well as financing options for residential and commercial customers (Efficiency Maine Trust 2026.).

For income-qualified households, the Maine State Housing Authority administers the Home Energy Assistance Program and the Energy Crisis Intervention Program, which provide financial support for heating costs, weatherization, and emergency energy needs (Maine Housing 2025). In addition, Versant Power offers a low-income assistance program and billing options such as budget billing and arrearage management to support customers facing financial hardship (Versant Power 2025).

This report is available at no cost from the National Laboratory of the Rockies (NLR) at www.nlr.gov/publications.

Legislation and Policy Context

State and regional policies influence electricity costs, program funding, and infrastructure investment. Many programs supporting energy efficiency, distributed generation, and grid modernization, administered through the Maine Public Utilities Commission and Efficiency Maine Trust, are funded in part through ratepayer-supported mechanisms (Maine PUC 2025).

Recent legislation, including H.P. 1311/L.D. 1967, directs the design of a Maine Home Energy Navigator and Coaching Pilot Program to improve access to energy efficiency resources and reduce energy burden through community-based support (Maine Legislature 2025). Regional market dynamics, including New England's reliance on natural gas for electricity generation, also contribute to seasonal price variability and overall electricity costs (U.S. Energy Information Administration 2025).

Together, these rate structures, incentives, and policies shape the energy landscape for Washington County. Although they contribute to cost pressures, particularly in a rural and energy-burdened region, they also provide pathways for reducing energy use, improving efficiency, and increasing resilience when effectively leveraged by communities and utilities.

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