Power outages could persist in some parts of Vermont after wet snow blankets region

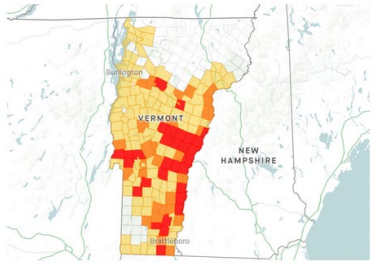
By Maggie Cassidy
December 17, 2022, 10:46 am

ENVIRONMENT

2nd major storm in a week leaves more than 12,000 without power

Outages were widespread in the northeastern corner of the state, which received the brunt of the storm.

By Habib Sabet
December 4, 2023, 11:58 am



Green Mountain Power's outage tracker showed about 51,000 customers without power as of 10 a.m. Saturday morning. The utility said it had already restored power to nearly 34,000 customers, but more outages could come. Image via Green Mountain Power

Power lines in central Vermont on Monday, Nov. 27. Photo by Natalie Williams/VTDigger

Resilience Proceeding

Presentation to the VSPC

January 22, 2025

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Overview

PUC invited PSD to submit a petition for a Resilience Proceeding

- Final Order in Case No. 23-3501-PET, GMP's "Zero Outages Initiative"

PUC encouraged PSD to consult with DUs and others in developing petition

- PSD has had discussions with some, but not all, DUs to date

Petition or status update due mid-February

- PSD seeking input on **participation, timeline, and scope** to include in petition

"We agree with the Department that a broader, general resilience proceeding that involves all of Vermont's distribution utilities and other affected entities would be timely and beneficial. GMP is not alone in dealing with the recent uptick in severe weather and extended outages. All utilities in Vermont are confronting similar challenges and, like GMP, will need to begin to re-evaluate their distribution system planning to respond to evolving climate patterns. This issue is of particular concern as state energy policy continues to encourage greater reliance on electricity for heating and transportation."

-ORDER GRANTING IN PART THE PETITION OF GREEN MOUNTAIN POWER CORPORATION FOR APPROVAL OF THE ZERO OUTAGES INITIATIVE, Case No. 23-3501-PET, p. 32

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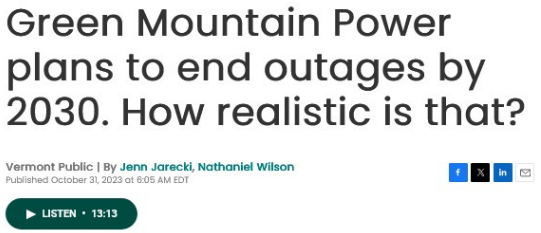
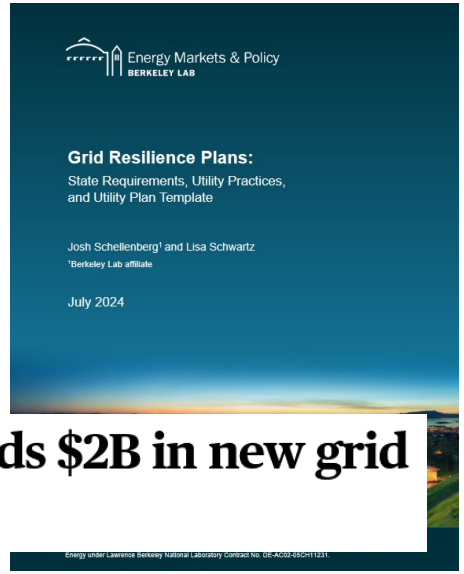
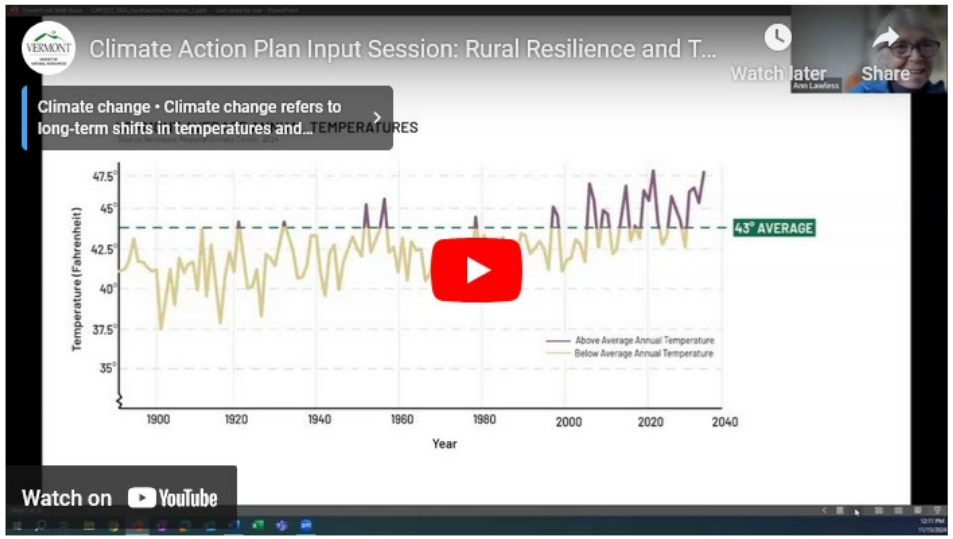
Context





Biden admin awards $2B in new grid resilience grants

Governor Phil Scott and Treasurer Mike Pieciak Announce Resilience Implementation Strategy Initiative



GMP Zero Outages Initiative (Case No. 23-3501-PET)

- PSD recommended the Commission open a resilience proceeding to develop a common framework for **defining, valuing, measuring, and planning for resilience**. Also to incorporate updates to Rule 4.900.

Recent state, regional, national focus on resilience

Award of DOE deep-dive technical assistance

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Vermont's deep-dive TA application to DOE

Applied to DOE 7/19/2024

- For assistance in developing a VT framework for resilience planning, benefit-cost analysis, and metrics & targets selection

Selected to move forward to scoping 8/26/24

- Resilience planning framework/template tailored to VT
- Scalable distribution system resilience BCA
- Assistance with resilience proceeding

"Deep-Dive" Technical Assistance team includes:

- **Dr. Juan Pablo "JP" Carvallo**, Research Scientist, Energy Markets & Policy, Lawrence Berkeley Lab
- **Dr. Alan Sanstad**, Affil Scientist/Sr. Scientist, Energy Markets & Policy, Lawrence Berkeley Lab
- **Dr. Benjamin Leibowicz**, Associate Professor, University of Texas at Austin
- **Nina Hebel**, PhD student, University of Texas at Austin

Proposed Scope

Process	Participants	Topical workshops/working groups

• PSD petitions PUC
• PUC opens proceeding
• Initial all-hands workshop(s) led by PSD/labs to review efforts to develop & implement utility resilience planning frameworks in other states
  • Key takeaways
  • VT comparison
  • Menu of potential outcomes
• PSD/labs lead sequential working groups on main topics, reporting out to PUC
• Outcomes
  • VT-specific resilience planning template
  • VT-specific BCA framework
  • VT-specific resilience metrics
• Est. duration 18 mos
	• DUs, VELCO, PSD
	• *VEM, ANR, RPCs, municipalities*
		• Resilience Planning
		  • Defining, measuring, metrics, targets
		  • Climate/weather-related risk analysis
		  • EJ & equity
		  • Consistency/complementarity with Rule 4.900, SQRPs
		• Resilience valuation
		  • Cost-benefit analysis
		• Regulatory aspects
		  • Requirements
		  • Scalability
		  • Transition path

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Questions or feedback?

Please send any feedback on the proposed scope by **February 5** to:

anne.margolis@vermont.gov

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TA Team Selected Works

Consumer Benefits of Clean Energy: The resilience value of residential solar + storage systems in the continental U.S.

AUTHORS: Baik, Sunhee; Cesca Miller, and Juan Pablo Carvallo.

12/2024

2025

The power reliability event simulator tool (PRESTO): A novel approach to distribution system reliability analysis and applications

AUTHORS: Baik, Sunhee; Juan Pablo Carvallo; Galen L Barbose; Will Gorman; Cesca Miller, and Michael Spears.

03/2025

Power Outage Economics Tool: A Prototype for the Commonwealth Edison Service Territory

AUTHORS: Larsen, Peter H; Juan Pablo Carvallo; Alan H Sanstad; Sunhee Baik; Ian Sue Wing; Dan Wei; Adam Rose; Jeremy Smith; Christopher Ramee, and Ridge Peterson.

05/2024

Sanstad, Alan H. 2016. "Regional economic modeling of electricity supply disruptions: a review and recommendations for research." Berkeley, CA: Lawrence Berkeley National Laboratory. LBNL-1004426. https://emp.lbl.gov/publications/regional-economic-modeling.

Baik, Sunhee, Alan H. Sanstad, Nichole Hanus, Joseph H. Eto, and Peter H. Larsen. 2021. "A Hybrid Approach to Estimating the Economic Value of Power System Resilience." *The Electricity Journal* 34 (8): 107013. https://doi.org/10.1016/j.tej.2021.107013.

Zhang, N.*, Leibowicz, B.D., Hanasusanto, G.A., 2020. Optimal residential battery storage operations using robust data-driven dynamic programming. IEEE Transactions on Smart Grid 11, 1771-1780.

Sanstad, A. H., Leibowicz, B. D., Zhu, Q., Larsen, P. H., & Eto, J. H. (2022). Electric utility valuations of investments to reduce the risks of long-duration, widespread power interruptions, part I: Background. *Sustainable and Resilient Infrastructure*, *8*(sup1), 311–322. https://

Leibowicz, B. D., Sanstad, A. H., Zhu, Q., Larsen, P. H., & Eto, J. H. (2022). Electric utility valuations of investments to reduce the risks of long-duration, widespread power interruptions, part II: Case studies. *Sustainable and Resilient Infrastructure*, *8*(sup1), 203–222. https://

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New Challenges ⟷ New Tools

Electrification

High penetration of renewables

Climate change

Storage

Load management

IT/OT

Innovations in hardening & undergrounding