WHITE PAPER

Building Resilience to Weather the Storm

Why 2026's BRIC FEMA Resilience Investment Is Critical For Rural America Resiliency

A PwrMetrix Analysis of National SAIDI/SAIFI Trends and the Distribution Cooperative's Path to the 2026 FEMA BRIC Grant Cycle

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Executive Summary

In 2023, the United States experienced 28 separate weather and climate disasters that each caused at least $1 billion in damage. That is an estimate and not the actual cost . The number is much higher.

Total damages reached at least **$92.9 billion, and the year's disasters caused 492 direct and indirect deaths, the eighth-highest death toll from extreme weather in the 44-year record**.

For the electric distribution utilities that keep the lights on through hurricanes, ice storms, wildfires, and record heat, 2023 was not an abstract statistic. It showed up directly in the reliability numbers.

PwrMetrix, Aerinet Solutions' cost data analytics outage platform is the primary way for several distribution cooperatives to analyze the cost of these issues. NRECA built their Reliability Benchmarking Group on the PwrMetrix platform, which tracks System Average Interruption Duration Index (SAIDI) and System Average Interruption Frequency Index (SAIFI) data and data sourced from the U.S. Energy Information Administration (EIA) for hundreds of U.S. distribution utilities. Our 10-year trend analysis (2015–2024), excluding major event days, shows national **SAIDI climbing to 151.6 minutes per customer in 2023 — the single highest point of the decade, a 34% jump from 2021's 109.7 minutes and well above the 2015–2022 average of roughly 113 minutes**.

National SAIFI followed the same pattern, spiking to 1.398 interruptions per customer in 2023 against a 2015–2022 average near 1.14.

The story holds at the national scale, too. PwrMetrix's scatter analysis of SAIFI versus SAIDI across 714 U.S. distribution utilities shows a strong, consistent relationship between interruption frequency and interruption duration. Utilities that experience more outages also experience longer ones, and the utilities clustered at the upper end of that curve are disproportionately those serving rural, storm-exposed service territories — including many of the distribution cooperatives PwrMetrix serves. This is where cost is underestimated in many of these areas. Since rural America has very few meters per mile the outage issue becomes more dire when extreme weather hits.

This white paper uses PwrMetrix's EIA-sourced reliability data alongside NOAA's 2023 disaster record to make connected points:

1) 2023 was not a fluke but part of an accelerating trend; proactive grid-hardening investment — such as funding through the U.S. Department of Energy's Grid Resilience and Innovation Partnerships (GRIP) program — measurably narrows the gap between a utility's performance and the regional storm trendline;
2) the 2026 FEMA Building Resilient Infrastructure and Communities (BRIC) grant cycle, including its dedicated Building Code Plus-Up set-aside, represents a critical and time-limited opportunity for distribution cooperatives to fund the resilience projects their member-communities need.

Key Takeaways

- 2023 set a record 28 billion-dollar weather disasters, and PwrMetrix's own EIA-sourced data shows the same record in national SAIDI (151.6 min.) and SAIFI (1.398) — the highest of the past decade.
- The trend is accelerating, not cyclical: 2019-2023 disaster costs averaged $120.6 billion a year, more than double the 44-year average, with just 18 days between events (2018-2022) versus 82 in the 1980s.

- Proactive grid-hardening — like the GRIP-funded Southeast cooperative case study in this paper — measurably contains outage volatility relative to regional storm trends.
- The 2026 FEMA BRIC cycle ($1 billion, open through July 23, 2026) and its $81 million Building Code Plus-Up are a time-limited opportunity for cooperatives to convert reliability and flood-risk data into funded resilience projects.

A Decade in Outage Data: The 2023 Spike

Reliability engineers use two standard metrics to describe how well a utility keeps power flowing. SAIDI — the System Average Interruption Duration Index — measures the average number of minutes a customer is without power over a given period. SAIFI — the System Average Interruption Frequency Index — measures how many times, on average, a customer experiences an interruption. Utilities and regulators typically report both figures two ways: "with major event days," which captures the full impact of hurricanes, ice storms and other significant events, and "without major event days," intended to reflect a utility's baseline, day-to-day reliability performance.

The chart below is drawn from PwrMetrix's 10-year (2015–2024) trend analysis of EIA-reported SAIFI and SAIDI data, without major event days, aggregated across the U.S. distribution utility population. Even with major storm days excluded, the trend is unmistakable. National SAIDI held in a relatively narrow band of 111–117 minutes from 2017 through 2022. In 2023 it jumped to 151.634 minutes — a level not approached at any other point in the ten-year record — before retreating to 116.47 minutes in 2024. SAIFI moved in lockstep, rising from a 2015–2022 range of roughly 1.13–1.19 interruptions per customer to 1.398 in 2023, then falling back to 1.139 in 2024.

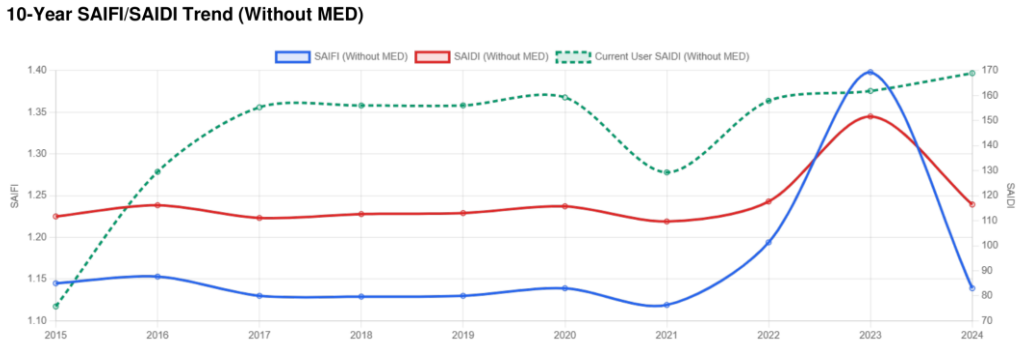

Figure 1. PwrMetrix 10-Year SAIFI/SAIDI Trend (Without Major Event Days), 2015–2024, sourced from EIA distribution utility filings. Green dashed line: PwrMetrix Southeast cooperative client ("Current User") SAIDI.

The green dashed line in the chart tracks a PwrMetrix client: a Southeast distribution cooperative. Its SAIDI performance reflects the same regional storm pressure the national data shows — a rise through 2016–2020, a dip in 2021, and a climb back through 2022–2024 — but its trajectory sits measurably more contained than the volatility surrounding it in the national storm years. That gap is not incidental.

This cooperative implemented a resiliency initiative funded in part through the U.S. Department of Energy's Grid Resilience and Innovation Partnerships (GRIP) program, discussed in Section 5. The comparison illustrates the central argument of this paper: grid-hardening investment measurably changes outcomes, even in a region absorbing the same storm exposure as its neighbors.

Source: PwrMetrix platform (Aerinet Solutions), aggregated from U.S. Energy Information Administration (EIA) Form EIA-861 distribution reliability filings.

Benchmarking Against the Nation: The PwrMetrix Scatter

To understand where an individual utility stands relative to its peers, PwrMetrix plots SAIFI against SAIDI across the full population of reporting U.S. distribution utilities — 714 utilities in the current dataset — using EIA-sourced data. Each point on the chart represents one utility's most recently reported SAIFI (interruption frequency, x-axis) and SAIDI (interruption duration, y-axis). The dashed regression line shows the overall relationship between the two metrics across the population.

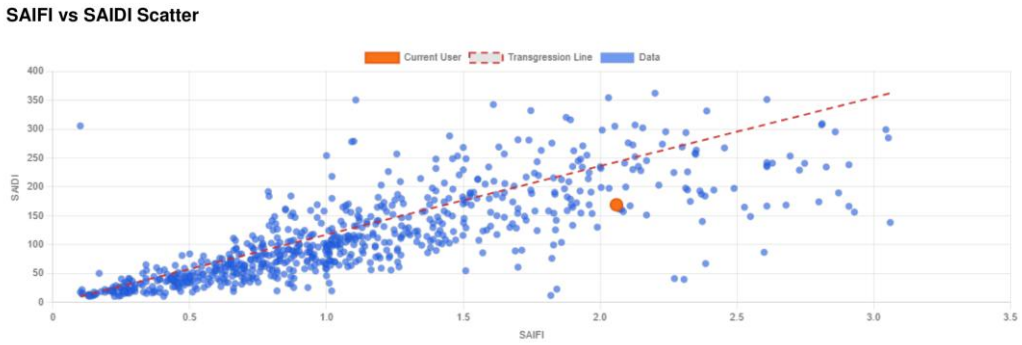

Figure 2. PwrMetrix SAIFI vs. SAIDI Scatter, 714 U.S. distribution utilities, sourced from EIA data. Orange point: highlighted PwrMetrix client utility relative to the national distribution.

The pattern is unmistakable: utilities cluster tightly along the regression line at the lower end of the distribution, then fan out with increasing scatter as both frequency and duration rise. Utilities in the upper-right quadrant — experiencing both frequent and prolonged outages — are disproportionately those serving large rural footprints, extensive overhead line miles, and storm-exposed terrain: precisely the profile of many electric distribution cooperatives across the South, Southeast and Midwest. The point highlighted in orange ("Current User") illustrates how PwrMetrix lets any individual cooperative see, at a glance, exactly where its reliability performance falls relative to nearly 700 of its national peers — and how far it would need to move to close the gap.

This benchmarking capability matters well beyond internal performance tracking. As Section 6 details, FEMA's BRIC program requires subapplicants to document risk and demonstrate cost-effectiveness. A cooperative that can show, with EIA-sourced data, precisely how its outage performance compares to hundreds of similar systems nationally is in a fundamentally stronger position to build a competitive mitigation grant application than one relying on anecdote alone.

Source: PwrMetrix platform (Aerinet Solutions), aggregated from U.S. Energy Information Administration (EIA) distribution reliability filings, 714-utility national dataset.

A Pattern, Not an Anomaly: Why Extreme Weather Will Keep Testing the Grid and the BRIC Funding is Critical

The reliability data is a symptom of a broader trend. According to NOAA's National Centers for Environmental Information, the United States sustained 28 separate billion-dollar weather and climate disasters in 2023 — the most in any year since record-keeping began in 1980, surpassing the prior record of 22 events set in 2020. Those events included 17 severe weather/hail events, four flooding events, two tornado outbreaks, two tropical

cyclones, one wildfire, one drought/heat wave and one winter storm, together causing at least $92.9 billion in damage and 492 deaths.

2023 was not an isolated bad year. It was the fourth consecutive year (2020–2023) in which the U.S. recorded 18 or more billion-dollar disasters, a pattern NOAA's own analysis describes as “becoming the new normal.” Over the most recent five-year period on record (2019–2023), the U.S. absorbed $603.1 billion in billion-dollar disaster damage — a five-year annual average of $120.6 billion, more than double the 44-year inflation-adjusted average. Over the ten years from 2014 to 2023, the country sustained $1.2 trillion in damage from 173 separate billion-dollar events. And the events are compounding faster than ever: from 2018 to 2022, the U.S. averaged just 18 days between billion-dollar disasters, down from 82 days in the 1980s — leaving utilities, emergency managers and FEMA itself less time to recover and prepare between events.

The South, Central and Southeast U.S. — the heart of electric cooperative territory — have absorbed the highest cumulative disaster costs of any U.S. region since 1980.

Texas leads the nation with roughly $402 billion in cumulative billion-dollar disaster costs, followed by Florida (~$389 billion) and Louisiana (~$304 billion).

NOAA's Fifth National Climate Assessment (2023) is explicit about one of the underlying drivers: “vulnerability is especially high where building codes are insufficient for reducing damage from extreme events” — a finding with direct implications for the Building Code Plus-Up funding discussed in Section 7.

Table 1. Most Damaging U.S. Billion-Dollar Disasters of 2023

2023 Event	Deaths	Damage Cost
Southern / Midwestern Drought & Heat Wave	247	$14.5 billion
Central Tornado Outbreak & Eastern Severe Weather (Mar. 31–Apr. 1)	33	$5.7 billion
Hawaii (Maui) Firestorm, August 8	100	$5.6 billion
All 28 billion-dollar events, full year 2023	492	$92.9 billion

Source: NOAA National Centers for Environmental Information, “2023: A Historic Year of U.S. Billion-Dollar Weather and Climate Disasters,” climate.gov, January 2024.

Grid Resiliency and Innovation Partnership: A Case Study in Proactive Resiliency that Doesn’t Address Emergencies

The U.S. Department of Energy's Grid Resilience and Innovation Partnerships (GRIP) program is a $10.5 billion federal investment in grid-hardening infrastructure, created to help utilities withstand extreme weather while meeting growing demand. In its second round, announced in October 2024, DOE allocated roughly $4.2 billion across 46 projects in 47 states and the District of Columbia. Of particular relevance here, DOE announced more than $600 million on October 13, 2024, specifically to harden the electric grid across the Southeastern United States in the aftermath of Hurricanes Helene and Milton — funding advanced conductors and controls, self-healing grid devices, more efficient fault response and dispatch, and rebuilt or reconductored transmission infrastructure. Awards under the program have gone directly to rural electric cooperatives; one example is a $117 million award to Hoosier Energy Rural Electric Cooperative and Southern Illinois Power Cooperative to loop new transmission feeds to substations across seven storm- and tornado-exposed counties.

The green line in Figure 1 (Section 2) represents exactly this kind of investment in practice: a PwrMetrix client cooperative in the Southeast that implemented a GRIP-funded resiliency initiative. Its SAIDI trajectory absorbed the same 2022–2024 regional storm pressure visible in the national data, but did so from a more contained baseline than the surrounding volatility in the national trendline would predict. GRIP funding, however, is large but finite, and highly competitive — it cannot be the only resiliency funding strategy available to the nation's roughly 900 distribution cooperatives. That is precisely the gap FEMA's BRIC program, and the 2026 cycle now open for application, is designed to fill.

Source: U.S. Department of Energy, Grid Deployment Office, Grid Resilience and Innovation Partnerships (GRIP) Program award announcements, October 2024.

Why FEMA Mitigation Funding Is Essential — and Why the Flood Overlay Matters

Federal disaster response spending is reactive by design; it arrives after damage is done. FEMA's Building Resilient Infrastructure and Communities (BRIC) program exists to fund the opposite: mitigation projects completed before a disaster strikes, reducing the damage, the recovery cost and the risk to life safety the next time an extreme event occurs. For the current BRIC funding opportunity, FEMA has made $1 billion available nationally, with the application window open from March 25 through July 23, 2026. Of that total, $757 million is available through the national competition and $162 million is set aside for state, territory and tribal government allocations, on top of the dedicated Building Code Plus-Up funding described in Section 7. Most BRIC awards carry a 75% federal / 25% non-federal cost share, dropping to 90% federal / 10% non-federal for small and economically disadvantaged communities — but every subapplication must still demonstrate, with data, that the proposed project is cost-effective and reduces risk to real assets and real people.

That data requirement is where **PwrMetrix's flood overlay capability becomes essential rather than optional. FEMA's own BRIC guidance requires flood mitigation subapplications to include a benefiting area map and associated geospatial file demonstrating which NFIP-insured properties and structures a project actually protects.** PwrMetrix is built to overlay FEMA flood hazard maps directly against a cooperative's own outage, asset, and SAIDI/SAIFI data — substation by substation, feeder by feeder. That overlay lets a cooperative answer, with a map and a number rather than a narrative, exactly which circuits sit inside high-risk flood zones, how those circuits have historically performed, and how many members and how much NFIP-insured property would benefit from hardening a specific asset.

Heading into the 2026 BRIC cycle, that capability is a genuine competitive advantage. FEMA has signaled it is tightening national competition scoring toward construction-ready, well-documented infrastructure projects, including added points tied to project design readiness. A subapplication built on a defensible, data-driven benefit-cost case — the kind PwrMetrix's flood-map overlay is designed to produce — is far better positioned to compete for a rigorous, finite pool of mitigation dollars than one built on generalized risk statements.

Table 2. FY24–FY25 BRIC Funding at a Glance (Application Window: March 25 – July 23, 2026)

FY24–FY25 BRIC Funding Component	Amount
National Competition	$757 million
State / Territory & Tribal Government Set-Aside	$162 million
State / Territory Building Code Plus-Up (max. $1M each)	$56 million

Tribal Building Code Plus-Up	$25 million
Total FY24–FY25 BRIC Funding Opportunity	$1.0 billion

Source: FEMA, Building Resilient Infrastructure and Communities (BRIC) Notice of Funding Opportunity Fact Sheet, FY24–FY25; FEMA BRIC Program Support Materials.

The Building Code Plus-Up: A Dedicated Path to Resilience Dollars

Within the current $1 billion BRIC funding opportunity, FEMA has carved out $81 million specifically to reward jurisdictions for adopting and enforcing up-to-date, hazard-resistant building codes — a direct response to sustained advocacy from the International Code Council and other building-safety organizations, and a direct response to NOAA's own finding that insufficient building codes are a primary driver of rising disaster vulnerability. The Building Code Plus-Up is split into two components: $56 million for a State/Territory Building Code Plus-Up, capped at $1 million per state or territory, and $25 million for a Tribal Building Code Plus-Up available to federally recognized tribal governments.

Unlike the national competition, which funds specific infrastructure projects, the Building Code Plus-Up rewards the governance layer beneath those projects: the adoption, updating and active enforcement of current hazard-resistant building codes at the state, territorial or tribal level. That distinction matters for distribution cooperatives. A cooperative cannot apply for Building Code Plus-Up funding directly, but it has a direct stake in whether its state pursues it: stronger, better-enforced building codes across a cooperative's service territory reduce the frequency and severity of the very outages captured in the SAIDI and SAIFI data throughout this paper, by reducing wind- and flood-driven damage to the structures, poles and distribution infrastructure that codes govern.

Cooperatives preparing a 2026 BRIC subapplication should treat the Building Code Plus-Up as connective tissue rather than a separate opportunity: confirming their state's current code adoption status, engaging their state hazard mitigation officer on code enforcement priorities, and — where relevant — pairing an infrastructure-hardening subapplication with documentation of local code compliance can materially strengthen a state's overall competitiveness for both the national BRIC competition and its Plus-Up allocation.

Source: FEMA BRIC Notice of Funding Opportunity Fact Sheet, FY24–FY25; International Code Council building code advocacy materials.

Subapplicants: How Distribution Cooperatives Can Help Their Towns

BRIC funding does not flow directly from FEMA to a distribution cooperative. States, U.S. territories and federally recognized tribal governments are the only eligible applicants; they submit the funding application to FEMA and, once awarded, make sub-awards to subapplicants — local governments, special districts, tribal governments, and the utilities operating within them. In practice, this means a distribution cooperative typically pursues BRIC funding by partnering with a subapplicant of record: a county, municipality or special utility district within its service territory, or, in some states, directly as a special-district utility subapplicant, depending on the cooperative's legal structure and the state's hazard mitigation office guidance.

Every subapplicant — and the applicant submitting on its behalf may need to be covered by a FEMA-approved Hazard Mitigation plan. Cooperatives that have not already engaged their county or state emergency management office on mitigation planning should start there.

This is where PwrMetrix's role compounds for cooperatives and the local governments they partner with: SAIDI/SAIFI performance benchmarked against nearly 700 national peers (Section 3), FEMA flood-map overlays tied to specific circuits and substations (Section 6), and a documented before/after resiliency case study like the

Southeast cooperative's GRIP-funded initiative (Section 5) together form the evidentiary backbone of a competitive BRIC subapplication — the kind of data-driven risk and benefit-cost case FEMA's tightened 2026 scoring criteria are designed to reward.

Next Steps

Weather trends are getting worse and more violent every year. Billion-dollar disasters are adding up. Communities cannot continue to operate without FEMA funding during emergencies to secure the grid. PwrMetrix's own EIA-sourced reliability data shows that record directly in the numbers: the highest national SAIDI and SAIFI readings of the past decade and it will get worse. That is why you need to prepare immediately for the 2026 NOFO for BRIC Funding. That means start meeting with the county or state officials now. If you have tribal areas they qualify for this as well.

NOAA's data makes clear this is a trend, not an anomaly — disasters are more frequent, more costly, and more closely spaced than at any point in the 44-year record. Distribution cooperatives sit at the center of this pressure, serving the rural, storm-exposed territories that carry a disproportionate share of the nation's outage risk. The 2026 FEMA BRIC cycle, with its $1 billion in national funding, its dedicated Building Code Plus-Up set-aside, and its documentation-heavy competitive scoring, offers a real and time-limited opportunity to convert that risk data into funded resilience projects — but only for cooperatives, and their local government partners, who show up with the data to compete.

About the Author

Tracey Klepic serves as Vice President of Marketing and Consulting Services at Aerinet Solutions. She works with electric distribution cooperatives across the country on reliability benchmarking, resilience strategy, and federal grant readiness using the PwrMetrix platform. She previously was a Director at Cisco Systems and worked at the National Rural Telecommunications Cooperative for over 15 years. Tracey loves working with rural cooperatives, renewable companies and climate organizations to increase local sustainability and reliability.

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About Aerinet Solutions

Aerinet Solutions helps electric distribution cooperatives and utilities turn their outage data and EIA-sourced reliability data and FEMA flood-hazard mapping into actionable resilience strategy through its PwrMetrix platform. Aerinet Solutions provides grant consulting, reports and several AI platforms. The PwrMetrix platform benchmarks SAIDI and SAIFI performance against hundreds of peer utilities nationally, overlays FEMA flood maps against a utility's own asset and outage data, and supports the benefit-cost documentation cooperatives need to compete for federal mitigation funding, including FEMA's BRIC program and DOE's GRIP program.

Sources: NOAA National Centers for Environmental Information / climate.gov (2023 U.S. Billion-Dollar Weather and Climate Disasters); U.S. Energy Information Administration (EIA) Form EIA-861 distribution reliability data via the PwrMetrix platform, Aerinet Solutions; FEMA Building Resilient Infrastructure and Communities (BRIC) Notice of Funding Opportunity, FY24–FY25; U.S. Department of Energy Grid Deployment Office, Grid Resilience and Innovation Partnerships (GRIP) Program.