Infrastructure Update – Top News, January 2026

January 2026 confirmed a reality infrastructure directors can't delegate: electricity is now a key constraint behind digital growth, with stress propagating into energy and water resilience. Three forces converged this month: AI-driven load growth, a hardening critical-minerals trade environment, and a step-change in cyber/technology risk across connected operations.

1. AI-driven load growth collides with market design (PJM as the stress test)

What happened: The White House and a bipartisan coalition of 13 governors pushed mid-Atlantic grid operator PJM Interconnection to: i) hold a power auction for tech companies to bid on 15-year contracts to build new power plants so that data center operators, rather than other utility customers, pay for their own power needs; and ii) extend a cap on increases of wholesale electricity payments to power plant owners. The Information Technology Industry Council, which represents IT companies like Amazon, Google, Meta and Microsoft, said it welcomed the announcement and opportunity 'to craft solutions to lower electricity bills', given its commitment to make 'investments to modernize the grid', and the Edison Electric Institute, which represents investor-owned electric companies, states that it also supports the 'idea (that) tech companies bid and pay for contracts to build new power plants'[i]. PJM has issued its own plan to fast-track resources and curtail supply during emergencies and load spikes, the latter of which is resisted by tech firms. The U.S. Energy Information Administration forecasts 1% electricity demand growth for 2026, and 3% for 2027, largely due to the commercial and industrial sectors, representing the strongest period of growth since 2000[ii].

Why it matters: For electric + water utilities, hyperscale load growth is now a system-planning and rate legitimacy issue (interconnection queues, transmission build-out, resource adequacy, emergency operations, and customer equity).

Board response for Energy firms, Electric Utilities and Hyperscalers: *Ask: Do we have a repeatable framework that protects reliability and allocates cost fairly as hyperscale loads connect?*

- Require a "Large Load Playbook" (interconnection policy, curtailment contracts, backup fuel rules, and cost-allocation principles).
- Stress-test resource adequacy under (a) AI load step-changes and (b) extreme weather correlation.
- Direct management to propose data-center tariffs / special contracts consistent with fairness + reliability.

2. Big Tech turns to nuclear, aligned with U.S. Government priorities

What happened: Meta announced three new nuclear supply deals – with TerraPower, Oklo and Vistra – for its 1-gigawatt cluster Prometheus AI data center in Ohio (online in 2026) and up to 6.6 GW by 2035[iii]. Having already signed deal with Constellation Energy, Meta is expanding its collaboration with independent power producers (IPPs)[iv], while also connecting into PJM, a trend also seen among other hyperscalers which are connected into ERCOT, ISOs and RTOs. The growth in hyperscaler nuclear deals aligns with the U.S. Administration and DOE actions to expand infrastructure, supply chains and output from nuclear power[v].

Why it matters: This accelerates (a) competition for firm capacity, (b) "behind-the-meter vs. grid" strategic decisions, and (c) pressure on utilities to provide clean + reliable service without shifting costs to existing customers.

Board response for Energy, Electric Utilities and Hyperscalers:

- Decide your stance on utility-led vs. customer-led firm generation and who carries development risk.
- Build governance around nuclear contracting, licensing timelines, decommissioning liabilities, and fuel security.
- Ensure a board-level dashboard for "AI load / firm capacity gap" and "ratepayer impact."

3. Rare earths and critical minerals: industrial policy meets grid reality

What happened: The U.S. government invested in USA Rare Earth to advance mining and build a magnet manufacturing facility[vi]. The third purchase (Vulcan Elements and ReElement Technologies), it continues efforts begun in 2020 (Energy Act of 2020, implemented by the DOE[vii]) to reduce the U.S.' reliance on China for 50+ minerals, including: i) bilateral trade deals with Australia, the DRC, Japan, Malaysia, Saudi Arabia and

Thailand[viii]; ii) use of the CHIPS and Science (2022) and OBBB (2025) Acts funds; and iii) (pending) a bipartisan federal vehicle to accelerate critical minerals/rare earth production[ix].

Why it matters: These highlight the geopolitical fragility of critical mineral inputs to grid hardware, DERs, electrification, high-tech manufacturing, advanced magnets, and water treatment/industrial equipment.

Board response for all Infrastructure (air, electric, energy, rail, water) Firms:

- Direct a tier-2/3 supplier mapping for transformers, switchgear, magnets, motors, and key water system components.
- Establish a board policy on strategic inventory, dual sourcing, and "design-to-substitute" engineering.
- Add critical minerals exposure into enterprise risk management (ERM) and capital planning.

4. Connected systems as a national security risk

What happened: RAND argues that the former hardware / software split no longer exists – vehicles, wind turbines, solar panels, and many infrastructure assets are "co-designed, with sensors, power electronics and mechanical structures specified to enable algorithms that track a product's health, prevent failures and optimize output" with embedded proprietary algorithms. The same optimization structure introduces national security risks, including operational dependence, data sovereignty and cybersecurity exposure – in other words, an expanded and increasingly complex attack surface[x].

Why it matters: Infrastructure operators are increasingly exposed through **vendors, cloud/OT integration, remote access**, and geopolitically constrained components.

Board response:

- Implement guidelines promulgated by NIST, and monitor attacks / vulnerabilities identified by the DOE and Idaho National Laboratory.
- Require common, verifiable security baselines, and ensure domestic control over essential functions.
- Treat "vendor + cloud concentration" as a board-level risk with quantified exposure limits.

5. Cybersecurity baseline shifts: Critical Infrastructure Protection Roadmap (NERC, January 2026)

What happened: The North American Electric Reliability Corp.[xi], released its 2026 Roadmap, explicitly noting emerging risks to the U.S.' ~400 million citizens relying on the bulk power system's six regional entities. Key risks include targeting of AI tools, large-load manipulation, EV supply equipment integration, and Distributed Energy Resource aggregation impacts. NERC advises a range of mitigation controls (multi-factor authentication

and foundational cyber hygiene) and recommends progressive CIP enhancement in three domains: i) reliability standards modifications; ii) guidance development; and iii) ongoing risk monitoring.

Why it matters: This is a clear signal that "connected infrastructure" has become a national security surface - reliability/security risk is moving beyond classic perimeter controls to AI-enabled operations, high-wattage customers, and edge-connected assets. RAND highlights how software-enabled systems and geopolitically entangled supply chains can be used as leverage in crises.

Board response for electric utilities and energy providers:

- Boards should treat vendor concentration, cloud dependencies and remote access as quantifiable exposures, governed with contract audit rights, SBOM expectations and incident response obligations.
- Demand an OT security posture review aligned to the roadmap: segmentation, MFA, logging, incident playbooks, and third-party controls.
- Mandate tabletop exercises that include AI-tool compromise and large-load manipulation scenarios.

6. NERC 2025-26 Winter Reliability Assessment and NARUC Wildfire Risk Playbook

What happened: NERC's winter assessment notes that while reliability standards introduced in 2023 have mitigated significant risks, and there is estimated to be sufficient capacity across the country, the Northwest, Texas ERCOT and Southeast have higher risk during extreme weather, and New England has a risk for insufficient natural gas pipeline capacity[xii]. Meanwhile, the National Association of Regulatory Utility Commissioners released the final chapters of its Wildfire Workbook, addressing coordination, cost recovery, financial risk, and mitigation—aimed at regulators and utilities[xiii].

Why it matters: Physical / climate risk continues to harden into financial risk**.** NERC's winter assessment reiterates that capacity adequacy does not equal reliability - energy/fuel constraints can emerge during prolonged cold spells, especially where fuel logistics and storage replenishment become binding constraints, and can create knock-on effects for water/wastewater operations that depend on uninterrupted power. Meanwhile, NARUC's workbook reflects a maturing of mitigation, coordination, and cost recovery frameworks. Wildfire is a balance-sheet and license-to-operate risk for electric utilities and can disrupt regional water systems; it also shapes capital allocation, insurance, and rate cases. Boards should align these physical risks into a single resilience agenda that covers electric and water interdependencies, liquidity and insurance planning, and regulator-ready valuation of risk reduction.

Board response:

- Boards should recognize emerging risks - targeting of AI tools, large-load manipulation, EV charging infrastructure integration, and the reliability/security impacts of aggregated DERs – and rehearse scenarios that combine cyber intrusion with operational disruption (e.g., AI-tool poisoning that alters dispatch decisions, or manipulated large-load behavior during a peak event).

- Ensure “energy assurance” metrics: dual-fuel capability, firm transportation, storage levels, and emergency load shedding protocols for critical water assets. Tie reliability investments to explicit, board-approved resilience valuation logic (risk reduction per dollar).
- Treat wildfire as an integrated risk: vegetation management, hardening, PSPS governance, mutual aid, and customer communications. Require a “wildfire financial risk” view: liquidity buffers, insurance strategy, and regulatory recovery pathways.

Bottom line: January 2026 delivered a board-level mandate: treat AI load, critical minerals, climate/physical and cyber-physical resilience as one integrated strategy. The directors who win this cycle will be the ones who force clarity on operational readiness, robust and resilient cost allocation and supply chain sovereignty, agile and responsive geostrategic capabilities, sustainable and flexible resourcing, and visionary strategic planning. And who do so before the next stress event forces decisions in real time.

Hashtags: #BoardGovernance #Energy #Utilities #AI #GridReliability #Cybersecurity #CriticalMinerals #NuclearEnergy #WaterInfrastructure #RiskManagement

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[i] https://apnews.com/article/trump-electricity-ai-data-centers-62e8118b069f36aa9d0844f904047933
[ii] https://www.eia.gov/outlooks/steo/
[iii] https://apnews.com/article/facebook-meta-zuckerberg-ai-vistra-oklo-terrapower-0eb051a9a11d96f7ce200e186ad13476
[iv] https://www.lpl.com/research/blog/ai-sparks-a-surge-in-power-demand-ipps-lead-the-charge.html#:~:text=These%20companies%2C%20including%20Constellation%20Energy,to%20retail%20and%20wholesale%20customers.
[v] https://www.energy.gov/articles/fact-sheet-energy-department-delivering-accelerating-deployment-nuclear-power
[vi] https://apnews.com/article/usa-rare-earth-trump-commerce-4c012d70ad172f12d9e3aca24508e766
[vii] https://www.energy.gov/sites/default/files/2023-07/doe-critical-material-assessment_07312023.pdf - Rare earth materials (neodymium, praseodymium, dysprosium, and terbium) used in magnets in EV motors and wind turbine generators continue to be critical. Materials used in batteries for EVs and stationary storage are now considered to be critical (cobalt, lithium, natural graphite) for the EV industry. Platinum group metals used in hydrogen electrolyzers (platinum and iridium) for hydrogen technologies to achieve net-zero carbon emissions- those used in catalytic converters (rhodium and palladium), were screened out due to the decreased importance of catalytic converters in the medium term. Gallium is critical due to its use in LEDs, magnet manufacturing and semiconductors (gallium arsenide and gallium nitride). Major materials (aluminum, copper, nickel and silicon) are critical due to their importance in electrification. Electrical steel is near critical due to its use in transformers for the grid and electric motors in EVs.
[viii] https://apnews.com/article/rare-earths-trump-tariffs-china-trade-war-effd6a7ec64b5830df9d3c76ab9b607a
[ix] https://apnews.com/article/congress-trump-china-rare-earths-minerals-bc17f99065400233c3dadd7bb4c6521b
[x] https://www.rand.org/pubs/commentary/2026/01/its-time-to-treat-chinas-connected-energy-systems-as-a.html
[xi] responsible for developing and enforcing reliability standards, monitoring the U.S. electric grid, assessing future electricity needs and educating the industry. NERC is the certified Electric Reliability Organization and works with six regional entities.
[xii] https://www.nerc.com/globalassets/our-work/assessments/nerc_wra_2025.pdf
[xiii] https://www.naruc.org/cpi-1/critical-infrastructure-resilience-emergency-preparedness-and-cybersecurity/cybersecurity-for-utility-regulators/