



September 2026 Integrated Infrastructure Board Briefing

September 2026 reinforced the growing interdependence of power, energy, water and industrial infrastructure. **Power demand and grid constraints** remain the dominant issue as AI- and data-center-driven load growth intensified pressure on generation adequacy, transmission capacity, cost allocation, physical security, and water resources. **Energy pricing and supply-chain risks** remain elevated amid geopolitical instability, LNG expansion, nuclear investment, defense demand, and persistent constraints in critical equipment, specialized labor, and manufacturing capacity. Meanwhile, **water availability and resilience** are increasingly emerging as strategic economic constraints affecting power generation, data centers, industrial development, and municipal systems. And, in an environment of geopolitical risk **aerospace and defense** are experiencing heightened M&A and proposal activity. Together, these developments underscore the need for boards to govern infrastructure as an integrated system of capital, resources, regulation, and operational interdependencies.

Electricity, Grid & Data-Center Infrastructure

1. U.S. FERC and EEI: Data-center cost allocation on the regulatory agenda

What happened. Sept. 29-30, the Federal Energy Regulatory Commission (FERC) accepted elements of the PJM's proposed Reliability Backstop Procurement: PJM faces a projected 6.8-GW capacity shortfall, driven substantially by rapidly growing data-center and other large-load demand. FERC suspended implementation for 5 months while requiring further proceedings over cost allocation and related issues; Commissioner David See explicitly argued that customers driving incremental system costs should bear responsibility for them.ⁱ In a similar way, the Edison Electric Institute (EEI) endorsed the House-approved (417-3) Ratepayer Protection Act

(which failed in the Senate 57-43 on Sept. 30) arguing that data-center agreements should ensure large customers pay the infrastructure costs attributable to them, protecting households and small businesses.ⁱⁱ

Why it matters. This represents an important evolution of the AI/data-center debate. The question is no longer simply *where will the electricity come from?* It is increasingly who pays for generation, transmission and distribution capacity built to serve hyperscale loads, and who bears stranded-asset risk if projected loads never materialize? That risk became particularly visible in September as utilities and grid operators confronted so-called "ghost demand"—multiple or speculative interconnection requests that can materially overstate actual data-center load growth.ⁱⁱⁱ

Board actions. Require management to segment load forecasts into committed, contracted and speculative demand. Stress-test capex plans against 25%, 50% and 75% realization of proposed hyperscale loads. Review minimum-demand charges, deposits, termination payments and take-or-pay structures for major customers. For infrastructure investments, require explicit allocation of stranded-cost risk. Monitor: FERC's PJM proceeding; PJM's revised 2027 load forecast; state utility commission treatment of hyperscaler tariffs; Congressional action on ratepayer protection; and whether cost-causation principles spread beyond PJM.

2. U.S. NERC: First reliability standards specifically aimed at large computational loads

What happened. On Sept. 19, the North American Electric Reliability Corp. (NERC) announced that its foundational Computational Loads Reliability Standards passed their initial ballot. The standards respond to reliability risks posed by data centers, cryptocurrency facilities and other very large electronic loads. NERC separately highlighted the voltage sensitivity of large computational loads on Sept. 8.^{iv}

Why it matters. Data centers are unusually large factories but, differently, their power electronics and operating behavior can produce rapid load changes and simultaneous disconnections that create new bulk-system stability risks. NERC is moving computational loads toward a more formal reliability regime. For boards, this changes data centers from a commercial-development to a CIP/reliability/governance issue.

Board actions. Ensure the CRO/CTO understands computational-load behavior—not just aggregate MW demand. Review data-center connection standards, ride-through requirements, telemetry, backup generation and demand-response capability. Integrate hyperscale loads into reliability scenario analysis. Monitor: Final NERC approval, FERC adoption, implementation timelines and whether reliability obligations migrate contractually to data-center operators.

3. U.S. DOE: Series of emergency orders used authority to keep generation available

What happened. September saw an extraordinary series of Department of Energy (DOE) Federal Power Act §202(c) emergency orders to ensure sufficient power generation. These orders affected PJM, Duke Energy, Orlando Utilities Commission, Centralia in Washington, Indiana coal plants and Craig Station in Colorado. DOE's Sept. 17 order, for example, authorized PJM to dispatch specified generation and even backup generation during stressed Mid-Atlantic conditions.^v

Why it matters. Whatever one's policy view of individual plants, the governance signal is significant: resource adequacy is increasingly becoming an operating constraint rather than a long-range planning concern. It also raises questions about retirement assumptions. Assets previously considered economically or environmentally obsolete may acquire temporary reliability value as load growth outruns replacement generation and transmission.

Board actions. Re-run retirement and decommissioning decisions using explicit reliability-option values. Review seasonal capacity margins, backup generation, fuel availability and emergency-operating authority. Require management to quantify the financial consequences of regulatory orders extending plant operations. Monitor: Further §202(c) orders; capacity-market pricing; generator retirement delays; environmental compliance exemptions; PJM/MISO reserve margins; winter 2026–27 reliability.

4. U.S. DOE: Commits \$5.25 billion to accelerate transmission upgrades

What happened. On Sept. 24, DOE announced its Speed to Power through Accelerated Reconductoring and other Key Advanced Transmission Technology Upgrades (SPARK) initiative to help fund 31 grid projects across 26 states, representing \$5.3 billion of investment (~\$2 billion federal and \$3.4 billion in recipient cost-share funding). SPARK projects are expected to rebuild or reconductor more than 1,500 miles of transmission and deploy grid-enhancing technologies across nearly 21,000 miles. Estimated to benefit ~100 million Americans.^{vi}

Why it matters. Reconductoring and grid-enhancing technologies can increase capacity substantially faster than entirely new transmission corridors, demonstrating that the investment thesis is shifting toward extracting greater capacity from the existing grid while longer-duration transmission projects proceed.

Board actions. Identify reconductoring, dynamic-line-rating and power-flow-control opportunities across the portfolio. Compare \$/MW unlocked and permitting timelines against greenfield transmission. Review supplier capacity for conductors, transformers and power electronics. Monitor: Project execution, permitting, domestic-content requirements, transformer availability and actual capacity unlocked per dollar invested.

5. U.S. FERC / NERC: Raises the physical-security bar for critical grid infrastructure

What happened. At its September meeting, FERC approved NERC's revised physical-security Reliability Standard CIP-014-4 and associated implementation plan, violation risk factors, and violation severity levels (and retired CIP-014-3). CIP-014-4 requires applicable transmission owners to perform periodic risk assessments to identify critical transmission substations, evaluate potential threats and vulnerabilities of physical attacks, and develop physical security plans to protect critical facilities. It provides a consistent approach for identifying and assessing transmission stations, transmission substations and primary control centers critical to the operation of the Bulk-Power System, and also tightens assessment timelines, clarifies applicability thresholds, and improves verification and oversight processes.^{vii}

Why it matters. Boards have understandably focused heavily on cyber risk, but physical attacks against substations, transformers and other critical infrastructure remain potentially high-impact events. Increasing load concentration and dependence on a smaller number of critical nodes magnify the consequences.

Board actions. Request a combined cyber + physical resilience map identifying single points of failure, critical substations, transformer replacement times, communications dependencies and black-start resources. Review insurance exclusions and spare-equipment strategies. Monitor: CIP-014-4 implementation, transformer lead times, physical attacks, drone threats and convergence between cyber and physical incidents.

Energy Security, Pricing & Supply Chains

6. Global: Hormuz disruption keeps global oil and LNG security at the center of infrastructure planning

What happened. The U.S. Energy Information Agency (EIA) September outlook reports average oil (Brent crude) ~\$91/barrel in August, \$7/b above the July average, due to falling inventories and continuing constraints on Middle Eastern exports. EIA expects some Middle Eastern export constraints to persist through year-end and production to remain below pre-conflict averages into 2027.^{viii} While LNG shipments through Hormuz did improve during the month (19 to 21 cargoes, and alternate routes and actions continued to lower the supply/demand imbalance – see separate LinkedIn post on this topic^{ix}), trade remains exposed to military and shipping-security risk.^x

IEA notes that the Hormuz disruption has been a catalyst for countries to accelerate electrification and diversify energy exposure; a new IEA analysis presents a scenario in which fuel-importing countries accelerate the electrification of their economies, lowering energy import bills by >\$400 billion by 2035 vs. 2025 and lowering oil consumption by >18 million barrels per day (the largest influence being a rapid uptake of EVs).^{xi}

Why it matters. Energy security is again becoming inseparable from infrastructure strategy. Elevated oil and gas prices affect electricity generation, aviation, construction materials, shipping and inflation simultaneously.

Board actions. Re-run commodity scenarios at \$80/\$100/\$120 oil and corresponding LNG/natural-gas cases. Review fuel hedges, counterparty exposure, transportation routes and business-continuity assumptions around critical maritime chokepoints. Monitor: Hormuz traffic, insurance premiums, tanker/LNG availability, emergency petroleum releases, OPEC+ policy and Russian refining disruption.

7. Global: LNG infrastructure expansion continues despite geopolitical volatility

What happened. FERC staff issued a final environmental impact statement for the Sabine Pass Stage 5 expansion on September 25 and a draft EIS for the Corpus Christi Stage 4/CCPL expansion on September 18.^{xii}

Why it matters. The combination of constrained Middle Eastern supply and continued U.S. LNG expansion reinforces the strategic role of North American natural gas in global energy security. It also increases domestic interaction between gas exports, power generation and data-center electricity demand.

Board actions. Incorporate LNG-export growth into long-term gas-price and pipeline-basis assumptions. Review gas/electric coordination, pipeline capacity and firm-transport arrangements for gas-fired generation. Monitor: FERC approvals, LNG construction schedules, Henry Hub prices, European and Asian contracting and domestic gas-power competition.

8. U.S. DOE: Nuclear's role in serving AI-era baseload demand continues to expand

What happened. September brought increased attention to the DOE's plan to support a fleet of ten AP1000 reactors, with a \$17.5 billion supply-chain financing initiative aimed at accelerating long-lead procurement. The broader U.S. objective is to substantially expand nuclear capacity, while data-center operators are emerging as potential anchor customers.^{xiii}

Why it matters. Nuclear increasingly sits at the intersection of three infrastructure requirements: 24/7 power, low operating emissions and very large incremental demand. The constraint is less technological capability than execution—capital cost, schedule, skilled labor, regulatory timelines and nuclear-component manufacturing.

Board actions. Evaluate nuclear exposure using fleet economics rather than single-project economics. Stress-test construction costs and delays. Examine colocation/offtake arrangements with hyperscalers and assess SMR versus large-reactor economics. Monitor: AP1000 commitments, NRC licensing, uranium/enrichment availability, component manufacturing capacity and hyperscaler PPAs.

Water Infrastructure

9. U.S. & Mexico: Colorado River risk increasingly becomes a power and industrial-infrastructure risk

What happened. September analysis highlighted worsening structural imbalance in the Colorado River Basin. Reclamation's September probable-minimum study modeled dry hydrological conditions and resulting reservoir operations and hydropower production. The U.S. and Mexico also finalized Minute 334, establishing cooperative Colorado River measures through 2028, including water-use reductions, salinity management and examination of new supplies/desalination.^{xiv}

Why it matters. This is no longer solely a municipal/agricultural water issue. Lake Powell and Lake Mead support hydropower, while Western semiconductor, data-center, mining and industrial expansion all compete for constrained water.

Board actions. Overlay water availability onto power-generation and industrial-asset maps. Establish basin-level water-risk limits for new investments. Stress-test assets against reduced allocations and higher water prices. Monitor: Powell/Mead elevations, 2027-28 allocations, post-2026 Colorado River negotiations, hydropower output and desalination/reuse economics.

10. Global: Water reuse becomes explicit industrial and energy policy

What happened. On Sept. 15, EPA launched a G20 Water Reuse Initiative, with participating G20 members agreeing to a framework emphasizing fit-for-purpose reuse across energy, manufacturing, agriculture, municipal systems and data centers.^{xv} EPA also closed substantial WIFIA loans during September, including

\$251 million for advanced water purification in California and \$272 million for expanded water supply in Tennessee.

Why it matters. Water reuse is transitioning from environmental practice into economic-development infrastructure. That matters particularly where data centers, semiconductor facilities and power generation compete with municipal demand.

Board actions. Require water-reuse feasibility analysis for water-intensive projects. Evaluate wastewater as an infrastructure input rather than simply an output. Examine public-private financing opportunities around reuse. Monitor: State reuse standards, WIFIA financing, data-center water requirements, treatment technology costs and industrial reuse contracts.

11. U.S.: WH EO Chesapeake policy changes funding and regulatory calculus for stormwater infrastructure

What happened. A Sept. 16 White House executive order rescinded the 2009 Chesapeake Bay executive order and directed agencies toward projects producing measurable water-quality improvements. It also directed EPA and basin jurisdictions to examine financial burdens associated with stormwater fees and encourage their repeal or rescission.^{xvi}

Why it matters. Stormwater charges have been an important funding mechanism for local water infrastructure. Changing that model could affect municipal financing capacity even where underlying infrastructure requirements remain.

Board actions. For municipal-water exposure, identify projects dependent upon stormwater-fee revenues. Reassess municipal counterparty and revenue-bond assumptions where applicable. Monitor: EPA implementation, state responses, litigation, municipal funding alternatives and Chesapeake project pipelines.

Aerospace & Aviation Infrastructure

12. U.S.: FAA's air-traffic-control modernization exposes both opportunity and execution risk

What happened. FAA reached its 100th Surface Awareness Initiative^{xvii} installation in September, approaching half of the 220 airports targeted. USDOT also announced \$1.1 billion of airport infrastructure investment across 280 grants.^{xviii} But GAO warned on September 14 that FAA's accelerated ATC modernization lacks an adequate lifecycle cost estimate and master schedule. FAA separately indicated that phase one could cost about \$16 billion, above the \$12.5 billion Congress had approved for broader reforms and facilities investment.^{xix}

Why it matters. This is a classic infrastructure-governance problem: the modernization is essential, but urgency can produce cost, schedule and implementation risk.

Board actions. Aerospace boards should monitor dependencies on FAA systems, certification resources and supplier capacity. Infrastructure boards should apply the same lesson internally: accelerated modernization

requires independent cost/schedule assurance. Monitor: Congressional funding, FAA procurement, controller staffing, radar/communications replacement, tariffs on equipment and implementation delays.

13. U.S.: Boeing's recovery encounters another certification and execution test

What happened. Boeing disclosed a software issue affecting certain 737 MAX aircraft that can increase pilot workload during a particular go-around scenario; FAA subsequently delayed certification of the 737 MAX 10 pending resolution.^{xx} Boeing management also announced that production stabilization remains incomplete, while Meanwhile, Boeing Aerospace M&A has accelerated as manufacturers and investors seek scarce skilled labor and specialized supplier capacity.^{xxi}

Why it matters. Aerospace remains a compelling long-duration demand story, but production quality, certification, labor and Tier 2/3 supplier capacity remain binding constraints.

Board actions. Require supplier health dashboards extending below Tier 1. Track quality escapes and certification milestones independently of production targets. Avoid incentives that reward throughput without equivalent quality metrics. Monitor: MAX 10 certification, 777-9 progress, Boeing production rates, engineering labor negotiations and supplier consolidation.

14. Defense aerospace enters another major capacity-expansion cycle

What happened. On Sept. 29, Boeing won the ~\$20 billion Navy's F/A-XX next-generation fighter development contract, after previously winning the Air Force F-47 program.^{xxii} Separately, the Pentagon awarded RTX's Raytheon business a prospective \$20.7 billion multiyear AMRAAM contract aimed at materially increasing missile production as U.S. and allied inventories are replenished.

Why it matters. These programs imply a multiyear capital cycle extending well beyond prime contractors into electronics, engines, specialty metals, composites, machining, skilled labor and factory infrastructure. The principal constraint may increasingly be industrial capacity rather than end demand. For an integrated infrastructure company, this also matters because defense/aerospace reshoring competes with grid, nuclear and energy projects for engineering talent, specialty metals, transformers/electronics and construction capacity.

Board actions. Map common suppliers across energy, utility and aerospace businesses. Identify single-source and capacity-constrained components. Consider strategic inventory, dual sourcing and long-term supplier agreements. Monitor: Congressional appropriations, F/A-XX/F-47 development milestones, munitions production, skilled-labor availability and aerospace supply-chain M&A.

Summary: Board Director CTAs

For Board Directors, September's developments reinforce the need to govern infrastructure as an integrated system of capital, physical resources, regulatory obligations, and operating dependencies rather than as separate electricity, energy, water, or industrial businesses. Boards should require management to stress-test demand forecasts - particularly separating contracted from speculative data-center load - evaluate generation and transmission adequacy under multiple growth scenarios, and ensure that incremental infrastructure costs are appropriately allocated to the customers driving them.

Directors should also challenge commodity, geopolitical, and supply-chain assumptions; assess exposure to critical equipment, specialized labor, and single-source suppliers; and incorporate water availability into site selection, capital planning, and operational resilience. Finally, boards should ensure that cyber, physical security, regulatory compliance, and emergency preparedness are incorporated into a consolidated infrastructure-risk dashboard. The central governance question shifts from whether demand for infrastructure will grow, to the organization's ability can finance, build, secure, and operate the interconnected systems required to meet that demand without transferring excessive cost or risk to shareholders, customers, or communities.

For the next board meeting, I would ask management for one consolidated dashboard to provide a stronger early-warning system than conventional business-unit reporting, covering:

- (1) load growth and contracted versus speculative data-center demand;
- (2) generation/resource adequacy;
- (3) transmission constraints and interconnection queues;
- (4) water availability;
- (5) critical equipment and supplier lead times;
- (6) commodity/geopolitical exposure;
- (7) cyber and physical resilience; and
- (8) capital-at-risk under alternative demand scenarios.

The five global issues at the top of the October monitoring agenda, aligned to each company's unique profile:

- PJM/FERC data-center cost allocation
- Winter resource adequacy following September's emergency interventions
- Hormuz/oil/LNG developments
- Colorado River negotiations and reservoir levels
- Aerospace certification/supply-chain execution

LinkedIn Hook:

For Board Directors, September's developments reinforce the need to govern infrastructure as an **integrated system of capital, physical resources, regulatory obligations, and operating dependencies** rather than as separate electricity, energy, water, or industrial businesses. Boards should require management to stress-test demand forecasts - particularly separating contracted from speculative data-center load - evaluate generation

and transmission adequacy under multiple growth scenarios, and ensure that incremental infrastructure costs are appropriately allocated to the customers driving them.

Infrastructure's next constraint may not be demand—it may be whether we can build the **power, grid, energy, water, and aerospace capacity fast enough, securely enough, and at an acceptable cost** to support it.

#Infrastructure #Energy #ElectricGrid #DataCenters #AI #EnergySecurity #WaterInfrastructure #Aerospace
#SupplyChain #BoardGovernance #RiskManagement

ⁱ <https://www.ferc.gov/news-events/news/commissioner-sees-concurrence-pjms-reliability-backstop-procurement-er26-3380-000>

ⁱⁱ <https://cms.eei.org/News/news/All/2026-ratepayer-protection-act>

ⁱⁱⁱ <https://www.reuters.com/business/texas-halt-powering-data-centers-reflects-us-reckoning-over-ghost-demand-2026-09-01/>

^{iv} <https://www.nerc.com/newsroom/computational-loads-standards-advance-following-initial-ballot>

^v <https://www.energy.gov/ceser/2026-doe-202c-orders>

^{vi} <https://www.energy.gov/articles/energy-department-announces-speed-power-investments-across-26-states-lower-electricity> and <https://www.energy.gov/oe/speed-power-through-accelerated-reconductoring-and-other-key-advanced-transmission-technology>

^{vii} <https://ferc.gov/news-events/news/summaries-september-2026-commission-meeting>

^{viii} https://www.eia.gov/outlooks/steo/pdf/steo_full.pdf and <https://www.eia.gov/outlooks/steo/report/index.php>

^{ix}

^x <https://www.reuters.com/business/energy/september-lng-shipments-through-hormuz-hit-highest-since-start-us-iran-war-2026-10-02/>

^{xi} <https://www.iea.org/news/electrification-takes-centre-stage-as-hormuz-shock-spurs-countries-to-seek-to-enhance-energy-security> and <https://www.iea.org/reports/electrification>

^{xii} <https://ferc.gov/news-events/news/ferc-staff-issues-final-environmental-impact-statement-sabine-pass-stage-5>

^{xiii} <https://www.reuters.com/business/energy/us-bets-heavy-westinghouse-fleet-cost-hurdles-loom--reeii-2026-09-16/>

^{xiv} <https://data.usbr.gov/catalog/6331/item/134191>

^{xv} <https://www.epa.gov/newsreleases/epa-administrator-zeldin-launches-g20-initiative-advance-water-security> and <https://www.epa.gov/wifia/wifia-program-announcements>

^{xvi} <https://www.whitehouse.gov/presidential-actions/2026/09/providing-meaningful-water-quality-improvements-through-collaboration-and-oversight-of-federal-support>

^{xvii} <https://www.faa.gov/surface-safety-portfolio>

^{xviii} <https://www.faa.gov/newsroom/trumps-transportation-secretary-sean-p-duffy-announces-milestone-air-traffic-control>

^{xix} <https://www.gao.gov/products/gao-26-107992>

^{xx} <https://www.reuters.com/business/aerospace-defense/us-does-not-see-safety-concern-737-max-software-issue-2026-09-30/> and <https://www.boeing.com/features/2026/09/ceo-737-10-certification-very-soon-more-to-do-to-stabilize-production>

^{xxi} <https://www.reuters.com/legal/transactional/aerospace-dealmaking-gathers-pace-jet-production-ramps-up-2026-09-10/>

^{xxii} <https://www.reuters.com/business/autos-transportation/boeing-wins-us-navys-next-generation-fighter-contract-sources-say-2026-09-29/> and <https://www.reuters.com/business/aerospace-defense/pentagon-awards-rtxs-raytheon-207-billion-contract-amraam-missiles-amid-2026-09-28/>