Power Is the New Compute

An executive blueprint for AI energy sovereignty, distributed infrastructure, commercial resilience and electricity abundance.

> **There is no artificial intelligence strategy without a power strategy.**

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Authored and authorised by Jami Kiran. Independent executive analysis inspired by the 20VC conversation with Bloom Energy CEO K. R. Sridhar. No affiliation or endorsement is implied.

EXECUTIVE THESIS

AI has converted electricity from a utility input into a strategic production constraint

Intelligence may become abundant, but the infrastructure that manufactures it is scarce, local, capital-intensive and regulated.

The board-level shift

- Compute planning and power planning can no longer be separated.
- Speed-to-power may determine speed-to-revenue.
- Grid access, interconnection, permits, gas, cooling, copper and skilled labour form one capacity system.
- Energy resilience becomes part of digital resilience.

The leadership response

- Build demand scenarios, not one heroic forecast.
- Value capacity by business outcomes and avoided delay.
- Design a portfolio of grid, onsite, storage and flexible load.
- Protect communities from cost and reliability externalities.

Jami Kiran’s principle

Treat every AI roadmap as a coupled digital–physical transformation. The intelligence layer creates opportunity; the electricity layer determines whether that opportunity can operate reliably, affordably and responsibly.

Interview proposition	Independent interpretation	Executive action
Electricity becomes the key factor.	AI changes the marginal value of firm, timely power.	Add energy gates to product and infrastructure investment.
Power must move to the edge.	Distributed generation may reduce time, distance and single-point dependency.	Evaluate onsite and modular options case by case.
Energy sovereignty matters.	Critical digital capacity depends on controllable energy supply chains.	Map fuel, equipment, grid and jurisdictional exposure.

DEMAND REALITY

This is not a single forecast—it is a range of plausible futures

415 TWh
Global data-centre electricity consumption in 2024, according to the IEA.

945 TWh
IEA 2030 base-case projection—more than double 2024.

700–1,700
TWh range across IEA 2035 scenarios, showing deep uncertainty.

The U.S. Department of Energy reported that data centres used about 4.4% of U.S. electricity in 2023 and projected approximately 6.7–12% by 2028. A later DOE resource hub cites a 2030 central estimate of 11.8%, with scenarios from 9.5% to 15.3%.

Why uncertainty is structural

Adoption
How many users and workflows?

Intensity
How much reasoning, video and agency?

Efficiency
How fast do chips, models and facilities improve?

Capacity
How quickly can power and infrastructure arrive?

Board implication: The correct decision is rarely "bubble or no bubble." It is whether an investment remains viable across demand, price, connection-delay and utilisation scenarios.

Scenario discipline

Case	Assumption	Decision rule
Headwinds	Slower adoption, permitting delay, high capital cost	Preserve modularity and staged commitments
Base	Strong adoption with manageable infrastructure friction	Secure diversified capacity and measure unit economics
Acceleration	Agentic workloads and constrained grids drive scarcity	Pay for speed only where revenue value exceeds premium

From molecule and electron to token and enterprise outcome

Primary energy Gas, nuclear, solar, wind, hydro, geothermal	**Conversion** Grid plants, fuel cells, engines, turbines, storage	**Delivery** Transmission, distribution, onsite and microgrids	**Facility** Cooling, UPS, power electronics and networking
Compute Accelerators, memory and servers	**Inference** Tokens, agents and data movement	**Product** Workflows, users and decisions	**Outcome** Revenue, productivity, resilience and public value

Where value can be lost

- Generation exists but cannot interconnect in time.
- Capacity is reserved but underutilised because workload demand was overstated.
- Cheap electricity becomes expensive after reliability, backup, transmission and conversion losses.
- A fast onsite solution creates unacceptable fuel, carbon, air-quality or community exposure.
- Efficiency gains reduce unit use but trigger enough additional demand to raise total consumption.

AI value per MWh = verified business value ÷ total electricity consumed

This is a management indicator, not an engineering efficiency metric. It forces digital outcomes and energy inputs into one conversation.

Do not optimize a layer in isolation. A lower electricity tariff may increase total system cost if it creates delay, poor power quality or additional conversion and backup requirements.

DISTRIBUTED POWER

Edge power is a strategic option—not a universal answer

Distributed generation places capacity closer to load. For AI facilities it can offer shorter delivery paths, modular expansion, resilience and reduced dependence on constrained transmission. Its value depends on technology, site, fuel, emissions, regulation and operating profile.

Dimension	Central grid	Distributed / onsite	Hybrid portfolio
Speed	May face interconnection queues	Can be faster where permitting and fuel exist	Stages capacity by need
Scale	Large shared system	Modular but supply-chain dependent	Combines system and local scale
Reliability	Diverse grid, exposed to network events	Local control, site concentration risk	Multiple independent pathways
Economics	Tariff and connection driven	Capital, fuel and service driven	Option value plus complexity
Externalities	Often geographically displaced	Visible at community level	Requires transparent accounting

Architecture principle: modular redundancy

The interview contrasts large mechanical units with many smaller solid-state modules. The transferable insight is architectural: smaller fault domains and incremental deployment may reduce overbuild and support maintenance without full shutdown. This must be verified with availability data, fuel resilience and site-specific engineering.

Strong fit

- Severe time-to-grid constraint
- High value of uptime
- Firm fuel and service capability
- Phased campus growth
- Useful heat or microgrid integration

Weak fit

- Uncertain or short-lived load
- Unacceptable local emissions
- Fragile single-fuel dependency
- Poor maintenance ecosystem
- Lower-cost grid capacity arriving soon

Value speed, reliability and optionality—not only cents per kilowatt-hour

Risk-adjusted energy value = enabled margin + avoided delay + avoided outage loss + option value − full lifecycle cost − externality cost

Full lifecycle cost

Include generation equipment, interconnection, fuel, operations, maintenance, backup, financing, land, cooling interactions, emissions compliance, decommissioning and internal delivery capacity.

Value lever	Evidence required	Example measure
Speed-to-revenue	Critical-path schedule and attributable go-live date	Gross margin per month accelerated
Reliability	Load-specific outage consequence and architecture	Expected annual loss avoided
Modularity	Capacity added in economically useful increments	Stranded-capital reduction
Efficiency	Measured end-to-end fuel/electricity performance	Useful output per input
Flexibility	Ability to ramp, island, defer or relocate	Scenario-weighted option value
Community impact	Local emissions, water, noise, tariffs and jobs	Mitigation and benefit cost

Commercial discipline: A premium power solution is justified only when its verified business value exceeds its all-in premium. “Power at any cost” is not a strategy.

Decision thresholds

- Positive downside NPV
- Affordable cost per AI outcome
- Clear capacity exit options
- Community safeguards funded
- Operational owner assigned

Sovereignty is the ability to operate through disruption —not isolation

Energy sovereignty means having sufficient control, diversity and recovery capability across the energy chain to sustain critical outcomes. It does not require total national or corporate self-sufficiency.

Source

Diversity of fuels and primary resources.

Technology

Access to equipment, spares and know-how.

Network

Grid, pipeline, transmission and local pathways.

Operations

People, maintenance, cybersecurity and recovery.

Policy

Stable rules, permits, contracts and emergency authority.

Community

Legitimacy, affordability and shared benefit.

Sovereignty scorecard

Question	Red flag	Evidence of readiness
Can critical load operate if the grid fails?	Untested backup assumptions	Demonstrated islanding and restoration
Can fuel disruption be absorbed?	One supplier, no inventory or alternative	Contracts, storage and substitution plan
Can equipment be serviced?	Long-lead proprietary dependency	Spares, skills and response SLA
Can cyber events cross domains?	Flat OT/IT control plane	Segmentation, monitoring and manual fallback
Will the community support expansion?	Benefits private, burdens public	Transparent engagement and benefit plan

Resilience comes from diversity and practiced recovery. Ownership alone does not create sovereignty.

REGULATION AND PERMITTING

Reform the sequence, not the safeguards

The interview describes regulation as a major constraint on growth. The executive lesson should not be deregulation by default. The problem is often fragmented sequencing, uncertain timelines and duplicated review.

Faster without weaker

- One accountable permitting pathway
- Parallel reviews where dependencies permit
- Published service-level timelines
- Pre-approved technical patterns
- Digital application and evidence exchange
- Community engagement at site selection

Safeguards that remain essential

- Air quality and climate impacts
- Water and land constraints
- Grid stability and safety
- Cybersecurity and emergency response
- Consumer affordability
- Fair distribution of costs and benefits

Permit-readiness package

- Site and load profile
- Technology specification
- Fuel plan
- Emissions model
- Noise and water
- Grid study
- Community plan
- Decommissioning

Policy position: The goal is predictable, evidence-based permission—not permission without accountability. Speed gained through early evidence and coordinated review is more durable than speed gained by transferring risk to the public.

Executive metric

Time-to-safe-power = decision time + permit time + equipment time + connection time + commissioning time

ENERGY JUSTICE

AI abundance is not progress if electricity scarcity is exported to others

Access to reliable and affordable electricity is foundational to health, education, communication and economic participation. World Bank material published in 2026 reports that 688 million people in Sub-Saharan Africa still lacked electricity access in 2024.

Potential harms

- Higher local tariffs and grid congestion
- Competition for scarce power or water
- Local air and noise burden
- Public infrastructure costs without shared gains
- Digital wealth concentration

Potential benefits

- New generation and grid investment
- Anchor demand for resilient local systems
- Jobs, skills and supplier development
- Waste-heat and community-energy use
- Distributed access beyond metropolitan centres

Responsible AI-energy compact

1. Protect existing customers from unfair cost transfer.
2. Disclose local energy, water and emissions implications.
3. Fund grid and community upgrades proportional to impact.
4. Prioritize local reliability and workforce participation.
5. Measure shared outcomes over the full project life.

Jami Kiran’s test: Does the project create more usable energy-system capability than it consumes or constrains—and are the benefits visible beyond the data-centre fence?

The interview’s vision of “electricity for all” becomes credible only when access, affordability and environmental quality are included in the investment model rather than left as inspirational language.

Use hydrogen where its system value justifies conversion losses and cost

The interview imagines locally produced renewable electricity converted to hydrogen and later reconverted into firm power. This could support long-duration storage and energy autonomy, but economics, efficiency, infrastructure and safety remain decisive.

Use case	Potential value	Critical uncertainty
Long-duration storage	Bridges extended low-renewable periods	Round-trip efficiency and storage cost
Remote microgrids	Reduces fuel logistics dependence	Equipment maturity and maintenance
Industrial clusters	Shared production, storage and demand	Pipeline, offtake and safety coordination
Backup generation	Low-use resilience resource	Fuel availability during disruption
International trade	Diversifies energy supply	Transport conversion and certification

Investment ladder

Observe
Track cost, policy and standards

Pilot
Test a bounded use case

Integrate
Connect to microgrid operations

Contract
Secure supply and offtake

Scale
Only after lifecycle proof

Technology neutrality: Compare hydrogen with batteries, thermal storage, demand flexibility, transmission, gas backup and other firm resources using the same service definition.

Hydrogen should be evaluated as a system option—not a universal destination and not a substitute for near-term efficiency, grid upgrades or proven capacity.

Resilience begins before failure

The interview links Sridhar’s Mars-mission experience to anticipatory mitigation: imagine what can fail, design workarounds and recover forward. It also recounts an early manufacturing crisis in which Andy Grove reframed the technical problem as a leadership problem—an important lesson for scaling any complex infrastructure.

Leadership disciplines

- Name the true constraint without defensiveness.
- Separate learning from repeated rumination.
- Build manufacturing and operating knowledge explicitly.
- Use empathy to detect risks hidden by hierarchy.
- Scale evidence, not confidence alone.

Pre-mortem questions

- Which five events could stop commissioning?
- Which dependency has no workaround?
- What fails silently?
- What does recovery require?
- Who can stop unsafe acceleration?

Execution loop

Anticipate	Mitigate	Observe	Recover	Learn
Model failures and scenarios	Create options and controls	Instrument real performance	Contain and restore	Change design and practice

> **Conviction is valuable only when it remains compatible with evidence.**

ACTION PLAN

A 100-day AI energy sovereignty programme

Days 0–20	Days 21–40	Days 41–65	Days 66–85	Days 86–100
Map loads, value, timelines and dependencies	Build scenarios and architecture options	Validate sites, permits, fuels and communities	Model commercial and resilience outcomes	Gate investment and publish commitments

Twelve questions before commitment

1. Which AI outcomes require this capacity?
2. What is the load shape—not only peak MW?
3. What happens in the downside-demand case?
4. What is the cost of each month of delay?
5. Which resource is the binding constraint?
6. Can capacity be added modularly?
7. What independent evidence supports availability?
8. How resilient are fuel and equipment supply?
9. What are full lifecycle emissions and costs?
10. Who bears local infrastructure burdens?
11. How is cyber-physical recovery tested?
12. What evidence unlocks the next capital gate?

Governance gates

Outcome proof · Load proof · Technology proof · Permit proof · Economic proof · Resilience proof · Community proof

> Do not approve megawatts because the narrative is large. Approve them because the business outcome, system architecture and public legitimacy survive scrutiny.

Evidence base

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Authorship and authorisation

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Source integrity: Interview statements are treated as perspectives. Time-sensitive company figures are not treated as audited evidence. External claims are separately sourced.

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