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AI Infrastructure Power Index 2026

The New Geography of Artificial Intelligence Power

A strategic economic report on how artificial intelligence capability is shifting from software competition into physical infrastructure competition.

Core thesis

AI advantage is becoming physically anchored.

Index scope

14 economies ranked across five infrastructure pillars.

Audience

Ministers, regulators, CEOs, investors, operators.

Time horizon

2026 baseline with 10–20 year outlook.

Contents

1. Executive Summary
2. Ten Major Findings
3. Index Methodology
4. Global Rankings
5. Country Deep Dives
6. Strategic Themes
7. Frameworks
8. Recommendations
9. Sources

PART 1

Executive Summary

The defining economic change in AI is that capability is becoming physically anchored. Frontier models still depend on algorithms, talent, and data. But as training runs grow, inference becomes persistent, and enterprise adoption scales, decisive advantage increasingly sits below the model layer: electricity, interconnection queues, transformers, advanced packaging, cloud regions, land, cooling, capital, and sovereign access to chips.

The strategic question has changed from “who can build the best model?” to “who can repeatedly supply model builders and operators with secure compute, advanced chips, low-cost electricity, and data-centre capacity under national or allied control?”

In the first decade of modern AI, software scarcity dominated. In the next decade, physical scarcity will matter more. AI is joining the historical family of industrial layers that shaped economic power: electricity, oil, railways, telecommunications, and the internet.

The consequence is a new divide between **AI infrastructure owners** and **AI infrastructure renters**. Owners can finance, permit, power, cool, secure, and scale AI systems under domestic or trusted allied control. Renters may still adopt AI, but they will capture less strategic surplus, less infrastructure spillover, and less bargaining power.

Ten Major Findings

- 1 AI infrastructure is becoming a new form of national industrial capacity.**
Countries now compete not only to invent AI, but to host, power, and industrialize it.

- 2 Compute is becoming a strategic asset, not merely a cloud service.**
Sovereign compute programs and national research resources are now part of industrial policy.

- 3 Electricity is the binding constraint many AI strategies still underweight.**
The next winners will approve, interconnect, and power gigawatt-scale campuses faster than peers.

- 4 Semiconductor leverage is broader than fab ownership.**
Design, memory, lithography, packaging, and supply-chain choke points all translate into strategic power.

- 5 Countries without domestic or allied compute access risk becoming dependent AI consumers.**
They may adopt heavily, but capture less of the capital expenditure and security leverage.

- 6 Data centres are becoming strategic assets.**
The relevant unit is no longer square footage. It is energized megawatts under secure control.

- 7 Energy abundance may become as important as AI talent.**
Firm, low-cost, low-carbon power is becoming a national AI advantage.

- 8 Small states can matter if they control strategic nodes.**
Singapore and the UAE show how policy coordination, capital, trust, and fast execution create leverage.

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- 9** **Europe's pathway is not to copy the United States.**
Its edge is trusted regulation, public compute, industrial demand, and low-carbon firm power where available.
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- 10** **Over 10–20 years, infrastructure ownership may matter more than application-layer novelty.**
The countries that own the rails of inference will capture a disproportionate share of productivity and influence.

PART 2

Index Methodology

The AI Infrastructure Power Index scores countries on a weighted 100-point scale. It is a strategic composite index, not a census of every GPU or data centre. The objective is to estimate a country's ability to train, operate, and control advanced AI systems at scale over a 10- to 20-year horizon.

Category	Weight	What was assessed	Strategic logic
Compute Infrastructure	25%	GPU availability, AI supercomputers, cloud regions, sovereign compute initiatives	Compute is the direct industrial input into training and inference.
Energy Infrastructure	25%	Generation, grid reliability, electricity prices, nuclear, renewables, gigawatt readiness	Electricity is increasingly the binding constraint.
Semiconductor Position	20%	Design, manufacturing, packaging, equipment, supply-chain influence	AI capability is gated by semiconductor chokepoints.
Data Centre Ecosystem	15%	Hyperscale capacity, colocation depth, cooling, land, permitting, investment pipeline	Data centres are the execution layer of AI industrialization.
Sovereign AI Strategy	15%	National strategy, public investment, regulation, talent, institutional coordination	Policy coordination converts assets into durable advantage.

Limitations: GPU inventories are opaque; cloud-region counts do not equal compute capacity; announced investments may not equal energized capacity; China and Gulf compute figures are less transparent; semiconductor power is multidimensional.

PART 3

Global AI Infrastructure Rankings

Rank	Country	Overall	Compute	Energy	Semiconductors	Data Centres	Sovereignty	Tier
1	United States	91	24	19	19	15	14	Tier 1 · AI Infrastructure Superpower
2	China	82	21	20	12	14	15	Tier 1 · AI Infrastructure Superpower
3	France	68	16	20	8	11	13	Tier 2 · AI Infrastructure Leader
4	Japan	67	16	15	14	10	12	Tier 2 · AI Infrastructure Leader
5	South Korea	65	15	13	16	9	12	Tier 2 · AI Infrastructure Leader
6	United Kingdom	61	15	10	10	11	15	Tier 3 · Strategic AI Builder
7	United Arab Emirates	59	13	18	4	11	13	Tier 3 · Strategic AI Builder
8	Germany	58	14	9	12	11	12	Tier 3 · Strategic AI Builder
9	Canada	57	12	18	5	8	14	Tier 3 · Strategic AI Builder
10	Saudi Arabia	56	12	19	3	10	12	Tier 3 · Strategic AI Builder

Rank	Country	Overall	Compute	Energy	Semiconductors	Data Centres	Sovereignty	Tier
11	Singapore	55	14	10	7	13	11	Tier 3 · Strategic AI Builder
12	India	54	12	13	6	10	13	Tier 4 · Emerging AI Infrastructure Economy
13	Netherlands	53	10	8	16	8	11	Tier 4 · Emerging AI Infrastructure Economy
14	Australia	49	10	17	2	9	11	Tier 4 · Emerging AI Infrastructure Economy

PART 4

Country Deep Dives

The following deep dives summarize each country's strategic position, key strengths, infrastructure bottlenecks, geopolitical exposure, and 10–20 year outlook.

United States

Mental model: **The full-stack AI empire.**

Overall 91 - Tier 1

Compute

24

Energy

19

Semis

19

Data Centres

15

Sovereignty

14

Tier

1

The United States remains the closest thing to a complete AI infrastructure state. It combines frontier model labs, hyperscaler density, chip design leadership, private capital formation, national research compute, advanced cloud regions, and a large domestic demand base.

Its advantage is breadth. The U.S. does not merely host AI firms; it hosts the commercial and physical stack that allows those firms to scale. The weakness is increasingly physical: electricity demand, permitting, interconnection queues, transformer availability, and regional grid stress.

10–20 YEAR OUTLOOK

The U.S. should remain the default frontier training and inference location if it treats grid expansion, advanced packaging, and high-density campuses with the same urgency it gives model development.

RECOMMENDATIONS

Government: accelerate transmission, firm low-carbon power, and advanced packaging. **Industry:** secure energy first, GPUs second. **Investors:** prioritize powered land and interconnection rights. **Operators:** plan campuses as multi-gigawatt industrial platforms.

China

Mental model: **The sovereign AI civilization.**

Overall 82 - Tier 1

Compute

21

Energy

20

Semis

12

Data Centres

14

Sovereignty

15

Tier

1

China's strategy is not built around winning one model race. It is built around constructing a sovereign, state-coordinated AI system with domestic cloud, industrial demand, western-region compute hubs, and national infrastructure planning.

China's strengths are scale, industrial coordination, infrastructure execution, and political willingness to steer compute geographically. Its vulnerability remains frontier semiconductor access under export controls.

10–20 YEAR OUTLOOK

China is likely to dominate AI deployment across a vast domestic economy even if some frontier chip bottlenecks remain. The central question is how fast domestic accelerators, packaging, process technology, and

tools improve.

RECOMMENDATIONS

Government: deepen the link between western compute hubs and eastern industrial demand. **Industry:** build domestic accelerator ecosystems. **Investors:** price export-control shocks. **Operators:** treat energy efficiency as strategic.

France

Mental model: **The nuclear-backed European AI platform.**

Overall 68 - Tier 2

Compute

16

Energy

20

Semis

8

Data Centres

11

Sovereignty

13

Tier

2

France has the clearest European AI infrastructure story. Its advantage is not only policy ambition, but firm low-carbon power. Nuclear generation gives France a strategic advantage in AI economics that software-only assessments often miss.

France is not yet a semiconductor superpower, but it has industrial depth, public compute capacity, and a credible data-centre pipeline. Its opportunity is to become Europe's AI infrastructure platform rather than merely an AI policy voice.

10–20 YEAR OUTLOOK

If France converts investment pledges into energized sites, it can become Europe's strongest AI factory location.

RECOMMENDATIONS

Government: keep permitting fast. **Industry:** exploit the nuclear-cost advantage. **Investors:** treat French AI campuses as long-duration infrastructure. **Operators:** target large northern and industrial brownfield sites.

Japan

Mental model: **The precision compute revival.**

Overall 67 - Tier 2

Compute

16

Energy

15

Semis

14

Data Centres

10

Sovereignty

12

Tier

2

Japan is rebuilding AI power through trusted deployment, industrial resilience, cloud investment, and semiconductor revival. Rapidus, domestic cloud expansion, and high-reliability infrastructure give Japan a credible route back into strategic technology leadership.

The key constraint is energy. AI infrastructure strategy in Japan cannot be separated from nuclear restart, power security, and industrial electricity costs.

10–20 YEAR OUTLOOK

Japan can become Asia's most trusted allied AI manufacturing and compute location after the U.S. if it pairs semiconductor renewal with reliable power and large cluster deployment.

RECOMMENDATIONS

Government: integrate semiconductor, compute, and power policy. **Industry:** bind AI infrastructure to industrial customers. **Investors:** prioritize reliable power zones. **Operators:** design for resilience and seismic risk.

South Korea

Mental model: **The memory-and-manufacturing AI arsenal.**

Overall 65 - Tier 2

Compute

15

Energy

13

Semis

16

Data Centres

9

Sovereignty

12

Tier

2

South Korea's AI infrastructure power begins with semiconductors, especially memory and HBM. Samsung and SK hynix sit inside the global AI supply chain in ways that give Korea leverage beyond its domestic compute footprint.

The challenge is conversion: being indispensable to global AI hardware does not automatically make Korea a sovereign compute owner.

10–20 YEAR OUTLOOK

If Korea converts memory leadership into local compute density and solves power constraints, it can move from key supplier to full strategic leader.

RECOMMENDATIONS

Government: connect HBM strength to domestic compute campuses. **Industry:** develop Korean accelerator and software ecosystems. **Investors:** back power-secure campuses near chip clusters. **Operators:** build close to industrial demand.

United Kingdom

Mental model: **The model-and-rulemaker without enough megawatts.**

Overall 61 - Tier 3

Compute

15

Energy

10

Semis

10

Data Centres

11

Sovereignty

15

Tier

3

The UK has become serious about compute as national infrastructure. It has strong research capacity, policy sophistication, AI safety leadership, capital markets, and chip design leverage through Arm.

Its weakness is physical scale: it lacks U.S.-level cluster density, Gulf-style land and power abundance, and France's nuclear advantage.

10–20 YEAR OUTLOOK

The UK remains strategically important if it turns AI Growth Zones, public compute, and Arm's design position into real powered campuses and domestic industrial uptake.

RECOMMENDATIONS

Government: move from white paper to powered sites. **Industry:** focus on finance, biotech, defense, and public services. **Investors:** treat AI Growth Zones as early infrastructure positions. **Operators:** prioritize clear power pathways.

United Arab Emirates

Mental model: **The AI infrastructure city-state.**

Overall 59 - Tier 3

Compute

13

Energy

18

Semis

4

Data Centres

11

Sovereignty

13

Tier

3

The UAE has built one of the most coherent state-capital-AI models outside the U.S. and China. Its formula is sovereign capital, speed, land, firm power, elite partnerships, and strong policy coordination.

The weakness is semiconductor dependence and geopolitical exposure. The UAE can become a premier AI hosting jurisdiction between Europe and Asia only if it sustains allied trust and hardens infrastructure resilience.

10–20 YEAR OUTLOOK

The UAE could become the Gulf's most credible AI infrastructure node, with regional inference, sovereign compute, and allied AI campuses.

RECOMMENDATIONS

Government: prioritize grid resilience and security. **Industry:** anchor regional workloads locally. **Investors:** price geopolitical resilience. **Operators:** build redundancy and crisis continuity.

Germany

Mental model: **The industrial data engine under power stress.**

Overall 58 - Tier 3

Compute

14

Energy

9

Semis

12

Data Centres

11

Sovereignty

12

Tier

3

Germany's AI position is strongest through industrial demand. Manufacturing, automation, engineering, public compute, and semiconductor projects create a credible industrial AI path.

The constraint is power economics and speed. Germany should not copy the U.S. hyperscale playbook. Its natural winning lane is industrial AI infrastructure.

10–20 YEAR OUTLOOK

Germany can become Europe's leading industrial AI production economy if it connects compute, manufacturing clusters, automation demand, and semiconductor capacity.

RECOMMENDATIONS

Government: focus on industrial AI zones. **Industry:** convert public compute into factory productivity.

Investors: favor brownfield industrial campuses. **Operators:** specialize in sovereign and industrial workloads.

Canada

Mental model: **The hydro-powered talent reserve.**

Overall 57 - Tier 3

Compute

12

Energy

18

Semis

5

Data Centres

8

Sovereignty

14

Tier

3

Canada's AI story is shifting from research legacy to physical sovereignty. Its advantage is clean power, trust, research credibility, and a strong democratic-alliance position.

The limitation is scale: smaller domestic capital pools, less semiconductor leverage, and lower hyperscale density than the U.S.

10–20 YEAR OUTLOOK

Canada can become a leading democratic public-compute and trusted-training jurisdiction if it scales sovereign compute fast enough.

RECOMMENDATIONS

Government: accelerate sovereign supercomputer buildout. **Industry:** bind compute to domestic champions. **Investors:** target low-carbon campus sites. **Operators:** build clean, secure, research-friendly infrastructure.

Saudi Arabia

Mental model: **The petro-to-compute kingdom.**

Overall 56 - Tier 3

Compute

12

Energy

19

Semis

3

Data Centres

10

Sovereignty

12

Tier

3

Saudi Arabia is trying to convert hydrocarbon-era scale into AI-era industrial relevance. Its strongest assets are land, power, capital, and state-backed coordination.

The weak point remains semiconductors and proven local frontier cluster operations. The ambition is large; the execution record is still forming.

10–20 YEAR OUTLOOK

If Saudi Arabia pairs energy abundance with real sovereign cloud and large-scale AI campus execution, it can become the largest AI-industrial site in the Arab world.

RECOMMENDATIONS

Government: convert land and power into bankable AI campuses. **Industry:** integrate Arabic-language models with enterprise demand. **Investors:** treat the Kingdom as long-duration infrastructure. **Operators:** lock in water-light cooling and grid integration.

Singapore

Mental model: **The latency city-state.**

Overall 55 - Tier 3

Compute

14

Energy

10

Semis

7

Data Centres

13

Sovereignty

11

Tier

3

Singapore matters because it controls trust, regulation, latency, enterprise demand, and regional cloud orchestration. It is not trying to become a U.S.-style full-stack giant.

Its constraints are land and power. But it compensates through disciplined data-centre policy, governance credibility, and regional centrality.

10–20 YEAR OUTLOOK

Singapore will remain Southeast Asia's premier inference, orchestration, and data-governance node rather than a self-sufficient frontier training state.

RECOMMENDATIONS

Government: preserve power discipline and efficiency standards. **Industry:** use Singapore for regional control planes. **Investors:** value scarcity and policy stability. **Operators:** optimize cooling, density, and cross-border energy.

India

Mental model: **The population-scale AI utility in the making.**

Overall 54 - Tier 4

Compute

12

Energy

13

Semis

6

Data Centres

10

Sovereignty

13

Tier

4

India's advantage is scale of demand, digital public infrastructure, and a growing sovereign compute agenda. Its weakness is current frontier compute density and semiconductor maturity.

India's likely path is not to match U.S. frontier training capacity immediately, but to become the world's largest applied-AI and inference-at-scale market.

10–20 YEAR OUTLOOK

Demand alone will not produce sovereignty. India must keep expanding common compute, packaging, and domestic infrastructure depth.

RECOMMENDATIONS

Government: expand common compute and semiconductor packaging. **Industry:** build for Indian languages and enterprise use. **Investors:** treat India as scale demand plus improving infrastructure. **Operators:** build for massive inference demand.

Netherlands

Mental model: **The semiconductor choke-point without scale compute.**

Overall 53 - Tier 4

Compute

10

Energy

8

Semis

16

Data Centres

8

Sovereignty

11

Tier

4

The Netherlands does not score highly as a compute or energy superpower. It matters because it controls a strategic semiconductor equipment choke point through ASML and the wider Dutch semiconductor ecosystem.

Its weakness is energy and physical expansion, especially grid congestion. It should think of itself as a control-point power more than a brute-force compute state.

10–20 YEAR OUTLOOK

The Netherlands will influence AI through tools, standards, equipment, and European semiconductor strategy rather than through domestic gigawatt AI campuses.

RECOMMENDATIONS

Government: ease grid bottlenecks. **Industry:** leverage semiconductor position into AI ecosystems. **Investors:** distinguish control-point leverage from local compute scarcity. **Operators:** focus on specialized high-value deployments.

Australia

Mental model: **The energy superpower searching for compute strategy.**

Overall 49 - Tier 4

Compute

10

Energy

17

Semis

2

Data Centres

9

Sovereignty

11

Tier

4

Australia has land, geopolitical trust, mineral and energy strengths, cloud presence, and the potential to become an allied AI campus jurisdiction. Its weakness is the absence of a meaningful domestic semiconductor layer and modest sovereign compute ambition.

Australia's opportunity is not cosmetic. It can treat AI capacity like export infrastructure and national industrial policy.

10–20 YEAR OUTLOOK

Australia can move up the index if it builds explicit AI energy corridors, sovereign compute anchor demand, and allied workloads tied to energy and defense use cases.

RECOMMENDATIONS

Government: designate AI energy corridors and compute anchor demand. **Industry:** pursue allied campuses and sovereign workloads. **Investors:** watch energized land and transmission. **Operators:** design for heat, water efficiency, and scale.

PART 5

Global Strategic Themes

The Rise of AI Infrastructure States

AI is becoming an infrastructure state project. Winning countries align energy, permitting, semiconductor policy, public compute, cloud buildout, and capital formation.

The New Compute Divide

The emerging divide is owners versus renters. Owners control enough of the stack to set terms; renters depend on foreign cloud, chips, or power economics.

The Electricity Bottleneck

Electricity has become the hidden variable in AI strategy. Firm low-cost power is now a strategic AI input.

The Semiconductor Dependency Problem

No country is casually sovereign in AI. Design, fabs, memory, lithography, and packaging remain globally concentrated.

Data Centres Become Strategic Assets

AI data centres are power-conversion and sovereignty assets. Energized megawatts matter more than square footage.

The Future of Sovereign AI

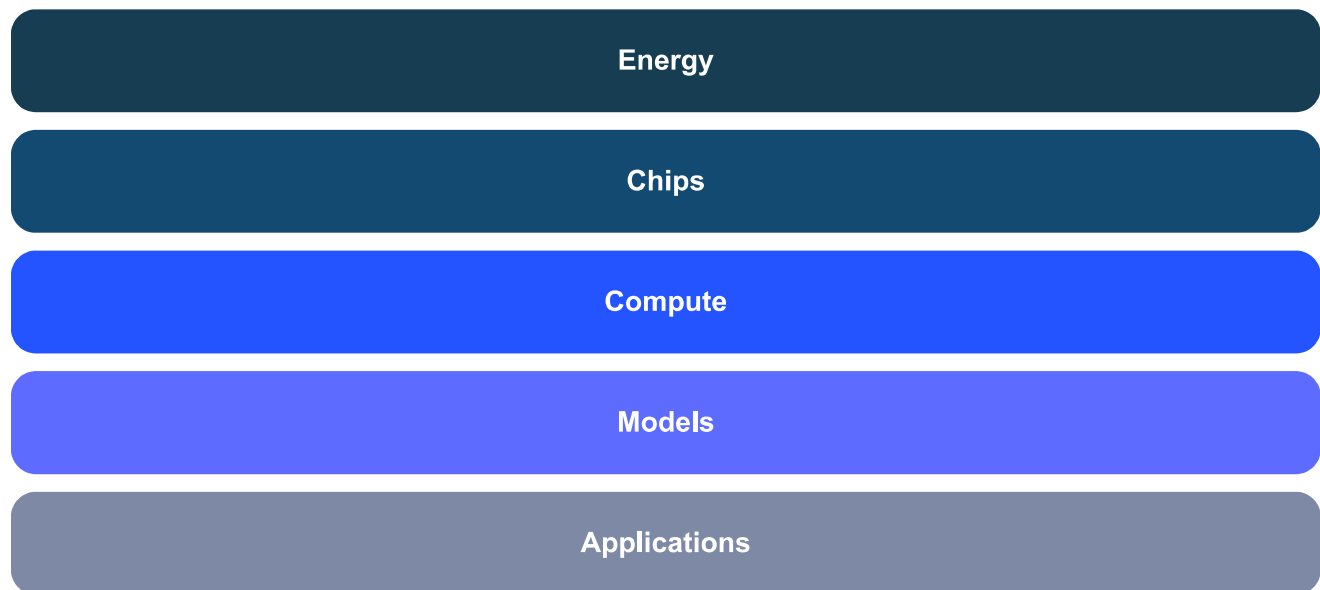
Sovereign AI means different things: full-stack dominance, trusted public compute, allied infrastructure, or domestic inference capacity.

PART 6

Strategic Frameworks

AI Infrastructure Stack

The lower layers constrain the upper layers. A country can import applications and models more easily than it can import always-on domestic power or instantly create high-density compute clusters.



AI Sovereignty Matrix

Full-stack owners: United States, China. **Energy-backed builders:** France, UAE, Saudi Arabia, Canada, Australia. **Control-point powers:** South Korea, Japan, Netherlands, United Kingdom. **Scale adopters building up:** India, Singapore, Germany.

Compute Dependency Map

Ask two questions: can the country access frontier accelerators on acceptable terms, and can it energize and house them domestically at scale? Countries that answer no to both are structural renters.

AI Industrial Power Curve

AI infrastructure has threshold effects. Once a country crosses thresholds in power, compute, data-centre density, and semiconductor leverage, capability compounds.

Infrastructure Ownership Model

Utility model: public compute for research and national missions. **National champion model:** state-backed firms building domestic AI infrastructure. **Alliance model:** sovereign capacity through trusted partners. **Tenant model:** heavy AI adoption on mostly foreign-owned infrastructure.

Cross-Cutting Recommendations

For governments

Create explicit AI energy corridors where transmission, permitting, land assembly, and cooling standards are pre-organized for AI campuses. Treat sovereign compute as procurement and industrial policy, not just research funding.

For industry

Sequence power first, chips second, models third. Secure long-tenor power, diversified accelerator access, and capacity rights before scaling inference-heavy products.

For investors

The investable scarcity is energized capacity, power-contracted campuses, transformer access, interconnection rights, advanced cooling, and sovereign-trust locations.

For operators

Plan AI campuses as expandable industrial utilities capable of moving from tens of megawatts to hundreds and then gigawatt scale.

Selected Source List

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