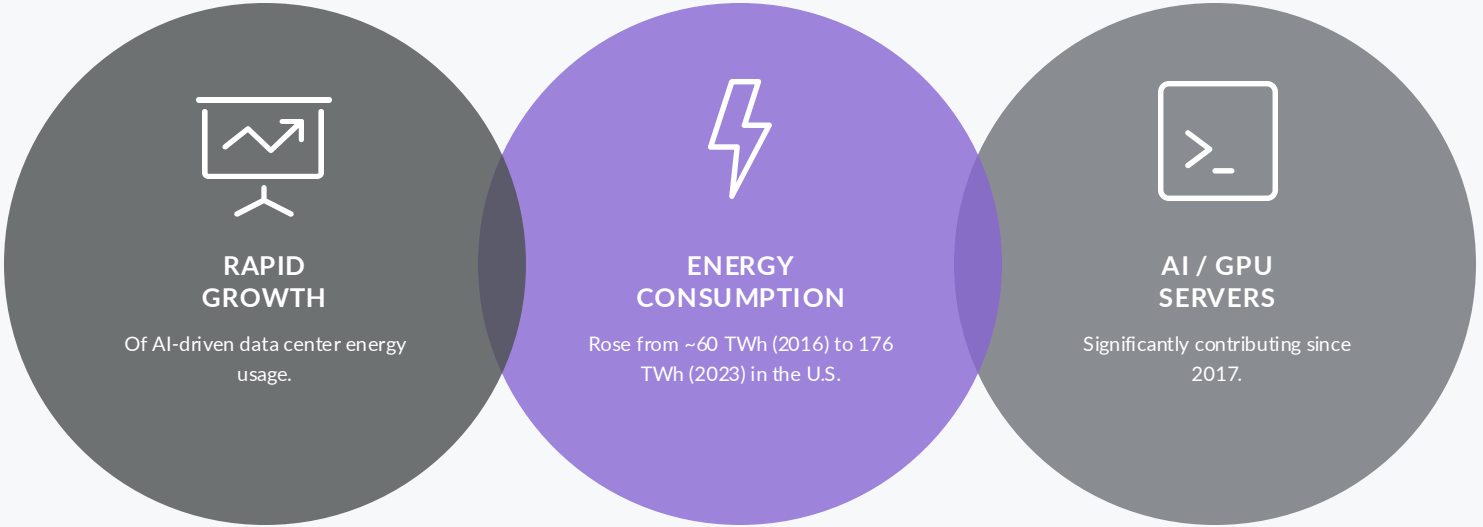
AI AND NATIONAL SECURITY: THE POWER CRISIS IN DATA CENTERS

Insights from the LBNL 2024 Data Center Energy Usage Report

Digital Meld

INTRODUCTION – THE RISE OF AI AND DATA CENTERS

Since 2016, U.S. data center energy usage has nearly tripled—from 60 to 176 TWh in 2023.



AI DRIVING POWER DEMAND – CURRENT TRENDS

AI servers aren't just more powerful—they're far more power-hungry.

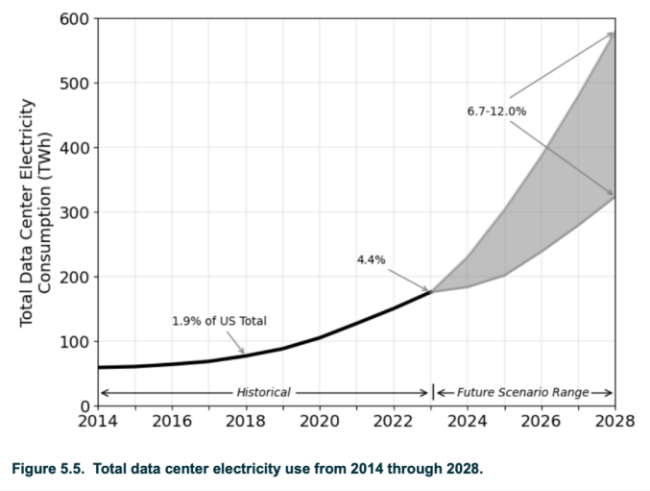


Figure 5.5. Total data center electricity use from 2014 through 2028.

AI WORKLOADS REQUIRE SPECIALIZED, GPU-INTENSIVE SERVERS.

SIGNIFICANT OPERATIONAL POWER INCREASES (MULTIPLE KW PER SERVER)

U.S. DATA CENTER ENERGY PROJECTED TO REACH 325–580 TWH BY 2028.

NATIONAL SECURITY IMPLICATIONS

THE AI RACE WITH CHINA

AI CAPABILITIES

Increased AI capability is essential for maintaining technological supremacy.

DATA CENTERS

Increased dependency on data centers elevates vulnerabilities.

STRATEGIC IMPERATIVE

There is a strategic imperative to maintain AI infrastructure leadership.

ENERGY DEMAND AND STRATEGIC COMPETITION

- CHINA'S RAPID EXPANSION OF DATA CENTER INFRASTRUCTURE.
- CRITICAL TO RECOGNIZE AI INFRASTRUCTURE AS NATIONAL SECURITY PRIORITY.
- STRATEGIC INVESTMENT IN SECURE, SUSTAINABLE ENERGY FOR U.S. LEADERSHIP.

CHINA IS SCALING AI INFRASTRUCTURE AGGRESSIVELY USING EVERYTHING FROM SOLAR TO COAL.

NATO ALLIES FALLING BEHIND

- SLOW EUROPEAN INVESTMENT IN DATA CENTER AND AI INFRASTRUCTURE.
- CONSERVATIVE GPU ADOPTION, SLOWER REFRESH CYCLES HINDER COMPETITIVENESS.
- EUROPEAN REGULATORY FOCUS SLOWING PRACTICAL AI DEPLOYMENT.

CONSEQUENCES OF LAGGING ALLIES

- INCREASED EUROPEAN RELIANCE ON U.S. DIGITAL AND ENERGY RESOURCES.
- CHALLENGES TO INTEROPERABILITY AND COLLECTIVE SECURITY POSTURE.
- REDUCED NATO RESILIENCE TO CYBER THREATS AND ADVERSARIES.

BRIDGING ENERGY DEMAND – NATURAL GAS AND NUCLEAR

NATURAL GAS

South Dakota planning data centers powered by natural gas, serving as stable, scalable power source.

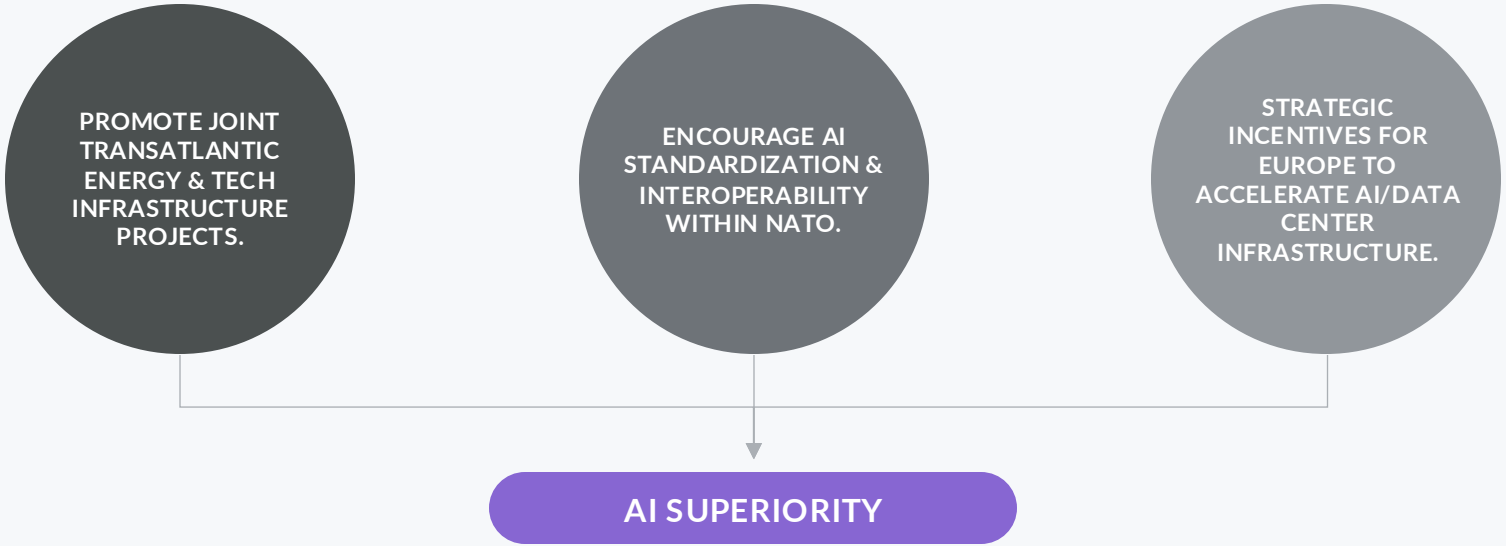
NUCLEAR

Texas announced plans for new nuclear reactors, providing carbon-free, reliable, large-scale power.

CHINA'S APPROACH? ALL OF THE ABOVE

- CHINA AGGRESSIVELY ADDRESSING ENERGY DEMAND, PRIORITIZING AI LEADERSHIP.
- RAPID CONSTRUCTION OF DATA CENTERS POWERED BY COAL ALONGSIDE RENEWABLES AND NUCLEAR.
- RAISES GLOBAL ENVIRONMENTAL CONCERNS AND GEOPOLITICAL PRESSURES ON SUSTAINABILITY GOALS.

POLICY IMPLICATIONS AND RECOMMENDATIONS



FUTURE SCENARIOS AND STRATEGIC PLANNING

IMPORTANCE OF STRATEGIC, LONG-TERM PLANNING FOR SUSTAINABLE AI OPERATIONS.

PROJECTED SCENARIOS FOR AI-DRIVEN ENERGY DEMAND (OPTIMISTIC VS. PESSIMISTIC).

OPPORTUNITY TO USE ENERGY INFRASTRUCTURE BUILD-OUT TO LEAD GLOBALLY.

THANK YOU! QUESTIONS?

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