



# CRYOZENIC vs CONVENTIONAL COOLING

## FINANCIAL & INFRASTRUCTURE IMPACT

Cryozenic's Integrated Thermal Management System is engineered to deliver intelligent thermal control, maximum efficiency, and uncompromised performance at scale—reducing energy consumption and total cost of ownership for next-generation data centres.

EXAMPLE SCENARIO

### 10 MW AI / HYPERSCALE DATA CENTRE

High-density AI workload deployment

## PERFORMANCE COMPARISON

METRIC	CONVENTIONAL COOLING	CRYOZENIC THERMAL ARCHITECTURE	ADVANTAGE
Typical PUE	1.6 – 1.8	1.1 – 1.35	Up to 25% better efficiency
Cooling Energy Share	30 – 50% of facility energy	Reduced by 20 – 40%	Lower operating cost
Rack Density Support	20 – 40 kW typical	80 – 100 kW+ ready	Higher compute density
Thermal Stability	±3 – 5°C variation	±1 – 2°C variation	Reduced hotspots
Mechanical Cooling Dependency	High	Reduced up to 35%	Lower HVAC runtime
System Availability	Standard enterprise (99.9%)	99.99% projected	Higher uptime resilience
Scalability	Airflow limited	Modular scalable architecture	Faster expansion capability

## STRATEGIC BUSINESS IMPACT



LOWER OPERATING EXPENDITURE



IMPROVED SUSTAINABILITY (ESG)



BETTER AI INFRASTRUCTURE READINESS



REDUCED OPERATIONAL RISK



HIGHER COMPUTE PER SQ. FT.

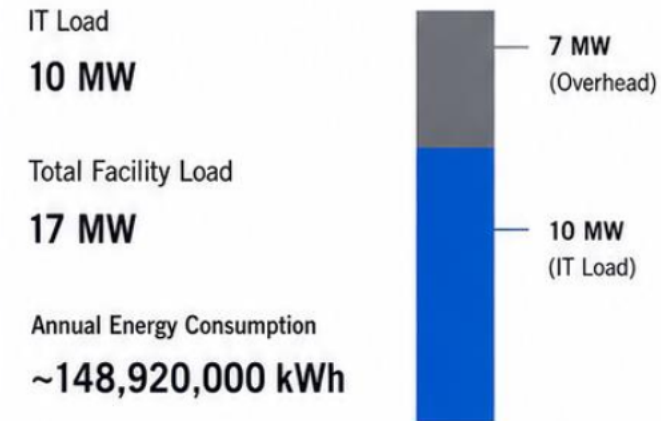


FUTURE-READY SCALABLE INFRASTRUCTURE

## ANNUAL ENERGY COST COMPARISON

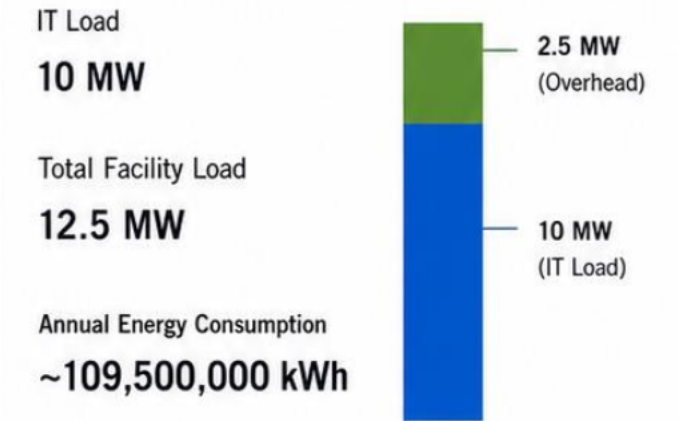
Assumptions: ⚡ Facility Load: 10 MW    💰 Electricity Cost: \$0.10/kWh    🕒 24/7 Operation    📅 365 Days/Year

### CONVENTIONAL DATA CENTRE (AT PUE 1.7)



Estimated Annual Electricity Cost  
**~\$14.9 Million / year**

### CRYOZENIC INFRASTRUCTURE (AT PUE 1.25)



Estimated Annual Electricity Cost  
**~\$10.9 Million / year**



ESTIMATED ANNUAL SAVINGS  
**~\$4 MILLION / YEAR**

**30 – 50%**  
 COOLING ENERGY REDUCTION



PAYBACK PERIOD  
**2 – 4 YEARS**

## FINANCIAL IMPACT AT A GLANCE

Annual Energy Savings	~\$4 Million / year
Cooling Energy Reduction	30 – 50%
HVAC Runtime Reduction	Up to 35%
Maintenance Reduction	Lower compressor & mechanical wear
Lifecycle Cost Reduction (Over 10 Years)	25 – 40%
Estimated Payback Period	2 – 4 Years

## 10-YEAR FINANCIAL IMPACT (ESTIMATED)

