BRIGHTCORE EDGE™ COOLING FOR DATA CENTERS

Brightcore
BUILDING ENERGY PERFORMANCE®

Reduce data center cooling power. Redeploy it as compute.

Brightcore's patent-pending geothermal cooling solution for new and existing data centers **reduces power required for cooling and unlocks additional compute capacity** for the same total site power.

POWER	COMPUTE	EFFICIENCY	WATER
75-85%	10-20%	1.09 pPUE	0 WUE
REDUCTION IN PEAK COOLING POWER	**INCREASE** IN COMPUTE, SAME SITE POWER	**IMPROVEMENT** VS. 1.30-1.43 CONVENTIONAL	**ELIMINATE** WITH FULLY CLOSED-LOOP COOLING

THE PROBLEM

Cooling is the largest non-compute data center load. Every megawatt spent on cooling is a megawatt of compute that cannot be monetized.

THE SOLUTION

Brightcore EDGE™ delivers the lowest watt per token cooling solution by combining geothermal cooling with dry coolers and optional chillers.

SYSTEM DESIGN

Our closed-loop geothermal borefield is 2-3x smaller and more cost-efficient than traditional geothermal designs. It fits within your site footprint, deploys in months (not years), and the CAPEX is comparable to conventional cooling systems.

COOLING MANAGEMENT

Brightcore EDGE™ software utilizes proprietary predictive algorithms to continuously optimize across geothermal, dry coolers, and optional chillers to deliver 100% of cooling demand, 24/7/365, for the life of the system.

THE RESULT

CONVENTIONAL COOLING

Consumes

25-35%

of total site power

→

GEOTHERMAL WITH BRIGHTCORE EDGE™

Consumes

4-6%

of total site power

ILLUSTRATIVE ECONOMICS

On an illustrative 250 MW-IT data center in Abilene, TX, Brightcore's geothermal cooling would deliver $4.1B in additional NPV by unlocking 48 MW-IT of additional compute, adding $706M in annual revenue.

15-YR NPV · 298 MW-IT · ABILENE, TX

$4.1B

ADDITIONAL NET PRESENT VALUE

Performance values represent high temperature liquid cooled compute cooled by geothermal vs. a baseline chiller-only design; 15-year NPV vs. chillers, 10% WACC; high-performance compute at $400k/rack cost, $150k/yr/rack revenue; electricity $0.10/kWh. Results vary by site, geography and configuration; for illustrative purposes only.

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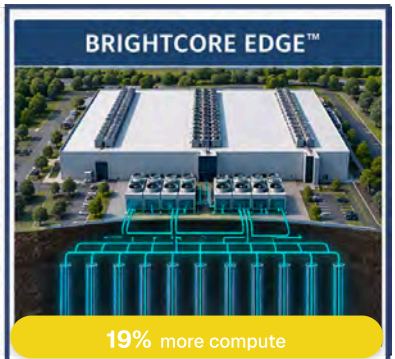
Works across new & existing data centers regardless of geography, scale or existing cooling system

A standardized geothermal cooling solution tailored to each facility's needs, seamlessly integrating with your cooling architecture and phase of operation.

Less cooling power. More compute.

Add more compute within a fixed power envelope.





		19% more compute
IT Compute	250 MW	298 MW
Cooling Power	60 MW	13 MW
Total Site Power	325 MW	325 MW
Peak PUE	1.30	1.09

USE CASES

From corporate HPC to AI factory, Brightcore EDGE™ scales to fit

NEXT-GEN AI / HPC

Highest efficiency, chiller-free design ideal for high temperature compute

RETROFIT

Phase in geothermal, then downsize or retire chillers

LEGACY UPGRADE

Add geothermal to cut energy spend and extend existing equipment life

ADDITIONAL BENEFITS

COOLING INFRASTRUCTURE & WATER

Chillers Optional Reduce or Eliminate	Reduces CapEx, Above Ground Space Constraints & Noise
50-85% Fewer Dry Coolers	Reduces Noise and Above Ground Space Constraints
0 WUE Water Use Effectiveness	Eliminates Water Consumption for Cooling

ECONOMICS & DEPLOYMENT

CAPEX ≤ BAU 50yr+ Asset Life	Comparable upfront cost with no replacement cycle required
24/7/365 High Reliability	Fewer failure points and less maintenance
All Geographies	2-3x smaller borefield fits on any site

ABOUT BRIGHTCORE

Brightcore Energy has been a clean energy developer since 2015, with 120+ employees in the U.S. and Sweden and 500+ projects, for commercial and industrial customers including Yale University, Lendlease, Morgan Stanley and hundreds more. Our offerings include geothermal heating & cooling and advanced energy efficiency for both new construction and existing building retrofits. Our team has designed geothermal cooling systems for more than 50 data centers/IT/telecom facilities in Sweden.

GEOTHERMAL HVAC



ADVANCED ENERGY EFFICIENCY



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