GCT Data Center/Nuclear Comparison

Grimes Carbon Tech (GCT)

A net negative green technology company changing the world

January 2025

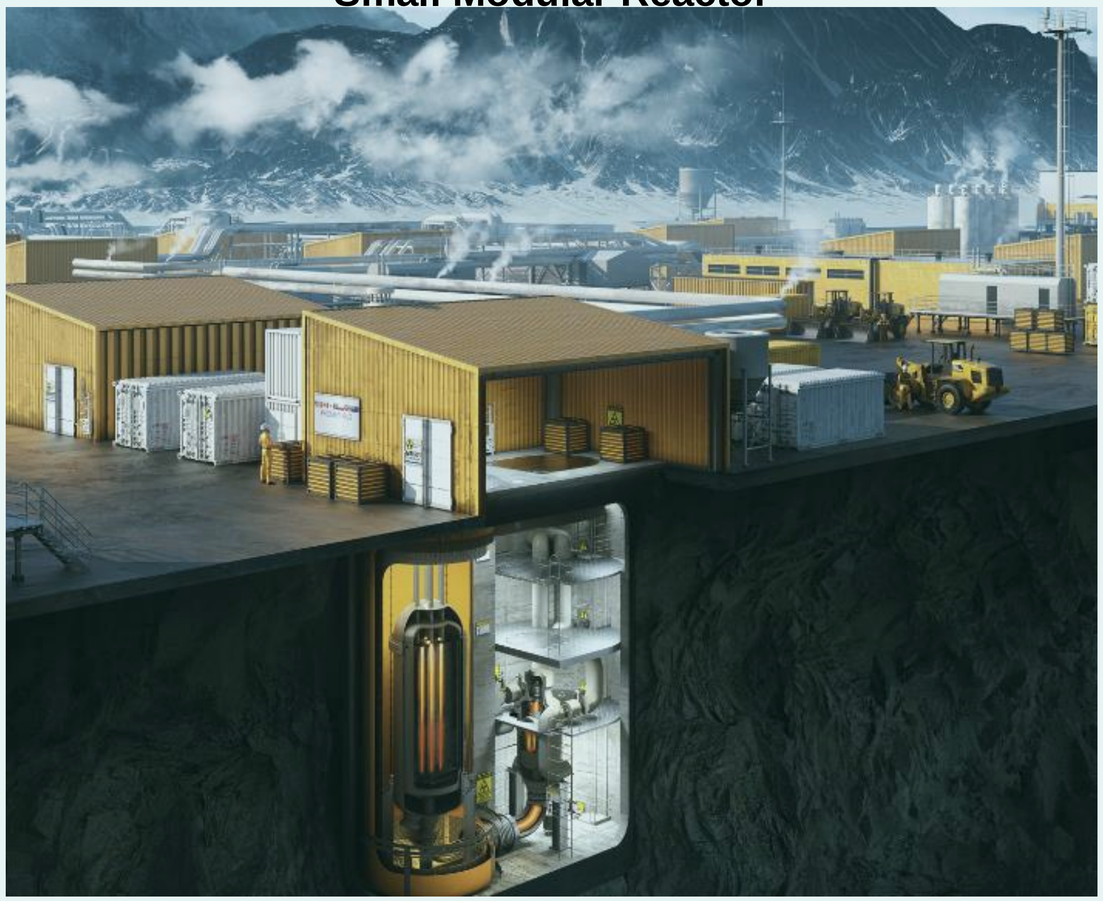
CCP (Combined Cooling and Power)

Distributed CAPER systems using low-grade waste heat to produce hydrogen on-site, integrated with thermally driven cooling & integrated heat recovery from the servers offers a 50% reduction in overall energy consumption.

Small Modular Reactors are being considered as data center energy sources

SMRs are similar in cost to large scale nuclear plant ~$6,000/kW

Small Modular Reactor



600 MW plant would cost $3.6 billion

Data Centers are desperate for power

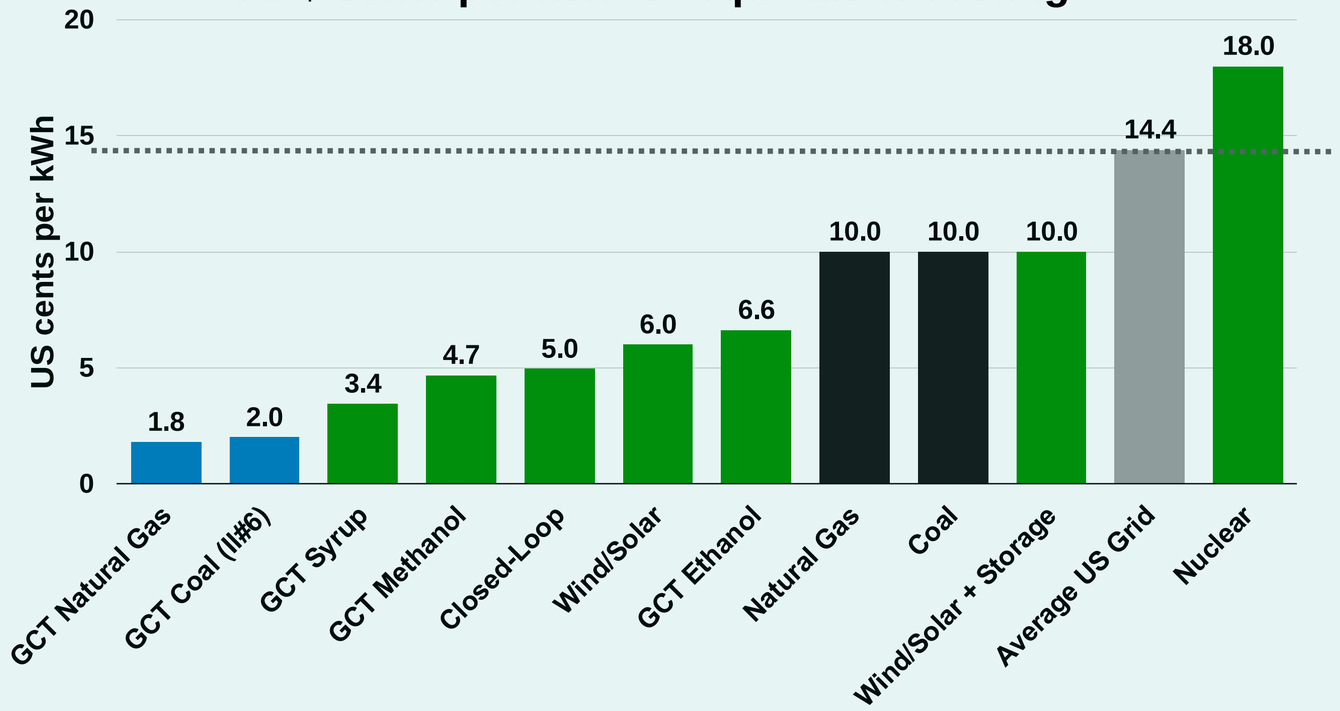
- A single ChatGPT query requires 2.9 watt-hours of electricity versus 0.3 watt-hours for a google search.
- By 2030 data centers will consume 8% of US power versus 3% in 2022.
- US utilities will need to invest $50B in new capacity for data centers alone by 2030.
- SMRs have the same capital cost per kW as large plants - ~$6,000/kW (UD DOE).
- Capex would be $.111/kWh for new construction (10 years @ 7.5%).
- DOE estimates for Opex from nuclear plants are $0.015/kWh.
- Average T&D costs nationwide are $0.070/kWh
- Total delivered cost for electricity from an SMR would be $0.126/kWh not including T&D

GCT has a proprietary method of reducing electricity demand by 50%

Integration of power generation & heat recovery offers unprecedented efficiency

GCT Electricity Cost Comparison

US $ cents per kWh or equivalent cooling



Notes:

- ***GCT energy is dispatchable (always available), unlike intermittent renewables***
- ***GCT costs reflect the reduction in demand enable by waste heat recovery***
- ***GCT costs DO NOT INCLUDE eligible tax credits & sale of CCR oxygen co-product***
- ***Only US Average includes transmission & distribution costs (T&D***
- ***Other competing costs would be higher with T&D included***

GCT CAPER process:

- Can use sugar juice directly & all waste by converting it to methanol & then Green H2.
- Can operate on low-cost, raw ethanol.
- Long-term feedstock contracts offer price stability
- Create blue hydrogen from natural gas or coal. When coupled with the CCR, this fossil carbon can be recycled as cost-competitive syngas or liquid fuels
- Onsite, modular systems can be added as needed & offers unparalleled system reliability
- The 50% reduction in energy needed by the CCP system reduces the load for 13,360 racks of 25 kW AI servers from 835MW to 417.4MW

CAPER creates on-site Green & Blue Electricity from multiple feedstocks

Electrical efficiency can increase as much as 50% over conventional plants

Nuclear Plants

$3.6 B Capex

600MW SMR

$14.4 B Capex

2,156 MW Central

Expensive, Long-Distance Transmission Grid

Grid Connected Center

Mega Center

(13,360-25kW AI Racks)

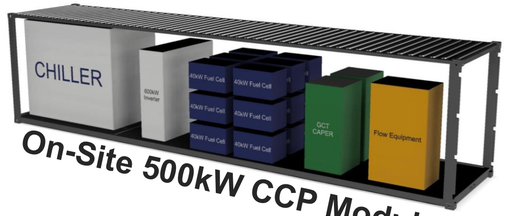
GCT

Ethanol or Methanol

Syrup

Carbon Slurry

Natural Gas



Logistic-Compatible Fuels

Delivered Costs for Fuels:

- *Methanol* *$400/ton*
- *Ethanol* *$700/ton*
- *Syrup* *$30/ton juice*
- *Natural Gas* *$3.00/MMBTU*
- *Coal (II#6)* *$45/ton*

GCT On-Site CCP - 417.5 MW

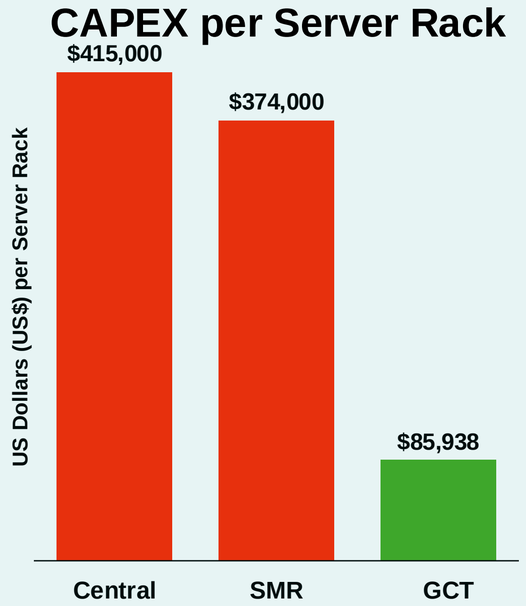
40-360 Modules

(14,400-25kW AI Racks)

$1.0 B Capex

CCP System offers Reduced Capital Investment & Commissioning Time

Green energy costs can be up to 75% lower than SMR



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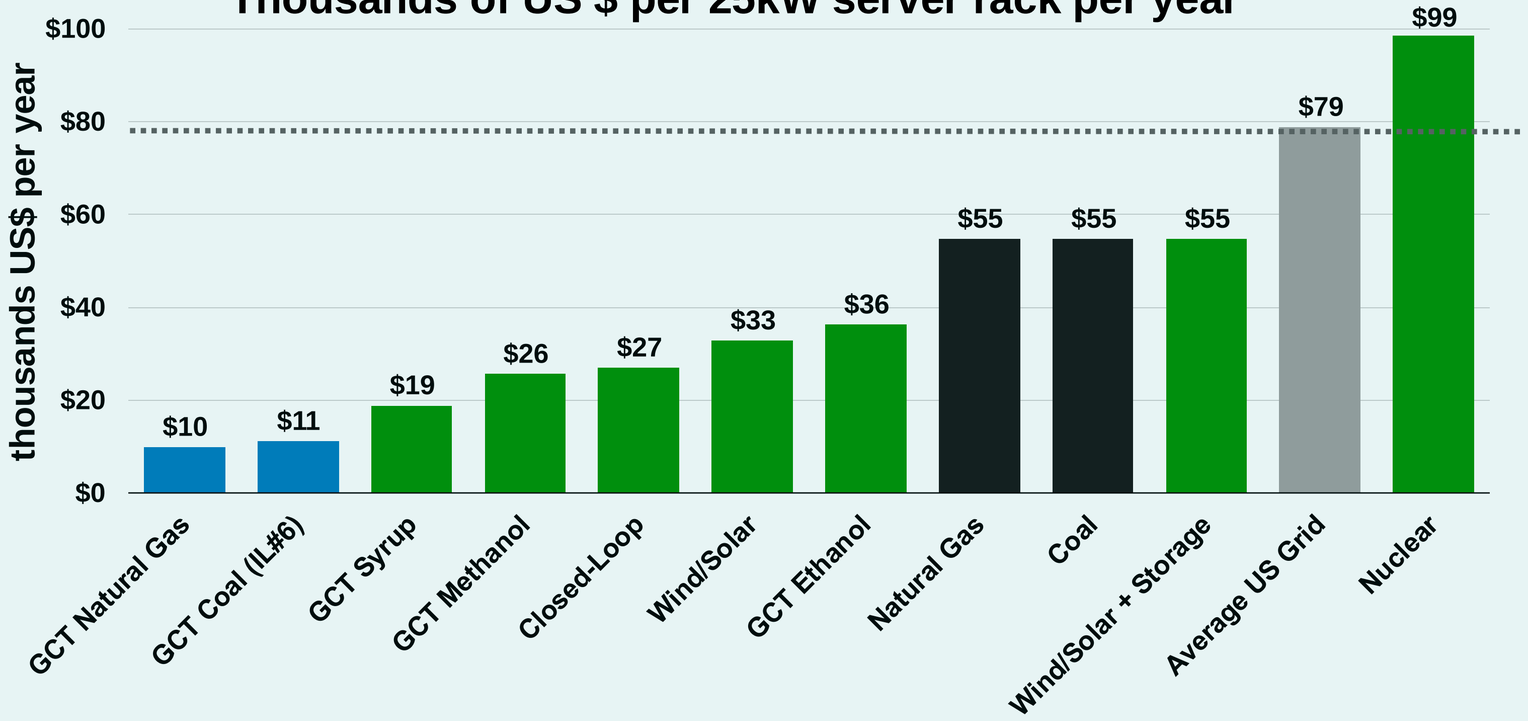

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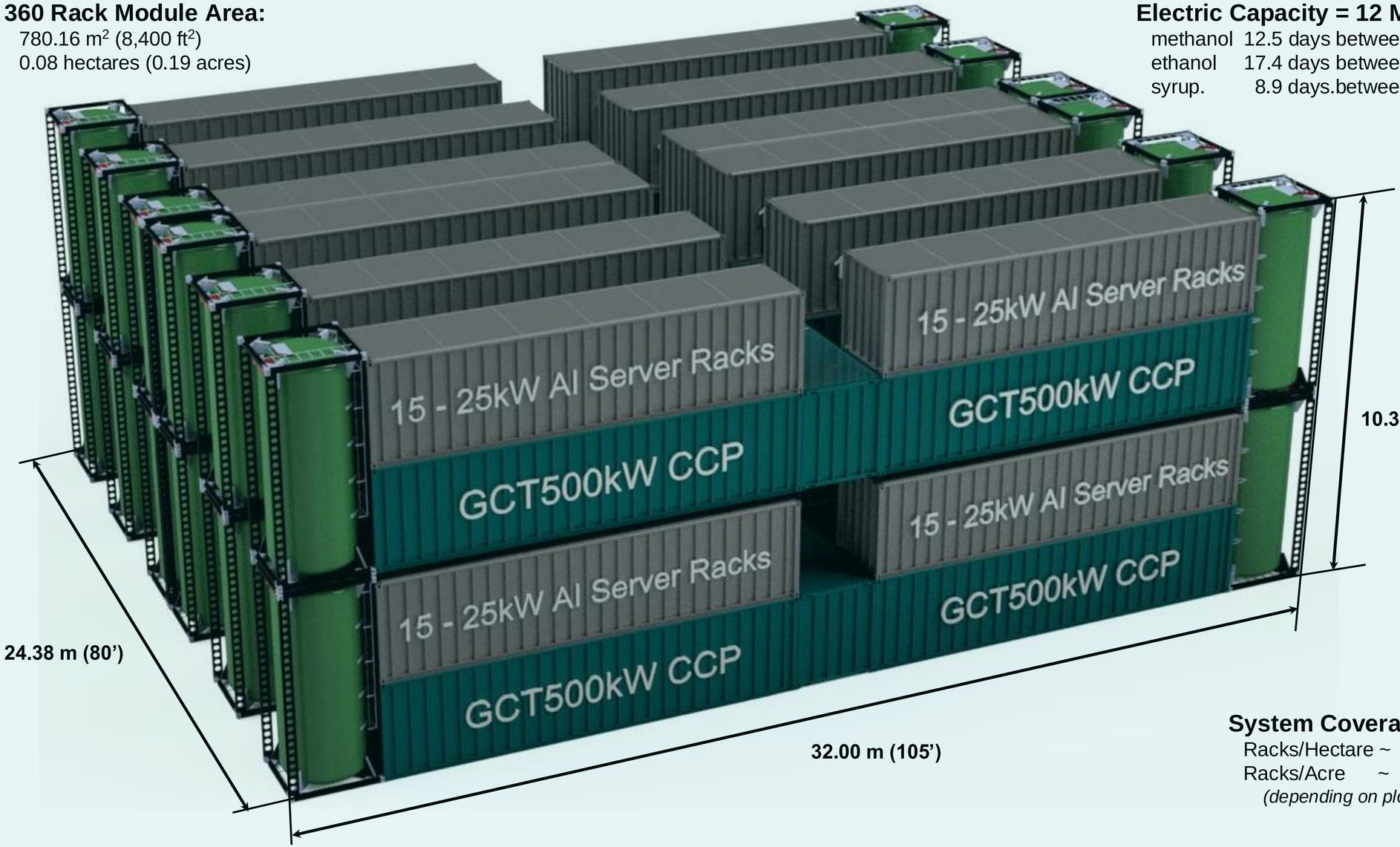
Factory-built, modular systems allow fast deployment where needed

Multiple units offer unparalleled system reliability (360 Rack Module)

360 Rack Module Area:
780.16 m^2 (8,400 ft^2)
0.08 hectares (0.19 acres)

Electric Capacity = 12 MW
methanol 12.5 days between refueling
ethanol 17.4 days between refueling
syrup. 8.9 days.between refueling



System Coverage = 60%
Racks/Hectare ~ 2,700
Racks/Acre ~ 1,100
(depending on plot shape)

For more information please email info@grimescarbontech.com