Sustainable Data Centers:
Scaling AI Sustainably

April 15, 2025
World Ai Summit Montreal

World Summit AI
24-25 April 2024 | Montréal

orbital farm

Impactful Capital

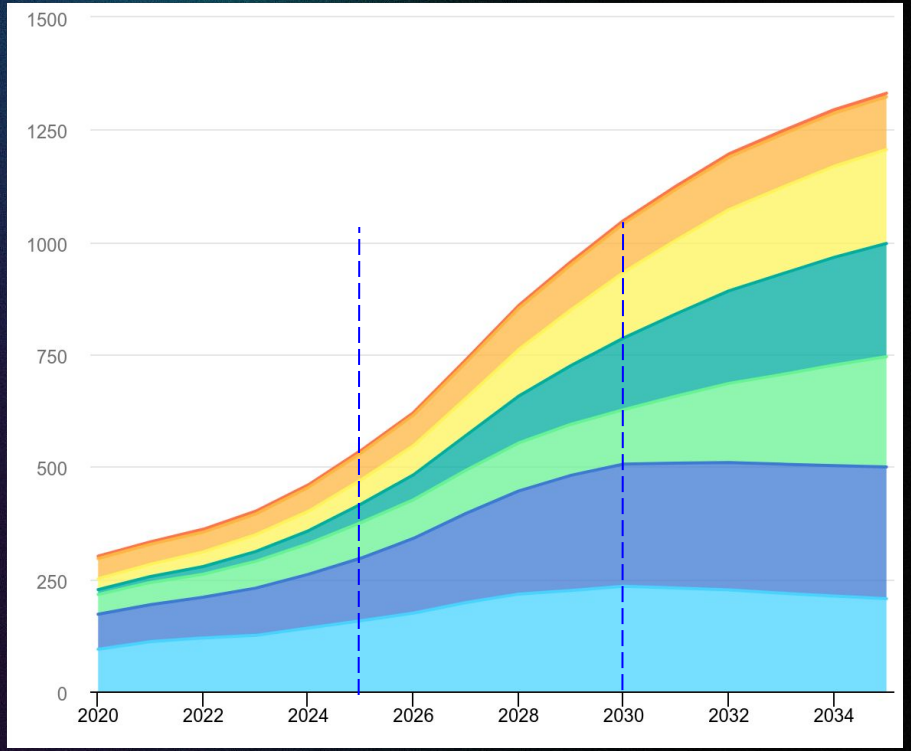
Scot Bryson
Orbital Farm
http://orbital.farm

Orbital Farm - The Scale of the Opportunity:

Data Centers = Global Energy Giants

- 8,500+ Data Centers Globally
- 945 TWh globally by 2030
- Demand Projected to Double < 5 Years

Generation 2020-2035



100%
Waste Heat

What Ai Risks: The Bitcoin Example

TECH & SCIENCE

Bitcoin Mining on Track to Consume All of the World's Energy by 2020

BY ANTHONY CUTHBERTSON ON 12/11/17 AT 10:07 AM EST

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Press Release

UN Study Reveals the Hidden Environmental Impacts of Bitcoin: Carbon is Not the Only Harmful By-product

Global Bitcoin mining is highly dependent on fossil fuels, with worrying impacts on water and land in addition to a significant carbon footprint.

Building Digital Power Plants

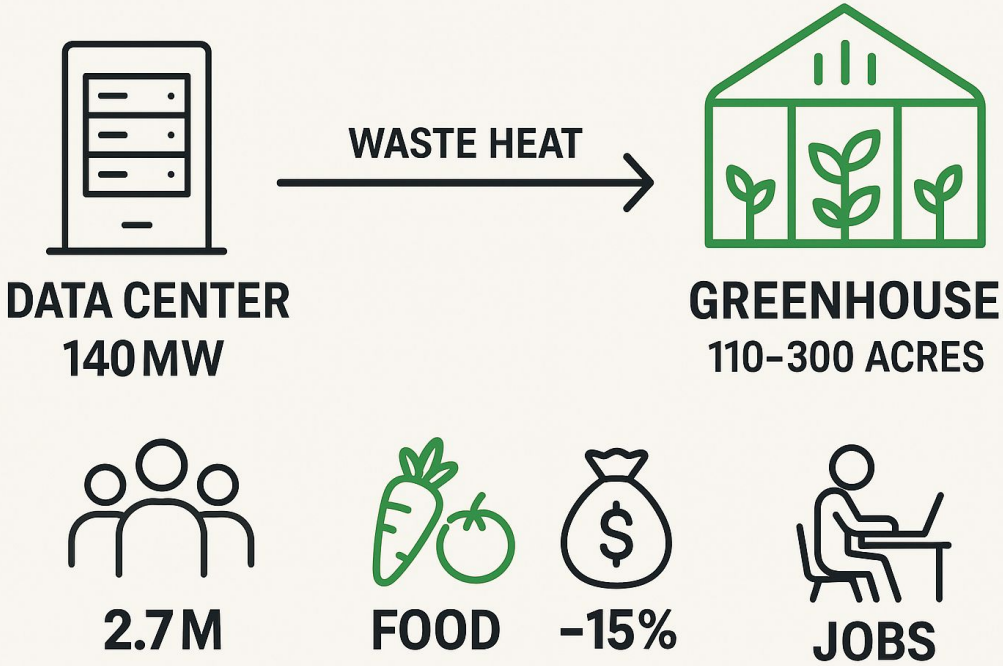
- Gigawatt-scale projects emerging (e.g., 1GW+).
- Massive grid impact: localized strain, potential displacement of renewables.

960MW Talen | Cumulus Data Center - Susquehanna nuclear power station in Pennsylvania

From Heat Waste to Food Security

Orbital Farm - Opportunity in Heat – A 140MW Case

“From heat waste to significant community Impact.”



One Source, Many Uses

- Greenhouses
- District Heating
- CO2 Capture
- Cold Storage (Absorption Chillers)
- Anaerobic Digestion (Biogas Boost)
- Desalination
- Food Processing (Drying, Pasteurizing)
- Aquaculture
- Industrial Processes
- Seasonal Storage
- Upgraded to 115°C - 140°C

Proven Models, Ready to Scale

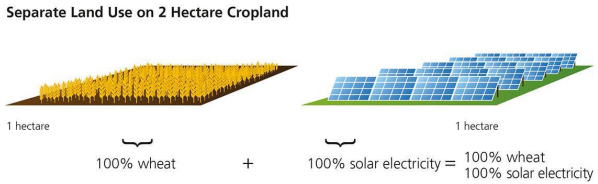
© Christian Richters

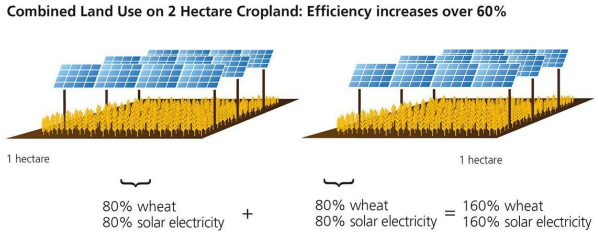
Power + Food

Agrivoltaics:

Producing Power and food in the same space

Example Project with Wheat:





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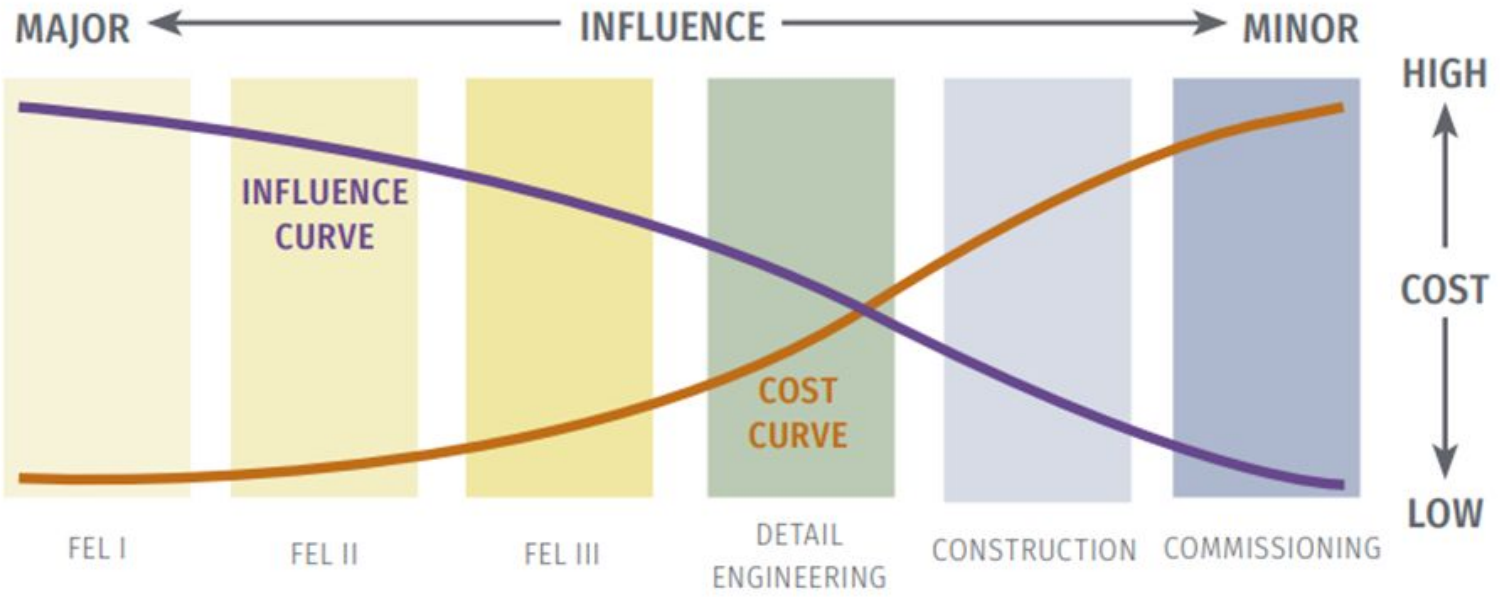
So, Where are all the projects?

Infrastructure Financing Is Too Narrow

Key issues:

- Projects developed and funded in isolation.
- Investors focus solely on the core asset (data center), not the potential ecosystem.
- Lack of integrated planning and cross-sector collaboration.

Impact Mainly Possible With Investment at Design Stage



Data Centers as Community Catalysts

EVALUATE & IMPROVE

01

Evaluate Existing Sites: Assess heat reuse potential.

DESIGN & STUDY

02

Mandate Feasibility Studies: Fund integrated planning for new projects early.

INVEST & WIDEN

03

Invest In Ecosystem Design: Investors need to broaden scope beyond the core asset.

ADVANTAGE & EXTEND

04

Customers Prioritize: Set clear & transparent prioritization, & advantage providers with longer firm contracts.

orbital farm

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Further information:
http://orbital.farm

Thank you

Driving climate action by seeding industrial scale impact companies & bankable project companies.

We Have
Questions!