

Sustainable Data Centers: Scaling AI Sustainably



April 15, 2025
World Ai Summit Montreal

World
Summit 
24-25 April 2024 | Montréal

orbital
farm 

Impactful
Capital



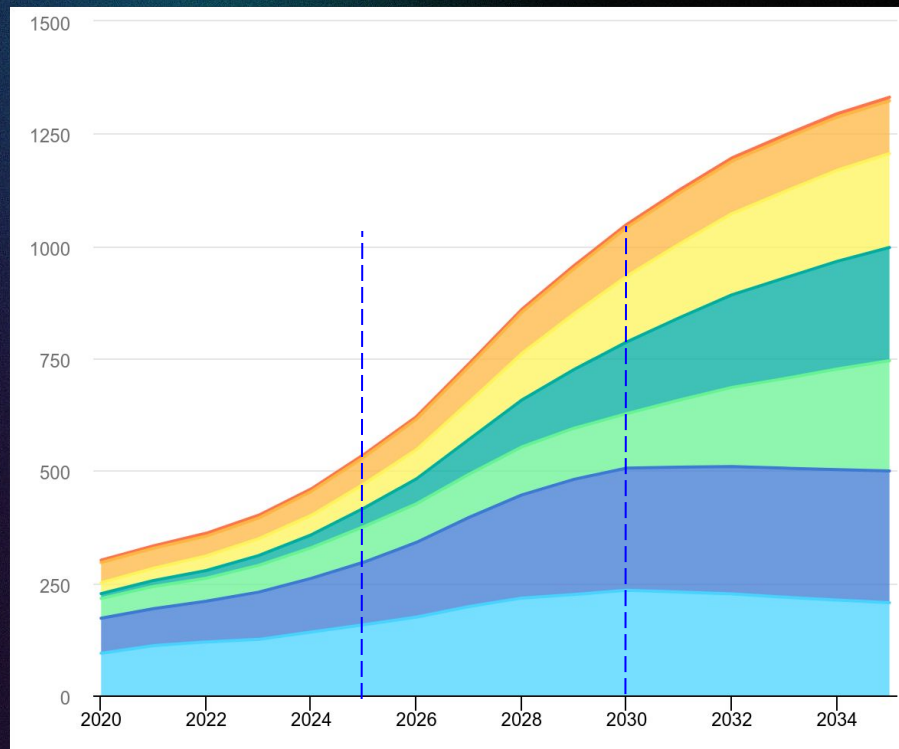
Scot Bryson
Orbital Farm
<http://orbital.farm>

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

A photograph of an industrial facility at night. Several large, rectangular smokestacks or heat exchangers are visible, each emitting a thick plume of white smoke that rises into the dark sky. The facility itself is illuminated by a warm, orange glow, likely from internal lights or the heat being released. The foreground shows a paved area with some equipment and pipes. The overall scene suggests a significant source of 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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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.

Orbital Farm - Mega-Scale Data Centers Are the New Norm

Building Digital Power Plants

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

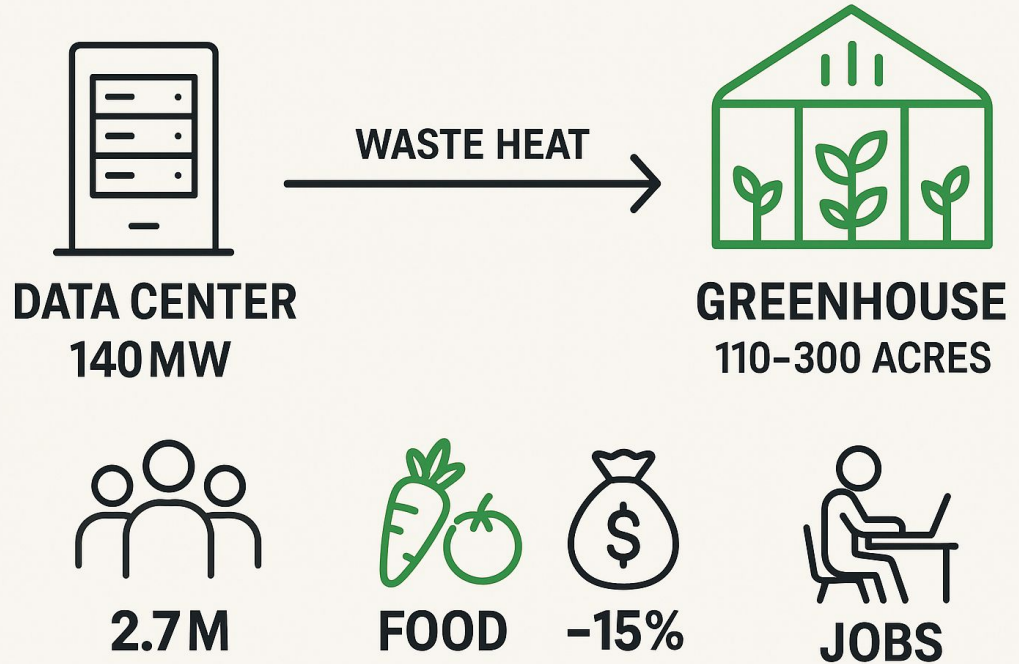


960MW Talen | Cumulus Data Center - Susquehanna nuclear power station in Pennsylvania

From Heat Waste to Food Security

An aerial photograph of a large industrial facility, the Orbital Farm, which is a massive greenhouse complex. The facility is a long, rectangular building with a flat roof and large glass walls. It is surrounded by vast fields of solar panels, which are arranged in neat rows. The solar panels are tilted at an angle, and the fields are separated by narrow paths. The facility is situated in a rural area, with some trees and other buildings visible in the background. The overall scene is one of a large-scale agricultural and industrial operation.

**“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







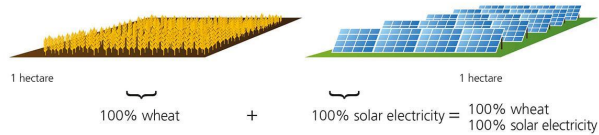
Power + Food

Agrivoltaics:

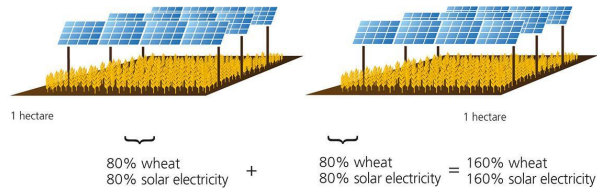
Producing Power and food in the same space

Example Project with Wheat:

Separate Land Use on 2 Hectare Cropland



Combined Land Use on 2 Hectare Cropland: Efficiency increases over 60%





CONFIDENTIAL



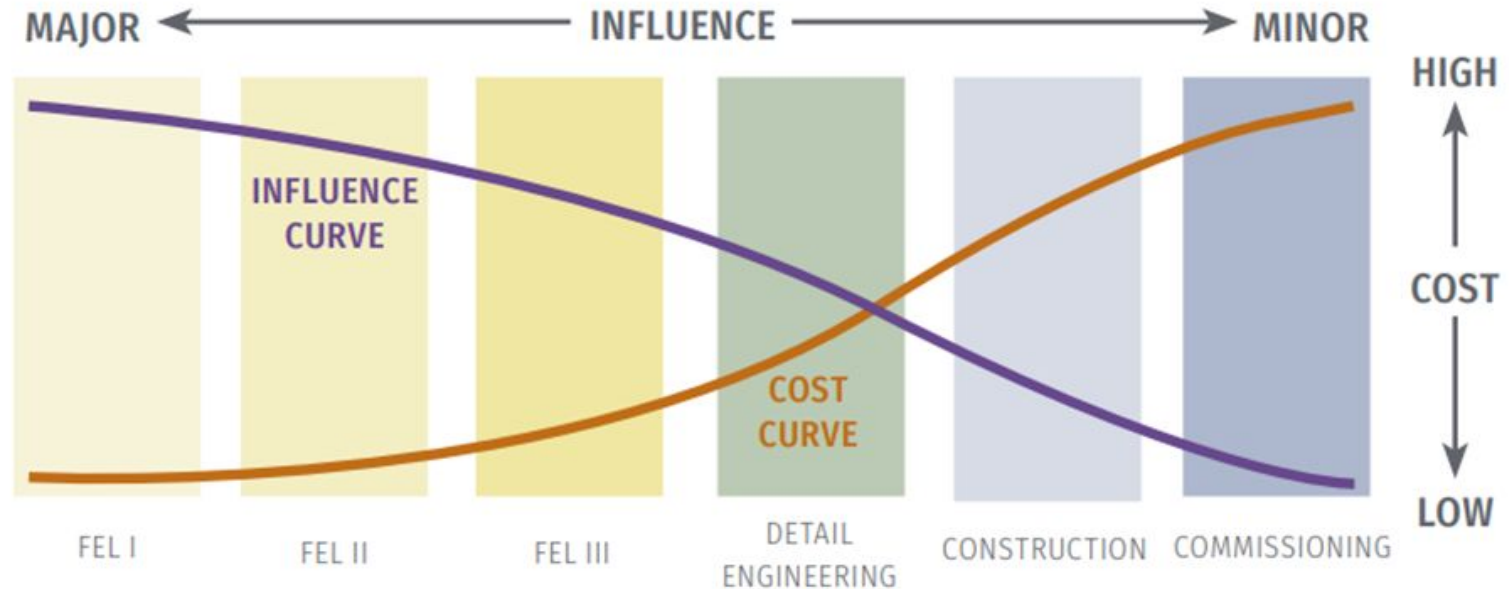
**So, Where are all
the projects?**

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.



Scot Bryson

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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!**

