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Leveraging data centers to power food system resilience

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Context: Greenhouse food production is critical for resilience. Colocation with data centers advances food system stability.

The Opportunity

- Year-round production
- More food per acre
- Water efficient

The Challenge

- Capital intensive
- Energy is 30-50% of cost structure
- Heating needed in colder markets
- Siting is key - meteorological + other factors

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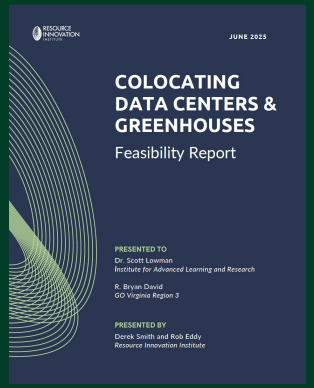

Colocating Data Centers & High-Tech Greenhouses is Feasible and Strategic

Resource Efficiency

Waste Heat, CO2, Water Exchanges Improve Economics

Job Creation

Greenhouses create **10x** more jobs per acre

Food Security

Year-round, local, high-volume production

Grid Stability

International greenhouse markets contribute 15% of power back to grid

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The Farm Park Model

- Greenhouse clusters colocated with data centers, and other complementary businesses
- Resource exchanges driving profitable economics (heat, CO2, water)
- Public-private partnerships to reduce and derisk CapEx investments
- Coordinated Data > Energy > Food construction sequence

Farm Park Ingredient #1

Data Center

- Built first
- Can operate as standalone
- No construction timeline impact
- “Greenhouse-ready” specs under development

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Farm Park Ingredient #2

Central Resource Hub

- Interconnection point between data center and greenhouses
  - waste heat
  - CO2
  - water
- Decouples data center from greenhouses for operational security
- How this entity is financed, insured, and governed is critical to the economics for all Farm Park occupants

Farm Park Ingredient #3

Large, High-Tech Greenhouses

- Diverse crops matched to waste heat loads

Farm Park Ingredient #4

Cold Chain & Logistics

- Cold storage
- Food processing
- Packaging
- Distribution

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Farm Park Ingredient #5

Other target sectors

+ Robotics
+ Thermal storage
+ Tech & agtech
+ Biomass processing
+ Conference & training center
+ University research facility
+ Housing, restaurant, et al

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Farm Parks Outcomes

Regional resilience hubs with integrated food-energy-data infrastructure

Economic Development

$5B+
Economic Development

1,000
Jobs

2,000,000
Mouths fed

Why Farm Parks make sense

- Data centers bring taxes.
  Greenhouses bring jobs, and so much more
- Broad vision inspires community acceptance
- No impact on pace of data center development
- Development of diverse business clusters and talent pools
- Can be adapted for rural and urban settings

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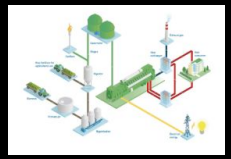
The Farm Parks Model is informed by the US Dept. of Energy **CEA Accelerator**

Site Feasibility Tool

CEA SiteScout is a geospatial tool for siting resource-efficient greenhouse crop production, including colocation potential.

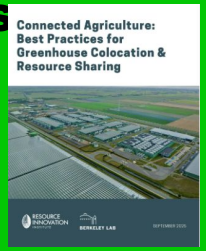
Technology Catalog



Exhaustive overview of technologies used in CEA, along with substantiated energy and water savings.

Will guide consistent utility programs, and building and energy codes.

Best Practices Res

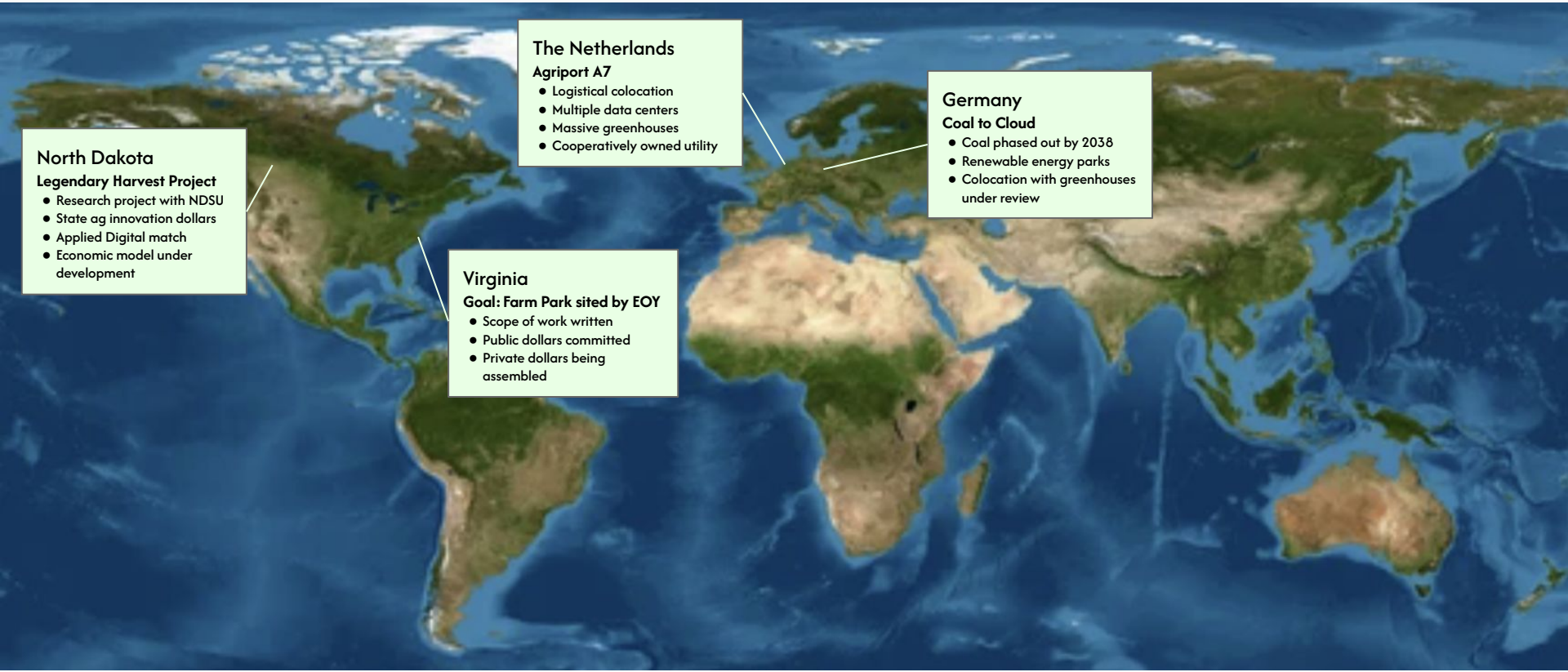


AI & Advanced Robotics
Greenhouse Colocation
High-Tech Strategies
Energy Management
Low-Tech Efficiency Pathways

Workforce Certificate

National training program for building professionals. *CEA Building & Biosystems: Horticulture Essentials* course based on RII best practices, certificate of completion issued by The Ohio State University.

Farm Parks in practice and under review



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Thank you

Resource Innovation Institute (RII) is a not-for-profit organization shaping the future of food, energy, water, and data systems. Partnering with governments, utilities, industry leaders, and research institutions, RII develops strategies and tools that scale controlled environment agriculture (CEA) as a solution to global food and resource challenges.

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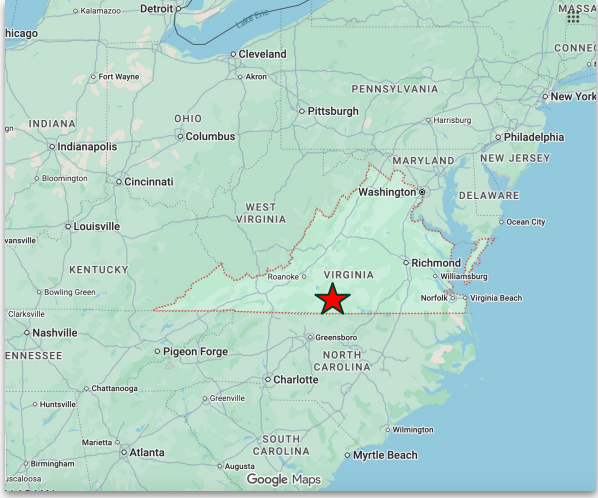
The Opportunity in Virginia



#1 data center jurisdiction in the world, CEA commitment

Region 3: Broadband, natural gas, and critical infrastructure

Budget and committed resources to fund RII + civil / economic / legal, if matching dollars

Project objectives:

1. Announce first US Farm Park demonstration pilot by end of year
2. Document the repeatable process for replication by other jurisdictions

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The Research Scope of Work:

To be shaped by matching partners

- Siting Rubric & Scoring Analysis
- Workforce Assessment
- Economic & Fiscal Assessment
- Shared Power Engineering & Infrastructure Assessment
- Finance & Delivery of Infrastructure
- Governance, Ownership & Operations Framework
- Applied Research & Innovation Support