farmedVA

BUILD WHAT AMERICA NEEDS. BUILD WHERE IT FITS.

A Secure America + Rural Prosperity

A rural strategy for national resilience

America needs dispersed data centers, more power, energy storage, transmission, broadband, and EV charging on rural roadways. Virginia can site data centers, utility-scale wind and solar farms, and battery storage away from homes while placing EV charging at useful intervals along rural roads - preferably with existing gas stations. Tribal nations, federal partners, local governments, landowners, developers, and project-area residents must shape the result.

— Farmed White Paper —

Prepared by Farmed, LLC | FarmedVA

Research current through September 2026

Visit farmed.ag/VA

Contents | A Coalition For Rural Progress

Farmed is part of a coalition.

Farmed is part of a coalition of partner organizations of THOS., LLC, including the **Rural National Defense Initiative** (RNDI), **Gridvocate**, and **Data Center Frog** (DC Frog). The coalition exists primarily to advance new rural economic development in America while strengthening national resilience and improving how major infrastructure is sited.

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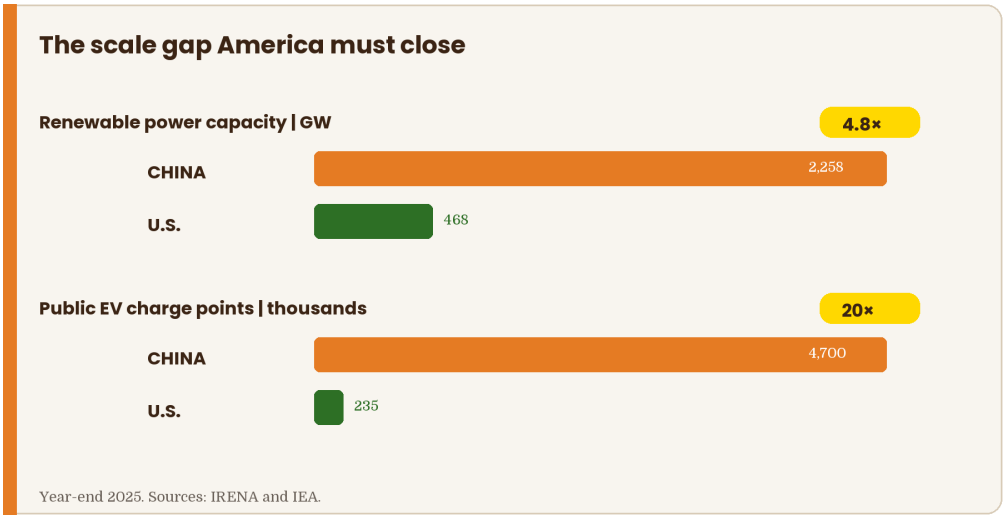
China's Scale - and Where Other Countries Lead

China is far ahead of the United States in installed renewable-power capacity and public EV charging. International data do not cleanly label gigawatts as 'rural,' so the comparison below uses total capacity and charging stock.



Scale Gap: IRENA reports 2,258 GW of renewable capacity in China versus 468 GW in the United States at year-end 2025. IEA reports more than 4.7 million public charge points in China versus about 235,000 in the United States.

Other Countries Lead on Highway Coverage: At the end of 2024, more than 90% of highways in the Netherlands, Belgium, Norway, Germany, and France had charging no more than 50 km apart, compared with 35% of the U.S. interstate system.

> ### The American answer is speed with discipline
>
> Virginia can pre-screen lower-conflict land, power and fiber corridors, storage, water strategies, and rural charging locations before applications arrive - combining urgency with property rights, Tribal sovereignty, and transparent approvals.

Sources: IRENA Renewable Capacity Statistics 2026; IEA Global EV Outlook 2025 and 2026.

Rural Infrastructure Can Strengthen Emergency Resilience

"Right-way" infrastructure can do more than serve a single customer. When generation, storage, communications, and local controls are designed together, rural communities can preserve critical functions during wildfire, extreme heat, winter storms, grid outages, cyber incidents, and other emergencies.

Design For Continuity

- **Microgrids:** Allow defined local systems to operate with the larger grid or independently when the wider system is disrupted.
- **Storage:** Support critical loads, black-start strategies, peak management, and time for generators or mutual aid to arrive.
- **Broadband:** Keep public-safety communications, alerts, telehealth, local government, and business continuity connected.
- **Resilience Hubs:** Coordinate power, cooling, water, charging, communications, and supplies at trusted community locations.
- **Exercises:** Test islanding, backup fuel, cyber response, evacuation, fire response, and recovery with local and Tribal partners.

> ### Infrastructure must be useful on the worst day
>
> Community benefits should include specific emergency capabilities, responsible owners, maintenance funding, activation rules, and recurring exercises - not only aspirational language.

Sources: DOE Energy Improvements in Rural or Remote Areas; DOE Community Microgrid Assistance Partnership.

Rural Economic Development Is the Lasting Return

Large infrastructure can expand a rural tax base and create construction activity, but the durable value depends on what remains after the build. Local governments should negotiate for assets that strengthen residents, farms, ranches, and businesses for decades.

- **Broadband that Serves People:** Open-access middle mile, conduit, public-safety connections, and last-mile partnerships rather than a private backbone that only passes through.
- **Workforce Pathways:** Local hiring, apprenticeships, community-college programs, electrical and fiber skills, operations training, and small-business procurement.
- **Useful Public Infrastructure:** Roads, emergency equipment, water improvements, substations, communications, and resilience assets sized for local priorities.
- **Agricultural Innovation:** Reliable power and broadband for precision agriculture, controlled environments, cold storage, processing, irrigation management, and market access.
- **Fiscal Durability:** Transparent revenue assumptions, realistic service costs, protections against stranded infrastructure, and funded decommissioning.

Make benefits enforceable

A community-benefit agreement should state who pays, who receives, when delivery occurs, what performance is measured, and what happens if the project changes ownership or never reaches full buildout.

Sources: NTIA BroadbandUSA; USDA Rural Development telecommunications programs; DOE rural and data-center resources.

A Data Center Cluster/Concentration Problem and Design Objective

On Data Centers: *"The reliance of critical services on concentrated infrastructure introduces security concerns."*

— RADM (Ret.) Mark Montgomery
United States Navy

Sources: House Homeland Security testimony, April 29, 2026.

Northern Virginia Data Center Alley

Northern Virginia remains the world's largest single data-center market and its most concentrated corridor, centered in Loudoun and adjacent Prince William Counties outside Washington, D.C. CBRE measured roughly 4.0 GW of operating inventory at year-end 2025.

Texas may now lead some statewide facility counts, while other datasets still place Virginia first. The measures differ, but the data center cluster in Northern Virginia remains the unmatched concentration of operating capacity.

Sources: CBRE; Virginia JLARC; August 2026 facility trackers. Facility and capacity counts are not interchangeable.

The Objective: Digital Strategic Depth

America needs geographically dispersed capacity that can survive disruption and shift workloads. A remote building alone is not resilience; the architecture must also diversify power, fiber, water, vendors, and operational failover. Other former U.S. military, intelligence, and homeland-security leaders have voiced the same or similar concern

"To defend against data centers becoming military targets, governments must prioritize geographic dispersion..."

Lt. Col. Jahara "Franky" Matisek
Nonresident Research Fellow, US Naval War College

Source: With Macdonald Amoah and Morgan Bazilian. The National Interest, 03/09/2026.

Virginia's National Opportunity

> ### A state built for strategic options
>
> Virginia can lead the national correction: reduce dependence on Data Center Alley while directing carefully separated digital, energy, storage, broadband, and charging investment toward willing rural communities.

The Census Bureau measures Virginia at 39,482.1 square miles of land - about 25.3 million acres. USDA counted 7.3 million acres in farms in 2022, about 28.9% of state land. These figures show scale, not legally available project acreage.

What the Acreage Can Support

- **Digital Capacity:** Dispersed campuses and edge facilities with tested failover.
- **New Power:** Solar, wind, storage, firm generation, and the transmission that delivers it.
- **Connected Corridors:** Rural fast charging, fiber, and emergency communications between population centers.
- **Working-Land Income:** Voluntary leases and partnerships that protect farming and ranching operations.

What the Acreage Does Not Erase

Tribal sovereignty, federal land authority, water limits, habitat, cultural resources, aviation, military missions, working landscapes, scenic values, property rights, and emergency-response capacity remain decisive. 'Rural' is a planning context - not a blank map.

Sources: U.S. Census Bureau Virginia profile; USDA 2022 Census of Agriculture.

Build Away From Homes - and With the People Who Enable It

For data centers, utility-scale wind and solar farms, and battery-storage facilities, a responsible rural strategy begins before a developer commits to the original parcel. Local governments should require a lower-population alternatives analysis early enough to influence the result.

- **Start with Actual Residences:** Map the entire stationary project against physical homes and clusters of 10 or more homes. Test 10-, 15-, and 20-mile alternatives.
- **Honor Sovereignty and Consent:** Work government-to-government with Tribal leaders. Consultation is not a substitute for the relevant Tribal nation's authority and approval.
- **Keep Working Lands Working:** Farms, ranches, and homesteaded properties may be considered when owners participate voluntarily and residences meet the selected separation.
- **Make the Project-Area Community Better Off:** Pair approvals with emergency power, broadband, roads, workforce programs, ratepayer protection, tax certainty, and funded decommissioning.

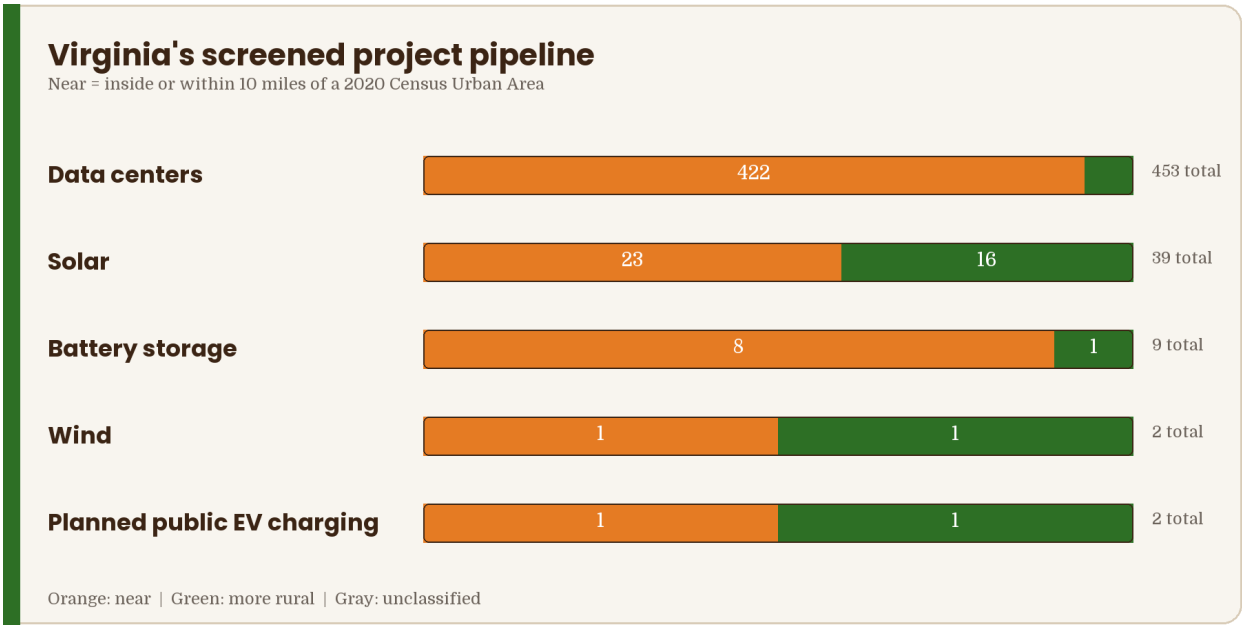
> **A separation standard is a screen - not the whole test**
>
> A distant parcel still must be lawful, buildable, connected, lower-impact, financially realistic, and supported by a willing owner or sovereign authority.

The Standard Farmed Advocates

Before approval, show whether a materially less-populated, infrastructure-feasible alternative exists. If it does, compare it transparently. If it does not, publish the evidence and require strong on-site protections.

What Virginia's Current Pipeline Shows

Farmed's September 2026 planning inventory screened 453 planned data-center facility entries, 39 near-term solar plants, 9 battery-storage plants, and 2 wind projects in Virginia. The screen separates public coordinates inside or within 10 miles of a Census Urban Area from those farther away.



Read this as a screen, not a verdict

'Near' means inside or within 10 miles of a 2020 Census Urban Area. The screen does not map every house, certify a 10-home cluster, prove land availability, or determine whether a project can move.

The inventory is useful because it identifies where a more precise alternatives review is most likely to matter - especially for early-stage projects and large sites with flexible internal layouts.

Sources: Cleanview; EIA Form 860M; Census Urban Areas; Virginia DOT | NEVI Awards. Counts are planning snapshots.

Data Centers | A Large Urban Pipeline and a Rural Opening

453 screened proposed facility entries

Farmed's tracker review identified 453 mapped planned entries: 422 screened inside or within 10 miles of a Census Urban Area and 31 screened more rural. The screen is a consistent statewide comparison, not a house-by-house siting conclusion.

An entry is not always a unique data center or data center campus. One campus may contain multiple proposed buildings, and our tracker status may lag local action. The figures should therefore be used to organize review - not to claim a precise number of final, permitted data centers or data center campuses.

Where Relocation Potential Is Greatest

- **Feasibility and Concept Stage:** developers can still compare regions, parcels, power solutions, and fiber routes.
- **Pre-Zoning or Early Review:** A locality can request whole-site alternatives before entitlements lock in value.
- **Large Unbuilt Envelopes:** Intensive components may move within the site even when the project stays.
- **Construction Underway:** The practical focus shifts to setbacks, operations, emergency planning, and community protections.

Do not recreate Data Center Alley elsewhere

A rural strategy should distribute campuses across genuinely separate regions and systems. Clustering many facilities on one rural grid or fiber corridor would move the concentration problem rather than solve it.

Source: Farmed Virginia planning inventory, current through September 3, 2026.

Solar, Wind, and Storage | Rural By Pattern, Not By Default

39 Near-Term Solar Plants

16 screened more rural and 23 screened near a Census Urban Area.

9 Near-Term Battery Plants

1 screened more rural and 8 screened near a Census Urban Area.

2 Separately Verified Wind Projects

1 screened more rural and 1 screened near a Census Urban Area.

What Good Rural Energy Siting Must Solve

- **Deliverability:** Interconnection, transmission, substations, queue position, and realistic energization dates.
- **Community Protection:** Residence separation, construction traffic, views, noise, lighting, battery safety, and emergency access.
- **Resource Stewardship:** Water, wildlife, cultural resources, grazing, productive soils, reclamation, and decommissioning.
- **Local Value:** Lease income, taxes, workforce, roads, emergency capability, and power or broadband useful to the project-area community.

> **Rural America must do much of the work**
>
> The goal is to move utility-scale wind, solar, and battery storage away from homes where feasible, preserve working landscapes, and connect rural generation and storage to the loads America needs.

Rural Corridors | Charging, Transmission, and Broadband Together

33 Virginia first-round NEVI awards, with phase two opened

Virginia announced 18 Phase 1A awards and listed 15 Phase 1B locations, then opened Phase 2. The national database separately listed two planned public locations, one more rural and one near a Census Urban Area.

The 'away from homes' objective does not apply to EV charging. Rural charging must be reachable, visible, safe, and available at regular points along rural roads, much like gasoline service. A key Farmed objective is to combine new chargers with existing gas stations wherever practical.

Plan the Corridor As One System

- **Power:** Coordinate feeders, substations, storage, and future truck-charging demand.
- **Transmission:** Use transparent routing and shared corridors where feasible; avoid hiding enabling lines outside the project footprint.
- **Broadband:** Install conduit and middle-mile capacity that can support public safety, farms, businesses, and last-mile partners.
- **Resilience:** Design key locations to support emergency vehicles, communications, cooling, and community services during disruption.

One approval can unlock several rural assets

When local governments negotiate early, the same corridor investment can improve transportation, grid capacity, communications, and emergency readiness instead of serving only one private facility.

Relocation Depends On Timing

For data centers, utility-scale wind and solar farms, and battery storage, the decision stage is often more important than the technology. The earlier the review, the more realistic whole-site relocation becomes.

01 Site Selection or Pre-Zoning

EdgeCore Shannon Hill, TECfusions Clarksville, Avaio Appomattox, and Mecklenburg entries are tracked as planned rural facilities; alternatives should be tested before new clusters form.

02 Review Stage, But Still Unbuilt

Bellflower and Courthouse solar and Two Oaks battery storage are reported in pre-construction review; this is the strongest window to compare housing exposure, working lands, power, and lines.

03 Major Approvals or Construction

Coastal Virginia Offshore Wind, Rocky Forge Wind, Dulles Solar and Storage, and other plants are reported under construction; protections, safety, restoration, grid performance, and enforceable benefits become the focus.

> **What these examples do not prove**
>
> They do not establish that a replacement site exists, that an existing application should be denied, or that a public status record is complete. They show when different planning tools are still available.

The Practical Rule

Require the alternatives work before public incentives, rezoning, line siting, or major site investments make the original location economically irreversible.

The Four-Gate Alternative-Site Test

1 Community Separation

For data centers, utility-scale wind and solar farms, and battery storage, map the entire campus and every enabling line, road, substation, storage block, and utility facility against actual residences and clusters of at least 10 homes. Test 10-, 15-, and 20-mile options.

2 Land and Legal Path

Confirm a willing owner or sovereign authority, a plausible zoning and permitting route, land-use-plan consistency, and exclusions for protected, cultural, flood, military, aviation, or other incompatible resources.

3 Infrastructure Feasibility

Price and schedule generation, interconnection, transmission, substations, diverse fiber, roads, water, wastewater, backup power, fire service, and emergency response. Count every enabling facility.

4 Comparative Impact and Benefit

Score the alternative against the original for housing exposure, agriculture, habitat, cultural resources, water, construction miles, cost, schedule, national resilience, and lasting local benefit.

> ### When relocation is a reasonable claim
>
> At least one lower-population candidate must pass all four gates. Distance alone is not feasibility; an early, documented comparison is the proof.

A locality can apply the test without pre-judging the outcome. The purpose is to make the tradeoffs visible while choices still exist.

Distance Tiers Test Alternatives

10 Miles

The first meaningful rural screen for large stationary projects. It can identify sites outside the immediate edge of a town or urbanized area, but actual residences and clusters must still be mapped.

15 Miles

A stronger separation option when power, fiber, roads, water, emergency response, and environmental conditions remain comparable.

20 Miles

The most protective of the three tested alternatives, and often the hardest to support without long new transmission, roads, utilities, or fiber.

Measure the Right Thing

- **Clusters:** Use physical homes - 10 or more - rather than municipal labels alone.
- **Full footprint:** Include lines, roads, substations, storage, water, and construction access.
- **Topography:** A straight-line radius cannot substitute for terrain, access, visibility, or emergency-response analysis.
- **Technology Fit:** Apply the tiers to data centers, utility-scale wind and solar farms, and battery storage - not to rural EV charging, which must remain useful to travelers.

> **A transparent result is more useful than a slogan**
>
> Publish which alternatives failed, why they failed, which assumptions were used, and what protections will apply at the selected site.

Federal Lands, Tribal Lands, and Working Lands

Tribal Nations

Each Tribal nation is a sovereign government with its own priorities, laws, cultural responsibilities, land status, utilities, and economic-development goals. Projects should begin with government-to-government engagement and proceed only through the relevant nation's authority.

Federal Lands

Federal acreage is not automatically available. Agency land-use plans, rights-of-way, environmental review, cultural-resource protection, species obligations, military and aviation needs, and public-interest findings may apply. Existing corridors and disturbed sites can reduce conflict, but they do not eliminate review.

Farms, Ranches, and Homesteaded Properties

These properties may be included in an alternatives study when landowners participate voluntarily and individual residences meet the chosen separation. Site design should preserve access, water, grazing, drainage, agricultural operations, and the option to keep producing food and fiber.

Shared Principles

- **Consent:** No assumption that rural ownership or sovereign land status equals permission.
- **Value:** Project agreements should produce durable local benefits, not only construction activity.
- **Stewardship:** Use siting, co-location, reclamation, and decommissioning to protect the land's next use.

A Virginia Action Agenda

01 Publish One Statewide Project Registry

Use a stable campus ID and disclose boundaries, buildings, megawatts, acres, status, permits, and the date each record was checked.

02 Require Alternatives Before a Site Locks In

Compare lower-population candidates at 10, 15, and 20 miles, including the complete enabling footprint.

03 Pre-Qualify Lower-Conflict Locations

Screen industrial land, brownfields, retired generation sites, existing corridors, reclaimed-water options, and willing landowners or sovereign authorities.

04 Protect Residents and Ratepayers

Use enforceable standards for setbacks, noise, lighting, water, backup power, battery safety, traffic, grid costs, and decommissioning.

05 Negotiate Rural Value

Secure broadband, emergency capability, workforce programs, local procurement, roads, and fiscal protections before approval.

06 Design For National Resilience

Require distinct grids and fiber routes, portable workloads, tested failover, cyber and physical security, and recovery exercises.

Virginians can act now

Virginians in communities throughout the state can take action by engaging their local governments to “build new infrastructure the right way.” For data centers, utility-scale wind and solar farms, and battery storage, that means away from communities and homes. **Farmed is ready to help**.

Sources | National Strategy, Capacity, and Resilience

Selected sources support the paper's national, international, Virginia, and coalition claims. All links were checked during the September 2026 revision.

1. Loudoun County | Data Center Alley

2. CBRE | Northern Virginia market, H2 2025

3. Virginia JLARC | Data Centers in Virginia

4. Synergy | Global hyperscale locations

5. Carnegie | Cloud Reassurance

6. War on the Rocks | Digital strategic depth

7. Census Bureau | Virginia profile

8. DOE | Data Center Resource Hub

9. DOE | 2026 Transmission Needs Study

10. DOE | Rural or Remote Energy

11. DOE | Community Microgrid Assistance

12. IRENA | Renewable Capacity Statistics 2026

13. IEA | Global EV Outlook 2026

14. IEA | Global EV Outlook 2025 highway coverage

Virginia pipeline, rural development, and coalition sources begin on the following page.

Sources | Virginia Pipeline, Rural Development, and the Farmed Coalition

Selected sources support the paper's national, international, Virginia, and coalition claims. All links were checked during the September 2026 revision.

15. EIA | China's utility-scale solar

16. NTIA | Broadband and local economies

17. USDA | Rural telecommunications programs

18. Cleanview | Virginia data centers

19. EIA | Form 860M

20. Census | 2020 Urban and Rural Areas

21. Virginia DOT | NEVI Awards

22. USDA | Virginia 2022 Census of Agriculture

23. Virginia DEQ | Renewable Energy Permits

24. Farmed | Rural economic development

25. Rural National Defense Initiative

26. Gridvocate | American power

27. DC Frog | Responsible data-center engagement

> **Research note**
>
> No single Virginia agency maintains a complete registry across all categories. 'Proposed' does not mean approved or certain to be built. Counts and project statuses should be refreshed before a formal proceeding.

Build What America Needs - Where It Fits

The Farmed Commitment

Farmed helps rural communities, local governments, and developers alike bring facts, practical alternatives, and local priorities into infrastructure decisions early enough to matter.

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Coalition Partner Organizations

Rural National Defense Initiative | Gridvocate | DC Frog

This paper is an educational planning brief, not a permit determination, engineering study, legal opinion, or investment recommendation.

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