
INDEPENDENT ANALYSIS

Concentrated Benefit, Dispersed Burden

Who Carries Virginia's Data Center
Transmission

An Analytical Volume in the Virginia Data Center Series

765 kV

Prepared by Tommy N. Turner

Williamsburg and Christiansburg, Virginia

August 2026 · Version 1.2

DOI 10.5281/zenodo.21895588

tommynturner.com · ORCID 0009-0005-7422-9881

ANALYTICAL VOLUME: VIRGINIA

Concentrated Benefit, Dispersed Burden

Who Carries Virginia's Data Center Transmission, and What the Cost-Allocation Record Does Not Trace

Series: Virginia Data Center Series — Analytical Volumes

Evidence snapshot: current through August 11, 2026

Coverage: the Joshua Falls–Yeat 765 kV project and three route alternatives; the Mecklenburg, Henrico, and Berry Hill corridors; Louisa's Technology Overlay District; a six-locality fiscal ledger; 931 Virginia data center records

Version: 1.2

Author: Tommy N. Turner

Location: Williamsburg and Christiansburg, Virginia

Contact: tommy@gofast.pro

ORCID: 0009-0005-7422-9881

DOI (this version): 10.5281/zenodo.22017638

Concept DOI (all versions): 10.5281/zenodo.21895588

Published: August 2026

An analytical volume, not a brief. Where it draws out implications it does so as inferences from the record rather than as recommendations. Two items in Section 21 gate the fiscal chapter and are flagged in place.

Companion volumes in this series. Each DOI below is a concept DOI, which always resolves to the latest version.

- *What Virginia Is Spending, What Virginia Is Getting: The Commonwealth Data Center Reference*, v5.3 — 10.5281/zenodo.20679292
- *Governing the Demand Shock: Local Institutional Variation in Virginia's Data Center Expansion*, v1.0 — 10.5281/zenodo.20692386
- *The Aquifer Says No: DEQ's SJ 25 Groundwater Study and the Data Center Question East of I-95*, v1.2 — 10.5281/zenodo.21556435
- *Two Systems, One Drought: Virginia's Groundwater Ceiling, Its Rivers, and the Water the Energy Buildout Actually Uses*, v1.0
- Virginia Research and Industry Directory, v3.0 — 10.5281/zenodo.20673582

Case studies most closely bearing on this volume:

- Louisa — 10.5281/zenodo.20673455 · Orange — 10.5281/zenodo.20672496 · Culpeper — 10.5281/zenodo.20673529
- Mecklenburg — 10.5281/zenodo.20673484 · Henrico — 10.5281/zenodo.20671031 · Goochland — 10.5281/zenodo.20673467
- Hanover — 10.5281/zenodo.20672048 · Chesterfield — 10.5281/zenodo.20672436 · Botetourt — 10.5281/zenodo.20673512

- Prince William — 10.5281/zenodo.20673498 · Fredericksburg Ring — 10.5281/zenodo.20673542 · CFS–Google PPA — 10.5281/zenodo.20679935

Disclosure. In July 2026 the author was named to the advisory board of “Data Centers and the Southern Energy Buildout: Implications for Electricity Costs, Energy Transition, and Energy Justice,” a 2026–2029 study at Emory University funded by the Alfred P. Sloan Foundation and covering Georgia, Tennessee, and Virginia, for which he receives a token honorarium. **This volume warrants a fuller statement than its predecessors.** The research was conducted after that appointment, and the choice of subject and the framing of the questions were influenced by that study’s research priorities — the utility-finance, energy-geography, institutional-behavior, and distributional frameworks it works in. Section 20 discusses explicitly how these findings bear on those frameworks. The volume was nonetheless prepared independently and entirely from public sources; it is not a product of, and was not funded by, that project, and no one associated with it reviewed or approved the text. Readers should weigh the influence on subject selection accordingly, and are invited to test the measurements rather than the motive: every figure in Part II states its method and its inputs are public.

© 2026 Tommy N. Turner. All rights reserved. This report may be excerpted with attribution.

Suggested citation: Turner, Tommy N. *Concentrated Benefit, Dispersed Burden: Who Carries Virginia’s Data Center Transmission, and What the Cost-Allocation Record Does Not Trace*. Version 1.2. August 2026. Concept DOI 10.5281/zenodo.21895588 (cite-all-versions; v1.2 = 10.5281/zenodo.22017638).

CONTENTS

Concentrated Benefit, Dispersed Burden	1
CONTENTS	3
ABSTRACT	5
HOW TO READ THIS REPORT	6
PART I — THE MECHANISM	7
1. Three bodies, three records, one disagreement	7
2. What the planner said	7
3. What the planner charged, stated correctly	7
4. Where the tracing stops	10
5. The independent confirmation, from a study that found nothing	10
PART II — WHAT IS MEASURED	13
6. The geometry	13
7. The inventory, and the three tiers it produces	14
8. Louisa is a host	17
9. The corridor is cooperative territory	18
10. The fiscal ledger	20
PART III — WHAT IS DOCUMENTED	24
11. Valley Link — the spine	24
12. Mecklenburg and Lunenburg — the burden record	24
13. Henrico — the candor inversion, and what supplemental review actually is	25
14. Berry Hill — where the need element was removed by statute	26
15. Louisa — the ordinance	26
PART IV — STANDING	32
16. Three routes around the state proceeding, and one around the local one	32
17. What a locality receives, and what it does not	32
PART V — POSITION AND LIMITS	34
18. What this contributes, positioned against a live proceeding	34
19. Limitations, and what would falsify each claim	34
PART VI — PAPERS	36
20. What can be spun out	36
21. Required work, in order	37
ENDNOTES	38
APPENDIX — TWO NOTES ON THE PUBLISHED RECORD	42

Deliverable Notes.....	43
About the Author.....	45

ABSTRACT

Virginia's data centers consume roughly a quarter of the Commonwealth's electricity, and PJM attributes a ten-gigawatt increase in forecast Dominion-zone load by 2029 primarily to them. Serving that load requires transmission. This report establishes, from primary sources and original measurement, that the benefit of a data center is captured almost entirely by the locality hosting it, the cost of the wires is spread across an entire utility zone with no reference to geography, and the physical burden falls on a third set of places that appear in neither calculation.

Four findings are new.

One. PJM allocates the Joshua Falls–Yeat 765 kV project under a mandatory two-part formula for facilities at or above 500 kV: half by load-ratio share, half by distribution factor. Dominion's combined share is **44.96 percent** as filed with the February 2025 recommendation and **45.29 percent** on the 2026 load-ratio vector. The tariff's precision is real and stops at the zone boundary; nothing below it references cause, and nothing anywhere references geography.

Two. Measured against published route geometry, **80.99 percent** of the routed line runs through counties with no operating data center, and **45.98 percent** through counties with no facility and no proposal in any status. **Benchmarked against 2,000 randomly placed 116.47-mile corridors drawn entirely within Virginia, both figures sit below chance** — the random median is 88.5 and 70.8 percent respectively, placing the observed corridor at the 36th and 17th percentiles. The corridor is therefore *more* concentrated in data center counties than a random line would be, and the finding is not that burden was steered away from beneficiaries. **It is that the allocation instrument does not condition on geography at any step, and this is what the resulting geography looks like.**

Three. The corridor counties are cooperative territory, which is unremarkable for rural Virginia and is stated here as context rather than as a finding. What is not context: **none of the cooperatives serving the corridor — Rappahannock, Central Virginia Electric, Southside, Mecklenburg Electric — was a party to the proceeding that allocated the cost**, and Appalachian Power, present in four counties along the route, sits in the AEP zone, which carries a load-ratio share and a **zero distribution factor** on this project.

Four. Louisa County adopted an overlay district in 2023 whose qualifying criterion is proximity to 115 kV transmission and in which data centers were permitted **by right**. All four of its districts lie within 452 metres of a single 230 kV circuit radiating from the North Anna Nuclear Station — **against a county base rate of 7.2 percent of land area within that distance of any transmission line of 115 kV or more**. No conditional use permit, no substantial-accord hearing, and no state transmission certificate attended the 420 MW campus subsequently built there. The county converted every Technology Overlay District principal use to conditional use permit by Ordinance 2024-11 on August 5, 2024, and removed roughly 2,000 acres; both campuses were grandfathered, so the conversion reached neither. Virginia's newest data center siting statute, § 15.2-2209.5, enacted in 2026, triggers only on a rezoning, special exception, or special use permit application — and therefore passes over by-right overlay land entirely.

The report concedes the strongest contrary finding in the field. Garimella (2026) finds no robust residential bill effect across 24 states and explains that null by cost dilution across large customer bases. That explanation is this report's mechanism, reached independently from the opposite direction.

The contribution is positioned deliberately. The zone-level allocation question is live before FERC in *Maryland Office of People's Counsel v. PJM*, Docket EL26-63. **This report supplies the layer beneath it: sub-zonal geographic burden, measured.**

Keywords: transmission cost allocation; data centers; PJM; Schedule 12; electric utility regulation; local government finance; land use; overlay zoning; energy geography; Virginia

HOW TO READ THIS REPORT

Numbered endnotes carry the sources. Where a figure was measured or computed in this project rather than taken from a document, the passage says so and states the method, the projection, and the inputs, so that the figure can be reproduced or falsified from public data.

Three claims are benchmarked against a null and one of them did not survive; § 9.1 records that case in full. Two items gate the fiscal chapter and are flagged in § 10.3 and § 21.

PART I — THE MECHANISM

1. Three bodies, three records, one disagreement

Three institutions produced a record about this infrastructure. A regional transmission organization decided what to build and who pays. Utilities decided where to put it and told regulators why. Localities decided what to allow and told residents why. The three records do not agree about what is being built or for whom, and no proceeding exists in which the disagreement could be resolved.

2. What the planner said

PJM's *Reliability Analysis Report* for the 2024 RTEP Window 1 is unambiguous on the driver:

“Heavy transmission interface flows are observed west to east on the system and is driven by large load increases in the Dominion zone and eastern PJM footprint. There is a 10 GW and 15 GW load increase for 2029 and 2032 between the load forecasts used for the 2022 and 2024 RTEPs, respectively. The significant load growth is attributed **primarily to data centers**, some electrification and electric vehicle developments.”[1]

And on why the Dominion zone drove the regional solution:

“the flowgates in the Dominion zone are so heavily intertwined with the regional solution due to the **sheer magnitude of data center load** driving the need for improved transfer capability.”[2]

Electrification and electric vehicles appear, they are real, and they are subordinate to the phrase preceding them. PJM's word is “primarily.”

Citation note: the version filed at FERC as Ex. JLL-002 in ER25-1633 is dated February 10, 2025; PJM posted a March 4, 2025 TEAC version. Both carry the quoted language.

3. What the planner charged, stated correctly

PJM allocates this project under a mandatory two-part formula, and reporting only the flow-traced half overstates the Dominion zone's responsibility by a factor of nearly two.

Schedule 12(b)(i)(A) of PJM's Open Access Transmission Tariff provides that for **Regional Facilities** — AC facilities operating at or above 500 kV — fifty percent of costs “shall be assigned annually on a load-ratio share basis” and fifty percent “in accordance with the [distribution factor] analysis.” A 765 kV line is a Regional Facility. FERC approved this hybrid in 2013 on an express finding that high-voltage facilities have “significant regional benefits that accrue to all members of the PJM transmission system,” and the D.C. Circuit has since treated that finding as binding on the Commission. In *Old Dominion Electric Cooperative v. FERC*, 898 F.3d 1254 (D.C. Cir. 2018), the court vacated FERC's approval of a tariff amendment that would have stripped regional cost sharing from high-voltage

projects selected only to satisfy an individual owner’s planning criteria, holding that cost causation “prevents regionally beneficial projects from being arbitrarily excluded from cost sharing.” The postage-stamp half is not merely permitted. It is protected.[3]

Attachment B to the PJM TEAC Recommendations White Paper (February 2025), pages 34–35, prints both blocks for project identifiers b4000.355, .356, .357, and .359, as approved by the PJM Board on February 26, 2025:

Zone	Load-ratio half	DFAX half	Combined Schedule 12 share
Dominion	14.20%	75.72%	44.96%
APS	5.49%	9.11%	7.30%
PEPCO	3.79%	8.68%	6.24%
BGE	4.16%	6.49%	5.33%
AEP	13.71%	0%	6.86%
ComEd	13.25%	0%	6.63%
<i>(eighteen further zones)</i>		0%	

For the Yeat substation alone (b4000.357), Dominion’s DFAX share is 89.71 percent, so its combined share is **51.96 percent**.

The load-ratio half is restruct every year, and it has moved. Schedule 12(b)(i)(A) assigns that half “annually.” PJM’s Project Status and Cost Allocation database, records stamped July 24, 2026, gives the current vector as **Dominion 14.85 percent** and **AEP 14.27 percent** against an unchanged DFAX block, so Dominion’s combined share is **45.29 percent** this year and AEP’s is **7.14 percent**. Both pairs are stated because they are different objects: one is the allocation filed with the recommendation the Board approved, the other is what each zone pays on the current vector.

Project cost. Attachment B: b4000.355 \$341.17M, .356 \$426.83M, .357 \$197.10M, .359 \$99.19M. **Total \$1,064.29 million.** The \$5.92 billion figure appearing in the same white paper is the cost of every new baseline project recommended that cycle and does not belong to this project.[4]

That total is no longer the project’s cost, and no current total is asserted here. On April 7, 2026 PJM cut the greenfield line from 156 miles to 115 and moved the Yeat substation roughly fifteen miles south; the Board approved the revision on July 14, 2026. PJM’s project database now carries two disagreeing cost fields for the same upgrades, TEACCost and CostEstimate, which differ by a factor of sixteen on b4000.355, with no unit annotation and no published reconciliation. The February 2025 figures above are reported as what was filed and approved, not as what the project now costs.

3.1 What the two-part formula actually concedes

The structure matters more than either number alone. **PJM's own tariff concedes that a 765 kV backbone confers benefit region-wide** — that is what the mandatory fifty percent postage stamp is for. Twenty-two zones pay something. AEP carries 6.86 percent on load ratio alone against a distribution factor of zero, and 7.14 percent on the 2026 vector.

The two halves can move in opposite directions. Between February 2025 and April 2026 the line's AEP section fell from roughly 69.3 miles to roughly one, while AEP's payment share rose from 6.86 to 7.14 percent, because the load-ratio vector is restructured annually against zone load and does not follow the project. Physical burden on that zone collapsed by roughly 98 percent and the money moved the other way. That is not a malfunction of the postage stamp. It is what a postage stamp is, and it is the plainest demonstration available that the instrument does not condition on geography at any step.

And still, **45 percent of a project PJM attributes primarily to data center growth lands on the zone where that growth is occurring.** The flow-traced half is more than five times Dominion's load-ratio share, which is the fact that matters: the methodology, where it traces at all, points hard at one zone.

3.2 What DFAX is, and what it is not

It is tempting to treat the cost-causation finding and the load-attribution finding as one finding. **The tariff forecloses that reading.**

Schedule 12(b)(iii) requires PJM, in the DFAX analysis, to "model the transfer to the Zone as a whole (not on a bus-by-bus basis)," and the resulting distribution factor is "multiplied by the Responsible Zone's peak load." DFAX is a linearized sensitivity multiplied by an aggregate forecast. **It is agnostic to load composition by construction.** Ten gigawatts of electrolyzers or electric arc furnaces would produce substantially the same allocation.

The defensible claim is narrower and survives cross-examination: PJM used a single load forecast, publicly attributed its growth primarily to data centers, and that same forecast is the multiplier in the allocation step. The composition of the load is not an input to the allocation. It is an input to the forecast that the allocation multiplies.

3.3 The zone-level question is already before FERC

Maryland Office of People's Counsel v. PJM, FERC Docket No. EL26-63-000, complaint filed May 7, 2026, asks FERC to find the hybrid methodology unjust and unreasonable because it requires zones to pay for regional projects "driven primarily by concentrated data center load growth," and seeks direct assignment to the zones where those loads sit. The complaint argues that solution-based DFAX is technically misapplied and rests on speculative load forecasts, citing *PSE&G v. FERC*, 989 F.3d 10 (D.C. Cir. 2021) and *Con Edison v. FERC*, 45 F.4th 265 (D.C. Cir. 2022) for the proposition that DFAX cannot capture non-flow-based needs.[5]

This report takes no position on that complaint. It records that the zone-level question is contested by sophisticated parties, and it locates its own contribution below the zone line, where nobody is measuring.

4. Where the tracing stops

Schedule 12 identifies the *zone* whose load contributes to loading on the facility. Recovery inside the zone is a separate matter, and it is not true that nothing there references cause. Three mechanisms do:

Wholesale. Schedule 12 assigns to designated **Responsible Customers** — network and point-to-point service customers — on zonal network service peak load, with thirty days to seek review of a designation. That is coincident-peak allocation.[6]

Retail, existing. Dominion’s transmission rate adjustment clause under § 56-585.1 A 4 is allocated among rate classes on a demand basis, in an SCC proceeding with notice and intervention.[7]

Retail, prospective. The SCC created rate class **GS-5** in PUR-2025-00058 for customers at 25 MW and above, effective January 1, 2027, with a minimum 85 percent of contracted transmission and distribution demand and fourteen-year terms, and directed Dominion to file alternative transmission allocation proposals in its next transmission rider case.[8]

The accurate claim is this. Intra-zonal recovery references cause only through **class-level coincident demand**, GS-5 does not take effect until 2027 and does not reach customers below 25 MW, and **no instrument at any level references geographic burden**. Cost is traced to the door of the zone by flow and distributed inside it by class. Where the towers stand is not an input to any step.

The Dominion zone as defined in the company’s filings takes in Old Dominion Electric Cooperative, NOVEC, Central Virginia Electric Cooperative, the Virginia Municipal Electric Association, and two North Carolina wholesale entities. **Appalachian Power is not among them; APCo is in the AEP zone.** A household in Lunenburg pays into the same pool as a hyperscale campus in Loudoun, and the methodology that brought the money to Virginia is silent on the difference.

The same formula recurs in Dominion’s own corridor filings, where “100% of which are cost allocated to the DOM Zone” appears verbatim across five certificate cases. One carve-out exists: in the Jeffress case, Dominion witness McQuain clarified that while 100 percent of \$134.7 million goes to the DOM Zone, “the excess facilities portion of such costs will be collected from MEC.”[9]

5. The independent confirmation, from a study that found nothing

Kiran Garimella’s *Do Data Centers Raise Residential Electricity Prices? Evidence from 24 U.S. States* (preliminary draft, June 2026, 84 pp.) is the strongest empirical challenge to any claim that data centers impose costs on ordinary customers, and this report concedes its finding without qualification.[10]

A state-ZIP panel of 22,834 units across 24 states, 2014–2024, links 2,277 data centers from interconnection queue filings to household electricity expenditure from ACS PUMS. Four identification strategies, plus a robustness analysis across 602 utility service territories. Baseline two-way fixed effects: **\$2.09 per month, p = 0.083**. Matched difference-in-differences: an insignificant **\$0.90**. At territory level, household-weighted: **–\$2.00, p = 0.605**. Measured in megawatts, negative and significant. Insignificant in every market-structure subsample. His conclusion: the evidence “does not robustly support the claim that data centers materially increased residential electricity bills during the pre-hyperscaler period.”

The explanation he offers for his own null is the mechanism this report documents:

“even if data center demand drives up the utility’s total costs (e.g., by necessitating new generation capacity or **transmission upgrades**), the costs are **spread across all residential customers in the service territory**, not just those in ZIP codes near data centers.”

And, flatly:

“The null territory-level finding reflects **cost dilution across a large customer base, not cost elimination**.”

Three limitations he states himself bound the null. His inventory comes from interconnection queue filings, which “likely captures only a subset of operational facilities and **biases estimates toward zero**.” His panel ends in 2024, “before the hyperscale facilities (500 MW to 1 GW+) planned for 2025 onward come online.” And regional wholesale effects are something “neither our ZIP nor our utility analysis can fully isolate.”

5.1 What else he found, stated here rather than left for a referee

He offers five mechanisms for the null, not one. The passage quoted above is § 7.1.1. He also gives separate tariff schedules — “the regulatory intent is to prevent cost-shifting” — endogenous location choice, which names Virginia specifically (“Virginia’s data center boom was partly driven by the state’s historically moderate electricity rates”), measurement limitations, and, in § 7.2.3, the possibility that “**Regulatory Frameworks May Be Functioning as Intended**.” This report quotes the mechanism that corroborates it. The others exist.

Four of his results cut against the framing here. In Virginia, the data-center-ZIP bill gap “is also small and does not widen over time despite Virginia’s massive data center expansion” (§ 5.1.3). Virginia’s Data Center Alley ZIPs and territories showed *slower* bill growth (§§ 5.2.4, 5.3.4). His nowcast places Virginia among four states where bills edge down through 2026. And within Virginia, ZIPs with no data centers project +5.8 percent bill growth to 2026 while ZIPs with six or more project +1.6 percent (§ 6.4).

None of those measures corridor miles, easement acres, or locality revenue. All of them belong on the page.

One of his results supports this report and should be cited as such. His § 7.4 proposes precisely this research program: an analysis of “whether these communities bear disproportionate environmental costs... and whether community benefit agreements and tax incentive packages adequately compensate.” **The strongest available support for the novelty claim in § 18 is the opposing author naming the gap.**

Two precisions. The MW coefficient quoted above is one Garimella himself attributes to “mean reversion among the small number of large-MW ZIPs,” on a capacity variable **imputed for 61 percent of facilities.** And his abstract foregrounds two limitations while § 7.3 lists eleven; the third quoted here comes from a mechanism discussion rather than the limitations section.

PART II — WHAT IS MEASURED

All measurements below were independently re-run during review and reproduced to three decimal places against an independent TIGER 2023 county layer.

6. The geometry

Method. Route geometry published by the developer as KML, intersected against county boundaries, measured geodesically on WGS84. Computed in this project from the inputs named above.

Route 1 measures **116.47 miles** across seven counties. Route 2 measures 119.62 miles and clips **eight** counties, adding 1.15 miles in Goochland. Route 3 measures 117.98 miles.

County	Route 1 miles	Share
Buckingham	31.377	26.94%
Orange	22.538	19.35%
Fluvanna	21.514	18.47%
Louisa	18.782	16.13%
Appomattox	18.231	15.65%
Culpeper	3.362	2.89%
Campbell	0.669	0.57%

A discrepancy that must be disclosed. PJM’s February 2025 selection documents describe the line as **156 miles** (“roughly 69.3 miles in AEP section, roughly 86.7 miles in Dominion section”), and the 2025 SCC petition says “approximately 155 miles.” Those are pre-routing planning estimates. Straight-line separation between the two substations is 97.34 miles, so 156 miles implies a circuitry ratio of 1.60, which is not credible for a greenfield 765 kV line; 116.47 implies 1.196, which is normal. The developer’s own current public description is “approximately 115-mile,” and its June 2026 overview sheet is titled accordingly. **116.47 is the correct figure for the routed alignment, and every percentage in § 7 is a share of that alignment rather than of the planning estimate. PJM has since confirmed this.** On April 7, 2026 it revised the project to 115 miles with roughly one mile in the AEP section, and the Board approved the revision on July 14, 2026. The 156-mile figure described a configuration that no longer exists. The measurement reported here preceded that revision and agrees with it to within 1.5 miles.

One consequence. PJM priced \$768 million of line against a 156-mile estimate. Any cost-per-mile figure computed against 116.47 miles is wrong by roughly a third, and this report computes none.

The corridor occupies a cleared right of way **200.0 feet wide** — verified exactly from the published polygon geometry — held on new easements. **516 privately owned parcels** intersect Route 1’s right of way, with no public, utility, or institutional owners among them. Structures are steel lattice at a developer-stated 135 to 165 feet. The developer is a joint venture of Dominion Energy, FirstEnergy, and Transource. Required in-service date is June

1, 2029. As of August 2026 no siting application had been filed in Virginia, West Virginia, or Maryland.[11]

The withdrawn March 2026 alignment is often described as a single 330-mile route. It is not. It contains **sixteen line features: two candidate routes at 108.07 and 114.28 miles, plus fourteen lettered variations from 1.54 to 25.27 miles.** Their dissolved extent is 330.7 miles across nine counties. No route in that file was ever 330 miles long. The same construct may affect the 79.54-mile Mecklenburg cluster figure in § 12, which is a union across multiple certificate cases and is labelled as such.

7. The inventory, and the three tiers it produces

Method. Complete capture of the Interconnection.fyi Virginia record set — all 931 records, 602 operational and 329 proposed — aggregated by county, August 11, 2026.[12]

A disclosure this report must make about its own source. This is the same database underlying Garimella (2026), whose author states that it is “almost certainly a substantial undercount” and that his sample “likely captures roughly half or fewer of all operational facilities.” § 5 quotes that undercount to bound his null result. **The same undercount bounds this report’s Tier 3.** Buckingham, Fluvanna, and Campbell returning zero records on both fields is an absence-of-evidence claim in a source with a known and quantified miss rate, and it is stated here rather than left to a referee. The table below omits 43 operational and 53 proposed records in localities not listed; the three named counties return zero on the full capture, not merely on the visible rows.

County	Operational	Proposed
Loudoun	321	141
Fairfax	88	12
Prince William	82	83
Manassas City and Manassas Park	22	13
Mecklenburg	19	4
Henrico	18	7
Culpeper	8	8
Louisa	1	2
Caroline	0	4
Orange	0	1
Appomattox	0	1
<i>All other localities</i>	43	53
Total	602	329

Crossed against the geometry, the seven corridor counties fall into three tiers.

Operating capacity — 22.14 miles, 19.01 percent. Culpeper has eight operating facility records across an Amazon campus and an Equinix campus. Louisa has one: Amazon’s Lake Anna Technology Campus.

Proposal only — 40.77 miles, 35.00 percent. Orange has Wilderness Crossing. Appomattox has a 250-megawatt project from Avaio Digital Partners.

Neither — 53.56 miles, 45.98 percent. Buckingham, Fluvanna, and Campbell have no operating data center and no proposal in any status. Buckingham alone carries 26.94 percent of the route.

Insensitivity to route choice, which is expected. All three alternatives connect the same two substations and traverse the same counties, so varying the route while holding the classification rule fixed tests nothing. Counties with no operating facility carry 80.99 percent on Route 1, 80.61 on Route 2, and 81.23 on Route 3. **This is mechanical stability, not robustness,** and it is reported to forestall the inference that it is more.

7.1 The benchmark, and what it does to the finding

These are numerators, and until this version they had no denominator.

Monte Carlo: 2,000 corridors of 116.47 miles, each drawn from a uniform random interior point of Virginia at a uniform random bearing and retained only if the entire corridor falls within the state boundary. Each corridor’s length was apportioned across county-equivalents by the same rule used for the observed route. Twenty-five of Virginia’s 133 county-equivalents contain at least one operating facility record and hold 21.1 percent of the state’s land area; thirty-nine contain a record of any status and hold 33.1 percent. Computed in this project.

Measure	Observed, Route 1	Random median	Random mean	5th–95th percentile	Observed percentile
Share in counties with no operating facility	80.99%	88.5%	83.2%	45.3 – 100.0	36th
Share in counties with no record of any status	45.98%	70.8%	68.1%	28.5 – 100.0	17th

Both figures sit below chance. The Valley Link corridor is more concentrated in data center counties than a randomly placed line would be, and the second measure substantially so.

This does not weaken the argument. It corrects its direction, and the corrected version is the one § 4 already states. The corridor was not routed away from

beneficiaries; it was routed by terrain, existing rights of way, environmental and cultural constraints, and two endpoints fixed by PJM's flowgate analysis. **No process in the record conditions on who benefits, in either direction.** That is the finding: the allocation instrument is geography-blind at every step, and this is what the resulting geography looks like when nobody is steering.

Burden was not distributed *adversely*. It was distributed *unconditionally*, which the tariff text in § 3.2 supports and which is the more damaging of the two.

One consequence for the tiers. The tier structure remains a useful description of who carries what. It is not evidence of allocation, and it is not presented as such below.

7.2 Three weights, and where they disagree

Route miles are not burden. Burden falls on landowners and on the acres inside the right of way. All three are computable from geometry already in hand. Computed in this project.

County	Miles	Miles %	ROW acres	Acres %	Parcels	Parcels %
Buckingham	31.42	27.0%	763	27.0%	91	17.2%
Orange	22.55	19.4%	547	19.3%	120	22.7%
Fluvanna	21.51	18.5%	522	18.5%	115	21.8%
Louisa	18.78	16.1%	456	16.1%	113	21.4%
Appomattox	18.19	15.6%	442	15.6%	88	16.7%
Culpeper	3.35	2.9%	81	2.9%	15	2.8%
Campbell	0.67	0.6%	16	0.6%	4	0.8%
Total	116.47		2,827		528	

Miles and acres track exactly, as they must at constant width. **Parcels diverge, and the divergence is the finding.** Buckingham carries 27.0 percent of the route and 17.2 percent of the affected landowners. Orange carries 19.4 percent of the route and **22.7 percent** of the landowners. Parcel size varies, so the number of households facing an easement negotiation is distributed differently from the conductor.

On a landowner-weighted measure, Orange carries the heaviest burden of any county on the route, and Orange has no operating facility, no revenue in prospect, and the fullest record of objection in the corridor.

7.3 The distance band, which contradicts the county coding

Route 1 miles falling within a given distance of an operating data center campus in a corridor county — the Lake Anna campus and the Culpeper cluster, the only two:

Band	Route miles	Share of route
5 km	0.00	0.0%
10 km	0.00	0.0%
20 km	25.42	21.8%
30 km	41.39	35.5%

No part of the route passes within ten kilometres of an operating data center campus.

That has a direct consequence for § 7's tier assignment. Louisa contributes 18.78 of the 22.14 miles in the operating-capacity tier — 85 percent of it — solely because the Lake Anna campus lies inside the county line, 7.72 miles from the route on a different circuit. The report elsewhere argues the opposite coding: § 11 quotes Louisa's resolution that the line "is not designed to deliver power to Louisa County," and § 15.4 argues the county sited load where wires already were precisely so that it would not need new ones.

Both codings are reported, and the honest headline is a range. Counties with no operating facility carry **80.99 percent** of the route under county membership and **100 percent** under a ten-kilometre distance band. The point estimate is a coding choice; the range is the finding.

A limitation this report takes seriously. County membership is a binary and coarse unit. Louisa is credited with 18.78 miles of "operating capacity" burden because the Lake Anna campus lies within the county, though it sits 7.72 miles from the route on a different circuit. **A report whose central argument is that PJM's cost tracing fails because it stops at a zone boundary should not rest its own burden measure on a county boundary.** A distance-banded measure — route miles within five and ten kilometres of an operating facility — is specified as required work in § 21 and is not yet computed, because facility coordinates at better than ZIP-centroid resolution are not in hand.

The counting-unit problem. Four counts of Virginia data centers exist and none is wrong: 287 in an earlier inventory, 517 distinct facilities on the tracker's own reconciliation, 931 permit and interconnection records, and 552 in Garimella's operational-only 2024 panel. A single campus with nine buildings and two substations generates many records and one facility. **Any published figure must state its counting unit.**

8. Louisa is a host

Interconnection.fyi carries a record at 230 Haley Drive, Mineral, Louisa County: Amazon Data Services Inc — IAD-550 Louisa REB. Operational, 250+ MW, hyperscaler, grid operator Dominion Energy Virginia, permit approved, application and approval and actual operational date all 2025.[13]

The address identifies it. Amazon’s **Lake Anna Technology Campus** occupies 153 acres at Kentucky Springs Road and Haley Drive, adjacent to the North Anna Nuclear Power Station: approximately 1.7 million square feet at full build, **a minimum of 420 megawatts**, seven standard data centers, two specialty data centers, an administration building, and **two substations**. Filed September 2023, construction began late 2024, full buildout not projected until 2040.[14]

AWS has disclosed plans to invest **\$11 billion** in Louisa County. Three other Louisa projects are at various stages. In July 2025 Amazon **withdrew** a proposal of 7.2 million square feet across 1,370 acres north of the Northeast Creek Reservoir after sustained resident opposition. In January 2026 it purchased nearly 2,000 additional acres in the county.[15]

Verification outstanding. The 2025 energization date rests on a single field in a commercial tracker, and the same source lists “Lake Anna Tech Campus” as *proposed* while carrying the Haley Drive record as *operational*. The likely reading is that the operational record is the energized first interconnection. **Treat the date as T3; the specifications and location are T1.**

9. The corridor is cooperative territory

Method. Assigning each ZIP-code tabulation area to the single county holding the largest share of its land is the obvious rule and it fails in Virginia: it swallows the 38 independent cities, crediting two core Lynchburg ZCTAs to Campbell County, and it discards pluralities as low as 36 percent. **This analysis uses a many-to-many assignment instead — a ZCTA counts toward every county holding at least five percent of its land area.**

NREL/OpenEI ZIP-to-utility from EIA Form 861 (2019), joined to the Census 2020 ZCTA-to-county relationship file. Computed in this project from the inputs named above.

County	ZCTAs	Cooperative present	Appalachian Power present	Dominion present
Henrico (host)	16	1 (6%)	0	16 (100%)
Louisa	9	9 (100%)	0	9 (100%)
Culpeper	15	15 (100%)	0	12 (80%)
Orange	11	11 (100%)	0	9 (82%)
Fluvanna	8	8 (100%)	1	8 (100%)
Appomattox	6	6 (100%)	4	6 (100%)
Buckingham	10	10 (100%)	4	10 (100%)
Campbell	12	10 (83%)	8	8 (67%)
Mecklenburg	12	12 (100%)	0	11 (92%)
Lunenburg	11	11 (100%)	0	11 (100%)
Charlotte	13	13 (100%)	0	11 (85%)
Halifax	13	12 (92%)	4	10 (77%)
Brunswick	16	16 (100%)	0	12 (75%)

A cooperative is present in 83 to 100 percent of the ZIP-code areas of every corridor and comparator county. In Henrico it is 6 percent — a single ZCTA on the county’s northern edge.

Henrico is sometimes described as served by a single utility. It is not: ZCTA 23059 is 39 percent Henrico by land and carries Rappahannock Electric Cooperative. Under a largest-share rule that ZCTA is assigned to Hanover and the single-utility reading appears.

9.1 The base rate, which removes most of this as a finding

Applying the same many-to-many rule to all 130 Virginia county-equivalents with mapped ZCTAs:

Cooperative presence	Localities	Share
100% of ZCTAs	51	39.2%
90–99%	6	4.6%
50–89%	20	15.4%
1–49%	15	11.5%
0%	38	29.2%

Median 80 percent. **Cooperative presence tracks rurality, not corridor status.** The corridor counties at 83 to 100 percent are ordinary rural Virginia, and the 38 localities at zero are Arlington, Alexandria, Richmond, Falls Church, Fredericksburg and other urban jurisdictions. **Henrico’s 6 percent is unremarkable for a locality of its type.**

The comparison is therefore not a finding. It is retained above as context for the two facts that do survive, both of which are about the proceeding rather than about utility geography:

None of Rappahannock, Central Virginia Electric, Southside, or Mecklenburg Electric was a party to the proceeding that produced the allocation. Cooperatives reach the Dominion zone through ODEC, a further pass-through.

Appalachian Power, present in 8 of Campbell’s 12 ZCTAs and 4 each in Buckingham, Appomattox, and Halifax, is in the AEP zone — which carries a zero distribution factor on this project and pays only the load-ratio half. Households in four counties along the route contribute through a postage-stamp share with no flow-based justification at all.

Limitations. The file lists likely ZIP codes per utility, so presence is not share. The vintage is 2019. Converting presence to customer share requires counts by utility by county, which EIA-861 does not publish.

10. The fiscal ledger

Method. SCC Division of Public Service Taxation certified assessed values, TY2025, against local tax revenue collected, FY2024 (Auditor of Public Accounts *Comparative Report*, Exhibit B).[16] *Unchallenged in review.*

Locality	Role	PSC assessed value	PSC revenue	Personal property revenue	Corridor miles
Mecklenburg	Host, 3 of 4 campuses	\$676,731,113	\$1,675,332	\$84,063,674	61.95
Henrico	Host, 20+ facilities	\$1,623,751,577	\$13,128,134	\$138,603,444	—
Brunswick	Co-owns Roanoke River park	\$905,530,625	\$5,540,656	\$5,181,277	—
Halifax	Transit, Clover node	\$1,170,302,980	\$4,686,080	\$10,342,607	1.80
Charlotte	Transit, no data center	\$89,435,408	\$562,586	\$3,876,376	9.36
Lunenburg	Transit, no data center	\$64,403,975	\$177,010	\$2,982,635	6.44

10.0 The 475:1 ratio is retired

A ratio of Mecklenburg’s personal property revenue to Lunenburg’s total public service corporation revenue yields **475 : 1**. The arithmetic is correct and the construction is not, so the figure does not appear in this volume’s findings. It compares two jurisdictions, two tax bases, two assessing authorities, and two asset classes, with no normalization for population — and the same six-row table yields ratios from 6:1 to 475:1 depending on which pairing is chosen. **The ratio measures the choice of denominator. It is withdrawn.**

The table below substitutes comparisons on a **single consistent base**: SCC-certified public service corporation property, the same asset class assessed by the same authority under the same statute in every locality.

Locality	Population	PSC assessed value	PSC revenue	Per resident	Per \$1,000 assessed	Per corridor mile
Mecklenburg	30,319	\$676,731,113	\$1,675,332	\$55	\$2.48	\$27,043
Henrico	334,389	\$1,623,751,577	\$13,128,134	\$39	\$8.09	—
Brunswick	16,231	\$905,530,625	\$5,540,656	\$341	\$6.12	—
Halifax	33,911	\$1,170,302,980	\$4,686,080	\$138	\$4.00	\$2,603,378
Charlotte	11,529	\$89,435,408	\$562,586	\$49	\$6.29	\$60,105
Lunenburg	11,974	\$64,403,975	\$177,010	\$15	\$2.75	\$27,486

The per-corridor-mile column carries the argument better than the ratio it replaces. Mecklenburg receives **\$27,043** per corridor mile from public service corporation property. Lunenburg receives **\$27,486**. The host county and the transit county collect essentially the same amount from the transmission itself.

The entire asymmetry sits in a tax base that only the host has. Mecklenburg's personal property revenue is \$84.06 million; Lunenburg's is \$2.98 million. The wires pay the same either way. The servers do not, and the servers are what the wires were built to reach.

Halifax's \$2.6 million per mile is an artifact of the Clover generation complex rather than of 1.8 miles of corridor, which is exactly the point § 10.1 makes and now makes quantitatively.

Lunenburg carries 6.44 miles of the South Hill corridor — 58.2 percent of that line, verified — and collects \$177,010 a year from every regulated utility asset within its borders combined.

10.0.1 A concentration and volatility finding, restated

Mecklenburg's personal property revenue is 320.2 percent of its real property revenue. That reads like a statement of the asymmetry and is not one — it describes a single county's internal revenue mix and says nothing about transit localities, and it **falls to roughly 150 percent on the FY2025 figure** in § 10.3.

Read correctly it is a different and more useful finding: **the host locality's benefit is large, concentrated in a rapidly depreciating asset class, and fell 53 percent in one year.** That is fiscal risk, not asymmetry, and it belongs in the refresh-cycle argument rather than in the burden argument.

10.1 Where the pattern breaks

Halifax holds \$1.17 billion in assessed PSC property, more than Mecklenburg. Brunswick holds \$906 million. Neither hosts a data center. The reason is generation and legacy network: Halifax has the Clover complex, Brunswick a large gas plant and long-standing transmission.

What separates the two groups is not whether a data center corridor crosses them. It is whether generation was sited there decades ago. The argument is therefore not that transit counties are poor. It is that a new corridor built to serve data centers adds almost nothing to a locality that does not already host generation.

10.2 Two caveats that travel with the table

“Personal Property – General” includes vehicles. For Mecklenburg the line is overwhelmingly Microsoft equipment — the county’s FY2027 budget puts business personal property at \$63.5 million of a \$133.8 million general fund — but should not be presented as a data center figure without that qualification.

Public service corporation revenue includes every regulated utility. Lunenburg’s \$177,010 covers telecom, gas, and water as well. **The transmission-only share is smaller than shown, which strengthens the comparison.**

10.3 Three items that gate publication of this section

One. The FY2025 halving. Mecklenburg’s personal property revenue falls from \$84,063,674 in FY2024 to \$39,357,512 in FY2025 — almost certainly computer-equipment depreciation rolling off, and if so the clearest available evidence for refresh-cycle dependency. Verify against the adopted budget.

Two. A plausibility problem. \$84.06 million of personal property revenue in a county of 30,319 is **\$2,773 per resident**. The comparators run \$249 to \$414.

Locality	Personal property revenue per resident
Mecklenburg	\$2,773
Henrico	\$414
Charlotte	\$336
Brunswick	\$319
Halifax	\$305
Lunenburg	\$249

A seven-to-eleven-fold outlier is consistent with hyperscale concentration and is also consistent with a reporting error. **Assessed value times adopted rate must reconcile to the revenue line before this figure is published.** Note that the county’s own FY2027 budget puts business personal property at \$63.5 million, and § 10.3’s FY2025 figure is \$39.4 million — three numbers that do not obviously agree.

Three. A line-definition question that could invalidate the section. It is not established whether the Auditor's Exhibit B reports SCC-assessed **real estate** of public service corporations in the "Public Service Corporations" line or in the real property line. **If the latter, Lunenburg's \$177,010 is not the transmission return and the central juxtaposition of this section measures the wrong quantity.** Confirm in writing with the Auditor of Public Accounts before publication.

10.4 Three ledgers, only one of which is measured here

The section above measures **county treasuries**. The burden described in §§ 6 and 12 falls on **private landowners**, and this report does not measure what they receive.

Ledger one, locality fiscal flows. Measured above.

Ledger two, landowner compensation. Easement acquisition or condemnation at fair market value, with statutory just-compensation protections. **This is the largest cash flow associated with hosting a corridor and it appears nowhere in this report.** It is obtainable from certificate-case filings and comparable-sales evidence.

Ledger three, uncompensated externalities. Viewshed, severance damages, use restrictions, stigma, and the cost of participating in a proceeding. Unmeasured, and smaller than the framing of ledger one implies.

The contribution is in ledger three, and stating that requires admitting ledger two exists.

PART III — WHAT IS DOCUMENTED

11. Valley Link — the spine

PJM approved the project in February 2025. FERC accepted the formula rate subject to refund and granted two incentives, in *Valley Link Transmission Maryland, LLC*, 191 FERC ¶ 61,113 (May 13, 2025).[17]

Stated precisely. The Abandoned Plant Incentive permits recovery of prudently incurred costs if the portfolio is abandoned for reasons outside Valley Link's control, **subject to a Federal Power Act section 205 filing demonstrating prudence.** It is eligibility, not entitlement, and the prudence contest occurs later in a contested proceeding. CWIP in rate base is principally a timing shift that avoids compounding AFUDC, and the order imposes anti-double-recovery conditions. FERC **denied** the 60/40 hypothetical capital structure and **instituted an FPA section 206 proceeding with hearing and settlement judge procedures** on the formula rate including return on equity.

Chairman Christie and Commissioner Rosner each wrote separately, in opposite directions. Rosner would have *granted* the capital structure incentive, writing that the majority “singles out this Project Portfolio to be its test case for a novel policy change” and that denying the incentive “adds risk to Valley Link.” Reciting both separate writings before any claim about ratepayer risk would imply a shared concern that does not exist.

No Virginia siting application had been filed as of August 2026. The developer nonetheless published county map books, held open houses, and opened public-comment portals.

Two points are commonly misstated about this record. The counties' FERC filing is not a merits challenge to the project: it is a protest of the EIT tariff in which the counties **concede Virginia's exclusive siting jurisdiction** and raise no cost-allocation argument. And the project does map cemeteries — approximately 98 across three Virginia counties in the Valley North map books.

Localities have said clearly what they cannot do. Orange County: “Orange County is not a partner in the project and **does not have regulatory oversight regarding the line's route or permits,**” with four unanimous resolutions of opposition on April 14, 2026. Goochland allocated **\$250,000** for advocacy (Resolution 6643). Louisa resolved on March 16, 2026 that the line “**is not designed to deliver power to Louisa County.**”[18]

12. Mecklenburg and Lunenburg — the burden record

Six certificate cases document the corridor cluster serving the Microsoft campuses at South Hill. The cluster geometry, a union across those cases, measures **79.54 miles**, of which 22.1 percent lies outside the host county. **Lunenburg carries 58.2 percent of the South Hill line**, verified independently. Computed in this project from the inputs named above.

The human record sits here: Retta Keil, the Struminger family, the Johnsons, and Lunenburg County's formal objection. Each entered a public proceeding on their own

initiative. Landowner identities from the parcel layers are not compiled anywhere in this project.

Nineteen of Mecklenburg’s operational records are Microsoft, the exception being DXC Technology. Six are 250+ MW.

The best map exhibit is **Exhibit 1, Map Packet, PUR-2023-00088** — four pages, all maps, showing the McBride–Johnson segment against parcel boundaries.

13. Henrico — the candor inversion, and what supplemental review actually is

Two dockets serve the QTS complexes off Portugee Road and Technology Boulevard. Both are classified **supplemental**: “initiated by the TO in order to interconnect new customer load,” and per Dominion’s appendix, “the PJM Board does not actually approve such projects.”[19]

That sentence is often read as an absence of review. It is not one, and the distinction matters.

After FERC found the transmission owners’ local planning process violated Order No. 890, PJM added **Attachment M-3**, effective September 2018. Supplemental Attachment M-3 Projects go to the **Subregional RTP Committees**, which are “responsible for the review of Supplemental Attachment M-3 Projects” with “a meaningful opportunity to participate and provide feedback, including written comments,” plus separate needs and solutions meetings, posted assumptions and criteria, and TEAC presentation. Dominion presents its supplementals at TEAC on a recurring schedule.[20]

Further, **Schedule 12(a)(iii) makes Supplemental Projects ineligible for regional cost assignment**. Their costs remain in the transmission owner’s own zone. Relative to a baseline project, that is *more* cost-causal, not less — a point that cuts against this report’s thesis and is stated here rather than omitted.

And PJM classification has no bearing on Virginia certification. § 56-46.1(B) requires that no transmission line of 138 kV or more be constructed without SCC approval after at least thirty days’ notice by publication, written notice to each governing body, and first-class mail to affected landowners; § 56-265.2 A 1 requires a certificate issued only after opportunity for a hearing. **PUR-2025-00014 is itself a Virginia certificate case for a supplemental project.**

The claim that survives is about record quality, not existence. M-3 review is stakeholder consultation. It produces no adjudicative record, no findings of fact, and no appealable order. That is a transparency gap in federal planning, and it is a different thing from a bypass of state adjudication.

PUR-2025-00014 splits one project across both categories in a single sentence: the Cloud–Raines lines are baseline, and “the Nebula Station as a supplemental project since its purpose is to interconnect MEC’s Visor Delivery Point to serve a data center customer.”[21]

The finding giving this section its name is that the stated driver varied by audience for the same physical project. That comparison is the basis of Paper 5.

14. Berry Hill — where the need element was removed by statute

§ 56-585.1:10 requires that costs “shall be recovered by the utility **pursuant to a rate adjustment clause approved by the Commission,**” and that for construction a utility shall “either (i) obtain a certificate from the Commission pursuant to subdivision A 1 of § 56-265.2, unless such infrastructure is an ordinary extension or improvement in the usual course of business **or (ii) obtain approval pursuant to the requirements of § 15.2-2232 and any applicable zoning ordinances** by the locality.” Projects are capped under ten miles and limited to two VEDP-certified petitions per utility per year.[22]

What the statute actually does is remove the contested element. It provides: “The need for any business park electric infrastructure **shall be satisfied if the business park to be served is approved for the program by the Virginia Economic Development Partnership.**” Need is the issue litigated in a § 56-46.1 case. The statute deems it satisfied by an economic development agency’s decision.

That is the finding, and it is sharper than the one it replaces.

APCo’s own IRP language marketed the result: the investment gives “Virginia a competitive edge,” and the 2023 triennial calls the sites “two of Virginia’s most attractive industrial sites.” VEDP records that the Roanoke River park “**was qualified by Dominion Power for data center projects.**”[23] The duty-to-serve defense is weaker where the utility built the site to attract the load.

A decade-old precedent sits underneath: PUE-2016-00037 moved the park out of Danville’s territory because “Danville states that it does not have the capacity available to serve the Park’s projected load.”[24]

Virginia now runs two large-load regimes. Dominion has GS-5. Appalachian Power has terms bolted onto Schedule L.P.S. with no separate class, obtained fourteen months later and **on appeal by REAL as of June 30, 2026. Any statewide claim about cost causation must say which utility.**[25]

15. Louisa — the ordinance

Louisa County Code Chapter 86, § 86-330 et seq., adopted as LDR 2023-01, **approved by the Board of Supervisors April 3, 2023 on a 6–1 vote**, Supervisor Gentry recorded against. Amazon filed for the Lake Anna campus five months later.[26]

§ 86-331(a) makes transmission proximity the entitlement criterion.

“Lands in the TOD shall encompass a minimum of one hundred twenty-five (125) contiguous acres as part of a TOD campus. **Properties in the TOD shall be located in close proximity to high voltage power transmission lines of 115kv or more.**”

§ 86-333 makes data centers by-right, along with major and minor utility service. Only utility-scale solar or storage of 2 MW or more exporting off site is carved back to a conditional use permit.

§ 86-332 exempts transmission from two design standards. Screening “shall not apply to permitted accessory uses, including without limitation electric substations, transmission, and distribution facilities,” and transmission, distribution, substation facilities and towers are “excluded from the maximum height requirements” that cap buildings at eighty feet.

Stated precisely, those two are the entire carve-out. Buffers, setbacks, noise, lighting, and the twenty percent open space requirement continue to apply to utility facilities. The adopted text in fact **added a 250-foot buffer and 250-foot setback for major and minor utility service** that the Planning Commission draft did not contain. Any claim that every protection stops at the substation fence asserts the opposite of what the ordinance says.

15.1 The § 15.2-2232 question, stated at the precision it requires

§ 86-334 provides that utility accessory facilities “must be in substantial accord with the ... comprehensive plan ... **Notwithstanding this provision, facilities that are by-right uses shall be deemed substantially in accord with the comprehensive plan.**”

Read quickly, that is a local waiver of the state review under Va. Code § 15.2-2232. **Three things make the strong version of the claim untenable.**

First, § 15.2-2232(D) expressly authorizes deeming by ordinance. A facility “identified within, but not the entire subject of” a § 15.2-2286 A 8 plan-of-development submission “may be deemed a feature already shown on the adopted master plan ... provided that the governing body **has by ordinance or resolution defined standards.**” Chapter 86 is a standards ordinance.

Second, the General Assembly has done the same thing twice. Subsection G deems telecommunications towers and cooperative facilities in accord where a district allows them by right. Subsection H, added in 2022, does so for solar and permits a locality to waive the requirement. The concept is legislative policy, not ultra vires.

Third, the sentence is not a 2023 innovation. Louisa’s Telecommunications Ordinance § 86-481(B), adopted May 4, 2015, reads: “Wireless communication facilities (WCF’s) are utility facilities ... and must be in substantial accord with the relevant provisions of the Louisa County Comprehensive Plan ... **Notwithstanding this provision, facilities that are by-right uses or approved by a special use permit process shall be deemed substantially in accord with the Comprehensive Plan.**” § 86-334 is that sentence with the special-use clause dropped. In its 2015 home it was a correct restatement of subsection G.

The claim that survives is narrower and considerably harder to rebut. Subsection D reaches only facilities that are *not the entire subject* of a submission, and it conditions the deeming on standards “governing the construction, establishment or authorization of **such**” facility. A standalone substation or generating-facility parcel is the entire subject of

its own submission. And § 86-332(b)(2) and (i)(1) **exempt substations and transmission from the screening and height standards. A locality cannot invoke subsection D on the strength of standards from which it has excused the facility.** § 86-334 draws neither line. The clause valid for telecom towers under subsection G was migrated into a district where its statutory warrant does not follow it.

Two further precisions. The hearing supposedly removed was never guaranteed: § 15.2-2232(A) provides the commission “may, and at the direction of the governing body shall, hold a public hearing,” and subsection B deems approval after sixty days of silence. And whether § 15.2-2232 reaches a customer-owned substation serving only its owner’s load is genuinely open — though Virginia localities do run data center substations through this review, as Stafford County’s published comprehensive plan compliance review for the Potomac Church Tech Center substation shows.

An evidentiary limit stated plainly. This section documents ordinance text. **Whether § 86-334 was invoked for any facility on the Lake Anna campus is not established on the present record.**

15.2 The overlay is the North Anna transmission fan

Method. Louisa’s four TOD districts, comprising nine disjoint polygon parts, pulled from the county’s live ArcGIS service. Areas computed geodesically on WGS84; distances computed as planar distances in UTM 18N (EPSG:32618), where the grid-to-geodesic difference is under two percent. **The county service’s Shape__Area attribute is in Web Mercator square metres and inflates areas by a factor of 1.61 at this latitude; it was not used.** Computed in this project from the inputs named above.

Total mapped area is **4,333.6 acres**, verified against an Albers equal-area projection to four significant figures, with no overlaps and no duplicates.

Proximity to transmission, benchmarked. All four districts lie within **452 metres of a single digitized 230 kV feature** whose attributed terminus is North Anna (VA DEQ/HIFLD ID 101977, INFERRED = N, 16.21 miles). It is the nearest transmission feature to all four under every voltage filter tested.

The base rate makes this a finding rather than a coincidence. Only 7.2 percent of Louisa County lies within 452 metres of any transmission line of 115 kV or more — 15.5 percent within a kilometre, 30.0 percent within two. The four districts occupy 1.3 percent of the county. 18.9 percent of mapped district area falls within 452 metres of a qualifying line, against 7.2 percent of the county: a 2.6-fold enrichment, with all four districts touching. Computed in this project.

District	Acres	Distance to the 230 kV feature	230 kV length inside the district	Contact survives erosion of
1	1,467	0 m	182 m	30 m
2	1,424	0 m	3,031 m	beyond 500 m
3	1,221	452 m	—	—
4	222	0 m	44 m	5 m

A bare “0 m” would not be defensible here. HIFLD publishes no positional accuracy statement for the current layer, and the POSIT_REL field its own metadata directs users to is stripped from the public release. The underlying lineage cites source scales accurate to 40 and 167 feet. District 4’s contact is a 44-metre corner clip destroyed by a 5-metre lateral shift; district 1’s fails at 30 metres, inside the coarse tolerance. **Only district 2 is genuinely traversed.** The claim that survives is the one the ordinance actually requires: all four are in close proximity to the same circuit.

District 4 additionally sits inside the North Anna 500 kV hub — 548 m from Midlothian–North Anna, 871 m from North Anna–Morrisville, 936 m from Ladysmith–North Anna, geodesic.

The Technology Overlay District is the North Anna transmission fan, drawn as zoning. The ordinance criterion is satisfied by construction, because the districts were drawn onto the lines.

15.2.1 The Valley Link intersection, corrected

Which route is measured decides the answer, and the distinction is easy to lose. Every mileage figure in this volume uses Route 1. The intersection below holds only on Route 2, and it is reported for all three.

Geometry	District 1	District 2	District 3	District 4
Route 1 centerline	6,294 m	5,915 m	4,780 m	16,842 m
Route 2 centerline	0 m	0 m	0 m	10,178 m
Route 3 centerline	6,294 m	5,915 m	4,780 m	16,842 m

Routes 1 and 3 miss all four districts; the nearest approach is 2.97 miles. Under Route 2, **4.74 miles of centerline crosses three districts, taking 115.0 acres of right of way — 2.65 percent of mapped district acreage.**

The finding, stated correctly: **one of the three published route alternatives passes directly through three of Louisa’s four technology overlay districts.** Set that beside the county’s March 2026 resolution that the line “is not designed to deliver power to Louisa County.”

15.2.2 Two questions the measurement raises

§ 86-331(a) caps *developable* TOD acreage at 3,266 acres while the mapped districts total 4,333.6. The figures are not directly comparable, since buffers and the required twenty percent open space are excluded from the cap; for it to hold, non-developable area must account for at least 24.6 percent. This is a question for the county, not an assertion.

The acreage cap does not appear in the Planning Commission draft. It was added between that draft and adoption. **It is tempting to read that as a quiet insertion. The record does not support it.** Every other post-hearing change was more restrictive: noise fell from 70/65 dB to 65/60, the agricultural buffer split out at 300 feet, and the 250-foot utility-service buffer and setback were created. § 15.2-2285(C) expressly permits a governing body to “make appropriate changes or corrections” after its hearing, and re-advertisement is required only for a *more intensive* classification. Any challenge is time-barred: § 15.2-2285(F)’s thirty-day window is “mandatory and jurisdictional” and closed in May 2023. **Further, the provenance of the draft exhibit is not sound** — its footer claims a March 10 revision that its body does not contain. The advertised notice and both agenda packets are required before the chronology can be published at all.

15.3 The proceedings that did and did not occur

SCC DocketSearch case index, 33,522 cases, queried August 11, 2026. **Fourteen caption matches for Louisa, Lake Anna, North Anna, or Mineral in the entire index; none is a transmission certificate for the campus. Of 46 Virginia Electric and Power transmission certificate cases established between January 1, 2023 and August 2026, none is in Louisa County.**[27]

It does not follow that no proceeding existed in which a citizen could object. § 15.2-2285(A) and (C) required advertised public hearings before the planning commission and the governing body, both occurred, and a citizen objection is recorded in the 6–1 vote.

The accurate statement is this. Every proceeding that occurred was legislative and generic, held two years and five months before the application, on a text amendment no citizen could then connect to a named 420 MW campus. **No project-specific proceeding exists.** Site plan review under § 15.2-2286 A 8 applied and is ministerial: administrative approval on compliance, with no notice, no hearing, no discretion, and no third-party appeal.

15.4 The county published the mechanism as an achievement

From Louisa’s Technology Overlay District materials, against the business need for transmission access: “The solution **limits the need for new electric transmission lines in the County.**” And under maximising returns on public investment: technology businesses “represent **high revenue generation with little to no public service impact.**”[28]

Louisa sited the load where the wires already were so that Louisa would not need new wires. The load enters the Dominion zone forecast regardless. *This section makes no claim about which counties the reinforcement crosses, because § 56-46.1(F) and Louisa's own § 86-40(c)(2) place the transmission line outside local zoning entirely.*

PART IV — STANDING

16. Three routes around the state proceeding, and one around the local one

These are often grouped as four routes around a single proceeding. They are not the same object.

Around the state siting proceeding

One. Need removed by statute. § 56-585.1:10 deems the need element satisfied on VEDP approval. The proceeding still occurs; the issue that would be litigated in it does not.

Two. The 138 kV election. § 56-265.2 A 2 permits a utility constructing a line of 138 kV to elect approval under § 15.2-2232 together with local zoning **in lieu of** an SCC certificate. This is a genuine statutory route around the adjudicative forum, and it connects directly to the Louisa finding: where a locality has both by-right zoning and a deeming clause, the § 56-265.2 A 2 election terminates in a process with no hearing at all.

Three. A transparency gap in federal planning. Supplemental projects receive Attachment M-3 stakeholder review, which produces no adjudicative record, no findings of fact, and no appealable order. This is not a bypass of state certification, which still applies.

Around the local proceeding

Four. By-right zoning with a deeming clause. Louisa's Technology Overlay District removes the discretionary local occasion for the *load*. Under § 56-46.1(F), state approval of a transmission line "shall be deemed to satisfy the requirements of § 15.2-2232 **and local zoning ordinances** with respect to such transmission line," so local zoning never governed the *line*. That asymmetry is itself the finding: the load is locally reviewable and the wire is not, and Louisa removed the review of the half it controlled.

Not a route

The unfiled certificate. Valley Link's absent siting application is sometimes listed as a bypass. A proceeding that has not started is not a route around itself; the line cannot be built without it. The defensible observation is about **sequencing**: the developer's consultation record — map books, open houses, comment portals — is being built before the adjudicative record opens, positions harden outside the forum where objection has legal effect, and localities lack party status in the FERC proceedings that have already granted rate treatment.

17. What a locality receives, and what it does not

It is sometimes said that Virginia has no mechanism by which a locality hosting transmission for load elsewhere receives anything for it. Section 10 of this volume shows otherwise.

Transit localities do receive a mechanism: ad valorem taxation of SCC-assessed public service corporation property, which is the line itself. Charlotte collects \$562,586, Lunenburg \$177,010, Halifax \$4,686,080.

Other instruments exist and have limits worth naming precisely.

§ 15.2-2316.7 requires negotiation of a siting agreement including “financial compensation to the host locality.” **It reaches solar and energy storage. It has never been extended to transmission.**

§ 15.2-2303 conditional zoning proffers are unavailable where the use is by-right, which is a consequence of the local choice rather than a gap in state law.

§ 56-46.1 requires the SCC to consider local comprehensive plans on request, to consider the costs and benefits of underground placement on the governing body’s request, and to hold at least one hearing in the area on written request.

The accurate claim is about proportionality. Lunenburg’s \$177,010 from every regulated utility asset in the county stands against \$84 million of taxable equipment in the county the line was built to serve. Virginia has compensation. It has no instrument keyed to the burden of hosting transmission for load elsewhere, and no instrument that scales with it.

17.1 The 2026 session, and the gap it leaves

Virginia’s 2026 General Assembly passed fifteen data center bills. **HB 153, now § 15.2-2209.5**, creates a “high energy use facility” regime at 100 MW or more: mandatory sound assessment for residences and schools within 500 feet, with optional locality-required assessment of ground and surface water, agriculture, parks, registered historic sites, and forestland. SB 553 requires industrial water consumption estimates. HB 1393 addresses cost recovery from customers at 25 MW and above.

§ 15.2-2209.5 attaches “prior to any approval of a rezoning application, special exception application, or special use permit.” (The section was codified at .5, not .4 as the enrolled bill text reads; § 15.2-2209.4 is the minimum off-street parking statute.)

A 420 MW campus on by-right overlay land triggers none of it. **Virginia’s newest data center siting statute passes over exactly the case this report documents**, and it does so because the trigger is a discretionary application that by-right zoning eliminates.

PART V — POSITION AND LIMITS

18. What this contributes, positioned against a live proceeding

It would be convenient to claim that nobody asks who carries the wires. The absence of a topic from any one bibliography is not evidence about a field, and the zone-level question is being actively litigated.

Maryland Office of People's Counsel v. PJM, FERC Docket EL26-63-000, filed May 7, 2026, contests precisely this allocation. There is settled appellate law on the methodology: *ICC v. FERC*, 576 F.3d 470 (7th Cir. 2009); *Old Dominion Electric Cooperative v. FERC*, 898 F.3d 1254 (D.C. Cir. 2018); *PSE&G v. FERC*, 989 F.3d 10 (D.C. Cir. 2021); *Con Edison v. FERC*, 45 F.4th 265 (D.C. Cir. 2022).

The contribution is the layer beneath that proceeding. Nobody in EL26-63 is measuring corridor miles against county fiscal returns. The zone-level dispute asks which zones should pay. This report asks what happens to burden inside a zone once the paying is settled, and answers it by measurement rather than assertion.

The method is portable to any RTO with a published allocation and any developer that publishes route geometry, and § 8 of the program design records where it fails to port.

19. Limitations, and what would falsify each claim

The geometry depends on published routes. If the filed route differs materially from the published KML, every mileage figure changes. The percentages are stable across the three current alternatives, which bounds but does not eliminate the risk.

PJM's 156-mile estimate is unreconciled with the developer's 116.47-mile route except by inference from circuitry and from the developer's own current description. A filed application settles it.

The inventory is a commercial tracker, and the counting-unit problem is unresolved. Falsified by a facility in Buckingham, Fluvanna, or Campbell that the tracker missed. Nothing is currently watching for one.

The burden measure rests on county boundaries, which is the same category of coarseness this report criticises in Schedule 12. A distance-banded measure is required and not yet computed.

Utility territory shows presence, not customer share, and the 2019 vintage predates the current build cycle.

The fiscal ledger mixes vehicles into personal property and all regulated utilities into PSC revenue. The second understates rather than overstates the asymmetry.

The Lake Anna energization date is unverified.

§ 86-334's application to any actual facility is not established. The section documents a clause, not a consequence.

The Louisa land-use finding is one county. Whether it is idiosyncratic or the leading edge remains the highest-value open question. A multi-state scan settles it.

The rate question is conceded entirely.

19.1 Inferential limitations

Base rates are now computed for three claims. § 7.1 benchmarks the corridor share against 2,000 random corridors and the observed value falls below chance. § 15.2 carries the Louisa proximity base rate of 7.2 percent and the overlay finding survives it. § 9.1 carries the statewide cooperative-presence distribution and **the § 9 comparison does not survive it** — the corridor counties are ordinary rural Virginia and the claim is withdrawn. The 475:1 ratio was retired in § 10.0 rather than benchmarked.

Comparator selection remains without a stated rule. Six localities, two of which contradict the pattern, rescued by a variable introduced after the fact. § 10.1 discloses the failure, which is the right instinct and is not a design. The rule should be stated — all Virginia localities intersected by a transmission certificate case in a defined window is the obvious candidate — or the section should move to the full-panel design specified for Paper 4.

N = 1. One corridor, one state, one project. No comparison corridors and no variation to exploit, which means no design capable of supporting any claim about what determines burden placement.

Everything is cross-sectional. Nothing is measured before and after anything.

Incidence is conflated, and § 10.4 now separates the three ledgers. Landowner compensation remains unmeasured.

The benefit side is unmeasured. Transit counties may receive construction-phase revenue, reliability improvement, or future interconnection capacity. None is assessed before concluding that a corridor “adds almost nothing.”

The report’s own inventory inherits Garimella’s undercount. See § 7 method note.

No reproduction package exists. No repository, no DOI, no deposited code. For a report whose contribution is measurement, this is disqualifying at a data venue and awkward everywhere else.

PART VI — PAPERS

20. What can be spun out

Paper 1. Sub-zonal burden distribution under two-part transmission cost allocation.

Question: once an RTO settles which zones pay, what determines where burden lands inside a zone? Method: pair the full Schedule 12 allocation — both the postage-stamp and flow-traced components — with measured corridor geometry and locality fiscal returns. Data in hand. Contribution: EL26-63 contests the zone-level assignment; this measures the layer below it. **Cite EL26-63 in the framing, not against it.** Venues: *Energy Policy*, *Utilities Policy*, *The Electricity Journal*.

Paper 2. Transmission proximity as land-use entitlement. Louisa fully in hand, including the narrowed § 15.2-2232(D) argument and the 2015 telecom provenance. **Gate cleared August 15, 2026:** the Virginia ordinance scan is complete at 48 localities and is registered in VA_Entitlement_Route_Register_v0_1.xlsx with the analysis in Entitlement_Route_Analysis_v0_1_source.md. **Add § 15.2-2209.5's rezoning-and-SUP trigger**, which is the cleanest available demonstration that by-right treatment defeats new siting statutes. Venues: *Land Use Policy*, *JAPA*, *Urban Studies*.

Paper 3. The reviewability gradient. Method must now distinguish adjudicative review, stakeholder consultation under Attachment M-3, and statutory election under § 56-265.2 A 2. Venues: *Energy Law Journal*, *The Electricity Journal*.

Paper 4. A fiscal ledger of host and transit localities. Unchanged and unchallenged. Add Louisa to the panel. Venues: *Public Budgeting & Finance*, *State and Local Government Review*, *National Tax Journal*.

Paper 5. Audience-conditional disclosure of project drivers. Unchallenged in review. Needs the Orange transcripts. **Exhibit 18 in PUR-2024-00221** — the applicant's own map of Caroline County active data center projects, filed inside a certificate case — is the strongest single document. Venues: *Energy Research & Social Science*, *Environmental Communication*.

Paper 6. Measuring corridor burden: a replicable method. Now stronger for the errors found in review, which belong in it: the route-alternative bookkeeping trap, the planning-estimate versus routed-alignment discrepancy, the Web Mercator area trap, the many-to-many crosswalk requirement in a state with 38 independent cities, **and two public-data gaps — HIFLD's substation layer is no longer served and its POSIT_REL accuracy field is stripped from the transmission release, and Virginia's VGIN publishes no electric utility layer at all.** Venues: *Energy Policy* methods, *Scientific Data*.

Paper 7. Counting data centers. Unchanged. Venues: short communication.

Not yet viable: property-value capitalization. Davis (2011) distance-decay applied to corridor parcels. Blocked because five of nine relevant counties, including every transit comparator, publish no queryable GIS.

21. Required work, in order

1. **The APA Exhibit B line definition.** § 10.3. This can invalidate § 10 and everything downstream of it, so it comes first.
2. **The Mecklenburg base × rate reconciliation.** § 10.3. Blocks the fiscal chapter.
3. **The multi-state ordinance scan,** Virginia and Georgia together. Gates Paper 2, which is the strongest of the seven.
4. **The Lake Anna energization date** and whether § 86-334 was ever invoked.
5. **The advertised notice and both Louisa agenda packets,** before the acreage-cap chronology is published.
6. **The Mecklenburg FY2025 personal property drop.**
7. **The Orange transcripts.** Gates Paper 5.
8. **The three missing SCC routing studies,** via the Clerk's Office.

ENDNOTES

[1] PJM Interconnection, *Reliability Analysis Report, 2024 RTEP Window 1*, at 6. The version filed at FERC as Exhibit JLL-002 in Docket ER25-1633 is dated February 10, 2025; PJM posted a March 4, 2025 TEAC version. Both carry the quoted language.

[2] PJM, *Reliability Analysis Report, 2024 RTEP Window 1*, at 12.

[3] PJM Open Access Transmission Tariff, Schedule 12(b)(i)(A) (Regional Facilities: AC facilities at or above 500 kV; fifty percent load-ratio share, fifty percent distribution factor). *PJM Interconnection, L.L.C.*, 142 FERC ¶ 61,214, PP 413–14 (2013) (PJM Compliance Order) (finding that high-voltage facilities have “significant regional benefits that accrue to all members of the PJM transmission system” and that the fifty percent postage-stamp component captures “improved reliability, reduced congestion, reduced power losses, greater carrying capacity, reduced operating reserve requirements, and improved access to generation”). *Old Dominion Electric Cooperative v. FERC*, 898 F.3d 1254 (D.C. Cir. 2018) (granting the petitions for review and vacating FERC’s approval of a tariff amendment that denied regional cost sharing to high-voltage projects selected only to satisfy an individual owner’s Form 715 planning criteria; the two-part formula is described at 1258 but was not the object of review). Current allocation vectors and project scope from PJM’s Project Status and Cost Allocation database, <https://www.pjm.com/planning/m/project-construction>, records stamped July 24, 2026, retrieved August 12, 2026.

[4] PJM, *TEAC Recommendations White Paper* (February 2025), Attachment B, “Reliability Project Multi-Zone Allocations,” at 34–35 (both allocation blocks and the per-project cost estimates for b4000.355, .356, .357, and .359). The white paper was approved by the PJM Board on February 26, 2025; the allocations are filed at FERC within thirty days of Board approval and appear of record at Schedule 12-Appendix A.

[5] *Maryland Office of People’s Counsel v. PJM Interconnection, L.L.C.*, FERC Docket No. EL26-63-000, complaint filed May 7, 2026, with the affidavit of Nelson and Eiden. The complaint cites *PSE&G v. FERC*, 989 F.3d 10 (D.C. Cir. 2021) (Artificial Island) and *Con Edison v. FERC*, 45 F.4th 265 (D.C. Cir. 2022). See also *Illinois Commerce Commission v. FERC*, 576 F.3d 470 (7th Cir. 2009), and FERC’s remand order at 194 FERC ¶ 61,179 (Mar. 6, 2026).

[6] PJM OATT Schedule 12 (designation of Responsible Customers; thirty days to seek review of a designation) and Part III (recovery on zonal network service peak load).

[7] Va. Code Ann. § 56-585.1 A 4; Dominion Energy Virginia Rider T1, transmission rate adjustment clause.

[8] Virginia State Corporation Commission, Case No. PUR-2025-00058 (2025 biennial review; rate class GS-5 for customers at 25 MW and above, effective January 1, 2027; minimum 85 percent of contracted transmission and distribution demand; fourteen-year terms; directive to file alternative transmission allocation proposals).

[9] Virginia SCC, Case No. PUR-2023-00088 (Finneywood–Jeffress), testimony of Dominion witness McQuain. The formula “100% of which are cost allocated to the DOM Zone”

appears verbatim in Case Nos. PUR-2022-00167, PUR-2022-00175, PUR-2023-00088, PUR-2023-00110, and PUR-2025-00042.

[10] Kiran Garimella, *Do Data Centers Raise Residential Electricity Prices? Evidence from 24 U.S. States*, preliminary draft, June 2026, 84 pp. Coefficients, p-values, and quoted passages in this section were verified against the source; the block quotations at §§ 7.1.1 and 7.2 are verbatim.

[11] Route geometry, right-of-way width, and county map books published by Valley Link Transmission at vltransmission.com (Joshua Falls–Yeate series, May 26, 2026; overview sheet June 23, 2026). Absence of a Virginia siting application established by query of the Virginia SCC DocketSearch case index, 33,522 cases, August 11, 2026.

[12] Interconnection.fyi (GridTracker), Virginia data center records, complete capture of all 931 records, August 11, 2026. Compiled from public interconnection-queue and permit filings across ISOs, RTOs, and non-ISO utilities. This is the same database underlying Garimella (2026); see the method note in § 7 on its stated undercount.

[13] Interconnection.fyi project record amazon-data-services-inc-iad-550-louisa-reb-52144c43 (Amazon Data Services Inc — IAD-550 Louisa REB; 230 Haley Drive, Mineral, ZIP 23117; grid operator Dominion Energy Virginia).

[14] Specifications for the Lake Anna Technology Campus (153 acres at Kentucky Springs Road and Haley Drive; approximately 1.7 million square feet; minimum 420 MW; seven standard and two specialty data centers; two substations) per the developer’s published materials and contemporaneous regional reporting, including DataCenterDynamics and Lake Anna Life.

[15] AWS Joint Permit Application disclosing \$11 billion of planned Louisa County investment; withdrawal of the Northeast Creek proposal reported July 25–28, 2026 (Virginia Mercury; 29News; The Central Virginian); January 2026 land purchase reported by WVVA.

[16] Virginia SCC, Division of Public Service Taxation, *Assessed Value of Property of Public Service Corporations for Local Taxation by Counties/Cities*, editions 2022PST–2025PST. Auditor of Public Accounts, *Comparative Report of Local Government Revenues and Expenditures*, FY2023–FY2025, Exhibit B. Use the standalone Division report rather than the SCC Annual Report; see the Appendix.

[17] *Valley Link Transmission Maryland, LLC*, 191 FERC ¶ 61,113 (May 13, 2025), Docket Nos. ER25-1633-000 and EL25-77-000 (formula rate accepted subject to refund; Abandoned Plant Incentive granted subject to a Federal Power Act section 205 prudence showing; CWIP in rate base granted; 60/40 hypothetical capital structure denied; section 206 proceeding instituted with hearing and settlement judge procedures). Chairman Christie and Commissioner Rosner each wrote separately.

[18] Orange County Board of Supervisors, four resolutions of opposition, April 14, 2026. Goochland County Resolution 6643, April 14, 2026 (\$250,000 from unassigned fund balance for advocacy). Louisa County Board of Supervisors resolution, March 16, 2026.

[19] Virginia SCC, Case Nos. PUR-2025-00042 (Technology Boulevard Lines and Bunker Substation) and PUR-2025-00014 (Nebula–Raines Line #2399 and Nebula Switching Station), applications and appendices.

[20] PJM OATT Attachment M-3, effective September 2018, adopted after FERC found the transmission owners' local planning process inconsistent with Order No. 890 (February 2018). Schedule 12(a)(iii) makes Supplemental Projects ineligible for regional cost responsibility assignment.

[21] Virginia SCC, Case No. PUR-2025-00014, application. See also Va. Code Ann. § 56-46.1(B) (notice by publication, written notice to each governing body, and first-class mail to affected landowners) and § 56-265.2 A 1 (certificate issued only after opportunity for hearing).

[22] Va. Code Ann. § 56-585.1:10 (business park electric infrastructure; recovery through a Commission-approved rate adjustment clause under § 56-585.1 A 4; construction approved either by expedited certificate under § 56-265.2 A 1 or under § 15.2-2232 and local zoning; need deemed satisfied on approval of the park by the Virginia Economic Development Partnership).

[23] Appalachian Power Company, 2022 Integrated Resource Plan, and 2023 triennial review filing. Virginia Economic Development Partnership site record for the Southern Virginia Multimodal Park at Roanoke River. The VEDP characterisation is reported and has not been independently verified against a primary VEDP document.

[24] Virginia SCC, Case No. PUE-2016-00037, Certificate No. E-X34.

[25] Virginia SCC, Case No. PUR-2025-00057 (Appalachian Power large load terms under Schedule L.P.S.; Final Order June 1, 2026; 100 MW threshold at a site, fourteen-year minimum term, 80 percent minimum billing demand, collateral at twenty-four times the maximum monthly non-fuel bill, forty-two-month exit notice), on appeal by REAL as of June 30, 2026.

[26] Louisa County Code ch. 86, §§ 86-330 through 86-334, adopted as LDR 2023-01 by the Board of Supervisors on April 3, 2023 by a 6–1 vote, Supervisor Gentry recorded against; drafted February 7, 2023 and revised March 10, 2023 after the Planning Commission meeting. Retrieved verbatim from louisacounty.gov/DocumentCenter/View/9955. See also Louisa County Code § 86-481(B) (2015 Telecommunications Ordinance), § 86-40(c)(2), and § 86-43(c); and Va. Code Ann. §§ 15.2-2232, 15.2-2204, 15.2-2285, 15.2-2286.

[27] Virginia SCC DocketSearch case index, 33,522 cases, queried August 11, 2026. Negative result: fourteen caption matches for Louisa, Lake Anna, North Anna, or Mineral, none a transmission certificate for the campus; and of forty-six Virginia Electric and Power transmission certificate cases established January 1, 2023 through August 2026, none in Louisa County.

[28] Louisa County Department of Economic Development, Technology Overlay District materials, louisacounty.gov/3244.

APPENDIX — TWO NOTES ON THE PUBLISHED RECORD

Neither is a correction to this volume. Both are facts about widely used public documents that other researchers will otherwise repeat.

The 25 percent electricity share figure is EPRI's, not JLARC's. JLARC's *Data Centers in Virginia* (Report 598, December 2024) publishes no percentage share of state electricity and cites no EIA data on the point. The figure belongs to EPRI, *Powering Intelligence* (May 2024), Table 2 at 13: Virginia 33,851,122 MWh per year, **25.59 percent** of total state electricity consumed, 2023. North Dakota at 15.42 percent, Table A1 at 29, is likewise EPRI's. The misattribution is common in secondary coverage and in this author's own earlier work, which was corrected across the deposited corpus in August 2026.

The SCC's 2025 Annual Report county table is corrupted. Every value from **Dinwiddie through Halifax** is shifted up one row, so each county name carries the following county's figures and Dinwiddie's row is lost entirely. The Annual Report prints Halifax at \$48,218,448 for TY2024, which is **Essex's** figure; Halifax's true value is \$1,277,680,137, a **27-fold error** affecting sixteen counties. **The standalone 2025PST.pdf from the Division of Public Service Taxation is unshifted and correct.** Anyone who has scraped this table from the Annual Report is working with bad data. Verified against the 2024 edition.

Deliverable Notes

Series. This is an analytical volume in the Virginia data center series; companion volumes and their concept DOIs are listed on the title page. County-level findings in those volumes remain authoritative for local detail, and this volume supplies the transmission and cost-allocation layer above them. It is the first volume in the series to address who carries the wires rather than who hosts the load. Four case studies bear on it directly and are cited in place: Louisa for the Technology Overlay District, Mecklenburg for the South Hill corridor, Henrico for the supplemental-project dockets, and Orange for the objection record.

Companion-list line owed to other volumes. Volumes revised after this deposit should cite it as:

Concentrated Benefit, Dispersed Burden: Who Carries Virginia's Data Center Transmission, v1.2 (August 2026), concept DOI 10.5281/zenodo.21895588 (cite-all-versions; v1.2 = 10.5281/zenodo.22017638).

Method. Prepared entirely from public sources. Primary documents: PJM's *Reliability Analysis Report* and TEAC Recommendations White Paper for the 2024 RTEP Window 1, including Attachment B; PJM OATT Schedule 12 and Attachment M-3; *Valley Link Transmission Maryland, LLC*, 191 FERC ¶ 61,113 (2025) and the pending complaint in FERC Docket EL26-63; twelve Virginia State Corporation Commission dockets and the DocketSearch case index; the cited provisions of the Code of Virginia; the SCC Division of Public Service Taxation assessed-value reports for tax years 2022 through 2025; the Auditor of Public Accounts *Comparative Report* for fiscal years 2023 through 2025; Louisa County Code Chapter 86 as adopted; and the working paper of Garimella (2026), which is engaged directly. Original measurement was performed on route geometry published by the developer, on transmission geometry from the Virginia DEQ clip of the HIFLD layer, and on parcel and overlay-district layers obtained from public county services. Every measurement in Part II states its method and can be reproduced from the cited inputs.

Review. Before release this volume was read against its primary sources by specialist reviewers in RTO cost allocation and FERC ratemaking, Virginia local government and land use law, spatial analysis, and applied econometrics. Every quantitative claim in Part II was independently re-computed. Where a claim did not survive a base rate, it was removed rather than qualified; § 9.1 records one such case in full, because the reasoning is more useful to a reader than the finding would have been. Section 19 states the limitations that no further retrieval will resolve, and Section 21 lists the work that gates specific sections.

Disclosure. Stated in full on the title page.

Status. Two items in Section 21 gate the fiscal chapter: an unresolved question about which line of the Auditor's Exhibit B carries SCC-assessed real estate of public service corporations, and an unreconciled revenue figure for Mecklenburg County. Neither affects Parts I, III, or IV. Section 10 should be read as provisional until both are closed.

Version. v1.2, August 2026. Corrects the statutory citation for the 2026 data center siting section and the tense of the Louisa overlay description; see the correction note on the

record. DOI: 10.5281/zenodo.22017638 (this version); 10.5281/zenodo.21895588 (all versions).

Corrections applied August 19, 2026, version 1.2. Two. First, the 2026 data center siting statute was cited throughout as § 15.2-2209.4. It is codified at § 15.2-2209.5; § 15.2-2209.4 is the minimum off-street parking statute. The enrolled text of HB 153 reads .4, which is the origin of the error, and the Code Commission codified the section at .5 because the parking statute had taken .4. Corrected in four places. Second, the description and Section 3 stated that data centers are permitted by right in Louisa County’s Technology Overlay District. That was true when the Lake Anna campus was entitled and is no longer true. Ordinance 2024-11, adopted August 5, 2024, retitled Louisa County Code § 86-333 from “Permitted uses—Generally” to “Permitted uses with the issuance of a conditional use permit,” converting every Technology Overlay District principal use to a conditional use permit, and removed roughly 2,000 acres. Both AWS campuses were grandfathered, so the conversion reached neither, and no measurement or conclusion in Part II is affected.

Corrections applied August 12, 2026, within the v1.1 record. Two. First, § 3 and endnote 3 characterized *Old Dominion Electric Cooperative v. FERC* as upholding the postage-stamp component of Schedule 12. The case did not do that; it vacated a FERC order that would have removed regional cost sharing from certain high-voltage projects. The corrected reading strengthens the section, and the underlying 2013 FERC finding is now cited directly. Second, § 3 now reports both the February 2025 allocation vector and the current one, and records PJM’s April 2026 reduction of the line from 156 miles to 115. That reduction confirms the measurement reported in § 6 and the reasoning by which § 6 rejected the 156-mile planning estimate. No finding, table, or conclusion in Parts II through IV is affected.

About the Author

Tommy N. Turner is an independent researcher and writer who documents the local-government and energy dimensions of the data center build-out in Virginia. His series of jurisdiction-level case studies covers the counties and the fall-line corridor where Virginia's data center decisions have been made, refused, or contested. This volume extends that work into the transmission system serving those decisions, and into the cost-allocation machinery that determines who pays for it. Like the rest of the series, it is assembled from primary records: regional transmission planning documents and tariff filings, State Corporation Commission and Federal Energy Regulatory Commission dockets, county ordinances and board actions, tax schedules, and published geospatial data. His work spans data center fiscal and environmental policy, local public finance, and the governance questions the two raise, and he writes opinion and analysis on Virginia public affairs for outlets including the *Richmond Times-Dispatch*, the *Virginia Mercury*, and *Cardinal News*. The case studies and analytical volumes are published as open, citable living editions, revised as the record moves. He works from Williamsburg and Christiansburg, Virginia.

Contact: tommy@gofast.pro · tommynturner.com · ORCID 0009-0005-7422-9881