
INDEPENDENT ANALYSIS

Concentrated Benefit, Dispersed Burden

Who Carries Virginia's Data Center
Transmission

An Analytical Volume in the Virginia Data Center Series

765 kV

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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

Updated through: October 10, 2026, for the items dated in the text

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

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An analytical volume, not a brief. Two items keep the fiscal chapter provisional and are flagged in place (§§ 10.3, 20).

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- *Governing the Demand Shock: Local Institutional Variation in Virginia's Data Center Expansion* — 10.5281/zenodo.20692386
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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

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ABSTRACT

Virginia's data centers consumed roughly a quarter of the Commonwealth's electricity in 2023, and PJM attributes a ten-gigawatt increase in its 2029 load forecast primarily to them, naming the Dominion zone and the eastern PJM footprint as the source of the resulting transmission need. Serving that load requires transmission. This report establishes, from primary sources and original measurement, that the tax benefit of a data center accrues to 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 stops at the zone boundary. Below it, recovery references cause only by rate class, and a Commission order of July 31, 2026 directs a filing that would charge a new or expanding large customer for the facilities connecting it to the network. No instrument examined here, at any level, 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, neither figure exceeds chance** — the random median is 88.5 and 70.8 percent respectively, placing the observed corridor at the 36th and 17th percentiles, inside the random range on both. 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 (§ 9.1). **No source located for this volume shows any of the cooperatives serving the corridor (Rappahannock, Central Virginia Electric, Southside, Mecklenburg Electric) taking part in the PJM process 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 meters of a single 230 kV circuit radiating from the North Anna Nuclear Power Station, and 18.9 percent of their area lies within that distance of a qualifying line, **against 7.2 percent of the county**. No conditional use permit and no state transmission certificate attended the 420 MW campus subsequently entitled there (§ 15.3), and no substantial-accord review of it is established on the record (§ 15.1). 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; the Louisa case

study in this series records both AWS campuses as 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.

Garimella (2026), the strongest contrary finding in the field, 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 zone-level allocation question is live before FERC in *Maryland Office of People’s Counsel v. PJM*, Docket EL26-63, undecided as of October 10, 2026. **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.

Facts dated after the August 11, 2026 evidence snapshot carry their dates in the sentence.

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, subordinate to the phrase preceding them. PJM's word is “primarily.”

3. What the planner charged

PJM allocates this project under a mandatory two-part formula, and reporting only the flow-traced half overstates the Dominion zone's responsibility by about 68 percent: 75.72 against 44.96.

Schedule 12(b)(i)(A) of PJM's Open Access Transmission Tariff provides that for **Regional Facilities**, which include AC facilities operating at or above 500 kV, fifty percent of costs “shall be assigned annually on a load-ratio share basis” and, for a project included “to address one or more reliability violations or to address operational adequacy and performance issues (collectively, ‘Reliability Project’),” fifty percent “in accordance with the distribution factor (‘DFAX’) analysis.” PJM's Attachment B lists Joshua Falls–Yeate among its “Reliability Project Multi-Zone Allocations” (note 4). 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 held the Commission to that finding. 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 has been enforced.[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>(sixteen 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. 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 announcement of the approval, posted July 16, 2026, gives its effect as a change and not as a total: the scope change “results in a cost decrease of \$259.84 million.”[4] 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.

3.1 What the two-part formula 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 July 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. The line’s mileage in that zone fell 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

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.

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 *Public Service Electric & Gas Co. v. FERC*, 989 F.3d 10 (D.C. Cir. 2021) (*PSE&G*) and *Consolidated Edison Co. of New York, Inc. v. FERC*, 45 F.4th 265 (D.C. Cir. 2022) (*Con Edison*) for the proposition that DFAX cannot capture non-flow-based needs.[5]

The docket has moved since the complaint. Its pleadings are identified here by their captions on the FERC docket sheet, and none has been read for this volume. An amended complaint was filed May 22, 2026, and the Virginia SCC moved to intervene on June 1. On July 27, 2026 PJM filed a motion to dismiss and answer; the Indicated PJM Transmission

Owners, Dominion among them, moved to dismiss and answered; ODEC answered in opposition to fast-track processing; NOVEC and the Data Center Coalition filed protests; and the Virginia Office of the Attorney General’s Division of Consumer Counsel answered. After this volume’s evidence snapshot the complainant sought leave on September 11 to file a response and answer out of time, and the Indicated Transmission Owners answered that filing on September 30. As of October 10, 2026 the docket sheet shows no Commission order on the complaint.[5]

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. Three mechanisms there reference cause, and a Commission order of July 31, 2026 directs a fourth:

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]

Retail, facility-specific, directed and not yet in force. In that next rider case the SCC’s Final Order of July 31, 2026 put Rider T1 into effect for service on and after September 1, 2026, on an amended 12-CP allocation with a minimum demand adjustment that, at the extremes, “decreases the residential class’s allocation factor by 2.84% and increases the GS-4 rate class’s allocation factor by 4.33%.” It then directed Dominion to file, within 90 days, amendments to its line extension policy “that would require a mandatory CIAC for defined types of transmission facilities.” The Commission limited that change “to apply prospectively and only to ‘direct connect’ transmission facilities—generally meaning substations and the lines connecting the customer to the bulk transmission system—that are needed to serve new or expanding large-load customers,” and stated the test in its own voice: “in these instances the large-load customer would be the but-for cause of the ‘direct connect’ transmission facilities.” The definition of “direct connect” is left for Dominion, with Staff, to propose. The filings go to a separate docket, PUR-2026-00131, opened August 25, 2026. As of October 10, 2026 nothing had been filed there; the line extension policy is due about October 29 and a status update on work with ODEC and the other distribution companies about November 28. No contribution in aid of construction is in force.[8]

For costs beyond the customer’s connection the order chose nothing. It listed three things the Commission “may” consider in the new docket: whether the line extension policy “could or should be extended to higher-order transmission costs”; “a blended approach” under which higher-order costs, “e.g., supplemental project costs not covered by the line

extension policy,” are “directly assigned to the GS-5 rate class”; or to “maintain the course.” The order does not name Valley Link or any 765 kV line. It records the three categories into which the parties sorted transmission cost: “direct connect” facilities; supplemental projects “caused by the interconnection of large-load customers”; and backbone development “from which the large-load customers—among others—would benefit.” The second is the subject of § 13 and the third is Joshua Falls–Yeat. Microsoft noticed an appeal to the Supreme Court of Virginia on August 28, 2026, and ODEC moved on October 1 to be named a party to the coordinated efforts the order directs. The SCC lists the case as under appeal.[8]

Intra-zonal recovery references cause through **class-level coincident demand**. GS-5 does not take effect until 2027 and does not reach customers below 25 MW. The July 2026 order, once a policy implementing it is filed and approved, adds but-for assignment for one category of cost: the facilities that connect a new or expanding large load to the network. By its terms it applies prospectively, and it leaves the network behind that connection to the options listed above, none of which it chose. The Piedmont Environmental Council, an advocacy organization, read the limit on August 10, 2026 as leaving already-approved projects allocated across all ratepayers, naming Culpeper’s Germanna Line and Prince William’s Daves Store Line.[8] **No instrument examined in this volume, at any level, references geographic burden.** Cost is traced to the door of the zone by flow and distributed inside it by class, and the Commission has directed that the customer’s own connection be added to that trace. 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” (Mecklenburg Electric Cooperative).[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.[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 of his own statements 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

He offers five mechanisms for the null, not one. The passage quoted above is from his section 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, for example, was partly driven by the state’s historically moderate electricity rates”), measurement limitations, and, in his section 7.2.3, the possibility that **“Regulatory Frameworks May Be Functioning as Intended.”**

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” (his section 5.1.3). Virginia’s Data Center Alley ZIPs and territories showed *slower* bill growth (his sections 5.2.4 and 5.3.4). His nowcast places Virginia among four states where bills edge down through 2026. And across his whole panel, ZIPs with no data centers project +5.8 percent bill growth to 2026 while ZIPs with six or more project +1.6 percent, a descriptive gradient he says “partly reflects which utilities those ZIPs sit in” (his section 6.4).

None of those measures corridor miles, easement acres, or locality revenue.

One of his results supports this report. His section 7.4 proposes this research program: an analysis of “whether these communities bear disproportionate environmental costs... and whether community benefit agreements and tax incentive packages adequately compensate.”

One caveat on the megawatt result above: Garimella himself says “mean reversion among the small number of large-MW ZIPs” “likely contributes to the negative sign,” and the capacity variable is **imputed for 61 percent of facilities.**

PART II — WHAT IS MEASURED

County mileages below were re-run against an independent TIGER 2023 county layer; the two layers agree within 0.05 miles per county, and the totals agree.

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%

PJM's February 2025 selection documents describe the line as 156 miles, roughly 69.3 miles in the AEP section (b4000.355) and roughly 86.7 miles in the Dominion section (b4000.356), and the 2025 SCC petition says "approximately 155 miles." Those were pre-routing planning estimates. On April 7, 2026 PJM 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 developer's current public description is "approximately 115-mile," and its June 2026 overview sheet is titled accordingly. **116.47 miles is the routed alignment, and every percentage in § 7 is a share of it.**

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.

The corridor occupies a cleared right of way **200.0 feet wide**, measured from the published polygon geometry and held on new easements. **516 parcel features, 500 distinct parcels**, intersect Route 1's right of way, with no public, utility, or institutional owners among them. At the snapshot the developer stated steel lattice structures of 135 to 165 feet; its project page, read October 10, 2026, says the structure type has not been determined and that typical structures are "approximately between 150' and 175' tall." The developer, Valley Link Transmission, is a joint venture of Dominion Energy, FirstEnergy, and Transource. Required in-service date is June 1, 2029. **As of August 2026 no Valley Link siting case appeared in the Virginia, West Virginia, or Maryland case indexes, and as of October 10, 2026 no case caption returned by the Virginia SCC docket index**

names Valley Link, Joshua Falls, or Yeat. The developer’s published schedule, read October 10, 2026, still showed an SCC filing in the third quarter of 2026.[11]

The withdrawn March 2026 alignment was never a single 330-mile route. 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. The same construct may affect the 79.54-mile Mecklenburg cluster figure in § 12, which is a union across multiple certificate cases and is labeled 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]

The source undercounts. It 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.” **The same undercount bounds Tier 3 below.** Zero records for Buckingham, Fluvanna, and Campbell on both fields is an absence of evidence in a source with a known miss rate. 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>	<i>43</i>	<i>53</i>
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 proposed campus from Avaio Digital Partners. On October 5, 2026, after the snapshot, Cardinal News reported construction expected to begin by the end of 2026 on a by-right site and, citing the county administrator, that 50 megawatts are available there without new infrastructure. The tier is measured as of August 11.[12]

Neither — 53.56 miles, 45.98 percent. Buckingham, Fluvanna, and Campbell return no operating or proposed record. Buckingham alone carries 26.94 percent of the route.

Insensitivity to route choice, which is expected. All three alternatives connect the same two substations through the same seven counties, plus 1.15 miles of Goochland on Route 2, 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.**

7.1 The benchmark, and what it does to the finding

These are numerators, and they need a 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

Neither figure exceeds chance. Both sit below the random median and inside the 5th–95th percentile range; the second sits toward the low end. The corridor’s burden is not concentrated away from data center counties beyond what a randomly placed line produces.

The corridor was not routed away from beneficiaries. Its endpoints were fixed by PJM’s flowgate analysis, and **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.

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. Miles here are cut on a second county layer and differ from § 6 by up to 0.05 miles at shared county lines, with the same total. Parcels are distinct parcels intersecting the developer's 200-foot right-of-way polygon, assigned by each parcel's county of record.

County	Miles	Miles %	ROW acres	Acres %	Parcels	Parcels %
Buckingham	31.42	27.0%	763	27.0%	85	17.0%
Orange	22.55	19.4%	547	19.3%	113	22.6%
Fluvanna	21.51	18.5%	522	18.5%	104	20.8%
Louisa	18.78	16.1%	456	16.1%	101	20.2%
Appomattox	18.19	15.6%	442	15.6%	80	16.0%
Culpeper	3.35	2.9%	81	2.9%	14	2.8%
Campbell	0.67	0.6%	16	0.6%	3	0.6%
Total	116.47		2,827		500	

Miles and acres track each other, as they must at constant width. **Parcels diverge, and the divergence is the finding.** Buckingham carries 27.0 percent of the route and 17.0 percent of the affected parcels. Orange carries 19.4 percent of the route and **22.6 percent** of the parcels. Parcel size varies, so the number of households facing an easement negotiation is distributed differently from the conductor.

On a parcel-weighted measure, Orange carries the heaviest burden of any county on the route. Fluvanna, Louisa and Appomattox also carry more of the parcels than of the miles. And Orange has no operating facility 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 kilometers of the Lake Anna campus or the Culpeper cluster.

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. Louisa County’s own Valley Link FAQ says the line “is not designed to deliver power to Louisa County” (§ 11), and § 15.4 shows the county sited load where wires already were so that it would not need new ones.

Counties with no operating facility carry **80.99 percent** of the route under county membership and **100 percent** under a ten-kilometer distance band. The point estimate is a coding choice; the range is the finding.

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. In July 2025 Amazon **withdrew** a proposal of 7.2 million square feet across roughly 1,353 acres north of the

Northeast Creek Reservoir (CUP2025-05) after sustained resident opposition. In January 2026 it purchased nearly 2,000 additional acres in the county.[15]

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. The location is the tracker’s address; the specifications rest on the developer’s published materials and press reports (note 14).

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 not a single-utility county: 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

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. Two facts are, and both concern the proceeding rather than utility geography:

No source located for this volume shows Rappahannock, Central Virginia Electric, Southside, or Mecklenburg Electric taking part in the PJM process that produced the allocation (§ 3). Rappahannock, Southside, and Mecklenburg Electric reach the Dominion zone through ODEC, their wholesale supplier, a further pass-through; Central Virginia Electric is listed in the zone in its own right (§ 4). ODEC and NOVEC have since filed in the zone-level complaint, EL26-63 (§ 3.3).

Appalachian Power, present in 8 of Campbell’s 12 ZCTAs, 4 each in Buckingham and Appomattox, and 1 in Fluvanna, is in the AEP zone — which carries a zero distribution factor on this project and pays only the load-ratio half. APCo customers 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]

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, 18 operational records	\$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 A single consistent base

A ratio of Mecklenburg's personal property revenue to Lunenburg's public service corporation revenue compares two jurisdictions, two tax bases, two assessing authorities, and two asset classes, and the same six rows yield ratios from 6:1 to 475:1 depending on the pairing chosen. The table below compares localities 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. 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 per corridor mile from the regulated-utility base that includes the line (§ 10.3).

The entire asymmetry sits in personal property, the tax base the servers create. 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 the point § 10.1 makes.

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

10.0.1 Concentration and volatility

Mecklenburg's personal property revenue is 320.2 percent of its real property revenue, and roughly 150 percent on the FY2025 figure in § 10.3. The ratio describes one county's internal revenue mix and says nothing about transit localities. What it shows is fiscal risk: **the host locality's benefit is large and concentrated in a rapidly depreciating asset class**, and on the FY2025 figure, not yet verified against the adopted budget (§ 10.3), it fell 53 percent in one year. That 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. 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 widens the gap between the host's personal property and the transit county's return.**

10.3 Three open items

One. The FY2025 halving. Mecklenburg's personal property revenue falls from \$84,063,674 in FY2024 to \$39,357,512 in FY2025 — consistent with computer-equipment depreciation rolling off and, if confirmed, the clearest available evidence for refresh-cycle dependency. It has not been verified 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. **The figure is unreconciled: assessed value times adopted rate has not been checked against the revenue line.** The county's own FY2027 budget puts business personal property at \$63.5 million, and the FY2025 figure above is \$39.4 million: three numbers that do not 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.** The Auditor of Public Accounts has not confirmed which line it is.

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**.

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 direct cash flow to the people who host the 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.

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]

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.

Commissioner Rosner wrote separately and 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.”

The developer has published county map books, held open houses, and opened public-comment portals ahead of any Virginia filing (§ 6).

The counties’ FERC filing located for this volume is a protest of the EIT tariff, not a merits challenge to the project; in it the counties **concede Virginia’s exclusive siting jurisdiction** and raise no cost-allocation argument. The project maps 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’s Board approved a resolution on March 16, 2026 that “opposes the project in Louisa County,” and the county’s Valley Link FAQ states 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**, 6.44 of its 11.06 miles. Computed in this project from the utility’s own route layers.[19]

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.

Eighteen of Mecklenburg's nineteen operational records are Microsoft; the exception is 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 and South Hill — what supplemental review is

Two 2025 certificate cases carry supplemental facilities built for data center load. PUR-2025-00042, in Henrico, serves two 300 MW data center developments in White Oak Technology Park off Technology Boulevard. PUR-2025-00014, in Mecklenburg, serves a Mecklenburg Electric Cooperative data center customer in the Boydton and South Hill load areas. Both include facilities 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.”[20]

Board non-approval is not an absence of review.

After FERC found the transmission owners’ local planning process violated Order No. 890, PJM added **Attachment M-3**, effective September 2018. Supplemental Projects are Attachment M-3 Projects under § (b)(2) and go to the **Subregional RTEP Committees**, which “shall be responsible for the review of Attachment M-3 Projects” and “shall have 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.[21]

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.

And PJM classification has no bearing on Virginia certification. § 56-46.1(B) requires, subject to the 138 kV election discussed in § 16, 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 gap is in 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.”[22]

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.[23]

The statute removes 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.

Appalachian Power used the program at the Southern Virginia Megasite at Berry Hill, in Pittsylvania County, recovering the cost through its transmission rate adjustment clause.[23] Its own IRP language marketed the result: the Berry Hill investment gives “Virginia a competitive edge,” and the 2023 triennial calls the sites “two of Virginia’s most attractive industrial sites.” Dominion territory has the same pattern at the Roanoke River park Brunswick co-owns (§ 10): VEDP’s site record, as reported and not independently verified here (note 24), states that the park “**was qualified by Dominion Power for data center projects.**”[24] 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 Berry Hill park out of Danville’s territory because “Danville states that it does not have the capacity available to serve the Park’s projected load.”[25]

Virginia’s two investor-owned utilities have taken different large-load paths. Dominion has rate class GS-5, approved November 25, 2025 and effective January 1, 2027. Appalachian Power has terms bolted onto Schedule L.P.S. with no separate class, approved about six months later. The Retail Energy Advancement League noticed an appeal on June 30, 2026; Appalachian Power’s revised tariff sheets had been filed on June 12 and were acknowledged by Staff on July 13, and nothing filed on the SCC docket through October 10, 2026 records a stay. **Any statewide claim about cost causation must say which utility.**[26]

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.[27]

§ 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, as adopted in 2023, made 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 was carved back to a conditional use permit. That is the text under which the Lake Anna campus was entitled. Ordinance 2024-11, adopted August 5, 2024, retitled § 86-333 "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 from the districts; the Louisa case study in this series records both AWS campuses as grandfathered.[27]

§ 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.

Beyond those two, the ordinance lets "utility rights-of-ways and easements" cross the TOD buffers (§ 86-332(d)(2)). Otherwise, 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.

15.1 The § 15.2-2232 question

§ 86-334 provides that utility accessory facilities "must be in substantial accord with the relevant provisions of the county comprehensive plan or applicable element thereof." It continues: **"Notwithstanding this provision, facilities that are by-right uses shall be deemed substantially in accord with the comprehensive plan."**

That looks like a local waiver of the state review under Va. Code § 15.2-2232. **Three things say otherwise.**

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 has a twin in the county's own code. Louisa's Telecommunications Ordinance, now codified at § 86-664(b), reads: "Wireless communication facilities (WCFs) are utility facilities subject to the provisions of article I, division VIII of this Code, and must be in substantial accord with the relevant provisions of the county comprehensive plan or

applicable element thereof.” It continues: **“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 the telecommunications ordinance it is a correct restatement of subsection G.

The defect is narrower. 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 sits, in § 86-334, in a district where its statutory warrant does not follow it.

The hearing 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 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.

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 on August 11, 2026. 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 meters 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 meters 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 meters of any transmission line of 115 kV or more — 15.5 percent within a kilometer, 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 meters 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 lost at 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

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-meter corner clip destroyed by a 5-meter lateral shift; district 1’s fails at 30 meters, inside the coarse tolerance. **Only district 2 is traversed.** What holds is what the ordinance 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. Every district satisfies the ordinance criterion on the same circuit.

15.2.1 The Valley Link intersection

Which route is measured decides the answer. Every Joshua Falls–Yeat route figure in this volume uses Route 1 unless stated. 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.**

One of the three published route alternatives passes directly through three of Louisa’s four technology overlay districts. Set that beside the county’s own Valley Link FAQ, which says the line “is not designed to deliver power to Louisa County” and, on another page, that “One of the proposed routes runs along Technology Overlay District (TOD).”

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.

The acreage cap does not appear in the Planning Commission draft. It was added between that draft and adoption, and 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. The draft exhibit’s provenance is unsound: its footer claims a March 10 revision that its body does not contain.

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.**[28]

§ 15.2-2285(A) and (C) required advertised public hearings before the planning commission and the governing body. Both were held, residents objected, and the vote was 6–1 with Supervisor Gentry against.[27]

Every proceeding that occurred was legislative and generic, held about five months before the campus’s first permit filing in September 2023, on a text amendment no citizen could then connect to a named 420 MW campus. **No project-specific hearing on the Lake Anna campus appears in the record.** A later AWS campus proposal, CUP2025-05, did go to a project-specific conditional use proceeding after Ordinance 2024-11, and AWS withdrew it in July 2025 (§ 8). 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 maximizing returns on public investment: technology businesses “represent **high revenue generation with little to no public service impact.**”[29]

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. *The transmission line itself is beyond the county’s reach: § 56-46.1(F) removes it from local zoning, and Louisa’s own § 86-*

72(c)(2) exempts “electrical transmission facilities complying with the provisions of Code of Virginia, § 56-265.2(A)(1)” from the county’s comprehensive-plan conformance review.

PART IV — STANDING

16. Routes around the state and local proceedings

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 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 that requires no hearing.

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. State certification still applies (§ 13).

Around the local proceeding

Four. By-right zoning with a deeming clause. Louisa’s Technology Overlay District, as adopted in 2023, removed 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 unfiled siting application (§ 6) is not a bypass: a proceeding that has not started is not a route around itself, and the line cannot be built without it. What it shows is **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 the localities’ one FERC filing located for this volume is a protest of a separate interconnection tariff (§ 11), not a filing in the proceeding that granted Valley Link rate treatment.

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

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

§ 15.2-2316.7 requires a solar or energy storage applicant to “meet, discuss, and negotiate a siting agreement” with the host locality, and provides that the agreement “may include” “financial compensation to the host locality to address capital needs” set out in the locality’s capital improvement plan, current fiscal budget, or fiscal fund balance policy. **It**

reaches solar and energy storage. As of October 10, 2026 it has not 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 gap is proportionality. Lunenburg's \$177,010 from every regulated utility asset in the county stands against \$84 million of personal property revenue, a figure § 10.3 holds as unreconciled, 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.

Two provisions from the same session reach transmission at the customer's connection. Subsection C of § 15.2-2209.5 requires the locality to require the utility serving a new high energy use facility to submit, "to the extent known and practicable," "a form describing (i) any new or existing substations that will be used to serve the HEUF and (ii) the anticipated transmission voltage required to serve the HEUF." It is a disclosure and assigns no cost. § 56-594.01:2, enacted as 2026 Acts chapters 21 and 22, lets an electric cooperative agree with a member of at least 20 MW that needs a point of interconnection at 230 kV or more that the member will build a dedicated substation "at the member's sole expense," and directs the Commission to "ensure that no costs associated with such substation are recovered from any ratepayer other than the member that entered an agreement to construct the substation." Neither assigns the cost of the network behind the substation.[30]

§ 15.2-2209.5 attaches "prior to any approval of a rezoning application, special exception, 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 would trigger none of it, the transmission form in subsection C included. **Virginia's newest data center siting statute passes over the case this report documents**, because its trigger is a discretionary application that by-right zoning eliminates.

The Governor's *Data Center Accountability Framework* of September 18, 2026 proposes, for the 2027 session, to "eliminate by-right approval and strengthen local control by requiring

local approval of any data center using more than 25 megawatts of power regardless of prior project approvals.” That is a proposal. As of October 10, 2026 the statute reads as quoted above.[30]

PART V — POSITION AND LIMITS

18. What this contributes, positioned against a live proceeding

Maryland Office of People's Counsel v. PJM, FERC Docket EL26-63-000, filed May 7, 2026 and undecided as of October 10, 2026 (§ 3.3), contests 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. The May 7 complaint in EL26-63 does not measure corridor miles against county fiscal returns; the later pleadings are known here by caption only (§ 3.3). The zone-level dispute asks which zones should pay. This report measures what happens to burden inside a zone once the paying is settled.

State officials and Congress have since moved on cost allocation by customer, by directive, plan, and bill. Executive Order 22 of September 18, 2026 directs the Office of the Chief Energy Officer to advocate with utilities, the SCC and PJM “for solutions that shield Virginia households from energy infrastructure costs driven by data center large loads.” The Commonwealth’s *2026 Virginia Energy Plan* recommends mechanisms “to allocate costs to data centers and other large power users in line with cost causation.” H.R. 9340, the Ratepayer Protection Act, passed the House 417 to 3 on September 16, 2026; in the Senate, cloture on the motion to proceed failed 57 to 43 on September 30. Each addresses who pays by customer, which is the layer above the one this volume measures.[31]

The method is portable to any RTO with a published allocation and any developer that publishes route geometry.

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. A Louisa map book dated September 29, 2026, whose file name describes a Louisa variation to the June routes, has not been measured. The routed length is settled only by a filed application.

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.

The burden measure rests on county boundaries, which is the same category of coarseness this report criticizes in Schedule 12. § 7.3 bands the route against the two operating campuses in corridor counties; a measure across every facility record is not computed (§ 20).

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 computed for three claims. § 7.1 benchmarks the corridor share against 2,000 random corridors, and the observed values fall below the random median, inside the random range. § 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.

Comparator selection has no stated rule. Six localities were chosen, two contradict the pattern, and the variable that explains them was introduced after the fact (§ 10.1).

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.

The design is cross-sectional. No outcome is measured before and after the line. The year-over-year comparisons in § 3.1 (the allocation vector) and § 10.3 (Mecklenburg's revenue) describe change over time; they are not designs around the project.

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."

No reproduction package exists. No repository and no deposited code accompany the report; its DOI covers the report, not a reproduction package.

20. Gaps in the Record

Each item below is an open documentary question with an address. The first two keep § 10 provisional.

The Auditor’s Exhibit B line definition (§ 10.3). Whether the Auditor of Public Accounts reports SCC-assessed real estate of public service corporations in the “Public Service Corporations” line or in the real property line.

The Mecklenburg revenue reconciliation (§ 10.3). Assessed value times adopted rate against the FY2024 personal property revenue line, and the FY2025 personal property drop against the county’s adopted budget.

A distance-banded burden measure across all facilities (§ 7.3). § 7.3 bands the route against the two operating campuses in corridor counties; a measure across every facility record needs facility coordinates at better than ZIP-centroid resolution.

The Lake Anna energization date and § 86-334 (§§ 8, 15.1). A primary record of first energization, and whether § 86-334 was invoked for any facility on the campus.

The Louisa acreage-cap chronology (§ 15.2.2). The advertised notice and both agenda packets for LDR 2023-01.

A multi-state ordinance scan (§ 19). Whether Louisa’s overlay is idiosyncratic or the leading edge.

Pending as of October 10, 2026. Dominion’s amended line extension policy and its definition of “direct connect” facilities, due in PUR-2026-00131 about October 29, 2026; the status update on work with ODEC and the other distribution companies, due about November 28; any Commission order in EL26-63; Microsoft’s petition in its appeal of the Rider T1 order; the status of the Retail Energy Advancement League’s appeal at the Supreme Court of Virginia; and a Valley Link certificate application, with the route it files.

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 10.

[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) (P 413, finding that high-voltage facilities have “significant regional benefits that accrue to all members of the PJM transmission system”; P 414, where “the PJM Transmission Owners state, and we agree,” that the postage-stamp method captures benefits “such as improved reliability, reduced congestion, reduced power losses, greater carrying capacity, reduced operating reserve requirements, and improved access to generation,” and stating that “there is a presumption that transmission system enhancements benefit all members of an integrated transmission system”). *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 1256–57 but was not the object of review). Schedule 12 text from PJM’s merged tariff, effective June 1, 2026 (Docket ER26-2736-000), read October 10, 2026. 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. The cost effect of the July 14, 2026 revision is from PJM Inside Lines, “PJM Board Approves Transmission Project Addition, Changes To Support Grid Reliability,” July 16, 2026.

[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 *Public Service Electric & Gas Co. v. FERC*, 989 F.3d 10 (D.C. Cir. 2021) (Artificial Island) and *Consolidated Edison Co. of New York, Inc. v. FERC*, 45 F.4th 265 (D.C. Cir. 2022), on remand, *Consolidated Edison Co. of New York, Inc. v. PJM Interconnection, L.L.C.*, 194 FERC ¶ 61,179 (Mar. 6, 2026) (Docket No. EL15-18-005). See also *Illinois Commerce Commission v. FERC*, 576 F.3d 470 (7th Cir. 2009). Docket activity after the complaint is from the FERC eLibrary docket sheet for EL26-63, read October 10, 2026 (entries, not pleadings).

[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). Virginia SCC, Case No. PUR-2026-00056, Final Order (July 31, 2026), at 7 (allocation factors; the three categories of transmission cost), 11 (mandatory CIAC), 12 and n. 52 (prospective, direct-connect only; but-for cause; definition to be proposed), 13 (options for higher-order costs), and 16 to 17 (ordering paragraphs); Case No. PUR-2026-00131, Order Establishing Docket (August 25, 2026); DocketSearch status and document indexes for both cases, read October 10, 2026, including Microsoft Corporation, Notice of Appeal (August 28, 2026), and Old Dominion Electric Cooperative’s motion of October 1, 2026. Piedmont Environmental Council, “State Corporation Commission Says Virginians Should Not Pay for Data Center Transmission Infrastructure,” August 10, 2026 (an advocacy organization’s statement).

[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.

[11] Route geometry, right-of-way width, and county map books published by Valley Link Transmission at vltransmission.com (Joshua Falls–Yeat 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; West Virginia PSC and Maryland PSC case searches run August 10, 2026 (Maryland through Case No. 9896) returned no Valley Link siting case, and their result pages were not saved. Caption search, October 10, 2026, of the 163 PUR-2026 cases the index returned through PUR-2026-00168 (established through October 9, 2026) for Valley Link, Joshua Falls, Yeat, 765, Transource and FirstEnergy: no match; five case numbers in that range (PUR-2026-00156, -00163, -00164, -00166, -00167) are not returned by the index, and a caption search does not find a case filed under another name. Developer’s project page, vltransmission.com/joshua-falls-to-yeat, read October 10, 2026 (schedule; structure heights; Louisa map book dated September 29, 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. Appomattox status after the snapshot: Emma Malinak, Cardinal News, October 5, 2026, on Project Hercules in Appomattox County.

[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, 2025 (Virginia Mercury; 29News; The Central Virginian), AWS’s withdrawal letter dated July 23, 2025 as reported; Louisa County neighborhood public notice for CUP2025-05 (about 1,353.19 acres, nine parcels); 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. Figures are from the standalone Division reports.

[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; Orange County, “Valley Link Information,” orangecountyva.gov/1243, read October 10, 2026 (the Orange County quotation). Goochland County Resolution 6643, April 14, 2026 (\$250,000 from unassigned fund balance for advocacy). Louisa County Board of Supervisors resolution, March 16, 2026, as reported on Louisa County, “Valley Link – Joshua Falls to Yeat Transmission Line Project FAQs,” louisacounty.gov/3539, read October 10, 2026, which is also the source of the Louisa quotations.

[19] Virginia SCC, Case Nos. PUR-2022-00167 (South Hill: Unity Switching Station and Tunstall–Unity lines; Final Order June 14, 2023), PUR-2021-00137 (Chase City–Cloud, Line #235 extension; February 22, 2022), PUR-2023-00141 (Clover–Chase City, Line #235 rebuild; February 21, 2024), PUR-2023-00088 (Finneywood–Jeffress; January 16, 2024), PUR-2022-00175 (Butler Farm–Clover and Butler Farm–Finneywood; May 31, 2023), and PUR-2025-00014 (Nebula; October 3, 2025). Retta Leigh Keil, written comment, February 8, 2023, and Donald L. Struminger, testimony, both PUR-2022-00167; Lauren and Brent Johnson, Respondents, PUR-2023-00088, as summarized in the Hearing Examiner’s report; Lunenburg County Board of Supervisors, comments through the DEQ environmental review in PUR-2022-00167. Geometry: Dominion’s GeoVoice public-comment portal for the Mecklenburg projects, geovoice.powereng.com/dominion/Mecklenburg/ (41 KML and KMZ layers, retrieved August 10, 2026), approved centerlines measured geodesically on

WGS84 against the portal's own county layer: Mecklenburg 61.95 miles, Charlotte 9.36, Lunenburg 6.44, Halifax 1.80. The SCC record states the South Hill line runs "approximately 6.4 miles through Lunenburg County" (PUR-2022-00167).

[20] Virginia SCC, Case Nos. PUR-2025-00042 (Technology Boulevard Lines, Bunker Substation and Saltwood Switching Station, Henrico County; Final Order February 19, 2026) and PUR-2025-00014 (Nebula–Raines Line #2399, Nebula Switching Station and Cloud–Nebula Line #2402, Mecklenburg County; Final Order October 3, 2025), applications, appendices and final orders.

[21] 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.

[22] 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).

[23] 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). Appalachian Power Company, Case Nos. PUR-2022-00014 (T-RAC; Final Order July 7, 2022), direct testimony of witness Neal, and PUR-2023-00061 (2023 T-RAC; Final Order July 24, 2023), on the Berry Hill pilot project.

[24] 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.

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

[26] 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); Retail Energy Advancement League, Notice of Appeal (June 30, 2026); revised tariff sheets filed June 12, 2026 and acknowledged by Staff July 13, 2026; DocketSearch document index read October 10, 2026.

[27] 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, the draft's footer giving a March 10, 2023 revision (§ 15.2.2). Retrieved verbatim from louisacounty.gov/DocumentCenter/View/9955. Ordinance 2024-11 (August 5, 2024), the 2023 hearing record and the grandfathering of both AWS campuses as documented in the Louisa case study in this series, concept DOI 10.5281/zenodo.20673455; the County Code's editor's note to § 86-333 records the 2024

retitling. See also Louisa County Code § 86-664(b) (Telecommunications Ordinance), § 86-72(c)(2), and § 86-43(c), current text read from Municode October 10, 2026, under which § 86-333 is now titled “Permitted uses with the issuance of a conditional use permit” and § 86-334 keeps the deeming sentence; and Va. Code Ann. §§ 15.2-2232, 15.2-2204, 15.2-2285, 15.2-2286.

[28] 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.

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

[30] Va. Code Ann. § 15.2-2209.5 (2026 Acts cc. 567, 568) and § 56-594.01:2 (2026 Acts cc. 21, 22), read on the Legislative Information System, October 10, 2026. Office of the Governor, *Virginia’s Data Center Accountability Framework* (September 18, 2026), at 4.

[31] Executive Order No. 22 (2026), § I.D.1, at 6. Virginia Energy, *2026 Virginia Energy Plan* (October 2026), at 114 (Strategy 2). H.R. 9340, 119th Cong., Ratepayer Protection Act, actions of September 16 and September 30, 2026, congress.gov, read October 10, 2026.

APPENDIX — TWO NOTES ON THE PUBLISHED RECORD

Each is a fact about a widely used public document 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.

Two state documents describe the July 31, 2026 Rider T1 order as a requirement already in place. The *2026 Virginia Energy Plan* states that “in August 2026, the SCC ruled that costs for transmission developments built exclusively to serve large load customers must be allocated directly to those customers” (at 64), and its note 137 (at 149) cites the July 31 Final Order. The Governor's *Data Center Accountability Framework* of September 18, 2026 lists among actions taken that the Governor “successfully urged the SCC to require data centers to pay for transmission infrastructure built exclusively for their operations” (at 10). The order directed Dominion to file a line extension policy that would require a contribution for “direct connect” facilities, prospectively, and left the definition of those facilities to that filing (§ 4). As of October 10, 2026 nothing had been filed in the docket opened to receive it, and no such contribution is in force.

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: Louisa for the Technology Overlay District, Mecklenburg for the South Hill corridor, Henrico for the Technology Boulevard docket, and Orange for the objection record.

Companion-list line. Companion volumes cite this one as:

Concentrated Benefit, Dispersed Burden: Who Carries Virginia's Data Center Transmission, v1.3 (October 2026), DOI 10.5281/zenodo.21895588.

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 FERC docket sheet in EL26-63; Virginia State Corporation Commission dockets and the DocketSearch case index, including the July 31, 2026 Final Order in PUR-2026-00056; the cited provisions of the Code of Virginia; Executive Order 22, the Governor's Data Center Accountability Framework and the 2026 Virginia Energy Plan; 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. Every quantitative claim in Part II was re-computed from its stated inputs, and three were tested against a base rate (§ 19.1).

Disclosure. Stated in full on the title page.

Status. The first two items in § 20 keep Section 10 and the proportionality comparison in § 17 provisional. They do not affect Parts I or III.

Version. 1.3, October 2026. Evidence snapshot August 11, 2026; later items carry their dates in the text, through October 10, 2026. DOI: 10.5281/zenodo.21895588.

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.

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