BEFORE THE
STATE CORPORATION COMMISSION
OF THE COMMONWEALTH OF VIRGINIA

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COMMONWEALTH OF VIRGINIA, *ex rel.*	)	
	)	
STATE CORPORATION COMMISSION	)	
	)	**CASE NO. PUR-2024-00144**
***Ex parte*: Electric Utilities and Load Growth**	)	
	)	

COMMENTS OF NRG ENERGY

January 17, 2025

Travis Kavulla
Vice President, Regulatory Affairs
1825 K. St. NW, Ste. 1208
Washington, D.C. 20006
Travis.Kavulla@nrg.com

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COMMENTS OF NRG ENERGY

Virginia may sit at the heart of the next revolution in computing technology, with a strategic location at the nexus of fiber interconnections that make it one of the most attractive jurisdiction anywhere in the world for the location of hyperscale data centers. These data centers are critical to driving the development and use of Artificial Intelligence ("AI") applications, in addition to more typical uses for the streaming and storage of cloud-based digital information. Data centers use an enormous amount of electrical energy, and the forecast rate of growth in demand from them has caused the regional market operator's already-aggressive load forecast for 2024 to be leapfrogged by its forthcoming 2025 load forecast, as seen in Figure 1. The massive change in two forecasts conducted within a year of one another underscores both the scale and uncertainty of what lies ahead, even as data-center customers, policymakers, utilities, and others are clamoring for investments to be made to serve these prospective large loads.

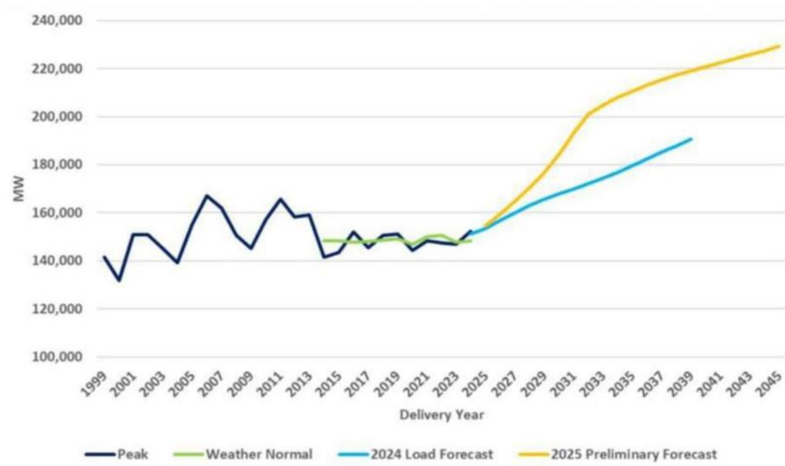

Figure 1: PJM Historical System Load and 2024 / 2025 Forecasts[1]

This is a moment of great risk, and potential reward, for anyone making investments to serve the data-center industry. Like previous revolutions in novel, high fixed-cost industries, much is uncertain about the foretold revolution in data processing and AI. The degree to which forecasted load growth will actually occur as a result of efficiency improvements in data-processing; the

[1] *Public Comments of PJM Interconnection L.L.C.*, submitted in Case No. PUR-2024-00144, attached to a Memorandum to Document Control (Dec. 26, 2024).

particular commercial actors who will dominate the space and where in the world they will do business; whether the first phase of AI development will flare and flame out like the 1990s dot-com bubble before being supplanted by a more sustainable growth: All of these are questions that have been asked about this revolution.[2] Each of these considerations weigh heavily on the amount of electricity demand that will emerge from the sector, which poses a corresponding risk to the energy businesses hoping to serve the prospective demand. When that energy business is a regulated utility, that risk often resides with the utility's other customers. This market cannot be derisked, but the risks inherent in this business can be placed on the parties in a best position to manage it. It is incumbent upon this Commission, both for the fulfillment of its own responsibilities to the people of Virginia and also as a national example, to properly mitigate these risks while not standing in the way of advancements in computing technology. The Commission can best accomplish this dual mission by relying upon Virginia's competitive market for electricity supply to power data-center loads.

By contrast, allowing Virginia's incumbent utilities to serve new large loads through their regulated rate base poses inherent, substantial, and undue risks to all other Virginia customers. NRG has quantified just one of these risks, that of stranded costs associated with investments in generation rate base to accommodate the demand forecasts of the Commonwealth's largest utility. Virginia Electric and Power Company ("Dominion") has a historical error rate of approximately twelve percent associated with its load forecasting, based on a comparison between its integrated resource plan ("IRP") forecasts and the load that actually materialized.[3] If one applies this rate of error to Dominion's 2024 load forecast, which includes its latest projections of data-center load growth, it would result in stranded assets on the energy-supply

[2] On the energy efficiency of these loads, for example, one comprehensive industry report observes the following: "Continual efficiency improvement cannot be emphasized enough. For example, NVIDIA Corp. has started focusing on energy efficiency…Training the latest ultra-large AI models using 2,000 Blackwell GPUs would use 4 MW of power over 90 days of training, compared with 8,000 older GPUs for the same period, which would consume 15 MW of power." *See* Aneesh Prabhu et al. *Data Centers: Surging Demand Will Benefit and Test the U.S. Power Sector*, S&P GLOBAL (Oct. 22, 2024), at 18, available at https://www.spglobal.com/ratings/en/research/articles/241022-data-centers-surging-demand-will-benefit-and-test-the-u-s-power-sector-13280625.

[3] This analysis uses the mid-term, Years 4 to 6 out from the initial forecast, because this represents the first period in which capital investments made in response to the forecast would begin to materialize. Like other elements of NRG's analysis, this represents a conservative approach, whereas further outer-year forecasts would incorporate a greater degree of compounding error. The full analysis is described in the body of these comments at Section 2.

side of its business alone of nearly $4 billion, based on the least-expensive capacity investment in Dominion's latest IRP. These $4 billion in stranded costs would be the outcome if Dominion simply performed in line with its historical performance, notwithstanding the heightened risk and uncertainty of the current moment. Assuming these costs were recovered from ratepayers (which they presumably would be, absent the protections these comments describe later), then every residential customer would be on the hook for $750 for the cost shift that results from the risk of Dominion's forecast error being transferred from the company to its regulated customers. Put simply, the Commission is facing a status quo that is full of risk, and the situation requires the Commission to take active steps to mitigate the risk in the public interest.

There are ways to contain if not altogether eliminate the cost- and risk-shift from regulated utilities to their ratepayers in this situation. Specifically, a comprehensive reform of utilities' tariffs that are used to serve large data centers should be undertaken.[4] To the extent the services that regulated utilities offer are subject to competition by other providers in Virginia's restructured market, then *only* a market-based rate should be available as a regulated service. Only a singular regulated tariff whose exclusive feature is its market-based nature, without any attachment to utility rate base investments, can fully insulate other customers from the substantial cost- and risk-shifting that characterizes the present environment. The largest Virginia electric utility already offers such a rate,[5] but it exists alongside a traditional "cost-of-service" tariff and at the option of eligible customers, who one may presume will act rationally in their economic self-interest by selecting the most attractive rate. As such, they will select Dominion's "market-based rate" when it is lower than Dominion's "cost of service" rate, and *vice versa*; but mathematically this leaves Dominion's other customers, who lack this choice, either to pay for a greater share of uneconomic rate base or, alternatively, to lose an opportunity cost from selling the rate base that they hitherto had funded into the market. The most obvious remedy to this situation is to not allow the regulated utility to act as a sop for this gamesmanship, and instead

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[4] NRG takes no position on whether data centers should be served in a separate class of service and believes this is largely a terminological distraction. To that point, Dominion's market-based rate tariff, *infra* n. 5, exists alongside and does not create a separate rate class. The Commission technical conference's lengthy discussion of the classification of service is relevant to NRG's recommendations only to the extent that a separate tariff might be delineated to only the very largest loads that were to come onto the system in view of their out-of-scale risks and costs. Even so, Dominion's existing market-base rate tariff already creates a size distinction that does not exist in the underlying customer classifications.
[5] The market-based rates tariff, known as Rider MBR, was approved in Case No. PUR-2018-00192 (Jan. 14, 2020).

set an expectation that data centers be served under a regulated market-based rate or through a competitive bilateral relationship where no recourse to other regulated ratepayers exists.

If electric utilities wish to provide something more than a market-based rate to very large loads as an additional, competitive service, they should compete with the rest of the retailers and developers who serve customers with no guaranteed rate of return by creating a truly ring-fenced affiliate that has no ability to finance projects using the regulated utility's creditworthiness and no opportunity to pass through any future stranded costs back onto to regulated customers. Indeed, because "this unprecedented size for data centers poses some new risks for liquidity and cost recovery," at least one electric utility in Virginia already has started an affiliate company to handle this service to data-center loads.[6]

There are three concrete steps the Commission should take to ensure that growth in the data-center industry is supported, while ensuring the risks inherent in providing energy-supply services to the data-center industry, and any ultimate stranded costs, are not visited upon the legacy base of captive ratepayers:

- A policy statement declaring a preference that energy supply for data centers will be sourced from the competitive market, from suppliers that have no ability to charge other ratepayers for the risk and costs of supplying those customers;
- Tariff reform to create an exclusively market-based regulated rate for very large loads, to ensure the legal requirement for such regulated utilities is satisfied[7]; and
- Corporate separation and ring-fencing to permit affiliates of electric utilities, should they wish to supply load on other terms on a competitive basis.

These measures would also ensure that the creditworthiness of this captive base of customers is not being relied upon to subsidize utilities' competition for data-center loads.

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[6] Rappahannock Electric Cooperative's Mr. Hewa, speaking to its affiliate and sub-affiliates known as Hyperscale Energy Services. Tr. 48:6-7. On November 19, 2024, Rappahannock Electric Cooperative petitioned the Commission for approval of this affiliate structure in order to "facilitate Rappahannock's provision of power supply to exceptionally-sized customers." *Application of Rappahannock Electric Cooperative, Hyperscale Energy Services, LLC, Hyperscale Energy 1, LLC, and Hyperscale Energy 2, LLC for Approval of Affiliate Agreements and for Future, Limited Exemptions Pursuant to Chapter 4 of Title 56 of the Code of Virginia*, Case No. PUR-2024-00213, Application at 3 (Nov. 19, 2024). The Commission has not yet ruled on this Petition, but has until February 17, 2025, to do so. Order Extending Time for Review at 2 (Jan. 9, 2025).

[7] A utility must furnish "reasonably adequate" service upon demand to its customers. Va. Code § 56-234 A.

In further support of its recommendations, NRG relies upon an independent analysis we have asked Scott Hempling to undertake, attached hereto as **Exhibit A**. Mr. Hempling is a world-renowned expert in utility regulation, and has advised numerous regulatory commissions, consumer advocates, and other parties over the course of his career. He is also a lecturer on these topics at Georgetown University Law Center, the former executive director of the National Regulatory Research Institute, and a former administrative law judge of the Federal Energy Regulatory Commission. Mr. Hempling reviewed Dominion's current tariffs to serve data-center customers, the so-called ringfencing practices that Dominion uses for certain elective tariffs, and he opines on whether these are aligned to the public interest generally and, more specifically, protect legacy Virginia customers from the risks of serving or seeking to serve data-center customers. He concludes that the status quo is not aligned to the public interest that the Commission is charged to uphold. NRG also asked Mr. Hempling to propose conceptual recommendations for how very large customers may be served in a way that would simultaneously assure them avenues of energy supply while adequately protecting other customers from these risks. Those recommendations align with the two solutions highlighted above. Mr. Hempling's white paper is filed with NRG's comments in this proceeding and reflects his decades of experience in the field of utility regulation.[8]

Finally, as a fourth recommendation unrelated to but aligned with the philosophy behind our supply-related proposals, NRG has contemplated how to square the data-center moment with the utility's role in the provision of interconnection, distribution, and transmission services. Here, we believe the Commission should draw upon the experience of other regulated industries and contemplate a Network Open Season to right-size and directly allocate grid costs to new very large loads.

1. SUMMARY OF COMMENTS

NRG Energy, Inc. ("NRG") is a Fortune 500 company, which supplies electricity, gas, and related services to nearly 8 million customers across North America. Through our subsidiaries,

[8] Scott Hempling, *Data Centers in Competitive Retail Electricity Markets: Protecting Nonshopping Customers from Stranded Cost, and Compensating Them for the Value They Provide, Requires Tariff Revision and Corporate Separation* (Jan. 2025), attached hereto as **Exhibit A**.

we are licensed by this Commission to serve both electric and gas customers in the Commonwealth.

In the following comments, NRG focuses on three actionable measures the Commission should take to mitigate the risks of making investments to accommodate data-center load growth, while accommodating the growth of that industry.

In Section 2, we describe and quantify the risks associated with permitting regulated utilities to make generation investments in their rate base to the extent such investments are predicated on their estimates of data-center demand. We then highlight the market for competitive retail supply that exists in Virginia's restructured but hybrid landscape, which includes a competitive model for energy supply through Commission-licensed Competitive Service Providers ("CSPs"). Virtually without exception, any new data center may select a CSP from which to take service. CSPs have no access to a captive base of customers to whose prices and from whose creditworthiness they may make a subsidized offer to new data centers. Any new data center that is provided energy supply by a CSP would have a bilateral relationship that, between those two parties, fully contains and allocates the costs and risks that otherwise would readily spread throughout the utility's balance sheet to other customers. The competitive-retail model accordingly works well to facilitate customer choice while mitigating the risks to other customers associated with energy-supply service to very large loads like data centers. The role of CSPs is an answer for the current moment of data-center growth. The Commission should issue a policy statement indicating its preference that hyperscale loads be served by CSPs to quarantine supply-related risks to other customers.

In Section 3, we consider that Virginia law allows for the opportunity for these data-center loads to be served by the incumbent, regulated utility, it is necessary to reevaluate whether existing utility practices in serving such loads adequately protect other customers. They do not. As described above, if Dominion plans and invests to serve prospective data centers through its regulated rate base, substantial and unmitigated risks will exist, and legacy customers will inevitably cross-subsidize this undertaking. The only way in which to ensure no cost shift will exist in serving these new very large customers by regulated utilities is to have regulated rates that reflect a pass-through of market-based prices for energy supply to these customers through a regulated tariff. This derisked, market-based tariff is fully sufficient to fulfill the utility's legal obligation to offer reasonably adequate service to these customers.

Since data centers today may enter into alternative supply arrangements with CSPs that contain the manifold risks of serving these loads in a contractual relationship between two non-regulated parties, with no recourse to other customers, the Commission should feel sufficiently comfortable that any longer-term, fixed-cost arrangements to serve such customers can be handled through this competitive marketplace. As Mr. Hempling describes in his white paper on this subject, a regulated utility wishing to compete on competitive terms for these loads should be able to do so—but only through a truly ringfenced, separate corporation that has no recourse to the captive base of ratepayers the regulated utility serves at Commission-regulated prices.[9]

Finally, in Section 4, we note that the role of regulated utilities is both unavoidable and important in terms of receiving interconnection and transmission and distribution services from incumbent utilities. It is noteworthy that transmission costs are part of the CSP's cost structure, when a customer selects a CSP, and that the transmission rates established by the Federal Energy Regulatory Commission ("FERC") apply to that customer in the same manner, whether the customer is served by a CSP or by the incumbent electric utility. For the incremental cost necessary to serve very large loads, NRG proposes the Commission consider a Network Open Season ("NOS") model that directly allocates the incremental costs of interconnection, distribution, and transmission expansion to customers requesting access to the grid. This direct allocation of cost could be refundable to the customer over a period of 7-10 years if the customer continues to pay the tariffed transmission rate applicable to its class of service.

NOSes have a long history of use in the development of natural-gas pipelines, and while more limited, it also has certain precursors in the power sector as well. The right to interconnection that a successful bidder into a NOS obtains can be used, if regulation allows for it, as a property right in a tradeable secondary market. The workings of such a market can help to eliminate duplicative interconnection requests and thus potential over-forecasts of load. In adopting this reform, the Commission would ensure that the potential exit of large-load customers does not negatively shift stranded transmission costs to customers who did not cause these costs in the first instance, while at the same time creating a market-based check on demand projections that currently are left to a significant degree to administrative guesswork by the utility and the regional transmission organization.

[9] *Id*. at 15-17.

2. DATA CENTERS SHOULD BE COMPETITIVELY SUPPLIED ENERGY IN ORDER TO MINIMIZE THE POTENTIAL FOR COST- AND RISK-SHIFTING

Unfortunately, in its technical conference on the above-captioned matter, the Commission neglected to invite any of the Competitive Service Providers ("CSPs") who, collectively, serve 36 percent of all industrial demand in the Dominion Energy service territory in Virginia, including data centers.[10] Large users of electricity, with a demand of five megawatts and above (*i.e.*, most data centers), have a statutory right to choose the supplier of their energy from among the Commission's licensed CSPs.[11] They also may receive that service from the incumbent utility. Protections exist within the law to ensure that customers who switch between a CSP and the utility are charged, when they switch to the latter without providing a minimum five-year notice, a market-based rate that reflects "the actual expenses of procuring such electric energy from the market"—rather than an average that may reflect a subsidy.[12] In this way, Virginia law protects utilities' non-shopping customers, including all residential customers, who take service through the regulated cost-of-service rates that electric utilities offer.

However, when large customers buy energy supply directly from the incumbent utility, without shopping in the first instance, they are entitled to be served under a tariffed rate applicable to the customer's class of service, offered by the incumbent electric utility in the applicable service territory. The particulars of the tariff are a matter of the Commission's judgment, applying its usual canons that any rate must be just, reasonable, and not unduly

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[10] U.S. Energy Information Administration, Form 861 (2023 data series, released Oct. 2024).
[11] Va. Code § 56-577 A 3. Nearly all 5-MW+ loads have the right to shop with a CSP provided by subsection A 3, but the law is awkwardly drafted to create what is sometimes called the "doughnut effect" in Virginia shopping opportunities, whereby a customer has an unrestricted right to shop if it is above 90MWs in size, or above 5MWs in size *but not* more than one (1) percent of the electric utility's peak load during the most recent calendar year. It is unclear how many data centers, in the process of scaling up to the typically larger sizes one sees in the industry, would at least temporarily fall within the doughnut hole. The "donut effect" is more likely to come into play in cooperative service territories, such as Rappahannock Electric Cooperative, which have smaller peak loads than Dominion but which are seeing increasing data-center activity. For example, Rappahannock has stated that its peak load is approximately 1,100 MW. This means that a customer can contract with a CSP upon establishing a demand between 5 and 11 MW in a prior calendar year. However, the customer would lose it shopping eligibility once it exceeds 11 MW and would remain ineligible to take service from a CSP until it exceeds 90 MW. That's a 79 MW donut hole that, as Rappahannock states, "would prove untenable for many customers." *Petition of Rappahannock Elec. Cooperative, et al., for a Declaratory Judgment and, if Necessary, a Partial Waiver of the Requirements of 20 VAC 5-312-20 E*, Case No. PUR-2024-00015, Petition at 10-11 (Jan. 23, 2024).
[12] *Id.*

discriminatory or preferential.[13] But it is important to understand how, in the first instance, Virginia's largest utility, Dominion, has described its plans to serve those customers, as well as future demand growth, and also to consider the incentives that face this regulated utility.

A. The incentives under the existing regulatory model for Virginia investor-owned utilities create unnecessary risks for their customers

In the integrated resource planning ("IRP") process it undertakes, Dominion suggested a preferred portfolio in its 2023 plan that would have it build in the next 15 years nearly 20,000 MWs of assets and incorporate into its regulated books another 25,000 MWs of long-term power purchase agreements and "capacity purchase[s]" of an undefined contract term.[14]

Figure 2.2.2: Alternative Plan B (Nameplate MW)

Year	Solar PPA	Solar COS	Solar DER	Wind	Storage	Natural Gas-Fired	Nuclear	Capacity Purchases	Retirements
2024	-	-	-	-	-	-	-	1,100	-
2025	-	-	-	-	-	-	-	1,100	-
2026	-	-	-	-	-	-	-	1,600	-
2027	210	390	15	-	-	-	-	700	-
2028	231	429	30	260	90	970	-	200	-
2029	231	429	45	-	120	-	-	600	-
2030	252	468	45	-	150	-	-	900	-
2031	315	585	111	60	180	-	-	1,300	-
2032	315	585	111	-	180	-	-	1,800	-
2033	315	585	111	2,600	240	-	-	1,600	-
2034	315	585	111	60	240	-	268	1,900	-
2035	315	585	114	-	270	485	-	2,100	-
2036	315	585	114	-	300	485	268	2,100	-
2037	315	585	114	60	300	485	-	2,300	-
2038	315	585	114	-	300	485	268	2,600	-
15-Year Subtotal	**3,444**	**6,396**	**1,035**	**3,040**	**2,370**	**2,910**	**804**	**21,900**	**-**
2039	315	585	-	-	180	-	-	3,500	-
2040	315	585	-	60	300	-	268	3,900	-
2041	315	585	-	-	300	-	-	4,400	-
2042	315	585	-	-	240	-	268	4,400	-
2043	315	585	-	60	300	-	-	4,400	-
2044	315	585	-	-	300	-	268	4,200	-
2045	315	585	-	-	300	-	-	4,300	-
2046	315	585	-	60	300	-	-	4,400	-
2047	315	585	-	-	300	-	-	4,400	-
2048	315	585	-	-	300	-	-	4,600	-
25-Year Total	**6,594**	**12,246**	**1,035**	**3,220**	**5,190**	**2,910**	**1,608**	**64,400**	**-**

Figure 2: Dominion Projected Rate Base and Power/Capacity Purchases

[13] Va. Code § 56-234 A, B.

[14] *Commonwealth of Virgina, ex rel. State Corporation in re: Virginia Elec. & Power Co.'s Integrated Resource Plan Filing Pursuant to Va. Code § 56-579 et seq.*, Case No. PUR-2023-00066, IRP Filing at 26 (May 1, 2023).

As seen above in Figure 2, Dominion's portfolio is a composite of rate-based assets, with a cost-of-service revenue requirement that includes a return to Dominion shareholders, and market purchases from third parties that are passed through to consumers at Dominion's cost. Yet, as noted in the introduction to these comments and in Section 3, not all customers take a regulated service that represents this composite. Dominion simultaneously offers two different and substitutable regulated tariffs to certain customers, whereby those customers may elect the best deal between the fully cost-of-service regulated rate (the composite of rate base and market purchases) and a purely market-based rate tariff. To the degree certain customers select a purely market-based rate when the economics of the alternative cost-of-service rate become unattractive due to that portion of it that is costed based on utility rate-base investments, then their decision will create a feedback loop that, ironically, reweighs the composite even more heavily toward rate-base investments for customers who do not have that choice. Accordingly, the IRP, as properly understood, is a proposal to build rate-base generation that may or may not be attractive relative to market alternatives.

This would not necessarily be a problem if the risk of this business model resided with the regulated utility's management and shareholders, and if they consequently faced incentives aligned with managing this risk. But they do not. Indeed, they face the opposite incentives. Investor-owned utilities' incentives weigh heavily toward making investments in its rate base, because it is only through these investments (and not market purchases) that Dominion earns a return. As NRG has noted to Virginia Energy's ongoing stakeholder process concerning performance-based regulation in the Commonwealth, Virginia is perhaps the most profligate jurisdiction when it comes to employing adjustment clauses and, between these and its fuel factor, Dominion's regulated utility has become merely a pass-through entity for the vast majority of generation-related costs that it would otherwise have some responsibility, "skin in the game," and profit opportunities in managing.[15] Denuded of the incentives that would drive an ordinary business to economize across the broad base of its costs, Virginia regulation has left

[15]Comments of Travis Kavulla, NRG Energy, submitted during the Initial Comment Period to Virginia Energy for the Stakeholder Process on Performance-Based Regulation and Alternative Regulatory Tools, pursuant to House Joint Resolution No. 30 and Senate Joint Resolution No. 47, available at: https://www.nrg.com/assets/documents/energy-policy/comments_of_travis_kavulla_nrg_on_performance_based_regulation_virginia_dept_of_energy_120224.pdf.

Dominion to have highly concentrated incentives toward further investment in rate base, and few other financial incentives besides. Indeed, Dominion has portrayed the Virginia jurisdiction to investors as being a win-win of having 75% of its costs be "rider-eligible" for near automatic pass-through, even while having a 9.0% "utility rate base compound average rate of growth" in the five-year period between 2024 and 2028.[16] These claims have led analysts to tell a story of Dominion as a "a straightforward and attractive Southeastern rate base and sales-growth story."[17]

It is consequently little surprise that Dominion's approach to serving data-center loads is more geared toward accretion within its regulated rate base, when compared to Virginia's electric cooperatives, which do not face the same profit motivations and which have sought to confine spending they make in relation to serving data-center loads into an affiliate separate from their ordinary, regulated-utility business.[18] The Commission should be highly alert to the likelihood that investor-owned utilities' motivations to pursue rate-base growth through the major source of its demand growth—data centers—comes at a cost- and risk-shift toward other customers.

As the recent report by the Joint Legislative Audit and Review Commission ("JLARC") noted, incremental supply to serve incremental demand will impose costs that, through the typical regulated-utility ratemaking processes, all customers pay for—not merely the new demand. As the JLARC report puts it, "A large amount of new generation and transmission would need to be built that would not otherwise be built, creating fixed costs that utilities would recover over the next several decades. A portion of these costs would be paid by non-data center customers."[19] This is not the case in an alternative regulatory model, like one focused on CSPs or that which electric cooperatives like Rappahannock Electric Cooperative are championing, where incremental demand is naturally and fully exposed to the incremental cost of providing it

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[16] In Dominion's "Investor Day" deck where it advertises this claim, Dominion compares Virginia favorably to the South Carolina regulatory environment, where its decisions face both greater exposure to ordinary ratemaking practices, not adjustment clauses and riders, and also feature a lower level of "rate base growth." Dominion, "Business Review Investor Meeting" (March 1, 2024), at 23 available at: https://s2.q4cdn.com/510812146/files/doc_downloads/2024/07/2024-03-01-business-review-investor-slides-vTCI.pdf.

[17] Guggenheim, "'Southern-esque' Re-Rating in Time? New Dominion, New Southeast Premium Name? Strategic Review Conclusion Marks a Turning Point" (March 4, 2024)

[18] *See supra* n. 6.

[19] Joint Legislative Audit and Review Commission, *Data Centers in Virginia* at 43(Dec. 9, 2024) ("JLARC Report"), available at: https://jlarc.virginia.gov/pdfs/reports/Rpt598-2.pdf.

service in a competitive market. Simply put, in a competitive market, there is ordinarily no recourse to a captive set of customers who are readily available to subsidize the incremental supply's cost, whereas that is the case for investor-owned utilities' regulated tariff structure in Virginia today.

B. *Dominion's own forecasts of demand have been demonstrably erroneous*

Dominion's own projections of incremental demand growth it intends to serve suggest that Dominion either has frequently mis-forecast or intentionally inflated its load forecasts. Seen below in Figure 3, one can see the peak demand projections made by Dominion over a series of IRPs, in comparison to the actual demand that materialized by year. Until very recently, demand lagged well behind the projections, and even with the rapid clip in recent growth, it has not caught up to projections made less than a decade ago.

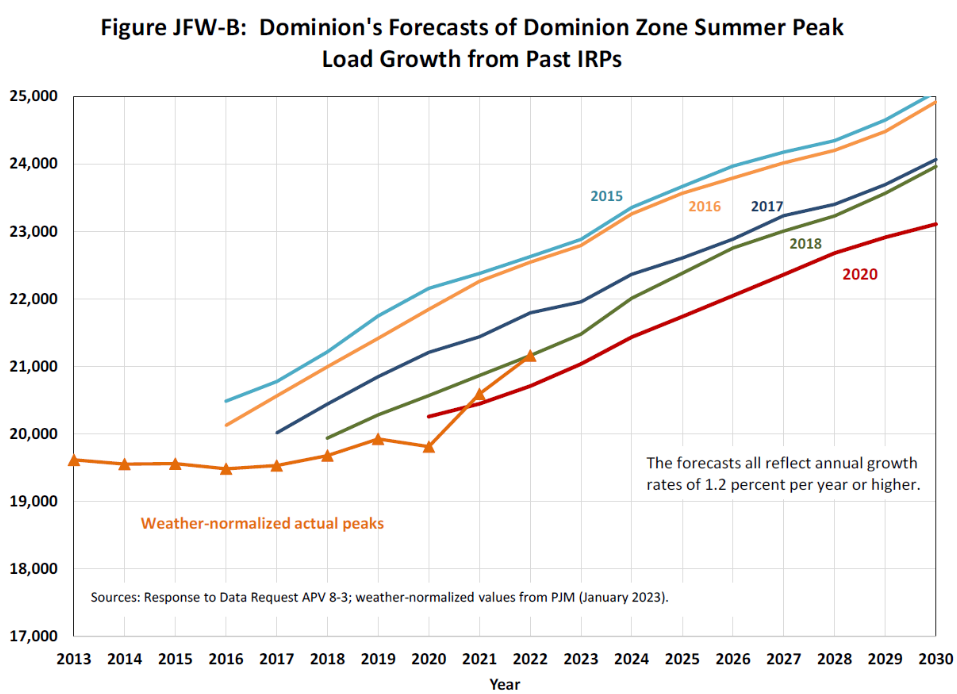

Figure 3: Dominion's Zonal Forecast of Demand vs. Actual[20]

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[20] *Application/Petition of Virginia Elec. & Power Co. In re: Virginia Elec. & Power Co. Integrated Resource Plan Filing Pursuant to Va. Code § 56-597 et seq.*, Case No. PUR-2023-00066, Direct Testimony of James F. Wilson on Behalf of Appalachian Voices at 16 (Aug. 8, 2023).

Dominion also makes unreasoned assumptions about how much new load will shop with a CSP. Indeed, Dominion also appears to assume that, despite the current presence of a significant quantity of CSP-supplied loads and a significant amount of oncoming projected load, that the amount of demand served out of Virginia's retail-competitive market will diminish. In Dominion's 2024 IRP, Dominion states that "[t]he load forecasts in this 2024 IRP include a downward adjustment for Choice Customers . . . Due to the uncertain nature of customer migration in or out of Choice, the Retail Choice Adjustment is held constant throughout the forecast period."[21] Obviously there are rubrics that one might use to sample the market's appetite for and ascertain the likelihood of supply arrangements outside of Dominion's regulated services, but that does not serve Dominion's purposes in justifying a load forecast that inures to the justification of further rate-base generation. And so instead Dominion has forecast a shopping environment where "choice" loads fall off a cliff, and then remain as persistently low levels throughout its forecast. Although no visual depiction of it exists in Dominion's most recent IRP, it is one Dominion has previously represented in graphical form—although perhaps pointlessly so, because when one sees for oneself this methodology (shown as Figure 4 below) it bespeaks the obvious imprecision of its load forecast in this respect.

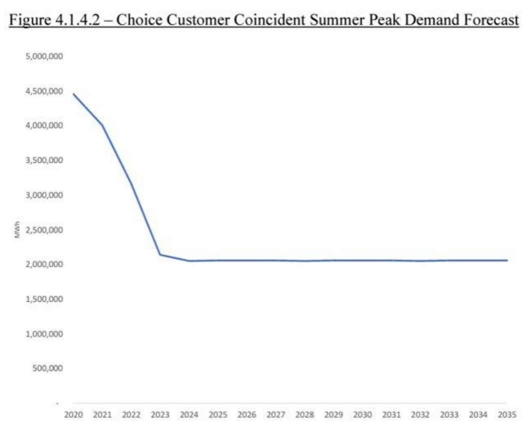

Figure 4: Dominion's Projections of Shopping Loads[22]

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[21] *Commonwealth of Virginia, ex rel. State Corp. Comm'n in re: Virginia Elec. & Power Co. Integrated Resource Plan Filing Pursuant to Va. Code § 56-597 et seq*. Case No. PUR-2024-00184, IRP Filing, Appendix 2A at 10-11 (Oct. 11, 2024) ("2024 IRP Filing").

[22] *Commonwealth of Virginia, ex rel. State Corp. Comm'n in re: Virginia Elec. & Power Co.'s Integrated Resource Plan Filing Pursuant to Va. Code § 56-597 et seq*. Case No. PUR-2020-00035, IRP Filing at 55 (May 1, 2020).

C. Dominion customers face at least $4 billion in stranded-cost risk if the utility, rather than the competitive market, supplies energy to data-center customers

NRG has conducted its own analysis of Dominion IRP data for the purpose of this proceeding, We evaluated Dominion's nine most recent IRPs, measuring the error rate of the utility's load forecast. The most relevant set of years for error forecasts begin in Year 4 since, given generation investment lead-times, that is the first year one may plausibly expect new rate base investments made in reaction to a growing load forecast to become commercially operational. We then examine the error rate as it persists from Year 4 to Year 6, a three-year stretch that counts as a conservative window to estimate the error rate, with outer years being understandably a matter of even greater speculation and thus prone to greater error. Under this conservative methodology, Dominion has an error rate of 12.5% six years out from its initial forecasts, with individual IRPs for Year 6 showing an error ranging from 6.7% to 16.0%. In other words, Dominion has actually been off by 12.5% when one compares its previous forecasts to the demand that actually materialized.

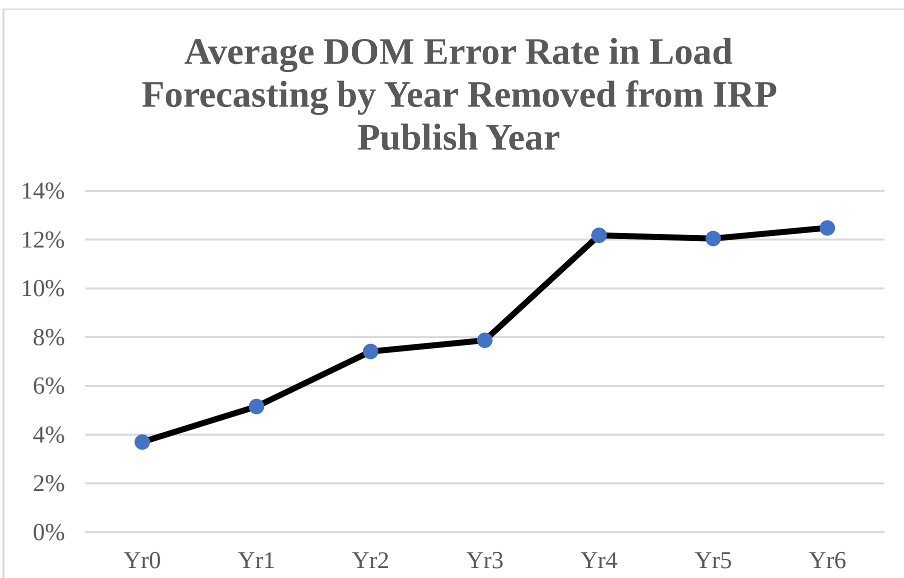

Figure 5: Average Error Rate in Load Forecasting by Year[23]

[23] *Id*. The error rate is an average of the percentage error between Dominion's Adjusted Summer Peak Load Forecast and Actual Peak Load for each available IRP from 2015 to 2023.

In its 2024 IRP, which includes data-center load growth, one may take Dominion's latest load forecast, apply Dominion's actual historical error rate to that forecast, to create an amount of load that is subject, at least by the standards of Dominion's own performance, to significant doubt. In NRG's view, this is again a conservative approach: The growth in data centers presents heightened risk and uncertainty compared with previous forecast periods. But nevertheless, taking this conservative approach, one may then put the amount of demand forecast in error (approximately 2,600 MWs) in terms of supply by using the marginal capacity unit (a combined cycle combustion turbine) that Dominion has indicated provides the least expensive incremental capacity. Based on Dominion's own capital costs, the cost of that capacity would equal $3.964 billion. These stranded costs are presumably subject to recovery from ratepayers, absent the protections these comments recommend, over some sensible timeline at the regulated utility's weighted average cost of capital. In this case, every Dominion residential customer would be on the hook for $750 for the cost shift that results from the risk of Dominion's forecast error being transferred from the company to its regulated customers.

Stranded Cost Exposure Based on Dominion IRP Data	
Potential Impact of Misforecasting Data Center Growth:	
Dominion's Avg. Forecasting Error at Yr 6	12.5%
Dominion's Forecasted Summer Peak in Yr 6 (2030)	20,848
Potential for Forecast Error (MW)	2,603
Dominion's Weighted Average Cost of Capital	6.95%
Potential $ Millions in Stranded Assets (at $2,523/kW)	**3,964**
Average $/kWh if Extinguished in Ten Years	$0.0065
Average Residential Cost if Extinguished in Ten Years	$751.74

Figure 6: Summary Results of NRG Analysis: "Stranded Cost Exposure Based on Dominion's Historic Forecast Error Rate and Current Forecast and Capital-Cost Projections"[24]

[24] *See Commonwealth of Virginia, ex rel. State Corp. Comm'n in re: Virginia Elec. & Power Co.'s Integrated Resource Plan Filing Pursuant to Va. Code § 56-579 et seq.*, Case No. PUE-2015-00035, IRP Filing, Appendix 2G (July 1, 2015); *Commonwealth of Virginia, ex rel. State Corp. Comm'n in re:*

This analysis, using Dominion's own data at every turn, demonstrates the risk shift and potential cost shift that is associated with making rate-base investments to serve these new loads. Put simply, the Commission is facing a status quo that is full of risk, and the situation requires the Commission to take active steps to mitigate the risk in the public interest.

D. The best way to prevent cost- and risk-shifts to utility customers is by channeling the supply needs of very large customers into the competitive market

The JLARC report concludes in one of the final sections of its chapter on "Energy Costs" that "utilities are required to build or secure enough generation to meet all customer demands. If a customer leaves the utility for retail choice, the fixed cost of recently built generation is divided among the remaining customers."[25] Of course it does not have to be this way, as NRG explores in Section 3 of our comments below, and either the Commission or the General Assembly or both can take steps to assure Virginia's consuming public as much. Utilities can and should fulfill their obligation to serve hyperscale customers by filing a market-base rate tariff.

The JLARC report in this one respect has the matter completely backwards. It is not the possibility that customers will choose an alternative provider that gives rise to stranded costs, it is the fact that a regulated utility would be put in a position to make those rate-based investments

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Virginia Elec. & Power Co.'s Integrated Resource Plan Filing Pursuant to Va. Code § 56-579 et seq., Case No. PUE-2016-00049, IRP Filing, Appendix 2H (Apr. 29, 2016); *Commonwealth of Virginia, ex rel. State Corp. Comm'n in re: Virginia Elec. & Power Co.'s Integrated Resource Plan Filing Pursuant to Va. Code § 56-579 et seq.,* Case No. PUR-2017-00051, IRP Filing, Appendix 2H (May 1, 2017); *Commonwealth of Virginia, ex rel. State Corp. Comm'n in re: Virginia Elec. & Power Co.'s Integrated Resource Plan Filing Pursuant to Va. Code § 56-579 et seq.,* Case No. PUR-2018-00065, IRP Filing, Appendix 2I (May 1, 2018); *Commonwealth of Virginia, ex rel. State Corp. Comm'n in re: Virginia Elec. & Power Co.'s Integrated Resource Plan Filing Pursuant to Va. Code § 56-579 et seq.,* Case No. PUR-2020-00035, IRP Filing, Appendix 4H (May 1, 2020); *Commonwealth of Virginia, ex rel. State Corp. Comm'n in re: Virginia Elec. and Power Co.'s Integrated Resource Plan Filing Pursuant to Va. Code § 56-579 et seq.,* Case No. PUR-2021-00201, IRP Filing, Appendix 4H (Sept. 1, 2021); *Commonwealth of Virginia, ex rel. State Corp. Comm'n in re: Virginia Elec. & Power Co.'s Integrated Resource Plan Filing Pursuant to Va. Code § 56-579 et seq.,* Case No. PUR-2022-00147, IRP Filing, Appendix 4H (Sept 1. 2022); *Commonwealth of Virginia, ex rel. State Corp. Comm'n in re: Virginia Elec. & Power Co.'s Integrated Resource Plan Filing Pursuant to Va. Code § 56-579 et seq.,* Case No. PUR-2023-00066, IRP Filing, Appendix 4H (May 1, 2023); 2024 IRP Filing, Appendix 3M at 32, n. 1 (stating the Weighted Average Cost of Capital is 6.95%).

[25] JLARC Report at 54.

in the first place. The first, best, and only protection against stranded assets is to not allow a utility to build assets that may become stranded. When large customers are served by CSPs, the assets the CSPs use to serve them are not backed by other ratepayers; there is no possibility that a CSP asset will lead to costs to legacy ratepayers or for that matter to other CSP customers, who would not tolerate cross-subsidization within the competitive shopping environment. The same cannot be said for assets that Dominion builds, and the risk of Dominion's activities in this regard is mounting quickly.

In summary, there are significant advantages to the public in general by expecting and indeed requiring that the data-center loads that Virginia is faced with to be served by the competitive market, either through retail service arrangements with CSPs or under a market-based rate tariff. The Commission should in the first instance issue a policy statement that expresses, for the sake of removing risks from the regulated-utility operations with which its duties are attached, that such loads be served by competitive arrangements under CSPs where possible. When data centers obtain their supply from CSPs, they abnegate altogether the questions involving utility rate base, cost allocation, and the risk of stranded costs. Regulated utilities face enough complexity already in the transmission and grid-development space. The Commission should work to right-size its regulatory duties by stating its clear preference to avoid supply-related risks and cost-shifts by relying on CSPs to serve this segment of the market.

3. REGULATED-TARIFF REFORM IS NECESSARY AND, TO THE EXTENT UTILITIES WISH TO COMPETE TO SUPPLY DATA CENTERS ENERGY, GENUINE RING-FENCING SHOULD BE REQUIRED

While NRG urges the Commission to issue a policy statement to declare that CSPs should be relied upon to serve the data-center market segment, it remains the case that any customer, including very large loads, has a legal right to demand generation-supply service from incumbent regulated utilities.[26] Too much has been made of what this "obligation to serve" entails as it relates to out-of-scale loads like data centers. This right is not limitless, especially not when customers have viable supply alternatives in the form of CSPs, and nowhere under Virginia law

[26] Va. Code § 56-234 A ("It shall be the duty of every public utility to furnish reasonably adequate service and facilities at reasonable and just rates to any person, firm or corporation along its lines desiring same.").

is the regulated utility required to make speculative investments in rate base to serve very large loads at the risk of stranding costs to other customers. This is merely an assumed convention of utility practice whose time should come to an end in light of the new realities of data-center growth and the uncertainty and risk that it poses. Other jurisdictions have recognized that very large loads require a different regulatory paradigm, with the market operator ERCOT in Texas—Virginia's biggest rival for data-center investment—recently proposing to define "large load" as being "a single site with aggregate peak demand greater than or equal to 75 MW behind one or more common points of interconnection or service delivery points."[27]

A. *A market-based tariff should be adopted that satisfies the regulated-utility obligation to serve while preventing potential stranded costs*

Regulated electric utilities in Virginia can fully satisfy their obligation to provide reasonably adequate service to very large loads, including data centers, by making available a market-based-rate tariff that passes through energy, capacity, and associated charges at their PJM market price or (where PJM pricing is unavailable, for example for the cost of credit posting and trading functions) at prevailing market rates for these services. As Scott Hempling describes in **Exhibit A**, a reform to the Sch. GS-4 tariff under which the largest customers take Dominion's service is necessary to eliminate the high potential for risk- and cost-shifting that presently exists; doing so by substituting a market-based tariff for very large loads is one way to accomplish this end.[28] The data-center loads taking a market-based tariff service would be and are capable of entering into a suite of financial and physical hedges adjacent to the market-based tariff service, which the Commission does not and need not regulate, though they conceivably could be sleeved through

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[27] All Texas loads in the restructured utility service territories of ERCOT are effectively required to shop on the market for electricity. The 75MW limit is associated with interconnection requirements, but nevertheless the point holds that this is where Texas has adjudged out-of-scale effects to potentially occur that are worthy of consideration. *See* ERCOT Comments on NPRR1234 (Dec. 16, 2024) available at: https://www.ercot.com/mktrules/issues/NPRR1234#keydocs.

[28] *Hempling*, **Exhibit A** at 10-11. Schedule GS-4 serves: (1) a transmission or primary voltage customer taking service from Dominion; (2) a transmission or primary voltage customer taking supply from a CSP; and (3) a customer whose peak measured demand has reached or exceeded 500 kW during at least three billing months within the current and previous 11 billing months. *See* Virginia Elec. & Power Co., Schedule GS-4 Large General Service Primary Voltage, filed Aug. 20, 2024, available at https://www.dominionenergy.com/-/media/pdfs/virginia/business-rates/schedule-gs4.pdf.

To the extent that the data-center loads would be served under the Dominion GS-3 tariff, the same arguments are applicable in that context.

the regulated-tariff arrangement.[29] Or, as described extensively above, these data centers also have the Virginia legal right to enter into an alternative retail supply arrangement through a CSP, which the Commission does license and may at its choosing more actively oversee.[30]

Dominion was vague on the purpose and use of its existing market-based rate tariff, Sch. MBR, at the technical conference.[31] Dominion advertised Schedule MBR as a protection for other customers because "as market prices go up, of course our fuel prices go up, but [those on an MBR tariff] are paying more into a system which then counteracts that."[32] As far as it goes, this much is true. But even matching retail prices to market prices is not fully sufficient to mitigate the risks to other customers of utility service to out-of-scale loads. As a representative of Old Dominion Electric Cooperative observed, a utility's service in passing-through market-based prices still leaves that utility in the position of wearing credit and collateral risk that, in the event of a default, could be socialized to its other customers.[33]

A still more fundamental concern is that while Dominion's existing Schedule MBR in itself may align prices to costs, its presence alongside an alternative regulated tariff in Schs. GS-3 and GS-4 presents opportunities for cost- and risk-shifting to be amplified, rather than minimized. Commissioner Bagot was correct in suggesting that Dominion's having both an MBR and a regular cost-of-service tariff like GS-4 available provides an opportunity for the subset of eligible loads to game the regulated system by choosing whichever schedule represents a higher or lower supply price, leaving, once more, all other ratepayers to bear the risk of out-of-the-money rate-based costs or, alternatively, lost opportunity costs.[34] This issue is protracted when

[29] *Hempling*, **<u>Exhibit A</u>** at 11.
[30] *See generally* Va. Code § 56-577.1.
[31] Based on the latest information, Dominion's MBR tariff has 6 customers, though they are large, consuming nearly 1.4 million MWhs of energy, or about 161 MW. *Application of Virginia Elec. & Power Co. for a 2023 Biennial Review of the Rates, Terms and Conditions for the Provision of Generation, Distribution and Transmission Services Pursuant to § 56-58/5.1 A of the Code of Virginia*, Case No. PUR-2023-00101, Direct Testimony on behalf of Paul B. Haynes, Schedule 4 at 1 (July 3, 2023).
[32] Tr. at 136:24-137:1.
[33] Tr at 117-19.
[34] "One of the things I'm struggling with market-based rates in that context is to the extent that Dominion is building its own generation to sort of protect itself for potentially [sic] price volatility in the wholesale markets, but then is using those prices as a proxy for power sales, isn't there an opportunity for data centers to either overpay or underpay their contribution to these system—their true cost of service to the extent that for the most part, the majority of Dominion's system is being served by Dominion-built-and-owned resources?" Tr. 183:12-22.

considering Dominion's imminent expansion of Schedule MBR.[35] Mr. Hempling's white paper appended to these comments speaks more comprehensively to this issue.[36] Rather than tolerate a confused approach whereby utilities employ a cost-of-service rate to effectively compete against CSPs, even while offering a putatively "market-based" (but still tariffed) rate of its own, it would be far more straightforward and more appropriately contain the risks and costs in question to have on the Dominion's tariff book *only* Schedule MBR, or something like it, for such loads. This would make clear to everyone that Dominion will not undertake rate-based investments in generation to serve these loads, thereby putting to an end many needless debates about cost- and risk-shifting associated with those activities. If a customer desires an alternative arrangement—and no doubt many would—then it should be left to a contractual negotiation between two sophisticated parties in the competitive market who, between them, form a cordon to the risks associated with serving very large loads.

B. Proper ring-fencing conditions do not exist today that would protect utility customers from risks, and prevent cross-subsidies, associated with utilities' competitive services

Utility parent companies no doubt wish to compete for this data-center market segment in a way that is profitable to them, which an MBR tariff typically would not permit because it is pass-through. The reality is that these regulated utilities can and will profit generously from the concomitant investments in the transmission and distribution grid they will need to make to serve data-center loads, something that NRG also addresses, in Section 4. But if allowed to participate in the energy-supply business to data centers at all outside an MBR tariff, utilities should do so only through a genuinely ring-fenced corporate affiliate that has no opportunity to shift risks and costs to, or obtain subsidies from, their regulated operations and its captive base of customers.

Periodically, in the context of certain special-purpose tariffs, usually limited in their eligibility to its largest customers, Dominion has used the term "ring-fencing" to describe certain arrangements Dominion has made to exclude utility investments from its calculation of its regulated rate base and to directly allocate certain expenditures to special-purpose tariffs, even while Dominion continues to use its regulated-utility balance sheet, undifferentiated financing

[35] Gaskill, Tr. at 137 ("So we, again, probably coming to a biannual [sic] review near you, but would be proposing to extend that market-based rate schedule.").
[36] *Hempling*, **Exhibit A** at 7-8.

instruments, common staff and facilities, and other elements of its regulated-utility business to offer these products. To put it simply, there is no corporate financial separation in this arrangement, meaning that the competitive business inevitably leans on a balance sheet supported by equity and debt investors of the operations as dominantly regulated, conferring an implicit subsidy. Meanwhile, common costs are subject only to direct allocation when the so-called "ring-fenced" services draw from them, meaning that the corporate overhead generally required to support Dominion's operations is subject to no cost allocation to these competitive services at all. "Ring-fencing" to describe this arrangement is a misnomer. As Mr. Hempling concludes in his white paper, "Dominion has misused the term. This misuse has caused confusion in multiple orders of the State Corporation Commission, placed customers at risk, and deprived the state of the merits-based competition deserved by all customers, large and small."[37] Dominion and the Commission have used and are using the term "ring-fencing" in a way that bears no relation to its common usage across the regulated utility industry, even by utility-employed experts themselves.[38]

The Commission should consequently harbor no illusions that the anemic "ring-fenced" arrangements now in place achieve the purpose of avoiding the exposure of utility customers to undue risks. This can only be accomplished by a genuine corporate separation, as Mr. Hempling explains. Ring-fencing worthy of the name involves the use of a separate affiliate or special purpose entity that can stand on its own, as this Commission has understood in other contexts, and with its own and separate financing.[39] Meanwhile, the Dominion practice of using the regulated utility balance sheet to back its special-tariff products represents an inherent subsidy by other ratepayers in the form of the cost of capital, one of the single largest inputs in the cost structure of an industry characterized by substantial fixed costs. The Commission has occasionally suggested that if Dominion were to invest in an asset associated with one of these special-purpose tariffs, which then became stranded, that other customers should not worry because any of the associated stranded costs would have to be reviewed by the Commission

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[37] *Id*. at 2.
[38] *Id.* at 13-15.
[39] *See e.g.*, *Application of Washington Gas Light Co. for Approval of Service Agreement*, Case No. PUR-2018-00103, Order Granting Approval (Aug. 8, 2018) (approving a service agreement with a special purpose entity established to hold common equity of WGL as a ring-fencing measure to protect WGL in the event of a bankruptcy. Action Brief at 2 (Aug. 6, 2018).).

before being passed through to ratepayers.[40] But this is beside the point. Again, the special-tariff product benefits from a financing subsidy from its position within a regulated-utility balance sheet in the first instance. If a default were to occur, or if a customer dropped service, or unrecovered costs were to exist because of a disallowance, any of these things would cause the overall balance sheet's regulated cost of capital to suffer as investors realized that the perceived bargain—cost recovery of utility investments, shielding investors from risk—was not actually the case. The complexities of the so-called "ring-fencing" that the Commission has spent its time refining inevitably begs the question: Why should the Commission even expose other customers to the risk associated with these services, which can alternatively be provided through the competitive market, in the first instance?

In summary, the Commission should revise Sch. GS-4 by either creating a separate rate class and schedule for very large loads or, within the existing schedule, by requiring energy-supply service to very large loads to be furnished through a Market-Based Rate structure. Meanwhile, to the extent a utility wishes to compete to provide something other than this service, it should be permitted to do so only through a genuinely ring-fenced corporate affiliate.

4. A NETWORK OPEN SEASON CAN BE EMPLOYED TO RIGHT-SIZE AND PROPERLY ALLOCATE THE INCREMENTAL COSTS OF PROVIDING GRID SERVICES TO NEW VERY LARGE LOADS

The uncertainty in load forecasting for data centers has substantial risk implications for the amount of energy supply that a utility should plan to serve. NRG above proposes regulatory approaches by which this risk may be channeled to parties other than a captive base of ratepayers who have nothing to do with data-center development other than their captivity to a regulated utility who occupies a speculative position to serve that demand. Unfortunately, for the planning and construction of improvements to the grid that are necessary to serve incremental load, the

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[40] *Application of Virginia Elec. & Power Co. for Approval to Establish a Voluntary, Experimental Companion Tariff to Support Carbon-Free and Renewable Energy Generation, Designated Schedule CFG, pursuant to § 56-234 B of the Code of Virginia,* Case No. PUR-2024-00114, Final Order at 2, 4 (Dec. 23, 2024) (accepting utility's "ring-fence" proposal as "reasonable and sufficient to protect non-participating customers").

policies we discuss above in Sections 2 and 3 are unavailing: The role of a utility monopoly is, to a more substantial degree, inevitable.

Despite the presence of local monopolies on grid services, there are market-based approaches to the expansion of grid service that can simultaneously cause utility investments to be right-sized, their costs directly allocated to cost-causers and beneficiaries, the regulatory process to determine "need" for them stream-lined, and the creation of valuable property rights for interconnection to the utility grid to be firmly established. Together, these are the four attributes of a Network Open Season ("NOS"), which may facilitate a more certain growth trajectory in the valuable data-center and AI sectors of the U.S. and Virginia economies.

The natural-gas pipeline sector has long employed a network open season when a new pipeline, an expansion of a pipeline, or a gas-storage asset was proposed.[41] An investment in any of these things can clearly have beneficial effects on those upstream or downstream of a pipeline—in economics terms, it has certain "public good" attributes—but that broad view of benefits was not and is not enough to convince regulators to socialize broadly the cost of natural gas pipeline capacity or to certificate its necessity as a public-utility asset. Instead, a NOS is a conduit for both the expression of demand for these gas-infrastructure assets and an avenue to ensure that their capacity costs are paid for by anchor tenants who sign up through the NOS to the incremental capital expenditure the public utility proposes. In turn, these anchor tenants, or shippers as they are termed in the regulated-gas pipeline industry, receive a property right to the use of the new capacity. This market-based approach to gas-infrastructure regulation was the major policy breakthrough that made the expansion of the natural-gas pipeline system across the United States possible, ushering in an era of abundant energy, lower emissions (versus coal-fired power generation), and a flourishing of end-users who could make use of that gas. This momentous step of regulatory innovation has obvious parallels to the data-center moment in the power sector, as at least one commentator to the Commission's technical conference observed.[42]

Electricity systems are different than natural gas; the physics of these systems work at the speed of light and not the speed of gas, the system is more a lattice than a series of tubes, and for

[41] *See Rockies Express Pipeline L.L.C.*, 116 F.E.R.C. ¶ 61,272 at para. 71 (2006) ("Under the Commission's policies, all new interstate pipeline construction must be preceded by a nondiscriminatory, nonpreferential, open-season process through which potential shippers may seek and obtain firm capacity rights.").

[42] James Wilson, Tr. at 133.

both of these reasons the benefits of an incremental investment in the electric grid may be more diffuse. Yet when it comes to large loads' hooking up to the grid at a particular point of interconnection, and at the scale we are now considering with respect to very large loads such as data centers, the principles that obtain in the regulation natural-gas pipelines become more relevant.

The present practice of interconnecting these very large loads is somewhat ambiguous, and devolved to the particularities of individual electric utilities. In this regard, it does not resemble FERC's regulation of the interconnection of generators which, while flawed, follows a *pro forma* process and generally has been relatively visible, even if both the interconnection of very large loads and generation follow a first-in-queue, first-in-right philosophy that tends to disregard the relative value of the interconnection to those in the queue. Both of these situations now demonstrate a scarcity of interconnection capacity. And in order to remedy either or both, but more relevant here for the load-side interconnection that this Commission clearly regulates, a market-based process would clarify the quantity, value the interconnection, and assign the costs of interconnection. The Commission should consider that retail load interconnection of very large loads be processed through a Network Open Season.

In the simplest terms, a NOS would have Dominion and other electric utilities who face an oversubscription of very large loads relative to their existing grid capacity to develop a bid-based process to expand their grids. A NOS would operate at a high level as follows. First, in view of the load interconnection requests and potential requests that exist, an electric utility would develop several expansion plans that are sufficient to accommodate lower and higher degrees of very large load interconnection at places on its system that are economically advantageous to data-center development and for which interest has been expressed. The electric utility would then identify the projected, indicative costs by firm-MW served of these interconnections (including any upstream upgrades required). Subsequently, it would tender an offer of service through a NOS and open a period of bidding. Very large loads, as well as any party wishing to buy a transferable right for a very large load to interconnect, would express a paired bid of location and volume relative to one or more of the utility's plans. Realizing that interconnection-per-MW is not a uniform commodity with a purely linear value, some flexibility in the post-bid process could be afforded an electric utility (e.g., +/- 15%) to appropriately identify costs of the seemingly most efficient portfolio, subject to bidder consent. This NOS outcome would then be submitted to the Commission to demonstrate both need for the portfolio and as a proposal to allocate costs, so long as the portfolio met an acceptable ratio whereby bids were near or exceeded the total offer cost. On that basis the Commission could make an approval of need based on the NOS's expressed demand, and the Commission also could be satisfied that the cost of this expansion was fully funded by bidders, with any surplus being applied to the utility's revenue requirement, or held as a contingency for cost overruns, or even kept as additional remuneration for the electric utility's extraordinary performance. Financial commitments then would be made by bidders, and the electric utility would commence construction, subject to a more limited public convenience and necessity proceeding that concerned only routing, and not necessity, since that criterion would have already been satisfied.

The revenue from NOS bidders could exist as the most significant part of the regulated rate that these customers would otherwise be subject to or, alternatively, exist parallel to the ordinary scheduled rates. In the former, the going-forward rates these customers paid would be lower than average; in the latter, these up-front payments from NOS bidders would be refunded to those customers over time (*e.g.*, between 7 and 10 years), and customers would be charged the prevailing customer-class-based rate for transmission service. The point of these up-front payments, in the pay-and-refund design, would be to ensure that the transmission is right-sized to needs and substantially avoid stranded costs. Meanwhile, in the situation where a NOS bidder pays without a future refund, the up-front cost of the upgrades is defrayed, and rate base is reduced, by what is essentially a substantial customer contribution in aid of construction. Whichever of these approaches might be selected is largely irrelevant to the benefits either approach produces, which is to resolve in one fell swoop two major regulatory problems: load forecast error, which in the regulated transmission-and-distribution-company landscape lacks any market-based check, and the allocation of capital costs that may absent an upfront defrayal be charged to consumers generally who may not have needed the investment.

This NOS approach also has another significant attribute that encourages the data-center economy: the development of a secondary market for the trade in interconnection rights. Once a bidder obtains a right to interconnect through a NOS by making a binding financial commitment, there is no reason why that bidder should not be able to transfer that property right to another party on whatever terms those two parties agree to. This would simultaneously help fund transmission expansion and allow for substitution of less economic for more economic data-center use cases in an uncertain data-center and AI landscape described at the very beginning of these comments. Moreover, it would minimize the arbitrary regulatory device of queueing that has taken a needless center stage in what should be a more streamlined process of network access to the electric grid.

The use of NOSes in the power sector is substantially more limited in the natural-gas sector, but NRG submits that the characteristics of the scale and optionality of data-center load growth make this approach well suited to the power sector at the present moment. It is a tool to both advance the data-center industry while protecting other consumers from any risk- or cost-shift in this part of the sector. There are, however, some limited antecedents for NOSes in the power sector, including the use of them for renewable generator interconnections by Bonneville Power Administration which, like the current moment, faced an overwhelming demand for interconnection (in this case, from the generation side) and decided to rationalize its queueing process by employing a market-based process.[43]

5. CONCLUSION

Virginia policymakers and the Commission have reason to both be enthusiastic about demand growth from data centers, and also wish to proactively arrange the energy regulatory setting to safeguard existing customers from adverse impacts. NRG in the above comments has outlined four things the Commission should do in furtherance of those twin goals:

- A policy statement declaring a preference that energy supply for data centers will be sourced from the competitive market, from suppliers that have no ability to charge other ratepayers for the risk and costs of supplying those customers;
- Tariff reform to create an exclusively market-based regulated rate for very large loads, to ensure the legal requirement for such regulated utilities is satisfied[44]; and
- Corporate separation and ring-fencing to permit affiliates of electric utilities, should they wish to supply load on other terms on a competitive basis.

[43] *See* Rob Gramlich and Zach Zimmerman, "Use of Network Open Seasons in the Electric Industry" (August 2024), prepared for NRG Energy. https://www.nrg.com/assets/documents/energy-policy/grid-strategies-electric-network-open-seasons080924.pdf.
[44] A utility must furnish "reasonably adequate" service upon demand to its customers. Va. Code § 56-234 A.

- A Network Open Season to right-size and directly allocate the grid costs of data centers, while creating a tradeable right to interconnect that will facilitate data-center growth.

[*signature page follows*]

Signed,

Travis Kavulla
Vice President, Regulatory Affairs
1825 K. St. NW, Ste. 1208
Washington, D.C. 20006
Travis.Kavulla@nrg.com
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