Developing a Comprehensive Approach to Strengthen, Support, and Actualize the Virginia Clean Economy Act

Summary of Feedback from April 2024 Meetings with Stakeholder Groups

Senator Dave Marsden

May 23, 2024

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Message from Senator Dave Marsden

First and foremost, I want to thank everyone who has participated thus far, and who will participate in the future, in putting together this exercise to strengthen and support the Virginia Clean Economy Act (VCEA). The feedback has been very positive.

This document is a compendium of information gathered from key stakeholder groups, both during our April 15 and 16 information gathering meetings and in follow-up correspondences. We appreciate the feedback and expansion of information from all who attended the meetings and who sent additional information afterwards.

The challenges of clean energy and meeting our electric needs is a changing landscape that will need our constant attention. We look forward to gathering information and answering the questions that have been posed and dealing with the roadblocks that have presented themselves to realizing a carbon-free Virginia in 2050.

Background

On April 15 and 16, 2024, Senator Dave Marsden held six information gathering meetings in advance of the Fall 2024 VCEA Summit. The six groups represented environmental lobbyists; electric utilities and cooperatives; solar and wind developers; the Virginia Municipal League (VML), Virginia Association of Counties (VACo), and data centers; state administrative agencies; and business, agriculture, forestry, and Virginia FREE. During the week of May 13, Senator Marsden met with a union representative. We will meet with ratepayer protection groups in June.

The purpose of the meetings was to hear what each group is encountering with regard to implementation of the VCEA and what they think can be done to enhance progress towards our clean energy goals. We also asked questions related to determining what data we need and what questions need to be answered. One week after these meetings, each group has had the opportunity to review for accuracy and include additional feedback.

This document is a compendium of all the notes from the 6 groups. Also, there is a preliminary SWOT (**S**trengths, **W**eaknesses, **O**pportunities, **T**hreats) analysis document for each group.

Our next steps involve planning meetings in June and July. Representatives will be selected from each of the aforementioned groups to begin planning the summit to cover the needs identified during our information gathering sessions. A final summit will be held in the fall with a full agenda of speakers, panel discussion, and data distribution, as well as opportunities for community testimony and feedback. The purpose of the summit is to create a comprehensive approach to dealing with issues related to actualizing the VCEA. One of the goals will be to merge this effort with the staff build-out of the Commission on Electric Utility Regulation (CEUR). It is hoped that the CEUR could review the summit findings and create the necessary policy and legislative solutions.

Meeting Notes and Additional Feedback – Environmental Lobby

Main points:

- There was general agreement with the goals of the VCEA. Most Virginians like the idea of the VCEA. We are on the right track. Most of the group believed Virginia could hit the VCEA goals. We've already done more than we thought we could do.

- If 66 percent of U.S. energy is coming from fossil fuels in 2050 (current DOE estimate), it will be a disaster. Part of this is a political issue. Virginia is going to have to ensure the VCEA standards are met and find additional ways to reduce greenhouse gas emissions. If not, we are failing future generations and the world.

- We don't have clear, positive messaging, even though the VCEA is working. We need to reframe the issue.

- Energy efficiency and demand for energy:

    - There is no discussion on energy efficiency, which is necessary. Energy creation is easier for people to understand than energy efficiency. But we need to talk about reducing demand for energy.
    - In the VCEA, the state recognized that there is a responsibility and a role to play in shaping the supply side of energy. But we also need to discuss the state's responsibility in addressing the demand side. This is a big challenge. Who is responsible for managing the demand side? How can we do this faster?
    - We should see whether the utilities are in alignment with VCEA. When new projects are proposed, the first step is to say, "How are you going to create and develop the kind of resources required to meet the VCEA?" There are backdoor conversations happening between data centers and utilities. Can we respond by saying, "How does this align with the VCEA?" We need to have serious conversations about this.

- Data center demand and load expectation:

    - We can either *manage* data center growth or *respond* to the growth. There have been many discussions on responding but not enough related to managing the growth.
    - The timeline is critical. One person said, "We won't deny them power, but we can push back on the pace and/or scale of development."

- We are not anti-nuclear, but we are concerned that we have jumped too quickly to the small nuclear reactor option without thinking through the implications (e.g., interconnection).

- We need to know the data center load expectations. Things keep changing so fast, and it's difficult to make plans and develop strategies.

- Advantages of community solar versus home and commercial building solar installation.

    - Parking lots and community solar should both be pursued.
    - It helps address an equity issue. Traditionally, only wealthier families could get residential solar. But we could provide access to renters with onsite solar.
    - Incentivizing more of the smaller projects would be helpful (currently there is a cap of 5 MW).

- There is a lot of pressure on land use issues. *The group discussed removing the requirement that all resources be built within Virginia (maybe Ohio?), but there was no agreement on this.* Many other states are facing the same issues.

- State engagement in siting utility-scale renewable energy:

    - There was no consensus on whether it would be beneficial to have the state more engaged in siting utility-scale renewable energy.

    - Some felt that if it were worth it for the localities, there would not be so many ordinances being passed against these projects. The market is extremely effective in incentivizing. Many felt that we have not yet done all we can do to make it worthwhile for local governments to approve these projects.

    - But, at some point in time, more state engagement in siting may be helpful. One person commented, "I don't think you should take the process away from the localities, but an ordinance against the VCEA is wrong."

- It looks like most solar development is being built in rural areas, and there is a lot of pushback. If opposition to large-scale solar projects continues to grow, there is a danger that people won't support the VCEA anymore.

Other points

- About the process:

    - This process makes sense. The stakeholders you have involved are the right ones.
    - There were 17 bills on data centers that were all delayed waiting for the JLARC study. It's critical to integrate the JLARC information into anything we do.
    - There are 6 groups in these April 15–16 meetings. But the other 5 groups do not recognize the transition to a carbon-free power sector as a priority. We will always be outvoted.
    - How will you choose the 2 people for the next stage of this process? We don't all think alike. We are not a unified voice. We want to make sure our collective viewpoints have a persuasive seat in the table. How are you choosing the people who will be in the planning process? Can we expand this?

- It's also about the cost and who is paying.

- If you talk to a data center developer, they will tell you they cannot be 100 percent renewable. They are pushing toward hydrogen and natural gas because they know renewables are not going to meet their base load needs. But even if they can meet the demand, how much is too much in terms of political backlash?

- There is a need to flesh out the incentives and requirements related to brownfields projects. There is already a funding mechanism related to brownfields, but it has received no funding.

Meeting Notes and Additional Feedback – Electric Utilities and Cooperatives

Main points

- As it relates to compliance, not only with the VCEA but with the electric utilities' obligations to serve, we have an obligation to maintain the liability. There are statutory considerations from those required to serve and those not (regulated vs. unregulated).

- We are focused on affordability as well as the safety and security of the grid. This is not specific to the VCEA. Reliability and affordability are tenets of what we do. Entities that do not have an obligation to serve are very different from those who do.

- Sometimes, in the public domain, the full breadth of what needs to be considered is not discussed. It is not about our concerns with the VCEA per se, but with any kind of legislation on regulation.

- Providing reliable service depends on our ability to plan, permit, and construct. Because the lead time is so long, we do not have the opportunity to just see how it goes. What makes sense in an academic space may not make sense in reality.

- Combined, it is a dramatic increase in load and retirements. We have targets. Can we build it fast enough?

- Affordability is the biggest concern. People can't afford it.

- We have a challenge and an opportunity to harness the power of the wind and sun during this transition. But the actual technological capabilities to keep the lights and heat on during the coldest day may be very different than what is powering customers right now.

- We are extremely supportive of using renewable sources. And it is also important to look at what we may have to give up. We need to plan for providing energy on coldest night of the year.

- We need more discussion about the dynamics in terms of the supply side, especially when considering other states.

- Closure schedules for current fossil fuel energy sources: If we close and we're not ready, it will be worrying.

- There are tier–3 places in the VCEA that have reliability concerns.

- Viability of 500-megawatt small nuclear reactors versus the current 300-megawatt prototype:

    - Dominion would say the regulators are working through the process on how they're going to regulate. At this stage, it depends. We're moving forward by not

necessarily locking ourselves in, because we want to be responsive to the regulators.
    - Two 250-megawatts side by side may be better than one 500. We are trying to figure this out now.

- The cooperatives have a voluntarily self-imposed clean economy goal. We are beholden to cutoff by 2050. The cooperatives have three fossil fuel plants that we own or co-own. We are pursuing clean energy as part of our resource planning. But we also want to keep the lights on. We cannot monetize solar credits. We do short-term and long-range planning. We're on track to meet our goals to be carbon neutral by 2050.

- It usually takes 30–50 years to make money back from a plant. We're not interested in this, given the 2050 allowances.

- The data center people are sophisticated.

- Retail choice is impactful – 5 megawatts at any site; they can come and go with any system. Our customers pay a rate of what it costs to serve them divided by those who are served. Large swarths of customers can come and go. When you construct something for them, and then they can choose to leave the system, how does that impact other customers? It's significant.

- Neither utility has had to make a deficiency payment to date.

- It will be a challenge to achieve the goals of the VCEA by 2045. It will require new technology and storage that doesn't exist today. We need to balance affordability and capacity

- If customers can contract dirtier energy from across state lines, which is cheaper, it is still considered carbon free. This is a problem.

- We have a long track record of working with localities and amicable siting of various projects. We did not support the legislation overriding local authorities.

- We might want to consider a machinery and tools tax exemption. If you take something that is being famed like solar, it can make local tax revenue go down (it looks like they received the revenue when they didn't, so this is a problem).

  We need a dispatchable wind unit.

- Dealing with private developers.

    - Many of the private developers don't seem to understand the complexity of the grid connection technology and the cost issues as more of these projects come online. Each of these issues can be very technical, especially in the distribution.

    - Many of us work with third parties through RFPs. That's different from third parties who try to peel off customers (to sell directly to them). A solar company that becomes a part of the utility company portfolio is different from one that produces without utility (but they may purchase from them).
    - There are issues created through the volume. There is a separate issue with distributed solar with volume and size and reliability requirements.
    - Every project is different – if there is a circuit with a lot of solar, that may require something. They have different attributes. Two projects that may look the same but can be very different based on the nature of the grid in those facilities.

- Interconnectivity:

    - Between the 36,000 customers behind the meter and the site of these projects, it can change the interconnection requirements to maintain line of site, whether they are producing or not producing.
    - We have to know that that facility is cut off from the grid to ensure life, reliability, etc.
    - Costs can vary quite a bit depending on interconnectivity.

- Awareness of companies – sometimes developers that seek the least cost don't understand the intricacies around nation states (it may look like a US company, but it may not be). This brings up concerns over cybersecurity.

- Forced retirement is a challenge in the VCEA. The needs of our customers are growing, but the VCEA requirements are permanent. It's one thing to not use those resources but to have them on demand to use them when needed; but this is very different from retiring them forever. It makes it very difficult to hold onto the plan.

Other Points

- The Old Dominion Electric Cooperative (ODEC) provides power to most of the electric cooperatives.

- Utilities have to petition the commission for approval.

- Dominion is in coop territory and in Dominion territory. What is coop plan to meet this demand?

- Targets go into RFP plans.

- The SCC collects data and can tell you what has been installed. Twice a year they have to submit data. We just had some projects that didn't get approval.

- Fossil retirement. All coal-fired powerplants will be closed.

- The co-ops aren't written into these requirements, but our plants will also retire. The Clover Power Station is still open but will close by 2050.

- Demand side – primary resource is energy efficiency. The targets are written in the code. The commission will go through rulemaking to expand those targets past 2025. It will be in three-year increments going forward.

- A lot of load is coming online – electrification, data centers, etc. This may create a challenge for us in meting our reliability requirements.

- Other policy constructs: enhanced performance metrics, expansion of net metering program, shared solar.

- The ability to use Recs as offsets. Dispatchable energy can be offset. Not a reliability offset for that.

- Integrated resource plan. How do requirements may play into that? This is one snapshot in a period in time.

Follow-Up Information (sent on May 21, 2024)

The follow-up information provided by Dominion was relatively technical and complicated. It was difficult to summarize and incorporate into the points above, so we have included it here in it's entirety.

1. What is the current status of the SCC related to the DER issue?

There are several Commission proceedings related to the DER interconnection issue. Two of these proceedings, in case nos. PUR-2022-00073 and PUR-2023-00069, predate the dispute between the company and the Virginia Distributed Solar Alliance (VA DSA).

Case No. PUR-2022-00073 was opened in the wake of Commission approval of one of DEV's Grid Transformation Plan petitions to solicit comments from stakeholders regarding the challenges of integrating DERs. Pursuant to Commission order in this proceeding, SCC Staff convened two third party-moderated stakeholder working groups to examine aspects of the interconnection process. This docket is still active, though the stakeholder process appears to have concluded. Upon exploring interconnection issues related to DERs in this case, the Commission determined it would be appropriate to initiate a rulemaking proceeding, in a separate docket, to examine certain potential changes to interconnection regulations. The Commission initiated the rulemaking proceeding in Case No. PUR-2023-00069.

VA DSA's initial complaint about DEV's Interconnection Parameters for Midsized (defined as projects of less than 1 MW but greater than or equal to 250kW) Net Metering DERs was adjudicated in Case No. PUR-2023-00097. In its Final Order, the Commission suspended DEV's imposition of the Parameters. However, the Order invited DEV to seek specific authority from the Commission to take actions necessary to maintain the immediate safety and reliability of its

system. Note that DEV accepted the Commission's invitation in this regard by filing a Motion for Interim Authority in Case No. PUR-2023-00069, discussed below.

In its Motion for Interim Authority, in Case No. PUR-2023-00069, DEV requested interim authority to continue to require certain equipment to be installed as a condition of a midsized net metering project's interconnection when certain conditions are met. Notably, DEV offered an option for net metering DER customers/developers to elect a cellular-based direct transfer trip (DTT) communication system in lieu of fiber-based DTT—the latter of which is more expensive and had been the focus of VA DSA's complaint. DEV's Interim Authority petition was granted in November 2023, but the case remains open pending conclusion of the rulemaking proceeding.

Case No. PUR-2023-00198 was initiated when VA DSA filed an enforcement petition seeking to direct DEV to cease and desist from imposing any component of its Interconnection Parameters for Net Metering DERs. The Hearing Examiner's Report in this case recommended dismissal of the petition, and on May 1, 2024, VA DSA filed a Notice withdrawing its Petition and requesting that the Commission dismiss the proceeding without prejudice. On May 16, 2024, the Commission issued a Dismissal Order granting VA DSA's Petition.

PUR-2022-00073. On May 24, 2022, this proceeding was opened pursuant to the VA SCC's Final Order in PUR-2021-00127, Dominion Energy Virginia's (DEV's) petition for approval of Phase II of its Grid Transformation Plan. In Case No. PUR-2022-00073, the Commission sought comments from stakeholders regarding the challenges of integrating distributed energy resources (DERs) to the electric distribution system. Additionally, the Commission directed SCC Staff to convene, no later than August 1, 2023, two separate stakeholder working groups to examine specific aspects of the interconnection process. The Staff convened stakeholder meetings in the summer and fall of 2023, which were moderated by a third-party facilitator. In January 2024, the third-party facilitator submitted its Final Report summarizing the outcome of the working group meetings. In February 2024, the Commission invited comments on the Final Report on the working group meetings. This proceeding is still active, though the stakeholder process ordered in May of 2022 appears to have concluded.

PUR-2023-00097. This proceeding was initiated by a complaint from the Virginia Distributed Solar Alliance (VA DSA) seeking an injunction to suspend imposition of DEV's Interconnection Parameters for Net Metering Distributed Energy Resources on "midsized" nonresidential net metering projects, defined as projects of less than 1MW but greater than or equal to 250kW. DEV first published the Parameters on its website in December of 2022. The Parameters extended the study and interconnection process imposed on non-net-metering interconnection customers by Chapter 314 of the Administrative Code[1] to Dominion's net metering customers, in order to ensure that these projects were also interconnected safely and reliably to the grid. The Commission issued a Final Order on August 30, 2023, suspending the imposition of the Parameters; however, it also indicated that DEV should continue to take the actions necessary to maintain the immediate safety and reliability of its system, which it said may include seeking

[1] See Regulations Governing Interconnection of Small Electrical Generators and Storage, 20 VAC 5-314-10 et seq., generally referred to as "Chapter 314 Regulations."

specific authority from the Commission to do so. Note that Dominion accepted the Commission's invitation in this regard by filing a Motion for Interim Authority in Case No. PUR-2023-00069, discussed below.

PUR-2023-00069. On May 2, 2023, the Commission entered an Order Initiating Rulemaking Proceeding in Case No. PUR-2023-00069 to "determine whether the Commission's Interconnection Regulations should be revised." This is the VA SCC's interconnection rulemaking proceeding which is ongoing. On Sept. 15, 2023, DEV sought Interim Authority, on an expedited basis, in this proceeding to continue to require either a fiber optic or cellular-based direct transfer trip (DTT) communication system, at the customer's election, when certain conditions are met, and to require installation of a DG Panel under certain conditions for midsized net metering projects. Originally this rulemaking proceeding only applied to interconnections that do not qualify for net metering, which are governed by the Chapter 314 Regulations; however, in the November 6, 2023, Hearing Examiner's Ruling approving the company's Interim Authority petition, it also ruled that the rulemaking should be expanded to address requirements to safely and reliably interconnect net metering DERs, which are governed by Chapter 315.[2] The most recent activity in this case was a SCC Staff-led working group meeting on April 18, 2024 to receive input on specific topics related to the Chapter 314 Regulations. On May 21, 2024, the VA SCC Staff held an additional virtual working group meeting to discuss the need for a minimum standard for cybersecurity for DERs. Additionally, the VA SCC Staff has scheduled a virtual half-day working group meeting on June 17, 2024 to discuss the engineering requirements necessary to safely and reliably interconnect net metering DERs under Chapter 315 Regulations, including but not limited to, the requirements for direct transfer trip and dark fiber.

PUR-2023-00198. This proceeding was initiated by VA DSA's filing of an Enforcement Petition on Nov. 2, 2023, directing DEV to cease and desist from imposing any component of its Interconnection Parameters for Net Metering Distributed Energy Resources, including but not limited to direct transfer trip requirements via "Minimum Standards" or light load screens or otherwise. On January 12, 2024, the Hearing Examiner issued her Report recommending that the petition be dismissed because (1) it lacks facts to establish irreparable harm or likelihood that VA DSA's members would suffer irreparable harm and (2) there is no legal basis to grant VA DSA's injunction by statute against Dominion for violating either Code § 56-578 C or 56-247. While the parties awaited a Final Order from the Commission, on May 1, 2024, VA DSA filed a Notice withdrawing its Petition and requesting that the Commission dismiss the proceeding without prejudice. On May 16, 2024, the Commission issued a Dismissal Order granting VA DSA's Petition.

[2] See Regulations Governing Net Energy Metering, 20 VAC 5-315-10 et seq., generally referred to as "Chapter 315 Regulations."

2. What do you see as the best solution to paying for grid enhancements to handle proposed projects?

DER projects have the option to connect to the grid in two different ways. They can interconnect on the company's side of the interconnection (front-of-meter), in which case the project typically exports all its electricity output to the grid. Alternatively, they can interconnect on the customer's side of the interconnection (behind-the-meter), in which case the customer may qualify to participate in net metering—consuming a portion of the electricity onsite and sending excess electricity to the grid.

Any interconnecting project can pose safety and reliability concerns that may necessitate grid upgrades to connect to the grid while maintaining reliability and the safety of line workers and the public. Therefore, regardless of the interconnection option chosen, the interconnecting project is required to bear the costs of any grid upgrades required for the sake of safety and reliability. Absent the interconnecting project, such upgrades would not otherwise be needed.

The Commission proceedings referenced in Question 1 have surfaced disputes over the costs to interconnect certain midsized net metering projects, as well as who should bear those costs. It is important to consider that most customers with onsite solar generation interconnect for free. To date, only 0.3% of the more than 40,000 DEV customers currently participating or seeking to participate in net metering have been subject to interconnection costs. The projects at issue are large, multi-acre solar installations serving a single customer.

If studies demonstrate that certain equipment is needed to safely interconnect these projects, those costs should be borne by the project developers/owners. We are wary of any proposal which would result in DER interconnection costs being socialized (that is, shifted onto non-participating customers who do not receive the benefits). DEV is nonetheless sensitive to the feasibility concerns and is committed to reducing the costs and cycle time for interconnection of DERs. To that end, DEV has been exploring ways to reduce the cost of interconnection since 2016 and currently has three pilot projects underway to validate potential alternatives to the costliest aspects of interconnection.

Typically, the largest interconnection expense imposed on mid-sized and larger net metering customers has been the fiber optic communications equipment that facilitates direct transfer trip (DTT) capability. This protection scheme allows the utility substation, and any in-line automatic protective devices, to communicate reliably with the DER facility and promptly isolate the facility during a fault condition. A reliable communications channel is necessary because during such a fault condition, it is imperative that the DER system disconnect from the grid to appropriately safeguard utility workers and the general public.

Under the interim authority the Commission granted DEV in PUR-2023-00069, the company has offered midsized non-residential net metering customers the option to select cellular-based DTT while the Commission rulemaking proceeds with the goal of a final resolution to this issue. Although it has the potential for more frequent nuisance trips compared to fiber as a communications medium, the cellular-based DTT option provides a less expensive interim

alternative to fiber-based DTT while still ensuring the solar system disconnects from the grid during a fault condition.

During the 2024 Virginia General Assembly session, DEV negotiated with solar and net metering advocates on several iterations of proposed legislation, with the goal of mitigating the issue of interconnection costs while the Commission rulemaking intended to establish a long-term resolution of the issue continues. Unfortunately, the two sides were unable to reach a resolution before the session adjourned. Among the compromise solutions the proposed by the company were:

• A non-exporting option where customers who agree not to export energy to the grid interconnect for free, and

• A capped cost to interconnect, intended to provide cost certainty to developers, with any costs exceeding the cap to be borne by the utility and recovered from other utility customers.

3. How many MWs are backlogged waiting to be allowed into the grid?

You will likely receive a range of answers based on how broadly respondents construe the supposed "backlog." Some solar developers may suggest that projects they bid into DEV's recurring Requests for Proposals for solar/storage projects, but which were not selected, are part of a "backlog."

Setting that issue aside, our response will focus on non-residential net metering projects awaiting interconnection, given that they have been the focus of the Commission proceedings. To date, DEV has connected a total of 1,193 non-residential net metering projects amounting to 84 megawatts of behind-the-meter solar capacity.

There is a total of 68 megawatts across 188 non-residential net metering projects waiting to interconnect to the grid at this time:

• 82 projects totaling 42 megawatts are in various stages of technical review or are awaiting feedback from the customer as to how they want to proceed based on technical study results. Of the 82 projects, 20 are awaiting cost estimates for the cellular-based direct transfer trip option. DEV plans to begin delivering the estimates to customers this month.

• The remaining 106 projects awaiting interconnection have all received contingent approval and are either already in construction or awaiting a meter exchange and/or Permission to Operate certificate.

4. Do fossil fuel closures create space on the grid for new renewable energy projects to replace them?

The closure of fossil-fueled power stations may create brownfield sites that provide physical space for renewable energy projects. However, the acreage needed to achieve the solar buildout envisioned by the VCEA and necessary for DEV to comply with its renewable portfolio standard compliance obligations will far exceed that which could be made available with power station retirements.

Retirement of fossil-fueled power stations would also create "space" in terms of capacity—a gap in the system's potential to generate electricity relative to growing demand. There would be an urgent need for replacement capacity to fill this "space," and solar/wind projects cannot match the capacity contribution of traditional resources.

In other words, a hypothetical 300-megawatt solar project would be insufficient to fill the "space" created by the retirement of a 300-megawatt gas-powered station. This is because solar productivity is inherently weather-dependent. The "effective load carrying capacity" values calculated by PJM illustrate the significantly different operational capabilities of intermittent renewable resources versus dispatchable fossil-fuel resources.

	2025/2026 BRA ELCC Class Ratings
Onshore Wind	35%
Offshore Wind	60%
Fixed-Tilt Solar	9%
Tracking Solar	14%
Landfill Intermittent	54%
Hydro Intermittent	37%
4-hr Storage	59%
6-hr Storage	67%
8-hr Storage	68%
10-hr Storage	78%
Demand Resource	76%
Nuclear	95%
Coal	84%
Gas Combined Cycle	79%
Gas Combustion Turbine	62%
Gas Combustion Turbine Dual Fuel	79%
Diesel Utility	92%
Steam	75%

5. How concerned is Dominion over power line infrastructure projects being denied? And who has final authority over their placement?

As with any linear infrastructure project, the approval process for power lines involves significant scrutiny by regulators. The State Corporation Commission has final authority to approve transmission line project placement, and its consideration is governed by § 56-46.1 of the Code of Virginia. For example, as it relates to transmission lines of 138 kilovolts or greater, the statute provides:

> "As a condition to approval the Commission shall determine that the line is needed and that the corridor or route chosen for the line will avoid or reasonably minimize adverse

> impact to the greatest extent reasonably practicable on the scenic assets, historic [and cultural] resources recorded with the Department of Historic Resources, [cultural resources identified by federally recognized Tribal Nations in the Commonwealth,] and environment of the area concerned…
>
> In making the determinations about need, corridor or route, and method of installation, the Commission shall verify the applicant's load flow modeling, contingency analyses, and reliability needs presented to justify the new line and its proposed method of installation…
>
> Additionally, the Commission shall consider, upon the request of the governing body of any county or municipality in which the line is proposed to be constructed, (a) the costs and economic benefits likely to result from requiring the underground placement of the line and (b) any potential impediments to timely construction of the line..."
>
> [Brackets reflect language to be added to the Code upon the effective date of House Bill 1157]

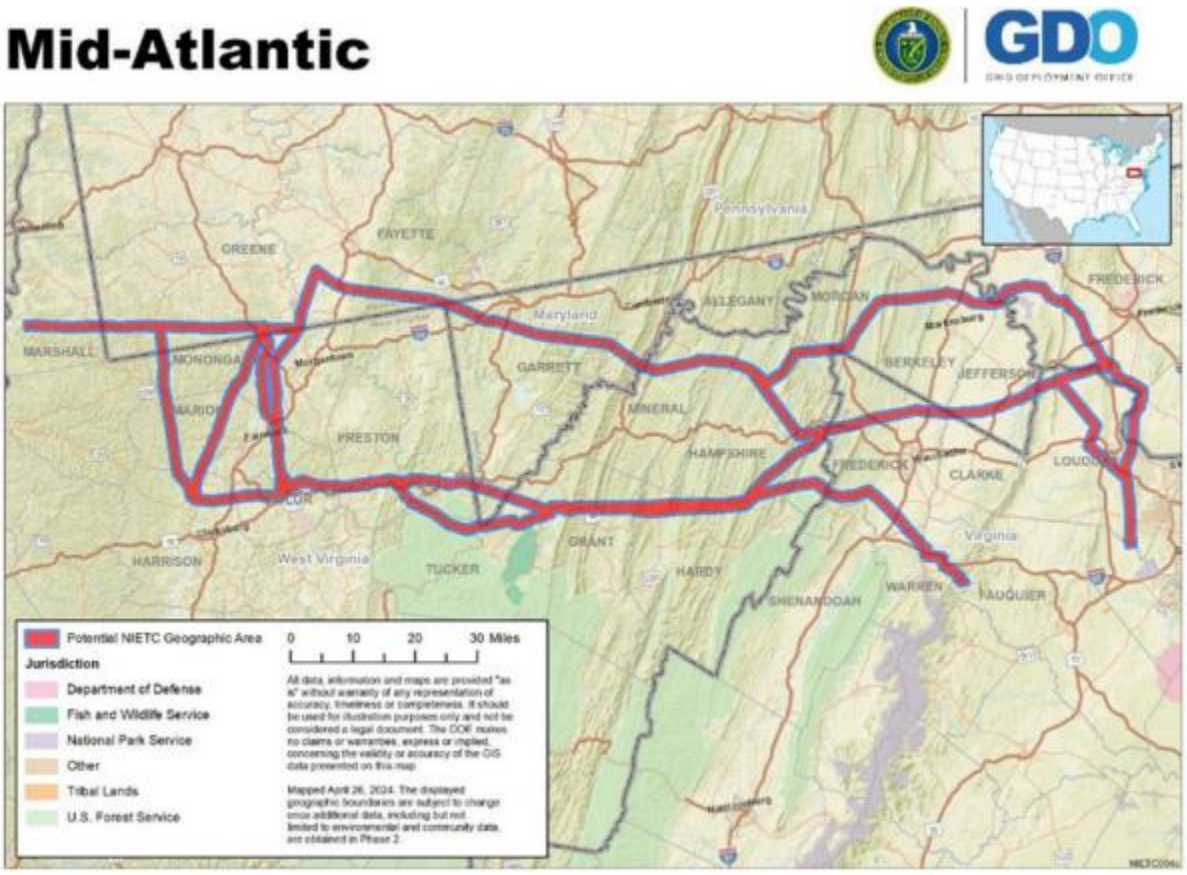
These provisions open the door for intervenors to dispute essentially any aspect of a proposed transmission project (necessity, design, routing, etc.) before the Commission. However, DEV has a long history of working with the Commission to ensure we meet applicable statutory requirements for the placement of power lines. This involves justifying the need for projects by reference to PJM's and DEV's assessment of their importance to ensure grid reliability, as well as demonstrating stakeholder engagement to reasonably address adverse impacts.

The likelihood of federal intervention in placement of power lines is evolving. Congress originally established a limited federal role in electric transmission siting via Energy Policy Act of 2005. That law authorized the Federal Energy Regulatory Commission (FERC), under certain circumstances, to issue permits to build or modify electric transmission facilities in "national interest electric transmission corridors" (NIETCs) identified by the U.S. Department of Energy. The Infrastructure Investment and Jobs Act of 2021 went on to clarify that FERC may issue such a permit if a state has denied a siting application.

On May 13, FERC unanimously approved a rule outlining how it plans to implement this limited authority, as amended in 2021, over transmission siting. FERC's process would serve as a backstop if a state rejects, fails to act on, or lacks authority to review a proposed transmission line within an NIETC. Notably, the rule did not adopt a suggested parallel pre-filing which would have allowed transmission project sponsors to initiate discussions with FERC while a state is reviewing the line. Instead, FERC's process would begin after a state's one-year review period lapses.

The U.S. Department of Energy announced 10 potential NIETC routes on May 8, including a Mid-Atlantic route that extends into DEV's Northern Virginia service area. If finalized, these NIETC routes represent the first potential use of FERC's statutory siting authority. Of course, nearly all of DEV's projects will not be within this potential NIETC route, or otherwise subject to this FERC rule.

Separately, FERC issued another order which found that current transmission planning and cost allocation rules are not just and reasonable. It goes on to establish new regional planning and cost allocation mechanisms. We and other stakeholders are still digesting the implications of this order, but at a high level, it requires transmission operators to produce a regional plan at least once every five years that looks out at least 20 years.



6. What is Dominion's assessment of water needs for data center proposals?

DEV believes localities are best equipped to analyze data center-related water needs as part of their site assessment processes. There may be a case for more intergovernmental coordination to the extent separate data center proposals envision drawing water from the same aquifer(s).

7. What would the cost of converting diesel-powered data centers to hook up to the grid?

To clarify, data centers typically rely on diesel generators only as a contingency in case their supply of grid power is interrupted. We are not aware of any data centers running exclusively or even substantially on diesel power.

8. What authority does Dominion have to deny or delay electric service to large customers that it is unable to serve based on available power and grid capacity?

We are not aware of any specific authority DEV could invoke to relieve the company of its obligation under § 56-234 of the Code of Virginia—a duty "to furnish reasonably adequate service and facilities at reasonable and just rates to any person, firm or corporation along its lines desiring same."

That said, we have been able to negotiate modified service arrangements with customers on a voluntary basis. DEV met with impacted customers to discuss plans for serving their individual facilities during the temporary pause on new data center service connections in eastern Loudoun County. After completing a comprehensive analysis of our system and accelerating several near-term projects, DEV was able to lift the pause and resume new service connections on an incremental basis.

9. Is Dominion running into any difficulty in securing solar sites?

Under Virginia law, "small renewable energy projects" (solar, wind, and energy storage) up to 150 megawatts are eligible for a permit by rule (PBR) process administered by the Department of Environmental Quality.

House Bill 206 from 2022 modified the existing PBR process for proposed small solar projects by requiring an assessment of their impact on prime agricultural soils and forest lands. A project is defined as having a significant adverse impact if it disturbs more than 10 acres of prime agricultural soils or 50 acres of contiguous forest lands, or if it would disturb forest lands enrolled in a project for forestry preservation. If these conditions are met, the project is required to create a mitigation plan.

These provisions are applicable specifically to projects that seek state approval for construction and operation via the PBR process. However, the State Corporation Commission looks to the DEQ to coordinate and participate in the environmental reviews associated with petitions for a certificate of public convenience and necessity (CPCN), which is required for projects not eligible for the PBR process.

Once a regulatory framework is in place for completing PBR project mitigation pursuant to HB 206, environmental agencies are expected to comment through the DEQ review that the same mitigation requirements should apply to CPCN projects. To the extent mitigation requirements are imported from the PBR process to CPCN proceedings, the incremental cost for mitigation activities could render certain solar project sites financially non-viable.

Meeting Notes and Additional Feedback – Soil & Water, Solar and Wind Developers

Main points

- Getting approval for a project doesn't always mean it will be constructed.

- Problems and solutions to water-related soil disturbance issues in creating utility-scale solar facilities:

    - Regarding the Virginia Department of Environmental Quality's (DEQ's) streamlining of the Virginia Stormwater Management Handbook, we need to ensure that best practices are included and clarified throughout the book. There is some concern among developers and engineers that various types of development could be increased. We are working with DEQ to address these issues, and we will have a better idea whether this is something that needs to be addressed when the Handbook is officially released in July.
    - There is a lot of misunderstanding among the companies and the DEQ.
    - The other issue is whether the Chesapeake Bay model property accounts for DEQ runoff. DEQ doesn't think it does. This is why many of our clients are scared of additional regulations.
    - There were several situations where we thought we had solutions, but then it did not work out. One time we were told we needed 100 stormwater basins, but that is incorrect.
    - The recent "immediate effect" regulation was very expensive.

- Everyone is in favor of brownfields and strip mines being used for solar, but not so much forests and good farmland. However, from a meta standpoint, solar is replacing road crop agriculture. If we can maintain evergreen groundcover on solar projects, we can mitigate soil erosion and runoff. Deep rooted ground cover on a solar facility can have better outcomes for soil than row crop agriculture. It's not a black and white issue. This cannot be a one-for-one exchange. Solar on brownfields, strip mines, or rooftops are great, but they are more expensive than farmlands or forest lands. We need options on all of these locations.

- We don't categorically oppose nuclear power. Local siting is a challenge for every energy source, and it should be a bipartisan priority to ensure we have enough energy. Small modular reactors are more expensive. Nuclear power must be generated in someone else's community. It's difficult to permit nuclear projects. For solar, you can just put it on your house – but not for nuclear. Dominion has a site that has already been approved.

- The VCE envisions a role for small nuclear reactors (SNRs). The big thing I want to emphasize is that there has been pushback on the feasibility of the VCEA. Less about the legislation itself but more about siting and other issues like that.

- We need to push back against the affordability and reliability arguments. We need to focus on interconnectivities and expanding the distributed energy resources. These small

things will make or break whether we can meet our VCEA goals.

- Every single project needs landowner support to proceed. Localities that block projects are denying residents the right to develop their land.

- When asked whether it would be of benefit to have the state more engaged in siting utility-scale renewable energy (or whether it should be left in the hands of local government) most agree that this is a tough issue.

    - We've been talking about this for some time. Virginia has been very deferential to local government for land use (until they start using it). A crescendo has to build for things to change. The state may need to move in. It's a timing issue. It's probably meeting that point now.
    - The challenge is that, politically, republicans and democrats will get squeamish about being the heavy hand for making people take solar.
    - We have to realize that the legislation that is brought forward has impacts on the localities. We don't want to be so heavy handed that there is a backlash. We need to be thoughtful. Timing is important.
    - Having some state control with local advisement, which is used in other states, may be a good model. This way, developers do not need to figure out the politics of every community. However, the advisement of local government is important to incorporate. This may be a two-part solution: first offer up the opportunity for local government to figure it out themselves (e.g., "tell us where we can put xx acres of solar"), but if this doesn't work, there needs to be another solution.
    - When there was legislation proposed that would require municipalities to just listen to the project proposals, it got a lot of pushback.
    - Some people in the meeting thought that we are beyond the "squeamish point" now – we're in aggressive posture. We need to decide if we're serious about the VCEA or not.

- Issues that solar developers experience when negotiating with local government around solar installations:

    - There were whiffs of the siting bills introduced in the general assembly. Even just a couple of weeks after they were introduced, things were denied.
    - Regardless of the decisions we make at this level, it's all about the local supervisors.
    - Some jurisdictions have de facto bans (1000 ft setbacks), and there are moratoriums. They say "because of this bill" we're no longer doing solar. We're at a breaking point. Counties sometimes just says "no."
    - It goes beyond NIMBE – it's also cultural (older white rural communities are against the VCEA; in other areas people are younger and diverse probably from somewhere else and religiously and ethnically they are very different). Two separate frames that no longer interact. In a lot of ways, it's a political calculus on whether they accept renewables.

    - Local opposition to solar and energy storage is a singular threat to our business plan and the achievement of VCEA goals. This threat stands out even in comparison with other "high visibility" threats, including interconnection costs and delays, federal tariffs on solar panels, and elevated interest rates.
    - What is most disheartening about local opposition is that misinformation–and even purposeful disinformation–is impairing discourse and due process at the County level. This propagates a level of "FUD" (fear, uncertainty and doubt) regarding solar that results in the kinds of arbitrary restrictions and moratoriums, acrimonious public hearings, and bizarre planning commission and supervisor voting outcomes that have become commonplace in Virginia (as an assessment of conformance with comprehensive planning is consumed instead by cultural and political talking points).
    - Our industry must do better to combat organized misinformation and disinformation campaigns being mobilized (and funded) by other interests.

- Are the issues more practical or more political?

    - As a general framing, there have been some national studies, generally it comes down to the viewshed and conflict between the haves and have nots.
    - The political situation exacerbates what's already there – they don't want to see the solar panels, so they find another reason to go against it. People are looking for any excuse they can find; they look for a scapegoat.
    - There are a lot of paid-for advocates against renewables. It's hard to counteract their misinformation campaign, but we are trying. We are doing lots of debunking of misinformation.
    - I have done several community engagement processes for solar developers – projects get denied because of fear (e.g., it will cause a fire or explode, and we don't have the capacity to deal with it), but when we say we will fund the fire station, then they find another excuse.
    - There are a lot of new legislators. We spend a lot of time doing new legislator education. There is a lot of misinformation. At some point we have to get to the facts.
    - We are trying to site 95 percent of our projects in rural republican districts. They do not want to make their landscapes undesirable just to give energy to urban and suburban communities.
    - The groups that are organized against these projects are very litigious.
    - Many of these lands are not even being farmed. The owners of the land just want to diversify. It's weird that local government can prevent that.

- Range for the total acreage needed per megawatt of solar.

    - This is more and more difficult to calculate given the increase in data centers and electric cars.
    - The nature conservancy did its own study. I can't remember the numbers. It's a single digit number in terms of the acreage.
    - The number I've seen is 3 percent.

- We are working with some people to get a study done. Rooftops, schools, community centers are included.
- Interconnection is the main issue. We need to convince people to sell or lease their land.
- The solar developers will build less than 3 percent because we must compete for the land they want to buy. There is only so much room in the grid (electronics).
- If 6 developers are competing, you will only get 1 or 2 agreements.

Other points

- When the renewable portfolio standard (RPS) was put in place, it did not cover nuclear.

- We're working on projects and how panels are made in the USA. Solar for All is in low to moderate income communities.

- We need Renewable Energy Certificates (RECs) associated with the sale of electricity from fossil fuel generation.

- Recent "immediate effect" regulation that was very expensive.

- Regarding the deficiency payments part of the RPS, the ceilings are what the REC might be. That is the cap. It goes into a fund to support things like job development and solar projects, etc.

- Dominion met their targets through 2023. Same as APCO. They haven't had to purchase any RECs.

- The VCEA incentivized the development of clean energy sources as well as retirement requirements.

- If they build targets for storage, off-shore wind, onshore wind, and solar (utility-specific ones), they have to petition the commission for approval to construct or operate. 65-(utility owned)–35 (PPA) split.

- What about renewable biomass?

- Third party ownership – got some pushback. Many canceled.

- When utilities file RPS plans, annually they must provide updates on projects that have gotten approval. They want to get cost approval. Are rate payers going to be on the hook for canceled projects? There is less risk for ratepayers if it's a PPA (power purchase agreements).

- What are the localities' obligations after there is approval from the commission? You can typically see in the filings justifications on what has happened.

- Economic hardship for sponsors.

- Binary risk of local opposition.

- Interest rates are rising, which raises risks for developers. The projects need more to be profitable.

- Things to think about when considering whether to give the state more control over the process: where does state government make all the decisions? What about a housing development? A mega-site? Schools?

- There was a big Excel spreadsheet to figure out runoff, and solar didn't fit into any of the existing categories. However, I know a lot has improved.

About the process

- As a Virginia company, we plan to (i) get in front of as many legislators, economic development directors, planning directors, and local supervisors as we reasonably can to provide better and more accurate information, and (ii) work with our trade organizations to coordinate, collaborate, and pool resources with other likeminded companies. We view this VCEA working group as a blend of those activities and look forward to supporting it fully.

Meeting Notes and Additional Feedback – VACO, VML, and Data Centers

Main Points

- We are working to meet the VCA goals.

- Impact of solar facilities on land usage, zoning requirements, environmental concerns, political concerns:

    - We've been able to collect some important information this year. Among 69 counties we have close to 12,000 MW. That's about 181 square miles.
    - We used to see projects in the 5–10 MW range. Now they are much larger (500–600 MW).
    - The main issues are: 1) loss of forest land, 2) loss of agricultural land, and 3) effects on stormwater. These are concerns during the construction phase and also after the construction has been completed.
    - Some have said it's getting more difficult to get projects approved, but I don't think that is true. They may be taking a pause. There is more press about projects getting denied than projects getting approved. But they are getting approved. We don't see a trend in increasing rejections.
    - Transmission lines are very controversial.
    - School rooftop solar is a useful conversation. Also, Solar in parking lots will happen eventually, but it's not happening much right now.

- Has revenue from solar projects been beneficial to local governments?

    - Yes and no.
    - For VACO, yes *(NOTE: There are older projects – those approved before enactment the Host Site agreement law – that, due to state mandated tax exemptions, resulted in significantly less revenue for some VACo members. Some of these projects have yet to begin, but the General Assembly has by law twice mandated extension of their local approvals. The result is counties have been prevented from utilizing the host site agreement law to re-negotiate these stale projects).*
    - We need more education, especially on educating the county supervisors on what is available.

Do we need to do anything else to incentivize solar installation?

- This is not a concern we've heard from our members. There is some concern about the LCI (Local Composite Index) score, but solar is a small part of that.
- Cultural and political concerns.
- In many places, there is a divide between urban/suburban and rural. Things are becoming more tribal.
- However, in some jurisdictions, it's more about "kitchen table" issues. For example, in Newport News it's not as much about "red team–blue team." They

will say, “this is a rich person problem. It’s not our problem.” There are a lot of people technically on one team who support someone very different from them.

- Data centers – high demand:
    - We’re streaming things now. Every one of these devices in some way uses a data center. The move to AI has changed current and projected need. People used to store data onsite, but now there are multi-tenant data centers. If you want to start a website and build a business, you will need a datacenter.
    - Another thing is latency, for example the time between putting the credit card in and getting the purchase completed. This speed depends on proximity to a data center.
    - People don’t realize how much of their relevant economy not modernized yet.
    - There is a huge push to modernize, and you need data centers for this.
    - People don’t realize how global issues, such as national security, are run through Virginia.
    - How much renewable energy is powering a certain data center? We don’t have a say in what’s in the mix. This question comes up a lot. We can say we offset or generate. But we cannot put an order in for just green. You hope to be closer to green generation, but it’s still not guaranteed.
    - Several companies have water goals. There are waterless datacenters. They need more energy for cooling. During the last session, there was a miscommunication about what type of water is used by data centers. I’ve yet to hear about a locality that has had a supply issue due to datacenters.
    - Data centers required 24/7 power of a certain quality. You can purchase from the grid, but you need it constantly and consistently. The wind isn’t always blowing, and the sun isn’t always shining. The load profile of data centers is best matched by nuclear generation.

- Decision-making related to siting should be left to the local government (not the state).

- We need to have an honest discussion on what our energy needs are and how solar fits into that. The numbers sometimes change. It’s difficult to know what is needed.

- Incentivizing things tends to be more successful than mandating things. One option is to find what the local units of government need and tie what you want to do to that. Maybe if you build solar, you can put them at the top of the list for school construction or something like that?

- We need to identify ways to reduce the need for water.

Other Points

- People want to build websites that are secure – there is a reason why they are building them in the US and in Virginia. Would you rather have your personal data in another country or in the USA? This is a reason for locating data in the USA. We don’t want a

move to stop building data center and then put them offshore and then have to bring them all back for security issues.

- The Virginia Solar Survey done by DOE with UVA had a 82 percent response rate (among all the proposed solar projects, 91 percent had been approved at the local level; there has been agreement). *(NOTE: The **Virginia Solar Survey** published in April 2022 by the Virginia Department of Energy, in partnership with the Virginia Solar Initiative at the University of Virginia, included a response rate of 82% that was primarily from counties (the survey was sent to all 95 counties and 38 cities in Virginia). **Table 3 on page 18** shows that of the 116 utility-scale solar projects that went through the complete application process, 106 were approved by the locality for a positive rate of 91%.)*

- Dominion has until December of this year to have 3,000 MW. They are ahead of schedule *(NOTE: In an October 2023 filing to the SCC, Dominion reports 3,744 MW of solar generation towards meeting this interim target. Dominion Energy is well ahead of schedule in meeting the target of 16,100 MW by December 31, 2035.)*

- Amazon Web Service (AWS) – transmission line development is the main issue. We will need more transmission. The grid, to enable the goal of the VCEA, will need to be modernized. We need to educate people on what must happen collectively.

- If 100 percent renewables, we would have to build out 3 times more transmission infrastructure than what it is right now.

- VCEA doesn't mandate that it build 60,000 MW; it just mandates that it proposes it to the SCC.

- Virginia already allows for partial deregulation. If you use 5 MW or larger, you can shop for someone other than youth utility. If you are shopping and procuring clean energy, you are allowed to opt out of some of these costs. But this is a voluntary opt in. This was a big fight last year – to take away data center's ability to shop.

- This provision needs increased standing to make it to get clean power easier to do.

- What about ongoing taxes on revenue? Say we have $1 million value in solar facilitation, the state says 80% does not count toward value of property. That comes from the machinery and tool tax. County can fully exempt from the machinery and tool tax. and replace it with "Revenue Share", which is currently at $1400 per MW of capacity. None of this value is counted in the LCI score.

- Can we recycle mine water?

Meeting Notes – State Government and Administrative Agencies

Main Points

- The pathway to hit the energy demand curves does not seem possible with only renewable energy.

- Behind-the-meter solutions can take several pathways: small nuclear reactors, hydrogen solutions, natural gas.

    - The cleanliness of natural gas is transitioning over time. A lot of our demand concerns can be solved with natural gas options. Natural gas will be cleaner in 2030-2035, in terms of carbon. It's getting cleaner and cleaner. If we can run behind-the-meter natural gas, that could help.

- Offshore wind, nuclear, even hydrogen sources are seen as economic development opportunities. There are lots of opportunities for projects there. We are hoping for small, nuclear opportunities, too. They could be incentives for economic development projects.

- We want to be able to get solar power easily. We will see more of this. The grants will come. We will hit the ground hard.

- We spoke with 750 stakeholders. The assumptions when the VCEA was passed do not make as much sense now. There are lots of new things going on. There is frustration that we, as decisionmakers, are not being transparent with changing realities. We need to provide more data. The assumptions of the VCEA have changed since it was passed. We need to update the assumptions.

- There is not a ton of flexibility or incentives to allow for new carbon generating sources. Some new technologies are not included in the definition.

- We look at the energy sources in silos, instead of as a system. We need all of them. But when we talk about them, we are ONLY talking about offshore or solar. How do they all work together? We now have a different economy and opportunity (militarization). But we are not addressing it holistically. There is a supply chain aspect that we are not talking about. Also, we sometimes leave the potential consequences (or externalities) of our ideas out of the conversation.

- Local support for VCEA

    - Behind closed doors, some will say they understand the importance of the VCEA. They understand the benefits, but they just can't do it. We get pushback on that. Local government staff want the most profitable use of property. Taking property for solar is a concern. They don't want to have this conversation in solar.
    - In some counties, the solar companies have placed their projects in terrible places. They are destroying places. There are solar and water issues. There are major

violations. There is a resentment that rich, Norther Virginia people are forcing the rural areas to have these solar farms. They think the wealthy areas in the state are pushing this on the poorer rural areas.

- We've seen a lot of negative opinions. Rural Virginia doesn't like the VCEA. It's attractive for small-time farmer to get rid of the farm. But the conversations now are not favorable. Are there opportunities for more NOVA rooftops rather than going out into the country?
- When localities get applications for solar, they pass resolutions against them. They have taken themselves off the table to even look at solar opportunities. There needs to be a fair process for seeing a proposal on its merit. Some will look at solar, but others won't even look at it.
- The assumption is that we have "given" these localities the power to decide. That's not true. They already have this power. It wasn't a 100–0 vote for the VCEA. We've set out mandates without an implementation framework.

- Would additional state policies (or other involvement or oversight) help move the VCEA forward?

    - I don't see this as viable. You've already tainted the water so much that I don't think we could set up an enforcement mechanism.
    - Consider zoning for solar. You can't say everyone needs X. If there is someone who owns land and by right can do this, they should be able to do it. If they want to use land for solar, it's their right as a property owner.
    - We should not force local government to site solar. However, if we give individuals more power to do what they want with their land, it will improve. Right now, it's like there is a prohibition on allowing two partners to come together.
    - You have to have proper setbacks and environmental perspectives. But in some communities, they have gone father.
    - We need a comprehensive plan for a more orderly process. This is better than just throwing out lots of plans and hoping one sticks. There is a five-year process.
    - There are conversations on where to site solar – but we're only placing 5 percent. We need PJM to be part of the plan.

Other points

- We appreciate that you invited us. We will have to reevaluate our role as things go along, based on the administration's goals.
- I don't care about the technology for the next 5 years. I care about it for the future.
- Interesting conversations. Do we need to stay away from natural gas in power gen?
- $250 million, of which $215 for solar.
- 6000– solar farm in Spotsylvania is a small-level place, but it took a lot of land.
- PJM is jammed up with proposals throwing against the wall to see what sticks.
- We can say we're created all this solar, but if only 5 percent gets through the process, localities, only small amount fruition. It's a terrible loss rate.

Meeting Notes and Additional Feedback – Virginia FREE, Business, Agriculture, and Forestry

Main Points

- The VCEA creates anxiety in terms of our competitiveness with other states.
- Since the VCEA began, we have introduced AI, data centers, and electric cars. What does the future hold? Can we maintain profitability and investment in Virginia or not? There is fear of the unknown. The planning does not always include the "what ifs" and the costs in that. There is always an anxiety in that.
- With these goals, you need a lot of land, and we just don't have it. People realize that they need to save forests and farms. The agriculture and forestry sectors are two of the biggest sectors, and they are in competition for the same resources as solar. They have a lot at stake. What's the tradeoff?
- The VCEA goals compete with Virginia's water quality goals. If we cut down the trees we won't meet these goals.
- We need to look at next-generation and renewable natural gas and consider its use in the future. Whatever the path forward is, we need flexibility to use the infrastructure we have. One of our main concerns is maintaining our access to natural gas. There are huge opportunities for reusable natural gas. This is a net zero.
- There is a general lack of understanding of the energy needs in Virginia. To have the same quality of life that we have today, we will need a lot more energy tomorrow because of electrification.
- Electrification affects our ability to meet the requirements of the VCEA. Some are opposed to electrification of homes. The VCEA makes it more difficult.
- The general assembly has given localities enormous revenue tools in the past couple of years as well as siting agreement capability.
- Grassroots groups are getting better organized. Now that they have revenue tools, they may take the populist route against the development.
- It will be difficult to bridge the divide across the commonwealth, in terms of rural and urban/suburban needs and values.
- Every person has shown a willingness to meet the VCEA goals in the policy. But we need far better leadership in Richmond and throughout the commonwealth to meet these goals. Some won't want to. But many do.

- I have seen an inordinate willingness to meet the goals. But there is a burden on the business community. There need to be incentives for businesses. Because of the influx of federal government money and resources from the port of Virginis, we have not had to meaningfully address our lack of economic growth as a state. But this is important to address.

- We need to have a shared set of data and information. We need to decide about what data we're looking at. NGOs like to bring their own data and make assumptions about our goals and our load. We need to be very clear about what these are in the very beginning. It's hard to have a serious discussion with a moving target.

- As private businesses we have our own goals, and some are related to environmental impact. But business wasn't given a seat at the table to make sure the VCEA met their needs. In a larger macro sense, the bottom line is the bottom line. There is not a lot of upside here for us. The math is the math. We have to pass these extra costs on to our customers. However, incentives will help us absorb a lot of the costs.

- People are calling other states for their manufacturing, not Virginia. No one is moving here. We are losing capital.

- We are also impacted by other requirements, such as the emissions standards and latest EPA proposals. We must take into account a lot of things, not just the VCEA. There is tremendous demand.

- It seems like the government picks the technology and makes us do that, instead of letting the market figure out the best ways to achieve the VCEA goals.

- From a cost perspective, the infrastructure required to get to full electric trucking is an enormous amount of money.

- We could come up with all kinds of great agreements on all sides, but there are advocates that will fight against it.

- It is not easy to find sectors of the Virginia business community that will be impacted positively by moving the VCEA forward.

- Solar panel construction:

    - It's unlikely that Virginia could have a profitable solar panel construction section, but it is possible.
    - People don't want overseas panels. But currently, China has 85 percent of the market in solar panel. Panel construction is also done in Alabama and Louisiana.
    - It just doesn't seem to be a viable industry in Virginia. Panel manufacturing is not a real goal.

- Solar panel recycling:

    - The SCC did a study on externalities of renewables. There are no plans or projected costs for these externalities.
    - Heavy metals in panels are toxic. We have zero plans for addressing the huge number of solar panels that will need to be recycled.
    - Recycling is a huge business opportunity. You may want to pull metal and toxics out of the old panels that may lead to environmental and health risks.
    - Solar panel recycling could be a business that would benefit from the VCEA, and we could do that in Virginia.
    - There will be an enormous need for panel recycling. This will be an anticipatory industry.

- Maritime industry – investment is down in the port. We need private investment to prepare what was an underutilized maritime industry to become a supporter of offshore wind. There is an opportunity to attract more of that supply chain.

- What is the business communities' general thought? These are the wrong questions. The question is, for most of the manufacturers, "is it the right goal?" not "how do we reach this goal?" The assumption is that it is feasible. But we do not all agree. We have artificially selected certain technologies in a certain timeline and ignored cost, externalities, and national security.

Other points

- Thank you for convening this working group. Wonderful leadership.

- We did our first RNG purchase.

- The role of hydrogen is still more in the exploratory stage.

- Some commented that they don't have the ability to pass on to consumers like others do. We think about this as we're doing this. It's not for a lack of concern or interest in the environment. It's about doing both at the same time.

- We should use the things we already have (biomass bill was a big deal). We should utilize resources we already have and are readily available and considered renewable.

- The big electric companies buy their own gas, but we move it to them.

- Some mentioned being members of One Future.

- Virginia hasn't had to address our lack of economic growth because of the federal government funding and the port of Virginia. But we need to address this soon.

- You asked the question about the positives of the VCEA, and there were crickets in the room. This doesn't mean that business and manufacturing don't care about the environment.

- We are looking ahead at future contracts for submarines. It's challenging.

- Anything that impacts the larging shipping or transportation center is 20 years ahead of the agriculture sector (e.g., making tractors).

- What is the prospect for nuclear power, in terms of helping to get closer to those goals? We won't know until 2028 when our Virginia-made reactor completes (in Ontario). We know it's achievable.

- Here in the matter of week, we are expecting another lease offer for an area a little larger than the Dominion current site, further east. There is also an already-authorized area off Kitty hawk. They have two struggles: 1) where to bring power ashore, 2) reaching an agreement for the purchasing of the power. Will Dominion compete for this?

- There has been a lot of discussion about Hampton Roads being the tip of the spear for reindustrialization and remilitarization. How does remilitarization (building more ships, building more subs and military infrastructure to protect ourselves from our adversaries) help Virginia? We are driven by military industrial infrastructure. We have ship builders, the port, cottage industries that depend on a defense economy. How does this intersect with the VCEA?

- Recently, the federal government has said they cannot achieve national security goals with only renewable power. Most likely, Virginia cannot do this either.

SWOT Analysis – Environmental Lobby

Environmental Lobby			
Strengths	**Weaknesses**	**Opportunities**	**Threats**
General agreement with the goals of the VCEA. Most Virginians like the idea of the VCEA. We are on the right track. Virginia could hit the VCEA goals. We've already done more than we thought we could do.	The messaging is failing. We are neglecting any discussion on energy efficiency and reducing demand for energy. There is a lot of pressure on land use issues. Not enough discussion on managing datacenter growth. We have jumped too quickly to the nuclear option without thinking through other implications. Things keep changing so fast, it's difficult to get up-to-date data to make plans and develop strategies. Most solar is being built in rural areas, and there is a lot of pushback.	Parking lots and community solar do not need to be mutually exclusive. There are backdoor conversations happening between data centers and utilities. Can we respond by saying, "How does this align with the VCEA?"	Efforts to expand use of hydrogen and natural gas. If we allow this scale to continue, we have to cover 10 percent of the state in solar panels, and there will be so much backlash that people won't support VCEA anymore.

SWOT Analysis – Soil and Water, Wind, and Solar Developers

Solar and Wind Developers			
Strengths	**Weaknesses**	**Opportunities**	**Threats**
Dominion and APCO met their 2023 targets. The VCEA incentivized the development of clean energy sources and retirement requirements.	Regardless of our decisions, local supervisors have the power. Some have moratoriums or de facto bans. Groups that are organized against these projects are very litigious. Viewshed issues and conflict between the haves and have nots. Misinformation among the new legislators. Misunderstanding among the companies and DPQ. Getting approval for a project doesn't always mean it will be constructed. Difficult to permit nuclear.	If we can maintain evergreen groundcover on solar projects, we can mitigate soil erosion and runoff. Deep rooted ground cover on a solar facility can have better outcomes for soil than row crop agriculture. We need to push back against the affordability and reliability arguments. We need to focus on interconnectivities and expanding the distributed energy resources. State has been deferential to local gov. for land use. The state may need to move in. It's a timing issue, and it's probably meeting that point now. We need RECs associated with the sale of electricity from fossil fuel generation.	Interest rates are rising. Many of our clients fear additional regulations. We need large-scale solar and wind projects to meet our energy needs. Siting challenges are the biggest barrier.

SWOT Analysis – Electric Companies and Cooperatives

Electric Utilities			
Strengths	**Weaknesses**	**Opportunities**	**Threats**
The opportunity to harness the power of the wind and sun. The coops have a self-imposed clean economy goal (beholden to 2050 cutoff). Neither utility has had to make a deficiency payment. Utilities have a track record of working with localities and amicable siting of various projects.	Dramatic increase in load while forcing retirement of fossil fuel plants. Providing reliable service depends on ability to plan, permit, and construct. But lead time is long. We may not have the ability with renewables to keep the lights/heat on during the coldest day. If customers can contract cheaper, dirtier energy from across state lines, it is still considered carbon free. Affordability is the biggest concern. People can't afford it. Many private developers don't understand the complexity of grid connection tech. and cost issues.	We need more discussion about the supply-side dynamics, especially when considering other states. We might want to consider a machinery and tools tax exemption.	If a locality bans a particular resource, it may have a lasting impact on reliability. If we close fossil fuel energy sources too soon, it may affect reliability. Large swarths of customers can come and go. When you construct something for them, and then they can choose to leave the system at any time, how does that impact other customers?

VACO, VML, and Data Centers			
Strengths	**Weaknesses**	**Opportunities**	**Threats**
We are working to meet the VCA goals. Dominion is ahead of schedule in having 3,000 MW.	Loss of forest and agriculture land and storm water effects. Transmission lines are controversial. Conflict between urban/suburban and rural communities. Things are becoming more tribal. In other places, they are more concerned with "kitchen table" topics and consider environmental policies to be a "rich person's problem." Need for discussion on what our energy needs are and how solar fits. However, data and information sometimes change. It's difficult to know what is needed.	School rooftop solar. Solar in parking lots. Need to educate county supervisors on options. Waterless datacenters. Meet load profile of data centers with nuclear. Incentivizing rather than mandating. Find what the local units of government need and tie what you want to do to that. Identify ways to reduce the need for water.	If we must have If 100 percent renewables, we would have to build out 3 times more than what there is right now.

State Government, Administrative Agencies			
Strengths	**Weaknesses**	**Opportunities**	**Threats**
Offshore wind, nuclear, even hydrogen sources are economic development opportunities.	We've set out mandates without an implementation framework. Hitting the energy demand does not seem possible with only renewable energy. The assumptions when the VCEA was passed do not make as much sense now. Frustration that we are not being transparent with changing realities. Little flexibility/incentives allowing new carbon generating sources. We look at the energy sources in silos, instead of as a system. We need all of them. Consequences and externalities not discussed. Some solar projects are in terrible places. There are solar and water issues and major violations. When localities get solar applications, they pass resolutions against them. There is resentment among rural counties that rich Northern Virginians are forcing the rural areas to have these solar farms.	New natural gas technology. Natural gas will be cleaner in 2030-2035, in terms of carbon. Behind-the-meter options: small nuclear reactors, hydrogen solutions, nat. gas. Develop a fair process for localities to see renewable project proposals on their merit. Small, nuclear opportunities as incentives for econ. dev. Provide more data and have a conversation about how all energy sources work together. A different economy and opportunity (militarization). Talk about supply chain aspect. It's attractive for small-time farmer to get rid of the farm. How can we make the conversations about solar more favorable? Are there opportunities for more NOVA rooftops rather than going out into the country? There needs to be a fair process in localities to review a renewable energy proposal on its merit.	

SWOT Analysis – Business, Forestry, Agriculture, and Virginia FREE

Business, Agriculture, Forestry, Virginia FREE			
Strengths	**Weaknesses**	**Opportunities**	**Threats**
We care about the environment	VCEA creates anxiety in terms of competitiveness with other states. Fear of the unknown. VCEA goals compete with VA's water quality goals. Agriculture and forestry sectors in competition for same resources as solar. Hard to have a serious discussion with a moving target. We have artificially selected certain technologies in a certain timeline and ignored cost, externalities, and national security.	Next generation natural gas. Whatever the path forward is, we need flexibility to use the infrastructure we have. Solar panel recycling businesses. Incentives could help businesses to absorb a lot of the costs related to the VCEA. Opportunity to attract more of the supply chain related to offshore wind, which will benefit the port.	No access to natural gas. Can we maintain profitability in Virginia? Forests, farms, solar: what's the tradeoff? We could come up with all kinds of great agreements on all sides, but there are advocates that will fight against it. Heavy metals in panels are toxic. No plans for addressing the huge number of solar panels that will need to be recycled.