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August 8, 2023

VIA ELECTRONIC FILING

Mr. Bernard Logan, Clerk
c/o Document Control Center
State Corporation Commission
Tyler Building – First Floor
1300 East Main Street
Richmond, Virginia 23219

**RE: Virginia Electric and Power Company's Integrated Resource Plan filing
pursuant to Va. Code § 56-597 et seq.**

Case No. PUR-2023-00066

Dear Mr. Logan,

Enclosed for filing in the above-captioned matter is the Direct Testimony of Justin Schott, which is being submitted on behalf of Appalachian Voices. Included with this testimony is Mr. Schott's one-page summary and 2 attachments. This testimony is being filed electronically, pursuant to the Commission's Electronic Document Filing system.

As authorized by Rule 140 of the Commission's Rules of Practice and Procedure, Appalachian Voices is providing, and agrees to accept, service of documents in this case exclusively via email unless parties request otherwise.

If you should have any questions regarding this filing, please do not hesitate to contact me at (434) 977-4090.

Regards,



Nathaniel Benforado

Summary of the Direct Testimony of Justin Schott

The primary purpose of my testimony is to analyze whether Dominion has met the requirements for environmental justice that were established by the Virginia General Assembly and the State Corporation Commission ("the Commission"). I evaluate the clear guidance that the Commission provided and find that Dominion did not follow through to ensure the fair treatment and meaningful involvement of environmental justice communities in developing its IRP. As a result, I recommend the Commission reject this IRP and require Dominion take concrete actions to prioritize the input and needs of environmental justice communities.

In response to its last IRP in 2020, the Commission made clear that Dominion needed to actively address environmental justice concerns in its 2023 IRP. Dominion has demonstrated its awareness of both legislative and Commission environmental justice requirements but neglected to fulfill them. Most notably, Dominion has not conducted substantive outreach among environmental justice communities or analyzed how the alternative plans would specifically impact these communities. Dominion has stated that it has no plans to conduct community engagement in the context of its IRP.

I discuss how Dominion's future-focused, case-by-case approach to environmental justice means that the voices of low-income households and communities of color are absent in its 2023 IRP. Those most impacted do not have access to inform or participate in planning and decision-making. I demonstrate that these same communities which are excluded from the planning process disproportionately experience a range of environmental injustices, including high energy burdens, high rates of disconnections, and exposure to extreme heat waves and urban heat islands. Nearly half a million of Dominion's residential customers cannot afford their energy bills; upwards of 40% of households in environmental justice communities are chronically cutting back on other basic needs or keeping their homes at unsafe temperatures. I present multiple sources of data that document these environmental injustices affect Black, Indigenous and Latinx households at double to triple the rates of higher income, predominantly white communities.

After establishing the prevalence of environmental injustice, I introduce four pillars of energy justice—recognition, procedural, distributive, and restorative justice—which I use to systematically assess the IRP and make recommendations to the Commission.

Dominion's failure to uphold procedural justice, which requires meaningful involvement throughout the full cycle of the IRP development and implementation, has serious consequences for environmental justice communities. I discuss how Dominion's failure to account for rapid increases in climate impacts puts vulnerable communities at risk and the additional the burden they face to support rapid load growth of data centers. Demand-side management (DSM) programs have an important role to play in protecting health and energy affordability. Dominion's IRP, however, minimizes the scope and positive benefits of DSM programs, which are not aligned with the needs of environmental justice communities. Without early consideration of environmental justice communities in the IRP, climate risks and energy insecurity will only be exacerbated.

I conclude by recommending the Commission reject Dominion's IRP. The Company has unquestionably not met or reasonably attempted to meet the requirements of environmental justice, despite clear guidance from the Commission and the Virginia General Assembly. I recommend concrete procedures Dominion should take to ensure fair treatment and meaningful involvement of environmental justice communities and ensure their needs and priorities are reflected in its IRP.

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

PETITION OF)

VIRGINIA ELECTRIC AND POWER)
COMANY)

Case No. PUR-2023-00066

*In Re: Virginia Electric and Power)
Company's Integrated Resource Plan filing)
pursuant to § 56-597 et seq.)*

Direct Testimony of
Justin Schott

On Behalf of
Appalachian Voices

August 8, 2023

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION

Virginia Electric & Power Company)	
)	
)	
Proposed Integrated Resource Plan)	
)	
)	
Docket	No.	2023-00066

DIRECT TESTIMONY OF
JUSTIN SCHOTT

ON BEHALF OF
APPALACHIAN VOICES
SOUTHERN ENVIRONMENTAL LAW CENTER
AUGUST 8, 2023

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I. INTRODUCTION AND WITNESS QUALIFICATIONS

Q: Please state your name, business name and address.

A: My name is Justin Schott. My business address is 440 Church St., Ann Arbor, MI 48109.

Q: By whom are you employed and in what capacity?

A: I serve as Director of the Energy Equity Project (EEP) and Lecturer of Energy Justice, both through University of Michigan's School for Environment and Sustainability. As a lecturer, I teach a graduate-level class to 40 students each fall semester.

Q: On whose behalf are you submitting testimony?

A: I am submitting testimony on behalf of Appalachian Voices.

Q: Please summarize your educational background.

A: I have an M.S. in Resource Policy and Behavior from University of Michigan (2006) and a B.S. in Natural Resources from Cornell University (2002).

Q: Please summarize your professional experience.

A: I have served in my current role as Director of the Energy Equity Project since February 2021, where I worked with researchers, community advocates, regulators and utilities to develop and implement a standardized framework for measuring and advancing equity in the energy system. The framework evaluated 148 potential metrics and considers demographic, historical, procedural and distributional aspects of equity and blends quantitative metrics with qualitative approaches. In leading the development of the framework, I organized 10 stakeholder-specific listening sessions from May 2021 – February 2022 that engaged more than 400 energy equity leaders across the country. I recruited 45 co-authors and advisors to serve on four workgroups and support each of the

1 four workgroups for fifteen months of intensive work to review listening session input and
2 148 proposed metrics and best practices, develop guiding principles, and write chapters
3 representing each of the four pillars of energy justice. In all, I coordinated highly
4 collaborative and participatory effort that was the result of more than 3,000 hours of
5 commitment from participants and workgroup members.

6 I have presented this work in over 40 settings, including roundtables, panels, advisory
7 boards, PUC proceedings, university classes, and energy and climate conferences since
8 May 2021. I have also been quoted by more than a dozen public media sources, published
9 opinion pieces, and submitted work to multiple academic journals (these are detailed in my
10 CV). Over the course of this work, I have become intimately familiar with the scope of
11 equity measurement and best practices to advance equity in both regulatory and utility
12 spaces. In recognition of the success of the Energy Equity Project and my professional
13 expertise, I received an appointment as a lecturer in the School for Environment and
14 Sustainability in 2022. I teach an interdisciplinary graduate level course on energy justice
15 to 40-45 students each fall semester.

16 Previously I served as Executive Director of EcoWorks, a Detroit non-profit, a
17 position I held from June 2015 to November 2020. I was responsible for overseeing all
18 aspects of financial management, development, communications and public relations, staff
19 recruitment, administrative operations, and risk management. I managed a team of 30 staff
20 members with an annual budget of \$2.8 Million. I also led research efforts to explore
21 connections between weatherization, health, and affordability, in partnership with Dr. Tony
22 Reames, U of M's Urban Energy Justice Lab, and other U of M faculty and institutes. From
23 2019-2020, I was an intervenor in DTE Energy's Energy Waste Reduction bi-annual plans

1 and successfully made the case to increase the budget for single family and multi-family
2 low-income programs, by \$10 million. My testimony drew on the research conducted in
3 partnership with Dr. Reames.

4 **Q: Have you testified before the SCC previously?**

5 A: No.

6 **Q: Have you testified or provided comments in regulatory proceedings in other states?**

7 A: Yes, I provided testimony to the Michigan Public Service Commission regarding DTE
8 Energy's filing in an Energy Waste Reduction docket (2019), to the Kansas Corporation
9 Commission regarding Evergy's filing in the Kansas Energy Efficiency Investment Act
10 docket (2022), and to the Illinois Commerce Commission for rate cases brought by Ameren
11 IL and People's Gas.

12 **Q: Are you sponsoring any new exhibits or workpapers in your testimony?**

13 A: Yes. The following is a list of the resources, discovery responses, and work papers that I
14 cite in my testimony. Due to the volume of these documents, I am attaching only JBS 1
15 (my CV) and JBS 37 (discovery responses). Any of the remaining resources are publicly
16 available or are available upon request:

- 17 • JBS 1 - Justin Schott CV & Summary of Qualifications
- 18 • JBS 2 - Energy Equity Framework ("the Framework")
- 19 • JBS 3 - Principles of Environmental Justice (1991)
- 20 • JBS 4 - Energy Insecurity in the U.S. (EIA, 2022)
- 21 • JBS 5 - Household Energy Insecurity (Indiana U, 2022)
- 22 • JBS 6 - Surviving a Shutoff - Households at Greatest Risk (Hernández and Laird,
23 2022)

- 1 ● JBS 7 - Lights Out in the Cold (NAACP, 2017)
- 2 ● JBS 8 - The incidence of extreme economic stress-Evidence (Cicala, 2020)
- 3 ● JBS 9 - Lifting the Highest Energy Burden in America's Largest Cities (Drehobl
4 and Ross, 2016)
- 5 ● JBS 10 - Energy Insecurity and Health (Hernández, 2016)
- 6 ● JBS 11 - Low-Income Energy Affordability Review (ORNL, 2020)
- 7 ● JBS 12 - Covid increases from utility shutoffs (Jowers et al, 2021)
- 8 ● JBS 13 - Dominion Environmental Justice Policy 2018
- 9 ● JBS 14 - Spectrum of Community Engagement
- 10 ● JBS 15 - Justice in 100 Scorecard (IEJ, 2021)
- 11 ● JBS 15b – Energy Justice Workbook (IEJ, 2019)
- 12 ● JBS 16 - Dominion Energy Climate Report 2022
- 13 ● JBS 17a - PJM Winter Storm Elliot Analysis (2023)
- 14 ● JBS 17b - Gas responsible for 70% outages in Winter Storm Elliott (Utility Dive,
15 2023)
- 16 ● JBS 18 - Energy Efficiency Potential in SF Homes (NREL)
- 17 ● JBS 19 - VA Potential Energy Savings Fact Sheet (NREL)
- 18 ● JBS 20 - Effective Residential DR Programs (CA, 2020)
- 19 ● JBS 21 - Utility Scorecard (ACEEE, 2020)
- 20 ● JBS 22 - Utility Scorecard, Southeast (ACEEE, 2020)
- 21 ● JBS 23 - ACEEE Utility Scorecard Equity Metrics
- 22 ● JBS 24 - Energy savings targets (ACEEE Tableau)
- 23 ● JBS 25 - Incremental savings data (ACEEE, 2019)

- 1 ● JBS 26 - NY Climate Plan (2022)
- 2 ● JBS 27 - Virginia disconnection protections summary (IU, 2023)
- 3 ● JBS 28 - Virginia Shutoff Protections (IU, 2023)
- 4 ● JBS 29 - Cold-based disconnection protections (IU, 2023)
- 5 ● JBS 30 - Utility Disconnections Dashboard Technical Documentation (IU, 2023)
- 6 ● JBS 31 - Heat Risk Report, Richmond VA (First Street)
- 7 ● JBS 32 - Heat Islands in VA (VFIC)
- 8 ● JBS 33 - Reimagining Resource Planning (RMI, 2023)
- 9 ● JBS 34 - NY Disadvantaged Communities Report (2023)
- 10 ● JBS 35 - Energy Burden Methodology
- 11 ● JBS 36 - Rahul Agrawal Bejarano CV 2023
- 12 ● JBS 37 - Set 14 Responses Combined
- 13 ● JBS 38 - Dominion Census Tracts - Attachment APV Set 17-01
- 14 ● APV JS Workpaper 1 - Energy Insecurity in VA (U.S. Census Pulse Survey, 2023)
- 15 ● APV JS Workpaper 2 - Utility Disconnections Data, VA
- 16 ● APV JS Workpaper 3 - SE Utility LI EE Spending & Savings (ACEEE 2019)
- 17 ● APV JS Workpaper 4 - Data servers as % of DSM programs
- 18 ● APV JS Workpaper 5 - CEJST VA Communities

19

II. PURPOSE AND OUTLINE OF TESTIMONY

Q: What is the purpose of your testimony?

A: The purpose of my testimony is to provide an environmental justice review of the Company's IRP. I also provide specific tools that can be readily employed by others to facilitate future environmental justice reviews and achieve more equitable outcomes. I find that Dominion has not met the requirements to ensure *fair treatment* and *meaningful involvement* as required by the Virginia Environmental Justice Act (VEJA) in its proposed IRP. My environmental justice review revealed that the Company's IRP was not developed in a manner that involved the fair treatment and meaningful involvement of environmental justice communities, nor did the Company's resource planning analysis appropriately consider environmental justice communities. Dominion did not respond adequately to the Commission's prior directives that the Company address environmental justice in its IRP. I present an energy equity framework that both the Commission and the Company can apply to fulfill environmental justice objectives, analyze the extent of energy insecurity and disproportionate impacts that Dominion customers in environmental justice communities experience. Finally, I offer recommendations to the Commission for how Dominion's shortcomings in addressing environmental justice concerns in its proposed IRP can be rectified.

My testimony is organized in the following sections:

- *Section III: Environmental Justice Requirements that Apply to Integrated Resource Plans.* I assess the Company's compliance with the Commission's 2020 IRP Order, which directed the Company to consider EJ in its next IRP. I focus on the definitions of fair treatment and meaningful involvement and their absence from Dominion's proposed IRP.

- 1 • *Section IV: Documenting harms among environmental justice communities.* I present a
- 2 baseline of inequities experienced by Dominion customers.
- 3 • *Section V: Assessment of Dominion's approach to environmental justice.* I evaluate the
- 4 Company's environmental justice "policy" and contest its preference for a "case-by-
- 5 case" approach to environmental justice and program performance.
- 6 • *Section VI: Introducing the Energy Equity Framework ("the Framework")* for assessing
- 7 environmental justice concerns and recommending strategies to remedy shortcomings
- 8 in the IRP.
- 9 • *Section VII: Assessing the recognition and procedural equity impacts of Dominion's*
- 10 *proposed IRP.* I assess whether the Company has taken adequate steps to identify and
- 11 ensure fair treatment of the environmental justice and fenceline communities it serves
- 12 and the general absence of meaningful involvement of these communities in the
- 13 development of its IRP.
- 14 • *Section VIII: Assessing the distributive and restorative equity impacts of Dominion's*
- 15 *proposed IRP.* I assess the impacts the Company's proposed IRP would have on
- 16 environmental justice communities and vulnerable households. I consider both supply
- 17 side and demand side portfolios and the equity implications of each.
- 18 • *Section IX: Conclusion and Final Recommendations to the Commission.*
- 19

20 **III. ENVIRONMENTAL JUSTICE REQUIREMENTS THAT APPLY TO**

21 **INTEGRATED RESOURCE PLANS IN VIRGINIA**

22 **Q: Has the Commission previously directed Dominion to account for**

23 **environmental justice in its IRP?**

24 **A:** It is well established that IRPs are subject to Commission guidance; Dominion

25 identifies the requirement to address environmental justice in its IRP and states that it has

26 fulfilled the requirement in Section 9.1.¹ The Commission has provided specific guidance

27 on how environmental justice should be considered in this IRP. In its 2020 Order, the

¹ *Commonwealth of Virginia, ex rel. State Corporation Commission, In re: Virginia Electric and Power Company's 2023 Integrated Resource Plan filing pursuant to Va. Code § 56-597 et seq., Case No. 2023-00066 (May 1, 2023) ("IRP")* at 7 (citations omitted) (emphasis added).

Commission is clear that Dominion should address environmental justice not only in narrow resource acquisition or siting decisions, but throughout the integrated resource planning process. The Commission's 2020 IRP Order states the following:

Environmental Justice.

The 2020 IRP is the first opportunity for Dominion to address environmental justice in the context of long-term planning . . . We note that the Commonwealth's policy on environmental justice is *broad*, including 'the fair treatment and meaningful involvement of every person, regardless of race, color, national origin, income, faith, or disability, regarding the development, implementation, or enforcement of any environmental law, regulation, or policy.' Accordingly, in addition to addressing environmental justice in more specific contexts, such as requests for certificates of public convenience and necessity for particular facilities at known locations, the *Commission finds that the Company should address environmental justice in future IRPs and updates*, as appropriate. As one example, the *Company may consider the impact of unit retirement decisions on environmental justice communities or fenceline communities*.²

Q: Has Dominion adequately responded to the Commission order in its IRP?

A: No. Despite the Commission's 2020 Order, the Company appears to believe that an environmental justice evaluation is not required for its proposed 2023 IRP. The Company states that it prefers a case-by-case³ approach to environmental justice, which it believes should apply only to specific activities like resource siting, but not to resource planning. Dominion has not demonstrated how it ensured fair treatment regardless of race and income or meaningful participation of environmental justice and fenceline communities (hereinafter collectively referred to as "environmental justice communities") in developing

² Final Order, *Commonwealth of Virginia, ex rel. State Corporation Commission, In re: Virginia Electric and Power Company's 2020 Integrated Resource Plan filing pursuant to Va. Code § 56-597 et seq.*, Case No. 2020-00035 (February 1, 2021) ("2020 IRP Order") at 14-15.

³ See IRP at 121.

its IRP. I discuss the implications of this approach and my recommendations in Sections VII and VIII.

Q: Why is Dominion’s decision not to address environmental justice in this IRP problematic?

A: Environmental justice considerations must begin in the planning stage⁴. The Virginia Environmental Justice Act defines meaningful involvement as the participation in the “*full cycle of the decision-making process*” and that the decision-makers must proactively “seek out” participation from residents of environmental justice communities and allow their needs and aspirations to “shape and influence” the decision.⁵ Dominion’s future RFPs will reflect the energy capacity and generation mix from its approved IRP. If community input is not considered at this stage, environmental justice communities can only influence—at best--the very tail end of the decision-making process.

Q: Please summarize your recommendations for Dominion to be in compliance with the Commission’s order to address environmental justice in this IRP.

A: The Company’s approach to environmental justice, which it describes in Section 9.1 of its IRP, should go considerably further to ensure fair treatment and meaningful involvement of environmental justice communities. I analyze and make recommendations on specific elements of the IRP later in my testimony; my high level recommendations are below:

1. To ensure *fair treatment*:

1.1. Dominion should compile and maintain a list of all environmental justice and fenceline communities as defined by VEJA. This list should be publicly accessible

⁴ See JSB 3 - *Principles of Environmental Justice* (1991) (where Principle 7 states: “ Environmental Justice demands the right to participate as equal partners at every level of decisionmaking, including needs assessment, planning, implementation, enforcement and evaluation.”).

⁵ Va. Code § 2.2-234-5.

and used by the Company and its contractors to initiate meaningful involvement activities, especially in longterm planning. The Company should also seek input from communities that may be impacted by energy development projects and analyze potential distribution of benefits and burdens from its energy decisions and investments.

1.2. Establish metrics to protect environmental justice communities from disproportionate burdens of the energy system. Disproportionate burdens can include poor indoor and outdoor air quality, and exposure to toxic wastes, to name a few. Metrics should be used to transparently identify disparities, set goals for rectifying disparities, and to track and report progress.

1.3. Establish metrics to ensure that environmental justice communities receive an equitable share of benefits, including energy savings from DSM programs, job and business opportunities in clean energy projects, and wealth-building opportunities through programs that encourage ownership of distributed generation and storage resources. These metrics should consider historical and cumulative disparities in benefits and invest sufficiently in environmental justice communities to correct those disparities.

2. To ensure *meaningful involvement*:

2.1. Conduct a series of listening sessions for residents of environmental justice communities. Sessions should be designed for maximum accessibility and relevance to maximize participation and elicit voices of impacted residents. The Energy Equity Framework dedicates an entire chapter to procedural equity, including extensive detail on how to make public meetings accessible (see Figure 1 below).

2.2. Ensure the input from community listening sessions, focus groups and surveys are submitted with utility petitions so they become part of the evidentiary record and can be used by the Commission to shape and influence the final decision on the proposed IRP.

2.3. Define how the voice of those in environmental justice communities can shape the full cycle of the decision-making process:

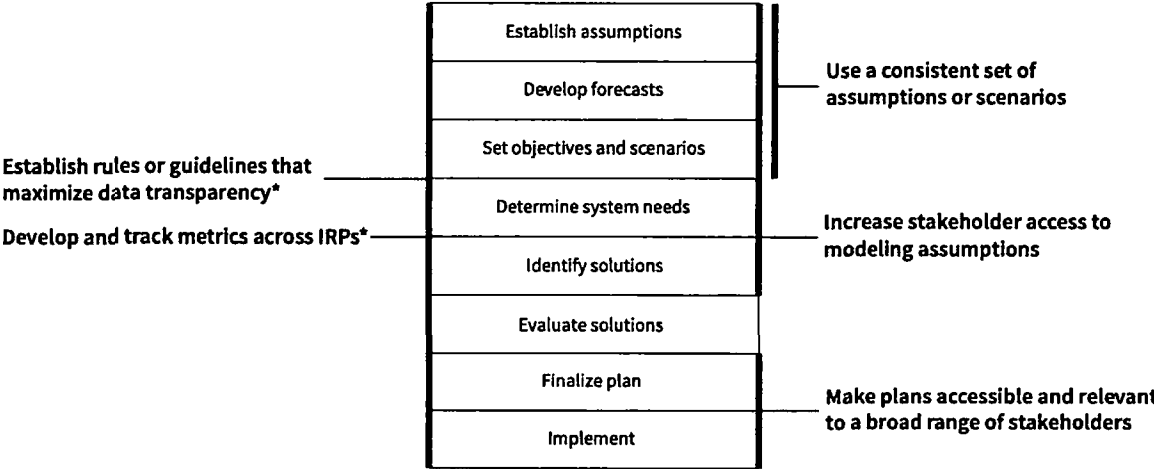
2.3.1. Engage communities in the assumptions and considerations that are used in modeling alternative plans. For instance, work with environmental justice communities to determine how to measure and value non-energy benefits, such as air quality improvements and jobs created in environmental justice communities. These should be factored into selecting what options are available to the model to consider, and this input should be readily apparent in the alternative plans presented. If a different capacity expansion or other modeling platform is needed to incorporate the priorities raised by environmental justice communities, Dominion should inform the Commission that this is needed. A resource for when and how to engage stakeholders, especially environmental justice communities, in the IRP process is included below in Figures 1. and 2.

2.3.2. Create opportunities for residents of environmental justice communities to learn about and ask questions about the model and the alternative plans

1 presented in the most recent IRP. This engagement should happen at least six
 2 months prior to running the model and drafting plans for the next required
 3 IRP; twelve months of advanced engagement in environmental justice
 4 communities would be ideal and allow for an authentic, iterative process of
 5 meaningful involvement.
 6

Figure 1. Improving Transparency in IRP Development (Source: Rocky Mountain Institute, 2023)⁶

Exhibit 17 Where options for prioritizing transparency might be applied in the IRP process



*Applied before and throughout the process

Source: RMI additions to the "Standard Building Blocks" from the National Association of Regulatory Utility Commissioners-National Association of State Energy Officials (NARUC-NASEO) Task Force on Comprehensive Electricity Planning, 2019

⁶ ROCKY MOUNTAIN INSTITUTE, REIMAGINING RESOURCE PLANNING (2023), EXHIBIT 17, last accessed August 1, 2023 from: <https://rmi.org/insight/reimagining-resource-planning/>.

Figure 2. Snapshot of procedural equity strategies for accessible public meetings. (Source:

JBS

2,

p.69)

- **Presence and recurrence of community stakeholder meetings** or hearings where public comments are solicited and publicly responded to in a timely matter, with language translation and interpretation services available
- **Availability of flexible planning and support services** or resources to ensure that meetings or hearings are accessible to underrepresented and historically marginalized community groups, such as:
 - holding meetings at different times of day and different days of the week to accommodate different schedules;
 - offering in person as well as remote attendance options;
 - holding meetings and hearings in different neighborhoods across a community to ease access;
 - providing onsite childcare;
 - supplementing transportation costs or directly providing transportation services;
 - providing refreshments, snacks, or meals depending on the time of day meetings are held;
 - compensating attendees for participation
- **Availability and ease of submitting public comments** for the official record during all phases of the proceeding and resulting project—including in planning, implementation, and closeout project or program phases—that allows for: comments to be submitted in languages appropriate to community stakeholder populations, e-filing options, transcribed community hearings, availability of midnight filings, and adequate review and consideration of public comments as part of the final regulatory decision

1 **IV. ASSESSING HARMS IMPACTING ENVIRONMENTAL JUSTICE**
2 **COMMUNITIES IN DOMINION SERVICE TERRITORY**

3 **Q: Please define energy justice and related concepts.**

4 A: In the last decade, the field of energy justice has emerged as a particular subset of
5 environmental justice. While environmental justice has traditionally focused on
6 disproportionate exposure to pollution, “an energy just world involves equitable sharing of
7 benefits and burdens involved in the production and consumption of energy services. It is
8 also one that is fair in how it treats people and communities in energy decision-making.”⁷
9 The Initiative for Energy Justice, which was co-founded by Shalanda Baker (who currently
10 serves as the Director of the U.S. Department of Energy Justice’s Office of Community
11 Impact and Diversity), states four goals of energy justice⁸:

- 12 1. Advance energy democracy, defined as “the notion that communities should have
13 a say and agency in shaping and participating in their energy future;”
14 2. Alleviate energy insecurity, which entails the inability to meet basic household
15 energy needs or compromising on other basic needs in order to access energy ‘
16 3. Reduce energy burden, or the percentage of household income spent on energy; and
17 4. Alleviate energy poverty, “a lack of access to basic life-sustaining energy.”

⁷ JBS 15b at 9.

⁸ *Id.*

1 **Q: Why are you introducing concepts of energy justice into your environmental justice**
2 **analysis of Dominion's IRP?**

3 A: Dominion appears to acknowledge and accept its responsibility to pursue environmental
4 justice as indicated in its IRP Section 9.1. As an electric utility provider, understanding
5 energy justice, a subset of environmental justice, is critical to ensuring the utility is
6 appropriately undertaking efforts to achieve environmental justice. I am introducing the
7 concepts of energy justice to enhance the Commission's evaluation of if and how
8 Dominion's approach to environmental justice appropriately aligns with the realities
9 environmental justice communities face.

10 **Q: How do Dominion's customer's experience energy injustices?**

11 A: Energy injustice is a national problem, with about one third of Americans experiencing
12 some form of energy insecurity⁹. Unfortunately, Dominion does not directly report on a
13 number of indicators of energy insecurity and energy injustice, so in some cases I present
14 state-wide data as the best available source.

15 Here I highlight three aspects of energy injustice: 1) Energy insecurity, 2) Disproportionate
16 exposures to urban heat islands, and 3) Disconnections. These are not the only forms of
17 energy injustice Dominion customers face. For example, proximity to fossil fuel
18 infrastructure, lack of access to incentives and rebates for energy efficiency and clean
19 energy, disproportionate rates of power outages, and limited access to clean energy jobs
20 and business contracts are additional concerns for which data is less readily available.

⁹ JBS 4.

1 *Energy Insecurity.* In Virginia, as of February 2023, 30.9% of households report reducing
2 or foregoing their spending on basic necessities such as food and medicine in order to pay
3 their energy bill, 20.3% report keeping their home at an unsafe or uncomfortable
4 temperature, and 22.0% report being unable to pay their energy bills¹⁰. Numerous reports
5 document the tremendous human toll of energy insecurity.

6 Multiple studies have confirmed that energy insecurity disproportionately impacts low-
7 income, Black and Hispanic households, and households with children, especially children
8 under 6 years old.¹¹

9 When disaggregating the data, significant disparities by race, income, and other identities
10 are apparent. Black households, for instance, are three times more likely to be unable to
11 pay their energy bills than white households (44.5% vs. 14.7%). More than half of
12 households earning less than \$35,000 are reducing or entirely foregoing their spending on
13 basic needs, and 72.4% of households that receive government rental assistance report
14 keeping their homes at an unsafe or uncomfortable temperature.¹²

¹⁰ JBS Workpaper 1.

¹¹ See JBS 5-10.

¹² JBS Workpaper 1, tab VA - Selected Characteristics.

Figure 3. (Source: JBS Workpaper 1)

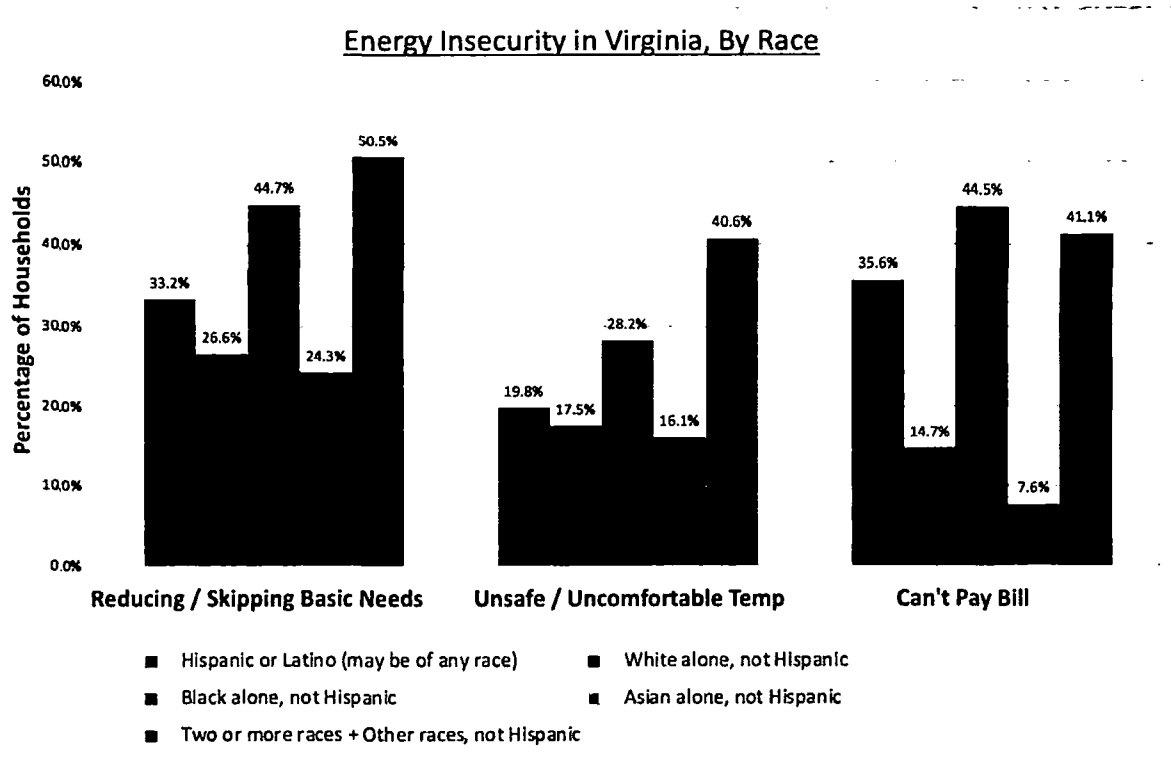


Figure 4. (Source: JBS Workpaper 1)

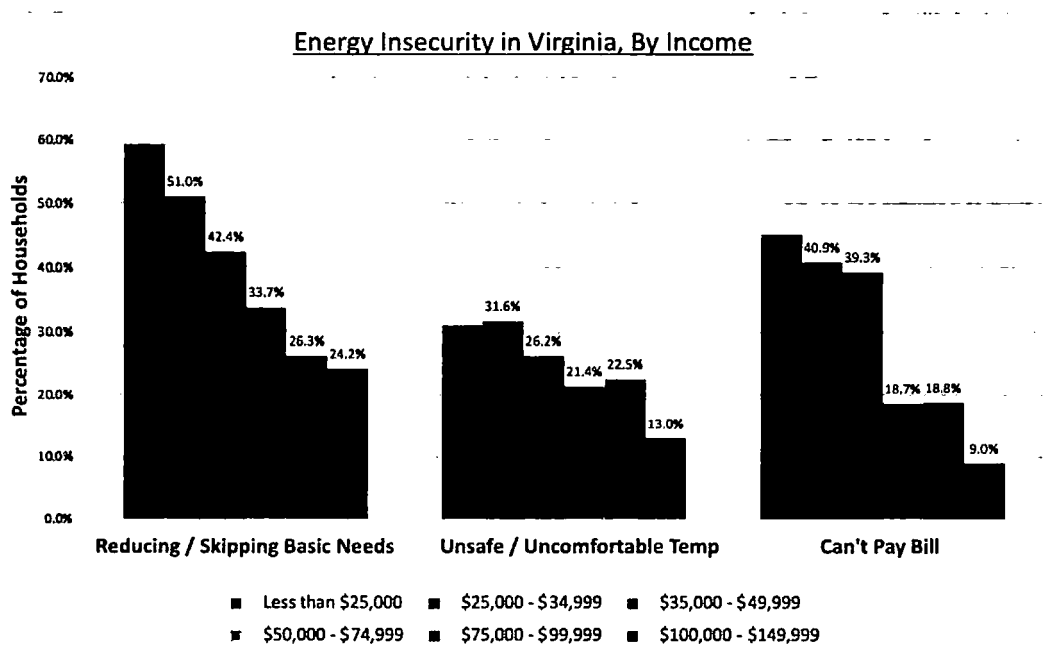
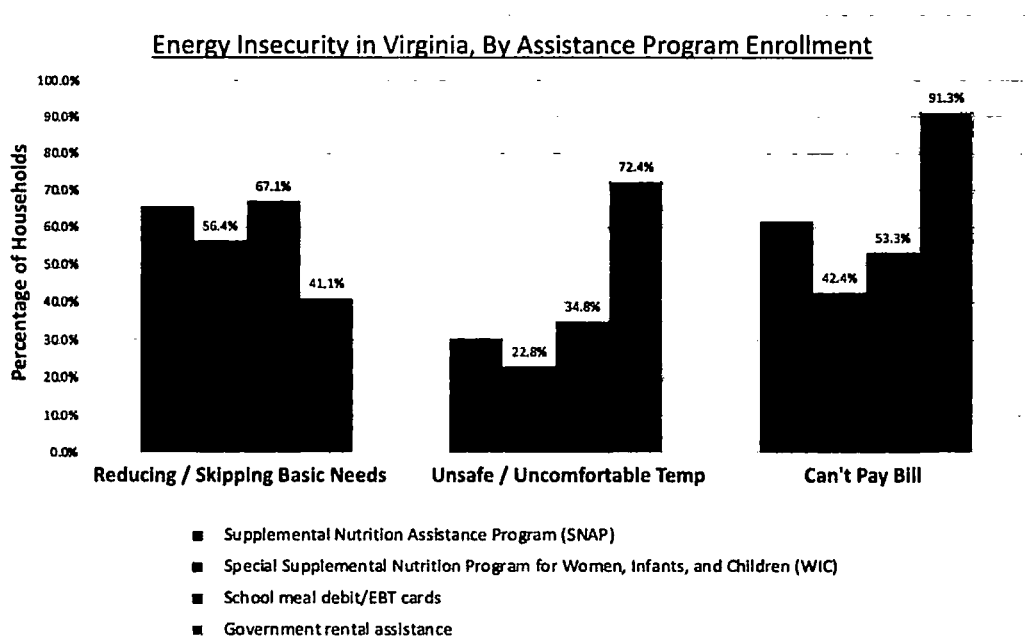


Figure 5. (Source: JBS Workpaper 1)



1 The Implications of energy insecurity are stark. Disconnections, which stem from the
2 combination of unaffordable gas and electric bills, can result in an array of health
3 problems.¹³ These health problems include the inability to refrigerate medicine or use
4 medical equipment that requires electricity, heat illness, cognitive and psychological
5 impacts, and respiratory impacts resulting from the loss of proper ventilation and from
6 fumes that may be caused by heating with an oven or an improperly ventilated generator.
7 Indirect health issues arise from lack of access to hot water for proper hygiene, which can
8 result in Legionnaires disease outbreaks and from higher incidents of house fires.¹⁴
9 Researchers at the Duke Nicholas Institute for Energy, Environment, & Sustainability,
10 performed a retrospective comparison of COVID-19 death rates in places both with and
11 without bans on utility disconnections. They found that had a national moratorium on
12 utility disconnections been in place from March 2020 to November 2020, COVID-19 death
13 rates during that time would have been 14.8% lower.¹⁵
14 *Energy burden disparities.* Energy burdens, the percentage of gross income that households
15 spend on heating and electricity, are not distributed evenly among Dominion's residential
16 customers. An array of energy affordability advocates, such as ACEEE and Roger Colton¹⁶,
17 have established that spending 6% of household income on energy (a 6% "energy burden")
18 constitutes a threshold for affordability of energy costs. The 6% energy burden was

¹³ See JBS 11.

¹⁴ See JBS 6.

¹⁵ Kay Jowers, Christopher Timmins, Nrupen Bhavsar, Qihui Hu & Julia Marshall, *Housing Precarity & the COVID-19 Pandemic: Impacts of Utility Disconnection and Eviction Moratoria on Infections and Deaths Across US Counties*, National Bureau of Economic Research (Jan. 2021).

¹⁶ See JSB 11.

1 established by considering that households should spend no more than 30% of their
2 incomes on all costs of housing, and energy should comprise no more than 1/5 of total
3 housing costs. For electricity alone, a 3% burden is considered the threshold for
4 affordability.

5 *Energy burden in Dominion's service territory.*¹⁷ Using data from the U.S. Census and
6 Department of Energy for residents in census tracts served by the Company, I directed the
7 assessment of different segments of the population by income level.¹⁸ VEJA defines low-
8 income communities, which are also a subset of environmental justice communities, as
9 areas with at least 30% of the population at 80% of the Area Median Income (AMI). The
10 median energy burden for low-income households in Dominion's service territory is
11 5.39%, more than three times higher than households with an income above 80% AMI
12 (1.57%). Calculating energy burden by averaging across all households within a census
13 tract identifies 24,209 households with an energy burden greater than 6%¹⁹. However,
14 using disaggregated data based on income levels, differentiating between housing units up
15 to 80% AMI and those above 80% AMI, reveals that 480,643 households (more than 19
16 times the previous estimate) have an energy burden above 6%. In other words, the number
17 of households with unaffordable energy burdens may be masked when looking at
18 aggregated data, but unaffordable bills, and the disconnections that low-income households

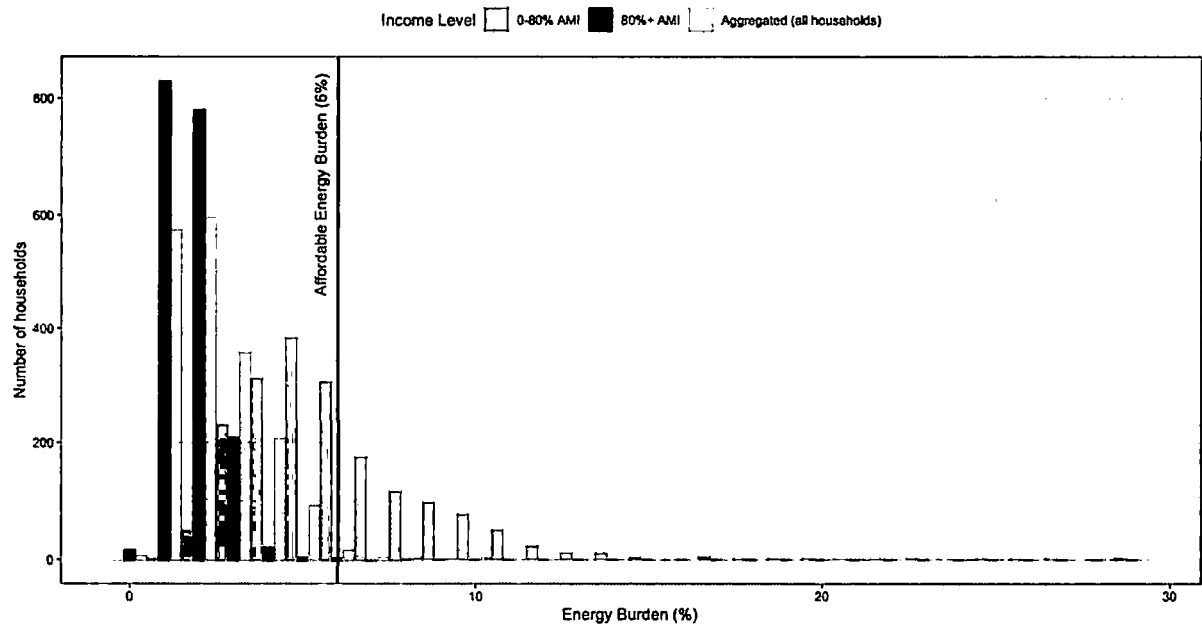
¹⁷ This section of analysis was developed by Rahul Agrawal Bejarano, Lead Data Scientist at the Energy Equity Project; the methodology is described in JBS 35.

¹⁸ JBS 35.

¹⁹ *Id.*

too often experience as a result, are a problem for nearly half a million residents in the Commonwealth.

Figure 6. Distribution of energy burden across income levels and aggregated census tract data

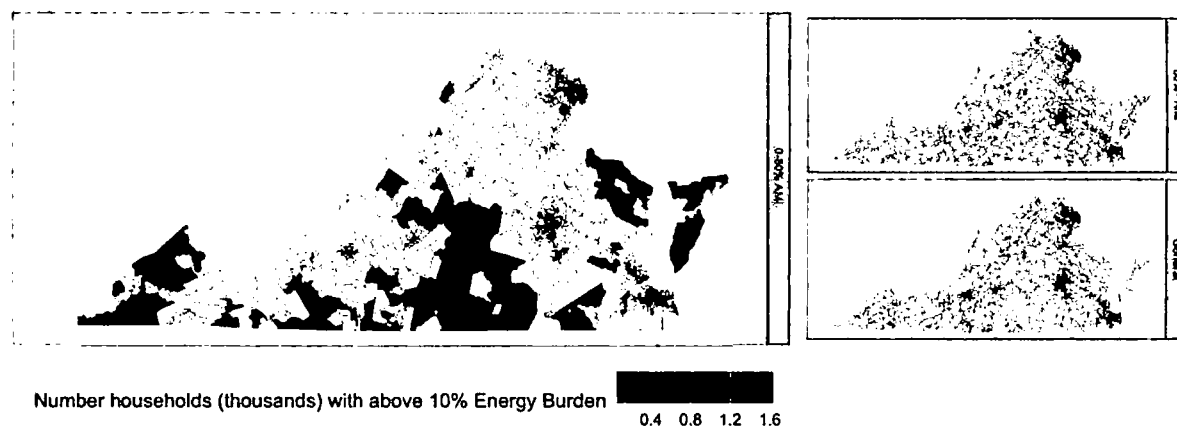


(Source: See JBS 35)

Further data analysis identifies households that have severe energy burdens above 10% of income and spend nearly twice as much on energy as they can afford. A number of census tracts in Dominion territory have more than 1,000 households with energy burdens greater than 10%; these communities warrant priority consideration for DSM programs and the benefits of distributed generation and storage.²⁰

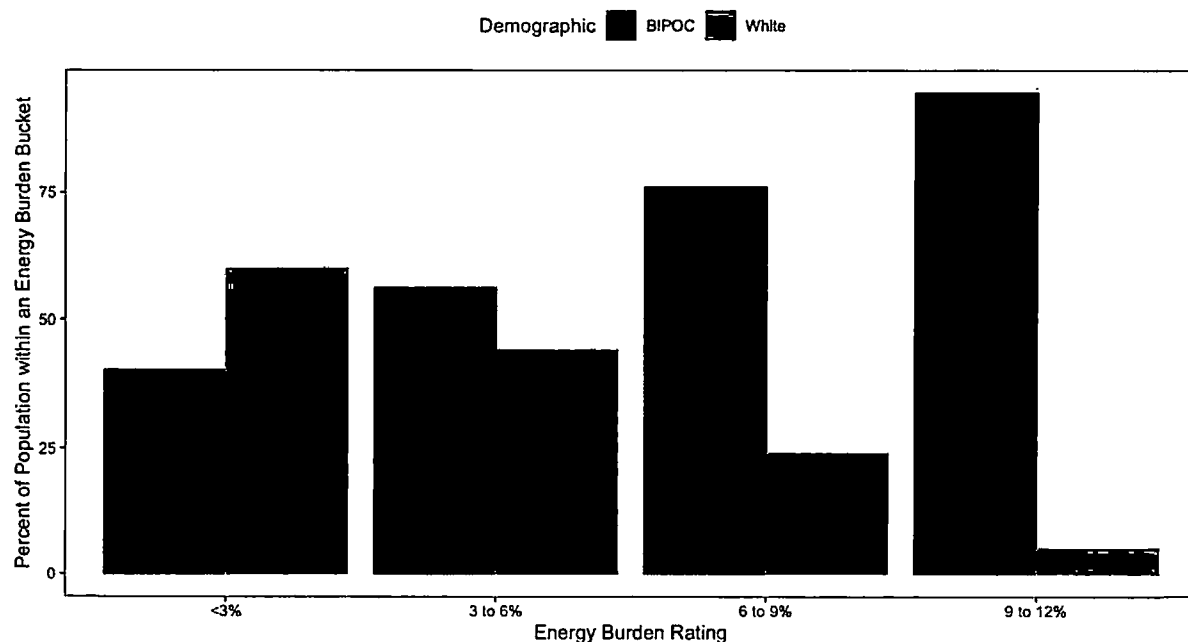
²⁰ *Id.*

Figure 7. Map of Virginia showing the number of households with a severe (10%) energy burden across aggregation levels (Source: See JBS 35)



1 *Energy burden disparities by race.* Census tracts in Virginia served by Dominion exhibit a
2 disproportionate energy burden towards households that are Black, Indigenous, and other
3 People of Color (BIPOC). Lower energy-burdened households (<3%) are mainly white,
4 whereas households burdened with unaffordable energy costs (>6%) are predominantly
5 BIPOC. These disparities by race and income demonstrate the importance of ensuring fair
6 treatment to residents of environmental justice communities and developing strategies to
7 consider and rectify such disparities in Dominion's IRP.

Fig. 8: Bar chart showing the demographic breakdown as percent of the population at each energy burden rating (Source: See JBS 35)



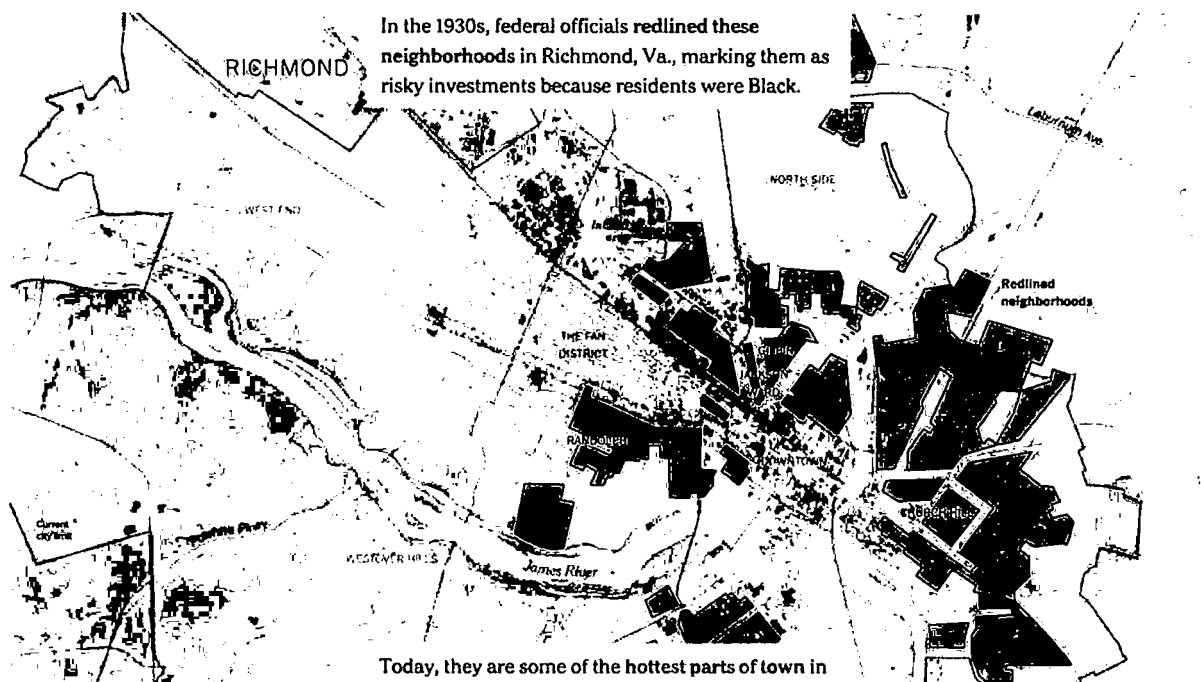
1 *Urban heat islands*. Exposure to extreme heat is also a major risk to Dominion customers,
 2 particularly those who struggle to afford their bills and lack access to air conditioning. The
 3 U.S. Department of Housing and Urban Development does not provide utility allowances
 4 for air conditioning and generally does not cover the costs of air conditioning upgrades,
 5 which puts residents at severe risk during heat waves²¹. Richmond faces a “severe” heat
 6 factor, and the projected number of days with heat indices above 105F will increase from
 7 7 days annually to 17 days by mid-century²². The risk of an extended heat wave (3+
 8 consecutive days above 105F heat index) will increase from 17% in 1990 to 83% in 2050.

²¹ Ludden, Jennifer, *Withering heat is more common, but AC is still a struggle in public housing*, National Public Radio (August 1, 2023).

²² First Street Foundation, Heat Factor Tool, last accessed August 2, 2023 https://riskfactor.com/city/richmond-va/5167000_fsid/heat; see JBS 31-33.

1 Multiple studies and maps draw clear connections between historical redlining in majority
2 Black neighborhoods in Richmond and their current disproportionate exposure to extreme
3 heat. In summer, formerly redlined neighborhoods can be 10F hotter than their
4 counterparts. Residents in these neighborhoods are also more likely to live in less energy-
5 efficient housing and to lack access to air conditioning.
6

Figure 9 - Overlay of heat maps and redlined neighborhoods, version 1 (Source: New York Times)²³.

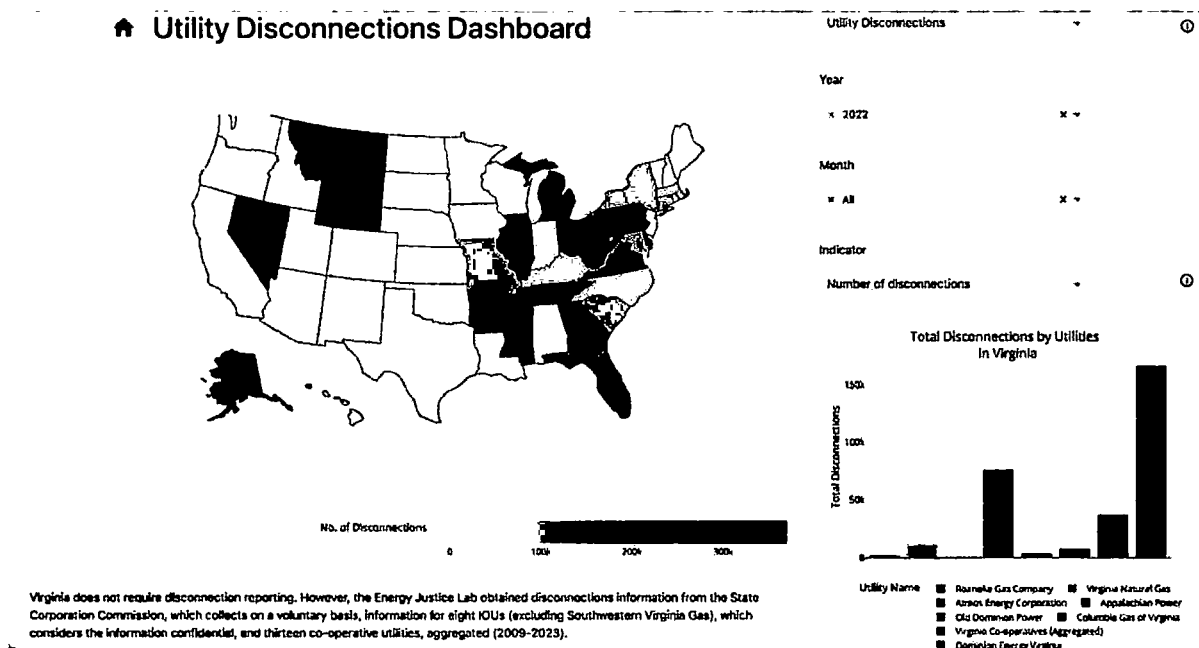


²³ Plumer, Brad and Popovich, Nadja, *How decades of racist housing policy left neighborhoods sweltering*, New York Times (August 24, 2020).

²⁴ Pisut, Dan, 2020. “Redlining” and Exposure to Urban Heat Islands. Last accessed August 2, 2023: <https://gis-for-racial-equity.hub.arcgis.com/maps/arcgis-content::redlining-and-exposure-to-urban-heat-islands/about>. (Note: letter grades at the center of the neighborhood of C and D mark “declining” or “hazardous” designations by the Home Owners’ Loan Corporation in the 1930s. Neighborhoods in dark red are up to 5F warmer than average, while neighborhoods in dark blue, also marked A for “best” or B for “still desirable” are up to 5F cooler than average.)

Disconnections. Prior to the release of the Utility Disconnections Dashboard by Indiana University, there was no public access to data on the number of households having their energy shutoff because they are unable to pay. Data became public in 2023. In 2022, there were more electric disconnections by IOUs documented in Virginia (304,373) than any other state except Illinois, and Dominion was responsible for the majority of these (166,105, or 54.5%).²⁵

Figure 11: Map of electric disconnections by state (Source: Indiana University, 2023)



²⁵See JBS Workpaper 2; Carley, S. and Konisky, D., 2023. *Utility Disconnections Dashboard*, Energy Justice Lab, Indiana University, Bloomington, IL. Last accessed July 22, 2023 from: <https://http-149-165-173-211-80.proxy-js2-iu.exosphere.app/>; JBS 30 – Utility Disconnections Database Technical Documentation was downloaded from: https://utilitydisconnections.org/doc/utility-disconnections-dashboard-technical-documentation_20230529.pdf.

1 **V. ASSESSING DOMINION’S APPROACH TO ENVIRONMENTAL JUSTICE**

2 **Q: How would you characterize Dominion’s understanding of environmental justice in**
3 **its IRP?**

4 A: Dominion appears well aware of statutes that define environmental justice and require
5 protections for environmental justice communities. Dominion recognizes efforts by the
6 Virginia Department of Environmental Quality (“DEQ”) to define environmental justice
7 communities according to the criteria of VEJA. In multiple instances, the Company affirms
8 the importance of “proactive” participation and participation during planning and
9 development processes. The Company communicates three elements of meaningful
10 involvement: “providing information in an accessible way, providing opportunities for
11 community members to voice their concerns and provide input, and that such concerns and
12 input are appropriately responded to *and that the company works to minimize or mitigate*
13 *any disproportionate impacts*” (emphasis added)²⁶. The Company’s lack of consideration
14 of energy justice tenets, either by name or in concept, indicates that the Company has not
15 specifically considered its role, as the electric utility provider in its service territory, in
16 ensuring environmental justice for its customers.

17 **Q: Has Dominion’s stated understanding of environmental justice in the IRP translated**
18 **to an acceptable approach for ensuring environmental justice?**

19 A: While Dominion’s characterization of the requirements of VEJA is reasonable, the
20 Company then references VCEA and North Carolina Executive Order No. 246 and

²⁶ IRP at 121.

1 mistakenly identifies these as supports for its case-by-case approach to evaluating
2 environmental justice concerns. In other words, Dominion has identified the requirements
3 of ensuring environmental justice, but it has not followed that up by presenting a
4 comprehensive plan in the IRP for how it will pursue these requirements in the context of
5 its provision of resource planning. To the contrary, Dominion's position is, paradoxically,
6 that the requirements do not apply to the IRP, but only to specific energy generation and
7 infrastructure projects that may be considered in the future. This approach is unnecessarily
8 narrow.

9 **Q: Does Dominion have any internal policies on environmental justice?**

10 A: Yes. Dominion established a 188-word environmental justice policy in 2018²⁷, in which
11 the Company "pledges" to undertake collaborative planning and that communities "*should*
12 have meaningful voice" and "*should* have early and continuing opportunities to work with
13 us" (emphasis added).²⁸ Despite its lack of rigor, it appears Dominion has not updated its
14 environmental justice policy; it cites this same policy in its 2023 Renewable Development
15 Projects RFP as the cornerstone of its environmental justice efforts.²⁹

16 **Q: Does Dominion uphold its own environmental justice policy in the IRP?**

17 A: I do not find evidence that Dominion has fulfilled its own understanding of environmental
18 justice in this docket. The Company's proposed IRP includes no recognition of specific

²⁷ JBS 13.

²⁸ JBS 13.

²⁹ See Dominion Energy, *Renewable Development Projects RFP* (2023) at 18, Last accessed July 22, 2023 from: <https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/global/renewable-projects/rfp/2023-clean-energy-dev-asset-acquisition-rfp.pdf?la=en&rev=2fc750ef3e9f4059809f185db0313431&hash=2FD97F23A9504967122DEA7CDE95339F>

1 environmental justice communities as defined by VEJA or how they may be impacted
2 under different planning scenarios.

3 In response to Appalachian Voices Interrogatory Set No. 14, Dominion declined to provide
4 a definition of disproportionate impact and did not provide an answer to eleven additional
5 discovery requests about its implementation of its environmental justice policy. The
6 culmination of the Company's responses to Appalachian Voices Interrogatory No. 14-9
7 suggest that the Company lacks a concrete strategy for defining or evaluating
8 environmental justice.³⁰

9 **Q: Dominion has suggested that environmental justice considerations should be applied
10 on a case-by-case basis. Is this approach sufficient?**

11 **A:** No. Integrating environmental justice concerns in each energy project is good practice, but
12 it cannot be *the only* forum. Critically, environmental justice must be considered in the full
13 lifecycle of the energy system, which includes the integrated resource planning process.
14 Dominion should maintain a case-by-case approach to advance environmental justice *and*
15 ensure environmental justice is centered in how it develops its IRP. Dominion can do this
16 by incorporating the tenets of energy justice into its existing approach to environmental
17 justice. Doing so would more comprehensively inform the utility of the various ways it
18 could plan more holistically to achieve environmental justice. From a planning perspective,
19 Dominion's siloed approach to environmental justice limits its ability to achieve its own
20 environmental justice goals, let alone the requirements established in the VEJA.

³⁰ See JBS 37.

1 First, as I described earlier, Dominion did not report having conducted any community
2 engagement activities in developing its IRP. Dominion has not demonstrated a desire to
3 conduct authentic community engagement in which the perspectives of residents of
4 environmental justice communities could actually influence decision-making. The most
5 efficient and productive way to integrate environmental justice concerns is as far upstream
6 in the development process as possible—in the current planning stage. Dominion has
7 neglected to do so.

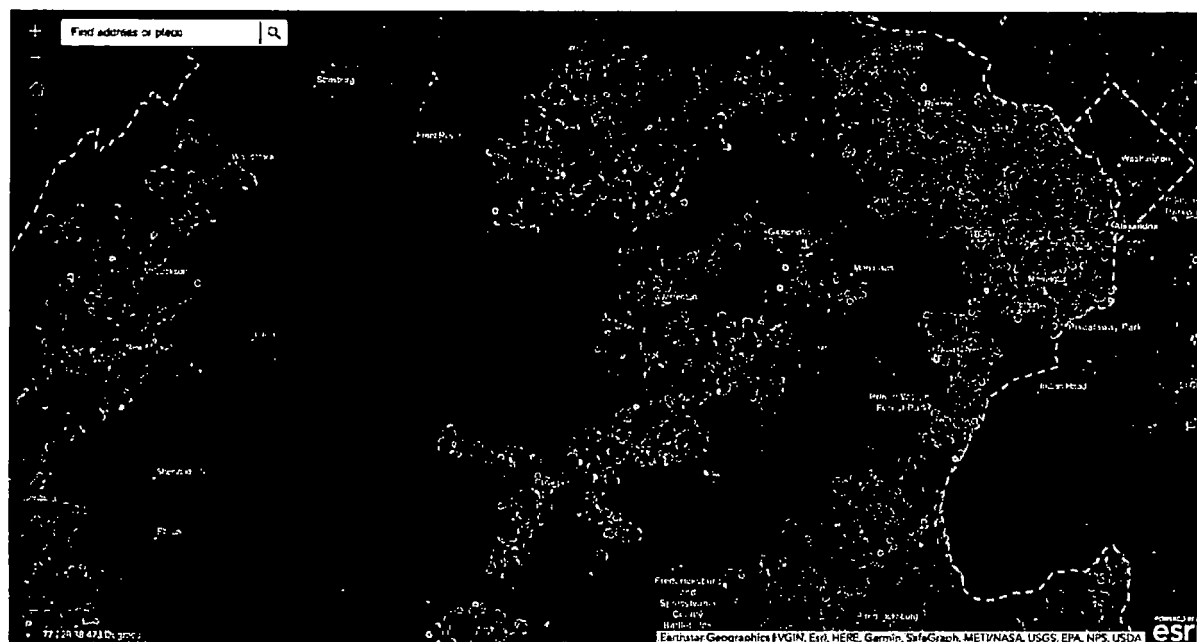
8 Second, ill-informed planning will result in ill constructed solicitations. Dominion's IRP
9 does not appropriately lay the foundation for how environmental justice should be
10 considered when conducting the resource integration analysis required in its IRP. This
11 failing transfers to its solicitations for resources. For example, Dominion presents only
12 limited environmental justice considerations in its 2023 Renewable Development Projects
13 Request for Proposals ("RFP")³¹. Rather than set specific standards or offer resources such
14 as the list of environmental justice communities identified by the Virginia DEQ, Dominion
15 has left the task of determining environmental justice needs and strategy to potential
16 bidders.

17 Third and relatedly, Dominion's IRP section on its DSM Programs provides no indication
18 that environmental justice considerations are included in its DSM Planning-Process, and
19 therefore it follows that such considerations cannot inform the manner in which Dominion
20 develops its IRP. For instance, Dominion provides prospective renewable developers with

³¹ All documents associated with the RFP can be accessed at: <https://www.dominionenergy.com/projects-and-facilities/renewable-projects/solar-onshore-wind-and-energy-storage-proposals>.

a map which highlights optimal sites for DERs in primarily white, affluent communities³² (see Figure 12 below). A snapshot of the map below highlights sites of greatest residential solar potential in pink, in areas such as Fairfax and Loudoun Counties, which have median household incomes of \$133,974 and \$156,821, respectively³³. This is another example of how Dominion's existing processes and tools are geared to funnel the benefits of clean energy development and DERs away from environmental justice communities. The methodology and data behind the tool are not publicly available.

Figure 12. Preferred areas for solar development.



³² Dominion Energy, *Hosting Capacity Tool*, last accessed July 22, 2023 from: <https://www.dominionenergy.com/projects-and-facilities/electric-projects/energy-grid-transformation/hosting-capacity-tool>.

³³ United States Census Bureau, *5-year Estimates (2017-2021)*, last accessed July 22, 2023 from: Quick Facts: Fairfax County, Virginia (<https://www.census.gov/quickfacts/fact/table/fairfaxcountyvirginia/PST045222>) and Quick Facts: Loudoun County, Virginia (<https://www.census.gov/quickfacts/fact/table/loudouncountyvirginia/PST045222>)

1 Fourth, the Commonwealth does not have a binding statute or regulation that would require
2 Dominion or its contractors to consult with environmental justice communities to develop
3 binding Community Benefits Agreements. Under Dominion's favored case-by-case
4 approach, residents of environmental justice communities would have no assurance of fair
5 treatment and lacking any environmental justice evaluation framework, Dominion would
6 not be subject to any real accountability. This is an example of why integrating
7 environmental justice approaches at this planning stage is critical.

8 **Q: What is your summary of the resources and approaches Dominion has dedicated to**
9 **environmental justice?**

10 A: Based on discovery responses provided to Appalachian Voices,³⁴ I have ascertained that

11 Dominion lacks the following elements regarding environmental justice:

- 12 i) Definition of environmental justice and disproportionate impacts.
- 13 ii) List of environmental justice communities in its service territory.
- 14 iii) Metrics for tracking environmental justice impacts or any evaluations pertaining to
15 environmental justice.
- 16 iv) Guidance on how contractors should apply the concepts of fair treatment and meaningful
17 involvement.

18 **VI. INTRODUCING THE ENERGY EQUITY FRAMEWORK**

19 **Q: Please summarize the Energy Equity Framework.**

20 A: The Framework to Measure and Advance Energy Equity ("Framework")³⁵ is a tool that
21 Commissions, policy makers, and others can use to engage environmental justice
22 communities in establishing quantitative targets, accountability metrics, and qualitative

³⁴ See generally JBS 37.

³⁵ JBS 2.

1 best practices, including in an IRP. The Framework is a compendium of research that
2 assesses 148 potential metrics and provides case studies of where and how they are being
3 used. The Framework was equitably developed by 45 co-authors and advisors and the input
4 of more than 400 stakeholders. The study was released in September 2022 and has been
5 used by public utility commissions in CO, MI, and OR. It is designed to be applied by
6 utilities, regulators, practitioners, and community organizations and has sector-specific
7 guidance for each type of stakeholder. The Framework identifies concrete action steps—
8 both quantitative and qualitative—to advance each of the four dimensions of energy justice.
9 The Framework adopts the Four Pillars of Energy Justice: Recognition, Procedural,
10 Distributive and Restorative.

11 **Q: How can Dominion apply the Framework to it's IRP?**

12 A: The Framework supports the practice of energy and environmental justice. It offers
13 templates for energy planning and decision-making, equity considerations for specific
14 audiences, and a broad array of open-source tools and datasets that can be used for both
15 analysis and as a starting point for community engagement. The Framework specifies
16 where high quality data exists and is in use by utilities and regulators and how qualitative
17 best practices play an integral role where data gaps exist. The document would be a good
18 primer for any staff tasked with designing accessible community meetings or establishing
19 metrics that evaluate how the burdens and benefits of the energy system are distributed
20 among Dominion's customers. For those just getting started, the Framework offers equity
21 prompts for a variety of audiences. The Framework could guide Dominion's approach to
22 involving environmental justice communities in the development of the Company's IRP
23 assumptions and inputs.

Figure 13. Considerations for frontline communities, organized by the four dimensions

(Source: JBS 2, p. 18).

Considerations by equity dimension for specific audiences:

AUDIENCE	RECOGNITION CONSIDERATIONS	PROCEDURAL CONSIDERATIONS	DISTRIBUTIONAL CONSIDERATIONS	RESTORATIVE CONSIDERATIONS
Frontline communities	Data gaps, undercounts/ underrepresentation, misrepresentation of local realities	Understanding of complex regulatory processes; resources, partners and expertise to engage effectively	Workforce development and clean energy business benefits, health, energy savings, wealth creation, climate resilience	Defining and communicating a vision of an equitable energy and climate future that centers frontline communities

1 **VII. RECOGNITION AND PROCEDURAL JUSTICE CONCERNS IN THE IRP**

2 **Q: How is the remainder of your testimony structured?**

3 A: I align my analysis of Dominion's IRP and proposed recommendations with the four
 4 energy justice principles. I group recognition and procedural justice concerns in Section
 5 VII and distributive and restorative justice concerns in Section VIII.

6 **Recognition justice Concerns**

7 **Q: Please summarize your concerns with Dominion's IRP from the perspective of**
 8 **recognition justice.**

9 A: Recognition justice is about who is impacted—historically, presently, and in future plans.
 10 Recognizing disproportionate burdens from the energy system and disproportionately low
 11 access to energy benefits by certain communities is necessary to ensure fair treatment. I am
 12 concerned that the Company has not identified which communities deserve consideration
 13 based on their experience of environmental injustices such as excessive pollution burdens,

1 energy inefficient housing, severe energy burdens, disconnections, and limited access to
2 participate in energy efficiency and clean energy programs.

3 **Q: What are your recommendations for Dominion to improve recognition justice in this**
4 **IRP?**

5 **A:** Identifying environmental justice communities is a good start, which Dominion has done
6 by noting the Virginia DEQ's draft environmental justice guidance definitions.³⁶ However,
7 this is a statewide assessment, and a more focused assessment is merited within
8 Dominion's service territory. There is great variation between environmental justice
9 communities, and it is important to be able to identify different subsets of communities for
10 different purposes. For instance, environmental justice communities located in urban heat
11 islands should be identified for initiatives that support more energy efficient cooling and
12 reduce the frequency and duration of summer outages. I recommend that Dominion draft a
13 plan that shows how it will use available data to identify and prioritize communities based
14 on factors such as demographics, housing characteristics, energy consumption, and
15 exposure to climate impacts.

16 Procedural Justice Concerns

17 **Q: Please summarize your concerns with Dominion's IRP from the perspective of**
18 **procedural justice.**

19 **A:** Dominion has not conducted any community engagement activities that are needed to
20 fulfill the requirement of meaningful involvement. Procedural justice is about the ability

³⁶ IRP at 121.

1 of impacted communities to access and influence decisions- to secure positive outcomes
2 for themselves. The voice of environmental justice committees is absent from the
3 considerations and modeling that were used to develop each of the alternative plans.

4 **Q: What are the best practices regarding public outreach and engagement?**

5 **A:** Broadly speaking, communities that are most adversely impacted by the energy system and
6 most excluded from the benefits of the clean energy transition should have the most agency
7 in decision-making. The Spectrum of Community Engagement³⁷ calls for moving from
8 merely ignoring or informing the public to full collaboration and even deferring to
9 communities to define priorities and make decisions.

10 The engagement activities themselves must be accessible and relevant: scheduling
11 meetings that do not conflict with work, providing language translation and interpretation
12 services, and minimizing other barriers such as the need for onsite childcare or covering
13 the costs of participants' time and transportation. The demographics of participants should
14 reflect the demographics of impacted communities.

15 For people who make the effort to participate, how their input shapes the final decision or
16 plan should be clearly and transparently communicated.

17 Public engagement is best evaluated qualitatively. The Initiative for Energy Justice offers
18 the Justice in 100 Scorecard³⁸ as a tool for assessing each stage of engagement and how
19 authentically community members were involved in decision-making. The Scorecard was

³⁷ JBS 14.

³⁸ JBS 15.

1 created to evaluate 100% clean energy laws, but the procedural justice assessments can be
2 readily adapted to evaluate IRPs.

3 **Q: What has the company actually done to engage the public in its IRP development?**

4 A: Based on the proposed IRP itself and discovery responses, it is unclear whether Dominion
5 has conducted any community engagement in the development of its IRP. If community
6 engagement has been done, it is unclear how it was conducted and how community input
7 was used to inform the IRP and ensure meaningful involvement of environmental justice
8 communities.

9 **Q: Does Dominion's approach achieve procedural justice?**

10 A: No. The ideal time for the public to contribute ideas to how the plan is produced was prior
11 to the time the proposed IRP was released. The Company did not report on any concrete
12 outreach efforts or outcomes in the plan itself. Mr. Riordan's discovery response indicates
13 that in fact Dominion has not conducted any outreach to date; Dominion's plan is to
14 conduct future outreach references specific projects, not energy resource planning.

15 **VIII. DISTRIBUTIVE AND RESTORATIVE JUSTICE CONCERNS IN THE IRP**

16 Distributive Justice Concerns

17 **Q: Please summarize your concerns with Dominion's IRP from a distributive justice**
18 **perspective.**

19 A: The Company's proposed IRP has the potential to result in disparate impacts to
20 affordability, access to energy efficiency and clean energy, and non-energy benefits such
21 as health improvements and opportunities to participate in the clean energy workforce.

1 Traditionally, the majority of clean energy benefits have primarily been captured by
2 affluent communities³⁹. Dominion's proposed DSM programs could be more ambitious
3 and targeted to benefit environmental justice communities. Without these programs,
4 customers face high levels of energy insecurity and disconnections.

5 **Q: Why are DSM programs important for distributive justice?**

6 A: DSM programs, if robust and well-designed with input from the communities they serve,
7 have the potential to mitigate affordability concerns and the widespread energy insecurity
8 and disconnections I described earlier. In its 2022 climate report, Dominion notes the
9 potential harm to customers that remain on the grid if there is a rush to adopt DERs by
10 some residents.⁴⁰

11 An energy portfolio that has a higher reliance on fossil fuels, which come with highly
12 volatile prices, will result in noticeable price spikes in customers' bills. Additionally, if the
13 Company fails to plan for much more severe peak load demands or more frequent
14 interruptions of fossil-based generation, it may be forced to procure additional load
15 capacity at prices above \$1,000 / MWh, as it did during Winter Storm Elliott.⁴¹ And a
16 failure to invest in climate resilience that results in increasing outages would also
17 incentivize customers who are financially capable to defect from an increasingly
18 unreliable, volatile, and expensive electricity grid.

³⁹ Borenstein, S., & Davis, L. W., *The distributional effects of US clean energy tax credits*, Tax Policy and the Economy 30(1), 191-234 (2016). Last accessed July 31, 2023 from:
<https://www.journals.uchicago.edu/doi/full/10.1086/685597>.

⁴⁰ See JBS 16 -Dominion Energy Climate Report, Distributed Energy Resources, Risk Impact column at 51.

⁴¹ JBS 17a.

1 DSM investments—extremely valuable in their own right for their cost effectiveness and
2 additional co-benefits such as improvements in health, safety and comfort—also provide a
3 hedge against the possibility of the kind of customer grid defection Dominion anticipates
4 in its climate report. With lower overall energy demand and the possibility to participate in
5 demand response programs, low-income and other vulnerable customers would be better
6 positioned to weather both physical and financial storms that are predicted in the coming
7 decades.

8 **Q: What is your assessment of the role of Demand-Side Management (DSM) programs**
9 **in the proposed IRP?**

10 **A:** Dominion minimizes the potential of DSM programs to contribute to reduced peak capacity
11 and supply needs.

12 When modeling DSM programs as a supply side resource, they represent just a sliver—
13 less than 2%—of its capacity and energy position in 2048.⁴² This leaves a large capacity
14 gap that could be closed with more aggressive and effective deployment of DSM programs.
15 Instead, Dominion’s forecast across all plans is for no further peak or energy savings from
16 DSM programs after 2025.

17 Furthermore, Dominion does not model the effect of billions of dollars in federal resources
18 to amplify DSM savings. While Dominion’s IRP devotes significant ink to discussion of
19 the Inflation Reduction Act (“IRA”) and Infrastructure Investment and Jobs Act
20 (“IIJA”d),⁴³ in Dominion’s response to Appalachian Voices Interrogatory No. 14-3(d)

⁴² See IRP, Figures 4.1.3.3-6.

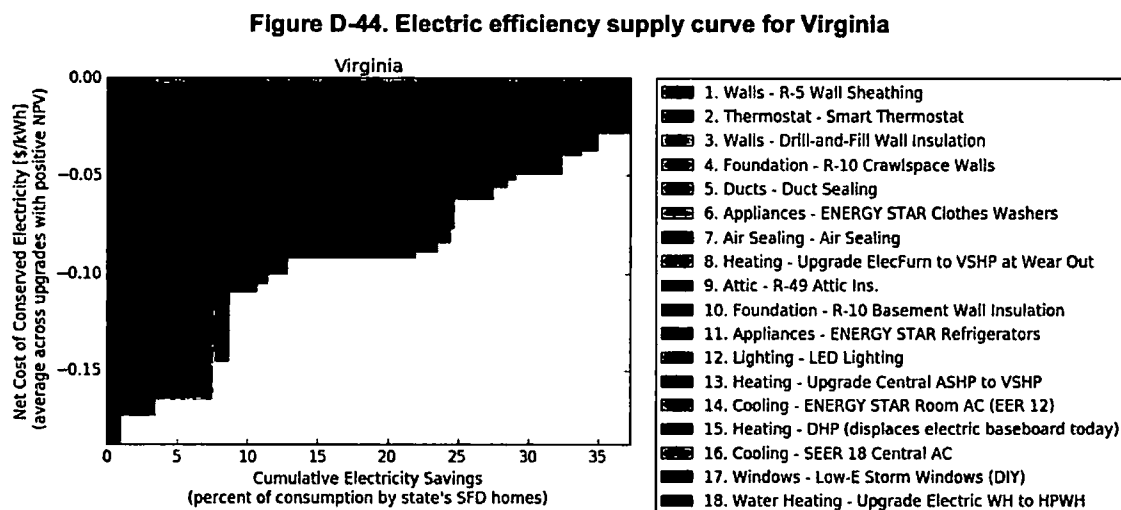
⁴³ IRP at 9-10.

states that it “has not yet included the home appliance electrification incentives or residential clean energy tax credits included in the IRA in any of its Alternative Plans.”⁴⁴

Q: Do Dominion’s assumptions about the cost-effective potential of DSM programs align with other expert evaluations?

A: No. While much of the potential value for DSM among residential customers is in programs that improve the building envelope and HVAC, savings from Dominion’s DSM portfolio are focused on programs like lighting, marketplace incentives and home energy assessments.⁴⁵

Figure 14. DSM Potential in Virginia (Source: NREL, 2020)⁴⁶



⁴⁴ JBS 37.

⁴⁵ IRP, Appendices - Corrected - 06.30.2023 at tab 6D.

⁴⁶ See JBS 18 at 126; JBS 19, 20 (for additional residential DSM design resources).

1 **Q:** **How do the costs of the Company's DSM programs compare to supply side resources?**

2 **A:** The costs of many DSM programs per MWh are very favorable, with 15 DSM programs
3 coming in at lower cost per MWh than the lowest cost supply side resource, which is solar
4 PPA at \$51.14⁴⁷.

5

⁴⁷ IRP, Appendices - Corrected - 06.30.202 at tab 6P.

Figure 15. Costs of DSM programs vs. new generation.

Appendix 6P: Comparison of per MWh Costs of Selected Generation

Comparison of per MWh Costs of Selected Resource	COD*	Capacity Factor	Cost (\$/MWh) no RECs	Cost (\$/MWh) with RECs
Voltage Optimization	2021	N/A	\$3.35	N/A
Non-Residential Lighting Systems & Controls Program	2022	N/A	\$5.81	N/A
Residential Efficient Products Marketplace Program	2022	N/A	\$6.03	N/A
Home Energy Assessment	2022	N/A	\$9.14	N/A
Non-Residential Heating and Cooling Efficiency Program	2022	N/A	\$10.70	N/A
Small Business Behavioral	2021	N/A	\$21.91	N/A
Non-Residential Small Manufacturing Program	2022	N/A	\$22.65	N/A
Non-Residential Lighting & Controls (Ext of Phase VII CLT3)	2021	N/A	\$22.90	N/A
Residential Home Retrofit	2022	N/A	\$38.99	N/A
Residential Customer Engagement Program	2022	N/A	\$42.28	N/A
Non-Residential Health Care	2021	N/A	\$42.37	N/A
Non Res Data Center and Server Rooms	2021	N/A	\$43.19	N/A
Non-Residential Hotel and Lodging	2021	N/A	\$47.10	N/A
Residential New Construction	2022	N/A	\$49.08	N/A
Residential Smart Thermostat (EE)	2022	N/A	\$49.16	N/A
Solar - PPA	2027	N/A	\$51.14	N/A
Residential Appliance Recycling Program (v2)	2022	N/A	\$58.30	N/A
Non-Residential Small Business Improvement Enhanced Program	2022	N/A	\$71.23	N/A
Solar - Tracker	2027	25%	\$72.05	\$63
3x1 CC Greenfield	2027	80%	\$72.25	N/A
2x1 CC Greenfield	2027	80%	\$75.58	N/A
Wind - On-Shore	2027	37%	\$78.58	\$69
Non-Residential EE Products	2022	N/A	\$79.04	N/A
Wind - Off Shore	2027	43%	\$82.57	\$73
1x1 CC Greenfield	2027	80%	\$91.29	N/A
Non-Residential Office Program	2022	N/A	\$114.99	N/A
Storage - PPA	2027	N/A	\$115.28	N/A

1 **Q: What is your assessment of DSM programs for the Company’s low-income (aka**
2 **Income and Age Qualifying, (“IAQ”)) residential customers?**

3 A: The proposed portfolio of programs will yield *disproportionately low benefits* to
4 vulnerable, low-income customers. While Dominion has committed to spend at least 15%
5 of its residential DSM budget on programs for low-income customers, those customers will
6 see just 2.3% of the total MWh savings from 2023-2038⁴⁸. This amounts to just 89,444
7 MWh. If Dominion has 1,000,000 LI customers, for example⁴⁹, each would save 89 kWh,
8 or \$13.42 at \$0.15 per kWh, over the next fifteen years. This is less than \$1 per customer
9 per year and equivalent to turning off a 100W light bulb for 6 hours each year. A number
10 of design resources⁵⁰ demonstrate far higher potentials for DSM programs to benefit low-
11 income customers.

12 **Q: How does Dominion’s current application of DSM programs compare to peer**
13 **investor-owned utilities?**

14 A: According to the ACEEE Utility Efficiency Scorecard,⁵¹ Dominion is at the very bottom
15 of the rankings among its peers. The Scorecard is an industry-leading assessment tool that
16 and was developed with extensive input from utility stakeholders. It has been through four
17 iterations and continues to hone its methodology for evaluating the energy efficiency
18 initiatives of the 52 largest investor-owned utilities in the country. Each utility is scored on

⁴⁸ *Id.* at tab 6I.

⁴⁹ This figure is a placeholder for illustration purposes; a better estimate can be developed with the identification of all census tracts served by Dominion.

⁵⁰ JBS 19 and 20.

⁵¹ JBS 21.

1 a total of 20 metrics across three categories: 1) Program energy efficiency spending and
 2 savings performance (52% of possible points), 2) Program offerings (25% of possible
 3 points), and 3) Enabling mechanisms (23% of possible points). Detail of the metrics used
 4 in the scorecard is presented below.

Figure 16. - Distribution of ACEEE Scorecard Indicators (Source: JBS 21)

2020 UTILITY SCORECARD © ACEEE

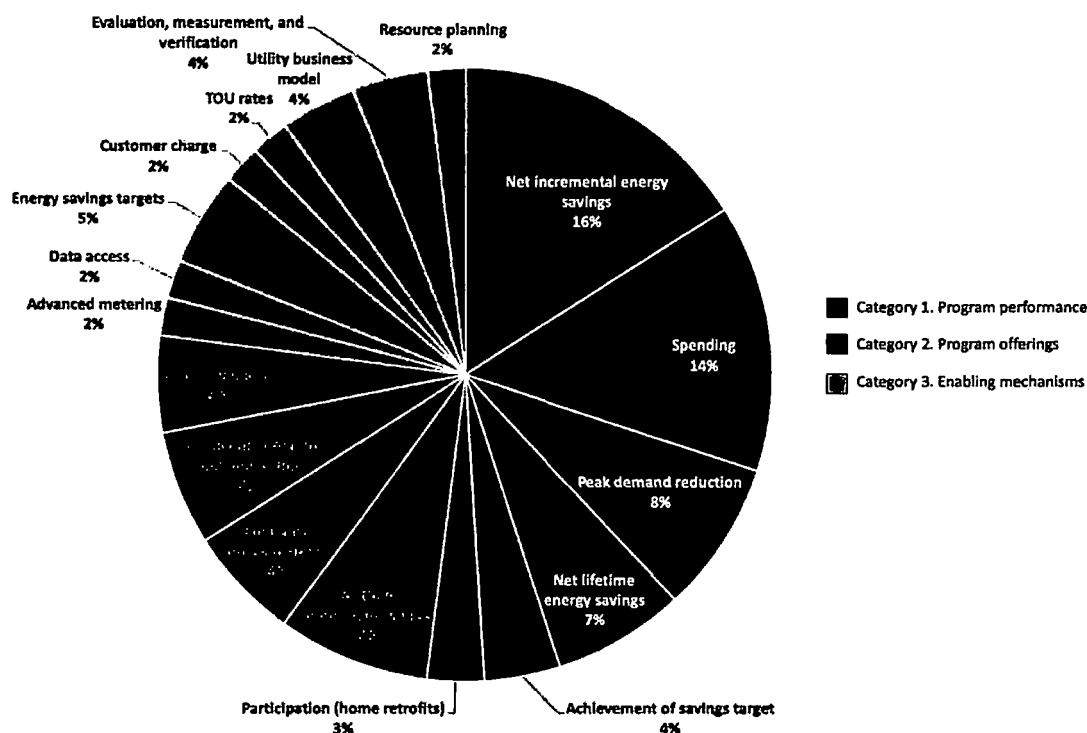


Figure 1. Weight of each metric

- 1 Dominion earned just 7 of 50 possible points and ranked 50th out of 52 utilities nationally.
2 Notably, Dominion earned just 1 point of out of 26 (4%) in the program performance
3 category, ranking second to last nationally behind only Alabama Power.

Figure 17 - Dominion DSM energy savings relative to peer utilities (Source: APV JS Workpaper 3)

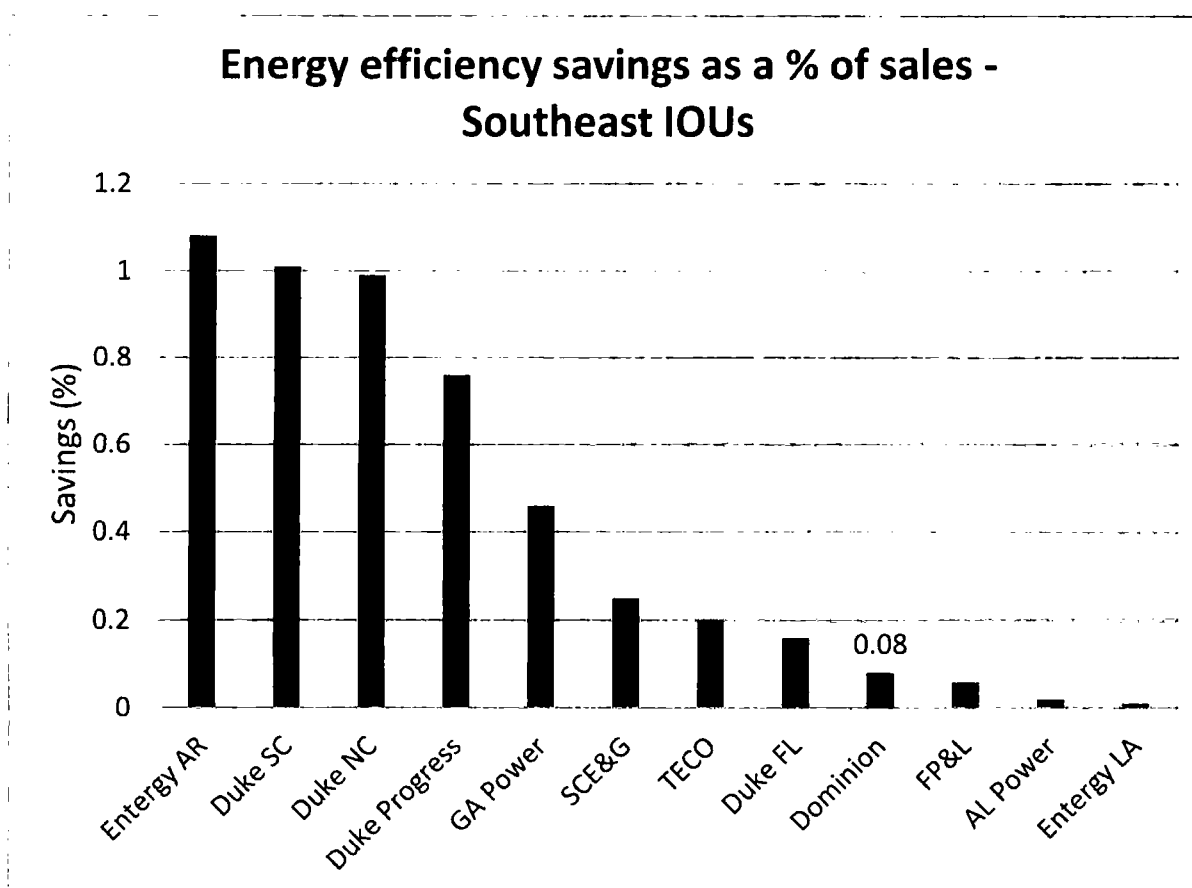
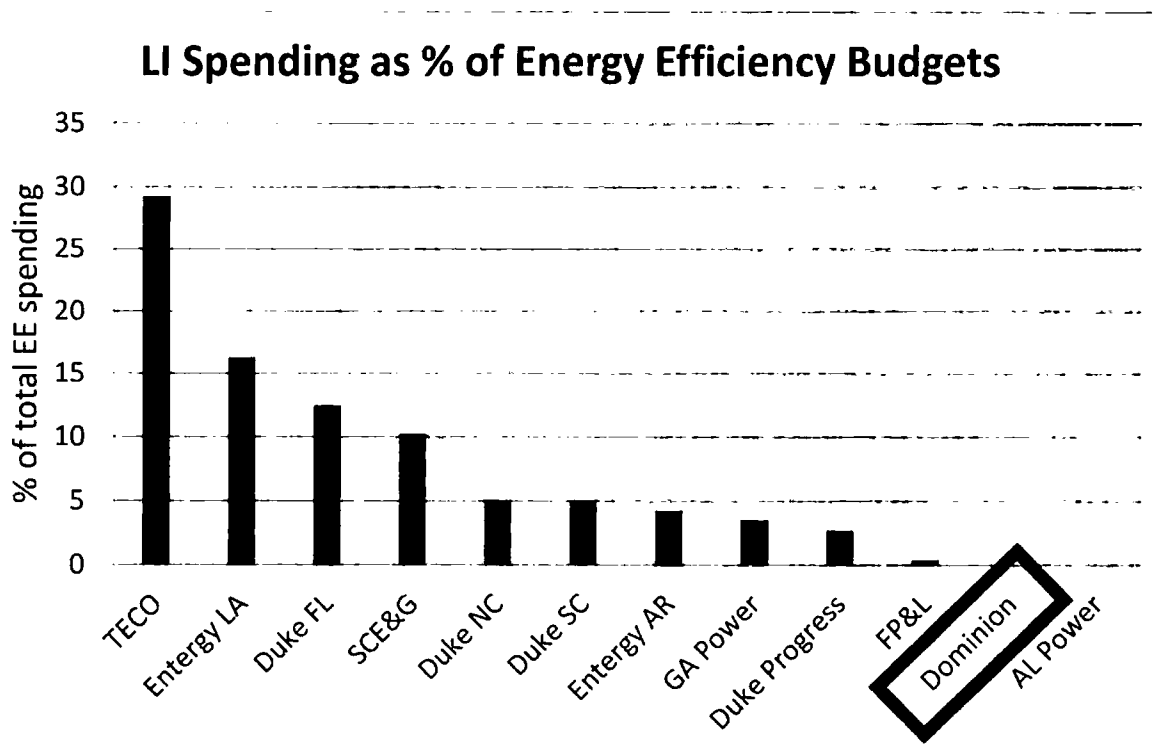


Figure 18 - Dominion low-income DSM spending relative to peer utilities (Source: APV JS Workpaper 3)



1 **Q: Do you see any connection between DSM performance and disconnections?**

2 **A:** Yes. Dominion's ranking second to last of all investor-owned utilities for energy efficiency
 3 program performance corresponds to its ranking near the top of the list for highest number
 4 and rate of disconnections executed by an investor-owned utility. A greater investment in
 5 DSM programs, especially in environmental justice communities, would result in lower
 6 consumption and energy bills.

7 While the Company indicates a number of DSM energy efficiency programs that are
 8 available to these groups of customers and that 15% of energy efficiency program funds
 9 will be spent on low-income programs (which is well below the percentage of Dominion

customers who are low-income), I would say this does not adequately achieve a systematic evaluation of how such programs will result in long-term bill reductions. A systematic evaluation of the impacts of its low-income programs, would include (but not be limited to):

- Anticipated kWh savings per customer
- Anticipated bill savings per customer
- Percentage bill reduction, per customer
- Reduction in energy burdens, per customer
- Assessment of overall customer need and demand. For instance, the number of customers with energy burdens that exceed 10% of income and the energy savings needed for those customers to achieve an affordable 6% burden, and the needed investment in a specific portfolio of programs that could achieve the desired rate stability and reduction in customer bills.

Q: Do you have any concerns about the cost allocation of new supply side generation to meet the increasing demand of data centers?

A: Yes. Growth in energy consumption and peak load by data centers is responsible for Dominion's efforts to mitigate the impacts of data centers on the load and capacity needs of the system as a whole are insufficient. Without more focused and effective approaches to limit the dramatic projected growth of this sector, all customers, especially those who are low-income and live in environmental justice communities, will bear a disproportionate cost burden to subsidize load and capacity growth for data centers that occupy one of the wealthiest counties in the country.

Even after confirming that data centers are the primary driver of increased energy demand, the Company has committed very few resources to offset this increasing demand. In 2023, the projected peak savings of the Non-Residential Data Center and Server Rooms program ("CDAC") is a paltry 109 kW, or 0.02% of all DSM load savings, which ranks

60th out of 64 programs⁵². This compares to 38,070 kW for the Residential Smart Thermostat (“DR”) program (“RTDR”) and 44,822 kW for the Non-Residential Heating and Cooling Efficiency Program (“CHV3”), which is nearly double the savings that CDAC will achieve *over 16 years* (23,729 kW)⁵³. On a related note, consider the investment data center load reductions compared to investments in hotels and health care facilities (annual savings in kW) below⁵⁴.

Figure 19. Data center vs other DSM programs load savings (Source: JBS Workpaper 4).

CODE	PROGRAM NAME	2023	2024	2025	2026	2027	2027
CDAC	Non Res Data Center and Server Rooms	109	308	718	1,257	1,795	1,827
CHA4	Non-Residential Hotel and Lodging	3,280	8,217	14,352	21,030	26,832	28,200
CHT4	Non-Residential Health Care	4,069	10,192	17,815	26,111	33,311	35,009

I am not suggesting that the investments in other DSM programs are too great; I am suggesting that given the explosive growth forecast for data center load and usage, corresponding DSM programs for data centers should be among the top of the portfolio in total reductions, if not *the* top. The CDAC program never exceeds 0.26% of the total portfolio between 2023 and 2038. This is particularly surprising given that the CDAC has a favorable \$43.19 per MWh, which ranks 12th of 45 programs evaluated⁵⁵.

⁵² JBS Workpaper 4. The work paper is adapted from IRP, Appendices - Corrected - 06.30.202 at tab 6B.

⁵³ *Id.*

⁵⁴ *Id.*

⁵⁵ *Id.* at tab 6P.

Restorative Justice Concerns

Q: Please summarize your concerns with Dominion's IRP from a restorative justice perspective.

A: Restorative justice focuses on systematic approaches to prevent harms from occurring or continuing in the future. Dominion's IRP offers no remedy to energy injustices that I have raised—including disproportionate exposure to extreme heat, lack of access to clean energy jobs, high levels of disconnections and energy insecurity among communities of color and low-income households. A restorative approach would identify the specific practices that will be implemented to curtail these harms. I am most concerned about Dominion's limited consideration of climate impacts and the potential harms to environmental justice communities in the future.

Q: Has Dominion adequately considered how increases in the impacts from climate change could affect its customers and the needs of its energy system?

A: No. In response to Appalachian Voices Interrogatory No. 14-1, the Company states that it "made no adjustments to the load forecast provided by PJM specifically to address 'climate change.'"⁵⁶ Furthermore, in its public response to Staff Interrogatory No. 4-116(b), the Company stated that, "[t]he Company does not believe that there has been a substantial increase in 'abnormal weather' conditions in its territory."⁵⁷

The skepticism and denial of climate change that the Company expresses above is surprising, given Dominion Energy's commitment to achieve zero emissions and its

⁵⁶ JBS 37.

⁵⁷ JBS 37.

1 statement: “Our vision is to be the most sustainable utility in the country.”⁵⁸

2 Dominion Energy also released a 72-page climate report in December 2022 in which it
3 states: “The risks posed by climate change are among the most significant that Dominion
4 Energy faces because of their scope, severity, and duration. The repercussions of climate
5 change and efforts to address it can alter everything from the global economy and the
6 competitive and regulatory environments to Dominion Energy’s infrastructure and
7 operations.”⁵⁹ The report evaluates seven types of climate hazards under multiple warming
8 scenarios.

9 Dominion Energy Chair, President and CEO Robert M. Blue affirmed his personal
10 understanding of his company’s duty to respond to climate change: “Climate change poses
11 risks, especially if companies and governments delay action. Acting decisively to address
12 climate change presents opportunities we can capitalize on to ensure a sustainable future
13 for our company, our customers, our communities, and the planet. And that is exactly what
14 we intend to do.”⁶⁰

15 **Q: What are the overall system impacts that are likely to result from climate change?**

16 **A:** A widely cited study in the peer-reviewed Proceedings of the National Academy of Science
17 found that under the modest 2.7 degrees C warming scenario in PJM, there will be 9
18 additional days in which peak load exceeds the current 99th percentile peak which occurs

⁵⁸ Dominion Energy’s Net Zero Commitment. Last accessed July 23, 2023 from:
<https://www.dominionenergy.com/our-company/netzero#:~:text=Domination%20Energy's%20Net%20Zero%20Commitment,our%20greenhouse%2Dgas%20emissions%20substantially.>

⁵⁹ JBS 16 at 46.

⁶⁰ *Id.* at 5.

1 on the four highest load days. If a more pronounced 4.4 degrees C warming occurs, there
2 would be 49 more days of extreme peak loads. Dominion uses the same moderate warming
3 scenario in its own assessment of climate risks.⁶¹

4 Even if the reality lands between the modest and high warming scenarios, this means
5 Dominion needs to prepare for a full additional month of peak loads that equal or exceed
6 the highest current peaks experienced.

7 Climate change will also influence sea levels, flood zones, and disruptions in transmission
8 and distribution due to increases in hurricanes and severe weather. Climate change also has
9 the potential to disrupt energy markets, whether from storms like Winter Storm Elliott,
10 hurricanes, or prolonged global events. In general, a resource mix that includes a greater
11 share of distributed generation and storage will be more reliable.

12 **Q: What do you make of the disparity between the extensive risk analysis in Dominion**
13 **Energy's climate report and the Company's omission of those same climate risks in**
14 **its IRP?**

15 **A:** At an executive level, the Company clearly has access to robust climate science and
16 modeling and has considered the potential risks to its infrastructure and facilities.

17 If the Company incorporated its extensive knowledge of climate risks into integrated
18 resource planning, I believe it would have provided significantly different inputs into its
19 models and arrived at a much more diverse and realistic set of alternative plans that reflect
20 the realities of climate impacts bearing down on the Commonwealth.

⁶¹ JBS 16 at 47-48.

1 **Q: What are the potential consequences of Dominion's unwillingness to consider more**
2 **severe climate scenarios in developing its alternative plans?**

3 A: Climate impacts are being felt extensively, locally, domestically, and globally. Summer
4 2023 marks a litany of climate impacts: Vermont experienced a "1,000-year flood,"
5 Phoenix eclipsed a record of more than 20 days in a row of temperatures exceeding 110
6 degrees F, and July is the hottest month on the planet, ever.⁶² Without consideration of
7 climate impacts, Dominion is planning for an energy system that may 1) Be unable to
8 withstand impacts in severe weather, and 2) Subject customers to unnecessarily high costs
9 if the proposed mix of supply- and demand-side approaches is poorly optimized for
10 extreme peaks and increasing power outages from more volatile weather and powerful
11 storms.

12 **Q: Has Dominion done enough to protect and benefit its low-income customers in this**
13 **IRP?**

14 A: No, and the Company has an opportunity to significantly increase its investments in low-
15 income energy efficiency programs, which also help the Company reduce peak demand
16 and overall capacity needs. The VCEA states that: "an energy efficiency program may be
17 deemed to be "in the public interest" if the program (1) provides measurable and verifiable
18 energy savings to low-income customers or elderly customers *or* (2) is a pilot program of

⁶² Borenstein, Seth and the Associated Press, *The heat, the rain and the smoke: July's record-setting weather is just the beginning of the summer of Earth's discontent*, Fortune July 31, 2023, last accessed August 2, 2023 from: <https://fortune.com/2023/07/31/what-will-summer-be-like-climate-change-rain-heat-smoke>.

1 *limited scope, cost, and duration, that is intended to determine whether a new or*
2 *substantially revised program or technology would be cost-effective.”⁶³*

3 **IX. CONCLUSION:**

4 **Q: What is your recommendation in light of Dominion's failure to comply with the**
5 **Commission’s 2020 IRP order related to environmental justice?**

6 **A:** I recommend the Commission reject Dominion’s IRP. Fulfilling the legal requirements to
7 promote and ensure environmental justice is carried out cannot be fully rectified in the
8 short-term, nor will environmental justice be achieved if no meaningful action is taken
9 toward achieving it. I recommend the Commission require corrective steps to the proposed
10 IRP and establish accountability mechanisms such that Dominion is required to integrate
11 environmental justice procedures before its IRP can receive approval. If however the
12 Commission approves this IRP, I recommend that the Commission should not rely on any
13 of the analyses or targets contained in this IRP in future filings or plans, including
14 Renewable Portfolio Standards (“RPS”) or Certificates for Public Convenience and
15 Necessity (“CPCN”) proceedings.

16 Dominion’s failure to meaningfully integrate environmental justice considerations in
17 developing IRP is unacceptable. The Company’s failure to authentically uphold the
18 Commission’s 2020 Order requiring it to ensure fair treatment and meaningful participation

⁶³ Va. Code § 56-576.

1 in this IRP cannot, however, be corrected overnight,⁶⁴ but must be addressed to achieve
2 meaningful outcomes.

3 **Q: What are your focused recommendations to the Commission?**

4 A: I focus my remaining recommendations on the two central tenets of fair treatment and
5 meaningful engagement. Either in a refiled IRP (if the Commission rejects this IRP) or in
6 future IRP filings, I recommend the Commission require the following.

7 *Fair Treatment - Require Dominion:*

8 1. To, in partnership with environmental justice community representatives, establish
9 formal environmental justice criteria for soliciting and evaluating all energy generation and
10 infrastructure construction projects, comprehensively so that each petition that comes
11 before the Commission is informed by a community driven standard. The guidelines in the
12 Renewable Development Projects RFP used to implement the RPS are a primary vehicle
13 for ensuring environmental justice. Criteria should include:

- 14 a. A minimum standard for compliance (e.g. identifying all environmental justice
15 communities that may be impacted by project siting; requiring a certain number of
16 public meetings and transparent reporting on the input received)
- 17 b. Incentives for exceeding the standards (e.g., positive labor requirements to hire a
18 majority of workers from environmental justice communities; community benefits
19 agreements).
- 20 c. Scoring methodologies for environmental justice criteria should be publicly
21 available.
- 22 d. Projects not meeting a threshold environmental justice score should be rejected.
- 23 e. The weight of environmental justice criteria should be sufficient such that the value
24 of benefits to environmental justice communities are likely to result in project
25 designs that are not the least cost but have maximum societal value.
- 26 f. Environmental justice components of a proposal should be publicly available to
27 enable meaningful participation and public input.

28 2. To publish a list of all environmental justice communities in its service territory
29 that meet the criteria established by VEJA. The Virginia DEQ has already done the work
30 of identifying all census block groups across the Commonwealth that meet the VEJA
31 criteria. The work remaining for Dominion is to identify which of these census block
32 groups its customers reside in.

33 The list of environmental justice communities should enable:

⁶⁴ JBS 34 - NY Disadvantaged Communities Report (2023). (For example, robust public engagement timelines for the development of statewide climate action plans is often a multi-year process. In New York, for instance, the Climate Leadership and Community Protection Act, a 22-member Climate Action Council worked over three years to develop the final plan; they held 32 public meetings and received more than 35,000 public comments.)

- 1 a. Communities and individual customers to quickly determine whether they reside in
- 2 a recognized environmental justice community.
- 3 b. Prospective contractors and bidders, for instance, renewable energy developers, to
- 4 access GIS and CSV data to identify communities that may be impacted by their
- 5 proposed projects and schedule community engagement activities to fulfill
- 6 meaningful involvement requirements.
- 7 3. To assess the extent to which disparate impacts are experienced by environmental
- 8 justice communities.
- 9 4. To incorporate environmental justice considerations, both benefits and burdens of
- 10 future load and capacity development, into modeling assumptions.
- 11

12 *Meaningful Involvement - Require Dominion:*

- 13 1. To work with a committee of residents in environmental justice communities to
- 14 develop a robust community engagement plan, which specifies the number and timing of
- 15 public meetings to be held and other processes to ensure meaningful involvement. The
- 16 committee should sign off on the plan prior to its implementation.
- 17 2. To publish community-facing accessible and relevant summaries of the proposed
- 18 IRP that explain in plain language what an IRP is, how it impacts customers, and how they
- 19 can provide input.
- 20 3. To grant access to PLEXOS modeling to community stakeholders upon request, at
- 21 least 1 year in advance of filing. If that is not possible, then at a minimum propose a process
- 22 that allows interested parties, especially environmental justice communities, to work with
- 23 Dominion to create inputs and assumptions to their capacity expansion modeling.
- 24 4. To conduct public meetings to solicit input.
- 25 5. To create a transparent report (which should be easily accessible in web format as
- 26 well as by request via mail if a customer does not have internet access) of community
- 27 engagement activities, including:
 - 28 a. The dates, locations, number of participants, and represented organizations of all
 - 29 meetings held. Collect and provide voluntary reporting by participants of their
 - 30 locations (to determine whether they reside in an environmental justice community)
 - 31 and demographics (to determine representation from communities of color and low-
 - 32 income households)
 - 33 b. All materials presented to community members during meetings.
 - 34 c. Meeting summaries, including but not limited to minutes, recordings, summaries
 - 35 of input received and from whom, and any data associated with live polling or
 - 36 prioritization.
 - 37 d. Any accompanying survey instruments and data from completed surveys.
 - 38

39 **Q: Does this conclude your testimony?**

40 **A: Yes.**

Attachment JBS-1

Justin Schott

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<https://www.linkedin.com/in/justinschott/>

https://bit.ly/Justin_Schott_Resume

Summary:

My work centers energy, environmental, and climate justice by blending deep and authentic community partnerships, applied quantitative research, policy analysis and advocacy, and education. My greatest aspiration is to partner with frontline communities to develop approaches that combat both racial and social injustices and ecological crises. I believe in the wisdom and solutions of Black, Brown and Indigenous communities, youth, and environmental justice communities. I see my task as illuminating and elevating this wisdom and ensuring they have the resources to bring their own visions of energy, environmental, and climate justice to life. Ultimately, I believe change will require repairing our relationships, remedying past injustices, and combining data and lived experiences to advocate for restructuring our energy systems. Perhaps most importantly, none of this can happen without the internal work each of us must do to heal, to grow, to be rooted in community, and to sustain our own action in the face of the climate crisis.

Work history (position details in professional resume)

University of Michigan, School for Environment and Sustainability

Ann Arbor, MI

Director, Energy Equity Project February 2021-present

Lecturer, Energy Justice, Fall 2022

EcoWorks

Detroit, MI

Project Manager, Detroit Climate Strategy, November 2020 – May 2021

Executive Director, June 2015 – November 2020

Founder & Program Director, Youth Energy Squad, September 2010 – June 2015

Voices for Earth Justice

Southfield, MI

Founder & Program Director, Youth Energy Squad, October 2008 – September 2010

Ecos Consulting

Detroit, MI

Launch Manager & Field Director, Home Energy Consultation Program, March – September, 2009

National Wildlife Federation

Ann Arbor, MI

Campus Field Coordinator, Campus Ecology Program, April 2007 – October 2008

Northwest Youth Corps, The Outdoor School

Eugene, OR

Field Science & Conservation Projects Team Leader, August 2002 – June 2004

Education

University of Michigan, M.S., Resource Policy & Behavior, 2006

Ann Arbor, MI

Cornell University, B.S., Natural Resources, 2002

Ithaca, NY

Professional Interests

Environmental justice, energy policy, equity research and metrics, utility regulation, community organizing and engagement, city and institutional climate planning, youth leadership development, K-12 and higher ed

Honors and Awards

Organizational:

UL Education Innovation Award, 2019

Longterm Community Partner Award, 2016 – Southeast Michigan Stewardship Coalition

Best Managed Nonprofit – Crain's Detroit Business 2013

Governor's Service Award, 2012 – Youth Volunteer of the Year (Deonte Lucas)

Spirit of Detroit Award, 2011 – For co-organizing the first ever Detroit Green Youth Summit

President Obama Meeting, 2011 – YES student only high schooler in oval office meeting

Detroit Free Press Inaugural Green Leader Award, 2010

Individual:

Semi-finalist – J.M.K. Innovation Prize, 2019

Bank of America Emerging Leader, National Neighborhood Builders Program, 2013

TogetherGreen Conservation Fellow, 2011

Research

Working Papers

Schott, J. and Whyte, K. Setting Justice⁴⁰ in Motion: The Hourglass Problem of Infrastructure Justice. Under review.

Schott, J., Whyte, K., Agrawal-Bejarano, R., and Dickson, T. Energy Equity Project: Developing a national framework that unites qualitative and quantitative equity measurement in climate and clean energy initiatives. Under review.

Academic Publications

Energy Equity Project (Schott, J. (ed), 2022. "Energy Equity Framework: Combining data and qualitative approaches to ensure equity in the energy transition." University of Michigan, School for Environment and Sustainability.

Gronlund, C. J., Ketenci, K. C., Reames, T. G., Larson, P. S., Schott, J., Rowe, Z., ... & O'Neill, M. S. (2022). Indoor apparent temperature, cognition, and daytime sleepiness among low-income adults in a temperate climate. *Indoor air*, 32(1), e12972.

Cardoza, J. E., Gronlund, C. J., Schott, J., Ziegler, T., Stone, B., & O'Neill, M. S. (2020). Heat-related illness is associated with lack of air conditioning and pre-existing health problems in Detroit, Michigan, USA: a community-based participatory co-analysis of survey data. *International journal of environmental research and public health*, 17(16), 5704.

Ziegler, T. B., Coombe, C. M., Rowe, Z. E., Clark, S. J., Gronlund, C. J., Lee, M., ... & O'Neill, M. S. (2019). Shifting from "community-placed" to "community-based" research to advance health equity: A case study of the Heatwaves, Housing, and Health: Increasing Climate Resiliency in Detroit (HHH) partnership. *International Journal of Environmental Research and Public Health*, 16(18), 3310.

Cardoza, J. E., Gronlund, C., Rowe, Z., Schott, J., Lee, M., Clark, S., ... & O'Neill, M. (2018, September). Air Conditioning and Heat-Related Illness in Detroit, Michigan, USA: A Community-Based Participatory Epidemiologic Analysis. In *ISEE Conference Abstracts* (Vol. 2018, No. 1).

Eagan, D. J., Keniry, J., & Schott, J. (2008). Higher education in a warming world. *Reston: National Wildlife Federation*.

Eagan, D. J., Calhoun, T., Schott, J., & Dayananda, P. (2008). Guide to climate action planning: Pathways to a low-carbon campus. *National Wildlife Federation, Reston, VA*.

Presentations

Energy Equity Project (February 2021 – present)

- American Public Health Association Environment Committee - panelist
- Climate Adaptation Forum (Massachusetts) – Justice40 panel
- Colorado Public Utilities Commission - Public meeting on community engagement
- Connecticut Public Utilities Commission – energy equity workshop
- Energy Equity in the South - energy equity panel
- Energy justice roundtable (with National Association of State Energy Offices and National Governor's Association)
- Greenhills School (Ann Arbor) – energy justice workshops for middle & high school students
- Green & Healthy Homes Institute – energy equity training and continuing education
- Hawaii Energy Hui – energy equity presentation
- Illinois Stakeholder Advisory Group – quarterly meeting and metrics development process
- Kansas Corporation Commission – Equity considerations – utility energy efficiency plan
- Michigan Energy Innovation Business Council – panel facilitator
- MI Energy Waste Reduction Low-Income Workgroup – panelist
- Michigan Healthy Climate Conference – affordability workshop
- MI Low-Income Energy Policy Board – affordability workshop
- Michigan Public Service Commission, MI Power Grid – energy equity presentation
- Michigan Energy Office – equity metrics for Justice40 alignment
- Midwest Building Decarbonization Equity Summit – panelist
- Midwest Energy Efficiency Alliance – energy equity workshop
- National Association of Regulatory Utility Commissioners (NARUC) – equity roundtable
- National Association of State Energy Offices – equity committee workshop
- National Association of State Utility Consumer Advocates (NASUCA) – energy equity presentation
- National Environmental Justice Conference – workshop
- National Community Action Partnership – conference workshop
- National Home Performance Conference – panelist
- New York Federal Reserve Equity Roundtable – panelist
- Oak Ridge National Lab – equity guidance
- Paris Reinforce Conference – equity advisor and panelist
- RE-AMP – equity panel
- Rocky Mountain Institute – equity considerations for utility dashboards, guest speaker
- Tufts University Cities Spring Symposium – co-presentation
- U.S. EPA – equity considerations for Portfolio Manager

Justin Schott

4

- Vote Solar – equity presentation
- World Resources Institute – equity considerations for electric school bus initiative

Examples of Prior Presentations (2007-2020)

- Association for the Advancement of Sustainability in Higher Education (AASHE)
- Autonomous Vehicles Initiative (Knight Foundation)
- Community forum (with high school students) – Southeast Michigan Stewardship Coalition
- Detroit Public Schools Community District – Go Green Challenge
- Detroit Sustainability Forum
- Great Lakes Bioneers Detroit
- MI Place-Based Education Conference (with high school students)
- Powershift (national youth climate conference)
- U.S. Green Building Council Green Schools Conference
- U.S. Sustainability Directors National Conference (keynote panelist)
- 50+ meetings to individual community groups, businesses, non-profits, K-12 schools, colleges

Academic Guest lectures

University of Michigan

EAS 501 – Energy justice and screening tools (Winter 2023)

Talks on Science – Roots of Energy Justice (Winter 2023)

Ross Energy Club (Fall 2021, 2022)

SEAS Environmental Justice (Fall 2021) – Energy justice and equity

Michigan Energy Week (Fall 2021)

Organizational Studies / Program in the Environment (Fall 2018) – Leadership and Environmental Stewardship

Graham Institute for Sustainability (Winter 2017) – Careers in Sustainability and Environmental Justice

Graham Institute for Sustainability (Fall 2016) – Origins of Flint Water Crisis

Semester in Detroit (Spring 2016) – Youth-led Sustainability Projects

Other Universities

Colorado School of Mines (Winter 2022)

Columbia University (Winter 2022)

Tufts University (Winter 2022)

Pomona College (Winter 2018)

Advising

Masters Projects

U of M Dow Fellows (Academic advisor) – Energy Equity Researchers Collaborative (2022)

U of M – SEAS (Academic advisor) – Detroit Resilience Hub Framework (2021-2022)

U of M Dow Fellows (Project Client) – Building the Foundation for a Residential Affordability Program in Detroit and Highland Park (2020)

U of M - SEAS (Project Client) –Roadmap to Water Security (2017-2018)

Student Interns

Since 2010, 20+ undergraduate and masters students from U of M (Semester in Detroit, UROP, Urban Energy Justice Lab, SEAS, Doris Duke Conservation Fellowship)

Professional Fellows

Detroit Revitalization Fellows – Susan Dundon (2015-17), Deb Houghtaling (2017)

Challenge Detroit – Shaina Davidson (2015-16), Miranda Day (2016-17)

Grants

Secured and managed more than \$15M in grants and contracts from 100+ government, foundation, and corporate sources; 2008 – present

Energy Equity Project

- Google Environmental Justice Data Fund \$250,000
- Joyce Foundation, \$200,000
- Crown Family Foundation, \$201,000
- Energy Foundation, \$150,000
- Colorado Public Utilities Commission, \$23,500
- Private donations - \$19,000

Academic awards

- National Institutes of Health (community partner) – “Assessing the Neuropsychological Benefits of Weatherization Programs.” 2021-2026, \$3.0 million
- National Science Foundation Smart & Connected Communities Program (community partner) – “Reducing Barriers to Residential Energy Security through an Integrated Case-management, Data-driven, Community-based approach”; 2020-2024, \$2.1 million
- National Oceanic and Atmospheric Administration (lead author and co-PI) – “Climate Resilience from the Youth Up”, 2018-20, \$500,000

EcoWorks – responsible for more than 100 grants and contracts, examples below (may represent multiple years of funding)

- AmeriCorps - \$3.6 million
- DTE Energy and contractors - \$3.2 million
- Wayne Metro Community Action Agency - \$3.05 million
- Erb Family Foundation - \$844,000
- Detroit Public Schools Community District - \$750,000
- Chase - \$500,000
- City of Detroit - \$459,000
- United Way for Southeast Michigan - \$300,000

Professional Service & Engagement

Anchor Committee Member, Tishman Center for Social and Environmental Justice, University of Michigan (2022 – present)

Planet Detroit, Board Member (2021 - present)

Commissioner, Michigan Bureau of Construction Codes (2020 –2022)

Member and chair, Coalition to Keep Michigan Warm (2015-2019)

Member, Detroit Environmental Agenda (2015-2019)

Steering committee member, Southeast Michigan Stewardship Coalition (2018-2020)

Board director, treasurer, and vice chair, Detroit Regional Chapter, U.S. Green Building Council (2013-2017)

Steering committee member, Michigan Student Sustainability Coalition (2008-2009)

Steering committee member, Energy Action Coalition (2007-2008)

Board director, Voices for Earth Justice (2006-2008)

In the Media

Utility Dive, “Equity framework online tool to help guide investments in line with Jsutice40, UM researchers say.” October 27, 2022.

Utility Dive, “The energy system is ‘inherently racist,’ advocates say. How are utilities responding to calls for greater equity?” October 26, 2022.

Energy News, “Can energy justice be measured? A new research project aims to do just that.” September 29, 2022.

Centered, “Michigan team unveils ‘first-of-its-kind’ energy equity framework and mapping tool.” September 22, 2022.

Grist, “Unplugged: Why utilities are more likely to disconnect Black, Latino and Indigenous households.” September 6, 2022.

Pecan Street, Guest Blog: “When it Comes to Energy and Equity, Metrics Aren’t Enough.” June, 2022.

Popular Science: “Energy Costs Hit Low-Income Americans the Hardest”, Apr 11, 2022.

Outlier Media: “The Obscure Utility Tax Detroiters Pay Each Month to Fund the Police”, Mar 24, 2022.

The Hill (Op-Ed): “Build Back Better Must Sharpen Focus on Environmental Justice”, Nov 13, 2021

Detroit Free Press: “Detroiters Can Bring Down Energy Costs. But Getting Homes Weatherized Isn’t Easy.” Nov 25, 2021.

Outlier Media: “7 Low-Cost Ways to Winterize Your Detroit Home”, Nov 3, 2021.

Energy News Network: “Detroit Says Its New Climate Strategy Will Empower Residents. Activists Have Questions.” Nov 2, 2021

Al Jazeera; The Take Podcast: “Winter is Coming: How the Energy Crunch is Squeezing Everyone”, Oct

Justin Schott

8

27, 2021.

Planet Detroit: "Is Housing an Environmental Justice Issue? In Detroit, Yes." October 6, 2021.

Planet Detroit (Op-Ed): "Beyond Lip Service: It's Time to Measure Equity in Clean Energy Investments.", July 8, 2021.

Planet Detroit: "Why EcoWorks Executive Director Justin Schott is Resigning to End 25 Years of Straight White Male Leadership." June 5, 2020.

Bridge Magazine (Op-Ed): "Liberate Michigan? Here's Where We Can Start", May 10, 2020

Curbed Detroit: "The Multi-Year Journey to Make a Concrete Yamasaki Building Net-Zero Energy" Feb 12, 2020.

Wayne State University: "Detroit Water Stories", Apr 4, 2019

Last Revised February, 2023

Justin Schott

Justin Schott

Attachment JBS-37

Virginia Electric and Power Company
Case No. PUR-2023-00066
Appalachian Voices
Set 14

The following response to Question No. 1 of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Karim Siamer
Lead Economist
Dominion Energy Virginia

As it pertains to legal matters, the following response to Question No. 1 of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Vishwa B. Link
McGuireWoods LLP

Question No. 1

Regarding the Company's approach to the development of its Alternative Plans. How is climate change factored into load forecasts?

Response:

The Company objects to this request because as used herein "climate change" is vague and undefined. Subject to and notwithstanding this objection, the Company provides the following response.

The Company used PJM's load forecast to develop the 2023 Plan. The Company made no adjustments to the load forecast provided by PJM specifically to address "climate change."

Virginia Electric and Power Company
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The following response to Question No. 2 of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Stan Blackwell
Director – Customer Service & Strategic Partnerships
Dominion Energy Virginia

As it pertains to legal matters, the following response to Question No. 2 of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Vishwa B. Link
McGuireWoods LLP

Question No. 2

Refer to IRP Figure 1.1.1: PJM Summer Peak Forecast for DOM Zone (MW).

- a) The figure shows a summer peak load forecast increase from about 25,000 MW (2022 model) to 43,000 MW (2023 model). Is the Company aware of what drove this nearly 70% increase? If so, please provide all documentation identifying this information.
- b) If the Company is aware of the driving force for the identified increase, please clarify whether the increase was the result of only changing inputs (if so, which ones) and or were there other changes (was the model designed or operated differently between 2022 and 2023)?

Response:

- a) The Company objects to this request as overly broad, unduly burdensome, and potentially voluminous to the extent it seeks “all documentation identifying this information.” Subject to and notwithstanding this objection, the Company provides the following response.

See the Executive Summary of the 2023 Plan for an explanation of the increase in the PJM Load Forecast. See the Company’s responses to Staff Set 06-146, APV Set 02-01, APV Set 02-04, APV Set 02-09, APV Set 02-13, APV Set 03-20, APV Set 05-01, APV Set 05-02, APV Set 05-04, APV Set 05-16, APV Set 05-17, APV Set 05-19, APV Set 05-20, APV Set 05-23, APV Set 05-26, APV Set 05-30 Supplemental, APV Set 05-31

Supplemental, APV Set 05-37, APV Set 05-47, APV Set 12-02, APV Set 12-03, APV Set 12-04, APV Set 12-05, APV Set 12-06, APV Set 12-07, APV Set 13-01, APV Set 13-03, APV Set 13-06, APV Set 13-07, APV Set 13-10, APV Set 13-11, APV Set 13-12, APV Set 13-13, Clean Virginia Set 01-05, Clean Virginia Set 01-06, and Clean Virginia Set 02-19.

- b) The significant increase is primarily due to the 15-year data center forecast that PJM incorporated into its load forecast. The Company utilized the PJM Load Forecast to develop all Alternative Plans shown in the 2023 Plan, as directed by the Commission.

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Set 14

The following response to Question No. 3(a) through (c) of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Jarad L. Morton
Manager – Integrated Strategic Planning
Dominion Energy Services, Inc.

The following response to Question No. 3(d) of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Karim Siamer
Lead Economist
Dominion Energy Virginia

As it pertains to legal matters, the following response to Question No. 3 of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Vishwa B. Link
McGuireWoods LLP

Question No. 3

Refer to IRP - the Company's Alternative Plans A – E and the Company's response to CV1-11.

- a) How do Plans D and E meet the criteria for zero emissions established by the VCEA with the inclusion of 970 MW of natural gas?
- b) Please confirm the Company views both Plans B and D to meet the requirements of the VCEA.
- c) If confirmed, please identify which requirements of the VCEA Plans B and D meet, and if Plans B and D meet all requirements of the VCEA via an exception in the law or via the primary requirements (i.e., without exceptions) of the law.
- d) Provide details on how each Alternative Plan projects increasing customer adoption of energy efficiency and distributed generation and storage as a result of incentives in the Inflation Reduction Act ("IRA").

Response:

The Company objects to this request to the extent it seeks a legal conclusion. The Company also objects to this request to the extent it seeks information that may be protected by the attorney-client privilege, work product doctrine, or other recognized privilege. Subject to and notwithstanding these objections, the Company provides the following responses to a, b and c, below.

- a) Plans D and E assume new CT generation is hydrogen capable by 2045. See Section 2.2 of the 2023 Plan.
- b) Confirmed.
- c) Plans B and D can meet all the requirements of the VCEA.
- d) In addition to the objections stated previously, the Company objects to this request because it would require original work. Subject to and notwithstanding these objections, the Company provides the following response.

The Company has not yet included the home appliance electrification incentives or residential clean energy tax credits included in the IRA in any of its Alternative Plans.

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The following response to Question No. 4 of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Jarad L. Morton
Manager – Integrated Strategic Planning
Dominion Energy Services, Inc.

As it pertains to legal matters, the following response to Question No. 4 of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Vishwa B. Link
McGuireWoods LLP

Question No. 4

Refer to IRP Appendix 2B (iv-v). What is the carbon intensity (in lbs CO₂ per kWh or similar metric) of each of the plants listed in Appendix 2B (iv-v)?

Response:

The Company objects to this request because it would require original work. Subject to and notwithstanding this objection, the Company provides the following response.

See Attachment APV Set 14-04 (JLM). Please note, Attachment APV Set 14-04 may not include all units from Appendix 2B (iv-v); if a unit is not included carbon intensity is not available as a PLEXOS output.

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The following response to Question No. 5 of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Jarad L. Morton
Manager – Integrated Strategic Planning
Dominion Energy Services, Inc.

As it pertains to legal matters, the following response to Question No. 5 of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Vishwa B. Link
McGuireWoods LLP

Question No. 5

Refer to Section 5.5.3 Third-Party Market Alternatives.

- a) Please provide a copy of the most recent RFP.
- b) Please provide the number of proposals received, total generating capacity of submitted proposals by energy source (e.g., solar, solar PPA, off-shore wind, etc.) by year, for as many years as the Company has available data.
- c) Provide the number of proposals accepted by energy source and the total capacity of these accepted by year, for as many years as the Company has available data.
- d) Please provide the values of each data point in Figures 5.5.2.1. and 5.5.2.2. in editable tabular form (e.g. Excel).

Response:

The Company objects to this request as not relevant or reasonably calculated to lead to the production of admissible evidence in this integrated resource plan proceeding as the Company is not seeking approval of any specific resource in this proceeding or cost recovery. It is unclear how requests for proposals (“RFPs”) are relevant to an integrated resource plan proceeding reviewed pursuant to Va. Code § 56-597 *et seq.* Further, the Company objects to this request as overly broad, unduly burdensome, and potentially voluminous to the extent it seeks detailed information on RFP proposals received and accepted “by year, for as many years as the

Company has available data.” The Company also objects to this request because it would require original work. Subject to and notwithstanding these objections, the Company provides the following response.

- a) The Company’s most recent RFPs can be found at <https://www.dominionenergy.com/projects-and-facilities/renewable-projects/solar-onshore-wind-and-energy-storage-proposals>.
- b) The current, open RFP for development proposals was issued on April 6, 2023. The Company is evaluating the proposals received and will provide the results in its forthcoming annual RPS Development Plan filing. The Company files detailed information on its annual RFP process in its annual RPS Development Plan proceeding, where it seeks certificates of public convenience and necessity for new generation resources and related cost recovery. See Case Nos. PUR-2020-00134, PUR-2021-00146, and PUR-2022-00124.
- c) See the Company’s response to subpart (b).
- d) See Attachment APV Set 14-05 (JLM).

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The following response to Question No. 6 of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Richard C. Siepka
Manager, Electric Distribution Grid Planning
Dominion Energy Virginia

As it pertains to legal matters, the following response to Question No. 6 of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Vishwa B. Link
McGuireWoods LLP

Question No. 6

Refer to Section 8.1 Distribution Planning. Provide any performance evaluations of the Grid Transformation Plan or a summary of its impacts and effectiveness.

Response:

The Company objects to this request as not relevant or reasonably calculated to lead to the production of admissible evidence in this integrated resource plan proceeding because it seeks information not used to develop the Company's 2023 Plan. The Company also objects to this request to the extent it would require original work. Further, the Company objects to this request as vague, overly broad, unduly burdensome, and potentially voluminous to the extent it seeks "any performance evaluations of the Grid Transformation Plan" without limitation or definition. Subject to and notwithstanding these objections, the Company provides the following response.

The Company files an Annual Report on its Grid Transformation Plan providing information on metrics directed by the Commission. The Company's most recent Annual Report was filed on March 31, 2023, in Case Nos. PUR-2019-00154 and PUR-2021-00127.

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The following response to Question No. 7 of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Jarad L. Morton
Manager – Integrated Strategic Planning
Dominion Energy Services, Inc.

As it pertains to legal matters, the following response to Question No. 7 of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Vishwa B. Link
McGuireWoods LLP

Question No. 7

Refer to Section 1.3 Severe Weather Events. The Company notes poor performance of its natural gas power plants during Winter Storm Elliot, and the loss of 46,000 MW of capacity. Given this experience, and multiple factors that remain out of the Company's control, including holiday market slowdowns and "limitations related to upstream pipeline pressures" (p.9):

- a) Why does the Company believe further investments in new natural gas-fired generation are reasonable and prudent?
- b) Why has the Company provided for continued use of natural gas generation in all five plans?

Response:

The Company objects to the premise of this request, which misstates the Company's description of its generation fleet performance during Winter Storm Elliot. The Company did not "note[] poor performance" as the request implies. As stated in Section 1.3, "*The Company's generation fleet performed well during Winter Storm Elliot, but the Company's natural gas-fired generation fleet experienced some limitations related to upstream pipeline pressure issues and units returning from outage as it related to the natural gas supply market for the four-day holiday weekend.*" Subject to and notwithstanding this objection, the Company provides the following response.

- a) As noted in Section 2.2 of the 2023 Plan, "Plan B preserves existing generation resources and adds an additional 2.9 GW of combustion turbine ("CT") generation to address future system reliability, stability, and energy independence issues. This allows the Company to maintain reliability while continuing to develop extensive renewable generation."
- b) Please see the Company's response to subpart (a). See also Section 5.4.2 of the 2023 Plan.

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The following response to Question No. 8(a) through (e) and (i) of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Michael T. Hubbard
Manager, Energy Conservation
Dominion Energy Virginia

The following response to Question No. 8(f) of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Jarad L. Morton
Manager – Integrated Strategic Planning
Dominion Energy Services, Inc.

The following response to Question No. 8(g) through (j) of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Kathleen D. Staples
Director - Electrification
Dominion Energy Virginia

C. Alan Givens
Manager – Customer Rates – Rate Design
Dominion Energy Virginia

The following response to Question No. 8(k) and (l) of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Stan Blackwell
Director – Customer Service & Strategic Partnerships
Dominion Energy Virginia

As it pertains to legal matters, the following response to Question No. 8 of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Vishwa B. Link
McGuireWoods LLP

Question No. 8

Refer to IRP Section 3.2 Demand Side Management and any discussion of DSM Programs contained in the IRP generally.

- a) Please provide a copy of the most recent RFP for DSM programs.
- b) Please provide a detailed description of current demand response programs and rates, both commercial and residential. Include the number of subscribers / participants and evaluation results, e.g. reductions in peak load.
- c) Has the Company evaluated the cost effectiveness, per MW, of its approved demand response programs? If so, provide the evaluation results. If not, please explain why the Company has not conducted an evaluation.
- d) Please provide evaluations of the current DSM programs' cost per MWh and per MW (if applicable). Provide historical data for the current programs going back 5 years or if less, for as many years as data is available.
- e) Please provide evaluations of the current DSM programs for any non-financial performance indicators that are tracked, such as reductions in arrearages, disconnections, and jobs created or sustained. Provide historical data for the current programs going back 5 years or if less, for as many years as data is available.
- f) In Appendix 4L, the load duration curves for both with and without DSM are presented as equal. Why is that the case?
- g) Provide the current rate structure for EV charging (both residential and commercial) and data centers.
- h) Has the Company considered specific rates for EV charging and for data center customers? If so, describe the Company's process and considerations for developing and proposing rates. If not, please explain why not.
- i) To what extent has Dominion considered alternative scenarios that consider combining DSM and time of day ("TOD") approaches to spread demand throughout the day and minimize impacts to peak load? For instance, has

Dominion considered technologies, even ones currently available, that can schedule usage of EV charging and other major appliances for periods of low overall electric demand?

- j) Has Dominion considered innovative rate structures and incentives that would maximize voluntary TOD switching by customers away from times of peak load?
- k) For the demands of new high usage facilities, such as data centers and electric school bus charging facilities, has the Company considered approaches that would directly tie or incentivize these new facilities to the development and siting of new renewable energy capacity?
- l) Has the Company considered that these high energy users could operate in a manner that avoids drawing electricity during periods of peak or near peak load, or could rely primarily, if not solely, on the availability of direct generation (and islanding) by onsite renewables?

Response:

The Company objects to this request as not relevant or reasonably calculated to lead to the production of admissible evidence in this integrated resource plan proceeding as the Company is not seeking approval of any DSM programs or cost recovery in this proceeding. It is unclear how requests for proposals ("RFPs") are relevant to an integrated resource plan proceeding reviewed pursuant to Va. Code § 56-597 *et seq.* The Company also objects to this request because it would require original work. Subject to and notwithstanding these objections, the Company provides the following response.

- a) The Company provides detailed information regarding its RFP for DSM programs in its annual DSM filing. See Case No. PUR-2022-00210.
- b) See the Company's most recent Evaluation, Measurement, and Verification ("EM&V") Report filed on June 15, 2023 in Case No. PUR-2021-00247.
- c) See the Company's response to subpart (b) and Section 6.7 and Appendix 6P of the 2023 Plan.
- d) The Company also objects to this request as overly broad, unduly burdensome, and potentially voluminous to the extent it seeks "historical data for current programs going back 5 years or if less, for as many years as data is available." Subject to and notwithstanding this additional objection, the Company provides the following response.

See the Company's responses to subpart (b) and (c).

- e) The Company does not track the information requested.

- f) DSM is accounted for in the load forecast and is not a direct input into the PLEXOS model.
- g) The Company does not have a specific rate class or rate structure for EV charging, except for Schedule EV and Schedule 1EV, which are experimental and are closed to new customers. Data centers would typically be on Rate Schedules GS-2, GS-3, or GS-4, depending on their load. Data centers with a demand that has reached or exceeded 5,000 kW may also take service under the experimental rate schedule, Schedule MBR.
- h) Please see the Company's Transportation Electrification Plan filed on May 1, 2023 in Case No. PUR-2020-00051. Please see the Company's response to subpart (g) regarding Schedule MBR. Refer to the Schedule MBR tariff for the specific pricing provisions for customers taking service under this rate schedule.
- i) The Company proposed a Peak Time Rebate Program as part of its 2022 DSM proceeding, Case No. PUR-2022-00210, which is currently pending before the Commission. Additionally, the Company currently offers Rate Schedules 1G, 1P, 1T, 1S, 1EV, EV, DPR, DP-1, DP-2, 5P, GS-2T, GS-3, 6, 6TS, GS-4, 10, and MBR. Each of these rates has various time of day and/or day type features that provide price incentives to customers. Finally, with respect to shifting load from major appliances, the Company currently offers a Residential Thermostat Program, which incents program participants to allow the Company to adjust heating or cooling within a participant's home during periods of peak demand.
- j) Yes. Please see the Company's response to subpart (i).
- k) The Company has not considered such incentives. The Company has worked with large load customers to create new renewable tariffs. Schedule RG and Schedule RF are two existing tariffs.
- l) See the Company's response to subpart (k).

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As it pertains to environmental justice, the following response to Question No. 9 of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Kathryn MacCormick
Supervisor, Environmental Justice
Dominion Energy Services, Inc.

As it pertains to the Company's Grid Transformation Plan projects, the following response to Question No. 9 of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Richard C. Siepka
Manager, Electric Distribution Grid Planning
Dominion Energy Virginia

As it pertains to legal matters, the following response to Question No. 9 of the Fourteenth Set of Interrogatories and Requests for Production of Documents propounded by Appalachian Voices received on July 13, 2023, was prepared by or under the supervision of:

Vishwa B. Link
McGuireWoods LLP

Question No. 9

Refer to IRP Chapter 9: Other Information.

- a) Describe the Company's efforts to appropriately respond to community input and minimize or mitigate any disproportionate impacts as referenced on p. 121.
- b) How does the Company define disproportionate impacts?
- c) How does the Company evaluate disproportionate impacts?
- d) Does the Company have any indicators for tracking progress on minimizing or mitigating disproportionate impacts or other environmental justice concerns? If so, please provide the indicators and associated data for at least the last 5 years, or as far back as Company data allows.

- e) Please provide the environmental justice review process the Company describes on p. 121.
- f) Provide any environmental justice or related evaluations the Company has conducted.
- g) Please identify Company staff who are responsible for fulfilling the requirements of the Virginia Environmental Justice Act as it pertains to this IRP. Describe their professional background and qualifications for that role. Staff need not be identified individually to retain anonymity.
- h) From 2017 through the present, provide all available reliability metrics, such as SAIDI and SAIFI, disaggregated by customer class and at the most local geographic resolution available, ideally at the census tract scale or finer.
- i) Provide details on the location and cost of grid hardening investments the Company has made since 2017. Please provide these in a spreadsheet of project improvements and costs by location (e.g. zip code, municipality, county).
- j) In the last five years, have any localities within the Company's service territory requested local reliability data? "Local reliability data" as used here includes data provided by the utility to a locality that includes standard reliability metrics used in accordance with industry-recognized electric reliability standards (IEEE 1366), including data from the System Average Interruption Duration Index (SAIDI), the System Average Interruption Frequency Index (SAIFI), the Customer Average Interruption Duration Index (CAIDI), and the Customer Average Interruption Frequency Index (CAIFI). If the Company provided local reliability data in response to a locality's request, please identify the localities, provide all communications related to this request, and provide the local reliability data the Company provided in response to that request.
- k) If no localities made such a request of the Company, but the Company provided any local reliability data to a locality within the Company's service territory within the last five years, please identify the localities, provide the local reliability data given to the locality, and provide all communications related to the provision of such data.

Response:

- a) The Company objects to this request as not relevant or reasonably calculated to lead to the production of admissible evidence in this integrated resource plan proceeding because it seeks information not used to development the Company's 2023 Plan. As noted in Section 9.1 of the 2023 Plan, the Company believes that environmental justice is best evaluated on a case-by-case project basis. The Company is not seeking approval for any resource or program in this integrated resource plan proceeding that would require an environmental justice evaluation. Subject to and notwithstanding these objections, the Company provides the following response.

See Section 9.1 of the 2023 Plan for the Company's approach to environmental justice.

- b) The Company objects to this request as not relevant or reasonably calculated to lead to the production of admissible evidence in this integrated resource plan proceeding because it seeks information not used to develop the Company's 2023 Plan. Further, the Company objects to this request to the extent it seeks a legal conclusion. The Company also objects to this request to the extent it seeks information that may be protected by the attorney-client privilege, work product doctrine, or other recognized privilege.
- c) The Company objects to this request as not relevant or reasonably calculated to lead to the production of admissible evidence in this integrated resource plan proceeding because it seeks information not used to develop the Company's 2023 Plan. Further, the Company objects to this request to the extent it seeks a legal conclusion. The Company also objects to this request to the extent it seeks information that may be protected by the attorney-client privilege, work product doctrine, or other recognized privilege. Subject to and notwithstanding these objections, the Company provides the following response.

The Company's environmental justice evaluation is conducted on a case-by-case basis and depends on the specific characteristics of the project or program.

- d) The Company objects to this request as not relevant or reasonably calculated to lead to the production of admissible evidence in this integrated resource plan proceeding because it seeks information not used to develop the Company's 2023 Plan. Further, the Company objects to this request as overly broad, unduly burdensome, and potentially voluminous to the extent it seeks "indicators and the associated data for at least the last 5 years, or as far back as Company data allows." The Company also objects to this request because it would require original work.
- e) See the Company's objections and response to subpart (a). See also Attachment APV Set 14-09(e) (KM) for a copy of the Company's environmental justice policy.
- f) The Company objects to this request as not relevant or reasonably calculated to lead to the production of admissible evidence in this integrated resource plan proceeding because it seeks information not used to develop the Company's 2023 Plan. Further, the Company objects to this request as vague, overly broad, unduly burdensome, and potentially voluminous to the extent it seeks "any environmental justice or related evaluations the Company has conducted" without definition or limitation. The Company also objects to this request because it would require original work.

- g) The Company objects to this request as overly broad, unduly burdensome, potentially voluminous, and because it would require original work. The Company also objects to this request as vague because the reference to "the requirements of the Virginia Environmental Justice Act as it pertains to this IRP" is unclear. Subject to and notwithstanding these objections, the Company provides the following response.

Dedicated environmental justice staff sit within the Corporate Environmental Services group and work with business development, engineering, project construction, permitting, legal, public affairs, and other subject matter expert staff from individual business groups and other Corporate Services groups to evaluate and meet all legal and regulatory requirements, including those related to environmental justice, for individual projects.

- h) The Company objects to this request as not relevant or reasonably calculated to lead to the production of admissible evidence in this integrated resource plan proceeding because it seeks information not used to develop the Company's 2023 Plan. The Company also objects to this request to the extent it would require original work. Further, the Company objects to this request as vague, overly broad, unduly burdensome, and potentially voluminous to the extent it seeks "all available reliability metrics" from 2017 to present. Subject to and notwithstanding these objections, the Company provides the following response.

The Company files an Annual Report on its Grid Transformation Plan providing information on metrics directed by the Commission. The Company's most recent Annual Report was filed on March 31, 2023 in Case Nos. PUR-2019-00154 and PUR-2021-00127.

- i) The Company objects to this request as not relevant or reasonably calculated to lead to the production of admissible evidence in this integrated resource plan proceeding because it seeks information not used to develop the Company's 2023 Plan. The Company also objects to this request to the extent it would require original work. Further, the Company objects to this request as vague, overly broad, unduly burdensome, and potentially voluminous to the extent it seeks "details on the location and cost of grid hardening investments the Company has made since 2017." Subject to and notwithstanding these objections, the Company provides the following response.

See the Company's Grid Transformation Plan filings in Case Nos. PUR-2018-00100, PUR-2019-00154, PUR-2021-00127, and PUR-2023-00051 and the Company's most recent Annual Report that was filed on March 31, 2023 in Case Nos. PUR-2019-00154 and PUR-2021-00127.

- j-k) The Company objects to this request as not relevant or reasonably calculated to lead to the production of admissible evidence in this integrated resource plan proceeding because it seeks information not used to develop the Company's 2023 Plan. The Company also objects to this request to the extent it would require original work. Further, the Company objects to this request as vague, overly broad, unduly burdensome, and potentially

voluminous to the extent it seeks "all communications" related to requests from localities and "the local reliability data."

Virginia Electric and Power Company
Case No. PUR-2023-00066
Staff Set 4

The following response to Question No. 116(a) of the Fourth Set of Interrogatories and Requests for Production of Documents propounded by Virginia State Corporation Commission Staff received on July 3, 2023, was prepared by or under the supervision of:

Karim Siamer
Lead Economist
Dominion Energy Virginia

The following response to Question No. 116(b) of the Fourth Set of Interrogatories and Requests for Production of Documents propounded by Virginia State Corporation Commission Staff received on July 3, 2023, was prepared by or under the supervision of:

Jarad L. Morton
Manager – Integrated Strategic Planning
Dominion Energy Services, Inc.

As it pertains to legal matters, the following response to Question No. 116 of the Fourth Set of Interrogatories and Requests for Production of Documents propounded by Virginia State Corporation Commission Staff received on July 3, 2023, was prepared by or under the supervision of:

Vishwa B. Link
McGuireWoods LLP

Question No. 116

Please see the Company's response to Staff Interrogatory No. 02-90.

- (a) Please provide the Company's definition of "normal weather"?
- (b) Based on the Company's response to (a), does the Company believe that there has been a substantial increase in "abnormal weather" conditions in its territory?

Response:

- (a) The Company uses PJM's definition of "normal weather" found on pages 14-15 of the following PJM site: <https://www.pjm.com/-/media/planning/res-adeq/load-forecast/load-forecast-supplement.ashx>.
- (b) The Company objects to this request because it seeks opinion, instead of facts. Further, the Company objects to this request because "abnormal weather conditions" is vague and

undefined. Subject to and notwithstanding these objections, the Company provides the following response.

The Company does not believe that there has been a substantial increase in "abnormal weather" conditions in its territory.

CERTIFICATE OF SERVICE

I hereby certify that the following have been served with a true and accurate copy of the foregoing via electronic mail:

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DATED: August 8, 2023

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