COMMONWEALTH OF VIRGINIA

STATE CORPORATION COMMISSION

CASE NO. PUR-2023-00066

COMMONWEALTH OF VIRGINIA, EX REL.
STATE CORPORATION COMMISSION

In Re: Virginia Electric
and Power Company's 2023
Integrated Resource Plan
filing pursuant to Virginia
Code Section 56-597 et seq.

TRANSCRIPT OF PROCEEDINGS BEFORE
THE HONORABLE A. ANN BERKEBILE,
SENIOR HEARING EXAMINER
Day 3
Wednesday, September 20, 2023
10:00 a.m. to 5:54 p.m.

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Reported By: Scott D. Gregg, RPR

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P R O C E E D I N G S

THE HEARING EXAMINER: Good morning, everyone.

I realize I have not put my phone on silent, which I will do.

I think we are starting with -- we are starting with Sierra Club, correct?

MS. JAFFE: Yes.

MS. CRABTREE: Your Honor, we just have one minor housekeeping matter.

THE HEARING EXAMINER: Sure.

MS. CRABTREE: Yesterday, I believe you admitted Exhibit 9 which was the Company's response to Staff Set 4-109, and I believe we neglected to actually distribute that --

THE HEARING EXAMINER: Oh, okay.

MS. CRABTREE: -- exhibit around. I don't know if Your Honor got copies, but I'm going to hand the parties copies of that exhibit.

THE HEARING EXAMINER: I do not.

MS. CRABTREE: That was the matter, Your Honor.

THE HEARING EXAMINER: All right. Turning to Ms. Jaffe.

MS. JAFFE: Yes. Thank you. Sierra Club

calls Devi Glick.

DEVI GLICK, called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MS. JAFFE:

Q Can you please state your name for the record.

A Devi Glick.

Q And who is your employer and your work address?

A Synapse Energy Economics, 485 Massachusetts Ave., Cambridge, Massachusetts.

Q And what is your position there?

A I'm a senior principal.

Q And did you prepare the written testimony that was filed in this case by the Sierra Club on August 8th, 2023, in both public and a confidential extraordinarily sensitive version?

A Yes, I did.

Q And does that testimony consist of a cover page, a one-page summary, 47 pages of question and answers, and ten exhibits?

A Yes.

Q And did you also prepare the revised

written testimony that was filed in this case by the Sierra Club on September 5th, 2023, in both a public and a confidential extraordinarily sensitive version?

A Yes.

Q And can you please explain those revisions?

A Yes. In answering a discovery response -- discovery request from the Company, I found that we had accidentally applied both the ITC and the PTC to the third tranche of offshore wind that the model selected, so my errata corrects that by removing the PTC and just applying the ITC.

Q Great. Thank you.

And did you have any additional changes or revisions to that revised direct testimony?

A No, I do not.

Q And does the written testimony as revised substantially reflect the answers you'd give if I were to ask you the same questions today?

A Yes, it does.

Q And do you adopt the testimony, as revised, as your direct testimony in this case?

A Yes, I do.

MS. JAFFE: Sierra Club would ask that

Ms. Glick's prefiled testimony in both public and a confidential extraordinarily sensitive version, as revised on September 5th, be marked and admitted to the record, subject to cross-examination.

THE HEARING EXAMINER: Okay. Just for clarity, the -- there is just one version? I have to go back and look here. She doesn't have three versions of her testimony?

MS. JAFFE: Correct. It's just two, a public version and the other version is a confidential and an extraordinarily sensitive version.

THE HEARING EXAMINER: All right. I'm going to admit her testimony as corrected as Exhibit 23 and 23C slash ES.

MS. PIERCE: Your Honor, I believe it might be Exhibit 24. That's what I have in my notes.

THE HEARING EXAMINER: Let me make sure.

MS. PIERCE: I have Dr. Roumpani being Exhibit 23 and 23ES.

THE HEARING EXAMINER: It is. It's written on the other side of my page.

So it is 24 and 24C/ES -- excuse me --

24C/ES, subject to cross-examination.

Thank you, Ms. Pierce.

(Exhibit No. 24 was marked and admitted into evidence.)

(Confidential/Extraordinarily Sensitive Exhibit No. 24C/ES was marked and admitted into evidence.)

MS. JAFFE: Thank you.

BY MS. JAFFE:

Q Ms. Glick, have you had an opportunity to review the Company's rebuttal testimony in this case?

A Yes, I have.

Q And are there any witnesses whose rebuttal testimony you'd like to address?

A Yes, I would like to respond to Company witnesses Compton, Bradshaw, and Flowers.

Q So on page 7 of Company Witness Compton's response to Staff Witness Boehnlein's assertion regarding determinations the Commission could make for generating units that the Company's own NPV analysis shows are uneconomic, stating that he strongly disagrees, do you have a response to that?

A Yeah, so I agree with Staff Witness

Boehnlein on this point. As I discuss on page 22 of my direct testimony, the Company presents analysis that shows that VCHEC has a negative cash flow over the next ten years, yet the Company continues to rely on the plant as part of its portfolio through the entire study period.

In addition to the plant being uneconomic and costly to ratepayers, there are substantial risks to ratepayers of continuing to rely on this uneconomic fossil plant, especially at increasing utilization levels that the Company forecasts in its IRP. Ratepayers could be stuck paying the above-market prices for the plant's output and could face costs associated with the regulatory risks of maintaining a coal plant given the federal and state policies aimed at reducing greenhouse gas emissions. So the Commission should consider the Company's own analysis, especially when there is a pattern of multiple NPV analyses showing that a plant is making -- is uneconomic when making cost recovery decisions.

Witness Compton says that a resource retirement decision should not be based on a single data point, but this is not a single data point. The Company's 2020 IRP had NPV analysis

which showed negative NPV for VCHEC and the negative NPV showed up through all of the Company's NPV sensitivities published in this 2023 IRP.

Q And on page 14, Company Witness Compton discusses the uncertainty inherent further out in the Company's 2023 plan and states that while the Company has presented information for the entire 25-year study period, the next 15-year planning period and especially the next five-year Short-Term Action Plan is the most important.

How do you respond?

A So I agree with Witness Compton that the next five years and 15 years are more certain and, therefore, more important to focus on in planning than the full 25-year study period. But the statement by Witness Compton is kind of misaligned with his continued focus on the NPVs of the Company's fossil fleets over the next 25 years. On pages 23 and 32 of his rebuttal testimony, he asserts multiple times that all of Dominion's fossil generators are NPV-positive from a customer perspective throughout the study period before ultimately admitting that the Company's analysis did find a negative ten-year NPV for VCHEC and

Rosemary. So I'm concerned that he's selectively using the 25-year study period to defend the Company's continued reliance on VCHEC, in particular a plant that the Company's own analysis shows is uneconomic over the next decade, while otherwise focusing the analysis on 10 to 15 years.

Q And on page 15 Company Witness Compton responds to criticisms that the Company did not include a least-cost VCEA-compliant plan as directed by the Commission, claiming that the Commission didn't direct them to do this.

How do you respond?

A So I'm not a lawyer, I'm not going to comment on what's legally required, but I see no indication that the Company challenges the fact that it is required under law to comply with the VCEA. So from a resource planning perspective, I'm confused why the Company would focus half of its modeling runs and intensive modeling resources on model runs that just fundamentally don't comply with Virginia law. I don't really see the value of doing that many model runs that don't comply with Virginia law.

Q And on page 25, Witness Compton criticizes Witness Roumpani for calling into question the

reliability of thermal resources during events such as Winter Storm Elliott, and Witness Compton goes on to claim that renewables didn't contribute much during the event.

How do you respond?

A So I think it's reasonable for Witness Roumpani to call into question the reliability of thermal resources during extreme weather events given the large number of thermal resources that were unavailable during Winter Storm Elliott due to fuel supply limitations and equipment failure. And while it might be true that renewables contributed minimally to Dominion's peak during the storm, that's because Dominion doesn't have a very high level of renewables on its system currently and doesn't have a lot of batteries. Company-owned renewables and PPAs make up less than 9 percent, so when you have so few it's not a surprise that, therefore, they contributed minimally during this event.

The point here is that reliability is not just about the megawatt performance but performance relative to what the projected and expected outcome of a resource was during the winter storm.

What Witness Compton fails to note is that thermal resources across PJM performed quite poorly during Elliott, raising questions about why he used the event to justify the development of thermal resources.

Large quantities of coal and gas generators were offline and unavailable. Across PJM's 70 percent of forced outages were at gas plants and the remainder, the majority were at coal plants. These units either malfunctioned in the cold weather or were unable to access gas supply.

More than adequate generation should have been available to meet peak load during the Winter Storm Elliott, which approximately matched PJM's 50/50 winter peak forecast. However, nearly 47,000 megawatts of forced outages almost entirely at gas, coal, and oil plants stressed the system. By contrast, wind overperformed relative to what was projected. So it's not just about how many megawatts of solar were on the system; it's what was expected and how did the plants perform relative to what is expected.

Q On pages 31 to 32 Company Witness Compton responds to both you and Witness Roumpani's

criticism of the Company's retirement analysis and its assumptions around bonus tax credits.

What is your response?

A On the Company's retirement analysis, Witness Compton admits the Company found VCHEC to have a negative NPV over the next ten years but still went on to defend the Company's choice of continuing to rely on the plant based on projected load growth and reliability needs. Regardless of load growth, if a plant has a negative NPV, the Company should retire it and replace it with lower-cost resources. And, in fact, all of my -- in all of my modeling, the model opted to economically retire VCHEC prior to 2030 and replace it with alternative resources.

On the issue of bonus tax credits, I understand these bonus adders are very site-specific and that Virginia, as a whole, doesn't have a huge quantity of energy communities, but Dominion does know that the Chesterfield site would qualify as an energy community, and the Company is planning to bring new resources online at the Chesterfield site. So if the Company knows that site qualifies and is planning to bring new resources on there and solar

and storage qualify for that bonus tax credit, I don't understand why they are not considering solar and storage and narrowing their focus to just CTs when solar and storage would qualify for that site-specific tax credit.

Q On pages 37 to 38, Witness Compton responds to your recommendation that the Company update its modeling to reflect the proposed Section 111 rule or the Greenhouse Gas Rule.

How do you respond?

A So I understand that the Company cannot update its IRP every time a new regulation is proposed, but the Section 111 rules, like the Inflation Reduction Act that came before it, are not just incremental regulations. They are unique and market-transformational. Their impacts are expected to be wide-reaching and to drive major changes across the power sector.

Therefore, it's understandable that Dominion did not include the rule in its initial IRP based on timing, but the impact is significant enough to warrant Dominion updating its IRP with a sensitivity to evaluate its impact. Waiting to model Section 111 rules until a future IRP or until it's finalized is not going to make it less

likely that Dominion will be required to comply, but it will make it harder for the Company to comply and reduce optionality. The longer that Dominion waits to understand what compliance with the proposed rule looks like, the less options it has. It removes optionality by waiting, which will make it ultimately harder and more expensive, and those costs will be passed on to ratepayers.

Q On page 44 Witness Compton responds to Witness Roumpani's recommendation that if the Company is going to include redispatch or ancillary costs driven by renewable builds in its model, then the value that energy storage can bring should also be counted for in the modeling, stating these values are uncertain and, therefore, hard to quantify.

What is your response?

A So I understand these values are uncertain and hard to qualify.

But renewable integration costs are also uncertain and hard to qualify, and Dominion is taking the time to study and quantify those. So I'm concerned that the Company is unevenly focusing its analysis on quantifying and incorporating into its analysis the costs imposed

by renewables without also spending time evaluating the benefits and the value that is proposed -- that is supplied by battery storage and other renewables. This will just inherently skew the results against renewables, when you only have the costs and not the additional integration value they provide.

Q Switching now to the rebuttal testimony of Company Witness Bradshaw, on page 11 he responds to your criticisms that the Company has just begun to plan for date center load growth despite having years to plan for the build-out of data centers, stating that the Company has, in fact, been gathering data and refining its forecasts for over ten years.

How do you respond?

A So gathering data is not the same as starting to plan for something from a resource-planning perspective. And ten years is a long time to gather data without incorporating that into your planning process and decisions.

I'll repeat a point that I made earlier. Delaying precludes optionality, and delaying consideration of data center load now has limited Dominion's options to meet the near-term demand.

I'm not saying that proactive planning would have eliminated all the challenges, but proactive planning increases options, and it lowers cost. This includes identifying and beginning to implement no-regrets resource-planning decisions.

Q And then turning now to Company Witness Flowers' rebuttal, on pages 3 to 5 he responds to your criticism of the Company's build limits, explaining the factors that the Company considered when establishing build limits for its modeling.

What is your response?

A So, unfortunately, Witness Flowers' response still does not provide concrete justification for the resource build limits that the Company selected. I understand that there are logical and rational limits to the quantity of resources a utility can bring online at one time, but placing an unjustified and low limit in the model will limit the usefulness of the results. The annual limits also depend on PJM and on Dominion's interconnection processes, internal company capacity to procure and build projects, and solar storage and wind industry supply chains. But these factors are not fixed over time, and the Company should consider ways it could increase the

amount of new clean resources it could bring online in the future given how cost-effective the Synapse modeling shows these resources will be for ratepayers.

The Company has reduced its annual build limits allowed in the model from 1,200 megawatts a year, and that was what it used in 2022, down to now 900 megawatts a year, and that limit stays in place until 2039 in the IRP. The Company rationalizes this limit for solar, this reduction in its limit, by pointing to limits on the number of projects permitted and under development as well as transmission interconnection reforms.

But PJM's interconnection reforms are scheduled to be implemented by 2025, and additional projects can be permitted long before 2039. The Company provides no explanation for why it expects the current conditions to persist for 15 years until 2039.

Further, the quantity of new resources the Company can acquire each year, it's not completely fixed. PJM and the Company's interconnection process, internal company capacity to procure and build resources, those things can be changed. The Company has the ability to influence those

factors, to build internal capability rather than treating the constraints as fixed. The Company should consider ways to build out its capabilities instead of considering those limits fixed.

Q And on pages 7 to 8, Witness Flowers responds to your critiques of the Company's resource options, specifically its lack of consideration of long-duration energy storage, stating that the Company only included resource options that are commercially available and economically feasible at the time of developing the 2023 plan.

How do you respond?

A So I'm concerned Dominion is being a little inconsistent in its treatment and consideration of new technologies. So Flowers defends the Company's decision not to include long-duration battery storage, stating it has not been deployed at scale yet. But the Company did include small modular nuclear reactors and allowed the model to select these SMRs as resource options.

I would argue that SMRs are no more commercially available than long-duration storage, and long-duration storage is being piloted across

the country. There are two projects in Minnesota, one in Colorado, one in New York, one in Georgia, and, as of Monday, one right here in Virginia that Dominion is piloting.

Q And on page 10 Witness Flowers responds to your claims that there's plenty of land available in Virginia for solar to meet the energy needs of the Company and data centers by stating: Solar alone cannot meet the energy needs of the Company's customers.

Did you ever claim in your direct testimony that solar alone can meet the energy needs of the Company in the data centers?

A No, absolutely not. I made no claims in my testimony that solar alone can meet Dominion and Virginia's needs. In stating that solar alone cannot meet the Company's needs, Dominion, once again, is conducting a straw man and pushing back against a statement I did not make.

My analysis considers solar PV as part of a resource portfolio. And, in fact, I modeled more offshore wind and battery storage resources than the Company did.

I understand that there are limitations and simplifications included in the Nature

Conservancy model I relied on, but the fact remains that there is land available in Virginia far in excess of the land required to deploy the quantity of solar PV built in the Synapse model. Dominion can deploy a substantial amount of PV before it comes up against any land challenges.

So focusing on the issues, the challenges that could occur in the future as deployment occurs only serves to distract and hurt ratepayers in terms of the actions they are taking today.

Q And lastly, on page 13 Witness Flowers pushes back on Appalachian Voices Witness Abbott's recommendations regarding future resource approvals, stating that the Company doesn't believe that an IRP proceeding should decide what is required to be provided in a future CPCN proceeding.

Do you have a response?

A Yes. So I will echo some of the things I heard Witness Abbott say yesterday. This is the Commission's opportunity to give guidance on what should be included in the CPCN. And while I understand an IRP is not an approval docket, the analysis included in the IRP underlies a utility's decision to apply for a CPCN. If there are

shortcomings in the analysis included in an IRP and that IRP is being used to support a company's application for a CPCN, that should be at issue in the IRP proceeding.

This is the Commission's opportunity to tell Dominion it expects an all-source RFP that includes all resource types, battery storage, PV, not just CTs. So based on Dominion's modeling, I'm concerned that Dominion has locked into its modeling the CTs it's planning to build, locked them in prior to when the model economically built them. It was not very transparent in its IRP that it had done this. It admitted in discovery, but it wasn't up front about this modeling assumption.

And they have -- this is a known site. It's Chesterfield. So it's a site they know they can get the bonus energy communities, but they did not model or consider battery storage or solar as a substitute or a supplement. And I'm just concerned that this IRP analysis is going to be used as a basis for supporting the CPCN when the model never economically picked it and they never considered alternatives to supplement or substitute for it and these alternatives, we know, can get additional tax credits.

MS. JAFFE: Thank you.

Ms. Glick is available for cross.

THE HEARING EXAMINER: Appalachian Voices?

MR. CLEVELAND: No questions, Your Honor.

THE HEARING EXAMINER: Let's see. Clean Virginia?

MR. REISINGER: Thank you, Your Honor.

CROSS-EXAMINATION

BY MR. REISINGER:

Q Good morning, Ms. Glick. My name is Will Reisinger. I'm representing Clean Virginia today.

A Good morning.

Q I have just a couple questions following up on your surrebuttal regarding the rules under Section 111 of the Clean Air Act.

You said that those rules are, quote, "market transformational."

Is that correct?

A That's correct.

Q Okay. And should that rulemaking have been a surprise for Dominion?

A So I think some level of carbon regulation has been known, so I mean that's why carbon prices are regularly modeled in IRPs. It serves as a proxy for any manner of future rules that will

increase the cost of operating a power plant. And given the Biden administration and the EPA's clear intentions to continue to limit emissions and reduce emissions from power plants, I would argue it should not have been a surprise that some type of limiting rule would come out. The exact details, I understand, are very hard to predict, but there was some manner of regulation I think is not hard to predict.

Q Okay. And following up on the point you just made, do you know whether or not President Biden on the campaign trail said that his administration would use the Clean Air Act to regulate carbon from an existing facilities?

A I can't remember specifically. I would imagine he probably did, but I don't remember the details.

Q Okay. And do you know whether the Obama administration attempted to use Section 111 of the Clean Air Act to regulate carbon emissions from existing facilities?

A I know he did. I did some pretty extensive analysis on that, yeah.

Q Okay. And, Ms. Glick, you also criticized the Company for not modeling long-duration battery

storage as an alternative to the CTs; is that correct?

A So long-duration battery storage is an alternative to any sort of kind of long-capacity resource, so a CT, continued reliance on a coal plant, it's a resource that can just provide a long level of base load generation.

Q Okay. And that technology is continuing to develop today, correct?

A That's correct.

Q Okay. But you said the Company did consider small modular nuclear reactors, correct?

A That's correct.

Q And is that technology in commercial use today?

A It's not, not in commercial use today, not economically.

Q Okay. So the Company did consider SMRs -- did the Company also consider or also assume that the CTs would be able to eventually run on 100 percent green hydrogen?

A So they would have to in order to model them under the -- as compliant under the VCEA. The only way that a gas resource comes carbon-free is if you model it as being assumed to convert to

operate on hydrogen.

Q And --

A Or retire, and then it becomes a stranded asset.

Q And to your knowledge is 100 percent green hydrogen a technology that is in commercial use today?

A Not economically. I mean, it's very expensive right now to produce hydrogen from renewables. There are many use cases for hydrogen, but when you're producing hydrogen from renewables, you could also produce electricity from renewables, and there are losses. So it's not in use commercially. It's not economically commercially in use today.

Q So when developing its planned, the Company assumed that technologies like SMRs would be commercially viable, and the Company also assumed that technology like green hydrogen would be commercially viable in the planning period?

A Yeah, that's my understanding.

Q Yeah.

MR. REISINGER: That's all I have. Thank you.

THE WITNESS: Thank you.

THE HEARING EXAMINER: Thank you.

All right.

Does the Committee have any questions.

MR. TUCKER: No questions.

THE HEARING EXAMINER: How about DCC?

MR. MURPHEY: No questions, Your Honor.

THE HEARING EXAMINER: Advanced Energy?

MR. KHAIRA: No questions, Your Honor.

THE HEARING EXAMINER: Consumer Counsel?

MR. FARMER: No questions, Your Honor.

THE HEARING EXAMINER: Commission Staff?

MR. CHAMBLISS: Yes, I do. Thank you, Your Honor.

CROSS-EXAMINATION

BY MR. CHAMBLISS:

Q Ms. Glick, I'm Bill Chambliss, the general counsel, and I just have a couple of questions about your testimony regarding the EPA's promulgation of rules under Section 111 earlier this year.

A Sure.

Q If I recall testimony from yesterday, those rules were issued sometime around mid-April of this year?

A I believe they were proposed in May.

Q May, okay.

And that was shortly before or shortly after the Company filed its -- made its filing?

A Yeah, it would not have been in time for the Company to have included them in the initial IRP it published.

Q All right. And these rules are not yet filed, are they?

A No. They are proposed. They are not finalized.

Q And we're sitting here in September of 2023. Will those rules be finalized by September of 2024?

A So I think right now it's expected they will be finalized by next summer. Obviously, there's a lot in them, and there are a lot of comments, but I believe it's currently projected they will be finalized by next summer.

Q And Mr. Reisinger just asked you about previous efforts to utilize Section 111(a) to regulate carbon emissions from power plants by the Obama administration.

A That's correct.

Q And you said you had done some extensive work in that -- on that particular set of rules?

A That's correct.

Q All right. Do you agree with me that that effort founded -- foundered at the United States Supreme Court?

A I believe there was. I'm not a lawyer, so, I mean, I know broadly it went to the Supreme Court.

Q Clean Power Plan never came to fruition, did it?

A Correct.

MR. CHAMBLISS: Okay. That's all I have.

THE HEARING EXAMINER: Company?

MS. CRABTREE: Yes, Your Honor.

CROSS-EXAMINATION

BY MS. CRABTREE:

Q Good morning, Ms. Glick.

A Good morning.

Q Lisa Crabtree with Dominion Energy.

This first area I wanted to ask you about this morning was with respect to your testimony regarding the shift that you observed in retirements as relative between the Company's 2020 IRP and then the 2023 IRP.

So in your testimony on page 9 you have a chart purporting to show the unit retirement

totals from the 2020 IRP Plan B as well as the 2023 IRP, correct?

A That's correct.

Q And for the unit retirements in 2020, you testify that the Company had shown 3,184 megawatts of retirements by 2035, correct?

A Yes.

Q And that same number for the 2023 IRP, you represent, is 1,804 megawatts, correct?

A That's correct.

Q Within the table, if we were to add up the units shown here, it does not sum to 3,184.

Why is that?

A Oh, yeah, I see you're right. I'm not sure. I'd have to look back. I'm not sure if there was another unit that I accidentally included in there. That looks like, yeah, that's probably about 20-something-hundred.

Q Yeah. I'm trying to do the math here, and I got 2,561 megawatts, as represented here.

Would you accept --

A Yeah.

Q -- subject to check that that math is correct?

A Yeah, correct.

Q And while it's your testimony, you kind of just stated there may have been a unit that was not included here.

Would you accept that in 2021 the Company retired its Possum Point 5 heavy oil unit?

A Yeah, I believe so. I think VCHEC is not included here. That might be the --

Q Is it your testimony the Company showed a retirement date for VCHEC in its 2020 IRP?

A I don't remember what the retirement date was for 2020. Probably not.

Q And so that -- VCHEC was not shown as retiring in either the 2020 or 2023 IRP?

A No, my understanding.

Q So in the 2020 IRP, the Company did show the retirement of its Possum Point 5 oil unit which was 623 megawatts in 2021?

A So this -- yeah, this table starts in 2023, so, I mean, I'm not showing -- this IRP couldn't possibly show us something from 2021, so it's --

Q But you have nonetheless counted a 2021 retirement in your total?

A So I'm not sure what the extra number is. If that works out to that exact amount, then sure.

Q Are you aware the Company did, in fact, retire its Possum Point 5 oil unit in 2021?

A Yeah, yep.

Q So should it be -- would it be fair to include those megawatts here in what's shown for 2023?

A Yeah, that makes sense.

Q So either we need to reduce your 2020 total by 623 megawatts or add those same 623 megawatts to the 2023 column?

A Sure, yeah.

The main differences you can see are, you know, Clover, Rosemary. The math, obviously, you're correct, is wrong, but the main difference is that Clover and Rosemary and those gas plants previously had retirement dates and they don't now. So that's what I was trying to draw the most attention to.

Q Sure.

But fair to say the difference should actually be this 2,561 to the 1,804?

A Yeah, the difference, the delta should be really just adding up like the 439 for Clover and the 165, 51, if you add up those lines, that's the delta that you're seeing. So that's probably

about I think maybe 700-something.
Q Okay. And within that 700, we have the Alta Vista, Hopewell, and Southampton plants, correct?
A Correct.
Q And those are three 51-megawatt biomass units that the Company has in its generation fleet, correct?
A Correct.
Q And are you aware in Virginia the biomass units are considered renewable?
A Yes, I understand in Virginia they are.
Q And so those -- every megawatt-hour generated from those plants creates a REC, correct?
A Yes. If it's renewable, then yeah.
Q And those RECs are eligible to be used for the Company's renewable portfolio standard performance obligations?
A Sure.
Q And so are you criticizing the delay in retirement of these three renewable plants?
A I don't talk about those at all in my testimony. I don't take a position on those. My focus is more on Clover specifically and Rosemary.

Q So the main difference between the Company and yourself is really Clover and Rosemary?

A Yeah. I mean, Clover is the one I focus on.

Q The two plants?

A Yeah.

Q Part of the modeling that you undertook in preparation for your testimony here -- or I should say you also undertook modeling as part of your testimony for this case?

A Yeah, that's correct.

Q And on page 21 you have -- sticking with the retirements -- a chart that shows the coal plant retirement dates by scenario, and you've included what Dominion showed in its Plan B, as well as what your optimized model showed, and then the 111(d) compliant plan, correct?

A Correct.

Q And you note that in Dominion's Plan B, none of the five coal units are shown as retiring?

A That's correct.

Q And when you optimized the Company's plan using some of your own updated assumptions, the only unit it retired was VCHEC, correct?

A Yeah, so that's correct. When you run an

optimization, the model is going to make a least-cost decision. And a point that I made in my testimony is that you have a model optimization is not a substitute for human critical thinking. So a model is not going to tell you if a different decision is $1 cheaper. And $1 is not a significant amount. It's not actually -- it doesn't mean anything.

So the reason that we did additional scenarios is that when we programmed in early retirements of these other coal units, we found there was a very small difference in the cost and, in fact, savings. And when you just -- if you're just going to use -- a model is a tool. It's not a substitute for resource planning. Just, you know, planners asking the important questions of: What does this look like if I have other -- if I make other assumptions?

Q Nevertheless, Ms. Glick, from using least-cost optimized modeling, you also found that the Clover units and the Mt. Storm units should not retire?

A No, I would not say that.

Q But your model did not do so?

A The model economically optimized the

retirement based on the information it had, not considering 111(d), not considering a lot of other costs, not considering renewable costs potentially being lower; so that is what the model economically optimized solution was as a starting point. That is not what I believe is the economically optimal solution.

Q It's what your model thought was the economically optimal solution?

A Based on Dominion's starting assumptions, which I do not agree are all accurate and appropriate.

Q With respect to the assumptions used in the model, though, the Synapse optimized model uses a lot of your assumptions, correct?

A No, that is not correct. So we used all of Dominion's renewable cost assumptions, all of Dominion's operational cost assumptions. The 111(d) compliance scenario, you used 111 compliance assumptions and the sensitivities, the ATB, Annual Technology Baseline, sensitivity that used updated renewable costs.

But as I discuss in my testimony, and I do have a table that outlines some of the different sources we used, our goal was to preserve as many

of Dominion's assumptions as possible. One of the main differences is we didn't allow the model to build any new gas units. But other than that, we did not make significant changes to Dominion's baseline assumptions.

Q One of the significant changes you did make was with respect to the build limits, correct?

A Correct.

Q And we'll get to that in a moment, but just trying to get an answer here, and it's stated in your testimony on page 21, at line 7 and 8, the model, and this is the Synapse optimized scenario, also did not choose to endogenously retire the Clover or Mt. Storm coal plants prior to 2040; is that correct?

A That's correct.

Q And your table shows blanks here, but it would also be fair to write "none," just like you did for the Dominion plan, right?

A Correct, yeah.

Q I had one other chart that I wanted to ask you about on page 19 -- I'm sorry -- 21. Sorry again. Let's see. It's on page 20. Apologies. And it's the extraordinarily sensitive, so I'm not

going to put it up on the screen.

A Page 20?

THE HEARING EXAMINER: That can't be right.

BY MS. CRABTREE:

Q This is in the revised version of your testimony. I don't know if that --

A What's the title on the table?

Q This is -- here, I can block it. I am looking at the --

A Oh, okay.

Q -- Extraordinarily Sensitive Figure 1, Comparisons of Dominion and NREL ATB Solar and Storage Capital Costs.

A Yeah. I have that on 19.

THE HEARING EXAMINER: That's page 19.

THE WITNESS: Yeah.

BY MS. CRABTREE:

Q I'm not sure why, but I have it on 20.

Are you there?

A Yes.

Q Okay. And the Company asked a discovery request to you that I'm going to hand out.

MS. CRABTREE: And this packet, Your Honor, has three discovery responses in it

that I plan to ask about, that I've included them all in the same exhibit.

THE HEARING EXAMINER: Okay.

THE WITNESS: Thank you.

BY MS. CRABTREE:

Q And just so you can get there, I'm going to ask about the second page, which is your response to the Company's Request Number 52.

THE HEARING EXAMINER: Are you going to be asking for this whole thing?

MS. CRABTREE: Yes. Could I please have this marked, Your Honor?

THE HEARING EXAMINER: And if you want to go ahead and -- yeah. And are you going to be doing -- well, just for clarity of the record, I'll put a little more detail into it. I was going to do a more general description of it.

These are all responses -- Sierra Club responses to Dominion's --

MS. CRABTREE: They are all the fifth set, Your Honor.

THE HEARING EXAMINER: All fifth set, Questions 47, 52, and 55. And I'm going to mark this collectively as Exhibit 25.

(Exhibit No. 25 was marked for

identification.)
MS. CRABTREE: Thank you.
BY MS. CRABTREE:
Q All right. So looking at the response to Request Number 52, you were asked about the extraordinarily sensitive figure that compares the Dominion and NREL ATB solar and storage capital costs, correct?
A Yes, that's correct.
Q And you were asked whether the Dominion capital costs were, in fact -- when you brought them back to an NPV basis, brought back to 2020 as opposed to 2022?
A That's correct.
Q And you confirmed that the formula should convert to 2022 dollars?
A Yep.
Q But that it does, in fact, convert to 2020, correct?
A Yep.
Q And so the chart shown in what seems to be everybody else's page 19 of the table, that is -- has an error in it?
A Yeah. We provided a corrected one.
Q Have you filed that corrected table in the

record?

A We provided it in discovery. So, I mean, I'm not a lawyer, so I don't know what happened.

Q So you're not aware of whether the correct version of table -- of Figure 1 -- apologies -- is in the record?

A You'll have to ask my lawyers. Sorry. I don't know that.

Q Thank you.

You mentioned a minute ago, but I did want to ask you about the build limits that you used for your modeling. So on page 37 of your testimony at lines 10 -- starting on line 10, you note: While it is reasonable for Dominion to place some limits on the quantity of batteries and solar PV it can add in each year, the limits Dominion has placed on the model, especially beyond 2030, are simply too low and not justified.

Do you see that?

A Yes.

Q And that echoes some of what you talked about in your surrebuttal as well, correct?

A Yes. I understand that in reality there might be limits, but the Company spent three of its scenarios modeling scenarios that are not

VCEA-compliant and didn't spend any scenarios asking important questions, like what happens if you can build more solar or retire coal sooner? I find that concerning.

Q And so -- and this gets at what I was trying to ask you about earlier as well. In your Synapse optimized model, you increased the build limits for solar PV and battery storage. And I'm on page 16 of your testimony.

A Yeah, that's correct.

Q And you also ran a sensitivity where you lowered the capital costs?

A Yeah. That's the NREL ATB sensitivity. So that's not in the -- the Synapse optimized numbers we were looking at. That's not in that. That's a separate sensitivity.

Q That just includes, among the other items you mentioned, which I'm forgetting now, it does include the increased build limits?

A Yeah. Increasing a build limit just gives the model the additional ability to make an economic decision. We're not programming in more solar. We're literally saying to the model: Tell us, if you would pick more solar, if you put out an RFP and more solar came in, is it an economic

decision to build more?

And the model said, yes, it is economic to build more.

Q And you noted the Company used, at least until 2039, a build limit of 900 megawatts for its solar PV, correct?

A I believe that's what Flowers said in rebuttal.

Q And so when you relaxed the build limits for the Synapse optimized model, what limit did you choose?

A I forget if I mentioned it in here. I have to look and see. I don't remember off the top of my head what number we used, if we allowed it to do unconstrained, just to see how much it would build.

Q Okay. I did not see anywhere in your testimony or discovery responses where you provided a build limit. I am going to put on the --

A It would have been in discovery. So in the encompassed modeling fils we provided, I know those are like really wonky to look through, but build limits are embedded in those. You would see if there is one.

Q I'm putting on the screen Table 7, which is the annual cumulative capacity additions by resource type?

A Yeah.

Q And if I look at your Synapse modeling using -- and this is the Synapse 111(d)-compliant scenarios using Dominion's costs, I see at least in 2030 the model added 2,400 megawatts and then almost 2,400 megawatts in 2031.

Would it be a fair guess that that was the limit you used, if any?

A I don't know if -- I think that might have been just how much it wanted to build. I don't remember if we had a limit. But the point of the modeling was not to say that, oh, we think it's absolutely feasible; a hundred percent they can do that. It's to answer the question: If there isn't a limit, if the Company can issue an RFP and say how much can we possibly get, then up to that amount would be economic to be brought online.

Q Okay. So you are not trying to testify that Dominion would be able to construct 2,400 megawatts or more of solar PV in any given year?

A No. I mean, but if Dominion limits it to 900 and they can actually build 1,200, they are

never going to know they could build 1,200 and that 1,200 was economic. You'll never get an answer to a question you don't ask.

Like, the amount of data center load growth we're dealing with is absolutely phenomenal. Like, I understand some of these solar numbers look really big. But, like, everything we're dealing with is massive and kind of, like, novel. So you have to think big in order to address this. And if you continue to operate under the BAU assumption that, like, relying on the fossil plants and not changing things is going to solve and address the data center load growth, you're not going to get there in a cost-effective way for ratepayers.

Q You, I think, mentioned just as part of your surrebuttal the fact that Dominion is part of PJM, correct?

A Correct. Yes.

Q And are you aware that PJM covers 13 states as well as Washington, DC?

A Yeah, that sounds right.

Q Are you aware that in 2022 all of PJM connected and brought online 677 megawatts of renewable?

A I would accept that, subject to check, yeah. I don't have the numbers in front of me.

Q So that is every independent developer, every utility within those 13 states accomplished 677 megawatts in one year?

A There are major interconnection queue backlogs that are currently underway that were -- existed in 2022. The PJM or FERC just issued recently interconnection reform. So I totally understand that there are backlogs; there would have been backlogs in 2022. But there's every indication that the -- a large part, the interconnection reforms that are coming through that are doing cluster studies, they're basically paving the way to remove some of that backlog and make it much more feasible to deploy a much larger quantities of renewables moving forward.

Q And your model is showing one utility bringing at least 2,400 megawatts on in one year?

A Yeah. But I mean, as I say in my testimony, does that mean that I think they should plot 2,400 in one year? No. I mean, a model result is not a substitute for good resource planning for critical thinking. It might make sense to deploy that in a phased manner instead.

That result basically just tells you that it is economic; if you can get there, that is the most economic option. Therefore, that should be what you are shooting for; that should be what you are trying for. If you limit your model to 900 a year, you're never going to see that is an option, that that is a least-cost pathway.

Q And with respect to thinking big, I think you said, and trying to get there, your testimony on page 38 at line 6 notes that Dominion should issue RFPs and begin to procure solar PV to meet the growing data center load, correct?

A So, yeah, Dominion is issuing -- I understand Dominion is going to be building new CTs that the model doesn't show it needs. So if they are going to be building new CTs at a site that qualifies for solar and battery storage energy community, you should definitely be considering other resources that qualify for tax credits and can come in at lower cost.

Q Are you aware that Dominion has both a rolling RFP for renewable resources as well as an annual issuance that it conducts for open source renewables every year?

A I'm not familiar with the exact

procurement methods they use. I would accept that.

Q And, in fact, it is directed to do so by the Virginia Clean Economy Act?

A Yeah, that makes sense.

Q So is there something you are recommending the Commission does with respect to RFPs beyond the actions it's already taking?

A So if the Commission indicates that it wants to see more renewables, I think that can drive more renewable development. If there is a rolling RFP, that's great. But if there's not, like, actual tangible action to say we have an intention to build more, if the IRP result show, oh, we don't think we need renewables, in my mind it doesn't send a strong signal to developers to come in and submit bids for renewables. If the IRP shows, oh, yeah, renewables are part of our resource plan, I think that is a much stronger signal to the market that, oh, we're looking for this.

So I mean, it's great that there's a rolling RFP, but I think this document, this IRP, is a strong communicator to the developer community on what resources the Company is

planning around and needs.

Q And so the Company would then be communicating that it wants and needs at least 900 megawatts of solar PV every year?

A That it wants and needs to see how much can the solar community provide, what are the costs. I'm not saying that if, you know, bids come in and they are absolutely ridiculous, that the Company should build that. I'm saying signal to the solar developers, to the battery storage developers too -- I'm not just talking about solar -- that the Company sees this as part of its least-cost plan going forward.

Q Are you aware the Company has brought three tranches of, subject to check, at least 500 megawatts of solar and storage each year since the passage of the Virginia Clean Economy Act?

A I'd accept that.

Q It would be expected to bring its next tranche later this year?

A I'd accept that, yeah.

Q Those are the Company's, what we term, the clean energy filings as well as the RPS development plans.

Have you reviewed those?

A I have not. The clean energy, no, I have not. It's a great start. I'm glad to hear the Company is doing that. I think what the data center load growth we're facing, it's just everything needs to happen quicker. You just need more.

Q With respect to the ability to not only build more energy but purchase both energy and capacity, the Company asked you -- and this is included in what's been marked as Exhibit 25 in Question 47, whether any of the scenarios you modeled assume capacity purchases above the current capacity purchase import limit of 2,700 megawatts.

Do you see that?

A Yep.

Q And you state in this response: They were assumed to need the same increased transmission import capability as Dominion identified in Plan B, but they were allowed to import 5,200 megawatts of capacity.

Do you see that?

A Correct.

Q And so in your testimony online -- page 17 hopefully -- and I can put it on the screen. The

one that has the paragraph that's kind of floating.

A Hold on.

Q Maybe it was the revised version -- I printed the red-line, so it may have just bumped the table to the next page.

A Yeah, that's on six -- I think 16 for me. Yes, I'm there, though. I see that, yep.

Q Okay. It states in your testimony: We did not increase the import limits during the study period as Dominion did; instead, we tested high renewable build limits.

Do you see that?

A Yes.

Q So when you state in your testimony, "We did not increase the import limits during the study period," you mean you had -- does that mean that you had a static import limit for all of the years of your study period?

A Yeah, I believe so.

Q But you did actually increase the import limits above what Dominion studied?

A Yeah, I guess we did. The model didn't actually select it; so it ended up not being a binding limit constraint at all.

Q And when you increased that limit, when you doubled it to 5,200 megawatts, this discovery response -- I'm sorry. That's not double.

This is your response saying essentially -- or is it fair, this is stating you did not add any additional cost for increasing this import limit.

Is that right?

A Yeah, we would have if the model it -- because this was -- the transmission costs, the Company did outside the model -- is my understanding. So if we had needed to adjust the transmission costs relative to the Company's baseline, we would have done so. But because the model didn't actually choose to import more than -- it didn't actually need this increase in the import limit, we didn't have to incorporate any incremental costs. If it had, we definitely would have.

Q Okay. Earlier we talked about how you studied lower cost -- lower capital costs in Dominion for your renewable build-out in one of your sensitivities, correct?

A Yes, that's correct.

Q Looking at the last discovery response in

this packet which was Request Number 55 -- and please feel free to take your time to look it over. But I think essentially part of this was asking to describe how some of those costs worked within your model. Is that fair?

A Yes.

Q And at a very high level -- please feel free to add -- you used the NREL ATB capital costs and then applied a Virginia multiplier to those costs. Is that fair?

A Yeah, so the EPA, the NREL ATB costs tend to be a little bit more general, and then the EPA publishes these regional, you know, adjusters so that you can then take the NREL data and say, how does it change from the kind of average if you're in Virginia?

Q And that Virginia multiplier, if you will, the attempt to make it more Virginia-specific, you were asked in Subpart C to this request whether the Virginia-specific multiplier that's supposed to account for labor, material, and construction additions had been updated since the 2016-2017 period when the EPA data was developed.

Do you see that?

A Yes.

Q And -- you were asked to confirm that it had not been updated. Is that fair?
A Yes, correct.
Q And you confirmed --
A That's a long question. Hold on. I'm sorry.
Q Sure. Yeah, please take your time.
A Yes, correct.
Q And you confirm that that multiplier had not been updated since the 2016-2017 period, right?
A That's my understanding, yes. So, I mean, it's not perfect. It's better than not applying anything, so that's why we used it.
Q The last area I wanted to ask you about was with respect to the 111(d) rules, which your testimony goes into significant detail about, correct?
A Yeah, that's correct.
Q And Mr. Chambliss was asking you about those as well. And I just wanted to maybe clarify some of the dates that we're talking about.
I think both in your testimony and Mr. Johns' opening statement, it's noted that it would have been impossible for Dominion to model

those rules when it filed its IRP on May 1, 2023?

A Yeah, that's correct, yep.

Q And I think the proposed rules were actually published May 11th, 2023. Would you accept that?

A I think that -- yeah, that sounds right.

Q And are you aware that comments on those proposed rules were due essentially at the end of August?

A Yes.

Q And that's August 2023?

A Yes.

Q So a short while ago?

A Yeah.

Q And I think you told Mr. Chambliss you expected the final rules to come out sometime in the summer of 2024?

A I think that's what I read. I mean, I don't remember where I read that, but I think that's what I've seen.

Q And once the rules -- the final rules are published, as opposed to these proposed rules, anyone that submitted a comment will have 60 days to challenge those rules; is that right?

A I haven't memorized the process, but I

would accept that, yeah.

Q And Mr. Chambliss highlighted for you a prior iteration of the EPA's attempt to regulate greenhouse gas emissions from existing generation, correct?

A Yeah. I mean, I understand that it could never be finalized. I think it's pretty likely that some level of regulation of carbon-emitting -- some regulation to limit carbon will be finalized. And some of these provisions, I believe, kick in already. Like, as soon as the rule was promulgated, if it's finalized, these already kick in.

So if you're building, like, a new CT right now, for example, you can pretend that the rule's not going to be finalized. But then if it is actually finalized, you just built a CT that has to now comply. And from a prudent perspective, if you're a utility planning around this level of uncertainty, it's much better to plan as though it actually happens and to understand what it means if it happens.

Q And so that prior iteration I was asking you about, that was the Clean Power Plan, correct?

A That's correct, yeah.

Q And that was also promulgated under 111(d) by the EPA; is that right?

A Yes.

Q And this is actually the third go by the EPA. Are you aware of the Clear Skies 111(d)s that preceded the Clean Power Plan?

A I don't know nearly as much about that, but I would accept that.

Q And those also were ultimately rescinded or repealed. Is that fair?

A I would accept that, yeah.

MS. CRABTREE: Thank you. No further questions.

THE HEARING EXAMINER: I'm not sure I admitted Exhibit 25.

MS. CRABTREE: Oh, thank you, Your Honor. Yes, I move its admission, please.

THE HEARING EXAMINER: I will -- hearing no objection, it is admitted.

(Exhibit No. 25 was admitted into evidence.)

THE HEARING EXAMINER: Redirect.

MS. JAFFE: Yes, thank you.

REDIRECT EXAMINATION

BY MS. JAFFE:

Q So, Ms. Glick, you were asked about Table 4, the coal plant retirement dates by scenario.

Do you remember that?

A Yes.

Q Okay. And so the Clover and Mt. Storm plants, your optimization modeling chose not to retire either of those plants. Why is that?

A That was really driven by the data center load growth, I believe, the cost of building alternatives. It was a very small delta, though. When we programmed it in and the model -- we programmed in the retirement dates and said what is the cost if they retire, the delta was relatively small.

Q So if I understand what you're saying correctly, then, the model chose not to retire those because of the load forecast?

A Yeah. I mean, that was probably one of the main drivers of the model not retiring them.

Q Okay. Thank you.

MS. JAFFE: Your Honor, I don't have any further questions, but I did want to address the Extraordinarily Sensitive Figure 1. So that -- and I apologize for this, that we did not catch

that in our revisions that we were talking about earlier. So we can file a revised version of the Extraordinarily Sensitive confidential version that has the updated ES 1 figure.

THE HEARING EXAMINER: Okay. Since we've already admitted the other, can we make this a separate exhibit?

MS. JAFFE: Yeah. I can actually just make that one page in a separate exhibit if that works.

THE HEARING EXAMINER: Yeah, that works for me.

MS. JAFFE: Okay. That's less paperwork.

THE HEARING EXAMINER: I'm not hearing any objection.

So we're going to look for a late-filed exhibit, which would be 26 ES, which is the corrected table that you were just referring to.

(Exhibit No. 26 was marked and admitted into evidence.)

MS. JAFFE: Okay. Thank you.

THE HEARING EXAMINER: All right. Thank you very much, Ms. Glick.

THE WITNESS: Thank you.

THE HEARING EXAMINER: You are excused.

MR. JOHNS: Your Honor, I've spoken with Ms. Pierce, and as a result of trying to move some witnesses to the most convenient time, I think we might defer to Staff to call Ms. Johnson next.

MS. PIERCE: Your Honor, Ms. Johnson has travel arrangements this afternoon. And just in case the next witness would go a little long, we would ask permission to have Ms. Johnson take the stand now. I know Sierra Club has graciously agreed to that. Hopefully, the other parties will not take issue with that.

THE HEARING EXAMINER: That's fine. Keep me on my toes. Thank you.

MS. PIERCE: All right. Then Staff calls Bernadette Johnson to the stand.

BERNADETTE JOHNSON, called as a witness, having been first duly sworn, was examined and testified as follows:

DIRECT EXAMINATION

BY MS. PIERCE:

Q Please state your name and occupation.

A My name is Bernadette Johnson, and I'm general manager of power and renewables for Enverus Inc.

Q Did you prepare and file testimony in this

proceeding on August 9th, 2023, testimony consisting of a one-page summary, five pages of questions and answers, and attachments?

A Yes.

Q And do you have any changes to make to your testimony?

A No, I do not.

Q If I asked you the same questions today, would your answers be the same or substantially the same?

A Yes, they would.

MS. PIERCE: Your Honor, I ask that Ms. Johnson's testimony be marked as the next exhibit and admitted into the record, subject to cross-examination. It was a public version only.

THE HEARING EXAMINER: Ms. Johnson's testimony is marked and admitted as Exhibit 27, subject to cross.

(Exhibit No. 27 was marked and admitted into evidence.)

MS. PIERCE: Thank you, Your Honor.

BY MS. PIERCE:

Q Ms. Johnson, do you have any comments related to the Company's rebuttal testimony that was filed in this case?

A Yes. I have comments related to the rebuttal testimony of Company witnesses Rajan, Bradshaw, and Scheller.

Q Starting with Company Witness Rajan, on pages 5 and 6 of his rebuttal testimony, he takes issue with Enverus's use of artificial neural network approach for long-range forecasting.

Do you have a response?

A Yes. Enverus uses historical analysis of weather-normalized load, which captures residential, commercial, and industrial demand and load growth. I think it's important to stress that these actuals encompass all observed changes in load, including from data centers, from electric vehicle charging, demand-response, rooftop solar impacts, et cetera.

For example, data centers that have started up in the Company's territory are reflected in the actual load we use to train our models to predict future load. I would also stress that we do not take issue with other methodologies employed by others to predict load.

But at the end of the day, I believe it's clear and in the record for many years now that our load forecasts have proven to be more accurate

than those published in the IRPs by the Company.

Q On page 6 of his prefiled rebuttal testimony on lines 12 through 13, Company Witness Rajan claims that there were, quote, no extraordinary factors at play, end quote, during the July 28th, 2023, DOM Zone peak, implying this calls into question the reliability of the Enverus forecast.

Do you have a response?

A Yes. This is not accurate. There was a heat wave starting July 25th, ending July 29th. This included three days of high temperatures of upper 90s measured at Dulles Area, Sterling, and the Richmond International Airport. Between the 27th and 29th, temperatures were nearly eight degrees above average. Average temperatures during this period would have been roughly 88 -- 87 to 88 degrees during July for both locations.

July 27th set a record high temperature at Dulles Area, Sterling. On the record peak load day of July 28th, the temperature was one degree shy of the record high temperature at Dulles Area, Sterling, and four degrees shy of the record at Richmond International Airport.

In fact, I think many of those in the room

that live in this area can recall this weather event.

Q Turning to Company Witness Bradshaw's rebuttal testimony, beginning on page 6, he implies that the data center market in Virginia is greater than four times the size of the data center market in ERCOT.

Do you have a response?

A Yes. Data center load is only one component or factor that influences overall demand growth. Our broader point here was that ERCOT is well-known to be the ISO with the fastest growing percentage load growth and that growth rate pales in comparison to the expected growth rate forecasted by the Company in this IRP.

According to the Dallas Fed, Texas job growth outpaces the US across most sectors while Virginia lags behind the US across most industries.

Comparing year-on-year changes from 2022 to 2023 of the energy use sectors provided in the 2023 IRP, in appendices Tab 4A, commercial is the only sector with substantial growth at 68 percent by 2038. The residential and industrial sectors are declining 22 percent and 3 percent,

respectively.

It's the combination of factors that are important in determining overall load growth, not just data centers in Virginia or economic growth in Texas; it's really the whole picture that matters.

Q And finally turning to Company Witness Scheller's rebuttal testimony on pages five and six of her prefiled testimony, she states that the Enverus capacity price forecast does not appear to capture the value of resource adequacy.

Do you agree?

A No.

The Enverus forecast is created by calculating the actual heat rates from the delivery years 24, 25 auction results. The actual heat rates are then multiplied by the gas forward market price referencing Transco Z5. This is another instance where we believe actuals are more indicative of likely future behavior.

ICF assumes rational economic behavior as an underlying principle in their power market forecasts, according to Witness Scheller, while Enverus is focused on predicting what will actually happen instead of what could happen in a

perfect efficient market that doesn't exist in PJM.

Q And, Ms. Johnson, do you have any further comments this morning?

A No.

MS. PIERCE: Your Honor, the witness is available for cross-examination.

THE HEARING EXAMINER: Thank you.

Appalachian Voices.

MR. CLEVELAND: Thank you, Your Honor.

And before I begin, I just want to let you know, I'm going to be using Exhibit 14 which we marked and admitted yesterday -- sorry -- Exhibit 4, not 14.

And I would also like to have another document marked, if I could, please.

THE HEARING EXAMINER: And 4 is already in.

MR. CLEVELAND: Yes, Your Honor.

THE HEARING EXAMINER: We just didn't use it yet.

MR. CLEVELAND: Not yet.

THE HEARING EXAMINER: Do you want me to go ahead and mark the other exhibit?

MR. CLEVELAND: Yes, Your Honor, if you

don't mind. And I'll describe it. This is Dominion's response to Appalachian Voices Set 13-15.

THE HEARING EXAMINER: Okay. All right. Well, that answer responds to Set 13, Question 15 from the Company is marked as Exhibit 38 [sic].

(Exhibit No. 28 was marked for identification.)

THE HEARING EXAMINER: Any objection to its admission?

Hearing none, it's already in.

(Exhibit No. 28 was admitted into evidence.)

MR. CLEVELAND: Thank you, Your Honor.

CROSS-EXAMINATION

BY MR. CLEVELAND:

Q Ms. Johnson, I'm Will Cleveland on behalf of Appalachian Voices. It's good to see you again. Thank you for being here. I just have a few short questions.

If I could turn, please, to page 7 --

MS. LINK: Your Honor, I'm sorry to interrupt. I believe the next exhibit is 28.

THE HEARING EXAMINER: I don't know where I came up with 38. Really, I have no idea. It is

28.

MS. LINK: Apologies for the interruption.

MR. CLEVELAND: Not at all.

THE HEARING EXAMINER: I appreciate it. Thank you very much.

MR. CLEVELAND: Always better to make sure the record is clear.

Thank you, Your Honor.

THE HEARING EXAMINER: We skipped ten exhibits.

MS. LINK: If only.

BY MR. CLEVELAND:

Q Ms. Johnson, if I could turn, please, to page 7 of your report.

A Yes.

Q And first off, did I hear you right, in the conversation you had with your counsel, that the residential customer class is projected to decline by 22 percent?

A Correct. The residential and industrial sectors are declining 22 percent and 3 percent respectively.

Q Okay. So in this last sentence, while you say, "No growth is projected for the residential and industrial segments," those segments are, in

fact, shrinking rather than staying flat?

A Correct.

Q Okay. Now, if I could, I'd like to ask you a question about this highlighted sentence which says: Enverus cautions against demand sales forecasts that rely too heavily on one sector of demand; in this case, the commercial sector.

Is that correct?

A Correct.

Q Okay. I'm going to put on the overhead projector Exhibit 4, which I realize you did not prepare a response to.

Have you seen this before?

A I have.

Q Okay. So in this, Staff asked the Company in Question A whether more than 80 percent of the Company's data center demand is located within Loudoun County, and the Company's response -- and this is looking at the last sentence -- "When combined with adjacent counties with significant data center development, the demand is greater than 80 percent of the Company's data center demand."

Is that right?

A Correct.

Q Do you have any reason to disagree with that statement?

A I don't.

Q Okay.

MR. CLEVELAND: And then, Your Honor, I'd like to turn to Exhibit 28.

BY MR. CLEVELAND:

Q Ms. Johnson, I'm specifically looking at question C, as in "cat." And this is our question to Dominion where we asked whether the aggregated percentage of the Company's forecasted data center demand in 23 from five largest data center customers and Dominion's response is 80 percent.

Do you see that?

A Yes.

Q So is it your understanding from this discovery response that five data center customers are making up 80 percent of Dominion's projected data center demand growth?

A Yes.

Q Okay. So going back to your report where you caution against a forecast that relies too heavily on one sector, which is the commercial sector, is it also accurate, Dominion's forecast doesn't just rely heavily on the commercial sector

but relies heavily on one type of commercial customer which is data centers?

A Yes. And I would say that the challenge here is a lot of the load growth that's offsetting the declines in commercial or in residential industrial is coming from data centers, so that -- it's challenging to forecast data centers.

I think we take issue with the size of the growth that Dominion is forecasting. We see it much lower, but we do agree that data center load is growing. It will continue to grow. It's the reason our overall load is growing.

So I think it's challenging in that when forecasting, you never want to look at just one thing or five projects; but that's also the reality, is the big data center players build the most data centers, and the load is coming from data centers when you look at growth.

So this is a bit of a conundrum for everyone that's trying to forecast out that far in that there's a couple of factors that are driving it. It will either show up or it won't. I think we're of the assumption that they will be much lower than forecasted by the Company.

Q Thank you for that. And we also agree

that forecasting data center demand is a very difficult process. And the point that I'm trying to make is that that growth it's not just one customer sector. It's one type of customer, and, in fact, it's five specific customers are responsible for the vast majority of this growth. Is that correct?

A That's correct. I think a different decision by any of those five and you have a markedly different growth pattern.

MR. CLEVELAND: Thank you. No further questions, Your Honor.

THE HEARING EXAMINER: Can I ask when you say "out that far," are you talking about the planning period?

THE WITNESS: Yes. In the near term, the next -- call it two, two and a half years, there's a lot more visibility. The Company speaks a lot to the different financial commitments that exist, the different layers of when you get closer to actually spending capital and who's on the hook for those; that's really a near-term dynamic.

It's once you get out past a few years where a person planning a data center ten years from now, they are not filing those commitments

necessarily. They don't necessarily know what they are going to build ten years from now. So it's really those outer years that's challenging for everybody. The near term is much more -- we all have a lot more information about what that looks like.

THE HEARING EXAMINER: Thank you.

MR. CLEVELAND: Your Honor, may I have Exhibit 28 marked? Just for the record, I recognize that Ms. Johnson did not sponsor these responses. I intend to get the Company's opinion on these responses when Mr. Bradshaw is on the stand.

THE HEARING EXAMINER: I think it's already admitted.

MR. CLEVELAND: Okay. Thank you, Your Honor.

THE HEARING EXAMINER: Thank you.

MR. CLEVELAND: Ms. Johnson, thank you. No further questions.

THE HEARING EXAMINER: Thank you. All right. Sierra Club.

MR. JOHNS: Yes.

CROSS-EXAMINATION

BY MR. JOHNS:

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Q Hi, Ms. Johnson. Evan Johns on behalf of Sierra Club. I just wanted to clarify one small matter.

You reviewed the rebuttal testimony of Company Witness Compton, right?

A I did.

Q And I want to ask you a question. This is not a question where Mr. Compton is specifically responding to you, but he does cite you in his answer. So I'm looking here at page 38, and you'll have to excuse my idiosyncratic highlighting here, but do you see in this question where Mr. Compton is asked about criticisms regarding the Company's inclusion of a social cost of carbon in its 2023 plan?

A Yes.

Q Okay. And then if I can just flip to the other side, starting on line 12, do you see where Mr. Compton says that Staff Witness Johnson agrees with the Company's federal carbon tax assumptions and then goes on to cite some remarks from your report.

I just wanted to clarify, your remarks here are about an actual carbon tax projected out into the future, correct?

A Yes. We're talking about a national federal carbon pricing program.

Q And so in your work with Staff, you were not asked to look at the social cost of carbon to the extent that's a different thing from an actual carbon tax, correct?

A Correct. That would be outside of the scope of our engagement with the Staff.

MR. JOHNS: All right. Thank you. No further questions.

THE HEARING EXAMINER: All right. Clean Virginia?

MR. REISINGER: No questions, Your Honor.

THE HEARING EXAMINER: How about the Committee?

MR. TUCKER: No questions, Your Honor.

THE HEARING EXAMINER: How about DCC?

MR. MURPHEY: No questions, Your Honor.

THE HEARING EXAMINER: And Advanced Energy?

MR. KHAIRA: No questions, Your Honor.

THE HEARING EXAMINER: Consumer Counsel?

MR. FARMER: No questions, Your Honor.

THE HEARING EXAMINER: What about Dominion?

MS. LINK: A few, Your Honor. Thank you.

CROSS-EXAMINATION

BY MS. LINK:

Q Good morning, Ms. Johnson.

A Good morning.

Q Nice to see you again.

A You as well.

Q I just have a few questions for you. Not surprisingly, they will be on your load forecast.

MS. LINK: I'd like to hand out a document. I'll put it on the screen while it's being handed out. And my person is not here. I'll be right back.

BY MS LINK:

Q And what I've handed out, Ms. Johnson, is the Staff's Response 20 and 22 to the Company's first set of interrogatories to the Staff.

I'm sorry. It says "first set," but then it says "third set."

So we're going to go with third set, Number 20.

Do you have that in front of you?

A Yes.

Q Okay. And were those prepared by you?

A Yes.

MS. LINK: Your Honor, may we have this exhibit marked?

THE HEARING EXAMINER: Sure. The Staff responses to 3-20 and 3-22 of the Company is marked as Exhibit 29.

(Exhibit No. 29 was marked for identification.)

THE HEARING EXAMINER: Any objection to its admission?

Hearing none, it's admitted.

(Exhibit No. 29 was admitted into evidence.)

MS. LINK: Thank you, Your Honor.

BY MS. LINK:

Q Ms. Johnson, this question is asking you to refer to your report, your testimony and report, Enverus report, and specifically page 34 regarding your energy sales and peak load forecast methodology. And I wanted to just focus on Subpart A and B, where it's asking for the factual information and any other documents that explain in detail how Enverus accounts for data center energy and load in its forecast.

And then also asks for factual information and any other document that identify the input

variables in the Enverus model that help identify data center loads in its historical data.

Do you see that?

A Yes.

Q And a series of other questions I'm not going to focus on right now.

And then your answer is on the next page. I think the response for A and B looks identical to me, that Enverus uses historical analysis of weather-normalized load, which captures residential, commercial, and industrial growth, load growth.

And then skipping down, since the algorithm relies on historical actual load as a key input to predict future load, the algorithm captures historical changes in load, including increased load from data centers, electrical vehicle charging, and other specific drivers of load change.

Do you see that?

A Yes.

Q And I think that's the same response to all the other questions.

A Correct.

Q Okay. So I see "historical" several

times. And I think you said it this morning in your surrebuttal, that, you know, actuals predict future. The Enverus model uses historical loads to predict the future. Fair enough?

A Correct.

Q Okay.

THE HEARING EXAMINER: But they are actual historical?

THE WITNESS: Actual historical load, what's actually happened, which does bake in all the different changes the market is observing, from electric vehicles, to the 80-or-so data centers that have come online in the Dominion footprint. All of that is baked into those actuals that we've observed.

BY MS. LINK:

Q Okay. Thank you for that clarification.

And then not to belabor it, No. 22 is asking for the factual information and the other documents that describe the factors that cause the energy sales to increase in successive forecasts in each vintage -- forecast vintage year, and you provide some charts on the next page. You say changes in load forecast from year to year are heavily influenced by historical load trends in

the actual load data.

A Correct.

Q Just to be clear. Thank you.

Were you here or did you listen in or perhaps read a transcript about Mr. Wilson's testimony from yesterday?

A I was here, yes.

Q Okay. And were you here or saw an Exhibit 15 that we put into the record with Mr. Wilson?

You understand his testimony is that the Company should hire a professional forecaster to do specifically the long-term forecast for data centers and to do a narrative, among other things.

Did you recall that?

A Yes.

Q And this Exhibit 15 is his attempt at explaining what a professional forecaster would do to do this kind of research.

A Correct.

Q You agree with that?

A Yes.

Q Okay. Do you consider yourself a professional forecaster for load forecasts?

A Yes.

Q Okay. So focusing on the Enverus model that used historical data to predict the future, what I've highlighted on Exhibit 15 is some of the things that Mr. Wilson says a professional forecaster would do in talking about the long-term drivers of demand, factors that are likely to be most important over the longer term, what technological innovations might be on the horizon, and some other things.

I guess my question is what did Enverus do to evaluate future-looking information and incorporate that into your forecast?

A If the question is about load specifically?

Q Yes.

A We focused entirely really on actuals and weather-normalized actual data to predict future load. I think from our perspective all of these things, technological advancements that have happened, are baked into those actuals. Electric vehicle charging is backed in. Data centers that come online and what that load pattern looks like is baked in.

So I think for us, our focus is using historicals that have actually happened as a

predictor of what comes next is the most reliable. I think that growth rate, no matter if you believe it's because of technological advancements or what have you, that growth rate is what underpins our forecast of the future, that are predicting higher load, just not as high as the Company.

Q Thank you.

So in terms of what -- if I'm understanding what you're saying, actuals predict the future, and the actuals always have to be history, correct?

A Correct.

Q So is there not anything in the Enverus model that is forward-looking, future-looking like, say, contracts with customers?

A There's not. And I would say we don't dispute any other methodology that might be out there. And I actually agree with Mr. Wilson, that having a third party that's an expert in data-center-specific market dynamics would be valuable.

I think some of the things that are challenging, every market is different. Do data centers, that pattern, does it change because power prices change, land availability changes,

the local pushback against land use for data centers changes that makes it more difficult to build a data center? All of those things are actually happening today.

And so an expert that is looking at all of those dynamics and predicting that specific component of load, I don't think there would be harm in that. I think we'd agree that that would be a valuable addition for the Commission and all of us to consider.

Q Okay. Thank you for that.

Going to your page 16 of the Enverus report, where you talk about being not as confident in the data center load growth for two reasons. One of them is a reliability challenge, and one is the demand -- data center demand is elastic, correct? These are the two reasons?

A Correct.

Q Okay. Were you able to review Mr. Bradshaw's rebuttal?

A Yes.

Q Okay. So I'm putting on the screen Figure 1 from Mr. Bradshaw's rebuttal.

Does that look familiar to you?

A Yes.

Q And that's on page 19 of his rebuttal.

So just to be clear for the record, where Mr. Bradshaw lays out the electric service agreements, construction, LOAs, and substation engineering LOAs, Enverus didn't evaluate any of those actual contracts, correct?

A No, we didn't.

Q So Enverus has no opinion on whether those actual contracts commit the customers financially to anything?

A We reviewed all the testimony. I think we understand that the financial commitments and the mechanics behind the ESAs, the CLOAs, exactly as the Company described.

I think one of the things that's interesting to me about this chart is it also drives home the point that we all have a lot more clarity on the next couple years, and then out past then, it looks very different.

So if I look at the blue area, the number starting in 2026 is the same all the way out through 2032. If I look at the orange, it's the same, which to me reads there are CLOAs in place for near-term construction, like you would expect; there are ESAs in place for data centers that are

well on the path to either being under construction or imminent.

So that -- we have a lot more clarity, we all do, on what happens in the very near term. Once you get out past 2026, I think there's a lot more unknown around what data centers will actually happen, what plans -- although the big players, plus others, have as it pertains to data centers in the Dominion footprint.

Q Okay. So you said we have more clarity based on the ESAs and the CLOAs.

And you understand, do you not, that the IRP forecast here of 7,686 in year 2032 just kind of covers the ESAs, which are 5,827 megawatts, and the CLOAs, which are 2,008 megawatts?

A Yes.

Q You see that?

A I do. That black line continues to grow even after the end of those, the new, the end of the new CLAs or ESAs on that chart.

Q Right.

But if you focus on 2032, the black line just covers the two components that we talked about you having more clarity for.

A Sure.

Q Do you see that?
It just meets that just in the nick of time, correct?
A It does.
Q Okay. So then on Figure 2, have you been able to look at that --
A I have.
Q -- as well?
Okay. And so that takes us out beyond 2032, which is, you know, almost -- that's nine years from now. And that shows where the IRP forecast goes, and now it's going into the land of substation LOAs, correct?
A Correct.
Q Okay. So when you say, you know, the clarity is only through 2026, I mean, the clarity of having actual financial commitments, if we're just looking at ESAs and CLOAs, is actually through 2032, correct?
A I would say the projects. When I look at the size of those bars, the projects look like they extend through the end of 2025. 2026 they are all very static. They're all the same number. Right?
So are there new ESAs that come in in

2027? It doesn't look like it.

Are there new CLOAs that come in 2027? It doesn't look like it.

Is there an assumption by the Company that that load continues to grow? Looks like it, either from these facilities or other facilities that don't have ESAs or CLAs yet.

I think this also speaks to that line does continue to go up. Now, does Dominion have specific firm financial commitments for facilities proposed in 2038? I think the answer is no to that.

So that's the tricky part with long-term forecasting is do any of us know what data centers might get built in the late 2030s that will either make this load forecast accurate or have it fall short? We don't, and that's the challenge.

Layer that onto the significant increase in the load forecast that we just saw this year, that -- I think those things call into question where is it coming from? Does it actually happen? Do these large data center market supply demand dynamics change, like they already are, and do we expect that real load to show up? We don't.

When we forecast, we don't think that that

load will show up the way that the Company is forecasting. We do expect growth to happen. We do expect additional data centers to be built, but not to the level that the Company is forecasting.

Q Thank you.

So I guess really where I want to focus is not beyond 2032. I kind of want to focus on 2026 to 2032, where the load forecast is actually below the amount of megawatts where the Company has firm financial commitments from customers.

So what I want to understand is your opinion about 2026 to 2032, where I understand what you're saying is the blue bar doesn't grow at this time. The orange bar hasn't grown. But the load forecast doesn't meet both bars in 2026. It only meets them by 2032.

So couldn't one say that the forecast from '26 to '32 is conservative, because it's not meeting the financial commitments right there, the customers of a given the company?

A I would say I don't agree necessarily without more information about what goes into this chart. Right?

So out past 2020 -- start in 2027 when there are no new CLAs or ESAs that come online,