

COMMONWEALTH OF VIRGINIA
STATE CORPORATION COMMISSION
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COMMONWEALTH OF VIRGINIA, *ex rel.*

STATE CORPORATION COMMISSION

CASE NO. PUR-2018-00065

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

ORDER

On May 1, 2018, Virginia Electric and Power Company ("Dominion" or "Company") filed with the State Corporation Commission ("Commission") the Company's 2018 Integrated Resource Plan ("IRP") pursuant to § 56-597 *et seq.* of the Code of Virginia ("Code"). Dominion's 2018 IRP encompasses the planning period from 2019 to 2033.

On May 7, 2018, the Commission issued an Order for Notice and Hearing in this proceeding that, among other things, established a procedural schedule; set an evidentiary hearing date; directed Dominion to provide public notice of its IRP; and provided any interested person an opportunity to file comments on the Company's IRP, or to participate in the case as a respondent by filing a notice of participation. Notices of participation were filed by Appalachian Voices ("Environmental Respondents"); the Virginia Chapter of the Sierra Club ("Sierra Club"); the Board of Supervisors of Culpeper County, Virginia ("Culpeper County"); the Mid-Atlantic Renewable Energy Coalition ("MAREC"); the Solar Energy Industries Association ("SEIA"); the Virginia Committee for Fair Utility Rates ("Committee"); Sandra L. Meyer, Trustee of the Meyer Family Trust ("Meyer Trust"); and the Virginia Office of the Attorney General, Division of Consumer Counsel ("Consumer Counsel").

The Commission's Order for Notice and Hearing also provided for the pre-filing of testimony and exhibits by Dominion, respondents and the Commission's Staff ("Staff"). The Company, Environmental Respondents, Sierra Club, MAREC, and Staff pre-filed testimony in this proceeding.

On September 7, 2018, Dominion filed a Motion *in Limine* ("Motion"). On September 21, 2018, the Environmental Respondents filed a response in opposition to Dominion's Motion. On October 5, 2018, Dominion filed its reply.

Beginning on September 24, 2018, the Commission convened a hearing on the Company's 2018 IRP.¹ During the hearing, the Commission received the testimony of public witnesses.² The Commission also received testimony and exhibits from Dominion, the respondents, and Staff.³ The hearing concluded, after closing arguments, on September 27, 2018.

NOW THE COMMISSION, upon consideration of this matter, is of the opinion and finds as follows.

Pursuant to § 56-599 C of the Code, the Commission must, after giving notice and an opportunity to be heard, determine whether Dominion's IRP is reasonable and in the public interest. For the reasons discussed below, the Commission finds, based on the record of this proceeding and applicable statutes, that the Company has failed to establish that its 2018 IRP, as

¹ Staff and all parties except Culpeper County, the Committee, and the Meyer Trust participated in the hearing.

² Tr. 12-50. The Commission also received public comments filed pursuant to the Order for Notice and Hearing.

³ At the hearing, the Commission noted that it would rule on the Motion in its Final Order in this proceeding. Tr. 9. We deny any objections we took under advisement and admit the testimony of Environmental Respondents witness Lander (Ex. 22). As noted during the hearing, admission of an exhibit is not tantamount to a finding of fact. Findings of fact are contained in orders as such. Tr. 10-11. The Motion is denied.

currently filed, is reasonable and in the public interest. The Commission further finds that the Company shall correct and refile its 2018 IRP subject to the provisions of this Order.

Compliance with Prior Commission Order

In its Order on Dominion's 2017 IRP,⁴ the Commission took judicial notice of Senate Bill 966,⁵ recognizing that the new legislation would impact subsequent IRPs. The Commission directed "that Dominion's future IRPs, beginning with the IRP due to be filed on May 1, 2018, shall include detailed plans to implement the mandates contained in that legislation, as well as plans that comply with all other legal requirements."⁶ The Commission noted "[t]his includes, for example, the utility's least-cost plan along with plans compliant with proposed federal carbon-control regulations"⁷

The record in the instant proceeding reflects that the Company's least-cost plan includes resources, such as the Coastal Virginia Offshore Wind ("CVOW") demonstration project, that were not selected by the Company's modeling on a least-cost basis, but rather were forced into each of the Company's alternative plans.⁸ The record also reflects that the Company's modeling was not permitted to select certain highly-efficient natural gas-fired combined-cycle facilities for

⁴ *Commonwealth of Virginia, ex rel. State Corporation Commission, In re: Virginia Electric and Power Company's Integrated Resource Plan filing pursuant to Va. Code § 56-597 et seq.*, Case No. PUR-2017-00051, Doc. Con. Cen. No. 180320095, Order (Mar. 12, 2018) ("2017 IRP Order").

⁵ 2018 Acts ch. 296.

⁶ 2017 IRP Order at 3-4.

⁷ *Id.* at 4 n.8. The Commission also explicitly required the Company to include a least-cost plan as part of its 2017 IRP. *See Commonwealth of Virginia, ex rel. State Corporation Commission, In re: Virginia Electric and Power Company's Integrated Resource Plan filing pursuant to Va. Code § 56-597 et seq.*, Case No. PUE-2016-00049, 2016 S.C.C. Ann. Rept. 405, 407 (Dec. 14, 2016).

⁸ *See, e.g.*, Ex. 37 (Abbott) at 7 n.3; Tr. 601.

purposes of developing a least-cost plan.⁹ Forcing in higher-cost resources and excluding other lower-cost resources results in a more expensive least-cost plan. While there may be appropriate or defensible reasons, including review of various potential state and federal carbon restrictions, for Dominion to include the scenarios it chose for the IRP, omitting a true least-cost plan does not provide the analysis needed to assess the incremental cost of various options, for Commission analysis, and for statutorily required reporting to the General Assembly. Based on the foregoing, the Commission finds that the Company did not comply with the Commission's directive to include a least-cost plan in its 2018 IRP.

With respect to the requirement to address the mandates contained in Senate Bill 966, the record reflects that the Company included some, but not all, of those mandates in its 2018 IRP. For example, the Company's plans include CVOW as well as solar photovoltaic ("PV") resources ranging in amounts up to 6,640 megawatts ("MW").¹⁰ The Company did not, however, model \$870 million in energy efficiency programs, nor did it model a battery storage pilot required by Senate Bill 966.¹¹ The 2018 IRP also did not include costs associated with the Company's Strategic Undergrounding Program ("SUP"), Grid Transformation Plan, or Transmission Line Undergrounding Pilot, each of which was contained in, or modified by, Senate Bill 966.¹² Again, by omitting certain mandates the IRP as filed does not provide the analysis and back-up data needed to assess the cost of these mandates, for Commission review, and for statutorily required reporting to the General Assembly. Based on the foregoing, the Commission further

⁹ See, e.g., Ex. 31 (Samuel) at 17; Ex. 37 (Abbott) at 7.

¹⁰ See, e.g., Ex. 37 (Abbott) at 5.

¹¹ See, e.g., *id.*; Ex. 24 (Hausman) at 20, 22-23; Tr. 139-140, 164.

¹² See, e.g., Ex. 37 (Abbott) at 6.

finds that the Company's 2018 IRP did not fully comply with the Commission's prior directive to include detailed plans to implement the mandates contained in Senate Bill 966.¹³

Corrected 2018 IRP

The Commission finds that the Company shall re-run and re-file the corrected results of its 2018 IRP within 90 days from the date of this Order, subject to the requirements of this Order.

In its corrected 2018 IRP, for purposes of its least-cost plan, the Company shall not force the modeling to select any resource, nor exclude any reasonable resource.¹⁴ This requirement does not reflect any finding that the Company should pursue any specific resource included in the least-cost plan; rather, as the Commission has repeatedly recognized, the IRP is a planning document, and it is reasonable, for planning purposes, to identify the least-cost plan to provide a benchmark against which to measure the costs of other alternative plans.

As previously ordered, the Company shall also calculate the incremental cost impacts of the mandates contained in Senate Bill 966, including a comparison to the identified least-cost plan. This includes CVOW; 5,000 MW of nameplate wind and solar, including at least 25 percent of such resources from non-utility generators; \$870 million in spending on energy efficiency programs; the 30 MW battery storage pilot; the SUP;¹⁵ the Grid Transformation Plan; and the Transmission Line Undergrounding Pilot.

¹³ The Commission accepts the Company's explanation that it misunderstood the requirements set forth in the Commission's prior order, *see* Tr. 1003-1005, and the Commission does not find bad faith on the part of the Company.

¹⁴ The record reflects that the Company did not include fuel transportation costs in the modeled costs of certain natural gas generation facilities. Tr. 610. For purposes of the corrected 2018 IRP, the Company should include a reasonable estimate of fuel transportation costs, including interruptible transportation, if applicable, associated with all natural gas generation facilities in addition to the fuel commodity costs.

¹⁵ With respect to the SUP, the Company shall calculate the incremental cost impacts associated with those SUP conversions after September 1, 2016, that were not approved for recovery prior to the effective date of Senate Bill 966.

In sum, while an IRP is a planning document and does not approve any specific expenditure, legally-mandated costs are likely to be borne by customers in one form or another, so it is essential that an IRP provide the public and policymakers with projected costs for such mandates that are as accurate as possible.

Load Forecast

The reasonableness of the Company's load forecast was a significant issue in this proceeding and the Commission received considerable evidence and argument related to the Company's load forecast. Several alternative load forecasts were presented by Staff and respondents for the Commission's consideration, each of which supported, to varying degrees, lower peak load and energy sales forecasts compared to the Company.¹⁶ Notably, the Company's peak load and sales forecasts are higher than those of PJM,¹⁷ the regional transmission entity of which the Company is a member, and the entity that sets the Company's capacity obligation within the PJM capacity market.¹⁸ For example, the evidence showed that PJM's 2018 Load Forecast projects a peak demand 15-year compound annual growth rate ("CAGR") of 0.8% for the Dominion Zone of PJM, compared to the Company's internal forecast of 1.4%.¹⁹ For energy, PJM projects a 15-year CAGR of 0.9% for the Dominion Zone, compared to the Company's

¹⁶ See, e.g., Ex. 20 (Wilson) at 10; Ex. 28 (McBride) Drilling Info Report at 29-34; Ex. 35 (White) at 14-15.

¹⁷ PJM Interconnection, L.L.C.

¹⁸ Tr. 737-38.

¹⁹ Ex. 4 (IRP) at 17, 22.

internal forecast of 1.4%.²⁰ The record further reflects that, since 2016, Dominion's forecast has begun to diverge significantly from PJM's forecast.²¹

The record further reflects that the load forecasts contained in the Company's past IRPs have been consistently overstated, particularly in years since 2012, with high growth expectations despite generally flat actual results each year.²² For example, the evidence showed that the Company's 2012 IRP projected peak load of approximately 21,500 MW in 2017 whereas the actual peak was approximately 19,500 MW.²³ Moreover, for the past several years, the Company has generally lowered its expected base year forecast with each subsequent IRP, while maintaining a similar slope for its long term forecast.²⁴

The Commission recognizes that every forecast has strengths and weaknesses and that no forecast will exactly match actual results except by chance; however, weighing the evidence presented in this proceeding, the Commission has considerable doubt regarding the accuracy and reasonableness of the Company's load forecast for use to predict future energy and peak load requirements. In reaching this conclusion, the Commission has considered all evidence presented in this proceeding including the alternative forecasts presented, as well as trends in the Company's historical load forecasts.

²⁰ *Id.*

²¹ Ex. 35 (White) at 13-14; Tr. 514.

²² Ex. 20 (Wilson) at 4-5; Ex. 23 (Shobe) at 3-6; Ex. 28 (Drilling Info Report) at 36.

²³ *See, e.g.*, Ex. 54; Ex. 50 (Thomas Rebuttal) at 26. The evidence also showed, as another example, that the Company's 2015 IRP projected a 2018 peak that was 2,500 MW higher than the actual 2018 peak. Tr. 516.

²⁴ Ex. 35 (White) at 13.

Based on the foregoing, rather than the Company's internal load forecast, the Commission directs that, for purposes of its corrected 2018 IRP, the Company shall utilize the Dominion Zone PJM coincident peak load forecast and energy sales forecast, scaled down to the Dominion load serving entity level, consistent with the methodology presented by Staff witness White, as further modified below.²⁵ The coincident peak is appropriate because, as Dominion acknowledges, PJM establishes the Company's capacity obligation based on Dominion's contribution to PJM's coincident peak.²⁶ Moreover, as acknowledged by the Company, one of the benefits of PJM membership is the capacity available to the Company for purchase from the PJM market during times of Dominion's non-coincident peak.²⁷

As acknowledged by the Company, one of the primary purposes of energy efficiency measures is to reduce load.²⁸ In order to assess more fully the impact of the requirement of Senate Bill 966 that the Company propose \$870 million in spending on new energy efficiency programs by 2028, the Company shall also model the impact of that requirement on the load forecast in all plans other than the least cost plan.²⁹ Specifically, this should be modeled separately as (1) an impact on the PJM peak load and energy sales forecast, and (2) a supply-side resource as currently presented. The Company should model the impact on forecasted peak load and energy sales using reasonable assumptions based on actual Virginia-specific data.

²⁵ *Id.* at 14-15; Tr. 537-542. Consumer Counsel supported this recommendation. Tr. 976.

²⁶ Ex. 35 (White) at 14; Tr. 880-881. The Company's original analysis using its projected load forecast remains part of this record.

²⁷ Tr. 880-881.

²⁸ Tr. 867.

²⁹ *See* Senate Bill 966, Enactment cl. 15.

Solar Capacity Factor

The solar capacity factor modeled by the Company was also a significant issue in this proceeding. The record reflects that the Company's existing solar PV resources, which include both fixed tilt and solar tracking resources, have experienced lower-than-modeled capacity factors. While the Company models an approximately 26 percent capacity factor for future solar PV resources, the Company's resources have experienced actual capacity factors of approximately 20 percent on average over the past five years.³⁰ Several explanations for the lower-than-expected capacity factors were offered. In particular, evidence was offered that suggested wetter than normal weather, technical difficulties including outages, and differences between fixed and solar tracking technologies, which caused the actual capacity factor to be lower than the 26 percent modeled in the 2018 IRP.³¹

For purposes of the Company's corrected 2018 IRP, the Commission finds that the Company should model a 23 percent capacity factor for solar PV resources. In reaching this decision, the Commission carefully considered and weighed all of the evidence regarding the causes of the actual solar capacity factors and evidence supporting technological efficiency improvements of solar resources over time.³²

Further in this regard, the Commission finds the Company's methodology for forecasting solar renewable energy certificate ("REC") prices to be unreasonable. The record shows that the Company's REC price methodology does not consider actual market prices of RECs, but instead

³⁰ See, e.g., Ex. 37 (Abbott) at 7; Tr. 561-62; Ex. 38; Ex. 41.

³¹ See, e.g., Tr. 401-403, 567-571; Ex. 39; Ex. 48.

³² See, e.g., Ex. 37 (Abbott) at 7; Tr. 561; Ex. 38; Ex. 41; Ex. 42; Ex. 48.

the REC price forecast is directly tied to and dependent upon the Company's forecasts of energy and capacity.³³ Specifically, the REC price forecast is the residual level necessary to make the renewable resource investment economic given the utility's forecasts of market prices for energy and capacity.³⁴ For purposes of the corrected 2018 IRP filing, the Company shall present an alternative methodology for forecasting REC prices that incorporates actual observable market prices for RECs.

Accordingly, IT IS SO ORDERED, and this matter IS CONTINUED.

AN ATTESTED COPY hereof shall be sent by the Clerk of the Commission to all persons on the official Service List in this matter. The Service List is available from the Clerk of the Commission, c/o Document Control Center, 1300 East Main Street, First Floor, Tyler Building, Richmond, Virginia 23219.

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Teste:



Clerk of the
State Corporation Commission

³³ See, e.g., Ex. 35 (White) at 18-21; Ex. 43 (Scheller Rebuttal) at 14-15.

³⁴ See, e.g., Ex. 35 (White) at 19-20; Tr. 512.