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BEFORE
THE PUBLIC SERVICE COMMISSION OF
SOUTH CAROLINA

DOCKET NO. 2020-263-E

Cherokee County Cogeneration Partners, LLC Complainant/Petitioner, v. Duke Energy Progress, LLC and Duke Energy Carolinas, LLC, Defendants/Respondents.	)))))))))))	**DUKE ENERGY CAROLINAS, LLC's AND DUKE ENERGY PROGRESS, LLC's MOTION TO STRIKE**

Pursuant to S.C. Code Ann. Regs. 103-829(A), 103-845(C) and 103-846 and South Carolina Rule of Evidence ("SCRE") 103, Duke Energy Carolinas, LLC ("DEC") and Duke Energy Progress, LLC ("DEP") (collectively the "Companies") hereby move the Public Service Commission of South Carolina ("Commission") for an order striking the following portions of Cherokee County Cogeneration Partners, LLC's ("Cherokee") Comments on DEC/DEP Late-Filed Exhibit One filed on August 12, 2021 (the "Response") in the above-captioned docket:

- Calculation of the $103.65 per kilowatt ("kW") year avoided energy cost for DEC in October 2018 and all supporting analysis; and
- Calculation of the $31.44 per kW-year avoided energy cost for DEC in February 2021.[1]

Since filing its Complaint in November 2020, Cherokee has challenged DEC's and DEP's calculation of their respective avoided capacity rates, and its position has been well vetted by all parties through discovery, pre-filed, and live testimony. In its Response to the Companies' Late-Filed Exhibit, Cherokee *for the first time* challenges DEC's

[1] The portions of Cherokee's Response that the Companies are requesting the Commission strike are highlighted in yellow in Attachment A.

calculations of its avoided *energy* rates in October 2018 and February 2021, and in doing so, proposes a Fall 2018 rate calculation that is *even higher* than the one initially presented in pre-filed testimony on May 3, 2021, by its retained expert, Witness Kurt Strunk, and then at the live hearing held on July 26-30, 2021. Cherokee's timing in raising this new argument is particularly egregious given that its calculations are based on a production cost simulation model that Witness Strunk did *not* use to calculate the Fall 2018 rates he proposed in his pre-filed or live testimony, and the Companies therefore have *not* had any opportunity to obtain discovery or otherwise vet this new modeling presented for the first time after the hearing.

In short, and as set forth herein, the Companies request that the Commission strike the portions of Cherokee's Comments related to its new 2018 and 2021 avoided energy calculations because they amount to new, unvetted testimony that go far beyond the scope of Commissioner C. Williams' request for a late-filed exhibit and Cherokee's reservation of a right to respond and, accordingly, represent an improper attempt to insert into the record of this proceeding matters not contained in the record currently before the Commission.

I. <u>Background</u>

At the July 29, 2021 hearing in this matter, Commissioner C. Williams asked DEC/DEP Witness John Freund to "update" his Figure 1 presented in his pre-filed direct testimony. As originally prepared, Figure 1 presented each of the five avoided cost rated proposals provided to Cherokee—in October 2018 (DEC), February 2019 (DEP), June 2020 (DEP), September 2020 (DEC), and February 2021 (DEC)—and described the characteristics of each, including the date of rate request, date rate provided, power purchase agreement ("PPA") structure, IRP used to support first year of capacity need, first

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year of capacity need based on IRP, timing of gas cost assumptions, and term. Commissioner C. Williams asked Witness Freund to "add, where it is possible, what the Duke avoided energy value, avoided capacity value, and the avoided cost is." (Tr. Vol. 2, p. 384.) Clarifying her request, Commissioner C. Williams explained that she wanted "to be able to see the avoided energy and the avoided capacity cost and then the total avoided cost for as many of these . . . proposed contracts as [DEC and/or DEP] have offered on Mr. Freund's Figure 1." (Tr. Vol. 2, p. 387.) In other words, Commissioner C. Williams asked the Companies to supplement Witness Freund's Figure 1 with information that was already in the record—she did *not* request the Companies to make any new calculations and/or provide any new material that was not already in the record.

In response, DEC and DEP submitted Late-Filed Exhibit One, which appended on to Witness Freund's Figure 1 DEC's avoided cost rates as calculated in October 2018, September 2020, and February 2021 as follows:

Information added as Late File Exhibit:

Avoided Cost Component	DEC 2018 Strunk*	DEC Oct 2018 **	DEP Feb 2019***	DEP Jun 2020***	DEC Sept 2020****	DEC Feb 2021
Energy $/kW-year	$ 63.00	$ 34.97			$ 39.01	$ 20.79
Capacity $/kW-year	$ 47.00	$ 15.10			$ 35.68	$ 35.68
Total $/kW-year	**$ 110.00**	**$ 50.06**			**$ 74.69**	**$ 56.48**

So that the numbers presented an apples-to-apples comparison of rates, for the DEC October 2018 entries, the Companies used the avoided cost components for a 10-year dispatchable tolling agreement capacity rate (rather than the 5-year "must-take" structure it originally offered to Cherokee) that they produced to the South Carolina Office of Regulatory Staff ("ORS") in response to ORS Data Request No. 2-2 and that Witness Freund referenced in his live testimony. (Tr. Vol. 2, p. 70.) The Companies did *not* provide rate calculations for the DEP February 2019 and June 2020 offers because DEP has never

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modeled a dispatchable tolling agreement for Cherokee based on inputs from December 2019 or June 2020. In other words, each of the avoided cost rates included in the Companies' Late-Filed Exhibit 1 were previously calculated and the Late-Filed Exhibit presented these rate proposals as 10-year dispatchable tolling agreements.

Cherokee's Response to the Late-Filed Exhibit is a 12-page single-spaced document that amounts to extensive new testimony and unabashedly purports to have calculated new avoided energy rates that are more than double the avoided energy rates previously presented by Witness Strunk for Fall 2018 and nearly three times DEC's actual avoided costs as presented in its Late-Filed Exhibit. In addition, Cherokee appears to challenge, again for the first time, DEC's February 2021 avoided energy rate, increasing the rate by $10.65/kW-year—from $20.79/kW-year to $31.44/kW-year. Both Cherokee's Fall 2018 and February 2021 avoided energy rates were calculated by Witness Strunk and his colleagues at NERA Economic Consulting ("NERA") using the PLEXOS model to run a production cost simulation—modeling that was not requested by the Commission and that was completed after the evidentiary hearing such that the Companies have not had the opportunity to vet it through discovery or cross-examination.

II. <u>Argument</u>

In past proceedings, the Commission has requested late-filed exhibits and responses thereto to provide specific, factual information of a limited nature that could supplement the record of a proceeding without unduly prejudicing the rights of other parties. Overly broad post-hearing filings, on the other hand, risks violation of a party's due process rights. *See Dangerfield v. State*, 376 S.C. 176, 179, 656 S.E.2d 352, 354 (2008) ("The procedural component of the state and federal due process clauses requires the individual whose property or liberty interests are affected . . . the opportunity to introduce evidence, the right

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to confront and cross-examine adverse witnesses, and the right to meaningful judicial review."). Because utilities must be given a "meaningful opportunity" to respond to evidence presented by other parties, *Utils. Serv. of S.C., Inc. v. S.C. Office of Regulatory Staff,* 392 S.C. 96, 107, 708 S.E.2d 755, 761 (2011), post-hearing filings like the Companies' Late-Filed Exhibit and Cherokee's Response must be extremely circumspect and appropriately limited to address the subject matter requested by the Commission. *See In the Matter of Dominion Energy South Carolina, Inc.'s Request for Approval of an Expanded Portfolio of Demand Side Management Programs and a Modified Demand Side Management Rider*, Dkt. No. 2019-239-E, Commission Directive (Dec. 10, 2019) (granting DESC's Motion to Strike late-filed exhibit because it "goes beyond the scope of the request and has not been subject to discovery and cross-examination."). Allowing Cherokee to submit—in the guise of a response to a late-filed exhibit—new material and a new theory, completely subverts the pre-filing requirements of S.C. Code Ann. Regs. 103-845 (C) which are intended to protect the due process rights of all parties.

Here, the Companies' Late-Filed Exhibit was appropriately circumspect, presenting only information that was specifically requested by Commissioner C. Williams and that was already in the record or otherwise available to the parties through discovery. In contrast, Cherokee's Response presents twelve pages of new analysis that, for the first time, challenges DEC's avoided energy rate calculations and proposes avoided energy rates that are *significantly higher* than any prior calculation vetted in this proceeding. Cherokee's decision to present new analysis and new arguments based on unvetted production cost models in the post-hearing phase of this proceeding is improper on its face, and the Commission should strike the portions of Cherokee's Response highlighted in Attachment 1 for all of the following reasons.

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A. **Cherokee has never challenged the Companies' avoided energy rate calculations, but now attempts to more than double the avoided energy rate it presented in testimony.**

In the nine months since filing its Complaint, Cherokee has never directly argued that the Companies' avoided energy rate calculations were incorrect. Instead, through the testimony of Witnesses Strunk and Hanson, Cherokee primarily argued that (1) it established a legally enforceable obligation with DEC in September 2018; (2) it is entitled to payment for capacity irrespective of DEC's first year of capacity need. At no point in Witness Strunk's pre-filed or live testimony did he present evidence or otherwise argue that the Companies' avoided energy rate calculations did not reflect their actual avoided costs.

In a complete reversal of the position it has taken throughout this proceeding, the rates included in Table 1 of Cherokee's Response appear to indicate that Cherokee no longer challenges DEC's October 2018 avoided capacity rate, but instead adopts a newly-calculated October 2018 avoided energy rate that more than doubles the rate presented by Witness Strunk in pre-filed and live testimony. The resulting overall avoided cost rate in Cherokee's Table 1—$118.75—is a 237% increase over the projected avoided cost rate DEC calculated using the same September 2018 inputs. That Cherokee would abandon the recovery theory it has pursued for the last nine months—*i.e.*, that it is entitled to capacity payments even in the absence of utility need—in favor of a new theory that yields a higher overall avoided cost is striking. Rather than take a principled position in search of the best methodology to approximate the Companies' actual avoided costs, Cherokee's actions show that it is simply in search of the highest contract value, regardless of approach or the legal requirements of PURPA.

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Because it is improper for a party to present new purported evidence in a post-hearing filing where there is no opportunity for discovery or cross-examination, the relevant portions of Cherokee's response should be stricken.

B. <u>Cherokee's production cost simulation model is unvetted by either the Companies, ORS or the Commission.</u>

To reach the October 2018 avoided energy rates included in its Response, Cherokee represents that Witness Strunk and NERA used Energy Exemplar's PLEXOS production cost simulation model. Importantly, Witness Strunk did *not* use PLEXOS or any other production cost simulator to model the avoided cost rates included in his pre-filed direct testimony and which Cherokee has argued the Commission should adopt as DEC's accurate and appropriate avoided costs in this proceeding. Because this is the first time Cherokee has relied on the PLEXOS model in this proceeding, the Companies and ORS have not had an opportunity to request discovery on the modeling or to cross-examine Witness Strunk on his modeling inputs, assumptions or use of the platform.

Given the prejudice the Companies would suffer if denied an opportunity to vet Cherokee's use of the software to arrive at the highest avoided cost rate calculation proffered in this proceeding, all portions of Cherokee's response that rely on PLEXOS modeling should be stricken from Cherokee's Response.

C. <u>Cherokee's commentary regarding the Companies' purported "understatement" of energy value could have and should have been raised earlier, in testimony subject to cross-examination.</u>

Next, Cherokee's Response argues that the DEC October 2018 avoided energy rate included in the Late-Filed Exhibit is "understated" because "DEC would only dispatch Cherokee during higher cost hours, when the energy value to the system exceeds Cherokee's dispatch costs." Response at 4. According to Cherokee, its Facility "will be

delivering energy when it is most valuable to the grid[, and, accordingly,] the average avoided energy cost during the hours when Cherokee is dispatched will be above the average avoided energy cost across all hours." *Id.* As a threshold matter, Cherokee's point is belied by the testimony of its own Witness Hanson, who represented that "DEC has dispatched the plant on average approximately 60% of all hours over the last three years." (Tr. Vol. 1, p. 15.5.) In contrast, Cherokee's Response Figure 1, which illustrates DEC's projected avoided energy costs on June 21, 2023, suggests a fluctuating energy cost peak of approximately four hours from roughly noon to 4 PM. While it may be true that DEC is likely to dispatch the Cherokee Facility during that four-hour "high cost" window, it would also have the contractual right to (and consistent with past practice, necessarily would) dispatch the Facility in other "low avoided energy cost hours" to reach a 60% average daily dispatch.

Even if picking only the highest-value avoided energy cost hours were a valid assumption for purposes of modeling the avoided energy costs under a dispatchable tolling agreement—which it is not—Cherokee's argument is not unique to DEC's October 2018 avoided energy rates presented in the Late-Filed Exhibit. Indeed, Cherokee could have argued that it was entitled to rates "above the average avoided energy cost across all hours" at any time in this proceeding prior to the close of the hearing. Instead, however, Cherokee has steadfastly maintained that it is *not* asking to be paid rates in excess of the Companies' average avoided cost rates. (*See* Tr. Vol. 3, p. 660.9: "Q: Do you believe that Duke is obligated to offer Cherokee higher than avoided cost rates . . . ? A: No, . . . and I have never represented that.") By waiting until a post-hearing filing to raise this argument for the first time, Cherokee has improperly deprived the Companies an opportunity to respond, either through cross-examination or through the presentation of evidence regarding

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whether this significant deviation from DEC's standardized methodology for calculating avoided energy costs using all potential hours in which DEC can dispatch the Cherokee Facility is appropriate or inappropriate.

D. **Cherokee's criticism of the Companies' use of Transco Zone 5 gas costs could have and should have been raised earlier, in testimony subject to cross-examination.**

Cherokee suggests that it was improper for DEC to rely on Transco Zone 5 gas costs to calculate the October 2018 rate included in its Late-Filed Exhibit, suggesting that Transco Zone 4 prices were more appropriate as they were the prices used in the 2012 PPA. Here again, this argument is not unique to the October 2018 rates presented in the Companies' Late-Filed Exhibit and, therefore, should have been presented well before the close of the hearing to allow appropriate time for cross-examination and presentation of responsive evidence. The Companies' witnesses could have easily explained why the Transco Zone 5 prices are more appropriate for calculation of the Cherokee rates, but have been deprived of the opportunity to inform the Commission on this topic due to the untimeliness of Cherokee's argument.

Cherokee's argument that the DEC's forward-looking operations (use of Transco Zone 4 to reserve gas) at the time the parties entered into the 2012 PPA has as little direct relevance to the Companies' current operations as Cherokee's other argument that its avoided cost rate proposals are reasonable because they are 24% lower than the 2012 PPA avoided cost rates, despite the fact that changes in natural gas cost and other changes have resulted in significantly lower avoided cost rates using the Commission-approved avoided cost methodology. (T. Vol. 3 p 628). This results-oriented analysis submitted after the hearing should be stricken and not considered by the Commission.

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III. Conclusion

Cherokee has improperly used Commissioner C. William's request for a late-filed exhibit as an opportunity to present new arguments, run new modeling, and advocate for even higher avoided cost rates than it did at the hearing in this matter. While the Companies' Late-Filed Exhibit was narrowly tailored to address the specific request raised by Commissioner C. Williams, Cherokee's overbroad response introduced new unverified quasi-testimony and evidence into the proceeding. Without an opportunity to conduct discovery, cross-examine Cherokee's witnesses, and present its own responsive evidence to this significant new alleged information, the Companies' due process rights will be prejudiced. Cherokee could have raised its new arguments and evidence earlier in the proceeding.

Based on the foregoing, the Companies respectfully request that the Commission strike the portions of Cherokee's Response identified in Attachment A.

Respectfully submitted this, the 18th day of August, 2021

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Comments on DEC/DEP Late Filed Exhibit One

Introduction

Cherokee County Cogeneration Partners, LLC ("Cherokee") provides these comments on the Late Filed Exhibit One filed by Duke Energy Carolinas, LLC ("DEC") and Duke Energy Progress, LLC ("DEP") (collectively, "Duke"). We begin by providing a high-level overview of the problems raised by Late Filed Exhibit One. DEC/DEP filed the Late Filed Exhibit on Wednesday, August 4, but then filed a corrected exhibit on Friday, August 6. References herein to the Late Filed Exhibit refer to the corrected version filed on August 6. Then we address the information added by DEC in its Late Filed Exhibit One to Mr. Freund's Direct Figure 1 (in our comments below, we refer to the information added by DEC as "DEC Late Filed Table 1"). As noted below, Cherokee's comments focus on information or data never provided by Duke previously,[1] such as recasting their Oct. 2018 offer which included no capacity payment and utilized a must-run contract, into a dispatchable, tolling agreement offer with a capacity payment. In other cases, the Late Filed Exhibit contains notes about assumptions that were not described in previous offers provided by DEC or DEP to Cherokee. In other cases, Cherokee has tried to reconcile the Late Filed Exhibit with information just received this week from Duke in response to discovery responses.

None of DEC's prices in the Late Filed Exhibit One provides a reasonable representation of DEC's avoided costs, either as of September 2018 when Cherokee established its Legally Enforceable Obligation ("LEO"), as of February 2021, or as of today. In seeking to avoid its legal obligations under PURPA, DEC has consistently presented offers to Cherokee that are not reasonable for Cherokee to accept. Its pricing calculations embed discretionary modeling assumptions that understate the value of Cherokee to DEC and its customers. DEC has attempted to render the dispute over the LEO moot by claiming that its latest avoided cost forecasts are in fact better than the rates Cherokee was entitled to as of September/October 2018. Yet, the data DEC provided in discovery responses backing up its calculations of September 2018 avoided costs confirm that the forecast energy value that DEC's customers would reap from continuing to contract with Cherokee is multiples of the value that DEC attributes to Cherokee as of September 2018.

[1] Mr. Freund's sworn testimony at hearing was that the "one thing that's missing" required to produce the Table requested by Chairman Williams was the energy valuation of Cherokee as of September 2018 (transcript, p. 385). Apparently, for that reason Mr. Freund relied upon Mr. Strunk's estimate of $43/kW-year (transcript, p. 383).

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Cherokee encourages the Commission to scrutinize the rate table provided by DEC in the Late Filed Exhibit. Such scrutiny will reveal that reasonable valuations of the dispatchability of Cherokee and the benefit to the DEC system far exceed the $34.97/kW-year energy value presented in DEC Late Filed Table 1 for the DEC Oct 2018 offer. Rather, DEC's own September 2018 modeling supports an energy value of $104/kW-year. Combining this energy value with the capacity value of $15.10/kW-year attributed by DEC, results in a rate for a 10-year tolling agreement of $119/kW-year, exclusive of start costs. We explain the basis for this updated rate in the sections below.

Cherokee's response analyzes each of the relevant rate calculations and highlights internal inconsistencies in DEC's modeling and areas where DEC has used discretion to undervalue the avoided cost rate applicable to Cherokee. Cherokee comments in turn on the following rates from DEC Late Filed Table 1: 1) DEC 2018 Strunk; 2) DEC Oct 2018; 3) DEC Sept 2020; and 4) DEC Feb 2021.

As detailed below, the rates presented by DEC require several corrections, as summarized in Table 1. In addition, Table 1 includes Cherokee's September 2020 counteroffer of $87.45/kW-year.[2]

Table 1: DEC Late Filed Table 1, with Corrections

Avoided Cost Component	DEC 2018 Strunk	DEC Oct 2018	DEC Sept 2020*	Cherokee Sep 2020	DEC Feb 2021*
Energy $/kW-year	$43.00	$103.65	$39.01		$31.44
Capacity $/kW-year	$47.00	$15.10	$35.68		$35.68
Total $/kW-year	$90.00	$118.75	$74.69	$87.45	$67.12

** We note that DEC's Sep 2020 and Feb 2021 offers incorporate other problematic assumptions that understate avoided costs, but corrections to these are not addressed in Table 1 because the record does not include all necessary information.*

DEC 2018 Strunk

DEC presents the rates in the Late Filed Exhibit on an apples-to-oranges basis. Mr. Strunk's $110/kW-year tolling agreement rate (DEC 2018 Strunk) includes compensation for start costs. Mr. Freund does not provide DEC's offers inclusive of start costs

[2] Reflects $7,520,640 of total annual revenues from monthly $/kW payments, divided by 86 MW of capacity.

because he noted on cross-examination that it is customary for DEC to pay start costs separately.[3] In order for DEC Late Filed Table 1 to provide apples-to-apples information to the Commission, it must remove start costs, approximately $20/kW-year, from Mr. Strunk's $110/kW-year tolling agreement rate. The resulting "DEC 2018 Strunk" rate for comparison purposes is $90/kW-year.

In addition, we note that Mr. Strunk has used DEC's September 2018 modeling to determine the appropriate 10-year tolling agreement rate. Mr. Strunk's updated value, based on DEC's own modeling of its September 2018 avoided costs, is $119/kW-year, exclusive of start costs, which a) reflects NERA's use of a production cost model to dispatch Cherokee against DEC's September 2018 hourly avoided cost forecast from 2021 to 2030 (the term of a 10-year tolling agreement), resulting in $104.65/kW-year of avoided energy costs, plus b) $15.10/kW-year of avoided capacity costs (this being DEC's modeling as of Oct 2018).

In comparison to the DEC September 2018 rate in the Late Filed Exhibit, Mr. Strunk's $119/kW-year value represents a more reasonable 10-year tolling agreement avoided cost rate as of October 2018 than the one presented by Duke. Mr. Strunk's approach uses DEC's actual hourly avoided production costs from DEC's modeling performed in September 2018. In contrast, DEC's Oct 2018 purported avoided energy value of $34.97/kW-year was based on DEC modeling performed recently by DEC for the purposes of this proceeding and whereas DEC has not provided detailed inputs and outputs from that modeling (making a proper critical review of that modeling impossible, despite what DEC provided in response to Cherokee's Third set of Interrogatories).

DEC Oct 2018

The DEC Oct 2018 pricing shown by Duke in the Late Filed Exhibit has the following problems.

A. **Understates Energy Value.** The energy valuation provided by Duke for "DEC Oct 2018" should not be relied upon by the Commission as it is patently inconsistent with DEC's September 2018 avoided cost modeling results.

In order to assess the DEC Oct. 2018 rate shown in the Late Filed Exhibit, it is important to note that avoided cost contract prices typically build in an averaging of energy values over different times. Because load and resource conditions on the power grid vary from moment to moment, avoided energy costs can be very different at different times in the day, on weekends as compared to weekdays, and during different times of the year. As such, the avoided energy cost forecast upon which a QF contract price is based tends to be quite granular, even if the valuation of the QF energy ultimately averages the QF's value across multiple time periods in

[3] *See* Hearing Transcript, cross-examination of Mr. Freund, p. 357 (when asked whether he agrees that startup costs should be paid in a dispatchable tolling agreement structure, Mr. Freund stated, "It's traditional in these types of contracts or capacity-type contracts").

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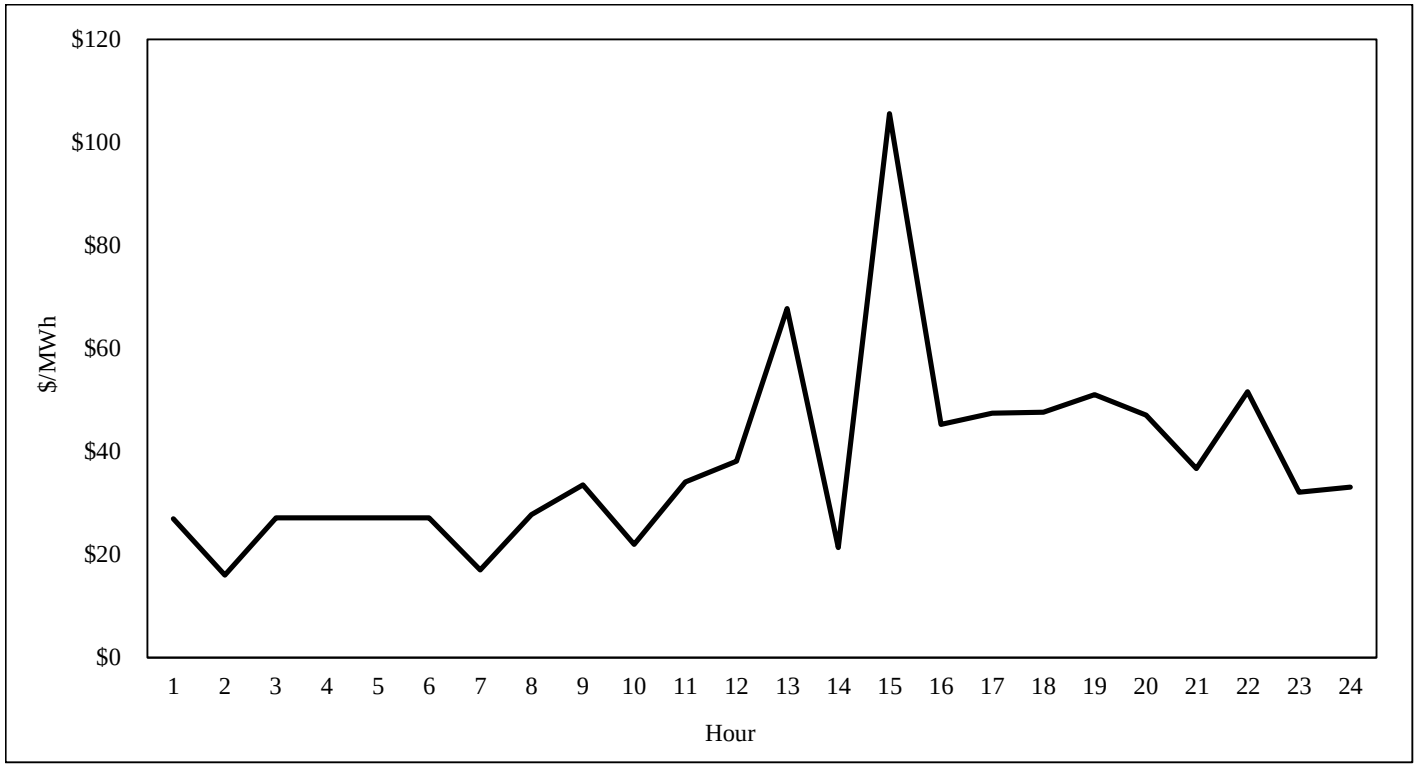
order to price the contract. (For example, DEC's 2018 offer collapsed avoided energy costs into two periods: off-peak hours and on-peak hours.)

In discovery, DEC provided the September 2018 forecasts of hourly avoided energy costs that supported its October 2018 offer to Cherokee. These forecasts also cover the term of a 10-year tolling agreement now under consideration for the period 2021-2030. These hourly avoided energy costs can be volatile and differ across the hours of each day.

Figure 1: Avoided Energy Costs on June 21, 2023



It is important to realize that in the low avoided energy cost hours, under a tolling agreement, DEC would elect not to dispatch Cherokee. DEC would only dispatch Cherokee during higher cost hours, when the energy value to the system exceeds Cherokee's

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dispatch costs. Because of this, it is important to recognize that Cherokee will be delivering energy when it is most valuable to the grid (*i.e.*, when energy costs are high). It is appropriate to recognize, then, that the average avoided energy cost during the hours when Cherokee is dispatched will be above the average avoided energy cost across all hours.

In order to better assess the rates in the Late Filed Exhibit, it is important to better understand the energy value of Cherokee—meaning the avoided energy cost in hours when Cherokee is reasonably expected to be called upon. In this regard, NERA used a production cost simulation model, Energy Exemplar's PLEXOS model. NERA dispatched Cherokee against the September 2018 hourly energy avoided cost forecast that underlies DEC's October 2018 offer to Cherokee. NERA considered the value of dispatching Cherokee over the course of the 10 years beginning January 1, 2021 and ending December 31, 2030. NERA's production cost modeling used the fuel cost inputs from DEC's September 2018 Prosym modeling, as provided by DEC in discovery. While DEC did not model the Cherokee extension in its September 2018 Prosym modeling, DEC provided in discovery the technical characteristics of DEC's modeling of the Cherokee extension in DEC's Feb-2021 Prosym modeling. NERA then used the same technical characteristics. The result confirmed the statements Mr. Strunk made in rebuttal—*i.e.*, that not capturing Cherokee's dispatch flexibility leads to a conservative estimate of the energy value and appropriate compensation to Cherokee for DEC's avoided energy costs. Figure 2 below shows the avoided energy costs in those hours when Cherokee is called upon in comparison to DEC's forecast dispatch cost of Cherokee (based on NERA's production cost modeling and DEC's September 2018 avoided cost prices).

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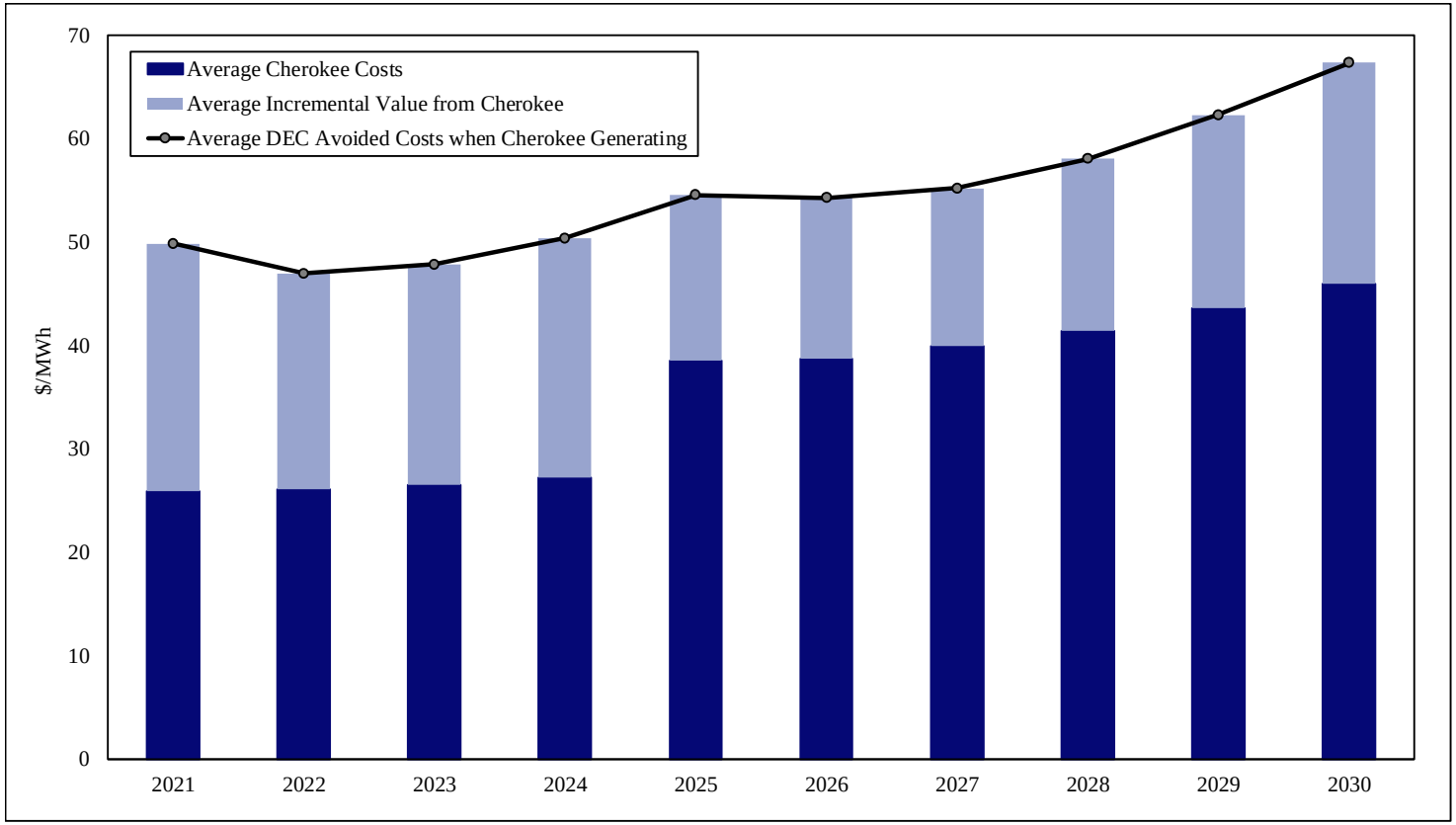
Figure 2: Avoided Energy Valuation of Cherokee ($/kW-year)



The average avoided energy cost when Cherokee is expected to be dispatched is $54/MWh, while the average Cherokee dispatch cost is $35/MWh (each is averaged over the entire 10-year term, without levelizing). Over the course of the 10-year tolling agreement, having the Cherokee resource will displace other more expensive resources on the DEC system. The levelized $/kW-year energy value over the 10-year term is $104/kW-year.

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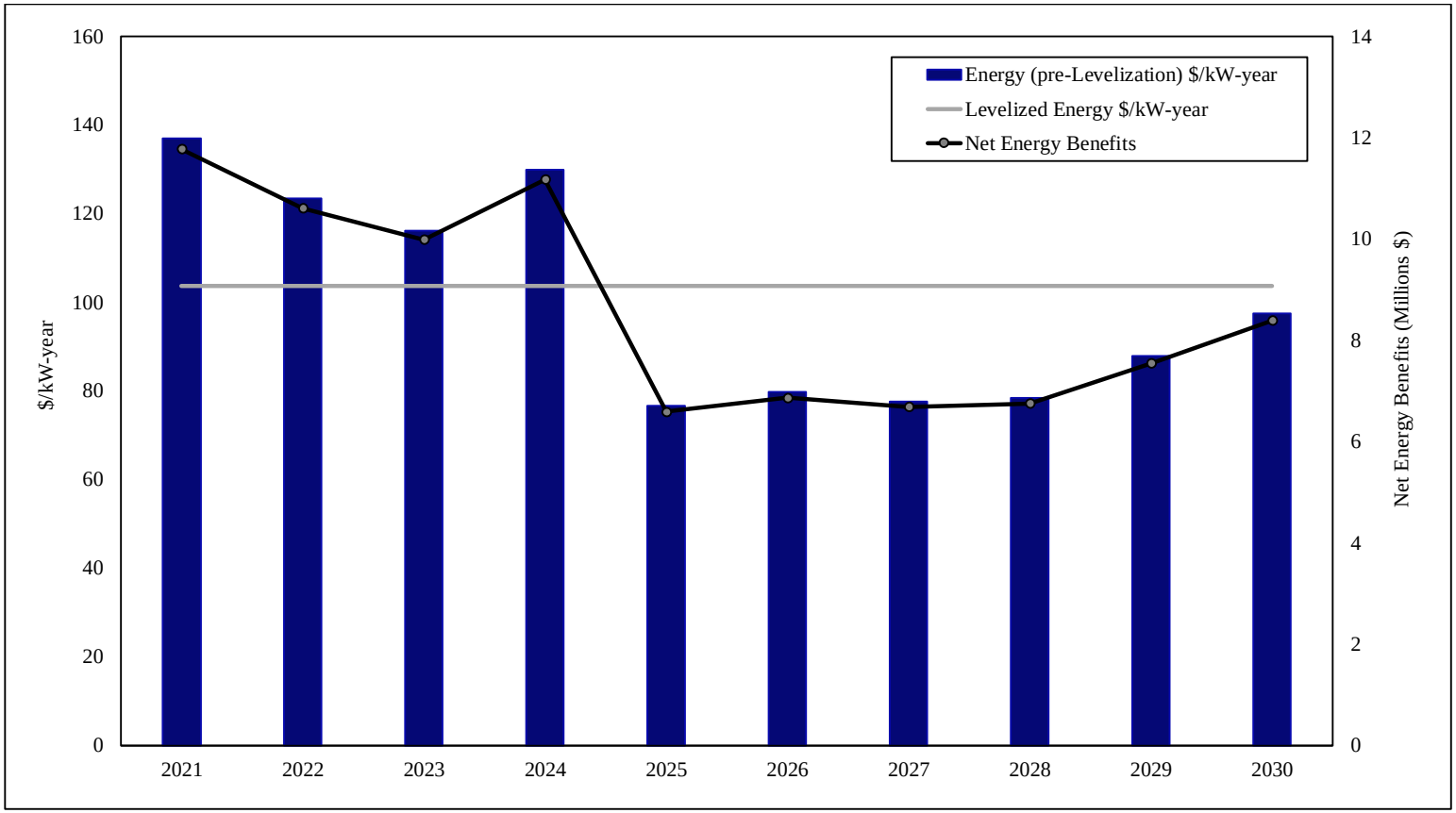
Figure 3: Energy Value ($/kW-year)



Adding Freund's estimate of $15.10/kW-year for capacity on top of the $104/kW-year energy value leads to a $119/kW-year total value, based on DEC's own modeling, exclusive of start costs. To be consistent with Commission Order No. 2016-349, it is Cherokee's position that a full avoided cost capacity payment of $57/kW-year is warranted. Nevertheless, Cherokee recognizes that the all-in price of $119/kW-year is within the zone of reasonableness for avoided cost pricing as of the date of its LEO.

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B. **Not an actual offer.** For purposes of clarification, the "DEC Oct 2018" column in Late Filed Exhibit One was not DEC's avoided cost rate proposal to Cherokee in October of 2018. Instead, and as indicated in Late-Filed Exhibit One, the "DEC Oct 2018" column includes "the avoided cost components for a 10-year dispatchable tolling PPA capacity rate" that had been given to the ORS in response to a data request made in this Docket. DEC did not offer Cherokee a 10-year dispatchable tolling Power Purchase Agreement ("PPA") in October of 2018. Instead, on October 31, 2018 DEC offered Cherokee a "must-take" PPA with a 5-year term, with energy-only rates (no compensation of capacity value), despite the fact that the existing PPA between DEC and Cherokee was a dispatchable tolling agreement with a 7.5-year term, and despite the fact that the parties had operated under a dispatchable arrangement beginning in 2001. (In 2001 DEC and Cherokee voluntarily modified the unworkable must-take agreement to make it dispatchable.)

C. **Relies on Transco Zone 5 gas costs.** While DEC has not provided comprehensive assumptions and inputs to its modeling for the "DEC Oct 2018" entry, we presume that DEC used Transco Zone 5 gas costs, as DEC titled its spreadsheet related to its calculation "Cherokee_SC DEC dispatchable pricing_(Sept 2018_**Z5**)_02.25.21 v0_ls(CONFIDENTIAL in Part)" (emphasis added). Yet, Cherokee's 2012 PPA had Transco Zone 4 as the reference gas price and DEC's own avoided cost modeling performed in Sept 2018 assigned Zone 4 prices to Cherokee. DEC's seemingly opportunistic use of Z5 prices biases Cherokee's costs upwards and this shows a lower avoided cost value for Cherokee.

Table 2 below compares the rates in question based on Cherokee's 2018 LEO.

Table 2: Comparison of Avoided Cost Rates Applicable to Cherokee 2018 LEO

		Cherokee		DEC
Avoided Cost Component	**Units**	**DEC October 2018 (Strunk Testimony)**	**DEC October 2018 (NERA Production Cost Modeling using DEC Avoided Costs)**	**DEC October 2018 (Late Filed Exhibit)**
Energy	$/kW-year	$43.00	$103.65	$34.97
Capacity	$/kW-year	$47.00	$15.10	$15.10
Total	**$/kW-year**	**$90.00**	**$118.75**	**$50.06**

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Table 2 above demonstrates that DEC's Oct 2018 tolling agreement rate is unjust and unreasonable and inconsistent with its own hourly avoided cost forecasts from September 2018. Table 2 also demonstrates that Mr. Strunk's $110/kW-year tolling agreement rate supported in testimony and at hearing is conservative, particularly because, after excluding start costs, Mr. Strunk's tolling agreement rate is $90/kW-year—significantly lower than the $119/kW-year tolling agreement rate based on DEC's modeling results.

DEC Sept 2020

The DEC Sept 2020 rate shown in the Late Filed Exhibit has the following problems.

D. **Ignores PURPA-mandated LEO.** DEC based its September 17, 2020 verbal offer on pricing information available as of September 2020, including a capacity need date taken from DEC's 2020 IRP. This approach incorrectly ignored the fact that Cherokee sent a letter of commitment to put capacity to DEC in September 2018 and has provided Duke with dispatchable energy for two decades.

E. **Misleadingly construed as a lower offer.** In a note in Late Filed Exhibit One, DEC suggests that its September 2020 offer is in fact more or less equivalent to its much lower February 2021 offer, due to a purported difference in start costs. Yet, DEC provides no evidence that the September 2020 offer (a verbal offer) had different start cost terms than its other offers. The Commission should view DEC's characterization of the September 2020 offer with skepticism. As noted at the hearing, the new tolling agreement rate will be substantially (*i.e.*, approximately 24%) below the existing tolling agreement rate.

F. **Verbal offer.** Duke provided Cherokee with a verbal offer, forcing all parties in this proceeding to rely on figures that are not easily verifiable by the Public Service Commission of South Carolina.

G. **Does not consider Cherokee counteroffer.** Cherokee countered with an offer ($87.45 /kW-year) in response to DEC's September 2020 offer. Cherokee was responding to Duke's consistent understatement of the Cherokee valuation. The counteroffer provides a more reasonable rate than the one presented by DEC, should the Commission elect to use September 2020 as the avoided cost valuation date.

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DEC Feb 2021

The DEC Feb 2021 pricing provided by Duke has the following problems.

H. **Relies on Transco Zone 5 gas costs.** Duke's February 2021 offer unreasonably relies on Transco Zone 5 gas costs for the Cherokee plant, a suspect assumption given the fact that Duke's previous contract with Cherokee specifies Transco Zone 4 as the basis for its pricing and the Sept 2018 modeling of Cherokee by DEC also relied on Transco Zone 4 gas costs. DEC's new modeling choice of Zone 5 costs—a discretionary choice obfuscated by Duke's complex Prosym modeling—results in an overstatement of Cherokee dispatch costs and an understatement of Cherokee energy value. This choice alone therefore unreasonably understates the value of the Cherokee plant. The effect of this seemingly opportunistic discretionary modeling choice is at least $11/kW-year based on Mr. Strunk's comparison of Z4 and Z5 gas prices in DEC's modeling for its February 2021 offer.

I. **Stale gas costs.** Duke's modeling also uses stale gas prices that artificially lower the avoided cost payments owed to Cherokee under PURPA. Duke uses gas prices from August of 2020, out of sync with both Cherokee's LEO date of September 2018 and with the purported time of Duke modeling (February 2021). As DEC is well aware, forward gas prices were significantly higher as of Cherokee's LEO date in September of 2018 than in August of 2020, leading to artificially low avoided costs as the base of DEC's February 2021 offer.

J. **Ignores PURPA mandated LEO.** DEC based its February 10, 2021 offer on pricing information available as of February 2021, including a capacity need date taken from DEC's 2020 IRP. This approach again incorrectly ignores the fact that Cherokee had put capacity to DEC as early as September 2018 and has provided Duke with dispatchable energy for years. Plus, as will be explained in Cherokee's Proposed Order, the February 2021 offer was submitted after the complaint was filed in this proceeding and should not be considered as it violates PURPA.

K. **Not reflective of current avoided costs.** Gas prices are now higher than those relied upon by DEC in establishing the February 2021 offer. If the Commission does not find that Cherokee established a LEO in 2018, then the avoided cost rates should be set on more current data than is reflected in the August 2020 gas curves used by DEC in valuing avoided costs for the February 2021 offer. A more current avoided cost forecast will be higher with current gas curves, all else equal.

Table 3 below presents applicable $/kW-year rates for Cherokee consistent with DEC's estimates of avoided costs and model input assumptions and compares them with various DEC offers. Specifically, the rates shown under the "NERA" rubric are consistent with DEC's September 2018 avoided cost modeling. In contrast, the $50.06/kW-year DEC Oct 2018 rate presented in DEC Late Filed Table 1 (not shown below) is inconsistent with that modeling, and the NERA correction of that modeling is the $118.75/kW-year rate shown below. For completeness, Table 3 also includes DEC's September 2020 and February 2021 offers, but we stress that these offers understate the applicable avoided cost rate for Cherokee and are not based on DEC's avoided costs as of the 2018 LEO. In addition, they embed certain assumptions that lead to avoided costs rates that are below the rate appropriate for Cherokee, even if the Commission finds a LEO had not been established in 2018. Please note that for the DEC February 2021 offer we correct one of DEC's inappropriate assumptions. Yet correction of all inappropriate assumptions in DEC's modeling that led to the Sept 2020 and Feb 2021 offers is not practicable. As such, the rates shown under the DEC rubric should be considered illustrative and not rates that fully reflect the then-applicable avoided cost forecasts.

Table 3: Avoided Cost Rates Using NERA and DEC Methodologies

		NERA		DEC	
Avoided Cost Component	**Units**	**DEC October 2018 (Strunk Testimony)**	**DEC October 2018 (NERA Production Cost Modeling)[4]**	**DEC September 2020**	**DEC February 2021[5]**
Energy	$/kW-year	$43.00[6]	$103.65	$39.01	$31.44
Capacity	$/kW-year	$47.00	$15.10	$35.68	$35.68
Total	**$/kW-year**	**$90.00**	**$118.75**	**$74.69**	**$67.12**

In summary, Cherokee leaves the Commission with the following conclusions:

[4] The energy value of $103.65/kW-year is the result of NERA's production cost modeling (based on DEC's September 2018 modeling of its avoided costs). The capacity value is the amount attributed by DEC to Cherokee in its modeling of the October 2018 offer. See the discussion above in the comments on DEC's October 2018 offer for details.

[5] DEC's February 2021 offer, plus the adjustment to reflect Transco Zone 4 pricing instead of Transco Zone 5 pricing (a $10.65/kW-year adjustment). Yet, this offer is not applicable because it was presented after the initiation of this proceeding.

[6] NERA's calculated energy payment was reduced by $20/kW-year, the approximate value of start costs as calculated by Duke Witness Freund. This allows NERA's figures to be presented on an apples-to-apples basis with the other offers.

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1. The applicable avoided cost rates for a 10-year dispatchable tolling agreement, consistent with Cherokee's 2018 LEO, is $118.75/kW-year—reflecting the value of dispatching Cherokee. Cherokee's pre-filed rate of $90.00/kW-year did not incorporate the value of dispatchability.

2. DEC understates the avoided cost rate applicable to Cherokee in a October 2018 tolling agreement. DEC's forecasted avoided costs from September 2018 undermine the purported values included in DEC Late Filed Table 1.

3. Even if the commission were to find that Cherokee did not establish a LEO in 2018, the appropriate avoided cost rates are higher than those provided in DEC Late Filed Table 1. DEC has made discretionary modeling adjustments that lead to unreasonably low avoided cost rates for Cherokee. Among these are: (a) using gas costs for Cherokee tied to Transco Z5 versus the lower Transco Z4 index; and (b) relying on stale gas costs from August 2020 that are lower than costs as of Cherokee's LEO date, February 2021, and lower than current gas prices as of the date of this filing.

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