

**COMMONWEALTH OF KENTUCKY  
BEFORE THE PUBLIC SERVICE COMMISSION**

**In the Matter of:**

<b>ELECTRONIC APPLICATION OF KENTUCKY</b>	)	
<b>POWER COMPANY FOR APPROVAL OF A</b>	)	
<b>CERTIFICATE OF PUBLIC CONVENIENCE</b>	)	
<b>AND NECESSITY FOR ENVIRONMENTAL</b>	)	<b>CASE NO.</b>
<b>PROJECT CONSTRUCTION AT THE</b>	)	<b>2021-00004</b>
<b>MITCHELL GENERATING STATION, AN</b>	)	
<b>AMENDED ENVIRONMENTAL COMPLIANCE</b>	)	
<b>PLAN, AND REVISED ENVIRONMENTAL</b>	)	
<b>SURCHARGE TARIFF SHEETS</b>	)	

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**RESPONSE BRIEF OF SIERRA CLUB**

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## I. INTRODUCTION

Sierra Club respectfully submits this Response Brief in opposition to Kentucky Power Company's ("KPC" or the "Company") request for a Certificate of Public Convenience and Necessity ("CPCN") to invest approximately \$49 million in capital projects that would be needed at KPC's co-owned Mitchell power plant in West Virginia to operate past the year 2028 under the Effluent Limitation Guidelines ("ELG").<sup>1</sup> Sierra Club takes no position on KPC's parallel request for a CPCN to invest \$18 million in capital projects needed to comply with the CCR Rule and enable operations in the nearer term. Sierra Club opposes KPC's proposed ELG investment because forgoing that investment and instead replacing Mitchell's power after 2028 is a lower-cost and lower-risk alternative—not to mention one that would create an opportunity for new jobs and tax revenues in the Commonwealth.

There are layers of vulnerabilities to KPC's claim that the option of investing in ELG compliance and operating the plant through the year 2040 would be cheaper than retiring and replacing Mitchell in 2028 and not spending the \$49 million, as detailed below. First, even under KPC's own modeling (which all intervenors critique as materially skewed), the Company's president describes the two alternatives as "similar" and "comparable," and confirms that the Company would have ample time between now and 2028 "to evaluate [] replacement options and present a recommended course of action in a later proceeding." In this vein, KPC tells us that the ELG investment and 2040 retirement option is only "slightly better" than the option of no

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<sup>1</sup> See Direct Testimony of Brett Mattison (Feb. 8, 2021) ("Mattison Direct") (identifying the cost of the capital projects to comply with ELG as well as the CCR Rule as \$67 million, and the cost of projects to comply only with the CCR Rule as \$18 million); see also, e.g., Initial Brief of Kentucky Power Company (June 15, 2021) ("Initial Brief") at 1 ("No party opposes the Company's proposed approximately \$18 million CCR Rule compliance investment, required for Mitchell to operate through 2028. Rather, intervenors challenge whether the Company also should make an approximately \$49 million ELG Rule compliance investment, which would allow Mitchell to continue to operate until 2040.").

investment and 2028 retirement—and that purported slight savings only lasts until the mid-late 2040s, at which point the 2028 retirement option returns to being lesser costs—and that all assumes that no functional carbon price manifests over the next two decades—and it *further* assumes that none of the looming long-term risks to coal will continue in line with present trends. In other words, even if one puts aside the perceived errors in KPC’s forecasts and calculations, and even if KPC then pulls an inside straight on future conditions supporting coal-fired generation through 2040, the Company admits that the benefit to ratepayers would be slight and short-lived.

Second, in contrast to KPC’s ambivalence about the relative advantageousness of the two alternatives at hand, both expert witnesses testifying on behalf of the intervenors in this case—the Attorney General (“AG”), Kentucky Industrial Utility Customers (“KIUC”), and Sierra Club—the assess the 2028 retirement option as clearly and significantly more economical than investing in ELG compliance and running Mitchell through 2040, even before weighing several harder-to-quantify risks and trends that will hamper coal-fired generation over the next two decades. Both experts identify flaws in KPC’s projections. Sierra Club’s expert also shares the results of independent modeling—utilizing a different industry-accepted model, with mostly the same inputs that KPC used but more realistic renewables forecasts—which rendered very stark preferences for the 2028 retirement alternative, with or without a carbon price. Meanwhile, the AG and KIUC’s expert took KPC’s modeling and calculations, identified several unrealistic inputs and errors therein, and showed that correcting for such flaws more than tips the scales in favor of 2028 retirement—again, even before folding in long-term risks.

Lastly, as alluded to, coal-fired generation faces multiple risks and trends that, though hard to quantify and insert precisely into a model, are undeniable and constitute serious threats to

coal's economic competitiveness and viability, especially over a two-decade time horizon. These include the probabilities of increasingly stringent, cost-internalizing regulations of traditional (non-carbon), which has happened every decade since the 1970s; new legislation, regulations, and/or executive orders that further enhance the relative attractiveness of clean energy and storage; strengthening corporate goals, investor/financer demands, and consumer preferences for reducing carbon footprints; and technological breakthroughs that reduce energy prices and favor non-coal generation—among others. The probability that these risks will manifest militates strongly in favor of now eschewing a long-term bet on a coal-fired Mitchell through 2040, which one can see plainly now is both a higher-cost and a higher-risk prospect than the alternative of replacing the plant after 2028.

If the Commission denies the ELG CPCN, KPC can assess, in the years leading up to 2028, the various options for replacing Mitchell, and can do so with the benefit of updated information about contemporaneous market prices and forecasts, environmental regulations, and the like. This path will avoid saddling KPC's ratepayers with the burden of a stranded asset following a dubious investment, and will enable the Company to take advantage of the newest, best information in the coming years for replacing Mitchell's power—possibly with a portfolio based in part or in whole in Kentucky

## **II. BACKGROUND & LEGAL STANDARD**

The record contains ample discussion of the regulatory developments, the condition of the Mitchell power plant, and other facts necessary for a sufficient familiarity with the context for KPC's requests. Accordingly, Sierra Club will not duplicate, here, the respective background sections in KPC's Initial Brief, its Application, or various witnesses' testimony.

Similarly, the Legal Standards section in KPC’s Initial Brief (at 18-20) largely suffices. For the sake of explicitness and completeness with respect to the CPCN standard, however, Sierra Club simply adds that the “[t]he fundamental principle of reasonable least-cost alternative is embedded in” the Commission’s analysis of “wasteful duplication.”<sup>2</sup>

**III. RETIRING MITCHELL IN 2028 IS CLEARLY THE LEAST-COST OPTION, EVEN BEFORE FACTORING IN THE SIGNIFICANT, HARDER-TO-QUANTIFY RISKS THAT A COAL-FIRED MITCHELL WOULD FACE THROUGH 2040.**

**A. KPC itself admits that the 2028 and 2040 retirement alternatives are “similar” and “comparable,” claiming at most a “slight” and temporary benefit from 2040 retirement—assuming no major risks manifest over the next two decades.**

Before getting to the errors in KPC’s modeling that skew its analysis in favor of a 2040 retirement, it is important at the threshold to underscore that, simply taking the Company’s testimony at face value, the ELG choice at hand is essentially a toss-up. KPC calls the two choices “similar” and “comparable,” saying one is “slightly better” than the other depending on whether a carbon price emerges. Specifically, in the words of KPC’s president, Witness Mattison, discussing the choice between spending money on ELG investments for a 2040 retirement, versus forgoing that spending and retiring and replacing Mitchell at the close of 2028, the result of the Company’s “analysis for each compliance alternative was similar, resulting in a less than 1% difference in the total NPV between the two cases.”<sup>3</sup> Accordingly, he says, “performing only the CCR compliance work at Mitchell [without ELG investments] and retiring

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<sup>2</sup> Case No. 2021-00079, *Electronic Application of Big Rivers Electric Corporation for a Certificate of Public Convenience and Necessity Authorizing the Conversion of the Green Station Units to Natural Gas-Fired Units and an Order Approving the Establishment of a Regulatory Asset*, Order (June 11, 2021) at 9; see also Case No. 2015-00152, *Application of Kentucky Power Company for: (1) A Certificate of Public Convenience & Necessity Authorizing the Company to Close the Big Sandy Plant Coal Ash Impoundment; & (2) for All Other Required Approvals & Relief*, Order (Jan. 27, 2016) at 4, 6.

<sup>3</sup> Mattison Direct at 5; Direct Testimony of Mark A. Becker (Feb. 8, 2021) (“Becker Direct”) at 5.

the plant in 2028 has comparable costs and benefits to making the additional ELG investment required to allow operation of the plant beyond 2028, taking into consideration the entire study period.”<sup>4</sup> Elaborating, he adds that, under KPC’s Base and Low Band (*i.e.*, low energy price) scenarios, the ELG investment / 2040 retirement alternative is “slightly better for customers,” whereas the CCR-only / 2028 retirement alternative instead “is slightly better” under the Carbon scenario.<sup>5</sup> What’s more, Witness Becker, the Company’s chief modeling expert, indicates that the supposed relative savings of the 2040 retirement case begin to diminish starting that year (when KPC would need to replace Mitchell), such that “[t]he cumulative impact of Case 2 (CCR

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<sup>4</sup> Mattison Direct at 5.

<sup>5</sup> *Id.* Notably, the co-owner of Mitchell, KPC’s sibling AEP-subsubsidiary Wheeling Power Company, included a similar characterization of the Mitchell ELG choice in the parallel proceeding at the West Virginia Public Service Commission, where Wheeling Power and other AEP subsidiary Appalachian Power Company are seeking CPCNs for Mitchell and two other power plants. In fact, Wheeling Power explained further that certain additional scenarios and analysis presented in that case favored 2028 retirement, and thus explicitly does not even affirmatively recommend that the West Virginia PSC approve ELG investment. West Virginia Public Service Commission, Case No. 20-1040-E-CN, *Application for the Issuance of a Certificate of Public Convenience and Necessity for Internal Modifications at Coal Fired Generating Plants Necessary to Comply with Federal Environmental Regulations*, Direct Testimony of Christian T. Beam (Jan. 7, 2021) at 7-8:

A. [...] The stand-alone NPV economic analysis for Mitchell, by contrast [to the two other plants at issue in that proceeding], produced a different result. Under that analysis, performing only the CCR compliance work at Mitchell and retiring the plant in 2028 has comparable costs and benefits to making the additional ELG investment required to allow operation of the plant beyond 2028. Under the stand-alone NPV scenarios including either a carbon tax or lower sustained power prices, the CCR only alternative is slightly better for customers. Since APCo and WPCo have common rates based upon the capacity resources of both Companies, Mr. Martin performed a further analysis in which he factored in WPCo’s ability to rely on the expected excess capacity of APCo upon the retirement of Mitchell. This further analysis demonstrated the economic advantage of undertaking only CCR compliance work at Mitchell. ... There are various strategies for the replacement of any capacity shortfall that cannot be met with APCo’s excess capacity and the years between 2020 and 2028 would allow the Companies time to evaluate them and present a recommended course of action in a later proceeding.

Q. ARE THE COMPANIES RECOMMENDING A PARTICULAR COURSE OF ACTION FOR ELG/CCR ENVIRONMENTAL COMPLIANCE WORK TO THE COMMISSION?

A. No. [...]

Only) versus Case 1 (CCR and ELG) flips from a net cost to a net savings to customers between 2046 and 2048, depending on the fundamentals case.”<sup>6</sup>

In other words, under KPC’s very best case for ELG investment—accepting all the Company’s inputs and modeling decisions, and assuming no effective carbon price for the next two decades—it is still barely advisable to make that investment; and even then, only when looking at savings through a certain period until the mid-late 2040s, at which point KPC says the calculus flips back to favoring the 2028 retirement option. KPC’s own case for ELGs is thus ambivalent, whereas the respective testimonies of the intervenors’ expert witnesses, discussed below, present rival analyses that starkly favor retiring Mitchell in 2028. And, to be clear, in weighing KPC’s ambivalent quantified case against Sierra Club’s and AG-KIUC’s respective unambivalent quantified cases, we have not even yet factored in several harder-to-quantify, yet obvious and daunting, risks and trends confronting coal-fired generation through 2040.

At the same time, KPC recognizes that “there are various strategies for the replacement of any capacity shortfall that would result from Mitchell’s retirement in 2028 if the Commission approved only the CCR investment,” and further recognizes that “[t]he years between 2021 and 2028 would allow the Company time to evaluate those replacement options and present a recommended course of action in a later proceeding.”<sup>7</sup> In other words, KPC acknowledges that it has ample time to choose a replacement portfolio. Importantly, going that route would enable KPC to update its analysis in the years leading up to 2028 with contemporaneous information about environmental regulations, market forecasts, tax credits, and other critical inputs, in determining the prudent course at such time.

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<sup>6</sup> Becker Direct at 8.

<sup>7</sup> Mattison Direct at 6.



What's clear at the present juncture, for purposes of ruling on KPC's instant CPCN request, is that the ELG investment option is *at best* barely beneficial, and at worst disastrous, relative to alternatives. Even in KPC's own telling, the option of committing ratepayers to a \$47 million investment and hoping that a coal-fired plant will operate economically through 2040 would be both scarcely and temporarily advantageous, even assuming everything goes the Company's way. By contrast, all other parties assess the ELG investment and a 2040 retirement as plainly and substantially more costly and more risky, as discussed below.

**B. In contrast to KPC's ambivalent results, all intervenors' expert analyses render stark preferences for 2028 retirement—even before factoring in unquantified risks.**

Whereas KPC presents the two alternatives as “similar” and “comparable,” the experts on behalf of the intervenors each assess the 2028 retirement option as plainly and significantly more economical, for overlapping reasons. And that's before one folds into the calculus the daunting risks and trends that a coal-fired Mitchell would face through 2040.

First, Witness Wilson, testifying on behalf of Sierra Club, indicates that a 2028 retirement and replacement would save ratepayers approximately \$194 million (NPV) under a base case with no carbon pricing, or \$341 million (NPV) with a carbon price, relative to investing in ELG capital projects and trying to operate Mitchell through 2040.<sup>8</sup> The most important takeaway from her analysis is not so much those specific savings projections per se (well-founded as they are); rather, the key point at this juncture is the stark degree to which that modeling prefers 2028 retirement over 2040 retirement, as Witness Wilson herself reflects.<sup>9</sup> That is, what matters fundamentally to the question of whether to approve the CPCN and bet now on a coal-fired

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<sup>8</sup> Direct Testimony of Rachel Wilson (May 12, 2021) (“Wilson Direct”) at 26; *see also id.* at 6, 35, 43.

<sup>9</sup> *Id.* at 26-27.

Mitchell through 2040, or instead to determine that some replacement portfolio will likely be a better deal for ratepayers, is that Witness Wilson's modeling identifies the 2040 retirement as a *drastically* higher-cost (not to mention higher-risk) option, whereas KPC's own results are relatively ambivalent.

Witness Wilson's analysis used the EnCompass model instead of the PLEXOS model used by KPC. These two models have different optimization and dispatch algorithms and can produce different results even when using the same inputs. EnCompass was released in 2016, and several major utilities have transitioned to it since that time (*e.g.*, Duke, Xcel, Minnesota Power, Otter Tail, and Public Service Company of New Mexico, among others).<sup>10</sup> Witness Wilson adopted most of the same modeling inputs that the Company used, namely KPC's assumptions for peak and annual energy, load shape, reserve margin, unit retirements, commodity prices (coal, gas, carbon dioxide, and energy market prices), and compliance costs for the CCR and ELG rules, *inter alia*.<sup>11</sup> However, she included more realistic price forecasts for solar, wind, and storage in modeling replacement alternatives (which Witness Kollen also suggests, as noted below). Witness Wilson learned that KPC used, for modeling those resources, figures from the Energy Information Administration's ("EIA") 2020 Annual Energy Outlook ("AEO"). EIA did not publish annual overnight capital cost projections for forward-looking years in that 2020 version of the AEO, but EIA did publish those values in its AEO 2021. Therefore, she was able to compare KPC's inputs to that more recent version, and saw that KPC's assumed values using the 2020 AEO were much higher than the 2021 AEO. For instance, whereas KPC's assumed PPA price was \$57.58/MWh for 2026, the levelized cost of energy

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<sup>10</sup> *Id.* at 15-16, 26.

<sup>11</sup> *Id.* at 17.

identified in AEO 2021 for solar in 2026 is only \$33.68/MWh. Witness Wilson surmised that KPC's assumptions regarding both the capital and fixed O&M component costs for solar were higher than those assumed by the 2021 AEO, based on financial assumptions in KPC's workpapers, in which the Company appears to add to the costs of their replacement resources. Witness Wilson had not previously seen such a manner of calculation in her considerable past experience in similar dockets.<sup>12</sup> Further, Witness Wilson also noted, as another indicator of the faultiness of KPC's renewables forecasts, that the Company's projections of future solar and wind prices are considerably higher than the recently prevailing prices (\$/MWh) in PJM.<sup>13</sup>

Instead of using KPC's 2020 AEO inputs and O&M adjustments, Witness Wilson instead used industry standard cost assumptions from the National Renewable Laboratory's ("NREL") 2020 Advanced Technology Baseline ("ATB") for utility-scale solar, onshore wind, and battery storage resources—specifically, the 2020 ATB's "Mid" set of forecasts. The ATB is a respected, widely used source of renewable and storage pricing data that incorporates several different sources, including analyses from both NREL and Oak Ridge National Laboratory, data from EIA, and a variety of other published reports, whereas the EIA-AEO's input costs are based on a single source: a report from Sargent & Lundy published in December 2019. The ATB provides annual estimates of fixed O&M, beyond forecasts of capital costs, unlike the AEO. Multiple major utilities have utilized ATB inputs in their recent planning, and the ATB's "Mid" forecasts have even been criticized by some as too conservative (*i.e.*, assuming too low of renewables costs / too slow a pace of technological innovation).<sup>14</sup>

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<sup>12</sup> *Id.* at 18-19

<sup>13</sup> *Id.* at 19.

<sup>14</sup> *Id.* at 19, 22-23, 36.

Using the EnCompass model and incorporating ABT’s lower price forecasts for renewables and storage—forecasts much more consistent with recently prevailing market prices—Witness Wilson’s analysis shows great savings posed by a 2028 retirement and replacement of Mitchell, relative to ELG investment and a 2040 retirement. This is so in both the Base case (\$194 million NPV savings) and the Carbon case (\$341 million NPV savings). The EnCompass model chose to replace Mitchell largely with solar, along with some imports from PJM in nearer term after 2028, with imports diminishing to nil by 2040, in the Base case.<sup>15</sup> To be clear, EnCompass accounts for the need to satisfy KPC’s capacity reserve margin, acquiring enough renewables and imports to meet that threshold.<sup>16</sup> Sierra Club notes that Witness Wilson restricted her model from selecting new built gas as an option to replace for Mitchell’s capacity, though that could of course be assessed. The salient point at this juncture is that Witness Wilson’s analysis (using industry-accepted modeling and inputs) shows that at least one viable alternative (here, a combination of renewables plus PJM imports) is vastly more cost-effective than keeping Mitchell coal-fired through 2040.<sup>17</sup> Therefore, KPC’s request for a CPCN for ELG investment should be denied now regardless of what specific replacement portfolio KPC may ultimately select in the lead-up to 2028. The actual replacement portfolio can be planned and approved in the coming years, based on updated inputs about market forecasts, prevailing

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<sup>15</sup> *Id.* at 29-32.

<sup>16</sup> *Id.* at 34.

<sup>17</sup> Witness Becker’s critique of Witness Wilson’s testimony for supposedly stating that gas replacement of Mitchell “should not be allowed,” Rebuttal Testimony of Mark Becker (June 9, 2021) (“Becker Rebuttal”) at 5, is thus factually incorrect. Witness Wilson never purported to state that new gas could not be *allowed*, as a legal matter or otherwise; she simply ran a model that did not look to new gas, and presented the results that renewables plus imports would be vastly more cost-effective option than investing in ELG compliance and planning on a coal-fired Mitchell operating through 2040. Whether replacement would be gas and/or renewables would be subject of new modeling and approval process in the years between now and 2028. Either way, with that critique, it bears noting that Witness Becker is not arguing that coal-fired Mitchell is the best option—which is the only question fundamentally at hand in this proceeding.

regulations and legislation, and the like. Again, the key point for present purposes is that EnCompass shows a very strong economic preference against the case of doubling down on coal-fired units through 2040, even without factoring in the serious unquantified risks to coal over the next two decades that are discussed below.

Meanwhile, Witness Kollen, on behalf of the AG and KIUC jointly, likewise testifies that a 2028 retirement of Mitchell is clearly the least-cost option—yet again, even before one folds the serious unquantified long-term risks to coal into the calculus, and even independent of the possibility of securitization that he identifies as making the decision all the clearer.<sup>18</sup> For one, Witness Kollen points out that KPC’s solar price forecasts were “excessive” and “unreasonable” (consistent with Witness Wilson’s critiques in this vein), noting that the Company unjustifiably failed to consider solar power purchase agreements (“PPAs”), and that other major utilities companies in Kentucky have recently entered into long-term solar contracts at around *half* the cost of what KPC’s model assumed.<sup>19</sup> In addition, Witness Kollen identifies several additional errors in the Company’s analysis, such as inaccurate modeling of investment and production tax credits,<sup>20</sup> and a failure to account for the “abandonment loss” tax deduction available to the Company in the event of a 2028 retirement.<sup>21</sup> Those errors are individually significant, as

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<sup>18</sup> Direct Testimony of Lane Kollen (May 12, 2021) (“Kollen Direct”) at 6, 23-27. Sierra Club supports securitization in principle and would join KPC and other stakeholders in pursuing it. *See id.* at 6.

<sup>19</sup> *Id.* at 14-16; *see id.* at 15 (“The actual pricing for solar PPAs today is half the cost of the Company’s forecast levelized cost of \$55/MWH for owned solar resources reflected in Cases 1 and 2 through 2050. Big Rivers recently entered into several 20-year energy and capacity solar PPAs with levelized costs ranging from \$27.30 to \$29.60/MWH. KU and LG&E recently entered into a 20-year solar PPA with levelized energy and capacity costs of \$27.82/MWH.” (footnotes omitted)).

<sup>20</sup> *Id.* at 20-23.

<sup>21</sup> *Id.* at 19-20 (noting that “[t]he Company simply ignored the tax benefits resulting from [2028 retirement],” failing to recognize that “the remaining tax basis is deductible as an ‘abandonment loss’ for income tax purposes when the assets are retired, thus effectively accelerating the tax benefits reflected in accumulated deferred income taxes (‘ADIT’) if the units are retired in 2028 instead of in 2040”); Corrected Supplemental Direct Testimony of Lane Kollen (June 15, 2021) (“Kollen Corr. Supp. Direct”) at 1-5.

detailed in Witness Kollen's testimony, and collectively eclipse the purported savings of a 2040 retirement in KPC's Base scenario.<sup>22</sup> Indeed, simply correcting for KPC's failure to account for the abandonment loss deduction alone would be enough to eliminate KPC's stated \$27 million NPV advantage of a 2040 retirement in the Company's Base case (let alone Low Band or Carbon cases), as that one error amounts to \$28.8 million NPV in 2028 dollars.<sup>23</sup> KPC conspicuously declines to address in its Initial Brief this major issue raised in the testimony, and thus has arguably waived its ability to contest this point. Even absent waiver, however, KPC has no evidentiary basis to deny the fact and importance of this error in its analysis, given that the Company's rebuttal testimony failed to address the previously raised abandonment loss issue.

#### **IV. SERIOUS UNQUANTIFIED RISKS TO COAL GENERATION OVER THE NEXT TWO DECADES MILITATE AGAINST BETTING THAT MITCHELL CAN RUN ECONOMICALLY THROUGH 2040, TIPPING THE SCALES ALL THE MORE TOWARDS A 2028 RETIREMENT.**

The weight of the quantified expert analysis in this case, discussed above, shows a clear and substantial benefit to ratepayers by forgoing the ELG investments and replacing Mitchell's capacity after 2028, rather than attempting to keep it running economically through 2040. However, the prudent choice becomes all the clearer when one factors in, on top of that quantified analysis, several undeniably real and significant, but harder-to-quantify, risks that a coal-fired Mitchell would face over the next two decades, such as the likelihood of more stringent environmental regulations, increasing corporate and investor preference for clean energy, and other such trends and risks.

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<sup>22</sup> See, e.g., Becker Direct at 4.

<sup>23</sup> Kollen Corr. Supp. Direct at 4.

Looking at a 2040 time horizon, the writing is on the wall for the economic fate of coal-fired generation versus its competition from cheaper energy and capacity resources. For some high-level context, 48 GW of coal-fired generation in the United States has been retired in last five years due to economic non-competitiveness, and many more gigawatts have been announced for retirement or soon will be.<sup>24</sup> This is so in part because the levelized cost of energy of solar power fell 90 percent from 2009-2020, and the cost of batteries (capacity) fell 76 percent between 2012 and the first half of 2019.<sup>25</sup> Proposed legislation on infrastructure, taxes, and otherwise could boost the economics of renewables and storage all the more. Meanwhile, coal is poised to feel more economic pressure from regulations that effectively force companies to internalize more of the costs of their impacts to public health and the environment. The U.S. Environmental Protection Agency (“EPA”) is currently in the process of reconsidering rulemakings on greenhouse gas regulation as well as traditional pollutants such as particulate matter (PM 2.5), by way of example, which will tend to make coal generation even less economical than at present.<sup>26</sup> This trend of regulatory tightening and increased cost-internalization has been a one-way street since the nation’s bedrock federal environmental statutes emerged half a century ago, and there is no reason to believe that the trend will stop (and every reason to believe it will continue or accelerate). Over the next two decades, strong concerns about climate change, public health, and environmental justice are poised only to grow.

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<sup>24</sup> Wilson Direct at 36-37.

<sup>25</sup> *Id.* at 37-38.

<sup>26</sup> *Id.* at 41; Kollen Direct at 5-6; EPA Press Release (June 10, 2021), *EPA to Reexamine Health Standards for Harmful Soot that Previous Administration Left Unchanged* (“Today, EPA announced that it will reconsider the previous administration’s decision to retain the particulate matter (PM) National Ambient Air Quality Standards (NAAQS), which were last strengthened in 2012. ... EPA expects to issue a proposed rulemaking in Summer 2022 and a final rule in Spring 2023...”), available at <https://www.epa.gov/newsreleases/epa-reexamine-health-standards-harmful-soot-previous-administration-left-unchanged>.

Concurrently, corporate leaders—including KPC’s parent, AEP—have been announcing increasingly stringent goals to cut greenhouse gas emissions in the coming years, just as institutional investors and finance firms are growing more reticent to entrench their involvement with coal-heavy companies.<sup>27</sup> Utilities throughout the country, including in the Commonwealth, are increasingly recognizing that these trends will only continue and that their existing coal plants will not be economically viable through the 2030s (Sierra Club would argue earlier), even without needing to add new capital costs for ELG compliance like KPC.<sup>28</sup>

As these trends continue and risks to coal manifest over the next two decades, they will overwhelm the slight, attenuated, and ephemeral benefit that KPC claims, taking that at face value for the moment (though Witnesses Wilson and Kollen demonstrate that it is actually non-existent). The Company’s customers would then be stuck with the hefty price tag of a stranded asset. There is simply no serious doubt that, over the next two decades, EPA will issue more stringent regulations that will require major new capital upgrades at coal-fired power plants, and/or will make them substantially costlier to operate as an ongoing matter, particularly relative to alternatives. Further, an effective price on carbon, whether legislative or regulatory, seems likely to arise somewhere in that timeframe, as the nation becomes increasingly concerned with

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<sup>27</sup> *E.g.*, Wilson Direct at 42.

<sup>28</sup> *See, e.g.*, Case No. 2021-00245, *Electronic 2021 Integrated Resource Plan of Duke Energy Kentucky, Inc.*, IRP (Public) at 4-5, 142 (June 21, 2021) (proposing to move the retirement date of its already ELG-compliant East Bend power plant from 2041 to 2035; reflecting: “These changes – earlier retirement of coal generation and increasing amounts of cleaner energy sources – are primarily driven by the economic improvement of renewable energy compared to other generation sources, the likelihood of federal clean energy legislation and other environmental regulation, uncertainty surrounding the long-term availability of low-cost fuel and reagent commodities, and increasing customer preference for renewable energy. The relevance of these factors will not diminish over time and, instead, is likely to become more profound. And as a prudent operator with an obligation to adequately and reliably serve its customers, both today and for decades to come, Duke Energy Kentucky must anticipate the potential for changes in environmental policy and the marketplace that will require further revision to its resource planning.” (emphasis added)).



the ravages of climate change. Or, perhaps Mitchell's capacity factor will prove lower than KPC projects, consistent with history.<sup>29</sup> And perhaps AEP—if it remains the Company's corporate parent (Sierra Club notes AEP's recent statements of interest in selling KPC, which carries its own set of uncertainties, as the AG-KIUC discuss)—will apply pressure to retire Mitchell before 2040 as a means of satisfying its climate pledges, in the face of customer, investor, and financier demands. When any of these things happen, the purported advantage of 2040 retirement with KPC's Base case (slight, ephemeral, and unsupported as it is) evaporates, ratepayers get stuck the prospect of paying for an uneconomical, stranded asset.

These palpable risks are hard to quantify, but they are undeniably real and significant. They must be seriously factored into the decisional calculus of whether to sink dozens of millions of dollars into to an investment that could only make (at best slight, fleeting) sense if Mitchell operates economically through 2040. At the end of the day, these considerations are more than enough to tip the scales to a 2028 retirement—if the scales needed any further tipping after weighing the expert testimonies about more readily quantifiable cost projections.

## **V. KPC'S VARIOUS COUNTERARGUMENTS ARE UNAVAILING.**

KPC's responses in its rebuttal testimony and Initial Brief to the intervenors' arguments, seeking to rehabilitate its case for ELG investment, are misleading, unfounded, or immaterial.

One main theme among the Company's responses is an effort to cast the ELG investment as a positive opportunity to delay choices and preserve options.<sup>30</sup> This attempted reframing puts

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<sup>29</sup> Wilson Direct at 13-15.

<sup>30</sup> See, e.g., Initial Brief at 1 (“That relatively small ELG Rule compliance investment would preserve Kentucky Power's future resource options, including delaying hundreds of millions or billions of dollars in replacement investments, and would provide the Company time to evaluate developments in matters which are the subject of significant current uncertainty, such as the cost of replacement resources, PJM capacity market rules, and carbon legislation.”).

things exactly backwards: KPC is actually asking for permission *now* to *lock in* its ratepayers to spending dozens of millions of dollars, predicated on a two-decade bet *now* that a coal-fired power plant will operate *through 2040, taking away* the Company's ability to reassess options in the years leading up to 2028. It also bears noting that KPC's emphasis on supposedly delaying choice through 2040 implicitly supposes that no interim environmental regulations will arise and require major new capital investments—a very fragile and critical assumption to say the least. Of course, it is true that, even if it were to sink the money into ELG compliance at Mitchell, KPC could at any time up through 2040 reevaluate things and decide that the coal-fired actually isn't looking viable and, based on a forward-looking analysis at that time, should be replaced with a more economical substitute portfolio. But that would hardly be a consolation to the Company's customers, who would then be stuck with paying off an undepreciated stranded asset, the costs of which KPC's shareholders surely would not simply agree to absorb. The correct course is instead to recognize that, at this time, a pricey investment and bet on coal being competitive through 2040 appears neither least-cost nor least-risk (nor otherwise in the interests of ratepayers or the Commonwealth), and at the same time to preserve the Company's options to replace Mitchell's power based on a fresh analysis of updated information in the coming years.

Another recurring tactic that KPC employs is to try to walk back its initial concession that the two alternatives are, in KPC's own assessment, "similar" and "comparable," with only a "slight benefit" either way, depending on one's carbon assumption. KPC attempts this by referring to its projections of savings on a *nominal basis*, rather than NPV as it typically had been and as is the norm. That switch enables the Company to proclaim that ELG investment would save \$260 million to \$340 million (nominal basis), to compare that in the same breath to the \$49 million investment for which they presently seek approval, and then to deny that their

own results showed that the decision is a close call—never mind that the Company’s own president stated exactly that.<sup>31</sup> Obviously, that is an inappropriate apples-to-oranges comparison, and KPC cannot retreat from the fact that their own modeling (and direct testimony) portray the decision as essentially a toss-up, even under KPC’s best-case scenario for coal (putting aside the skewed nature of the Company’s analysis).

KPC’s other counterarguments are likewise unavailing. For one, KPC criticizes Witness Wilson for not including a Low Band scenario in her independent modeling, and instead only including a Base case and Carbon scenarios (both using KPC’s inputs on energy market and carbon prices, *inter alia*).<sup>32</sup> That fact is unremarkable and immaterial. Base and Carbon represented the upper and lower bounds, respectively, of KPC’s spectrum of cost projections, so it was sensible to repurpose only those endpoints in independent modeling. Moreover, Witness Wilson’s results showed such drastic relative savings—in the hundreds of millions savings—posed by a 2028 retirement with either Base or Carbon, that there is no reason to suppose that a Low Band scenario (which was KPC’s middle cost scenario) would have rendered a materially different result, other than likewise showing a stark preference for 2028 retirement.

KPC also assails the mostly solar replacement portfolio chosen by Witness Wilson’s EnCompass model as practically unrealistic. KPC’s attacks in this vein largely presuppose that the Company would need to build and own all the contemplated solar replacement capacity.<sup>33</sup> But Witness Wilson’s testimony allows for the possibility of acquiring the solar at least in part through PPAs, and the Company unjustifiably failed to consider that option (which, as Witness Kollen points out, is one flaw in the Company’s modeling). KPC includes various other critiques

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<sup>31</sup> *E.g.*, Becker Rebuttal at 12-13; Initial Brief at 22-23.

<sup>32</sup> Becker Rebuttal at 3.

<sup>33</sup> *E.g.*, *id.* at 4; Initial Brief at 27-28.

of Witness Wilson’s analysis, but they are either baseless or do not materially impact the results of her modeling, namely that forgoing ELG investment and replacing Mitchell in 2028 is plainly the least-cost, least-risk option—whatever the replacement portfolio may turn out to be based on fresh analysis in coming years. And that, after all, is the fundamental question in this case.<sup>34</sup>

KPC’s various critiques of Witness Kollen’s testimony are also unpersuasive, but Sierra Club will leave that discussion for the AG-KIUC.

## **VI. CONCLUSION**

For the reasons discussed above, and as otherwise supported by the record, Sierra Club respectfully requests that the Commission deny KPC’s request for a CPCN to invest in ELG capital projects. The plainly least-cost, least-risk, and otherwise pro-Kentucky<sup>35</sup> alternative is for KPC to retire Mitchell in 2028, and chose a replacement portfolio in the coming years based on a contemporaneous assessment of updated information. Sierra Club takes no position, meanwhile, on KPC’s request for a CPCN related to CCR projects.

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<sup>34</sup> Sierra Club would note that, although Witness Wilson’s credibility needs no external support in light of her considerable experience, the Staff of the Virginia Corporation Commission recently affirmed the credibility of her analogous testimony in parallel proceedings in that venue. Commonwealth of Virginia State Corporation Commission, Case No. PUR-2020-00258, Prefiled Testimony of Earnest J. White, Division of Public Utility Regulation (May 7, 2021), at 10-15 (“I believe that Sierra Club witness Wilson identifies two potential areas of concern in the Company’s economic analysis.... Sierra Club witness Wilson present[s] thorough analyses of the potential economic benefits of the compliance options necessary to continue to operate the Plants.”).

<sup>35</sup> Sierra Club would underscore that replacing Mitchell’s West Virginia-based power in 2028 with Kentucky-based energy solutions—including renewable power and storage options—could create jobs and increase tax revenues within the Commonwealth. Sierra Club also acknowledges, in this vein, that Mitchell apparently employs zero Kentucky-based workers, and that less than one percent of Mitchell’s coal fuel comes from Kentucky. Kollen Direct at 9-10.

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Respectfully submitted,



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### **CERTIFICATE OF SERVICE**

This is to certify that the foregoing copy of this RESPONSE BRIEF OF SIERRA CLUB in this action is being electronically transmitted to the Commission on June 24, 2021; and that there are currently no parties that the Commission has excused from participation by electronic means in this proceeding. Per the Commission's general standing Order issued in Case No. 2020-00085 on March 16, 2020, this filing will not be mailed in paper medium to the Commission.



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JOE F. CHILDERS