

STATE OF IOWA
BEFORE THE IOWA UTILITIES BOARD

IN RE:)
)
) DOCKET NO. RPU-2022-0001
MIDAMERICAN ENERGY COMPANY)
)
)
)

ENVIRONMENTAL INTERVENORS' COMMENTS ON PROPOSED SETTLEMENT

December 16, 2022

TABLE OF CONTENTS

I. Introduction..... 4

II. Legal standard..... 7

III. The record does not support approval of the Wind PRIME portfolio as a whole because MidAmerican failed to adequately demonstrate that the proposed facilities are reasonable when compared to other feasible alternatives. 8

 A. MidAmerican’s use of the “nine-factor analysis” only provides subjective, qualitative support for the project and did not adequately compare Wind PRIME to other feasible alternatives. 10

 B. MidAmerican failed to re-assess whether Wind PRIME is the right set of resource additions after IRA passed, despite the significant impact of the IRA on the comparative economics of new resources. 13

 C. MidAmerican never quantitatively analyzed costs and benefits of alternatives. 15

 D. MidAmerican’s contention that Wind PRIME can be added at “no net cost” to customers does not excuse it from the requirement of comparing the project to feasible alternatives. 17

 E. MidAmerican’s analysis overlooks the \$ [REDACTED] to \$3 billion in costs associated with maintaining its coal plants through their planned lives..... 19

IV. An analysis of feasible alternatives shows that a more balanced portfolio of battery storage, solar, and wind that reduces reliance on its aging and costly coal plants is in the public interest..... 21

 A. Utilities should use capacity resource expansion modeling to demonstrate that a resource proposal is reasonable compared to other feasible alternatives under 476.53. 22

 B. Capacity expansion modeling that includes the IRA tax incentives shows that MidAmerican should be evaluating significant additions of battery storage and solar, rather than heavily weighting its proposal towards additional wind. 24

 Overview of Modeling Process 25

 Summary of Modeling Results 27

 Summary of cost savings 30

 Low load sensitivity..... 31

 EI Preferred Plan Better Serves to Diversify MidAmerican’s System..... 32

 The EI Preferred Plan Transitions Away from Inflexible Coal Generation 33

 EI Preferred Plan Better Serves to Meet Customer Demand for Carbon-Free Electricity 34

 EI Preferred Plan also better meets MidAmerican’s nine-factor test 36

 EI Preferred Plan Ensures System Needs Are Met..... 39

 C. EI Expert Recommendations 40

V. The record as a whole does not support the reasonableness of the settlement and the settlement should not be approved without modification..... 41

A. Modifications to the size of the approved project..... 42

B. Modifications to the resource evaluation study portion of the “Size Cap” 43

C. Modifications to revenue sharing principle 46

VI. Conclusion 47

Environmental Law & Policy Center (ELPC), Iowa Environmental Council (IEC), and Sierra Club (collectively, Environmental Intervenors) submit the following comments on the Stipulation and Agreement filed by MidAmerican Energy Company (MidAmerican), the Office of Consumer Advocate (OCA), and the Iowa Business Energy Coalition (IBEC) on December 2, 2022.

I. Introduction

On January 19, 2022, MidAmerican filed a proposal for advanced ratemaking principles that would authorize it to own and recover a rate of return on 2,042 megawatts (MW) of wind generation and 50 MW of solar, as well as an investigatory study into certain technologies (“Wind PRIME portfolio” or “project”). MidAmerican asserts that the Wind PRIME project is needed due to growing customer demand for carbon-free electricity, and that its development will help attract new customers to the state. It further asserts that the project can be built at no net cost to customers.

Environmental Intervenors strongly support the continued growth of the wind industry in Iowa, and we are pleased to hear from MidAmerican that the wind projects will be built regardless of whether MidAmerican owns them. The question before the Board is not whether these projects are good for Iowa, but whether MidAmerican has met its evidentiary burden that it should have a right to the proposed advanced ratemaking principles.

The advance ratemaking statute requires the utility to show that it has “considered other sources for long-term electric supply and that the facility or lease is reasonable when compared to other feasible alternative sources of supply.” IOWA CODE § 476.53(3)(c)(2). Nowhere in its application, nor in its updated testimony, does MidAmerican show that Wind PRIME is reasonable set of additions in comparison to other feasible alternatives. Instead, MidAmerican narrowly focuses on the short-term revenues it expects the Wind PRIME project to deliver. As a rate-

regulated utility requesting advance ratemaking, MidAmerican has an obligation to ask whether resource additions will enable it to deliver low cost, reliable system for ratepayers over the long term compared to other feasible alternatives, rather than whether it will offer short-term revenues. MidAmerican has not done so.

Environmental Intervenors also strongly support the goal of delivering reliable and affordable carbon-free electricity to customers. As MidAmerican acknowledges and as recognized in the advance ratemaking principles statute, section 476.53, Iowa’s historic commitment to clean energy has been and should continue to be a powerful economic engine in our state. However, MidAmerican did not examine whether alternative sets of resource additions would better facilitate this important goal. Fundamentally, MidAmerican has created a “wind-coal” system in which it is able to focus on maximizing wind energy revenues because it can rely on its significant fleet of carbon-intensive coal plants to meet its capacity needs. Nowhere in its application does MidAmerican evaluate whether other feasible portfolios of clean energy – such as more solar and battery storage, which complement MidAmerican’s existing wind fleet – would be lower in cost and would better facilitate achieving true carbon-free electricity. As our expert plainly states, “To ignore this fossil generation and herald the arrival of a historic, “100 percent-renewable” milestone is an obvious, deliberate misrepresentation of the fact that MidAmerican is continuing to rely on its coal capacity for a substantial portion of its customers’ capacity and energy needs.” (Glick Dir. at 40.)

MidAmerican also missed the opportunity in its supplemental testimony to evaluate whether it should change its proposed resource mix in light of the Inflation Reduction Act (“IRA”). The IRA significantly improved the economics of solar and battery storage, and yet MidAmerican made no effort to assess whether it should shift its proposal towards these resources.

The settlement between MidAmerican, OCA, and IBEC does not address the fundamental flaw with MidAmerican's application. The settlement would have the Board approve the size cap and cost cap of the entire Wind PRIME project without a record that ensures Wind PRIME is reasonable in comparison to feasible alternatives. The settlement includes a Resource Evaluation Study to be conducted within the next 24 months, but that study would only commence *after* MidAmerican moves forward with the \$4 billion Wind PRIME investment. A comparison of feasible alternatives is necessary to ensure a \$4 billion investment is reasonable, and it is not in the public interest to push that comparison to after the investment is made and locked in for customers.

Environmental Intervenors engaged independent experts Synapse Energy Economics and Energy Futures Group to conduct the kind of analysis that MidAmerican should have done in the first place: resource capacity expansion modeling that assessed whether there is an alternative feasible set of additions to Wind PRIME that offers greater benefits to customers, taking into account the Inflation Reduction Act. This analysis shows that a more balanced portfolio that contains battery storage, more solar, and a third of the Wind PRIME wind allows for the phased transition away from coal plants and offers a more reasonable, lower cost, and lower emissions plan than the Company's plan to build Wind PRIME and continue relying on its existing coal plants for decades.

Environmental Intervenors object to the settlement because of the deficiencies in MidAmerican's application and for the reasons discussed further below, a settlement in which MidAmerican may proceed with owning and recovering a rate of return on the entire Wind PRIME project is not "reasonable in light of the whole record, consistent with law, and in the public interest." 199 IOWA ADMIN. R. § 7.18. In order to bring the settlement into consistency with the law and the public interest, we respectfully request that the Board modify the settlement as

proposed in Attachment A to these comments. If the Board does not modify the settlement, the Board should reject the settlement as inconsistent with the law, unsupported by the record, and not in the public interest.

II. Legal standard

The Board's administrative rules provide that "[t]he board . . . will not approve settlements, whether contested or uncontested, unless the settlement is reasonable in light of the whole record, consistent with law, and in the public interest." 199 Iowa Administrative Rules § 7.18.

State law encourages development of electric power generating facilities to provide reliable electric service and to provide economic benefits. IOWA CODE § 476.53. The Code also authorizes the Board to approve advance ratemaking principles after making two findings: (1) the rate-regulated public utility has in effect a board-approved energy efficiency plan as required under section 476.6, subsection 15; and (2) the rate-regulated public utility has demonstrated to the board that the public utility has considered other sources for long-term electric supply and that the facility or lease is reasonable when compared to other feasible alternative sources of supply. IOWA CODE § 476.53(3)(c).

The comparison to other feasible alternatives is a critical finding. It requires consideration of alternative generation sources, alternative ownership and procurement options, and consideration of changing market factors that may impact the project, including the Inflation Reduction Act. RPU-2021-0003, Final Order, at 14-15 (filed Nov. 9, 2022). The Board has further held that "[a]ny comparison of feasible alternative sources of supply must consider not only the type of generating asset for which advance ratemaking principles are requested, but also the cost profile and manner in which the utility receives the desired energy and capacity." *Id.* at 8. In addition, the analysis of alternatives must be thorough: "not being able to compare those benefits

to potential cost savings to other generation resources or PPAs either with or without a later ownership option, does not satisfy the requirements of Iowa Code § 476.53(3)(c)(2).” *Id.* at 7. The Board determined in a recent case that the utility “should have included an analysis of other generation resources or PPAs” to address capacity needs. *Id.* at 10. One method to do so is to issue a request for proposals to determine the range of alternative sources of electric supply. *Id.*

The Board found that the Inflation Reduction Act (adopted in August 2022) may cause significant changes in energy markets, and utilities must account for those shifts in analyzing alternatives. *Id.* at 11. The IRA may also introduce “other potential sources of electric supply” for utilities to consider, and in light of the IRA, the Board “needs full consideration of alternative sources of supply.” *Id.* at 14.

In briefing to the Iowa Supreme Court, MidAmerican acknowledged that the legislature explicitly required utilities to consider alternatives in the advanced ratemaking statute:

[W]hen the legislature wants to establish a process where alternatives to the applicants’ filing are to be considered, it has shown that it knows how to do so explicitly. In Iowa Code § 476.53, pertaining to advance ratemaking principles for new generating facilities, the legislature expressly requires utilities to have ‘demonstrated to the board that the public utility has considered other sources for long-term electric supply and that the facility is reasonable when compared to other feasible alternative sources of supply.’ Iowa code § 476.53(3)(c)(2).

ELPC et al. v. Iowa Utilities Bd., No. 22-0385, Final Br. of Intervenor-Appellee MidAmerican at 20 (filed Aug. 15, 2022).

III. The record does not support approval of the Wind PRIME portfolio as a whole because MidAmerican failed to adequately demonstrate that the proposed facilities are reasonable when compared to other feasible alternatives.

At the most fundamental level, the settlement is not reasonable in light of the whole record or consistent with the law because MidAmerican did not compare its proposed resource additions to other feasible sources of long-term supply as required by Iowa Code section 476.53(3)(c)(2).

Instead, MidAmerican justifies the project based on its forecasted revenues and on the assertion that the \$4 billion proposal can occur at “no net cost” to customers. (Specketer Rebuttal at 3.) This myopic approach is an imprudent way for a monopoly rate-regulated utility to evaluate new resource additions, and does not meet the legal standard set out in section 476.53, which requires a comparison to feasible alternatives. As a result, the record does not support approval of the settlement as it stands.

Despite the hundreds of pages of testimony in support of its application, the record makes clear that MidAmerican only considered a single resource portfolio and did not compare Wind PRIME to other feasible alternative sources of supply. See Glick Dir. at 34.¹ The uncontested evidence is that MidAmerican developed its proposal simply by “assessing the quantity of solar PV and wind that was currently far enough along in the interconnection queue to be brought online in time to capture the investment tax credit (ITC) and production tax credit (PTC).” (Glick Dir. at 20 (citing Glick Direct Exhibit 7, MidAmerican Response to OCA Data Request 14); see also Glick Dir. at 32.) MidAmerican did not issue an all-source request for proposals (RFP) or request for information (RFI) to test the market and determine whether other projects might be available. (Glick Direct Ex. 11). As discussed in greater detail below, MidAmerican also did not conduct any quantitative resource expansion modeling, as is standard in the industry. *Id.* Environmental Intervenor witness Ms. Glick summarizes: “the reality is that the Company selected the Wind

¹ See Glick Direct Exhibit 11, MidAmerican Response to Environmental Intervenors Data Request 13 (“MidAmerican targets new renewable generation resources based on site availability and development status, interconnection status and off-site transmission system upgrade costs, and reasonable costs and contract terms offered by developers, balance of plant construction contractors and equipment suppliers for a particular site.”); Glick Direct Exhibit 12, MidAmerican Response to Environmental Intervenors Data Request 22; Glick Direct Exhibit 7, MidAmerican Response to OCA Data Request 14; Glick Direct Exhibit 13, MidAmerican Response to Environmental Intervenors Data Request 43.

PRIME resource portfolio totally outside of any analytical process....” (Glick Dir. at 19.) As a result, “it is unknowable based on the Company’s analysis whether there are alternative resource portfolios that are more economic or reasonable than Wind PRIME, inclusive of the IRA impacts.” Glick Supp. at 13.

MidAmerican’s “nine-factor” analysis in this docket is inherently subjective and easily manipulatable, and does not provide the evidentiary record necessary to demonstrate consideration of feasible alternatives. MidAmerican’s quantitative analysis focuses only on the impact of Wind PRIME to the company’s net revenues and is not a comparison of the proposal to other feasible alternatives.

MidAmerican also did not remedy its failure to compare Wind PRIME with feasible alternatives when it updated its application after the Inflation Reduction Act (IRA) passed, despite the fundamental changes wrought by the Act on the comparative economics of resource alternatives. Given the IRA’s significance, MidAmerican should have evaluated whether its Wind PRIME portfolio – which has large amounts of wind but very little solar and no battery storage – remained the right set of resource additions. Instead, the Company only updated its analysis of forecasted revenues. But forecasted rate impacts do not supersede the legal requirements for advance ratemaking.

A. MidAmerican’s use of the “nine-factor analysis” only provides subjective, qualitative support for the project and did not adequately compare Wind PRIME to other feasible alternatives.

MidAmerican relied on a subjective, qualitative nine-factor analysis “lacking any sort of rigorous methodology” to justify its resource additions rather than compare the selected resource additions to other feasible alternatives. (Bents Direct at 11.) MidAmerican’s approach in this docket is not consistent with Iowa Code section 476.53(3)(c)(2) and does not provide a record that demonstrates adequate consideration of feasible alternatives.

MidAmerican used a “nine-factor analysis” to support its proposed resource additions in Wind PRIME. (Hammer Direct at 28.) These nine factors are (1) cost, (2) cost robustness, (3) environmental reasonableness, (4) system reliability, (5) economic development, (6) geopolitical uncertainty, (7) flexibility/optionality, (8) diversity, and (9) resource availability/stability. (Hammer Direct at 2, 28-45.) MidAmerican relied on a qualitative analysis of each factor, and did not conduct any quantitative analysis to assess the optimal resource mix. (Glick Direct at 29.)

MidAmerican applied the nine-factor analysis to Wind PRIME, but not to any other feasible alternatives including other generation sources and ownership options such as PPAs. MidAmerican’s qualitative application of each factor was “somewhat arbitrary and subjective and is inconsistent with best practices used throughout the utility industry for selecting resource additions.” (Glick Supp. Dir. at 12.) Witness Guyer assessed the factors MidAmerican relies on and explained how MidAmerican did not actually compare the Wind PRIME project to any alternatives that could yield better outcomes. (Guyer Direct at 3-31.) Because of MidAmerican’s purely qualitative application to only the Wind PRIME projects, witness Guyer noted the possibility that “an alternative set of resource additions – for example, a larger amount of solar combined with battery storage, as well as some amount of wind – would provide far greater benefits to customers.” (Guyer Direct at 4.)

In nearly all ways, Mr. Hammer’s nine-factor analysis appeared to equally support solar and wind, but the Wind PRIME project is heavily weighted towards wind additions. (Hammer Direct at 44 (“Wind PRIME’s wind and solar generation ranks among the top generation technologies for six of the nine reasonableness criteria”); Hammer Rebuttal at 3.) The only basis for which MidAmerican discounted solar in its evaluation was that MidAmerican found solar to be less “mature” technology than wind generation. Environmental Intervenors’ experts disagree

with this assertion, pointing out that several gigawatts solar are in operation in Midwestern states, with many more in the queue. (Hammer Direct at 57; Guyer direct at 26-27.) The preference for wind in the Wind PRIME portfolio is also not supported by [REDACTED]

[REDACTED] (Zero Emissions Study at 2.) The Study also found that [REDACTED]

[REDACTED] (*Id.* at 14.) And at the same time, MidAmerican is purchasing solar in Iowa outside of this proceeding. (Guyer Direct at 27.)

A particular fault of the nine-factor analysis was MidAmerican's rejection of battery storage. MidAmerican witness Hammer claimed that battery electric storage was not yet mature. (Hammer Direct at 51.) But the Energy Information Administration has tracked storage installations for nearly two decades. (Guyer Direct at 27.) Utilities across the country, including many in the Midwest, are installing storage now, with more than 420,000 MW in interconnection queues nationally and 2,800 MW of storage projects in the queue for Iowa. (Guyer direct at 13-14, 22, 28-29; Glick supp. at 65.) In addition, MidAmerican admitted that storage provides reliability benefits. (Hammer Direct at 34-37; *see* Guyer Direct at 18.) The quantitative capacity expansion modeling conducted by Environmental Intervenors concluded that storage was the appropriate resource to add in the short-term. (Hotaling Direct at 17-18.) Battery storage can help reduce wind curtailment while providing a firm capacity resource as well as grid balancing attributes. (Glick supp. at 51, 64.) Batteries can ramp up and down quickly, making them better suited to complementing grids with higher levels of renewables. (Glick Dir. at 50.)

MidAmerican's nine factor analysis in this docket is not a comparison of feasible alternatives. MidAmerican only analyzed one portfolio and made a qualitative, subjective

justification of Wind PRIME, based on an unsupported and arbitrary exclusion of feasible alternatives with a different mix of solar and storage. This does not provide a sufficient record to support a demonstration that Wind PRIME is reasonable in comparison to feasible alternatives. The Board cannot “compare those benefits to potential cost savings to other generation resources or PPAs either with or without a later ownership option.” RPU-2021-0003, Final Order, at 7 (filed Nov. 9, 2022).

B. MidAmerican failed to re-assess whether Wind PRIME is the right set of resource additions after IRA passed, despite the significant impact of the IRA on the comparative economics of new resources.

In its September 23, 2022 Order Granting the Motion to Extend and Revise the Procedural Schedule, the Board recognized the significant impact that the passage of the Inflation Reduction Act is expected to have on the energy landscape. The Board stated that: “In evaluating the impact of the Act on this docket, the Board is interested in understanding not only Wind PRIME’s project economics, but *also the impact on the statutorily required comparison of alternatives to determine the reasonableness of the project that must be established before advance ratemaking principles can be granted.* Additional testimony from the parties on those points is essential in understanding the new landscape that is emerging from the passage of the Act.” (Board Order at 6 (filed Sept. 23, 2022) (emphasis added).)

The IRA has improved the ability of utilities to access to tax credits for solar and battery storage, fundamentally altering the comparative economics of wind, solar and storage. (Glick Supp. Dir. at 8.) The IRA also offers 10% tax credit bonuses for meeting domestic content criteria and another 10% bonus for siting new clean energy projects in “energy communities,” for a total tax credit of up to 50%. (Glick Supp. Dir. at 8.) The “energy communities” bonus applies to projects sited in census tracts or tracts adjacent to those in which a coal plant closes after 2009. (*Id.* at 9-10).

Surprisingly, MidAmerican’s supplemental direct testimony did not respond to the Board’s Order to address the impact of the IRA on feasible alternatives. MidAmerican “failed to quantitatively assess how the change in comparative economics of clean energy resources resulting from passage of the IRA impacts what mix of resource additions are in customers’ best interests.” (Glick Supp. Dir. at 4 and 7-8.) Instead, MidAmerican kept the Wind PRIME resource portfolio unchanged and updated only its calculations of the impact of the IRA on Wind PRIME’s net revenues by updating the tax credit levels that the Wind PRIME projects would receive. (*Id.*) MidAmerican did not conduct updated Aurora modeling of the impact of the Wind PRIME projects with the updated tax credits on energy market prices in the eastern interconnect. Given the critical role this energy market price forecast plays in MidAmerican’s estimation of the “net systems benefits” of the Wind PRIME project, it was unreasonable of the company not to conduct even this minimal update to its analysis. (Glick Supp. Dir. at 11.)

MidAmerican should have evaluated alternative resource portfolios to take into account the substantial impact of the IRA on the comparative economics of new resources. (Glick Supp. Dir. at 10.) In addition, given the new availability of the “energy communities” bonus, updated analysis also should have included an assessment of whether coal retirements could be paired with new clean energy additions to improve the capture of tax credits on behalf of customers, while also providing other important benefits to those communities. Ms. Glick points out that “[REDACTED]” (Glick Supp Dir. at 11.)

The failure to conduct analysis of the impacts of the IRA was part of the basis for the Board’s recent denial of IPL’s advanced ratemaking principles. RPU-2021-0003, Final Order at 14 (filed Nov. 9, 2022) (“Since the enactment of the IRA, the electric market has the possibility of

significant change, and the board therefore needs full consideration of alternative sources of supply.”). It is not in the public interest to approve a \$4 billion investment without comparison to alternatives and analysis of the IRA’s impact. Without this analysis, the record does not support the settlement.

C. MidAmerican never quantitatively analyzed costs and benefits of alternatives.

The only quantitative analysis MidAmerican included in its application was an assessment of the impact of Wind PRIME on the Company’s revenues, which is presented in the testimony of MidAmerican Witness Specketer. MidAmerican’s analysis only looked at its system with Wind PRIME and without Wind PRIME, and did not compare it to other feasible alternatives. To summarize MidAmerican’s multi-step process, MidAmerican modeled the impact of adding the Wind PRIME projects on market energy prices, and then modeled how the market energy price change would impact the net energy revenues to the company from all of its generation (existing and new). (Glick Dir. at 19-25.)

This analysis did not include a comparison of Wind PRIME to other feasible options, as required by statute, and thus does not serve to meet the utility’s obligations under the advance ratemaking principles statute. The utility’s only comparison between wind and solar was in Specketer Exhibit 4, in which the utility simply determined that wind would generate more production tax credits (PTCs) than would solar.³ While this limited viewpoint might make sense for a merchant generator, it misses the other valuable attributes resources can offer to a monopoly utility with an obligation to deliver electricity throughout a system. As Ms. Glick explains in her supplemental testimony, Mr. Specketer’s analysis answers the question “what is the change in the Company’s market revenue with Wind PRIME,” rather than the question that a rate-regulated monopoly public utility is required to ask, which is, “is Wind PRIME a reasonable and cost-

effective set of resource supply additions to meet MidAmerican’s long-term electric supply needs.” (Glick Dir. at 26.)

In short, “MidAmerican designed the Wind PRIME project to maximize tax credits and market revenues for MidAmerican, not to ensure reasonable and prudent system costs for Iowa ratepayers.” (*Id.* at 9.) That narrow calculation “focuses on maximizing short-term market revenues, and not on developing a low cost, reliable system for ratepayers over the long term.” (*Id.* at 26). MidAmerican’s approach is insufficient to meet the “reasonableness” standard of a rate-regulated monopoly utility under section 476.53.

MidAmerican’s method ignored the fact that other portfolios may result in better outcomes for customers, including lower overall resource portfolio costs, lower customer risk, and long-term resource adequacy. (Glick Supp. Dir. at 14.) Ms. Glick notes that by “committing \$4 billion to the Wind PRIME project, MidAmerican may be making it more challenging to commit shareholder and ratepayer dollars to a different set of resources that would (1) achieve greater cost savings to customers and (2) better position the utility to advance towards the goal it says customers are demanding: true carbon-free electricity.” (Glick Supp. Dir. at 32.)

As a rate-regulated monopoly, MidAmerican has an obligation to meet short- and long-term resource planning and resource adequacy needs at reasonable cost. (Glick Dir. at 20). Nowhere in its analysis does MidAmerican assess how Wind PRIME meets these requirements. Mr. Specketer’s quantitative analysis “omits critical quantitative components, including quantification of avoidable fixed and capital costs for existing and new generation, an evaluation of meeting long-term resource adequacy to ensure system reliability, and the value of resource diversity.” (Glick Dir. at 9-10). It also fails to consider whether there may be other portfolios that could result in lower overall resource portfolio costs and lower customer risk. (Glick Supp. Dir. at

14.) The Board has expressly stated such a comparison is necessary to determine the reasonableness of proposed generation. RPU-2021-0003, Final Order, at 7 (filed Nov. 9, 2022).

D. MidAmerican’s contention that Wind PRIME can be added at “no net cost” to customers does not excuse it from the requirement of comparing the project to feasible alternatives.

MidAmerican relied on a claim of “no net cost” to customers to justify the Wind PRIME proposal, but considering only one facility or portfolio does not meet the requirements in the statute. The Board recently determined in an Interstate Power & Light Company proceeding that “[w]ithout the full consideration of other sources, the Board is not convinced that [utility] ownership of the facilities is reasonable based upon the anticipated market for electric supply that will result from the IRA.” RPU-2021-0003, Final Order at 14 (filed Nov. 9, 2022). In the same way, MidAmerican has not considered the costs of other facilities, other ownership structures, or the costs of alternatives after passage of the IRA. The fact that the IRA improved the projected customer impacts of Wind PRIME does not remedy MidAmerican’s fundamental failure to comply with the statutory requirement for the utility to compare its proposed “facility” – the specific project it plans to build – to other feasible alternatives. MidAmerican’s failure to compare Wind PRIME to alternatives will lead to significant unnecessary costs to customers.

Moreover, MidAmerican’s no net cost claim comes with significant caveats. MidAmerican’s assessment of net project costs is based on its projections of energy market prices. Mr. Specketer admits that “customers bear the risk that electricity market prices are lower than forecasted...” (Specketer Direct at 39.) Failure of these high market prices to materialize would result in the utility coming in for a rate case. (*Id.* at 42.) Thus, only MidAmerican is protected from low prices, while “[t]he potential range of outcomes and the resulting uncertainty here creates significant risks to MEC’s ratepayers.” (Brubaker Direct at 4.) Ms. Glick notes that “[e]ffectively,

MidAmerican is acting like an investor merchant generator, using ratepayers as a backstop and guarantor if the economics of its investment do not pan out.” (Glick Supp. Dir. at 33.) However, the passage of the IRA is expected to incentivize the addition of renewables nationwide, which should put downwards pressure on energy market prices. As discussed above, MidAmerican did not update its Aurora modeling of the impact of Wind PRIME on energy market prices after the IRA’s passage. MidAmerican therefore has not sufficiently accounted for the risk of lower energy market prices in its analysis.

The “no net cost” assertion is also based on inclusion of a category of benefits that should have been excluded. Based on MidAmerican’s own analysis, [REDACTED] of the benefits of the Wind PRIME proposal are derived from the lower market prices that will result from the projects’ construction. (Glick Supp. Dir. at 33-34.) MidAmerican has asserted that the Wind PRIME projects will be built regardless of whether MidAmerican owns them. (Rebuttal Testimony of Company Witness Hammer, Pg. 14; Rebuttal Testimony of Company Witness Fehr, Pgs. 7-8; Direct Testimony of Company Witness Brown, Pg. 11.) This means that [REDACTED] the benefits of Wind PRIME will be realized for customers regardless of whether the Board approves the proposal. (Glick Supp. Dir. at 35-36.) Ms. Glick suggests that these benefits should therefore be excluded from MidAmerican’s assessment of net system benefits. Without inclusion of this benefits category, the Wind PRIME project would result in a net cost increase to customers. (*See* Glick Supp. Dir. at 34, Table 6 (when “net system benefits” are excluded, the project would in fact result in a net cost increase to customers of \$ [REDACTED]/kWh)).

E. MidAmerican’s analysis overlooks the \$ [REDACTED] to \$3 billion in costs associated with maintaining its coal plants through their planned lives.

Because MidAmerican’s analysis is narrowly focused on assessing the tax credit and energy revenues from Wind PRIME, the analysis makes an implicit decision “to rely on its existing thermal generating fleet to meet capacity needs, ignoring the substantial fixed costs that are avoidable if it retires the plants early and replaces them with lower cost alternatives.” (Glick Dir. at 10; Glick Supp. Dir. at 15.) Nowhere in its application, however, does MidAmerican provide analysis to support the reasonableness of this decision or to evaluate the costs required to maintain its aging plants compared to reasonable alternatives. (Glick Supp Dir. at 15.) The Company’s analytical approach results in the build-out of additional energy resources without also building out the firm capacity resources that will enable the utility to avoid significant capital expenditures needed to maintain its aging coal fleet. (Glick Dir. at 34.)

The overlooked costs of continuing to operate MidAmerican’s coal generation are enormous. MidAmerican plans to rely on most of its coal plants until [REDACTED], with one unit planned to run until [REDACTED]. (Glick Supp. Dir. at 17.) [REDACTED] [REDACTED]. *Id.* Maintaining coal plants is costly, and these costs usually increase as plants age. (*Id.* at 18.) MidAmerican expects to spend \$ [REDACTED] in capital expenditures and fixed operations and maintenance (“O&M”) to sustain its coal plants through the remainder of their planned lives. (*Id.* at 5; 18-20.)

MidAmerican’s cost estimates may be significantly understated: publicly available industry estimates from Sargent and Lundy of the costs to maintain plants of similar size and age indicate that a more reasonable cost estimate to maintain the coal plants through their remaining lives is **\$2.99 billion**. (*Id.* at 19-20.) This does not include the costs of additional pollution controls that MidAmerican may be required to install at the plants to comply with more stringent air or

[REDACTED], and that “[REDACTED]
[REDACTED].” (*Id.*) Moreover, [REDACTED]
[REDACTED]
[REDACTED]
[REDACTED]. (*Id.* at 27.)

In sum, MidAmerican’s quantitative analysis is unduly narrow, omitting a huge category of potentially avoidable costs that a reasonable and prudent comparison of feasible alternatives must account for in making decisions regarding resource additions. Most fundamentally, though, it does not include a comparative assessment of the system benefits of alternative sources of supply. The way to capture all of the costs and benefits different resource options can offer – energy, capacity, resource adequacy, and resource diversity – is through use of capacity expansion modeling.

IV. An analysis of feasible alternatives shows that a more balanced portfolio of battery storage, solar, and wind that reduces reliance on its aging and costly coal plants is in the public interest.

MidAmerican’s single-minded focus on the Wind PRIME portfolio ignored alternatives that could achieve better results for customers. Expert consultants hired by Environmental Intervenors conducted modeling using standard industry modeling methods that compares MidAmerican’s proposal to other feasible alternatives. This analysis shows that a more balanced portfolio with more solar and storage provides a reasonable, lower cost, and lower emissions generation portfolio than the Company’s existing plan to build out Wind PRIME and continue relying on its existing coal units.

A. Utilities should use capacity resource expansion modeling to demonstrate that a resource proposal is reasonable compared to other feasible alternatives under 476.53.

MidAmerican's qualitative nine-factor analysis and the limited quantitative analysis it references overlook huge categories of costs and fails to assess whether other portfolios of additions could offer greater system benefits. The industry-standard method for fully capturing the potential costs and benefits to a utility's system of various resource additions is to conduct quantitative capacity expansion modeling. (Glick Dir. at 30-31.) This type of modeling is needed "to demonstrate that the resource portfolio that MidAmerican is proposing ensures resource adequacy and meets system constraints at reasonable cost when compared with alternative resource options and portfolios." (Glick Supp. Dir. at 14-15.)

Capacity expansion modeling involves modeling the utility's entire system – including all of its existing resources, as well as its load – to develop cost-effective supply portfolios that can meet both energy and capacity system needs. (Glick Dir. at 27.) This means that "under a reasonable range of assumptions about the future, the model will build a portfolio that can reliably provide the energy, capacity, and grid services that a utility needs to meet customer demand with a reasonable reserve margin." (*Id.* at 30-31.) Such a resource evaluation will "ensure that new resources are an optimal solution to meet the long-term energy and capacity needs of MidAmerican's customers." (OCA Bents Direct at 4.)

MidAmerican did not conduct any capacity expansion modeling to compare Wind PRIME to other resource alternatives or evaluate the feasibility of other supply options. (Glick Dir. at 27-28.) In response to Ms. Glick's testimony, MidAmerican argues that capacity expansion modeling is neither required nor useful because the market as a whole is evolving too quickly for modeling

to provide insight into the best resource mix for its customers. (Brown Rebuttal at 10; Hammer Rebuttal at 13.)

MidAmerican's assertion that capacity expansion modeling cannot provide useful insight is fundamentally flawed, for several reasons. First, MidAmerican's own calculation of the forecasted revenues and net system benefits of Wind PRIME is equally based on projections regarding the future of energy markets. MidAmerican used Aurora modeling to generate an electric price forecast for the Eastern Interconnect, with and without Wind PRIME, as the basis for its assertion that the Wind PRIME project can be added at "no net cost" to customers. (Guyer Rebuttal at 7.) These price forecasts are "at the very core of MidAmerican's argument that Wind PRIME is a reasonable and cost-effective resource selection." (*Id.* at 7.) MidAmerican's projections did not account for decisions being made by utilities throughout the Eastern Interconnect.

As discussed further below, in conducting capacity expansion modeling on Environmental Intervenors' behalf, Energy Futures Group used MidAmerican's reference case electricity market price forecasts. The modeling thus accounted for the overall market transition to the exact same extent as did MidAmerican's.

The standard industry method for handling various uncertainties about the future – such as high or low energy market prices, gas prices, or load changes – is to conduct sensitivities to test key variables. (Glick Supp. Dir. 37-38; Guyer Rebuttal at 9). These sensitivities can illuminate how robust a particular portfolio is to those uncertainties, and therefore assist in selection of a portfolio that is low risk. (Glick Supp. Dir. at 38.) MidAmerican acknowledged that this is the correct approach by modeling energy market price projections for a reference case, a sensitivity with no carbon price case, and a gas price sensitivity.

cost, lower risk, and would better meet MidAmerican's important goal of meeting customer demand for zero emissions clean energy.

Overview of Modeling Process

Synapse and EFG conducted the modeling using EnCompass, a widely-used capacity expansion and production cost model that is similar to Aurora, but that has significantly lower licensing costs and thus is more accessible. (Glick Supp. Dir. at 40; Hotaling Supp. Dir. at 4.) The modeling has two steps. In the first step, the model develops portfolios that minimize cost subject to modeling constraints, such as meeting a planning reserve margin. (Hotaling Supp. Dir. at 4.) In the second step, the model simulates the operation of the portfolio over every hour of each year in the planning period, using existing and new resources and market purchases and sales to meet load across every hour of the planning period. (*Id.* at 5.) The resulting revenue requirements for each portfolio, allow comparison of portfolios on a cost basis. The modeling also provides outputs such as annual average capacity factors and energy generation for each resource and total emissions data.

To conduct this analysis, Synapse and EFG used MidAmerican's own data, obtained through discovery, and supplemented with publicly available data where necessary. (Glick Supp. Dir. at 36.) This included MidAmerican's load data, resource costs, heat rates, and other key inputs. (*Id.* at 39.) For new clean energy resource additions, the modelers used a standard industry resource, the NREL ATB database.³ (Hotaling Supp. Dir. at 10-11.) They also incorporated the IRA tax incentive updates into the new resource costs. The complete details of the modeling

³ See also Glick Supp. Dir. at 10-11 ("...the starting capital cost for generic new wind and solar resources were based on the starting capital cost from the Wind PRIME projects and then the Moderate cost curve from the NREL ATB was applied to develop costs for the remainder of the planning period. This modification was made to account for recent inflationary and supply chain pressures that have resulted in short term cost increases for new solar and wind projects.")

methodology are presented in the Direct Testimony of Environmental Intervenor Witness Chelsea Hotaling (summarized in Table 2 on pages 8-9 of her testimony).

The key differences between the Environmental Intervenor (EI) Plan and MidAmerican preferred plan are summarized in Table 1, below.

Table 1. Scenarios Modeled

Scenarios	Coal Retirements	Wind PRIME Projects	Replacement Resources
MidAmerican Preferred Plan	MidAmerican Dates	All Projects	Model may select economic additional new clean resources starting in 2030
Environmental Intervenor Preferred Plan	Optimized Economic Retirement of Louisa, Neal 3, and Ottumwa in 2025; retires Neal 4 in 2028, WSEC3 in 2031, WSEC 4 in 2034.	Approximately 1/3 of Wind PRIME wind and 50 MW solar ⁴	Model may select economic additional new clean resources starting in 2025

The MidAmerican Preferred Plan scenario includes the proposed Wind PRIME additions as well as the continued operation of the coal plants until their current planned retirement dates. Ms. Hotaling allowed the model to build additional new clean energy resources beginning in 2030, [REDACTED]. (Glick Supp at 42.) MidAmerican does not currently plan to add resources after 2030; in its own modeling, the company filled unmet needs with market purchases. (*Id.*) However, allowing the model to build new resources after this year was necessary to create an “apples to apples” comparison between the EnCompass model and MidAmerican’s proposal. The modelers restricted the model from adding new resources to MidAmerican’s system before 2030, to prevent MidAmerican from arguing that we had allowed the system to be overbuilt, artificially inflating the costs of its plan. (Glick Supp. Dir. at 49.)

The EI Preferred Plan scenario preserved Wind PRIME’s 50 MW solar project, as well as approximately a third of the proposed wind PRIME wind ([REDACTED]) (Glick Supp. at 42-43.) The solar project was included in the EI Preferred Plan because MidAmerican currently has minimal solar on its system, so the project adds to MidAmerican’s resource diversity. (*Id.* at 42.) The [REDACTED] of the wind proposal was preserved because these projects: [REDACTED]

[REDACTED] The model was allowed to economically determine (“optimize”) when to retire some of the coal plants and was allowed to optimize the addition of other clean energy resources⁴ beginning in 2025. (*Id.* at 43.)

Summary of Modeling Results

In the EI Preferred Plan scenario, the model found it was optimal to retire Louisa, Ottumwa and Neal 3 in the first year it was allowed to do so, which was 2025. (Glick Supp. Dir. at 45.) In other words, **the modeling found that Louisa, Ottumwa, and Neal 3 are uneconomic and should be retired and replaced with lower cost resources as soon as feasible.**

The “finding that Louisa, Ottumwa and Neal 3 are the most uneconomic and therefore retire first is [REDACTED].” (Glick Supp. Dir. at 45.) The plan also includes retirement of Neal 4 in 2028, Walter Scott 3 in 2031, and Walter Scott 4 in 2034. (*Id.*)

⁴ The model was allowed to build new wind, solar, 4-hour battery storage, and 10-hour battery storage beginning in 2025. Beginning in 2030, the model could also select a “proxy clean firm” resource, which was modeled with the costs and operating characteristics of a gas combustion turbine, in order to capture the potential benefits of long duration storage. Hotaling Dir. at 10.

Table 2. Confidential Retirement dates for MidAmerican coal units

Unit	MidAmerican Preferred retirement date	Plan EI Preferred Plan retirement date
Louisa	[REDACTED]	12/31/2025
Ottumwa	[REDACTED]	12/31/2025
Neal 3	[REDACTED]	12/31/2025
Neal 4	[REDACTED]	12/31/2028
Walter Scott 3	[REDACTED]	12/31/2031
Walter Scott 4	[REDACTED]	12/31/2034

The retirement date for Walter Scott 4 was fixed in order to minimize carbon emissions and align with the policy goal of transitioning to a carbon-free grid by 2035. The retirement date for Neal 4 was fixed in 2028 because our expert was concerned that MidAmerican had particularly understated the expected costs to maintain Neal 4. Specifically, (1) the fixed operations and maintenance costs MidAmerican assumes for Neal 4 are around [REDACTED] the average level that MidAmerican assumed at its other coal units, and less than [REDACTED] the level we would expect based on industry averages estimates; (2) the sustaining capital expenditures were less than [REDACTED] the average level that MidAmerican assumed at its other coal units, and around [REDACTED] the level we would expect based on industry average estimates. (Glick Supp. Dir. at 19-20 and Glick Exhibit 33, Appendix A). Because Synapse and EFG used MidAmerican’s cost assumptions in the modeling, the modeling results showed the unit was maintained as a capacity resource but was only minimally used (< 12 percent capacity factor). (*Id.*) “The assumption that an aging and inflexible coal unit would be maintained as a peaking capacity resource is inconsistent with industry best practices, and was driven by the unreasonably low fixed and capital cost assumptions.” (Exhibit 1, EI Response to MEC DR 33-confidential.)

The model found it optimal to add the maximum amount of 4-hour battery storage permitted, 500 MW, in both 2025 and 2026, and solar beginning in 2030. (Glick Supp. Dir. at 46-

47.) A complete summary of the new resource additions in the EI Preferred Plan are found in Table 10 on page 47 of Ms. Glick’s supplemental testimony. (Table 10 does not include the portion of the Wind PRIME resources that are also a part of the EI Preferred Plan.) Figures 1 and 2 below show the resource mix under each plan.

Figure 1 EI Preferred Plan - Firm Capacity

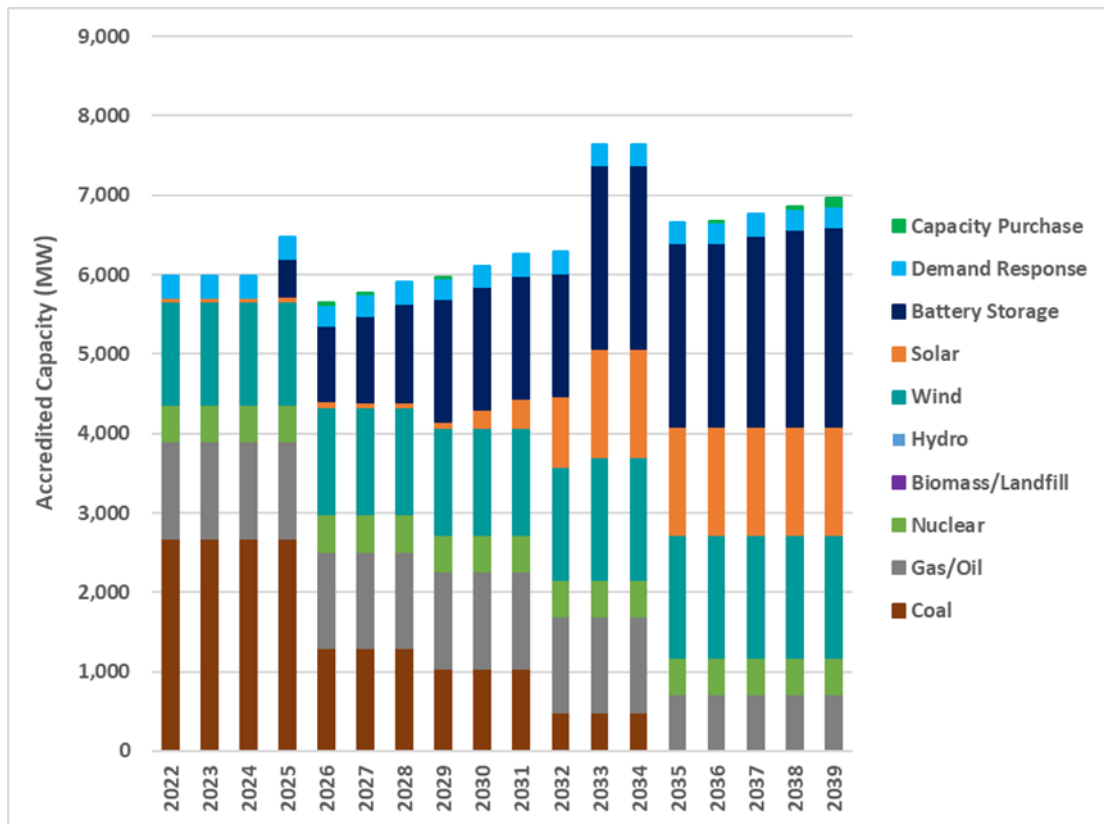
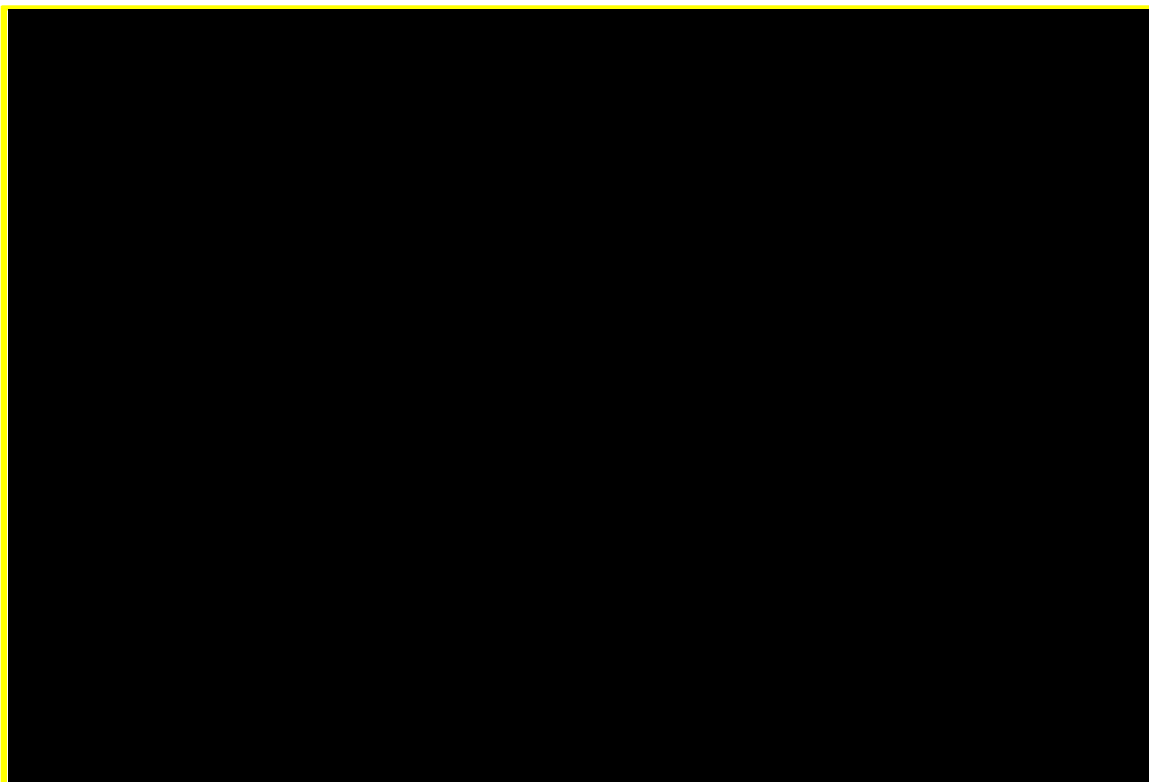


Figure 2 Confidential - MidAmerican Preferred Plan Firm Capacity

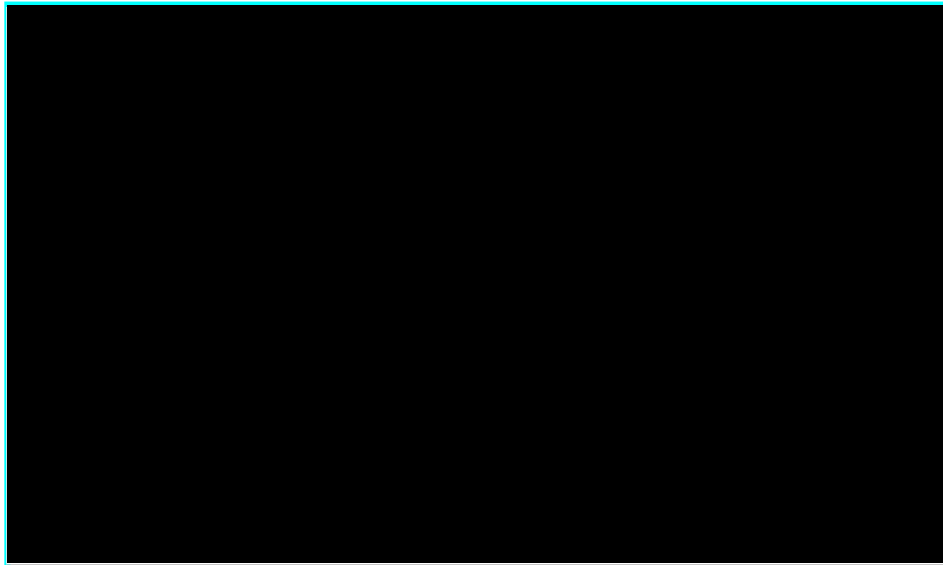


The new clean energy additions in the modeling for MidAmerican's Preferred Plan, shown in Figure 2 above, are not new resources that MidAmerican is currently planning to add, but rather were added by the model [REDACTED].

Summary of cost savings

As summarized in the Figure below, Synapse's and EFG's modeling found that the EI Preferred Plan saves customers more than **\$120 million** compared to MidAmerican's Plan. (Glick Supp. Dir. At 54.)

Figure 3 AEO Confidential comparison between costs of Environmental Intervenor and MidAmerican preferred plans



Importantly, the modeling was based on MidAmerican’s cost assumptions for continuing to maintain its coal plants. As discussed above, MidAmerican’s cost estimates for maintaining its coal plants are roughly [REDACTED] lower than industry estimates indicate are likely. If MidAmerican is underestimating the costs to maintain its coal plants, the savings from pursuing the EI Preferred Plan rather than MidAmerican’s could amount to nearly \$ [REDACTED]. As summarized by Ms. Glick, “This modeling demonstrates that only parts of Wind PRIME should be approved, and that alternative resource decisions – namely, increased supply diversity through additions of battery storage and solar and retirements of coal units – would provide a lower-cost portfolio for customers.” (Glick Supp. Dir. at 3.)

Low load sensitivity

Synapse and EFG also tested the robustness of the modeling results against a “low load” sensitivity, to assess the potential impact of MidAmerican’s strong ([REDACTED]) load forecast not coming into fruition. (Hotaling Supp. Dir. at 13.) For this sensitivity, Synapse/EFG assumed an average

annual growth rate of 1%. (*Id.* at 14.) This sensitivity resulted in even greater savings between the two plans, with Environmental Intervenors' Preferred Plan saving \$157 million compared to MidAmerican's. (Hotaling Supp. Dir. at 29.) This means that EI's Preferred Plan would better position customers for the risk that MidAmerican's aggressive load forecast does not occur.

EI Preferred Plan Better Serves to Diversify MidAmerican's System

Our modeling demonstrates that there is a reasonable alternative set of supply additions that is better for customers: a more balanced portfolio of solar, wind and battery storage additions that facilitates retirement of MidAmerican's existing coal generation by 2035 costs more than \$120 million less than MidAmerican's proposal, while allowing MidAmerican to meet customer expectations for "truly carbon-free electricity." (Glick Supp. Dir. at 5.) "[A] combination of solar PV, wind, and 4-hour battery storage provides a more reasonable, lower cost, and lower emissions generation portfolio than the Company's existing plan to build out Wind PRIME and continue relying on its existing coal units for [at least] another two decades...." (Glick Supp. Dir. at 56-57.)

The EI Preferred Plan better serves to diversify MidAmerican's system, showing that battery storage is the most valuable resource for MidAmerican to be adding to its system now, and that solar will become an important resource addition in the 2030s as the last of the coal units are retired. MidAmerican's "wind-coal resource system does not meet the purpose of improving resource diversity and ensuring a reliable and resilient grid." (Glick Dir. at 10.) The modeling shows that solar and battery storage offer important resource diversification benefits to MidAmerican's system. Solar's generation profile complements MidAmerican's wind portfolio, particularly during the summer. (Glick Dir. at 49.) MidAmerican's own internal Zero Emissions Study acknowledges that [REDACTED] and [REDACTED]

[REDACTED]. That study found that [REDACTED]

[REDACTED]. (Glick Supp. Dir at 24.) The study identified that [REDACTED]. [REDACTED]. (Id.)

The modeling shows that battery storage also offers significant cost benefits to MidAmerican’s system. The model selected battery storage because it is a cost-effective resource, even more so after the passage of the IRA. (Hotaling Supp. Dir. at 26.) Battery storage also offers significant benefits in reducing curtailment of MidAmerican’s wind. (Glick Supp. Dir. at 50-51; Hotaling Supp. Dir. at 27 and Figure 7.) In our modeling of MidAmerican’s Preferred Plan, after 2030, the model added significant amounts of battery storage because it was optimal to do so, and not because MidAmerican has any plans for these additions.⁵

The EI Preferred Plan Transitions Away from Inflexible Coal Generation

The modeling also underscores the importance of developing a plan to transition away from reliance on coal plants that are costly to maintain and lack the flexibility to complement a high renewables future. The modeling shows that under MidAmerican’s Preferred Plan, the coal plant capacity factors can be expected to [REDACTED], so that no unit operates above a [REDACTED] capacity factor after 2026. (Glick Supp. Dir. at 52, Figure 4.) This will mean that the coal plants will have less revenues with which to cover their high fixed costs. (Id. at 52-53.) In addition, coal plants “are not ideal for creating a flexible system that can integrate growing amounts of renewable energy on the system,” because coal plants have lengthy start up and ramp rates/dispatch maneuverability compared to solar, wind, and battery storage. (Id. at 54, 62.) Ms. Glick notes that “if MidAmerican

⁵ MidAmerican’s internal ZES study [REDACTED]. (Glick Supp. Dir. at 24.)

expects to run a group of decades-old coal plants more variably and with increased ramping, these forced outage rates will only go up, as will O&M costs.” (*Id.* at 63.)

EI Preferred Plan Better Serves to Meet Customer Demand for Carbon-Free Electricity

The EI Preferred Plan also better meets the purported purpose of the Wind PRIME project: meeting customer demand for carbon free electricity. MidAmerican asserts that Wind PRIME will allow the utility to meet 111 percent of customer energy needs with renewables, helping to attract valuable customers to Iowa that are seeking to locate in areas with low cost, reliable carbon free electricity. (Brown Dir. at 3; Brown Rebuttal at 6; Fehr Rebuttal at 8.) This claim is only technically true when using renewable energy credits to offset energy usage on an annual basis, but this does not meet increasing customer demand for 24/7 around the clock clean energy. (Fehr Rebuttal at 10.) The fact is that MidAmerican’s own internal studies acknowledge that [REDACTED], because it currently plans to continue to rely on coal burning. (ZES Study at 21.) The ZES Study forecasted that in [REDACTED].

Table 3 Confidential ZES Carbon Emissions Forecast for MidAmerican’s generation fleet as of 2018

PAST ACTUAL DATA													
	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017
CO2 (million tons)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
PROJECTED													
	2018	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029	2030
CO2 (million tons)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]
	2031	2032	2033	2034	2035	2036	2037	2038					
CO2 (million tons)	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]	[REDACTED]					

Ms. Glick testifies that “To ignore this fossil generation and herald the arrival of a historic, “100 percent-renewable” milestone is an obvious, deliberate misrepresentation of the fact that MidAmerican is continuing to rely on its coal capacity for a substantial portion of its customers’ capacity and energy needs.” (Glick Dir. at 40.)

In contrast, EI’s Preferred Plan would put MidAmerican on a path to truly carbon free electricity. Figure X4, below, shows the carbon emissions forecast from Synapse and EFG’s EnCompass modeling of MidAmerican’s Preferred Plan compared to the EI Preferred Plan.

Figure 4 Confidential comparison of carbon emissions between plans



MidAmerican also claims in its application that the Wind PRIME portfolio will reduce its dependence on fossil fuels and would better position the utility for compliance with future environmental regulations, including potential greenhouse gas emissions limits. (Glick Dir. at 38-39 (citing Hammer Direct at 23, 25, 66).) However, Wind PRIME is “locking in’ continued operation of MidAmerican’s coal plants because MidAmerican is depending on those units to meet system needs,” and so Wind PRIME does not help the utility avoid future compliance obligations.

(Glick Direct at 45.) In fact, if Wind PRIME does result in reduced operation of the coal plants, as MidAmerican expects and as Synapse/EFG's modeling suggests, the cost per MWh of environmental compliance at the coal plants will actually *increase*. (*Id.* At 45.) Synapse and EFG's modeling shows that a cost-effective portfolio of carbon free solar, storage and wind would better enable the retirement of the coal plants and better position MidAmerican to avoid the need for costly future environmental compliance obligations. (Glick Dir. At 45.)



It is worth noting that MidAmerican attributes a significant amount (\$ [REDACTED]) of carbon cost reduction benefits to the Wind PRIME project due to reduced operation of the coal plants. (Glick Dir. at 51.) Ms. Glick points out a key issue with how MidAmerican has applied the carbon price to its assessment:

“The presence of a CO2 price should itself drive the design of the Company's future system (i.e., what resources are built and retired), not just change the dispatch pattern and dispatch costs of a set portfolio. Put another way, if MidAmerican believes that there will be a carbon price (or other policies that will drive up the cost of coal plants) in the future, [an expectation that Ms. Glick agrees is reasonable, *see* Glick Direct at 50,] that assumption should also be driving which resource additions are selected in the first place, not just used to calculate the change in system dispatch and dispatch costs of a pre-chosen supply option assuming a CO2 price is present. Failure to do so will lock ratepayers into a costly and suboptimal resource portfolio that does not meet long-term supply needs.” (Glick Dir. at 52.)

EI Preferred Plan also better meets MidAmerican's nine-factor test

Environmental Intervenors' proposed alternative also better satisfies the criteria MidAmerican created and exceeds the benefits of the Wind PRIME project.

- In terms of cost, Synapse and EFG identified a lower-cost long-term portfolio that would save customers more than \$100 million. (Hotaling Supp. Dir. at 24.) The approach to add solar is consistent with [REDACTED]

- 
- 
- Cost robustness also cuts against Wind PRIME. EIs’ modeled portfolio considered several sensitivities, just as MidAmerican did; it avoids the volatile fuel prices that witness Hammer flagged as a risk by retiring the coal plants. (Hotaling Supp. Dir. at 17; Hammer Direct at 32-33.)
 - Environmental Intervenors’ alternative provides a more environmentally reasonable alternative because it reduces cumulative emissions by a larger amount than Wind PRIME. (Glick Supp. Dir. at 56.)
 - In terms of reliability, adding batteries would provide both reliability and ancillary grid benefits (as MidAmerican admitted), while MidAmerican failed to explain any reliability benefits from Wind PRIME. (Glick Supp. at 60-64; Guyer Direct at 14-15; Hammer Direct at 34-37.)
 - MidAmerican took the position that economic development benefits from all types of generating facilities. (Hammer Direct at 39.) Economic development will also benefit from reducing electricity-sector emissions, and this development could be particularly helpful in communities currently reliant on fossil generation. (Guyer Direct at 13; Guyer Rebuttal at 14.) The Inflation Reduction Act offers benefits for these communities, but MidAmerican did not assess those potential economic development benefits. (Guyer Rebuttal at 14.)
 - MidAmerican considered geopolitical uncertainty in terms of materials, component manufacturing, fuel prices, and safety. (Hammer Direct at 40.) MidAmerican concluded these factors supported both wind and solar over alternatives. (*Id.* at 41.) The Inflation Reduction Act further supports wind, solar, and storage development by providing

certainty for at least the next decade, while increasing the risk of regulations for fossil generation. (Guyer Rebuttal at 12.)

- Flexibility would increase with solar and battery storage, rather than expanding MidAmerican's dominant resource. (Guyer Direct at 20-23.)
- MidAmerican argues that Wind PRIME provides diversity benefits to the MISO system, but in fact the project locks in a wind/coal system for MidAmerican in which aging coal plants provide capacity for the system. (Guyer Direct at 9-20; Glick Supp. at 4.) MidAmerican "offer[ed] no analysis, explanation or quantification of the asserted fuel diversity benefits." (Tessier Direct at 17.)
- Customer renewable energy goals are quickly moving toward round-the-clock renewable generation. (Guyer Direct at 33-34.) These would be met through alternative resource builds, as EI showed by allowing faster retirement of fossil generation. (Glick Supp. at 56.)

MidAmerican relied on supplemental criteria – availability, economics, and maturity – to favor wind over solar. (Hammer Direct at 51.) Witness Hammer concluded that wind was more available, had better economics, and was more mature. (*Id.* at 59.) Environmental Intervenors' evidence shows that solar and battery storage are available, economic, and mature: they are being built or acquired by MidAmerican and other utilities, they could be built at lower overall cost, and utilities that consider all resource types are building them widely. (*See* Guyer Direct at 13-14, 22, 28-29; Glick Direct at 58; Hotaling Direct at 24.) MidAmerican did not address those issues in the record. In particular, MidAmerican did not address the benefits of the IRA for alternatives in its updated analysis – it only calculated the benefits for its proposed resource additions without considering alternatives, such as those proposed by Environmental Intervenors.

[REDACTED]

[REDACTED]

[REDACTED]

[REDACTED] This is precisely what Environmental Intervenors did.

EI Preferred Plan Ensures System Needs Are Met

We anticipate that MidAmerican will assert that EI's Preferred Plan is not feasible, claiming the coal plants are essential to meeting system reliability needs. Ms. Glick notes that MidAmerican's application does not contain any analysis of system reliability or long-term resource adequacy, and that there is no "compelling evidence that Wind PRIME benefits system reliability." (Glick Dir. at 30.) Nor has MidAmerican – in this docket or elsewhere – ever offered any quantitative analysis to support its contention that the coal plants are essential for system reliability.

In contrast, EnCompass is designed to ensure resource adequacy and system constraints are met, at reasonable cost when compared to alternatives. (Glick Supp. Dir. at 14.) The model tests the resource builds by dispatching them on a chronological hourly basis across the year and can identify times of unserved energy, as well as the ways in which the system is interacting with the MISO market.

Our modeling indicates that it would be economic and in customers' interests for MidAmerican to plan for the phased retirement of the coal plants. Ms. Glick observes that "MidAmerican's load and resource data shows that the Company can retire one uneconomic coal plant immediately and will not need to procure replacement capacity until [REDACTED] at the earliest, and more likely [REDACTED]." (Glick Supp. at 5.) The model retired three of the coal plants -- Ottumwa, Neal 3, and Louisa -- in 2025, the first year the model was allowed to do so. For every

year beyond 2025 that these coal plants remain online, the company is incurring unnecessary costs for ratepayers. (Glick Supp. Dir. at 53.) The model added 1,000 MW of battery storage by the end of 2026 to replace retiring coal capacity. With MidAmerican's existing capacity surplus, the addition of the battery storage, and the 50 MW of solar and one third of wind PRIME wind included in the EI Preferred Plan, the model ensured the system met MidAmerican's capacity needs.

C. EI Expert Recommendations

MidAmerican has not demonstrated that its Wind PRIME proposal is reasonable compared to other feasible supply additions, and Environmental Intervenors' modeling indicates that an alternative set of additions, combined with the reasonable transition away from coal generation by 2035, is lower cost, better diversifies MidAmerican's portfolio, and puts the utility on a true path to carbon-free electric generation. Therefore, our experts offered the following recommendations:

- The Board should only approve the 50 MW solar project and one third of wind PRIME wind, specifically, the [REDACTED] [REDACTED]. (Glick Supp. Dir. at 42-43.)
- MidAmerican should be instructed to conduct an RFP for the 500 MW of battery storage that the modeling shows is needed in 2025. (Glick Supp Dir. at 6.)
- The Board should find Neal 3 is uneconomic and should be immediately retired. (Glick Supp. Dir. at 6.)
- Regardless of whether the Board approves wind PRIME (in this settlement or otherwise), the Board should order MidAmerican to undertake an economic analysis of all of its remaining coal units "to ensure MidAmerican is not recovering costs from customers that are not reasonable and in ratepayers' best interest." (Glick Supp at 6.) Ms. Glick

recommends that this modeling include capacity expansion modeling that assesses economic coal plant retirements, and that is overseen by the Board with stakeholder participation in a contested case proceeding. (*Id.*) She further recommends that the process be informed by a robust all-source RFP process. (*Id.*)

- The Board should modify the revenue sharing ratemaking principle by re-ordering the coal plants in the following order in the depreciation schedule: (1) Neal 3, (2) Louisa, (3) Ottumwa, (4) Neal 4, (5) WSEC 3. (*Id.*) Because the Synapse/EFG modeling finds that Neal 3, Louisa, and Ottumwa are uneconomic in the near term, she proposes that MidAmerican identify retirement dates and modify the revenue sharing principles for Louisa and Neal 3 to link complete depreciation of the coal units to retirement and removal from rate base. (*Id.*)
- The Board should reject the technology study principle. (Glick Direct at 11.)

V. The record as a whole does not support the reasonableness of the settlement and the settlement should not be approved without modification.

For all of the reasons presented in the preceding sections of these comments, and as further supported by our experts' testimony, MidAmerican has not met its burden of demonstrating that the Wind PRIME proposal is reasonable compared to other feasible additions, and so cannot be approved as a whole consistent with the advanced ratemaking principles statute, 476.53. As such, the settlement in current form is not "consistent with the law" as required by Board rule 7.18. In this section, we recommend modifications to the settlement needed to bring it into consistency with the requirements of 476.53. Attachment A to these comments includes our recommended modifications in red lined tracked changes.

A. Modifications to the size of the approved project

As discussed above, MidAmerican has not demonstrated the reasonableness of the entire Wind PRIME proposal. Our modeling does, however, support the approval of the 50 MW solar project, as well as the roughly one third ([REDACTED] MW) of wind [REDACTED].⁶ We therefore recommend modifying the size cap to limit the advanced ratemaking principle to these amounts. Consistent with our modeling results, we further recommend that the size cap be modified to instruct MidAmerican to issue a request for proposals for 500 MW of battery storage. We therefore recommend modifying the size cap to limit the advanced ratemaking principle to these amounts.

The RES provision in the settlement does not replace the need for the record to demonstrate that Wind PRIME project is reasonable in comparison to feasible alternatives. That comparison to feasible alternatives must happen *prior* to the approval of the project. This is not just a legal requirement. It will have real system and cost consequences: if Wind PRIME as a whole is not a reasonable addition in light of overall system requirements, approval now will bake in higher costs to customers. The RES may help create a record that supports the next project, but it does not support approval of Wind PRIME until the process is completed. This is why we support a modification to the Wind PRIME settlement term to limit it only to the generation that the record supports today.

⁶ [REDACTED]

B. Modifications to the resource evaluation study portion of the “Size Cap” principle

The proposed settlement commits MidAmerican to completing a “Resource Evaluation Study” (“RES”) as detailed in the Stipulation’s Exhibit A, “Resource Evaluation Study Terms and Conditions.” As part of this RES process, MidAmerican would use capacity expansion software and “other analytical tools” to “consider” a reference case and “examine various planning scenarios for comparison purposes.” (*Id.*)

As explained at length in our experts’ testimony and as summarized above, it is a standard industry best practice to conduct resource capacity expansion modeling to assess cost effective plans for meeting long-term resource adequacy needs. Use of capacity expansion modeling is a much-needed tool to provide greater accountability regarding MidAmerican’s resource addition proposals. However, as proposed, this provision is so lacking in guardrails that it offers little assurance that it will result in reasonably useful modeling results.

First, the proposal does not include any provisions that would ensure that MidAmerican uses reasonable modeling assumptions. The modeling outputs are determined by the modeling inputs, and the RES terms do not specify how the inputs will be selected. For instance, under the RES proposal, MidAmerican could artificially inflate the costs of resources it does not want to pursue (e.g. battery storage), and artificially suppress the costs of the resources it does want (e.g. modular nuclear reactors), and the participants would have no process through which to challenge the assumptions’ reasonableness. MidAmerican could also inflate its load forecast to support the need for additional resources. MidAmerican could understate the costs to continue to maintain existing resources, a concern summarized above. In our attached redline proposal to the RES terms, we offer several suggested modifications that would specify that MidAmerican must use reasonable assumptions in the modeling process.

Second, the proposal lacks sufficient detail for participants to understand the scenarios that MidAmerican would model. For example, as written, MidAmerican could model the status quo (continued operation of all of its existing generation plus Wind PRIME), and use the model only to identify future new resource additions, rather than allowing the model to identify existing resources that are uneconomic and should be considered for retirement. As summarized in our comments above, the record demonstrates the critical need for MidAmerican to undertake an economic analysis of all of its remaining coal units “to ensure MidAmerican is not recovering costs from customers that are not reasonable and in ratepayers’ best interest.” (Glick Supp. Dir. at 6.) Most immediately, the Synapse/EFG modeling shows that Louisa, Ottumwa and Neal 3 are uneconomic and that customers are incurring unnecessary costs for every year in which MidAmerican fails to evaluate plans to replace any needed energy and capacity from their retirement. This means that the modeling must include reasonable scenarios in which the model allows the coal plants to retire if the model identifies them as uneconomic.

Environmental Intervenors sent MidAmerican discovery questions after the settlement was filed that asked how MidAmerican would determine which scenarios to model and which input assumptions it would use, as well as which provisions of the IRA would be considered in the RES process. MidAmerican responded that it was “premature” to address those questions, and that it would decide those issues at the beginning of the RES process. (Exhibit 1, MEC Responses to EI DR 182 and 186). These responses indicate that MidAmerican views itself as the correct arbitrator of the reasonableness of its assumptions and scenarios. We respectfully disagree. MidAmerican has been granted a monopoly to serve customers in its territory, and in exchange it is subject to Board oversight to ensure the costs of that service are reasonable and just. Either the parameters of the RES process should be specified now, when the Board is reviewing the reasonableness of

the settlement, or the Board must maintain oversight over the process by using a contested case proceeding. For this reason, our redline also includes a requirement that the RES process take place in a contested case before the Board.

It is essential that the Board retain oversight over the RES process in order to assure that MidAmerican is meeting its obligation to provide electricity at reasonable cost to customers. A contested case proceeding would allow participants the ability to conduct discovery and to challenge the reasonableness of MidAmerican's modeling assumptions. The planning process should allow the Board and parties to challenge assumptions in a resource plan and to ensure the analysis in the plan to reflect current trends and legislative changes. The utility bears the burden to develop a record that supports assumptions used and provide an evidentiary basis for planning and resource decisions the utility makes. If the Board follows this process in a contested case in advanced ratemaking, it will ensure the best projects for the utility and its customers.

Further, we ask that the Board modify the RES terms to require MidAmerican to provide participants with license access to the model, so that participants can undertake their own modeling runs and correcting any problematic assumptions. Other states have used this approach to facilitate stakeholder involvement.⁷ . The Aurora model, in particular, is prohibitively expensive for many parties, and under the RES terms, MidAmerican is not required to provide participants with the modeling inputs in order to conduct their own modeling runs.

Our suggested redlines also include provisions to improve the transparency of the RES process. For example, we ask that MidAmerican be required to hold at least one meeting open to

⁷ For example, Dominion Energy worked with Energy Exemplar to provide intervenor licenses at no cost to the intervenors. "Integrated Resource Plan 2021 Update," Dominion Energy South Carolina, Inc., at 13 (filed Aug. 17, 2021), available at <https://cdn-dominionenergy-prd-001.azureedge.net/-/media/pdfs/global/company/desc-2021-integrated-resource-plan.pdf?la=en&rev=3bdf5cb827ec48dc9f4655c38d96aa50>.

the public in which it will share the high-level results of the modeling. This level of transparency allows more thorough evaluation of alternatives and is in the public interest.

C. Modifications to revenue sharing principle

The revenue sharing advanced ratemaking principles have historically been linked to the coal plants because the mechanism is used in part to pay down the undepreciated balances of MidAmerican’s existing assets. Table 4, below, summarizes the years in which MidAmerican forecasts each coal plant will be fully depreciated, under the current (no Wind PRIME) revenue sharing mechanism, with Wind PRIME, and under the proposed settlement.

Table 4 Confidential - Year each coal unit is fully depreciated via revenue sharing

	Current (no Wind PRIME)	With Wind PRIME+IRA	Under Proposed Settlement
Walter Scott 4	████	████	████
Ottumwa	████	████	████
Louisa	████	████	████
Neal 4	████	████	████
Neal 3	████	████	████
Walter Scott 3	████	████	████

The revenue sharing principle in the settlement applies excess revenue sharing from resources with previously approved advance ratemaking principles according to prior board decisions. The revenue sharing from Wind X and Wind XII are applied to fossil-fueled generation sources in the order determined in the approval of Wind XII. RPU-2018-0003, “Final Decision and Order,” at 25 (filed Dec. 4, 2018).

The current order in which the revenue from wind projects is paying off the coal plants “does not prioritize paying off first the plants that have the highest variable operations costs and fixed O&M costs, and require the largest sustaining capital expenditures.” (Glick Supp. Dir. at 16.) As such, the revenue sharing mechanism is currently not structured in the way that results in the best outcome for customers. As discussed above, our modeling found that Neal 3, Louisa, and

Ottumwa should be retired as soon as possible because their costs are higher than alternatives. In order to facilitate removal of these plants from the rate base, Ms. Glick recommends reordering the plants in the pay-off schedule as follows: (1) Neal 3, (2) Louisa, (3) Ottumwa, (4) Neal 4, (5) WSEC 3. (Glick Supp. Dir. at 3.)

For the reasons explained above and in Ms. Glick and Ms. Hotaling's testimony, we recommend that the Board modify the revenue sharing ratemaking principle applying Wind X and Wind XII revenue sharing by re-ordering the coal plants in the following order in the depreciation schedule: (1) Neal 3, (2) Louisa, (3) Ottumwa, (4) Neal 4, (5) WSEC 3. Because the Synapse/EFG modeling finds that Neal 3, Louisa, and Ottumwa are uneconomic in the near term, the revenue sharing principles should also be modified for Louisa and Neal 3 to link complete depreciation of the coal units to retirement and removal from rate base.

VI. Conclusion

For the reasons contained herein, we respectfully request that the Board modify the Stipulation and Agreement as detailed in Attachment A to these comments.

Respectfully submitted this 16th day of December 2022.

/s/ Joshua T. Mandelbaum

Joshua T. Mandelbaum (AT0010151)
Environmental Law & Policy Center
505 5th Avenue, Suite 333
Des Moines, Iowa 50309
P: (515) 244-0253
jmandelbaum@elpc.org

/s/ Michael R. Schmidt

Michael R. Schmidt (AT0013962)
Iowa Environmental Council
505 5th Avenue, Suite 850
Des Moines, Iowa 50309
P: (515) 244-1194 x212
schmidt@iaenvironment.org

/s/ Laurie Williams

S. Laurie Williams, *pro hac vice pending*
Senior Attorney
Sierra Club
1536 Wynkoop St. Ste. 200
Denver, CO 80202
P: (303) 454-3358
laurie.williams@sierraclub.org