MidAmerican Energy Company
Informational Compliance Filing
With the South Dakota Public Utilities Commission as required by 18 CFR 292.302

June 30, 2022

<u>18 CFR 292.302(b)(1)</u>. The estimated avoided cost on the electric utility's system, solely with respect to the energy component, for various levels of purchases from qualifying facilities. Such levels of purchases shall be stated in blocks of not more than 100 megawatts for systems with peak demands of 1,000 megawatts or more. The avoided costs shall be stated on a cents per kilowatt-hour basis, during daily and seasonal peak and off-peak periods, by year, for the current calendar year and each of the next five years.

Avoided energy costs for various levels of purchase from qualifying facilities were calculated using MidAmerican's generating costs from MidAmerican generating units dispatched against a market price simulating the Midcontinent Independent System Operator, Inc. ("MISO") market, using a production costing model, Aurora. The MidAmerican generating units selected to run in the particular hour are summarized by fuel type. The energy production and costs reflect the costs of MidAmerican's generation assets that are used to serve MidAmerican's Iowa/South Dakota customers. Energy and costs from Walter Scott Energy Center Unit 4, Greater Des Moines Energy Center and MidAmerican's wind and solar projects ("New Generation") are not allocated to the Illinois retail jurisdiction. The fuel types are allocated from lowest incremental production cost to highest incremental production cost (renewable, nuclear, coal and natural gas) to meet MidAmerican's Iowa and South Dakota retail energy requirement in each hour. In the event the hourly generation does not meet the retail energy requirement, a net market purchase is calculated and priced. The resulting average annual production costs of the hourly fuel type cost expected to meet the retail energy need is the basis for the avoided energy cost rates. Tables of the resulting avoided energy costs by block for the 0-megawatt level through the 200-megawatt level for 2022 through 2027 are shown on the attached Exhibit A.

The market dispatch methodology is the same methodology used in the prior avoided cost rate filing with PROMOD IV being replaced by Aurora. The data used in the present filing includes the allocation of the New Generation production costs to only the Iowa and South Dakota retail jurisdictions. The data used in the market dispatch allocates the remainder of the generation to all three jurisdictions. The New Generation and generation allocated to Iowa and South Dakota are used to develop the avoided energy costs.

Exhibit A reflects the nine levels of purchases evaluated: 0 megawatts, 10 megawatts, 20 megawatts, 30 megawatts, 40 megawatts, 50 megawatts, 100 megawatts, 150 megawatts and 200 megawatts. Avoided energy costs for 0 MW through 200 MW levels were calculated as a decrement to the hourly retail load requirement.

The avoided energy cost calculations were made for the summer and winter seasons for each year. The summer season is June through September, with all other months in each year in the winter season. The on-peak periods are weekdays from hour ending 7:00 A.M. to 10:00 P.M. All other hours are off-peak.

The forecast firm peak demand and system net requirements for regulated native load customers used in the calculation of avoided energy costs are shown in the following table.

Year	Firm Summer Total Company Peak (MW)	Firm Summer Iowa/South Dakota Peak (MW)	System Net Total Company Requirements (MWh)	Iowa/South Dakota Net System Requirements (MWh)
2022	4,994	4,578	28,923,971	26,511,712
2023	5,093	4,668	29,656,986	27,183,593
2024	5,191	4,758	30,392,113	27,857,411
2025	5,289	4,848	31,125,157	28,529,319
2026	5,387	4,938	31,858,854	29,201,826
2027	5,485	5,027	32,592,562	29,874,342

Purchases of firm capacity and energy during the six-year period from 2022 through 2027 are a result of a power purchase contract for the output of a 108 MW (nameplate) wind farm and two behind the MISO meter purchase contracts; a 20 MW (nameplate) wind farm and a 6 MW (nameplate) methane landfill producer.

Year	Total Company Summer Accredited (MW)	Total Company Annual Energy (MWh)	Iowa/South Dakota Annual Energy Share (MWh)
2022	21.6	312,169	306,014
2023	21.6	314,292	307,961

2024	21.6	314,655	308,307
2025	21.6	314,205	307,883
2026	21.6	307,531	301,219
2027	15.8	267,835	261,529

Additions and retirements that serve Iowa/South Dakota regulated load were phased in to the 2022-2027 avoided energy cost forecast. For the forecast period, this includes the retirement of the 110 MW natural gas-fired Riverside 5 generating facility, which was retired January 1, 2021.

18 CFR 292.302 (b)(2). The electric utility's plan for the addition of capacity by amount and type, for purchases of firm energy and capacity, and for capacity retirements for each year during the succeeding 10 years.

MidAmerican filed with the Iowa Utilities Board for approval of the proposed 2,092 MW Wind PRIME project in January 2022 (RPU-2022-0001) wind farm and 444 MW Rolling Hills wind farm.

Year	Coal Unit Capacity Additions (MW)	Natural Gas Fired Unit Capacity Additions (MW)	Wind/Solar Project Capacity Additions (Wind XII & Others) (MW)	Natural Gas Fired Unit Capacity Retirements (MW)
2022	-	-	-	-
2023	-	-	1022	-
2024	-	-	1070	-
2025	-	-	-	-
2026	-	-	-	-
2027	-	-	-	-
2028	-	-	-	-
2029	-	-	-	-
2030				
2031				

18 CFR 292.302 (b)(3). The estimated capacity costs at completion of the planned capacity additions and planning capacity from purchases, on the basis of dollars per kilowatt, and the associated energy costs of each unit, expressed in cents per kilowatt-hour. These costs shall be expressed in terms of individual generating units and of individual planned firm purchases.

MidAmerican continually reviews its capacity needs. This review includes the forecast of load growth, demand side management programs, renewable capacity availability, a review of new regional capacity additions and Federal Energy Regulatory Commission (FERC) orders including those relative to transmission ownership and economic costs.

MidAmerican used the economic carrying charges for a new combustion turbine to calculate its long-term avoidable capacity cost. Using this methodology, the annual cost in 2022 is $80.20/kW. The installed cost of the combustion turbine unit with a net summer capacity of 204 MW (237 MW nominal capacity rating) is $868/kW based on the summer capacity rating and expressed in 2022 dollars. The determination by the Midcontinent Independent System Operator, Inc. (MISO) in its annual calculation of the Cost of New Entry (CONE) filed with the (FERC) is the basis for the avoided cost calculation[1.]

The calculation of economic carrying charges and annual revenue requirements is based upon a weighted-average capital cost of 7.25%, an after-tax discount rate of 6.62%, a 15-year tax life, tax-depreciation basis of 100%, book life of 30 years and fixed operation and maintenance costs of $8.88/kW/year expressed in 2022 dollars. The present value of annual expenses for the new combustion turbine is estimated to be $1,399/kW installed in 2022.

1 The capacity price for a combustion turbine is based on MISO's CONE for the Local Resource Zone 3 (LRZ 3) in the October 4, 2021 letter to the FERC, Filing of MISO regarding LRZ CONE Calculation; FERC Docket No. ER22-50. The project cost for LRZ 3 is $718.50 per kW in 2022 dollars. That project cost was converted to a summer-based cost based on the summer rating of an advanced combustion turbine.

Economic carrying charges for the new combustion turbine are calculated by the formula:

$$ECC_t = k\ x\ (r - i)\ x\ \frac{(1 + r)^{(n-1)}}{(1 + r)^n - (1 + i)^n}\ x\ (1 + i)^{(t-1)}$$

Where:
ECC_t = Economic carrying charge in year "t"
k = Present value rate of revenue requirement
n = Expected life of investment
i = Inflation rate
r = Discount rate

Near-term capacity prices are based on the offer cap of 10% of CONE for the MISO Planning Resource Auction, followed by a three-year bridging period (years 2023 through 2025), and then based upon the economic carrying charge of a new simple cycle combustion turbine as calculated by MidAmerican. 10% of CONE for Zone 3 is equal to $8.64/kW-year for June 2022 through May 2023 (the 2022/23 "Planning Year"). A price of $8.83 for the 2023/2024 Planning Year was calculated by escalating the 2022/2023 MISO clearing price by 2.25%. MidAmerican's economic carrying charge-based pricing begins with a price of $88.49/kW-year for the 2026/27 Planning Year and price of $90.48/kW-year for the 2027/28 Planning Year (2.25% escalation). The three-year bridging period results in a price of $35.38/kW-year for the 2024/25 Planning Year, a price of $61.94/kW-year for the 2025/26 Planning Year. The table below converts these values to calendar year prices.

The avoidable new generation capacity costs are as follows.

Year	Avoidable New Generating Capacity Costs ($/kW/yr.)
2022	$8.64
2023	$8.75
2024	$24.32
2025	$50.87
2026	$87.67
2027	$89.64