

**Docket Number:** EL20-005  
**Subject Matter:** First Data Request  
**Request to:** MidAmerican Energy Company (MidAmerican or Company)  
**Request from:** South Dakota Public Utilities Commission Staff  
**Date of Request:** February 21, 2020  
**Responses Due:** February 28, 2020

- 1-1. In MidAmerican's letter filed in docket EL17-040, it stated that "the result of the retrofit/repowering project is effectively a new turbine on top of an existing structure". Would MidAmerican say the same applies for the 510 turbines in this docket as well? Explain.

**MidAmerican Response:**

Yes, the same statement is applicable. However, the 2.7-129m turbines will have the top section of the existing tower replaced as well. The top tower section for this model turbine needs to be replaced in order to mate the tower to the new nacelle. This differs from the previous docket where the entire tower was reused on all turbines.

- 1-2. Refer to docket EL17-040, data request response 3-1, lines 41 through 47 of the excel spreadsheet. Provide the same "cumulative cost to customers" analysis for this docket making sure to include the cumulative PTC and rate base effects which would include the 706 turbines associated with docket EL17-040.

**MidAmerican Response:**

Exhibit A provides an analysis showing that MidAmerican's customers benefit from our proposal regarding the Siemens wind repowering PTCs. The section at the bottom of the "ROE-Forecast 3-1,1-2" tab from Exhibit A shows the revenue deficiency MidAmerican would experience if all PTCs were passed through the ECA (including the GE and Siemens repowering PTCs as well as new wind since the last rate case). That revenue deficiency is compared to the value of these PTCs to customers if they were passed through the ECA, with the result being that the required base rate increase is larger than the PTC benefit to customers. Note that if MidAmerican does not pass through the PTCs as proposed in this docket, our ROE is forecasted to recover to a level that keeps MidAmerican from filing a rate case for several years (see line 24 of the spreadsheet).

- 1-3. Provide the capacity factors for the wind turbines before and after the repowering.

**MidAmerican Response:**

The table below illustrates the equipment models and capacity factors of equipment before and after repowering. In some instances, a wind farm will be repowered with two different models of equipment.

**TABLE IS CONFIDENTIAL**

- 1-4. Refer to page 2 of MidAmerican’s letter where it states, “MidAmerican estimates that the overall ECA benefits for South Dakota customers will be \$1.5 million through 2029”.
- a. Explain the improvements since docket EL17-040 where repowering 28 percent less turbines (this time) only results in 12 percent less customer savings.

**MidAmerican Response:**

Although the Siemens repowering involves 28% fewer turbines, the Siemens turbines are larger (2.3MW vs 1.5MW for the GE turbines) and are expected to achieve a significantly higher incremental capacity factor improvement due to the repowering. These differences are partially offset by the fact that the Siemens turbine repowering will qualify for reduced PTCs (80% for the 2021 repowering and 60% for the 2021 repowering) as compared to the 100% PTC level for the earlier Siemens repowering.

- b. The customer savings were quoted as being through 2029 in docket EL17-040 as well. Should the savings extend out longer for this repowering project?

**MidAmerican Response:**

Yes, benefits of both projects extend beyond 2029; however, the modeling performed only extended through 2029.

- 1-5. MidAmerican’s response to data request 1-3 in docket EL17-040 shows that the original cost for the 706 turbines was approximately \$1.8 billion, or approximately \$2.5 million each. The “Plant Summary 1-3” tab of Exhibit A in this filing shows that the original cost for the 510 turbines was approximately \$17 billion (total Company), or approximately \$33.3 million each. Confirm that these numbers are accurate. If so, explain the large increase in turbine cost.

**MidAmerican Response:**

The “Plant Summary 1-3” tab of original Exhibit A contained an error. The “Plant Summary 1-3” tab of Exhibit A-Revised now shows the original cost for the Siemens turbines being replaced as totaling \$■ billion, or approximately \$■ million each. The increase in the original per turbine cost for the Siemens turbines as compared to the GE turbines is primarily due to the size of the turbines (2.3 MW vs. 1.5 MW) as well as an increase in turbine component costs over time.

- 1-6. Provide the calculations that show this repowering project meets the 80/20 Rule to requalify for PTCs.

**MidAmerican Response:**

For a repowering project to requalify for PTC's - "*Section 6.01 of Notice 2016-31 provides that a facility may qualify as originally placed in service even though it contains some used property, provided the fair market value of the used property is not more than 20 percent of the facility's total value (the cost of the new property plus the value of the used property) (the 80/20 Rule).*" The table below shows the date we expect to repower each wind farm and then on a per turbine basis the value of retained (used) component, the estimated cost of the repowering (new), the total cost of a turbine after repowering and the 80/20 calculation. Then a calculation is performed on the data to show the relationship of the new repower equipment and the retained (used) equipment each divided by the total facility cost after repowering.

**TABLE IS CONFIDENTIAL**

- 1-7. Refer to the "Stand-Alone Summary 1-4" tab of Exhibit A.
- a. Explain why MidAmerican used a 40-year levelized revenue requirement calculation here but only a 20-year levelized revenue requirement calculation in data request response 1-4 in EL17-040.

**MidAmerican Response:**

A 40-year levelized revenue requirement is an incorrect label for this analysis. The 40-year levelized requirement references the original life-span of the project, but the calculation in the "Stand-Alone Summary 1-4" tab is actually a 30-year levelized revenue requirement.

The difference between the 20- and 30-year life spans has to do with the initial life span given to the turbines. Earlier turbines (such as those underlying the calculation for data request response 1-4 in EL17-40) were assigned life spans of 20 to 30 years based on established agreements and ratemaking principles at the time of construction. Newer turbines (such as those in this analysis) were given 40-year life spans which were consistent with manufacturer expectations and management operating practices at the time of construction. The 30-year levelized requirement used here is reflective of the 40-year life span assigned at original construction net of the ten years the turbines have already been in service.

- b. Provide a comparison of the 9.48 percent calculated incremental capacity factor versus the 44.1 percent calculated incremental capacity factor as calculated in data request response 1-4 in EL17-040.

**MidAmerican Response:**

The 44.1% value referenced in the summary table as part of data request response 1-4 in EL17-040 is the assumed capacity factor of the General Electric wind farms once they have been repowered. Conversely, the 9.48% value referenced in this file is instead the incremental increase in capacity factor after the Siemens wind farms have

been repowered. In both filings the repowering results in an increased capacity factor. Between the time of the two filings, MidAmerican determined it was more pertinent to display the incremental increased capacity factor expected from this filing.

- 1-8. Provide the driving factor(s) for the increased South Dakota allocation from docket EL17-040 to this docket.

**MidAmerican Response:**

The calculation inadvertently picked up an incorrect allocation factor instead of the A&E allocator that is used to assign PTCs for South Dakota ECA purposes. See Exhibit A-Revised for the corrected calculation with the appropriate A&E factors included. The impact of this change does not materially impact the analysis.