Docket Number: **EL17-040**
Subject Matter: **First Data Request**
Request to: **MidAmerican Energy Company**
Request from: **South Dakota Public Utilities Commission Staff**
Date of Request: **October 4, 2017**
Responses Due: **October 18, 2017**

1-1. Provide, by year, the additional South Dakota revenue requirement which would be attributable to the repowering process for the next five years.

MEC Response:

The table below provides the South Dakota net revenue requirement for the repowering project. Because significant additional benefits are derived from this investment it is important to understand the net revenue requirement taking into account those benefits. The net revenue requirement is the regulated revenue requirement net of the benefits of the production tax credits and net system benefit (energy benefits) provided from repowering the turbines. The negative net revenue requirement reflects the expected benefit to MidAmerican's South Dakota jurisdiction.

South Dakota percentage ($000)	2018	2019	2020	2021	2022
Net Revenue Requirements	$ 4	$ (77)	$ (219)	$ (553)	$ (465)

MidAmerican does not plan to include any of the costs of repowering in its South Dakota revenue requirement in the next five years. Costs would only be included in the event of a MidAmerican rate case, which MidAmerican does not plan to have in the next five years. In the event of a rate case, no party nor the Commission would be prejudiced in the ability to argue about the prudency of MidAmerican's repowering efforts.

1-2. Provide, by year, the additional production tax credits MidAmerican will earn from the repowering process for the next five years.

MEC Response:

$000	2018	2019	2020	2021	2022
GE Repowering PTC's	$ 46,521	$ 70,643	$ 90,101	$ 103,620	$ 103,620

These figures are the total amount of production tax credits associated with repowering, of which approximately 1% would be attributable to the South Dakota jurisdiction.

1-3. Provide the original book value, current book value, and market value of the existing 706 wind turbines subject to repowering. What is the estimated cost of repowering these turbines? Will this rate base value be added to the current book value of the existing turbines?

MEC Response:

$000	Original Cost	9/30/2017 Plant Balance	Accumulated Depr at 9/30/17	NBV 9/30/17
GE Wind Farms to be Repowered	1,780,209	1,803,424	728,098	1,075,326

Estimated costs for repowering are $1.138b or $1,075/kW.
The repowering costs will be added to the current book value of the existing turbines.

The figures shown here are totals for the overall repowering project. The South Dakota share of the values is approximately 1% of the amounts shown.

1-4. Provide a top-sheet depiction which shows the estimated benefits will outweigh the cost of performing the repowering.

MEC Response:
The table below provides the top-sheet summary stand-alone economics for the repowering project. Rows 21-25 provide the cost/benefit on a per kilowatt hour. This shows, on a levelized basis, the benefits of the production tax credits and off system sales of additional generation more than offset the investment cost of the repowering. The project provides a credit of $0.008/kilowatt hour to customers on a levelized basis.

Repower 706 GE WTG		
		Total
1	Investment	1,104,263,689
2	Transmission	0
3	Total Investment	1,104,263,689
4	AFUDC	34,040,485
5	Gross Investment	1,138,304,174
6	Levelized Revenue & Offsets	
7	Levelized Revenue Requirement/Year - 20 Years	100,482,809
8	Offsets (to Revenue Requirement)	
9	Production Tax Credits (Revenue Level)	119,254,161
10	REC Credits	0
11	Capacity Sales	0
12	Change in Net Off-System Purchases & Fuel Costs	13,982,556
13	Net Levelized Revenue Requirement/Year	(32,753,909)
14	Power: Cost & others	
15	kW	1,059,000
16	$/kW with afudc	1,075
	$/kW wo afudc	1,043
17	Hours/Year	8,760
18	Average kWh/Year (to be produced)	4,091,003,014
19	Calculated Incremental Capacity Factor	44.1%
20	Cost of Service ($/kWh)	
21	Total	0.025
22	- (Less) Production Tax Cr	(0.005)
23	- (Less) Prod Tax Cr - REC Cr	(0.005)
24	- (Less) Prod Tax Cr - REC Cr - Cap Sales	(0.005)
25	- (Less) Prod Tax Cr - REC Cr - Cap Sales - Off-Sys Sales	(0.008)

1-5. The third paragraph on page 2 of the filing states, “the result of this retrofit/repowering project is effectively a new turbine on top of an existing structure”. Will there be instances where the repowering includes longer blades, necessitating taller towers?

MEC Response: All repowered turbines will include longer blades than the original installation configuration resulting in an increase in the capacity factor for these wind farms. However, the longer blades are compatible with the existing towers so no change to the towers will be required.