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FILED

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Missouri Public Service Commission

Case No.: EX-2014-0352

WIND ON THE WIRES COMMENTS – ATTACHMENT A

Attachment A: Proposed "Retail Rate Impact Analysis using 10 Year Forward Average"

Calculates the Differences (Over/Under) as a Percentile instead of a fixed dollar Amount in a manner consistent with the existing RES rule.

Inputs:	
Avoided Cost of current portfolio ($/MWh)	48
Avoided Cost of new generation ($/MWh)	76
New Wind ($/MWh)	50
REC Cost ($)	10
New Solar Cost ($/MWh)	100
S-REC Cost ($)	5
REC Bank 2008-2010	3,412,500
S-REC Bank 2008-2010	12,606

Renewable Resources	MWh		$/MWh
Existing Wind	375,000	out of state	75
Existing Landfill Gas	100,000	in state	71
Existing Hydro	950,000	out of state	11
Existing Solar I (2012)	115	in state	150
Existing Solar II (2014)	7,800	in state	130
Proposed Solar III (2015)	19,000	in state	120

Non-Renewable Generation Additions		MWh	$/MWh
Natural Gas (2020)	in state	31536	75

Non-Renewable Generation Retirements		MWh	$/MWh
Coal A (2021)	in state	70080	35

1. Utility Generation Portfolio Inputs

	2011	2012	2013	PLANNING YEAR 2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Existing generation to serve load (MWh)	36,000,000	36,000,000	36,000,000	36,000,000	36,000,000	36,000,000	36,000,000	36,000,000	36,000,000	36,000,000	36,000,000	36,000,000	36,000,000
Existing renewable generation (MWh)	1,325,000	1,358,333	1,391,667	1,399,467	1,399,467	1,418,467	1,418,467	1,451,800	1,451,800	1,451,800	1,451,800	1,451,800	1,451,800
RES Portfolio Requirements	2%	2%	2%	5%	5%	5%	5%	10%	10%	10%	15%	15%	15%
NON-SOLAR REQUIREMENTS													
Non-solar RES Requirements (MWh)	705,600	705,600	705,600	1,764,000	1,764,000	1,764,000	1,764,000	3,528,000	3,528,000	3,528,000	5,292,000	5,292,000	5,292,000
Existing non-solar REC generation (MWh)	1,325,000	1,366,667	1,408,333	1,408,333	1,408,333	1,408,333	1,408,333	1,450,000	1,450,000	1,450,000	1,450,000	1,450,000	1,450,000
REC Bank (MWh)	4,031,900	4,692,967	5,395,700	5,040,033	4,684,367	4,328,700	3,973,033	1,895,033	-	-	-	-	-
New non-solar renewable generation needed to meet RES (MWh)	-	-	-	-	-	-	-	-	2,078,000	2,078,000	3,842,000	3,842,000	3,842,000
SOLAR REQUIREMENTS													
Solar RES Requirements (MWh)	14,400	14,400	14,400	36,000	36,000	36,000	36,000	72,000	72,000	72,000	108,000	108,000	108,000
Existing solar REC generation (MWh)	-	144	144	9,894	9,894	33,644	33,644	33,644	33,644	33,644	33,644	33,644	33,644
S-RECs (w/o energy)	17,400	1,000	18,825										
S-RECs from Solar Rebates	1,325	3,564	10,139	53,461	53,461	52,986	50,319	50,319	50,319	50,319	49,469	47,723	35,838
S-REC Bank	16,931	7,239	21,946	49,301	76,656	127,286	175,249	187,211	199,174	211,136	186,249	159,615	121,096
New solar needed to meet RES (or S-REC purchases) (MWh)	-	-	-	-	-	-	-	-	-	-	-	-	-

2. Non-Renewable Generation and PPA Portfolio

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Base Revenue Requirement for the Planning Year (includes all generation) (MM$)	1,800	1,900	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,702	2,800	2,900	3,000
Remove from Rev Requirement cost of existing renewable resources added prior to Planning Year (MM$)	39	57	57	41	41	41	41	41	41	41	41	41	41
from Wind Resources	28	28	28	28	28	28	28	28	28	28	28	28	28
from Solar Resources	-	0	0	0	0	0	0	0	0	0	0	0	0
from Landfill Gas Resources		2	2	2	2	2	2	2	2	2	2	2	2
from Hydro Resources	10	10	10	10	10	10	10	10	10	10	10	10	10
from REC procurement and solar rebate payments	0	16	16		-	-	-	-	-	-	-	-	-
Non-Renewable Generation that Replaces Existing and RES-Added Renewable Resources (MM$)	68	68	68	68	69	70	70	70	228	228	362	362	360
Expected Greenhouse Gas Emissions Compliance Costs (MM$)	-	-	-		-	-	-	-	-	-	-	-	-
Total Non-Renewable Generation Portfolio Revenue Requirement (MM$)	**1,830**	**1,911**	**2,011**	**2,127**	**2,228**	**2,329**	**2,429**	**2,529**	**2,787**	**2,889**	**3,121**	**3,221**	**3,319**

3. RES Compliant Portfolio

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Base Revenue Requirement for Year Preceding Planning Year (includes all generation) (MM$)	1,800	1,900	2,000	2,100	2,200	2,300	2,400	2,500	2,600	2,700	2,800	2,900	3,000
Incremental ADDITION of Least-Cost Renewable Resources Sufficient to Meet RES Requirements (MM$)	-	-	-	-	1	3	3	3	107	107	195	195	195
from Wind Resources	-	-	-	-	-	-	-	-	104	104	192	192	192
from Solar Resources	-	-	-	-	1	3	3	3	3	3	3	3	3
from Landfill Gas Resources	-	-	-	-	-	-	-	-	-	-	-	-	-
from Hydro Resources	-	-	-	-	-	-	-	-	-	-	-	-	-
from REC procurement	-	-	-	-	-	-	-	-	-	-	-	-	-
Solar Rebate Payment ($MM)	-	-	-	61	-	-	-	-	-	-	-	-	-
Total RES-Compliant Portfolio Revenue Requirement (MM$)	**1,800**	**1,900**	**2,000**	**2,161**	**2,201**	**2,303**	**2,403**	**2,503**	**2,707**	**2,807**	**2,995**	**3,095**	**3,195**

4. RES RETAIL RATE IMPACT -- Comparison of RES Compliant Portfolio Costs to Non-Renewable Portfolio Costs

	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023
Difference between "Total RES-Compliant Portfolio RR" and "Total Non-Renewable Generation Portfolio RR" for that Year (MM$)				33	(27)	(25)	(25)	(25)	(79)	(82)	(125)	(125)	(124)
RENEWABLE ENERGY RETAIL RATE IMPACT (Delta/Total Non-Renewable Generation Portfolio for that Year -- AS A PERCENTILE)				1.55%	-1.20%	-1.09%	-1.05%	-1.01%	-2.85%	-2.83%	-4.01%	-3.89%	-3.73%

5. 10-Yr Forward Looking Average (2014-2023)	**-2.01%**

The average Renewable Energy Retail Rate Impact over the next ten years -- 2014 through 2023 -- does not exceeed the allowable Retail Rate Impact percentage of 1%. Therefore, the proposed RES Portfolio is compliant.

Brady Exhibit No. A

Date 6-11-15 Reporter ADT

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