

Application No. 18-04-____
Exhibit PAC/604
Witness: Timothy J. Hemstreet

BEFORE THE PUBLIC UTILITIES COMMISSION
OF THE STATE OF CALIFORNIA

PACIFICORP

REDACTED

Direct Testimony of Timothy J. Hemstreet

Repowering Project Details, Capital Costs, and In-Service Dates

April 2018

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PacifiCorp Wind Fleet Repowering

Table 1: Repowering Project Details, Capital Costs, and In-Service Dates

Project #	Wind Project	WTGs	WTGs to be Repowered	Current Project Capacity (MW)	Current Long-Term Generation (MWh)	Current Capacity Factor	Future Project Capacity (MW)	Project In-Service Date	Retirement date without Repowering	Retirement date with Repowering	Additional Life (Years)
Wyoming Projects											
1	Glenrock I	66	58	99.0	303,723	35.0%	119.7	10/1/2019	12/31/2038	10/1/2049	10.75
2	Glenrock III	26	20	39.0	113,438	33.2%	46.3	10/1/2019	12/31/2038	10/1/2049	10.75
3	Rolling Hills	66	48	99.0	271,635	31.3%	116.6	10/1/2019	12/31/2038	10/1/2049	10.75
4	Seven Mile Hill I	66	66	99.0	339,195	39.1%	122.1	7/1/2019	12/31/2038	7/1/2049	10.50
5	Seven Mile Hill II	13	13	19.5	71,224	41.7%	24.1	7/1/2019	12/31/2038	7/1/2049	10.50
6	High Plains	66	66	99.0	306,145	35.3%	122.1	11/1/2019	12/31/2038	11/1/2049	10.84
7	McFadden Ridge	19	19	28.5	93,101	37.3%	35.2	11/1/2019	12/31/2038	11/1/2049	10.84
8	Dunlap I	74	74	111.0	389,045	40.0%	136.9	12/1/2020	10/1/2040	12/1/2050	10.17
		396	364	594.0	1,887,506	36.3%	722.8				
Washington Projects											
9	Marengo I	78	78	140.4	360,279	29.3%	156.0	11/1/2019	8/1/2037	11/1/2049	12.25
10	Marengo II	39	39	70.2	166,742	27.1%	78.0	11/1/2019	6/1/2038	11/1/2049	11.42
11	Goodnoe Hills	47	47	94.0	220,898	26.8%	94.0	10/1/2019	12/31/2038	10/1/2049	10.75
		164	164	304.6	747,919	28.0%	328.0				
Oregon Project											
12	Leaning Juniper	67	67	100.5	233,592	26.5%	100.5	10/1/2019	9/14/2036	10/1/2049	13.05
13	TOTAL	627	595	999.1	2,869,016	32.8%	1,151.3				

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Generation increases for base case repowering scenario and modified (increased) transmission interconnection/service agreements sensitivity in Wyoming

Project #	Wind Project	Base Case Repowering Scenario (Current Transmission Interconnection/Service Limits except at Marengo)					Wyoming Transmission Sensitivity (Under Modified Transmission Interconnection/Service Limits)				
		Current Net Capacity (MW)	Current Long-Term Generation (MWh)	Project Generation Increase (%)	Incremental Energy (MWh)	Repowered Project Generation (MWh)	Capital Cost (\$m)	Project Generation Increase (%)	Incremental Energy (MWh)	Repowered Project Generation (MWh)	Capital Cost (\$m)
[1]	[2]	[3]	[4]	[5]	[6]	[7]	[8]	[9]	[10]	[11]	[12]
Wyoming Projects											
1	Glenrock I	99.0	303,723	21.7%	66,000	369,723		26.3%	79,918	383,641	
2	Glenrock III	39.0	113,438	20.7%	23,427	136,864		23.2%	26,353	139,791	
3	Rolling Hills	99.0	271,635	17.4%	47,387	319,022		21.6%	58,617	330,252	
4	Seven Mile Hill I	99.0	339,195	23.0%	78,063	417,258		30.4%	103,108	442,303	
5	Seven Mile Hill II	19.5	71,224	22.8%	16,256	87,480		30.4%	21,651	92,874	
6	High Plains	99.0	306,145	24.9%	76,256	382,400		31.6%	96,865	403,010	
7	McFadden Ridge	28.5	93,101	25.3%	23,542	116,644		32.0%	29,829	122,930	
8	Dunlap I	111.0	389,045	22.5%	87,704	476,749		30.6%	119,044	508,089	
		594.0	1,887,506	22.2%	418,634	2,306,139		28.4%	535,385	2,422,890	
Washington Projects											
9	Marengo I*	140.4	360,279	35.5%	127,927	488,207		35.5%	127,927	488,207	
10	Marengo II*	70.2	166,742	39.4%	65,683	232,424		39.4%	65,683	232,424	
11	Goodnoe Hills**	94.0	220,898	28.4%	62,799	283,696		28.4%	62,799	283,696	
		304.6	747,919	34.3%	256,409	1,004,327		34.3%	256,409	1,004,327	
Oregon Project											
12	Leaning Juniper**	100.5	233,592	27.0%	62,999	296,590		27.0%	62,999	296,590	
13	TOTAL	999.1	2,869,016	25.7%	738,041	3,607,057		29.8%	854,792	3,723,808	\$1,136.6

Notes: *Marengo I and Marengo II are assumed to have transmission interconnection agreements modified under both scenarios.
 **Goodnoe Hills and Leaning Juniper are not assumed to operate under revised transmission interconnection agreements with increased capacity.