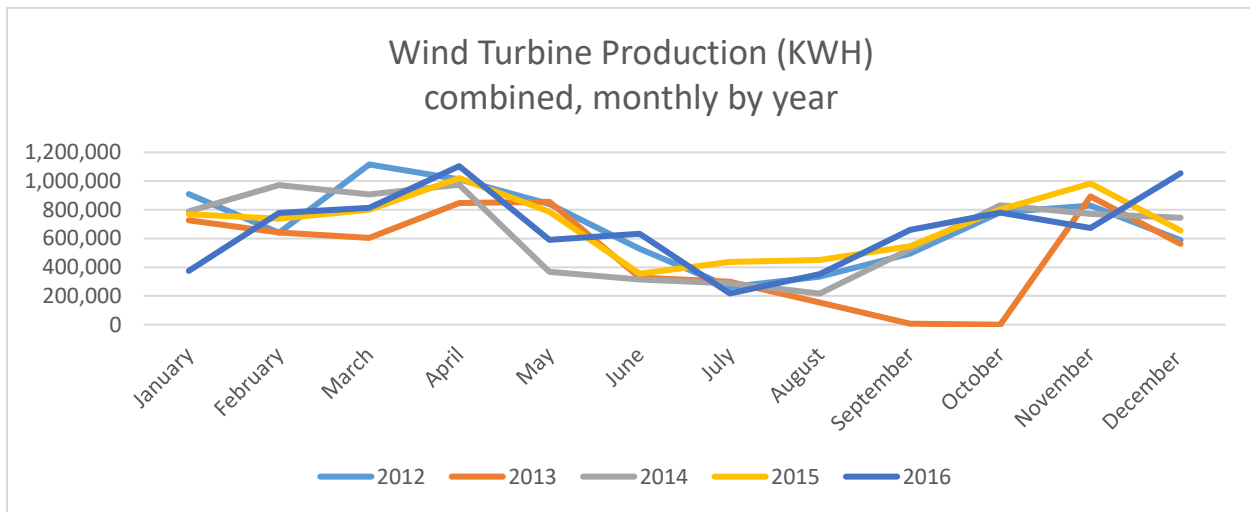




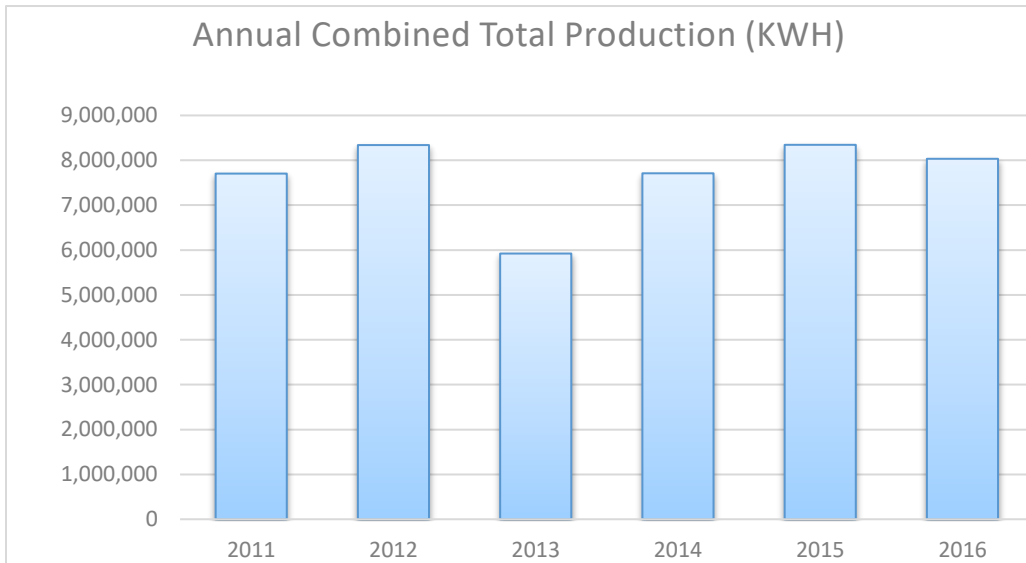
WILLMAR MUNICIPAL UTILITIES

December 2016 Wind Turbine Report



	Production (KWH)		Availability (%)		Total KWH	Major Outages
	#3	#4	#3	#4		
Dec. 2016	494,779	559,055	92.9	93.4	1,053,834	
Nov. 2016	308,832	364,948	87.4	98.7	673,780	
Oct. 2016	350,086	430,345	87.7	98.6	780,431	
Sep. 2016	320,139	339,728	94.3	94.8	659,867	
Aug. 2016	162,977	188,595	89.6	99.3	351,572	
July 2016	55,585	161,725	49.4	66.8	217,310	#3 & #4 Semi-Annual Maintenance
June 2016	308,219	324,529	88.0	99.9	632,748	
May 2016	305,374	285,755	99.4	98.3	591,129	
Apr. 2016	576,692	527,450	96.1	91.0	1,104,142	
Mar. 2016	402,070	412,171	98.5	98.0	814,241	
Feb. 2016	381,652	397,539	99.5	86.6	779,191	
Jan. 2016	268,715	106,610	99.8	49.4	375,325	#4: WD Oil System Blockage
Dec. 2015	374,469	282,023	92.0	69.5	656,492	#4: WD Oil System Blockage
2016 Total	3,935,120	4,098,450			8,033,570	

Month	2011	2012	2013	2014	2015	2016
January	444,328	908,895	726,024	790,389	769,838	375,325
February	752,592	639,029	643,084	972,812	737,597	779,191
March	475,329	1,116,052	604,455	907,464	800,089	814,241
April	935,277	1,011,719	847,275	974,896	1,021,111	1,104,142
May	924,648	840,846	857,219	368,431	787,172	591,129
June	705,554	527,743	328,075	315,023	354,839	632,748
July	334,814	262,082	300,044	288,957	436,147	217,310
August	240,683	335,647	153,513	216,998	451,332	351,572
September	482,596	495,268	6,556	526,694	545,524	659,867
October	700,728	783,001	0	832,535	802,013	780,431
November	900,367	829,988	893,789	771,320	983,181	673,780
December	806,853	589,497	562,010	744,957	656,492	1,053,834
Total	7,703,769	8,339,767	5,922,044	7,710,476	8,345,335	8,033,570



Fun Fact: Because the generator is connected by an electrical cable that runs from the nacelle (top) to the switch gear (bottom). the turbine has the potential to wrap itself up and needs to periodically stop and unwind or rotate in the opposing direction in order to avoid tangling