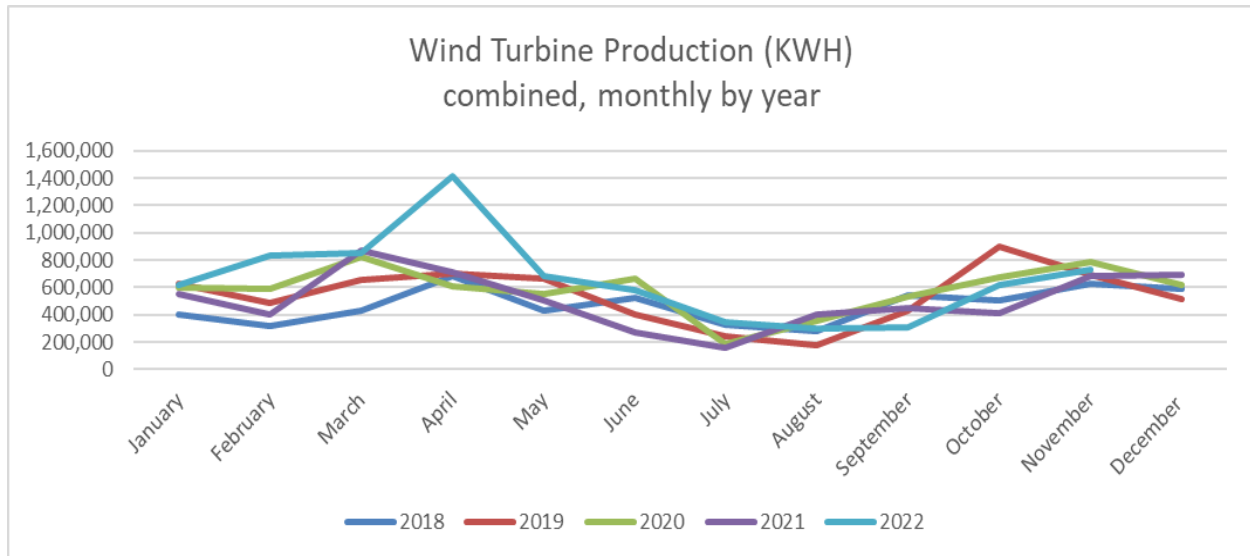




WILLMAR MUNICIPAL UTILITIES

November 2022 Wind Turbine Report

“Willmar Municipal Utilities will provide safe, reliable & quality utility services at competitive rates for their customers.”



	Production (KWH)		Availability (%)		Total KWH	Major Outages
	#3	#4	#3	#4		
Nov 2022	314,419	418,704	76.6	97.4	733,123	
Oct 2022	272,341	344,073	69.1	92.7	616,414	#3 Breaker Failure
Sept 2022	94,466	217,202	48.1	84.7	311,668	#3 Annual Maintenance
Aug 2022	147,480	151,453	92.2	93.3	298,933	
July 2022	181,149	162,286	90.9	83.5	343,435	
June 2022	302,181	276,359	94.4	88.6	578,540	
May 2022	334,016	346,667	94.3	90.7	680,683	
April 2022	682,796	733,316	95.8	98.8	1,416,112	
Mar 2022	423,397	428,473	98.4	97.2	851,870	
Feb 2022	386,126	442,660	92.9	95.9	828,786	
Jan 2022	191,089	428,633	67.8	92.3	619,722	Contactora and oil cooling fan failure
Dec 2021	356,542	337,412	94.2	88.8	693,954	
Nov 2021	241,863	443,307	50.1	99.9	685,170	#3 Gearbox speed sensor fault
2022 Total	3,329,460	3,949,826			7,279,286	

Month	2018	2019	2020	2021	2022
January	398,844	624,884	598,668	551,509	619,722
February	317,618	484,162	590,960	397,869	828,786
March	432,165	656,272	827,205	866,500	851,870
April	681,026	699,956	611,169	709,639	1,416,112
May	427,219	668,434	552,522	509,051	680,683
June	523,406	400,456	667,898	269,811	578,540
July	330,556	247,502	184,774	156,572	343,435
August	278,651	176,047	352,244	400,452	298,933
September	545,469	426,860	531,071	444,730	311,668
October	505,906	895,781	675,543	413,446	616,414
November	628,416	695,008	788,202	685,170	733,123
December	587,263	514,858	613,308	693,954	
Total	5,656,539	6,490,220	6,993,564	6,098,703	7,279,286

