# Willmar Municipal Utilities 

# WILLMAR MUNICIPAL UTILITIES <br> September 2023 Wind Turbine Report 

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


|  | Production (KWH) |  | Availability (\%) |  | Total | Major Outages |
| :--- | ---: | ---: | ---: | ---: | ---: | :--- |
|  | $\# 3$ | $\# 4$ | $\# 3$ | $\# 4$ | KWH |  |
| Sept 2023 | 119,259 | 167,641 | 57.5 | 83.1 | 286,900 | Positioning Sensor/Annual Maintenance |
| Aug 2023 | 24,590 | 119,144 | 35.5 | 61.4 | 143,734 | Positioning Sensor |
| July 2023 | 96,562 | 64,030 | 94.1 | 67.9 | 160,592 | Positioning Sensor, Ether-cat Faults |
| June 2023 | 41,562 | 68,613 | 42.0 | 52.0 | 110,175 | \#3 Pitch sensor \#4 Elec.Faults/Coupler |
| May 2023 | 244,122 | 341,882 | 72.0 | 89.8 | 586,004 |  |
| April 2023 | - | 326,944 | 0.0 | 64.5 | 326,944 | $\# 3$ Breaker Failure |
| Mar 2023 | - | - | 0.0 | 0.0 | - | \#3,\#4 Breaker Failure |
| Feb 2023 | 92,772 | 3,640 | 25.3 | 41.6 | 96,412 | \#3,\#4 Breaker Failure |
| Jan 2023 | 229,638 | - | 99.3 | 13.5 | 229,638 | \#4 Blade pitch failure |
| Dec 2022 | 288,452 | 155,753 | 66.4 | 74.3 | 444,245 | CT/PT Faults, Icing from Storm |
| Nov 2022 | 314,419 | 418,704 | 76.6 | 97.4 | 733,123 | \#3 Breaker Failure |
| Oct 2022 | 272,341 | 344,073 | 69.1 | 92.7 | 616,414 | \#3 Annual Maintenance |
| Sept 2022 | 94,466 | 217,202 | 48.1 | 84.7 | 311,668 |  |
| 2023 Total | 848,505 | $1,091,894$ |  |  | $1,940,399$ |  |


| Month | $\mathbf{2 0 1 9}$ | $\mathbf{2 0 2 0}$ | $\mathbf{2 0 2 1}$ | $\mathbf{2 0 2 2}$ | $\mathbf{2 0 2 3}$ |
| :--- | ---: | ---: | ---: | ---: | ---: |
| January | 624,884 | 598,668 | 551,509 | 619,722 | 229,638 |
| February | 484,162 | 590,960 | 397,869 | 828,786 | 96,412 |
| March | 656,272 | 827,205 | 866,500 | 851,870 | 0 |
| April | 699,956 | 611,169 | 709,639 | $1,416,112$ | 326,944 |
| May | 668,434 | 552,522 | 509,051 | 680,683 | 586,004 |
| June | 400,456 | 667,898 | 269,811 | 578,540 | 110,175 |
| July | 247,502 | 184,774 | 156,572 | 343,435 | 160,592 |
| August | 176,047 | 352,244 | 400,452 | 298,933 | 143,734 |
| September | 426,860 | 531,071 | 444,730 | 311,668 | 286,900 |
| October | 895,781 | 675,543 | 413,446 | 616,414 |  |
| November | 695,008 | 788,202 | 685,170 | 733,123 |  |
| Total | $5,975,362$ | $6,380,256$ | $5,404,749$ | $7,279,286$ | $1,940,399$ |



