

**Westmill Wind Farm  
Performance Review**

**Oct-14**

Period 01/10/2014-31/10/2014						
Turbine	Days	Energy [kWh]	Turbine Manuf. Avail.		Energy Since Startup [kWh]	
			Subtotal [%]	Total [%]		
T01	31	221,465	99.1	98.1	14,613,459	
T02	31	225,279	99.2	97.5	14,405,622	
T03	31	213,991	97.5	98.2	14,132,365	
T04	31	218,351	98.9	96.6	13,417,418	
T05	31	208,706	97.4	98	14,382,740	
<b>Totals</b>						
<b>Average</b>	31	217,558	98.4	97.7	14,190,321	
<b>Sum</b>		1,087,792			70,951,604	

	October	Since Start Up
<b>Production at SubStation</b>		
Active Energy Import	3,535	464,279 kWh
Active Energy Export	<b>1,047,016</b>	
Budget	<b>1,125,277</b>	
Actual Export	<b>1,049,530</b>	
Variance to budget	<b>93%</b>	
Line Loss	<b>4%</b>	

<b>Reactive Energy</b>		
Reactive Energy Import	211,455	4,203,879 kVAh
Reactive Energy Export	286	1,495,943 kVAh

<b>Reliability</b>		
Manufacturer Availability	98.4%	97.7 %
Capacity Factor	<b>22.00%</b>	18.2 %

<b>Outage Time</b>		
Total	125.00	10,812.10 hours

**Estimated figures until meter reading confirmed**

<b>Notes/Errors</b>	
Tower vibration twice on T3.	
Gear oil temperature warning 14 times; 4 times on T1 & T3 and 3 times on T2 & T5	
Gear oil temperature high 5 times; 3 times on T3 and once on T1 & T5	

**Daily output  
Oct-14**

Grid

Export Active Energy	Total [kWh]	Period	Total [kWh]	T01 [kWh]	T02 [kWh]	T03 [kWh]	T04 [kWh]	T05 [kWh]
31/10/2014	40,000	31/10/2014	41,480	8,973	8,932	8,537	7,827	7,211
30/10/2014	14,943	30/10/2014	16,280	3,489	3,402	3,285	3,157	2,947
29/10/2014	2,167	29/10/2014	3,027	611	559	469	507	881
28/10/2014	22,815	28/10/2014	24,065	4,913	5,045	4,764	4,662	4,681
27/10/2014	43,150	27/10/2014	44,687	9,250	9,117	8,974	8,814	8,532
26/10/2014	48,430	26/10/2014	50,018	9,549	10,257	10,348	9,880	9,984
25/10/2014	32,257	25/10/2014	33,687	5,935	6,860	7,104	6,920	6,868
24/10/2014	20,954	24/10/2014	22,288	4,340	4,665	4,598	4,334	4,351
23/10/2014	40,408	23/10/2014	41,924	7,650	8,763	8,614	8,326	8,571
22/10/2014	26,042	22/10/2014	27,411	5,618	5,565	5,378	5,335	5,515
21/10/2014	103,153	21/10/2014	105,221	24,073	20,765	19,982	19,959	20,442
20/10/2014	42,647	20/10/2014	44,172	8,269	8,803	9,024	8,900	9,176
19/10/2014	70,960	19/10/2014	72,733	13,674	14,256	14,722	14,924	15,157
18/10/2014	67,735	18/10/2014	69,462	14,272	14,261	13,785	13,827	13,317
17/10/2014	41,164	17/10/2014	42,683	9,028	9,076	8,641	8,257	7,681
16/10/2014	13,604	16/10/2014	14,900	2,863	3,138	2,997	2,998	2,904
15/10/2014	4,843	15/10/2014	5,585	1,026	1,046	987	898	1,628
14/10/2014	6,579	14/10/2014	7,377	1,473	1,414	1,472	1,447	1,571
13/10/2014	95,349	13/10/2014	97,255	19,048	20,088	19,945	19,158	19,016
12/10/2014	17,539	12/10/2014	18,263	3,772	3,908	3,567	3,447	3,569
11/10/2014	6,848	11/10/2014	7,905	1,208	1,627	1,590	1,718	1,762
10/10/2014	23,970	10/10/2014	25,284	5,059	5,281	5,110	5,042	4,792
09/10/2014	73,268	09/10/2014	74,941	13,101	13,513	13,047	18,740	16,540
08/10/2014	48,186	08/10/2014	49,640	10,767	10,974	6,784	10,145	10,970
07/10/2014	28,232	07/10/2014	29,459	7,221	7,393	6,960	4,611	3,274
06/10/2014	36,330	06/10/2014	37,604	10,092	9,893	7,032	8,736	1,851
05/10/2014	10,154	05/10/2014	11,183	2,316	2,449	2,258	2,150	2,010
04/10/2014	23,452	04/10/2014	24,558	5,278	4,999	4,855	4,744	4,682
03/10/2014	31,056	03/10/2014	32,515	6,458	6,773	6,787	6,428	6,069
02/10/2014	1,670	02/10/2014	2,008	353	438	395	400	422
01/10/2014	9,111	01/10/2014	10,177	1,786	2,019	1,980	2,060	2,332
<b>Totals</b>		<b>Totals</b>						
Average	33,775	Average	35,090	7,144	7,267	6,903	7,044	6,732
Sum	1,047,016	Sum	1,087,792	221,465	225,279	213,991	218,351	208,706

Lost Output over 24 hrs
0

Key	100.00%	20.36%	20.71%	19.67%	20.07%	19.19%
turbine down for less than 24 hours						
turbine down for more than 24 hours						

**WESTMILL YEAR TO DATE PRODUCTION**

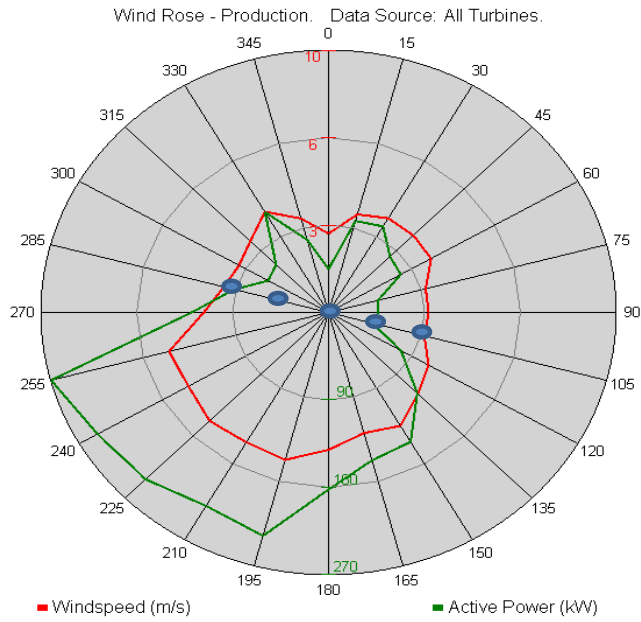
2013/2014						
PRODUCTION PER TURBINE						
	T1	T2	T3	T4	T5	Total
Nov-13	152,917	155,372	152,079	148,382	147,328	<b>756,078</b>
Dec-13	162,353	345,414	333,075	326,518	333,336	<b>1,500,696</b>
Jan-14	325,298	324,157	299,948	261,890	300,989	<b>1,512,282</b>
Feb-14	433,645	433,128	429,667	336,952	417,267	<b>2,050,659</b>
Mar-14	176,888	181,816	176,481	173,949	177,428	<b>886,562</b>
Apr-14	129,816	128,231	59,099	124,123	128,016	<b>569,285</b>
May-14	159,268	165,073	157,189	162,739	151,946	<b>796,215</b>
Jun-14	47,242	48,485	47,570	46,688	40,277	<b>230,262</b>
Jul-14	73,298	70,505	70,965	72,179	75,364	<b>362,311</b>
Aug-14	138,652	129,911	127,575	126,035	138,238	<b>660,411</b>
Sep-14	37,301	39,511	39,092	40,015	42,849	<b>198,768</b>
Oct-14	221,465	225,279	213,991	218,351	208,706	<b>1,087,792</b>
<b>Total</b>	<b>2,058,143</b>	<b>2,246,882</b>	<b>2,106,731</b>	<b>2,037,821</b>	<b>2,161,744</b>	<b>10,611,321</b>
%	19.4%	21.2%	19.9%	19.2%	20.4%	100.0%

Estimated lost output in kWh due to mechanical failure and above 24 hours								Total after Line Loss
	T1	T2	T3	T4	T5	Total	Line Loss	
Nov-13						-	-	-
Dec-13	121,014					121,014	3,231.27	<b>117,783</b>
Jan-14				39,372		39,372	1,024.38	<b>38,347</b>
Feb-14				39,713		39,713	514.24	<b>39,198</b>
Mar-14	3,419					3,419	182.48	<b>3,237</b>
Apr-14			65,587			65,587	3,302.47	<b>62,284</b>
May-14						-	-	-
Jun-14					1496.25	1,496	124.68	<b>1,372</b>
Jul-14						-	-	-
Aug-14				9,867		9,867	482.50	<b>9,384</b>
Sep-14						-	-	-
Oct-14						-	-	-

	YTD					Cumulative			Capacity Factor	Availability	Wind Speed m/s	Historic data						
	2013/2014					2013/2014						Average	2012/2013	2011/2012	2010/2011	2009/2010	2008/2009	2007/2008
	Actual Including Estimated Outages	Actual	P90 Budget	Variance	Line Loss	Actual	GH P90 Budget	Variance										
Nov-13	725,115	725,115	1,113,177	65.1%	4%	725,115	1,113,177	65%	15.8%	98.7%	5.61	1,162,927	826,190	838,750	1,040,420	1,938,119	1,171,155	
Dec-13	1,578,408	1,460,625	1,246,274	117.2%	3%	2,185,740	2,359,451	93%	30.3%	92.7%	5.41	1,104,525	1,377,105	1,724,080	498,995	1,010,235	912,210	
Jan-14	1,511,282	1,472,935	1,355,172	108.7%	3%	3,658,675	3,714,623	98%	30.6%	98.7%	8.35	1,033,137	1,001,975	1,297,035	1,041,950	683,190	1,141,535	
Feb-14	2,063,303	2,024,105	1,234,187	164.0%	1%	5,682,780	4,948,810	115%	46.6%	97.4%	9.29	740,313	679,390	728,005	1,161,200	622,215	510,755	160,710
Mar-14	842,482	839,245	1,197,875	70.1%	5%	6,522,025	6,146,685	106%	17.4%	96.2%	5.06	922,543	1,004,105	470,930	589,550	915,735	1,032,800	1,522,135
Apr-14	602,904	540,620	943,781	57.3%	5%	7,062,645	7,090,466	100%	12.6%	94.7%	4.79	835,228	1,344,095	994,110	634,940	637,085	483,385	917,750
May-14	766,650	766,650	846,983	90.5%	4%	7,829,295	7,937,448	99%	16.1%	95.4%	5.07	836,687	915,240	634,345	1,202,020	380,665	1,202,895	684,955
Jun-14	212,447	211,075	750,185	28.1%	8%	8,040,370	8,687,633	93%	4.8%	94.1%	3.90	685,296	848,400	1,121,805	795,565	268,615	348,430	728,960
Jul-14	338,445	338,445	701,786	48.2%	7%	8,378,815	9,389,418	89%	7.3%	97.7%	4.40	622,672	370,585	575,445	460,895	619,750	967,500	741,855
Aug-14	637,499	628,115	725,985	86.5%	5%	9,006,930	10,115,403	89%	13.3%	95.1%	5.03	673,582	510,790	581,425	513,435	671,210	761,260	1,003,370
Sep-14	178,425	178,425	859,070	20.8%	10%	9,185,355	10,974,473	84%	4.2%	98.1%	3.25	731,487	395,320	750,075	1,079,775	694,335	777,250	692,165
Oct-14	1,049,530	1,049,530	1,125,277	93.3%	4%	10,234,885	12,099,750	85%	22.0%	98.4%	5.64	974,248	1,173,090	859,350	1,231,920	853,350	567,510	1,160,270
<b>TOTAL</b>	<b>10,506,489</b>	<b>10,234,885</b>	<b>12,099,750</b>		<b>4.86%</b>				<b>18.4%</b>	<b>96.4%</b>	<b>5.48</b>	<b>10,322,643</b>	<b>10,446,285</b>	<b>10,575,355</b>	<b>10,250,665</b>	<b>9,294,504</b>	<b>9,876,685</b>	<b>7,612,170</b>

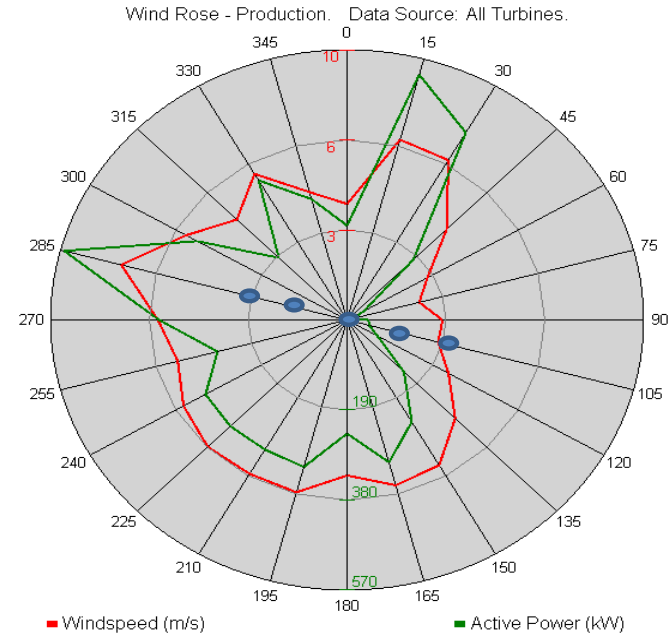
estimated figure

## Wind Rose



YTD Wind Rose (from Nov 2013)

● Direction of Turbines



1st - 31st October 2014 Wind Rose