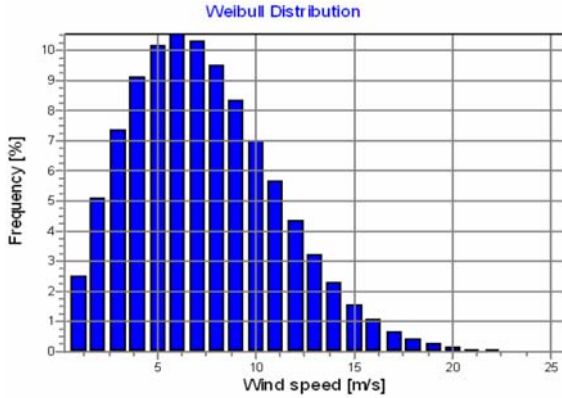


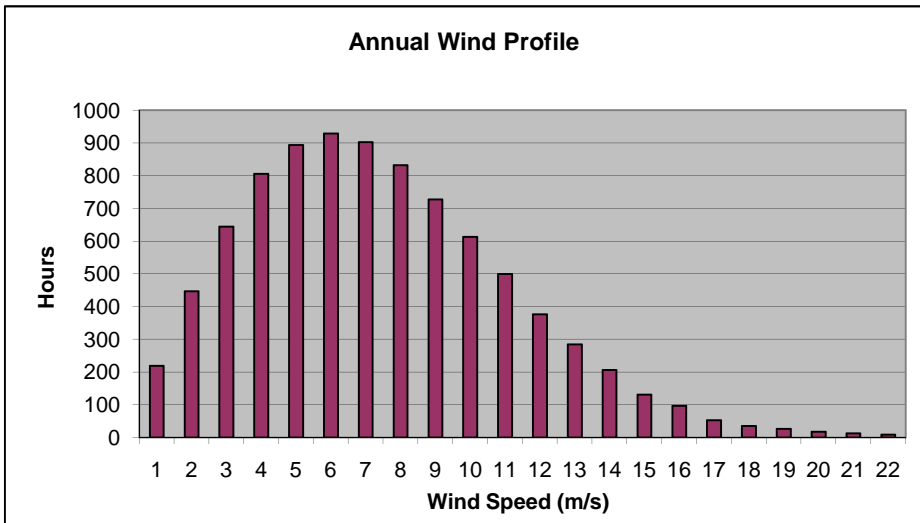
## GREAT LAKES WIND ENERGY PILOT PROJECT MODIFIED ENERGY ESTIMATE



Wind profile taken from GLWEC Feasibility Study page 6-80

### CONVERT FREQUENCY TO HOURS PER YEAR (1 YEAR = 8760 HOURS)

Wind Speed (m/s)	Freq (%)	Hours	Power** (KW)	Energy (KWh)		
1	2.50%	219	0	0	Power = 0 (below cut-in speed)	
2	5.10%	447	0	0		
3	7.35%	644	63	40,244	Power = $2.315 \times V^3$ (cubic curve)	
4	9.20%	806	148	119,405		
5	10.20%	894	289	258,562		
6	10.60%	929	500	464,317		
7	10.30%	902	794	716,451		
8	9.50%	832	1185	986,390		
9	8.30%	727	1688	1,227,046		
10	7.00%	613	2315	1,419,558	Power extrapolated value to smooth curve	
11	5.70%	499	3081	1,538,537		
12	4.30%	377	3550	1,337,214		
13	3.25%	285	3850	1,096,095		
14	2.35%	206	4000	823,440		
15	1.50%	131	4000	525,600		
16	1.10%	96	4000	385,440		
17	0.60%	53	4000	210,240		
18	0.40%	35	4000	140,160		
19	0.30%	26	4000	105,120		
20	0.20%	18	4000	70,080	Power = 4000 KW (max output)	
21	0.15%	13	4000	52,560		
22	0.10%	9	4000	35,040		
<b>TOTALS</b>	<b>100.00%</b>	<b>8760</b>				
			<b>Uptime</b>	<b>Actual Energy (KWh)</b>	<b>Actual Energy (MWh)</b>	<b>Annual Energy 5 Turbines (MWh)</b>
			83%	9,587,745	9,588	47,939
			85%	9,818,775	9,819	49,094
			90%	10,396,350	10,396	51,982
			92%	10,627,380	10,627	53,137



**4.0-110 GE Offshore Wind Turbines (5 total turbines)**

Energy output per Wind Profile Analysis - 90% uptime

6 years of paid maintenance

No inflation applied to O&M

Annual Energy Production

input 51,982 MWh

Value of Electricity

input \$50 per MWh

Annual Inflation Rate

input 2.5%

1st Year Revenue

\$2,599,100

Annual Maint & Oper Cost

input (\$2,000,000)

Year	Inflation Factor	Revenue	Maint & Ops	Cash Flow
0				(\$100,000,000)
1		\$2,599,100		(\$97,400,900)
2	1.025	\$2,664,078		(\$94,736,823)
3	1.025	\$2,730,679		(\$92,006,143)
4	1.025	\$2,798,946		(\$89,207,197)
5	1.025	\$2,868,920		(\$86,338,277)
6	1.025	\$2,940,643		(\$83,397,633)
7	1.025	\$3,014,159	(\$2,000,000)	(\$82,383,474)
8	1.025	\$3,089,513	(\$2,000,000)	(\$81,293,961)
9	1.025	\$3,166,751	(\$2,000,000)	(\$80,127,210)
10	1.025	\$3,245,920	(\$2,000,000)	(\$78,881,290)
11	1.025	\$3,327,068	(\$2,000,000)	(\$77,554,223)
12	1.025	\$3,410,244	(\$2,000,000)	(\$76,143,978)
13	1.025	\$3,495,501	(\$2,000,000)	(\$74,648,478)
14	1.025	\$3,582,888	(\$2,000,000)	(\$73,065,590)
15	1.025	\$3,672,460	(\$2,000,000)	(\$71,393,129)
16	1.025	\$3,764,272	(\$2,000,000)	(\$69,628,858)
17	1.025	\$3,858,379	(\$2,000,000)	(\$67,770,479)
18	1.025	\$3,954,838	(\$2,000,000)	(\$65,815,641)
19	1.025	\$4,053,709	(\$2,000,000)	(\$63,761,932)
20	1.025	\$4,155,052	(\$2,000,000)	(\$61,606,880)
21	1.025	\$4,258,928	(\$2,000,000)	(\$59,347,952)

**4.0-110 GE Offshore Wind Turbines (5 total turbines)**

Energy output per Wind Profile Analysis - 90% uptime

6 years of paid maintenance

Inflation applied to O&M

Annual Energy Production

input 51,982 MWh

Value of Electricity

input \$50 per MWh

Annual Inflation Rate

input 2.5%

1st Year Revenue

\$2,599,100

Annual Maint & Oper Cost

input (\$2,000,000)

Year	Inflation Factor	Revenue	Maint & Ops	Cash Flow
0				(\$100,000,000)
1		\$2,599,100		(\$97,400,900)
2	1.025	\$2,664,078		(\$94,736,823)
3	1.025	\$2,730,679		(\$92,006,143)
4	1.025	\$2,798,946		(\$89,207,197)
5	1.025	\$2,868,920		(\$86,338,277)
6	1.025	\$2,940,643		(\$83,397,633)
7	1.025	\$3,014,159	(\$2,000,000)	(\$82,383,474)
8	1.025	\$3,089,513	(\$2,050,000)	(\$81,343,961)
9	1.025	\$3,166,751	(\$2,101,250)	(\$80,278,460)
10	1.025	\$3,245,920	(\$2,153,781)	(\$79,186,322)
11	1.025	\$3,327,068	(\$2,207,626)	(\$78,066,880)
12	1.025	\$3,410,244	(\$2,262,816)	(\$76,919,452)
13	1.025	\$3,495,501	(\$2,319,387)	(\$75,743,338)
14	1.025	\$3,582,888	(\$2,377,372)	(\$74,537,821)
15	1.025	\$3,672,460	(\$2,436,806)	(\$73,302,167)
16	1.025	\$3,764,272	(\$2,497,726)	(\$72,035,621)
17	1.025	\$3,858,379	(\$2,560,169)	(\$70,737,412)
18	1.025	\$3,954,838	(\$2,624,173)	(\$69,406,747)
19	1.025	\$4,053,709	(\$2,689,778)	(\$68,042,816)
20	1.025	\$4,155,052	(\$2,757,022)	(\$66,644,786)
21	1.025	\$4,258,928	(\$2,825,948)	(\$65,211,806)