Year n	actual Build cost	discounted Build cost	actual O&M cost	discounted O&M cost	discounted cumulative cost
$0.00	$1,020.00	$1,020.00	$37.50	$37.50	$1,057.50
$1.00	0	$0.00	$37.50	$35.71	$1,093.21
$2.00	0	$0.00	$37.50	$34.01	$1,127.23
$3.00	0	$0.00	$37.50	$32.39	$1,159.62
$4.00	0	$0.00	$37.50	$30.85	$1,190.47
$5.00	0	$0.00	$37.50	$29.38	$1,219.86
$6.00	0	$0.00	$37.50	$27.98	$1,247.84
$7.00	0	$0.00	$37.50	$26.65	$1,274.49
$8.00	0	$0.00	$37.50	$25.38	$1,299.87
$9.00	0	$0.00	$37.50	$24.17	$1,324.04
$10.00	0	$0.00	$37.50	$23.02	$1,347.07
$11.00	0	$0.00	$37.50	$21.93	$1,368.99
$12.00	0	$0.00	$37.50	$20.88	$1,389.87
$13.00	0	$0.00	$37.50	$19.89	$1,409.76
$14.00	0	$0.00	$37.50	$18.94	$1,428.70
$15.00	235	$113.04	$37.50	$18.04	$1,559.78
$16.00	0	$0.00	$37.50	$17.18	$1,576.96
$17.00	0	$0.00	$37.50	$16.36	$1,593.32
$18.00	0	$0.00	$37.50	$15.58	$1,608.90
$19.00	0	$0.00	$37.50	$14.84	$1,623.74
$20.00	0	$0.00	$37.50	$14.13	$1,637.87
$21.00	0	$0.00	$37.50	$13.46	$1,651.33
$22.00	0	$0.00	$37.50	$12.82	$1,664.15
$23.00	0	$0.00	$37.50	$12.21	$1,676.36
$24.00	0	$0.00	$37.50	$11.63	$1,687.99
$25.00	0	$0.00	$37.50	$11.07	$1,699.06
$26.00	0	$0.00	$37.50	$10.55	$1,709.61
$27.00	0	$0.00	$37.50	$10.04	$1,719.65
$28.00	0	$0.00	$37.50	$9.57	$1,729.22
$29.00	0	$0.00	$37.50	$9.11	$1,738.33
$30.00	480	$111.06	$37.50	$8.68	$1,858.07
$31.00	0	$0.00	$37.50	$8.26	$1,866.33
$32.00	0	$0.00	$37.50	$7.87	$1,874.20
$33.00	0	$0.00	$37.50	$7.50	$1,881.70
$34.00	0	$0.00	$37.50	$7.14	$1,888.83
$35.00	0	$0.00	$37.50	$6.80	$1,895.63
$36.00	0	$0.00	$37.50	$6.47	$1,902.11
$37.00	0	$0.00	$37.50	$6.17	$1,908.27
$38.00	0	$0.00	$37.50	$5.87	$1,914.15
$39.00	0	$0.00	$37.50	$5.59	$1,919.74
$40.00	0	$0.00	$37.50	$5.33	$1,925.07
$41.00	0	$0.00	$37.50	$5.07	$1,930.14
$42.00	0	$0.00	$37.50	$4.83	$1,934.97
$43.00	0	$0.00	$37.50	$4.60	$1,939.57
$44.00	0	$0.00	$37.50	$4.38	$1,943.95
$45.00	235	$26.15	$37.50	$4.17	$1,974.28
$46.00	0	$0.00	$37.50	$3.97	$1,978.26
$47.00	0	$0.00	$37.50	$3.79	$1,982.04
$48.00	0	$0.00	$37.50	$3.61	$1,985.65

$49.00	0	$0.00	$37.50	$3.43	$1,989.08
$50.00	0	$0.00	$37.50	$3.27	$1,992.35
Decommission = 1%	$1,970.00	$171.79			$2,164.14

All values are in units of $ /kW

Energy source is Onshore wind

Assumed discount rate is 5% /yr

Levelized cost of Power = $2,164.14 $ /kW

Capacity Factor = 37.9%

Levelized Cost of Energy – LCOE = $2164.14 ÷ 166.002 $13.04 /MWh

	Actual Build cost	Discounted Build cost	Actual O&M cost	Discounted O&M cost	Cumulative cost	Yearly energy
Year **n**	$1,020 /kW					**average**
	$1,020	$1,020.00	$37.50	$37.50	$1,057.50	3.320
1	0	$0.00	$37.50	$34.09	$1,091.59	3.320
2	0	$0.00	$37.50	$30.99	$1,122.58	3.320
3	0	$0.00	$37.50	$28.17	$1,150.76	3.320
4	0	$0.00	$37.50	$25.61	$1,176.37	3.320
5	0	$0.00	$37.50	$23.28	$1,199.65	3.320
6	0	$0.00	$37.50	$21.17	$1,220.82	3.320
7	0	$0.00	$37.50	$19.24	$1,240.07	3.320
8	0	$0.00	$37.50	$17.49	$1,257.56	3.320
9	0	$0.00	$37.50	$15.90	$1,273.46	3.320
10	0	$0.00	$37.50	$14.46	$1,287.92	3.320
11	0	$0.00	$37.50	$13.14	$1,301.06	3.320
12	$91.80	$29.25	$37.50	$11.95	$1,342.26	3.320
13	$0.00	$0.00	$37.50	$10.86	$1,353.13	3.320
14	0	$0.00	$37.50	$9.87	$1,363.00	3.320
15	0	$0.00	$37.50	$8.98	$1,371.98	3.320
16	0	$0.00	$37.50	$8.16	$1,380.14	3.320
17	0	$0.00	$37.50	$7.42	$1,387.56	3.320
18	0	$0.00	$37.50	$6.74	$1,394.30	3.320
19	0	$0.00	$37.50	$6.13	$1,400.43	3.320
20	0	$0.00	$37.50	$5.57	$1,406.01	3.320
21	0	$0.00	$37.50	$5.07	$1,411.08	3.320
22	0	$0.00	$37.50	$4.61	$1,415.68	3.320
23	0	$0.00	$37.50	$4.19	$1,419.87	3.320
24	$91.80	$9.32	$37.50	$3.81	$1,433.00	3.320
25	0	$0.00	$37.50	$3.46	$1,436.46	3.320
26	0	$0.00	$37.50	$3.15	$1,439.61	3.320
27	0	$0.00	$37.50	$2.86	$1,442.47	3.320
28	0	$0.00	$37.50	$2.60	$1,445.07	3.320
29	0	$0.00	$37.50	$2.36	$1,447.43	3.320
30	$652.80	$37.41	$37.50	$2.15	$1,486.99	3.320
31	0	$0.00	$37.50	$1.95	$1,488.94	3.320
32	0	$0.00	$37.50	$1.78	$1,490.72	3.320
33	0	$0.00	$37.50	$1.61	$1,492.34	3.320
34	0	$0.00	$37.50	$1.47	$1,493.80	3.320
35	0	$0.00	$37.50	$1.33	$1,495.14	3.320
36	0	$0.00	$37.50	$1.21	$1,496.35	3.320
37	0	$0.00	$37.50	$1.10	$1,497.45	3.320
38	0	$0.00	$37.50	$1.00	$1,498.46	3.320
39	0	$0.00	$37.50	$0.91	$1,499.37	3.320
40	0	$0.00	$37.50	$0.83	$1,500.20	3.320
41	0	$0.00	$37.50	$0.75	$1,500.95	3.320
42	$91.80	$1.68	$37.50	$0.68	$1,503.31	3.320
43	0	$0.00	$37.50	$0.62	$1,503.93	3.320
44	0	$0.00	$37.50	$0.57	$1,504.50	3.320
45	0	$0.00	$37.50	$0.51	$1,505.01	3.320
46	0	$0.00	$37.50	$0.47	$1,505.48	3.320

47	0	$0.00	$37.50	$0.43	$1,505.91	3.320
48	0	$0.00	$37.50	$0.39	$1,506.29	3.320
49	0	$0.00	$37.50	$0.35	$1,506.64	3.320
50	$316.20	$2.69	$37.50	$0.32	$1,509.66	3.320
51	0	$0.00	$37.50	$0.29	$1,509.95	3.320
52	0	$0.00	$37.50	$0.26	$1,510.21	3.320
53	0	$0.00	$37.50	$0.24	$1,510.45	3.320
54	$91.80	$0.53	$37.50	$0.22	$1,511.20	3.320
55	0	$0.00	$37.50	$0.20	$1,511.40	3.320
56	0	$0.00	$37.50	$0.18	$1,511.58	3.320
57	0	$0.00	$37.50	$0.16	$1,511.75	3.320
58	0	$0.00	$37.50	$0.15	$1,511.90	3.320
59	0	$0.00	$37.50	$0.14	$1,512.03	3.320
60	0	$0.00	$37.50	$0.12	$1,512.15	3.320
Total BLDG cost	$2,356.20	Replacements performed			Actual lifetime energy (MWh)	202.52
Decom = 1.25%	$29.45					

Levelized Cost of Power ($ /kW) $1,541.61 include decomi

All the above values are in units of $ /kW

Levelized Cost of Energy – LCOE ($ /MWh) **$42.34** Leve

			discoun
Source is On Shore Wind w/ CF = 37.9%	0.379	3.320	average yearly energy (MWh)
Assumed discount rate is 10% /year			
Levelized Cost of Power in $ /kW units	$1,541.61	from Column F above, after year 60	
Conversion factor from Power to Actual Energy	0.00502002	for CF = 0.379	Conversion = 1 ÷ (CF x 8760 h /yr x 60
Levelized Cost of Energy	**$42.34 /MWh**		**LCOE**

Discounted yearly energy	Remarks
in MWh	**On Shore Wind @10%**
3.320	Construction
3.018	completed
2.744	In 1 year
2.494	
2.268	Total CAPEX = $1,020 /kW
2.061	
1.874	Columns A through F
1.704	are nominal dollars
1.549	per kilowatt
1.408	of peak generating
1.280	capacity
1.164	
1.058	Replace AC converter 9%
0.962	
0.874	
0.795	
0.723	
0.657	
0.597	
0.543	
0.494	Replace blades 31%
0.449	
0.408	
0.371	
0.337	Replace AC converter 9%
0.306	
0.279	
0.253	
0.230	
0.209	
0.190	Replace all hardware = 64%
0.173	Gearbox, generator,
0.157	transformer, converter & blades
0.143	24% + 9% + 31% = 64%
0.130	
0.118	
0.107	
0.098	
0.089	
0.081	
0.073	
0.067	
0.061	Replace AC converter 9%
0.055	
0.050	
0.046	
0.041	

0.038	
0.034	
0.031	
0.028	Replace blades 31%
0.026	
0.023	
0.021	
0.019	Replace AC converter 9%
0.018	
0.016	
0.015	
0.013	
0.012	
0.011	
36.41	Discounted lifetime energy (MWh)

mission from column A

lized cost of power

divided by

ted lifetime energy

yrs /1000 kW per MW)