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**	$1,960 /kW					**average**
	$1,960	$1,960	$80.00	$80.00	$2,040.00	2.505
1	0	0	$80.00	$72.73	$2,112.73	2.505
2	0	0	$80.00	$66.12	$2,178.84	2.505
3	0	0	$80.00	$60.11	$2,238.95	2.505
4	0	0	$80.00	$54.64	$2,293.59	2.505
5	0	0	$80.00	$49.67	$2,343.26	2.505
6	0	0	$80.00	$45.16	$2,388.42	2.505
7	0	0	$80.00	$41.05	$2,429.47	2.505
8	0	0	$80.00	$37.32	$2,466.79	2.505
9	0	0	$80.00	$33.93	$2,500.72	2.505
10	0	0	$80.00	$30.84	$2,531.57	2.505
11	0	0	$80.00	$28.04	$2,559.60	2.505
12	176.40	56.2064762441	$80.00	$25.49	$2,641.30	2.505
13	0	0	$80.00	$23.17	$2,664.47	2.505
14	0	0	$80.00	$21.07	$2,685.54	2.505
15	0	0	$80.00	$19.15	$2,704.69	2.505
16	0	0	$80.00	$17.41	$2,722.10	2.505
17	0	0	$80.00	$15.83	$2,737.93	2.505
18	0	0	$80.00	$14.39	$2,752.32	2.505
19	0	0	$80.00	$13.08	$2,765.40	2.505
20	$607.60	$90.32	$80.00	$11.89	$2,867.61	2.505
21	0	0	$80.00	$10.81	$2,878.42	2.505
22	0	0	$80.00	$9.83	$2,888.25	2.505
23	0	0	$80.00	$8.93	$2,897.18	2.505
24	$176.40	$17.91	$80.00	$8.12	$2,923.21	2.505
25	0	0	$80.00	$7.38	$2,930.59	2.505
26	0	0	$80.00	$6.71	$2,937.31	2.505
27	0	0	$80.00	$6.10	$2,943.41	2.505
28	0	0	$80.00	$5.55	$2,948.96	2.505
29	0	0	$80.00	$5.04	$2,954.00	2.505
30	$1,254.40	$71.89	$80.00	$4.58	$3,030.47	2.505
31	0	0	$80.00	$4.17	$3,034.64	2.505
32	0	0	$80.00	$3.79	$3,038.43	2.505
33	0	0	$80.00	$3.44	$3,041.87	2.505
34	0	0	$80.00	$3.13	$3,045.01	2.505
35	0	0	$80.00	$2.85	$3,047.85	2.505
36	0	0	$80.00	$2.59	$3,050.44	2.505
37	0	0	$80.00	$2.35	$3,052.79	2.505
38	0	0	$80.00	$2.14	$3,054.93	2.505
39	0	0	$80.00	$1.94	$3,056.88	2.505
40	0	0	$80.00	$1.77	$3,058.64	2.505
41	0	0	$80.00	$1.61	$3,060.25	2.505
42	$176.40	$3.22	$80.00	$1.46	$3,064.93	2.505
43	0	0	$80.00	$1.33	$3,066.26	2.505
44	0	0	$80.00	$1.21	$3,067.47	2.505
45	0	0	$80.00	$1.10	$3,068.57	2.505
46	0	0	$80.00	$1.00	$3,069.56	2.505

47	0	0	$80.00	$0.91	$3,070.47	2.505
48	0	0	$80.00	$0.82	$3,071.29	2.505
49	0	0	$80.00	$0.75	$3,072.04	2.505
50	$607.60	$5.18	$80.00	$0.68	$3,077.90	2.505
51	0	0	$80.00	$0.62	$3,078.52	2.505
52	0	0	$80.00	$0.56	$3,079.08	2.505
53	0	0	$80.00	$0.51	$3,079.60	2.505
54	$176.40	$1.03	$80.00	$0.47	$3,081.09	2.505
55	0	0	$80.00	$0.42	$3,081.51	2.505
56	0	0	$80.00	$0.38	$3,081.90	2.505
57	0	0	$80.00	$0.35	$3,082.25	2.505
58	0	0	$80.00	$0.32	$3,082.56	2.505
59	0	0	$80.00	$0.29	$3,082.85	2.505
60	0	0	$80.00	$0.26	$3,083.12	2.505
Total BLDG cost	$5,135.20	Replacements performed		Actual lifetime energy (MWh)		152.83
Decom = 2%	$102.70					
			Levelized Cost of Power ($ /kW)		$3,185.82	include decomı

All the above values are in units of $ /kW

Levelized Cost of Energy – LCOE ($ /MWh)	**$115.95**	Leve

			discoun
Source is Off Shore Wind w/ CF = 28.6%	0.286	2.505	average yearly energy
Assumed discount rate is 10% /year			
Levelized Cost of Power in $ /kW units	$3,185.82	from Column F above, after year 60	
Conversion factor from Power to Actual Energy	0.006652404	for CF = 0.286	Conversion = 1 ÷ (CF x 8760 h /yr x 60
Levelized Cost of Energy	**$115.95 /MWh**		**LCOE**

Discounted yearly energy	Remarks
in MWh	**Off Shore Wind @10%**
2.505	Construction
2.278	completed
2.071	In 1 year
1.882	
1.711	Total CAPEX = $1,960 /kW
1.556	
1.414	Columns A through F
1.286	are nominal dollars
1.169	per kilowatt
1.063	of peak generating
0.966	capacity
0.878	
0.798	Replace AC converter 9%
0.726	
0.660	
0.600	
0.545	
0.496	
0.451	
0.410	
0.372	Replace blades 31%
0.339	
0.308	
0.280	
0.254	Replace AC converter 9%
0.231	
0.210	
0.191	
0.174	
0.158	
0.144	Replace all hardware = 64%
0.131	gearbox + generator + transformer,
0.119	converter & blades
0.108	24% + 9% + 31% = 64%
0.098	
0.089	
0.081	
0.074	
0.067	
0.061	
0.055	
0.050	
0.046	Replace AC converter 9%
0.042	
0.038	
0.034	
0.031	

0.028	
0.026	
0.023	
0.021	Replace blades 31%
0.019	
0.018	
0.016	
0.015	Replace AC converter 9%
0.013	
0.012	
0.011	
0.010	
0.009	
0.008	
27.48	Discounted lifetime energy (MWh)

mission from column A

lized cost of power

divided by

ted lifetime energy

yrs /1000 kW per MW)