

Sheet2

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

Sheet2

\$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 = $\$2164.14 \div 166.002$ \$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	\$37.50	\$1,095.00	3.320
2	0	\$0.00	\$37.50	\$37.50	\$1,132.50	3.320
3	0	\$0.00	\$37.50	\$37.50	\$1,170.00	3.320
4	0	\$0.00	\$37.50	\$37.50	\$1,207.50	3.320
5	0	\$0.00	\$37.50	\$37.50	\$1,245.00	3.320
6	0	\$0.00	\$37.50	\$37.50	\$1,282.50	3.320
7	0	\$0.00	\$37.50	\$37.50	\$1,320.00	3.320
8	0	\$0.00	\$37.50	\$37.50	\$1,357.50	3.320
9	0	\$0.00	\$37.50	\$37.50	\$1,395.00	3.320
10	0	\$0.00	\$37.50	\$37.50	\$1,432.50	3.320
11	0	\$0.00	\$37.50	\$37.50	\$1,470.00	3.320
12	\$91.80	\$91.80	\$37.50	\$37.50	\$1,599.30	3.320
13	\$0.00	\$0.00	\$37.50	\$37.50	\$1,636.80	3.320
14	0	\$0.00	\$37.50	\$37.50	\$1,674.30	3.320
15	0	\$0.00	\$37.50	\$37.50	\$1,711.80	3.320
16	0	\$0.00	\$37.50	\$37.50	\$1,749.30	3.320
17	0	\$0.00	\$37.50	\$37.50	\$1,786.80	3.320
18	0	\$0.00	\$37.50	\$37.50	\$1,824.30	3.320
19	0	\$0.00	\$37.50	\$37.50	\$1,861.80	3.320
20	0	\$0.00	\$37.50	\$37.50	\$1,899.30	3.320
21	0	\$0.00	\$37.50	\$37.50	\$1,936.80	3.320
22	0	\$0.00	\$37.50	\$37.50	\$1,974.30	3.320
23	0	\$0.00	\$37.50	\$37.50	\$2,011.80	3.320
24	\$91.80	\$91.80	\$37.50	\$37.50	\$2,141.10	3.320
25	0	\$0.00	\$37.50	\$37.50	\$2,178.60	3.320
26	0	\$0.00	\$37.50	\$37.50	\$2,216.10	3.320
27	0	\$0.00	\$37.50	\$37.50	\$2,253.60	3.320
28	0	\$0.00	\$37.50	\$37.50	\$2,291.10	3.320
29	0	\$0.00	\$37.50	\$37.50	\$2,328.60	3.320
30	\$652.80	\$652.80	\$37.50	\$37.50	\$3,018.90	3.320
31	0	\$0.00	\$37.50	\$37.50	\$3,056.40	3.320
32	0	\$0.00	\$37.50	\$37.50	\$3,093.90	3.320
33	0	\$0.00	\$37.50	\$37.50	\$3,131.40	3.320
34	0	\$0.00	\$37.50	\$37.50	\$3,168.90	3.320
35	0	\$0.00	\$37.50	\$37.50	\$3,206.40	3.320
36	0	\$0.00	\$37.50	\$37.50	\$3,243.90	3.320
37	0	\$0.00	\$37.50	\$37.50	\$3,281.40	3.320
38	0	\$0.00	\$37.50	\$37.50	\$3,318.90	3.320
39	0	\$0.00	\$37.50	\$37.50	\$3,356.40	3.320
40	0	\$0.00	\$37.50	\$37.50	\$3,393.90	3.320
41	0	\$0.00	\$37.50	\$37.50	\$3,431.40	3.320
42	\$91.80	\$91.80	\$37.50	\$37.50	\$3,560.70	3.320
43	0	\$0.00	\$37.50	\$37.50	\$3,598.20	3.320
44	0	\$0.00	\$37.50	\$37.50	\$3,635.70	3.320
45	0	\$0.00	\$37.50	\$37.50	\$3,673.20	3.320
46	0	\$0.00	\$37.50	\$37.50	\$3,710.70	3.320

Sheet1

47	0	\$0.00	\$37.50	\$37.50	\$3,748.20	3.320
48	0	\$0.00	\$37.50	\$37.50	\$3,785.70	3.320
49	0	\$0.00	\$37.50	\$37.50	\$3,823.20	3.320
50	\$316.20	\$316.20	\$37.50	\$37.50	\$4,176.90	3.320
51	0	\$0.00	\$37.50	\$37.50	\$4,214.40	3.320
52	0	\$0.00	\$37.50	\$37.50	\$4,251.90	3.320
53	0	\$0.00	\$37.50	\$37.50	\$4,289.40	3.320
54	\$91.80	\$91.80	\$37.50	\$37.50	\$4,418.70	3.320
55	0	\$0.00	\$37.50	\$37.50	\$4,456.20	3.320
56	0	\$0.00	\$37.50	\$37.50	\$4,493.70	3.320
57	0	\$0.00	\$37.50	\$37.50	\$4,531.20	3.320
58	0	\$0.00	\$37.50	\$37.50	\$4,568.70	3.320
59	0	\$0.00	\$37.50	\$37.50	\$4,606.20	3.320
60	0	\$0.00	\$37.50	\$37.50	\$4,643.70	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)		\$4,673.15	include decom	
		All the above values are in units of \$ /kW				
		Levelized Cost of Energy – LCOE (\$/MWh)		\$23.07	← →	Level

Sheet1

			discoun
Source is On Shore Wind w/ CF = 37.9%	0.379	3.320	average yearly energy (MWh)
Assumed discount rate is 0% /year			
Levelized Cost of Power in \$ /kW units	\$4,673.15		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	\$23.07 /MWh	LCOE	

Discounted yearly energy	Remarks
in MWh	On Shore Wind @ 0%
3.320	Construction
3.320	completed
3.320	In 1 year
3.320	
3.320	Total CAPEX = \$1,020 /kW
3.320	
3.320	Columns A through F
3.320	are nominal dollars
3.320	per kilowatt
3.320	of peak generating
3.320	capacity
3.320	
3.320	Replace AC converter 9%
3.320	
3.320	
3.320	
3.320	
3.320	
3.320	
3.320	Replace blades 31%
3.320	
3.320	
3.320	
3.320	Replace AC converter 9%
3.320	
3.320	
3.320	
3.320	
3.320	Replace all hardware = 64%
3.320	Gearbox, generator,
3.320	transformer, converter & blades
3.320	24% + 9% + 31% = 64%
3.320	
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3.320	Replace AC converter 9%
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Replace blades 31%

Replace AC converter 9%

202.52 Discounted lifetime energy (MWh)

mission from column A

lized cost of power

divided by
ted lifetime energy

yrs /1000 kW per MW)