

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	\$1290 /kW					average
	\$1,290	\$1,290	\$16.50	\$16.50	\$1,306.50	1.726
1	0	0	\$16.50	\$16.50	\$1,323.00	1.726
2	0	0	\$16.50	\$16.50	\$1,339.50	1.726
3	0	0	\$16.50	\$16.50	\$1,356.00	1.726
4	0	0	\$16.50	\$16.50	\$1,372.50	1.726
5	0	0	\$16.50	\$16.50	\$1,389.00	1.726
6	0	0	\$16.50	\$16.50	\$1,405.50	1.726
7	0	0	\$16.50	\$16.50	\$1,422.00	1.726
8	0	0	\$16.50	\$16.50	\$1,438.50	1.726
9	0	0	\$16.50	\$16.50	\$1,455.00	1.726
10	0	0	\$16.50	\$16.50	\$1,471.50	1.726
11	0	0	\$16.50	\$16.50	\$1,488.00	1.726
12	\$77.40	\$77.40	\$16.50	\$16.50	\$1,581.90	1.726
13	0	0	\$16.50	\$16.50	\$1,598.40	1.726
14	0	0	\$16.50	\$16.50	\$1,614.90	1.726
15	0	0	\$16.50	\$16.50	\$1,631.40	1.726
16	0	0	\$16.50	\$16.50	\$1,647.90	1.726
17	0	0	\$16.50	\$16.50	\$1,664.40	1.726
18	0	0	\$16.50	\$16.50	\$1,680.90	1.726
19	0	0	\$16.50	\$16.50	\$1,697.40	1.726
20	0	0	\$16.50	\$16.50	\$1,713.90	1.726
21	0	0	\$16.50	\$16.50	\$1,730.40	1.726
22	0	0	\$16.50	\$16.50	\$1,746.90	1.726
23	0	0	\$16.50	\$16.50	\$1,763.40	1.726
24	\$77.40	\$77.40	\$16.50	\$16.50	\$1,857.30	1.726
25	0	0	\$16.50	\$16.50	\$1,873.80	1.726
26	0	0	\$16.50	\$16.50	\$1,890.30	1.726
27	0	0	\$16.50	\$16.50	\$1,906.80	1.726
28	0	0	\$16.50	\$16.50	\$1,923.30	1.726
29	0	0	\$16.50	\$16.50	\$1,939.80	1.726
30	0	0	\$16.50	\$16.50	\$1,956.30	1.726
31	0	0	\$16.50	\$16.50	\$1,972.80	1.726
32	0	0	\$16.50	\$16.50	\$1,989.30	1.726
33	0	0	\$16.50	\$16.50	\$2,005.80	1.726
34	0	0	\$16.50	\$16.50	\$2,022.30	1.726
35	0	0	\$16.50	\$16.50	\$2,038.80	1.726
36	\$77.40	\$77.40	\$16.50	\$16.50	\$2,132.70	1.726
37	0	0	\$16.50	\$16.50	\$2,149.20	1.726
38	0	0	\$16.50	\$16.50	\$2,165.70	1.726
39	0	0	\$16.50	\$16.50	\$2,182.20	1.726
40	0	0	\$16.50	\$16.50	\$2,198.70	1.726
41	0	0	\$16.50	\$16.50	\$2,215.20	1.726
42	0	0	\$16.50	\$16.50	\$2,231.70	1.726
43	0	0	\$16.50	\$16.50	\$2,248.20	1.726
44	0	0	\$16.50	\$16.50	\$2,264.70	1.726
45	0	0	\$16.50	\$16.50	\$2,281.20	1.726
46	\$1,212.60	\$1,212.60	\$16.50	\$16.50	\$3,510.30	1.726

Sheet1

47	0	0	\$16.50	\$16.50	\$3,526.80	1.726
48	0	0	\$16.50	\$16.50	\$3,543.30	1.726
49	0	0	\$16.50	\$16.50	\$3,559.80	1.726
50	0	0	\$16.50	\$16.50	\$3,576.30	1.726
51	0	0	\$16.50	\$16.50	\$3,592.80	1.726
52	0	0	\$16.50	\$16.50	\$3,609.30	1.726
53	0	0	\$16.50	\$16.50	\$3,625.80	1.726
54	0	0	\$16.50	\$16.50	\$3,642.30	1.726
55	0	0	\$16.50	\$16.50	\$3,658.80	1.726
56	0	0	\$16.50	\$16.50	\$3,675.30	1.726
57	0	0	\$16.50	\$16.50	\$3,691.80	1.726
58	0	0	\$16.50	\$16.50	\$3,708.30	1.726
59	0	0	\$16.50	\$16.50	\$3,724.80	1.726
60	0	0	\$16.50	\$16.50	\$3,741.30	1.726
Total BLDG cost	\$2,734.80	Replacements performed			Actual lifetime energy (MWh)	105.27
Decom = 0.75%	\$20.51					
		Levelized Cost of Power (\$/kW)			\$3,761.81	Include decom
		All the above values are in units of \$/kW				
		Levelized Cost of Energy – LCOE (\$/MWh)			\$35.74	

Sheet1

Source is Commercial Roof Solar w/ CF = 19.7%	0.197	1.726	average yearly energy (MWh)
Assumed discount rate is 0% /year			
Levelized Cost of Power in \$ /kW units	\$3,761.81	from Column F above, after year 60	
Conversion factor from Power to Actual Energy	0.009657805	for CF = 0.197	Conversion = 1 ÷ (CF x 8760 h /yr x 60)
Levelized Cost of Energy	\$35.74 /MWh	LCOE	

Discounted yearly energy	Remarks
in MWh	Commercial Roof Solar @0%
1.726	Construction
1.726	completed
1.726	In 1 year
1.726	
1.726	Total CAPEX = \$1290 /kW
1.726	
1.726	Columns A through F
1.726	are nominal dollars
1.726	per kilowatt
1.726	of peak generating
1.726	capacity
1.726	
1.726	Replace DC inverter 6%
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1.726	Replace DC inverter 6%
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1.726	Replace DC inverter 6%
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1.726	Replace hardware = 94%

1.726	Panel module and BOS hardware plus labor.
1.726	62% + 32% = 94%
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105.27 Discounted lifetime energy (MWh)

mission from column B

Equals Levelized cost of power

