

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

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\$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	\$1930 /kW					average
	\$1,930	\$1,930.00	\$27.50	\$27.50	\$1,957.50	1.726
1	0	0	\$27.50	\$26.96	\$1,984.46	1.726
2	0	0	\$27.50	\$26.43	\$2,010.89	1.726
3	0	0	\$27.50	\$25.91	\$2,036.81	1.726
4	0	0	\$27.50	\$25.41	\$2,062.21	1.726
5	0	0	\$27.50	\$24.91	\$2,087.12	1.726
6	0	0	\$27.50	\$24.42	\$2,111.54	1.726
7	0	0	\$27.50	\$23.94	\$2,135.48	1.726
8	0	0	\$27.50	\$23.47	\$2,158.95	1.726
9	0	0	\$27.50	\$23.01	\$2,181.96	1.726
10	0	0	\$27.50	\$22.56	\$2,204.52	1.726
11	0	0	\$27.50	\$22.12	\$2,226.64	1.726
12	\$154.40	\$49.20	\$27.50	\$21.68	\$2,297.52	1.726
13	0	0	\$27.50	\$21.26	\$2,318.78	1.726
14	0	0	\$27.50	\$20.84	\$2,339.62	1.726
15	0	0	\$27.50	\$20.43	\$2,360.05	1.726
16	0	0	\$27.50	\$20.03	\$2,380.08	1.726
17	0	0	\$27.50	\$19.64	\$2,399.72	1.726
18	0	0	\$27.50	\$19.25	\$2,418.98	1.726
19	0	0	\$27.50	\$18.88	\$2,437.85	1.726
20	0	0	\$27.50	\$18.51	\$2,456.36	1.726
21	0	0	\$27.50	\$18.14	\$2,474.50	1.726
22	0	0	\$27.50	\$17.79	\$2,492.29	1.726
23	0	0	\$27.50	\$17.44	\$2,509.73	1.726
24	\$154.40	\$15.68	\$27.50	\$17.10	\$2,542.51	1.726
25	0	0	\$27.50	\$16.76	\$2,559.27	1.726
26	0	0	\$27.50	\$16.43	\$2,575.70	1.726
27	0	0	\$27.50	\$16.11	\$2,591.81	1.726
28	0	0	\$27.50	\$15.80	\$2,607.61	1.726
29	0	0	\$27.50	\$15.49	\$2,623.09	1.726
30	0	0	\$27.50	\$15.18	\$2,638.27	1.726
31	0	0	\$27.50	\$14.88	\$2,653.16	1.726
32	0	0	\$27.50	\$14.59	\$2,667.75	1.726
33	0	0	\$27.50	\$14.31	\$2,682.06	1.726
34	0	0	\$27.50	\$14.03	\$2,696.08	1.726
35	0	0	\$27.50	\$13.75	\$2,709.83	1.726
36	\$154.40	\$4.99	\$27.50	\$13.48	\$2,728.31	1.726
37	0	0	\$27.50	\$13.22	\$2,741.53	1.726
38	0	0	\$27.50	\$12.96	\$2,754.48	1.726
39	0	0	\$27.50	\$12.70	\$2,767.19	1.726
40	0	0	\$27.50	\$12.45	\$2,779.64	1.726
41	0	0	\$27.50	\$12.21	\$2,791.85	1.726
42	0	0	\$27.50	\$11.97	\$2,803.82	1.726
43	0	0	\$27.50	\$11.74	\$2,815.56	1.726
44	0	0	\$27.50	\$11.51	\$2,827.07	1.726
45	0	0	\$27.50	\$11.28	\$2,838.35	1.726
46	\$1,775.60	\$22.15	\$27.50	\$11.06	\$2,871.55	1.726

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47	0	0	\$27.50	\$10.84	\$2,882.39	1.726
48	0	0	\$27.50	\$10.63	\$2,893.02	1.726
49	0	0	\$27.50	\$10.42	\$2,903.44	1.726
50	0	0	\$27.50	\$10.22	\$2,913.66	1.726
51	0	0	\$27.50	\$10.02	\$2,923.68	1.726
52	0	0	\$27.50	\$9.82	\$2,933.50	1.726
53	0	0	\$27.50	\$9.63	\$2,943.13	1.726
54	0	0	\$27.50	\$9.44	\$2,952.56	1.726
55	0	0	\$27.50	\$9.25	\$2,961.82	1.726
56	0	0	\$27.50	\$9.07	\$2,970.89	1.726
57	0	0	\$27.50	\$8.89	\$2,979.79	1.726
58	0	0	\$27.50	\$8.72	\$2,988.51	1.726
59	0	0	\$27.50	\$8.55	\$2,997.06	1.726
60	0	0	\$27.50	\$8.38	\$3,005.44	1.726
Total BLDG cost	\$4,168.80	Replacements performed	Actual lifetime energy (MWh)		105.27	
Decom = 0.75%	\$31.27					
		Levelized Cost of Power (\$/kW)		\$3,036.70	Include decom	
		All the above values are in units of \$ /kW				
		Levelized Cost of Energy – LCOE (\$/MWh)		\$160.45		

Sheet1

Source is Residential Roof Solar w/ CF = 19.7%	0.197	1.726	average yearly energy (MWh)
Assumed discount rate is 2% /year			
Levelized Cost of Power in \$ /kW units	\$3,036.70	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	\$160.45 /MWh	LCOE	

Discounted yearly energy	Remarks
in MWh	Residential Roof Solar @ 10%
1.726	Construction
1.569	completed
1.426	In 1 year
1.297	
1.179	Total CAPEX = \$1930 /kW
1.072	
0.974	Columns A through F
0.886	are nominal dollars
0.805	per kilowatt
0.732	of peak generating
0.665	capacity
0.605	
0.550	Replace DC inverter 8%
0.500	
0.454	
0.413	
0.376	
0.341	
0.310	
0.282	
0.257	
0.233	
0.212	
0.193	
0.175	Replace DC inverter 8%
0.159	
0.145	
0.132	
0.120	
0.109	
0.099	
0.090	
0.082	
0.074	
0.068	
0.061	
0.056	Replace DC inverter 8%
0.051	
0.046	
0.042	
0.038	
0.035	
0.032	
0.029	
0.026	
0.024	
0.022	Replace hardware = 92%

0.020	Panel module and BOS hardware plus labor.
0.018	59% + 33% = 92%
0.016	
0.015	
0.013	
0.012	
0.011	
0.010	
0.009	
0.008	
0.008	
0.007	
0.006	
0.006	
18.93	Discounted lifetime energy (MWh)

mission from column B

Equals Levelized cost of power

