

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

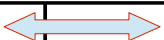
Levelized cost of Power = \$2,164.14 \$ /kW

Capacity Factor = 37.9%

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

	<b>Actual Build cost</b>	<b>Discounted Build cost</b>	<b>Actual O&amp;M cost</b>	<b>Discounted O&amp;M cost</b>	<b>Cumulative cost</b>	<b>Yearly energy</b>
<b>Year n</b>	<b>\$1930 /kW</b>					<b>average</b>
	\$1,930	\$1,930	\$27.50	\$27.50	\$1,957.50	1.726
1	0	0	\$27.50	\$25.94	\$1,983.44	1.726
2	0	0	\$27.50	\$24.47	\$2,007.92	1.726
3	0	0	\$27.50	\$23.09	\$2,031.01	1.726
4	0	0	\$27.50	\$21.78	\$2,052.79	1.726
5	0	0	\$27.50	\$20.55	\$2,073.34	1.726
6	0	0	\$27.50	\$19.39	\$2,092.73	1.726
7	0	0	\$27.50	\$18.29	\$2,111.02	1.726
8	0	0	\$27.50	\$17.25	\$2,128.27	1.726
9	0	0	\$27.50	\$16.28	\$2,144.55	1.726
10	0	0	\$27.50	\$15.36	\$2,159.90	1.726
11	0	0	\$27.50	\$14.49	\$2,174.39	1.726
12	\$154.40	\$76.73	\$27.50	\$13.67	\$2,264.79	1.726
13	0	0	\$27.50	\$12.89	\$2,277.68	1.726
14	0	0	\$27.50	\$12.16	\$2,289.84	1.726
15	0	0	\$27.50	\$11.47	\$2,301.32	1.726
16	0	0	\$27.50	\$10.83	\$2,312.14	1.726
17	0	0	\$27.50	\$10.21	\$2,322.36	1.726
18	0	0	\$27.50	\$9.63	\$2,331.99	1.726
19	0	0	\$27.50	\$9.09	\$2,341.08	1.726
20	0	0	\$27.50	\$8.57	\$2,349.65	1.726
21	0	0	\$27.50	\$8.09	\$2,357.74	1.726
22	0	0	\$27.50	\$7.63	\$2,365.38	1.726
23	0	0	\$27.50	\$7.20	\$2,372.57	1.726
24	\$154.40	\$38.13	\$27.50	\$6.79	\$2,417.50	1.726
25	0	0	\$27.50	\$6.41	\$2,423.91	1.726
26	0	0	\$27.50	\$6.04	\$2,429.95	1.726
27	0	0	\$27.50	\$5.70	\$2,435.66	1.726
28	0	0	\$27.50	\$5.38	\$2,441.04	1.726
29	0	0	\$27.50	\$5.08	\$2,446.11	1.726
30	0	0	\$27.50	\$4.79	\$2,450.90	1.726
31	0	0	\$27.50	\$4.52	\$2,455.42	1.726
32	0	0	\$27.50	\$4.26	\$2,459.68	1.726
33	0	0	\$27.50	\$4.02	\$2,463.70	1.726
34	0	0	\$27.50	\$3.79	\$2,467.49	1.726
35	0	0	\$27.50	\$3.58	\$2,471.07	1.726
36	\$154.40	\$18.95	\$27.50	\$3.38	\$2,493.39	1.726
37	0	0	\$27.50	\$3.18	\$2,496.58	1.726
38	0	0	\$27.50	\$3.00	\$2,499.58	1.726
39	0	0	\$27.50	\$2.83	\$2,502.42	1.726
40	0	0	\$27.50	\$2.67	\$2,505.09	1.726
41	0	0	\$27.50	\$2.52	\$2,507.61	1.726
42	0	0	\$27.50	\$2.38	\$2,509.99	1.726
43	0	0	\$27.50	\$2.24	\$2,512.24	1.726
44	0	0	\$27.50	\$2.12	\$2,514.35	1.726
45	0	0	\$27.50	\$2.00	\$2,516.35	1.726
46	\$1,775.60	\$121.70	\$27.50	\$1.88	\$2,639.93	1.726

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47	0	0	\$27.50	\$1.78	\$2,641.71	1.726
48	0	0	\$27.50	\$1.68	\$2,643.39	1.726
49	0	0	\$27.50	\$1.58	\$2,644.97	1.726
50	0	0	\$27.50	\$1.49	\$2,646.46	1.726
51	0	0	\$27.50	\$1.41	\$2,647.87	1.726
52	0	0	\$27.50	\$1.33	\$2,649.20	1.726
53	0	0	\$27.50	\$1.25	\$2,650.45	1.726
54	0	0	\$27.50	\$1.18	\$2,651.64	1.726
55	0	0	\$27.50	\$1.12	\$2,652.75	1.726
56	0	0	\$27.50	\$1.05	\$2,653.80	1.726
57	0	0	\$27.50	\$0.99	\$2,654.80	1.726
58	0	0	\$27.50	\$0.94	\$2,655.73	1.726
59	0	0	\$27.50	\$0.88	\$2,656.62	1.726
60	0	0	\$27.50	\$0.83	\$2,657.45	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)		\$2,688.72	Include decom
			<b>All the above values are in units of \$/kW</b>			
			Levelized Cost of Energy – LCOE (\$/MWh)		<b>\$90.79</b>	

Sheet1

Source is Residential Roof Solar w/ CF = 19.7%	0.197	1.726	average yearly energy (MWh)
Assumed discount rate is 6% /year			
Levelized Cost of Power in \$ /kW units	\$2,688.72	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)
<b>Levelized Cost of Energy</b>	<b>\$90.79 /MWh</b>	<b>LCOE</b>	

Discounted yearly energy	Remarks
in MWh	<b>Residential Roof Solar @6%</b>
1.726	Construction
1.628	completed
1.536	In 1 year
1.449	
1.367	Total CAPEX = \$1930 /kW
1.290	
1.217	Columns A through F
1.148	are nominal dollars
1.083	per kilowatt
1.021	of peak generating
0.964	capacity
0.909	
0.858	Replace DC inverter 8%
0.809	
0.763	
0.720	
0.679	
0.641	
0.605	
0.570	
0.538	
0.508	
0.479	
0.452	
0.426	Replace DC inverter 8%
0.402	
0.379	
0.358	
0.338	
0.318	
0.300	
0.283	
0.267	
0.252	
0.238	
0.225	
0.212	Replace DC inverter 8%
0.200	
0.189	
0.178	
0.168	
0.158	
0.149	
0.141	
0.133	
0.125	
0.118	Replace hardware = 92%

0.112	Panel module and BOS hardware plus labor.
0.105	59% + 33% = 92%
0.099	
0.094	
0.088	
0.083	
0.079	
0.074	
0.070	
0.066	
0.062	
0.059	
0.055	
0.052	
29.62	Discounted lifetime energy (MWh)

mission from column B

Equals Levelized cost of power

