

	Contract Year Calendar Year	1 2013	2 2014	3 2015	4 2016
System Price	Turn-key Installation	(\$5,000)	\$0	\$0	\$0
Tax Credit	30% of System Price	\$1,500			
State Tax Credit/Grants	0.0%	\$0	\$0	\$0	\$0
Upfront Utility Incentives	UFI Therm	\$1,453	\$0		
Electricity Produced	kWh	750	746	743	739
Assumed electricity cost	\$/kWh	\$0.120	\$0.124	\$0.127	\$0.131
Avoided Electricity spending	\$	\$90	\$92	\$95	\$97
Heat Offset	therms	122	122	122	122
Assumed cost of electricity	\$/therm	\$1.000	\$1.030	\$1.061	\$1.093
Avoided heat spending	\$(incl. efficiency)	\$122	\$126	\$129	\$133
Avoided utility spending	Electricity + Gas	\$212	\$218	\$224	\$230
Carbon Offset Value	\$	\$0	\$0	\$0	\$0
Electric REC Value	\$	\$0	\$0	\$0	\$0
Thermal REC Value	\$	\$0	\$0	\$0	\$0
Electric PBI	\$	\$0	\$0	\$0	\$0
Thermal PBI	\$	\$0	\$0	\$0	\$0
Annual RE Incentives		\$0	\$0	\$0	\$0
Estimated Insurance		(\$10)	(\$10)	(\$10)	(\$10)
Inverter Replacement	\$0.25/W	\$0	\$0	\$0	\$0
O&M		\$0	\$0	\$0	\$0
MACRS % (Based on COD Qrtr)		35%	26%	16%	11%
Federal Schedule	MACRS	35%	26%	16%	11%
Federal Depreciation Base		(\$1,488)	(\$1,105)	(\$663)	(\$468)
Profit for Federal Tax		\$167	(\$897)	(\$449)	(\$247)
Federal Tax Effect	35.0 %	(\$59)	\$314	\$157	\$87
State Schedule	Straight Line	8.3%	8.3%	8.3%	8.3%
State Depreciation Base		(\$354)	(\$354)	(\$354)	(\$354)
Profit for State Tax		(\$152)	(\$146)	(\$140)	(\$134)
State Tax Effect	5.8 %	\$9	\$8	\$8	\$8
Overall Net Tax Impact		(\$50)	\$322	\$165	\$94
Net Cash Flow		(\$1,895)	\$530	\$379	\$315
Accumulated Cash Flow		(\$1,895)	(\$1,364)	(\$985)	(\$670)
Unlevered Internal Rate of Return		13.2%	4,465		
Net Present Value		\$584			

5	6	7	8	9	10	11	12
2017	2018	2019	2020	2021	2022	2023	2024
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
735	731	728	724	721	717	713	710
\$0.135	\$0.139	\$0.143	\$0.148	\$0.152	\$0.157	\$0.161	\$0.166
\$99	\$102	\$104	\$107	\$110	\$112	\$115	\$118
122	122	122	122	122	122	122	122
\$1.126	\$1.159	\$1.194	\$1.230	\$1.267	\$1.305	\$1.344	\$1.384
\$137	\$141	\$146	\$150	\$154	\$159	\$164	\$169
\$237	\$243	\$250	\$257	\$264	\$271	\$279	\$287
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(\$10)	(\$10)	(\$9)	(\$9)	(\$9)	(\$9)	(\$9)	(\$9)
\$0	\$0	\$0	\$0	\$0	\$0	(\$168)	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
11%	1%	0%	0%	0%	0%	0%	0%
11%	1%	0%	0%	0%	0%	0%	0%
(\$468)	(\$59)	\$0	\$0	\$0	\$0	\$0	\$0
(\$241)	\$175	\$240	\$248	\$255	\$262	\$102	\$278
\$84	(\$61)	(\$84)	(\$87)	(\$89)	(\$92)	(\$36)	(\$97)
8.3%	8.3%	8.3%	8.3%	8.3%	8.3%	8.3%	8.3%
(\$354)	(\$354)	(\$354)	(\$354)	(\$354)	(\$354)	(\$354)	(\$354)
(\$127)	(\$121)	(\$114)	(\$107)	(\$99)	(\$92)	(\$252)	(\$76)
\$7	\$7	\$7	\$6	\$6	\$5	\$15	\$4
\$92	(\$54)	(\$78)	(\$80)	(\$83)	(\$86)	(\$21)	(\$93)
\$319	\$179	\$163	\$167	\$171	\$176	\$81	\$185
(\$352)	(\$172)	(\$9)	\$158	\$329	\$505	\$586	\$771

13	14	15	16	17	18	19	20
2025	2026	2027	2028	2029	2030	2031	2032
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
706	703	699	696	692	689	685	682
\$0.171	\$0.176	\$0.182	\$0.187	\$0.193	\$0.198	\$0.204	\$0.210
\$121	\$124	\$127	\$130	\$133	\$137	\$140	\$143
122	122	122	122	122	122	122	122
\$1.426	\$1.469	\$1.513	\$1.558	\$1.605	\$1.653	\$1.702	\$1.754
\$174	\$179	\$184	\$190	\$196	\$202	\$208	\$214
\$295	\$303	\$311	\$320	\$329	\$338	\$348	\$357
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
(\$9)	(\$9)	(\$9)	(\$9)	(\$9)	(\$8)	(\$8)	(\$8)
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
0%	0%	0%	0%	0%	0%	0%	0%
0%	0%	0%	0%	0%	0%	0%	0%
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$286	\$294	\$303	\$311	\$320	\$330	\$339	\$349
(\$100)	(\$103)	(\$106)	(\$109)	(\$112)	(\$115)	(\$119)	(\$122)
0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%
\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
\$286	\$294	\$303	\$311	\$320	\$330	\$339	\$349
(\$17)	(\$17)	(\$18)	(\$18)	(\$19)	(\$19)	(\$20)	(\$20)
(\$117)	(\$120)	(\$123)	(\$127)	(\$131)	(\$135)	(\$138)	(\$142)
\$169	\$174	\$179	\$184	\$190	\$195	\$201	\$207
\$940	\$1,114	\$1,293	\$1,478	\$1,667	\$1,863	\$2,063	\$2,270

21 2033	22 2034	23 2035	24 2036	25 2037
\$0	\$0	\$0	\$0	\$0
678	675	672	668	665
\$0.217	\$0.223	\$0.230	\$0.237	\$0.244
\$147	\$151	\$154	\$158	\$162
122	122	122	122	122
\$1.806	\$1.860	\$1.916	\$1.974	\$2.033
\$220	\$227	\$234	\$241	\$248
\$367	\$378	\$388	\$399	\$410
\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0
\$0	\$0	\$0	\$0	\$0
(\$8)	(\$8)	(\$8)	(\$8)	(\$8)
(\$226)	\$0	\$0	\$0	\$0
(\$33)	(\$19)	(\$19)	(\$20)	(\$20)
0%	0%	0%	0%	0%
0%	0%	0%	0%	0%
\$0	\$0	\$0	\$0	\$0
\$101	\$351	\$361	\$371	\$382
(\$35)	(\$123)	(\$126)	(\$130)	(\$134)
0.0%	0.0%	0.0%	0.0%	0.0%
\$0	\$0	\$0	\$0	\$0
\$101	\$351	\$361	\$371	\$382
(\$6)	(\$20)	(\$21)	(\$22)	(\$22)
(\$41)	(\$143)	(\$147)	(\$151)	(\$156)
\$60	\$208	\$214	\$220	\$226
\$2,330	\$2,537	\$2,751	\$2,971	\$3,197

Inputs

Values default from "Input" & "Project" sheet but can be overwritten

PV Capacity Installed (We)	500	
Thermal Capacity Installed (Wth)	2000	
Installed Price (\$/(We+Wth))	2	
Elec Prod (kWh_e/KWe)	1500	
Therms Prod (therms/KWth)	50	
Space Required (sq. ft)	50	
Installation Price	\$5,000	Calculated
Weighted Average Cost of Capital	8.1%	
O&M (\$/(We+Wth))	\$0.0040	
O&M Escal. Rate	3.0%	
O&M Warranty Period	20.00	
Insurance Rate	0.2%	
Insurance Escalation	-1.0%	
Nameplate Boiler Efficiency	82.0%	
Rebate Boiler Efficiency	100.0%	
Thermal EPBB (\$/Therm Offset)	\$14.53	
True Up/100% Upfront?	100.0%	
Electric EPBB (\$/W)	\$0.00	
Electric PBI (\$/kWh)	\$0.00	
Electric PBI Duration (Yrs)	0	
Thermal PBI (\$/therm)	\$0.00	
Thermal PBI Duration (Yrs)	0	
Electricity Price	\$0.120	
Electric Escalation Rate	3.0%	
Natural Gas Price	\$1.00	
Nat Gas Escalation Rate	3.0%	
Heating System Type	natural gas	
CO ₂ Price (\$ / ton)	\$0.00	
CO ₂ Escalation Rate	6.0%	
Electric REC (\$/MWh)	\$0.00	

Inputs in yellow cells

Cells

Thermal REC (\$/MWh)	\$0.00
REC Escalation Rate	0.0%
REC Start Year	2012
REC Ending Year	2017
Federal Tax Rate	35.0%
State Tax Rate	5.8%
Fed Depreciation	MACRS
State Depreciation	Straight Line
Tax Credit Name	0
Tax Credit Cap	\$0
Tax Credit Percent	0.0%
Tax Credit Carryover	1.0
Federal Grant or Credit?	Tax Credit

MACRS Depreciation Schedule

Year	0	1	2	3	4
MACRS % - with 50% bonus	0.5	0.5*Qtr	0.5*Qtr	0.5*Qtr	0.5*Qtr
MACRS % - PIS 1st Quarter		0.35	0.26	0.156	0.1101
MACRS % - PIS 2nd Quarter		0.25	0.3	0.18	0.1137
MACRS % - PIS 3rd Quarter		0.15	0.34	0.204	0.1224
MACRS % - PIS 4th Quarter		0.05	0.38	0.228	0.1368
				5	6
			0.5*Qtr	0.5*Qtr	
				0.1101	0.0138
				0.1137	0.0426
				0.113	0.0706
				0.1094	0.0958