



MVWSD Solar PV Project

25-Yr Savings Analysis Summary

10/15/2020

Metric	Units	Value
Project Details		
Total System Size	kWp (DC Nameplate)	1,589
Modeled Production	kWh, Year-1	2,535,893
Yield	kWh/kWp	1,596
25-yr Savings Analysis		
Project Capital Cost		
Base Capital Cost	\$	\$8,864,616
5% Contingency Cost	\$	\$443,000
Soft Costs	\$	\$316,000
Total Year-0 PV Purchase Cost	\$	\$9,623,616
Savings		
Gross Lifetime Savings, Nominal	\$	\$11,968,000
Net Lifetime Savings, Nominal	\$	\$2,344,000
Net Lifetime NPV Savings (2.0% DR)	\$	-\$433,000
Project IRR	%	1.64%
Simple Payback	Years	20.5

Operating Cost Assumptions

Metric	Units	Value
Discount Rate	%	2.0%
O&M, PeGu Escalator	%	3.00%
Inverter Replacement Cost (Sinking Fund)	\$/W	\$0.11
Inverter Replacement Escalator	%	-1%
Inverter Replacement Interval	Years	12

Other Key Assumptions

NEM 2.0 Export Energy Rate	Full retail rate, minus non-bypassable charges, for 20 years.
Annual Utility Inflation Rate	3%
Annual Utility Tariff Risk Factor	-0.10%, loss in value of PV energy due to utility rate structure changes.
Time-of-Use Grandfathering Loss (2028)	-7%, loss in value due to loss of TOU grandfathering on 1/1/2028.
NEM 2.0 Loss (2040)	-15%, loss in value of PV energy after NEM 2.0 expires in 20 years.
Net Present Value (NPV) Discount Rate	2%

Project Dev Soft Cost Assumptions

	% of Build Cost	Cap Cost Equiv.
Contingency	5%	\$443,000
Sage Fees	2%	\$150,000
Legal and Administration Fees	0.6%	\$50,000
Testing and Inspection Fees	1%	\$100,000
Interconnection Fees	0.18%	\$16,000
Total	9%	\$759,000

Note

Net lifetime savings are inclusive of all costs incurred during the 25-year lifetime of the solar project, including project development soft costs listed below, O&M and PeGu costs, other annual operational expenses such as system insurance and performance management, end of lifetime system decommissioning fund, and a inverter replacement fund. The Net Lifetime Savings numbers also consider annual changes to value of generated PV energy due to changing tariff structures, NEM grandfathering and Time-of-Use (TOU grandfathering).



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Year	Annual Estimated Utility Cost w/o PV	Utility Energy Cost w/PV	PV O&M, PeGu	Inverter Replacement	Decommissioning	Net Annual Savings	Cumulative Project Cash Flow
0						(\$9,624,000)	(\$9,624,000)
1	\$680,354	\$210,769	\$59,736	\$13,113	\$7,709	\$389,000	(\$9,235,000)
2	\$700,765	\$227,990	\$61,528	\$13,113	\$7,709	\$390,000	(\$8,845,000)
3	\$721,788	\$245,937	\$63,374	\$13,113	\$7,709	\$392,000	(\$8,453,000)
4	\$743,442	\$260,306	\$65,275	\$13,113	\$7,709	\$397,000	(\$8,056,000)
5	\$765,745	\$275,246	\$67,233	\$13,113	\$7,709	\$402,000	(\$7,654,000)
6	\$788,717	\$286,239	\$69,250	\$13,113	\$7,709	\$412,000	(\$7,242,000)
7	\$812,379	\$297,628	\$71,328	\$13,113	\$7,709	\$423,000	(\$6,819,000)
8	\$836,750	\$309,425	\$73,468	\$13,113	\$7,709	\$433,000	(\$6,386,000)
9	\$861,852	\$321,645	\$75,672	\$13,113	\$7,709	\$444,000	(\$5,942,000)
10	\$887,708	\$334,300	\$77,942	\$13,113	\$7,709	\$455,000	(\$5,487,000)
11	\$914,339	\$347,408	\$80,280	\$13,113	\$7,709	\$466,000	(\$5,021,000)
12	\$941,769	\$360,981	\$82,689	\$13,113	\$7,709	\$477,000	(\$4,544,000)
13	\$970,023	\$375,038	\$85,169	\$11,623	\$7,709	\$490,000	(\$4,054,000)
14	\$999,123	\$389,592	\$87,724	\$11,623	\$7,709	\$502,000	(\$3,552,000)
15	\$1,029,097	\$404,662	\$90,356	\$11,623	\$7,709	\$515,000	(\$3,037,000)
16	\$1,059,970	\$420,265	\$93,067	\$11,623	\$7,709	\$527,000	(\$2,510,000)
17	\$1,091,769	\$436,418	\$95,859	\$11,623	\$7,709	\$540,000	(\$1,970,000)
18	\$1,124,522	\$453,140	\$98,735	\$11,623	\$7,709	\$553,000	(\$1,417,000)
19	\$1,158,258	\$470,451	\$101,697	\$11,623	\$7,709	\$567,000	(\$850,000)
20	\$1,193,005	\$488,369	\$104,747	\$11,623	\$7,709	\$581,000	(\$269,000)
21	\$1,228,796	\$603,798	\$107,890	\$11,623	\$7,709	\$498,000	\$229,000
22	\$1,265,659	\$625,302	\$111,127	\$11,623	\$7,709	\$510,000	\$739,000
23	\$1,303,629	\$647,532	\$114,460	\$11,623	\$7,709	\$522,000	\$1,261,000
24	\$1,342,738	\$670,511	\$117,894	\$11,623	\$7,709	\$535,000	\$1,796,000
25	\$1,383,020	\$694,265	\$121,431	\$11,623	\$7,709	\$548,000	\$2,344,000
Totals	\$24,805,217	\$10,157,218	\$2,177,931	\$308,451	\$192,735	\$2,344,000	

