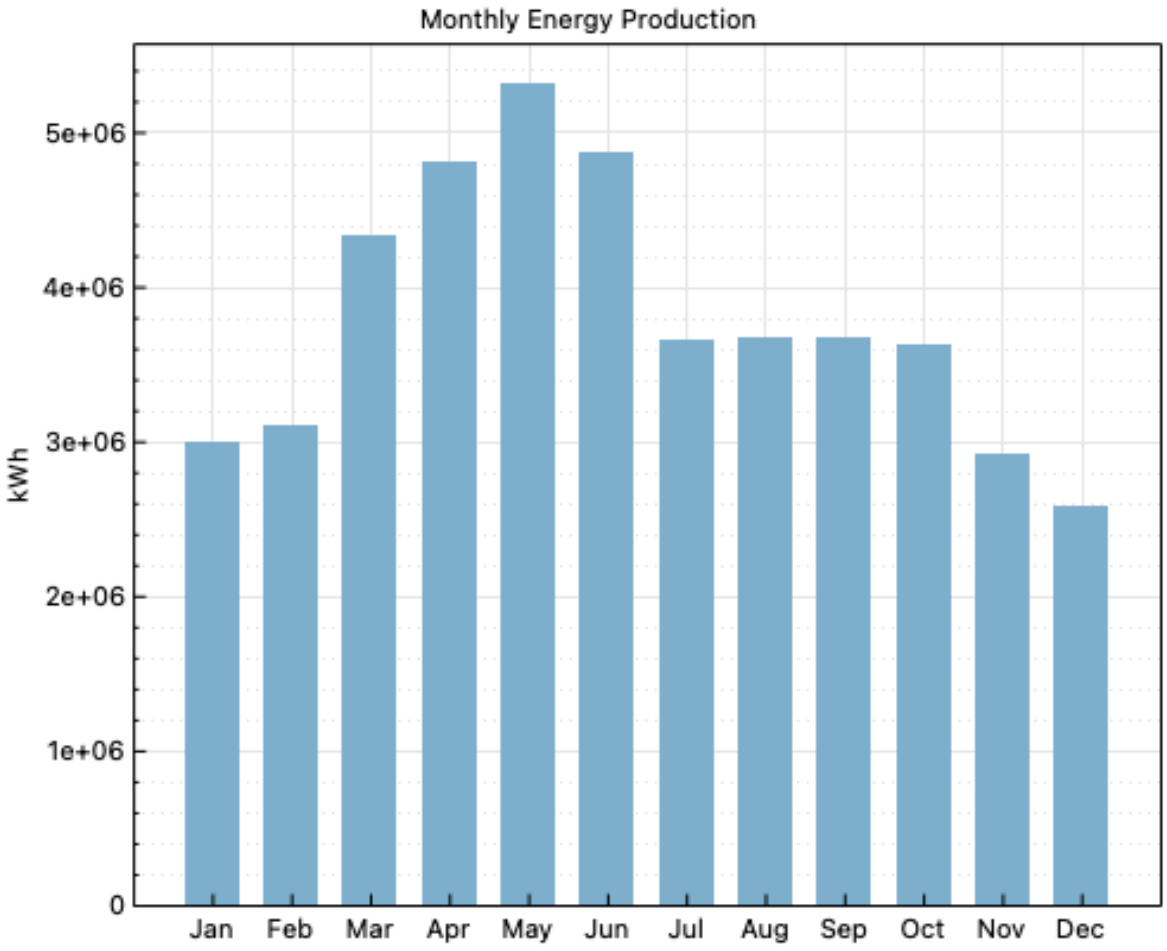
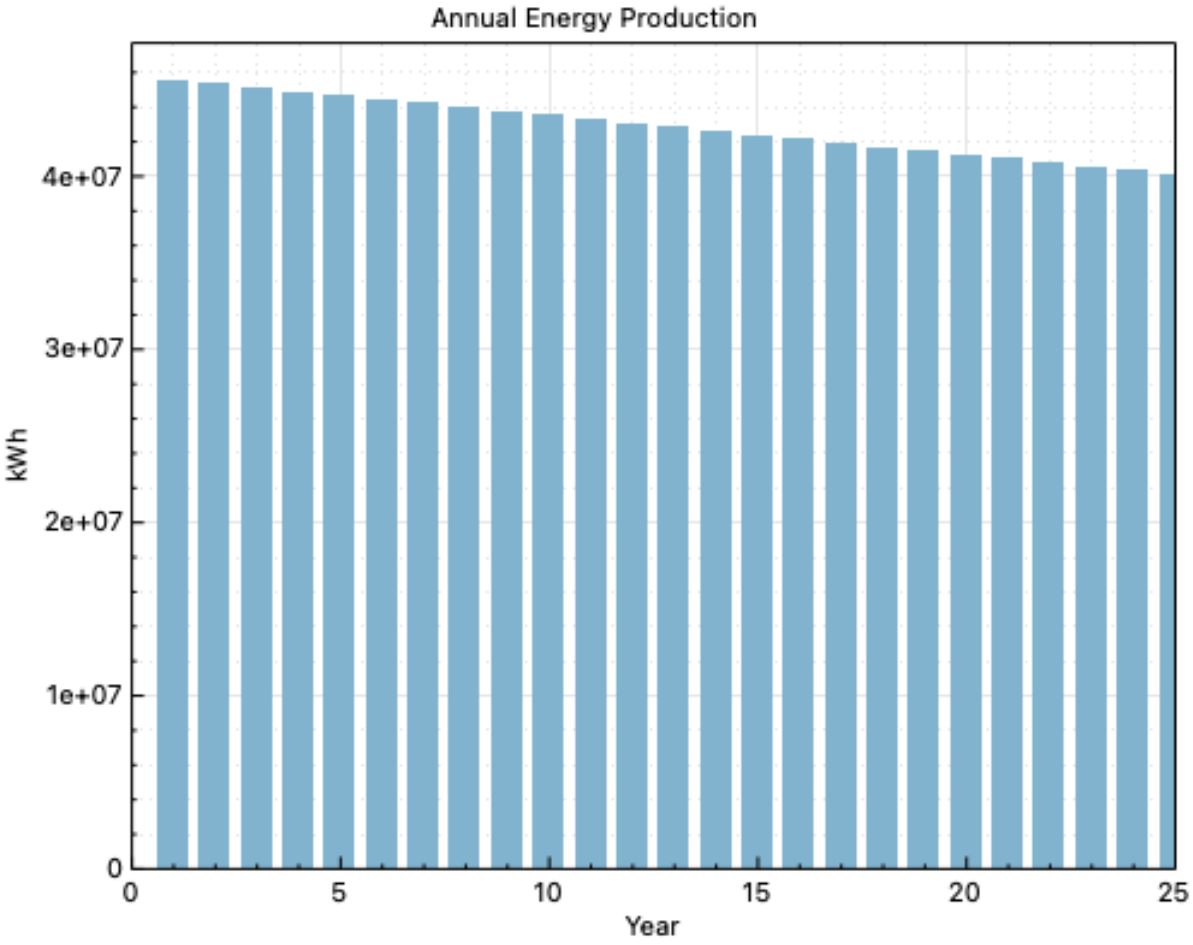
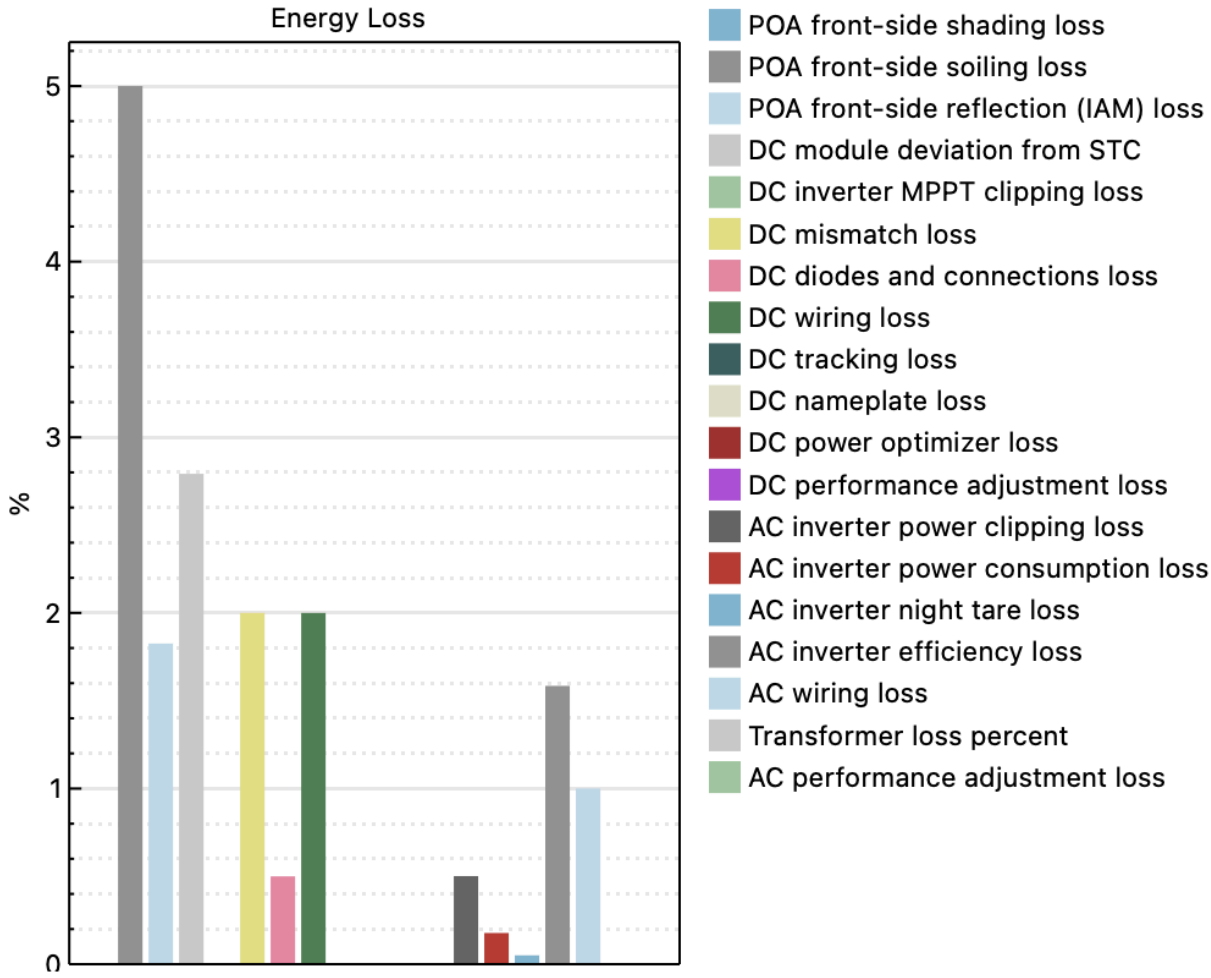
After completing the LCOE and AEP calculations within SAM, a simulation was run to determine the designed systems LCOE and AEP. The simulation was based on a 25-year span with an estimated 50MW system capacity. Based on the data form the simulation, the AEP for the system is 45,431,7780 kWh annually. The system produces the most energy in the second quarter of year with May being the most productive month. The LCOE determined was $ 0.0618/kWh (nominal) and $ 0.0494 (real). The overall system design carries a performance ratio of 86%, which is well within ideal conditions. Looking at the system energy losses, the most significant energy loss results from soiling losses. These losses account for any debris that can accumulate on the panels such as snow, dirt, or dust. These values are subject to change as the design is improved but as of now these values fall within the desired results for the system.

Metric	Value
Annual energy (year 1)	45,431,780 kWh
Capacity factor (year 1)	26.2%
Energy yield (year 1)	2,292 kWh/kW
Performance ratio (year 1)	0.86
PPA price (year 1)	6.06 ¢/kWh
PPA price escalation	1.00 %/year
Levelized PPA price (nominal)	6.55 ¢/kWh
Levelized PPA price (real)	5.23 ¢/kWh
Levelized COE (nominal)	6.18 ¢/kWh
Levelized COE (real)	4.94 ¢/kWh
Investor IRR in flip year	11.00 %
Flip year	20
Investor IRR at end of project	11.26 %
Investor NPV over project life	$629,626
Developer IRR at end of project	NaN
Developer NPV over project life	$1,423,536
Net capital cost	$24,255,382
Equity	$10,064,434
Debt	$14,190,947


Monthly Energy Production
kWh
5e+06
4e+06
3e+06
2e+06
1e+06
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


Annual Energy Production
4e+07
3e+07
2e+07
1e+07
0
kWh
0
5
10
15
20
25
Year


Energy Loss
%
0
1
2
3
4
5
POA front-side shading loss
POA front-side soiling loss
POA front-side reflection (IAM) loss
DC module deviation from STC
DC inverter MPPT clipping loss
DC mismatch loss
DC diodes and connections loss
DC wiring loss
DC tracking loss
DC nameplate loss
DC power optimizer loss
DC performance adjustment loss
AC inverter power clipping loss
AC inverter power consumption loss
AC inverter night tare loss
AC inverter efficiency loss
AC wiring loss
Transformer loss percent
AC performance adjustment loss