

Solar Shading Analysis

honeydew

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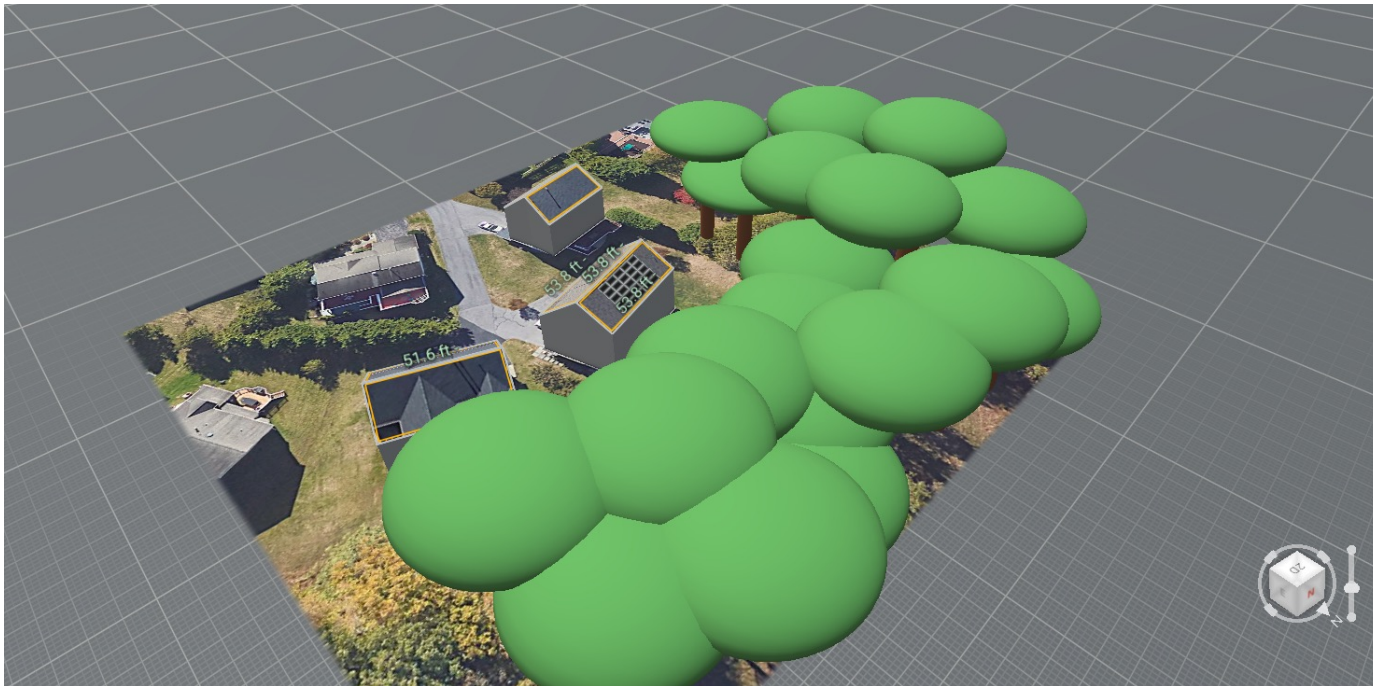
April 25, 2023

Shading Analysis Methodology

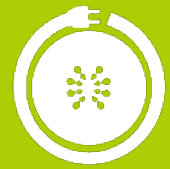


Honeydew Energy Advisors received the building designs for the residential property located at... It inputted this design into the Aurora shading analysis software to determine the efficacy of a proposed solar system. Aurora is a commonly used and respected shading analysis software within the solar industry.

Aurora data estimates that shading from nearby obstructions will hinder solar production by 16%. The result is a system producing 6,734 kWh annually. This will offset approximately 46% of the property's annual electric usage of 14,553 kWh.



System Production



ANNUAL PRODUCTION

25

Panels

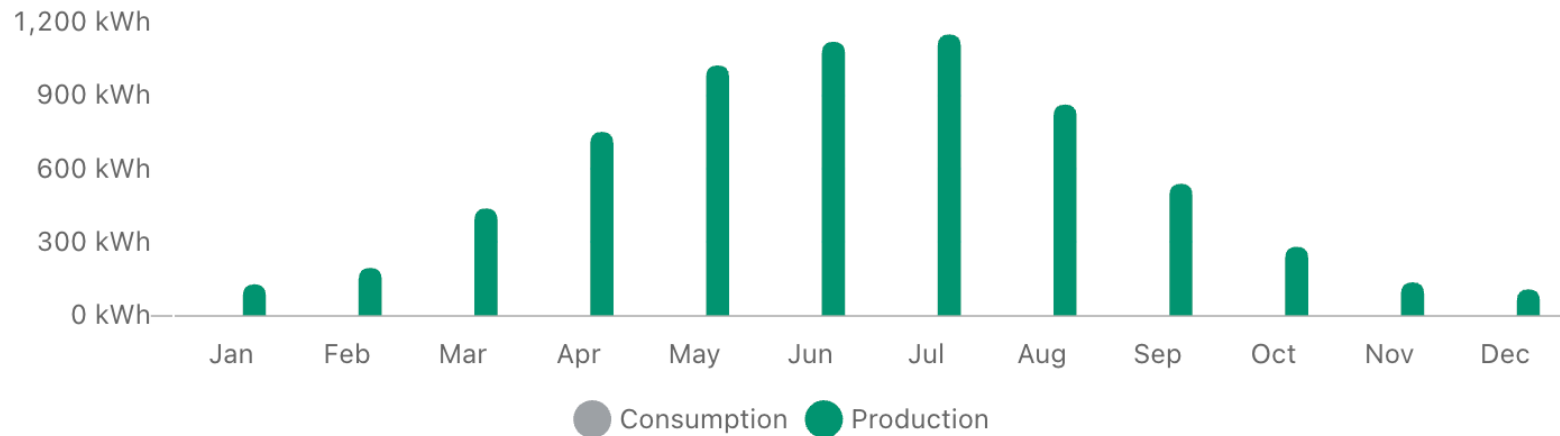
6,734kWh

Energy

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Energy Offset

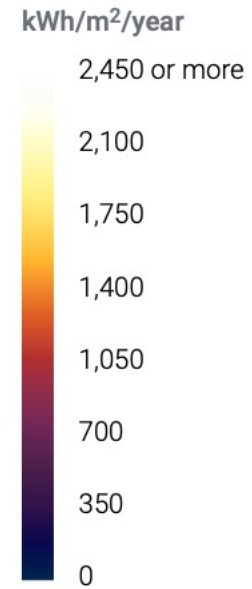
MONTHLY PRODUCTION (KWH)



Irradiance Data



Annual irradiance



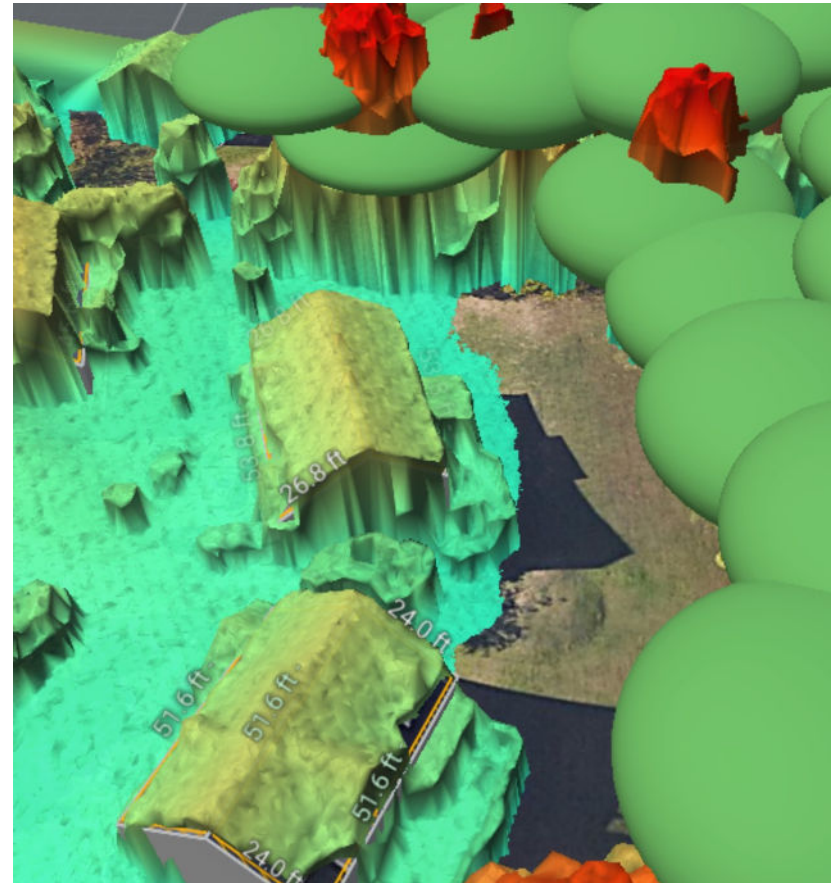
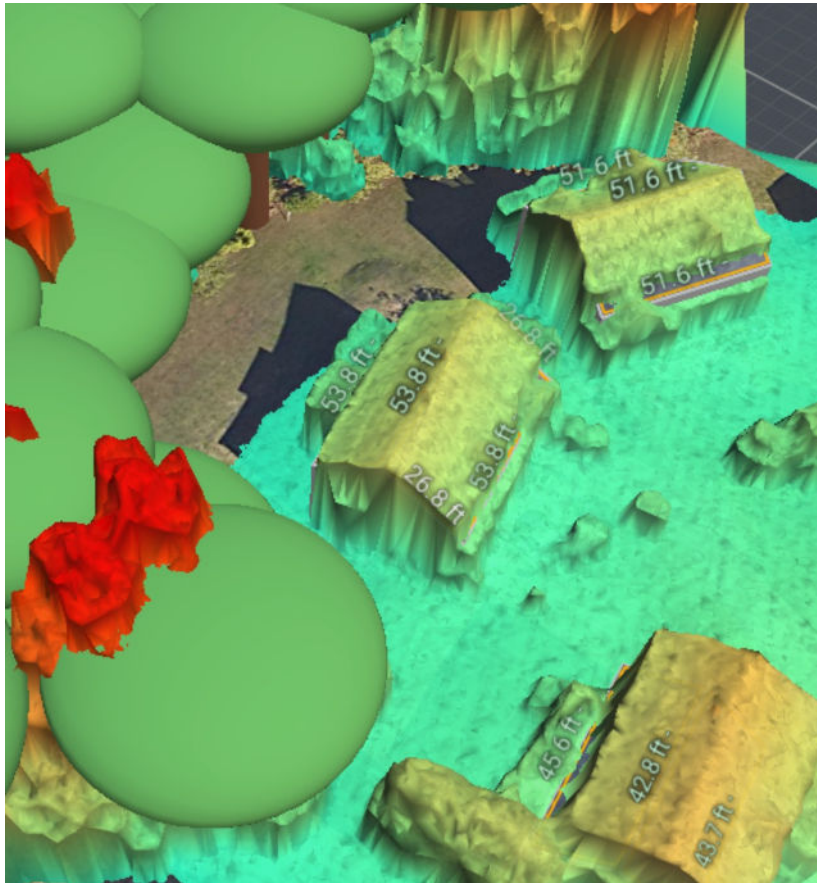
Summary

Array	Panel Count	Azimuth (deg.)	Pitch (deg.)	Annual TOF (%)	Annual Solar Access (%)	Annual TSPF (%)
1	25	343	32	57	84	48
Weighted average by panel count	-	-	-	-	84	47.9

Monthly solar access (%) across arrays

Array	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1	76	80	79	85	86	86	87	86	81	79	78	76

LIDAR



Financial Analysis Methodology



Assumptions

The financial analysis was conducted using Honeydew's proprietary District of Columbia financial model. All numbers are presented in the tables are real dollars not adjusted for present value and using the following assumptions:

3.0%	Electric Inflation
0.50%	Panel Degradation/YR
85%	SREC:ACP Ratio

Solar Renewable Energy Credit (SREC) prices are based on a 85% of the Alternative Compliance Payments that undergird demand for SRECs. It also factors in a discount paid to an SREC aggregator, which is needed for all residential scale solar energy systems in DC. This analysis does not consider income tax paid on SREC income from system owner.

Summary

10.13	System Size (kW)
6,734	Production (kWh)
\$0.097	Current Rate (\$/kWh)
\$1,047	1 Year Electric Savings
\$24,177	20 Year Electric Savings

If we assume a 3% general inflation rate, the total nominal value on the 20 years of marginal cash flow is equal to **\$24,177**.

Estimated Electric Savings



Solar Energy System Details	
Solar System Size (kW)	10.13
Solar System Production (kWh in Yr 1)	6,734
Avg Solar Panel Annual Degradation Rate	0.50%

Building Details	
Bldg Annual Energy Usage (kWh)	14,553
Estimated Electric Rate (\$/kWh)	\$0.097
Electric Rate Annual Escalation	3.0%
Bldg Energy Offset (Yr 1)	46%
Number of Interconnections	1

Year	Estimated Solar Production (kWh)	Estimated Electric Offset Rate	Estimated Energy Savings	Estimated SREC Cash Flow
0				
1	6,734	\$0.0970	\$653	\$394
2	6,700	\$0.0999	\$669	\$392
3	6,667	\$0.1029	\$686	\$390
4	6,633	\$0.1060	\$703	\$388
5	6,600	\$0.1092	\$721	\$386
6	6,567	\$0.1124	\$738	\$384
7	6,534	\$0.1158	\$757	\$382
8	6,502	\$0.1193	\$776	\$380
9	6,469	\$0.1229	\$795	\$378
10	6,437	\$0.1266	\$815	\$377
11	6,405	\$0.1304	\$835	\$375
12	6,373	\$0.1343	\$856	\$373
13	6,341	\$0.1383	\$877	\$371
14	6,309	\$0.1424	\$899	\$369
15	6,278	\$0.1467	\$921	\$367
16	6,246	\$0.1511	\$944	\$365
17	6,215	\$0.1557	\$967	\$364
18	6,184	\$0.1603	\$991	\$362
19	6,153	\$0.1651	\$1,016	\$360
20	6,122	\$0.1701	\$1,041	\$358
TOTAL			\$16,661	\$7,516