COA Barelas Senior Center 76.5 kW COA SENIOR CENTER, 714 7th street SW Albuquerque, NM

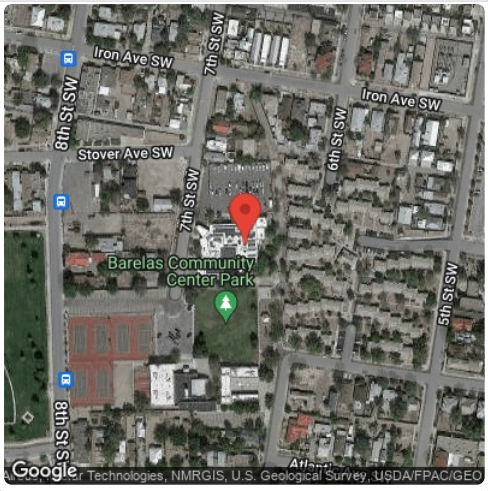
Report

Project Name	COA SENIOR CENTER
Project Address	714 7th street SW Albuquerque, NM
Prepared By	Zach Johnson zach@sollunasolar.com

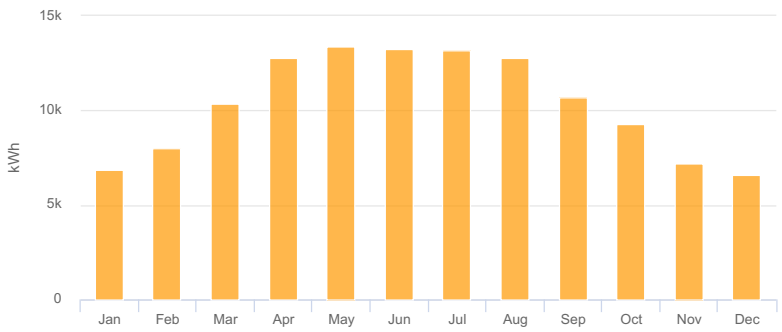
System Metrics

Design	COA Barelas Senior Center 76.5 kW
Module DC Nameplate	76.5 kW
Inverter AC Nameplate	86.4 kW Load Ratio: 0.89
Annual Production	124.3 MWh
Performance Ratio	78.7%
kWh/kWp	1,625.1
Weather Dataset	TMY, ALBUQUERQUE INTL ARPT [ISIS], NSRDB (tmy3, I)
Simulator Version	70e353687f-301d24fdcb-8f3cf974d4-5e9aee986c

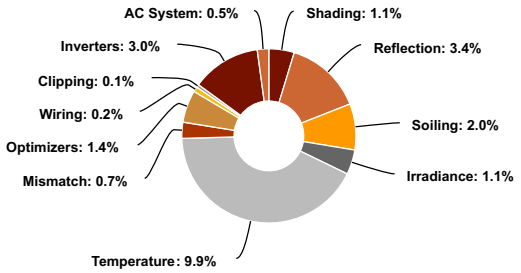
Project Location



Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,980.4	
	POA Irradiance	2,065.4	4.3%
	Shaded Irradiance	2,042.7	-1.1%
	Irradiance after Reflection	1,974.2	-3.4%
	Irradiance after Soiling	1,934.7	-2.0%
	Total Collector Irradiance	**1,934.7**	**0.0%**
Energy (kWh)	Nameplate	148,098.2	
	Output at Irradiance Levels	146,515.3	-1.1%
	Output at Cell Temperature Derate	132,018.9	-9.9%
	Output After Mismatch	131,095.1	-0.7%
	Optimizer Output	129,259.3	-1.4%
	Optimal DC Output	128,977.3	-0.2%
	Constrained DC Output	128,810.6	-0.1%
	Inverter Output	124,946.3	-3.0%
	Energy to Grid	**124,321.6**	**-0.5%**
Temperature Metrics			
	Avg. Operating Ambient Temp		17.3 °C
	Avg. Operating Cell Temp		34.9 °C
Simulation Metrics			
	Operating Hours		4566
	Solved Hours		4566

Condition Set

Description	Condition Set 1
Weather Dataset	TMY, ALBUQUERQUE INTL ARPT [ISIS], NSRDB (tmy3, I)
Solar Angle Location	Meteo Lat/Lng
Transposition Model	Perez Model
Temperature Model	Diffusion Model

Temperature Model Parameters

Rack Type	U_{const}	U_{wind}
Fixed Tilt	18	0
Flush Mount	15	0
East-West	29	0
Carport	29	0

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
2	2	2	2	2	2	2	2	2	2	2	2

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	-2.5% to 2.5%
AC System Derate	0.50%

Module Characterizations

Module	Uploaded By	Characterization
CS3U 340P 1500V (Canadian Solar Inc.)	HelioScope	CS3U-340P_MIX_CSI_EXT_V6_52_1500V_2016Q4_A2.PAN, PAN

Component Characterizations

Device	Uploaded By	Characterization

Components

Component	Name	Count
Inverters	SE43.2K (SolarEdge)	2 (86.4 kW)
Combiners	5 input Combiner	1
Combiners	6 input Combiner	1
Strings	10 AWG (Copper)	11 (676.7 ft)
Optimizers	P800S (SolarEdge)	115 (92.0 kW)
Module	Canadian Solar Inc., CS3U 340P 1500V (340W)	225 (76.5 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	12	7-21	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Field Segment 1	Fixed Tilt	Landscape (Horizontal)	5°	178.21°	0.7 ft	1x1	39	39	13.3 kW
Field Segment 2	Fixed Tilt	Landscape (Horizontal)	5°	178.21°	0.7 ft	1x1	68	68	23.1 kW
Field Segment 3	Fixed Tilt	Landscape (Horizontal)	5°	177.434°	0.7 ft	1x1	100	100	34.0 kW
Field Segment 4	Fixed Tilt	Landscape (Horizontal)	5°	177.72153°	0.7 ft	1x1	18	18	6.12 kW

Detailed Layout