

ReDesign - Max 120kWac - 2.6.25

Town of Ashfield WWTP (PO Purchase GD MT) - 10880, 705 Conway Rd, Ashfield MA

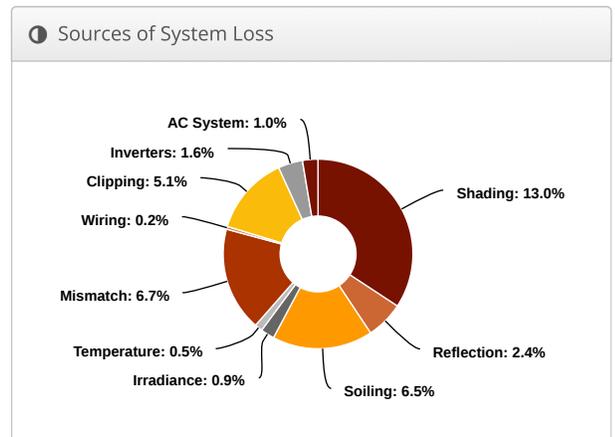
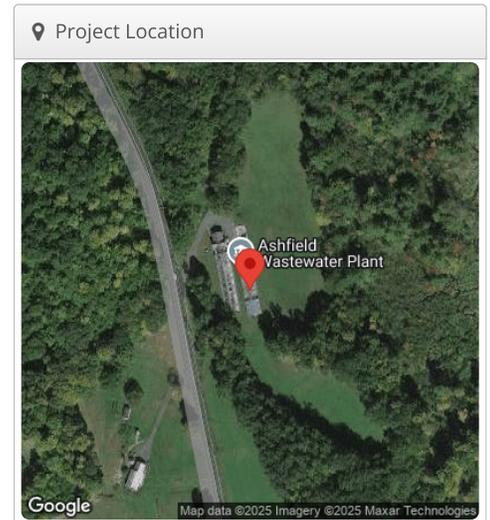
Report

Project Name	Town of Ashfield WWTP (PO Purchase GD MT) - 10880
Project Address	705 Conway Rd, Ashfield MA
Prepared By	Seamus Maxwell smaxwell@solect.com



System Metrics

Design	ReDesign - Max 120kWac - 2.6.25
Module DC Nameplate	179.5 kW
Inverter AC Nameplate	120.0 kW Load Ratio: 1.50
Annual Production	195.4 MWh
Performance Ratio	67.7%
kWh/kWp	1,088.7
Weather Dataset	TMY, 10km Grid (42.55,-72.75), NREL (prospector)
Simulator Version	75be936074-dc2997d67d-e49f353037-aa21df33c0



⚡ Annual Production			
	Description	Output	% Delta
Irradiance (kWh/m ²)	Annual Global Horizontal Irradiance	1,375.7	
	POA Irradiance	1,607.2	16.8%
	Shaded Irradiance	1,398.5	-13.0%
	Irradiance after Reflection	1,364.5	-2.4%
	Irradiance after Soiling	1,276.1	-6.5%
	Total Collector Irradiance	1,275.9	0.0%
Energy (kWh)	Nameplate	230,172.5	
	Output at Irradiance Levels	228,110.5	-0.9%
	Output at Cell Temperature Derate	226,972.7	-0.5%
	Output After Mismatch	211,688.7	-6.7%
	Optimal DC Output	211,310.7	-0.2%
	Constrained DC Output	200,503.5	-5.1%
	Inverter Output	197,340.8	-1.6%
		Energy to Grid	195,367.4
Temperature Metrics			
	Avg. Operating Ambient Temp		10.7 °C
	Avg. Operating Cell Temp		17.0 °C
Simulation Metrics			
	Operating Hours	4695	
	Solved Hours	4695	

☁ Condition Set												
Description		Condition Set 1										
Weather Dataset		TMY, 10km Grid (42.55,-72.75), NREL (prospector)										
Solar Angle Location		Meteo Lat/Lng										
Transposition Model		Perez Model										
Temperature Model		Sandia Model										
Temperature Model Parameters	Rack Type	a	b	Temperature Delta								
	Fixed Tilt	-3.56	-0.075	3°C								
	Flush Mount	-2.81	-0.0455	0°C								
	East-West	-3.56	-0.075	3°C								
	Carport	-3.56	-0.075	3°C								
Soiling (%)	J	F	M	A	M	J	J	A	S	O	N	D
	25	30	10	3	3	3	3	3	3	3	3	10
Irradiation Variance		5%										
Cell Temperature Spread		4° C										
Module Binning Range		0% to 1.04%										
AC System Derate		1.00%										
Trackers	Maximum Angle					Backtracking						
	60°					Enabled						
Module Characterizations	Module					Uploaded By		Characterization				
	Q.PEAK DUO XL-G10.3/BFG 485 (2021) (Hanwha)					HelioScope		Spec Sheet Characterization, PAN				
Component Characterizations	Device					Uploaded By		Characterization				
	CPS SCA60KTL-DO/US-480 (2021) (Chint Power Systems)					HelioScope		Spec Sheet				

📦 Components		
Component	Name	Count
Inverters	CPS SCA60KTL-DO/US-480 (2021) (Chint Power Systems)	2 (120.0 kW)
Strings	10 AWG (Copper)	30 (2,695.3 ft)
Module	Hanwha, Q.PEAK DUO XL-G10.3/BFG 485 (2021) (485W)	370 (179.5 kW)

🔌 Wiring Zones			
Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	-	11-13	Along Racking

🏠 Field Segments									
Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Field Segment 1	Fixed Tilt	Portrait (Vertical)	Module: 25°	Module: 180°	10.0 ft	2x1	185	370	179.5 kW

Detailed Layout2



