Meter # 322 853 017 BCS - North Buncombe Middle, 51 N Buncombe School Rd, Weaverville,NC 28787

Report

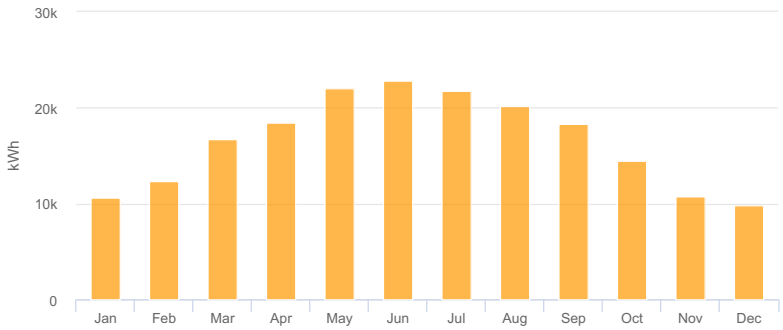
Project Name	BCS - North Buncombe Middle
Project Address	51 N Buncombe School Rd, Weaverville,NC 28787
Prepared By	Jay Radcliffe ops@renuenergysolutions.com

System Metrics

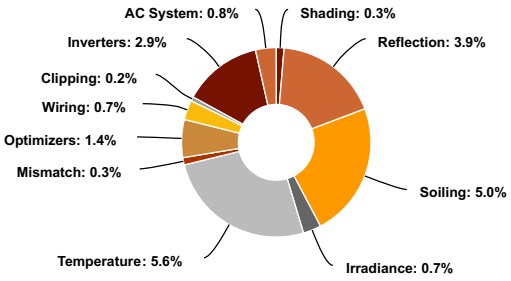
Design	Meter # 322 853 017
Module DC Nameplate	153.6 kW
Inverter AC Nameplate	117.3 kW Load Ratio: 1.31
Annual Production	198.2 MWh
Performance Ratio	80.1%
kWh/kWp	1,290.2
Weather Dataset	TMY, 10km Grid (35.75,-82.55), NREL (prospector)
Simulator Version	0cee300acc-3b7092d7ff-41629a9a21-c717987783

Project Location

Monthly Production



Sources of System Loss



Annual Production

	Description	Output	% Delta
Irradiance (kWh/m²)	Annual Global Horizontal Irradiance	1,591.8	
	POA Irradiance	1,609.7	1.1%
	Shaded Irradiance	1,605.1	-0.3%
	Irradiance after Reflection	1,542.6	-3.9%
	Irradiance after Soiling	1,465.5	-5.0%
	Total Collector Irradiance	**1,465.5**	**0.0%**
Energy (kWh)	Nameplate	225,132.6	
	Output at Irradiance Levels	223,636.1	-0.7%
	Output at Cell Temperature Derate	211,096.3	-5.6%
	Output After Mismatch	210,527.2	-0.3%
	Optimizer Output	207,570.3	-1.4%
	Optimal DC Output	206,058.4	-0.7%
	Constrained DC Output	205,737.3	-0.2%
	Inverter Output	199,698.9	-2.9%
	Energy to Grid	**198,171.7**	**-0.8%**
Temperature Metrics			
	Avg. Operating Ambient Temp		12.1 °C
	Avg. Operating Cell Temp		27.6 °C
Simulation Metrics			
	Operating Hours		4712
	Solved Hours		4712

Condition Set

Description	Condition Set 2
Weather Dataset	TMY, 10km Grid (35.75,-82.55), 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

Soiling (%)

J	F	M	A	M	J	J	A	S	O	N	D
5	5	5	5	5	5	5	5	5	5	5	5

Irradiation Variance	5%
Cell Temperature Spread	4° C
Module Binning Range	-2.5% to 2.5%
AC System Derate	2.00%

Module Characterizations

Module	Uploaded By	Characterization
TSM-PD14 320 (May16) (Trina Solar)	HelioScope	Spec Sheet Characterization, PAN
Q.peak DUO XL-G10.3 480 (Hanwha Q Cells)	HelioScope	Spec Sheet Characterization, PAN

Component Characterizations

Device	Uploaded By	Characterization

Components

Component	Name	Count
Inverters	SE50KUS (SolarEdge)	2 (100.0 kW)
Inverters	SE17.3KUS (2021) (SolarEdge)	1 (17.3 kW)
AC Panels	2 input AC Panel	1
AC Home Runs	3 AWG (Copper)	1 (176.3 ft)
AC Home Runs	1 AWG (Copper)	2 (154.9 ft)
AC Home Runs	250 MCM (Copper)	1 (182.7 ft)
Strings	10 AWG (Copper)	20 (9,429.5 ft)
Optimizers	P1101 (SolarEdge)	167 (183.7 kW)
Module	Hanwha Q Cells, Q.peak DUO XL-G10.3 480 (480W)	320 (153.6 kW)

Wiring Zones

Description	Combiner Poles	String Size	Stringing Strategy
Wiring Zone	-	9-18	Along Racking
Wiring Zone 2	-	7-13	Along Racking

Field Segments

Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power
Field Segment 1	Flush Mount	Portrait (Vertical)	3°	255.06754°	0.1 ft	1x1	109	103	49.4 kW
Field Segment 2	Flush Mount	Landscape (Horizontal)	3°	75.201515°	2.0 ft	1x1	0	0	0
Field Segment 3	Flush Mount	Landscape (Horizontal)	3°	74.43603°	2.0 ft	1x1	0	0	0
Field Segment 4	Flush Mount	Portrait (Vertical)	3°	164.88907°	0.1 ft	1x1	51	43	20.6 kW
Field Segment 5	Flush Mount	Landscape (Horizontal)	3°	345.1075°	2.0 ft	1x1	0	0	0
Field Segment 6	Flush Mount	Portrait (Vertical)	3°	255.12337°	0.1 ft	1x1	179	133	63.8 kW
Field Segment 7	Flush Mount	Landscape (Horizontal)	2°	199.29544°	2.0 ft	1x1	0	0	0
Field Segment 8	Fixed Tilt	Landscape (Horizontal)	2°	165.15°	2.0 ft	1x1	0	0	0
Field Segment 9	Fixed Tilt	Landscape (Horizontal)	3°	199.29544°	2.0 ft	1x1	0	0	0
Field Segment 10	Fixed Tilt	Landscape (Horizontal)	3°	165.03853°	2.0 ft	1x1	0	0	0
Field Segment 11	Fixed Tilt	Landscape (Horizontal)	3°	199.29544°	2.0 ft	1x1	0	0	0
Field Segment 12	Fixed Tilt	Landscape (Horizontal)	6°	199.29544°	2.0 ft	1x1	6	0	0
Field Segment 13	Fixed Tilt	Landscape (Horizontal)	6°	164.7°	2.0 ft	1x1	0	0	0
Field Segment 14	Fixed Tilt	Landscape (Horizontal)	6°	199.29544°	2.0 ft	1x1	2	0	0
Field Segment 15	Fixed Tilt	Landscape (Horizontal)	2°	164.99232°	2.0 ft	1x1	0	0	0
Field Segment 16	Fixed Tilt	Portrait (Vertical)	3°	165.15°	2.0 ft	5x1	0	0	0
Field Segment 17	Flush Mount	Portrait (Vertical)	3°	164.8328°	0.1 ft	1x1	41	41	19.7 kW
Field Segment 18	Flush Mount	Portrait (Vertical)	3°	164.8328°	0.1 ft	1x1	0	0	0
Field Segment 19	Flush Mount	Portrait (Vertical)	3°	164.8328°	0.1 ft	1x1	0	0	0

Detailed Layout