

636.5kW_P ON GRID SOLAR SYSTEM (Nippon Sanso Myanmar)

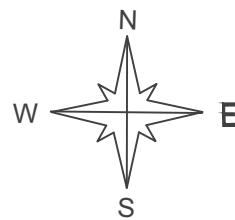
SOLAR DESIGN AND DRAWINGS , REV(0)

DESIGNED BY,

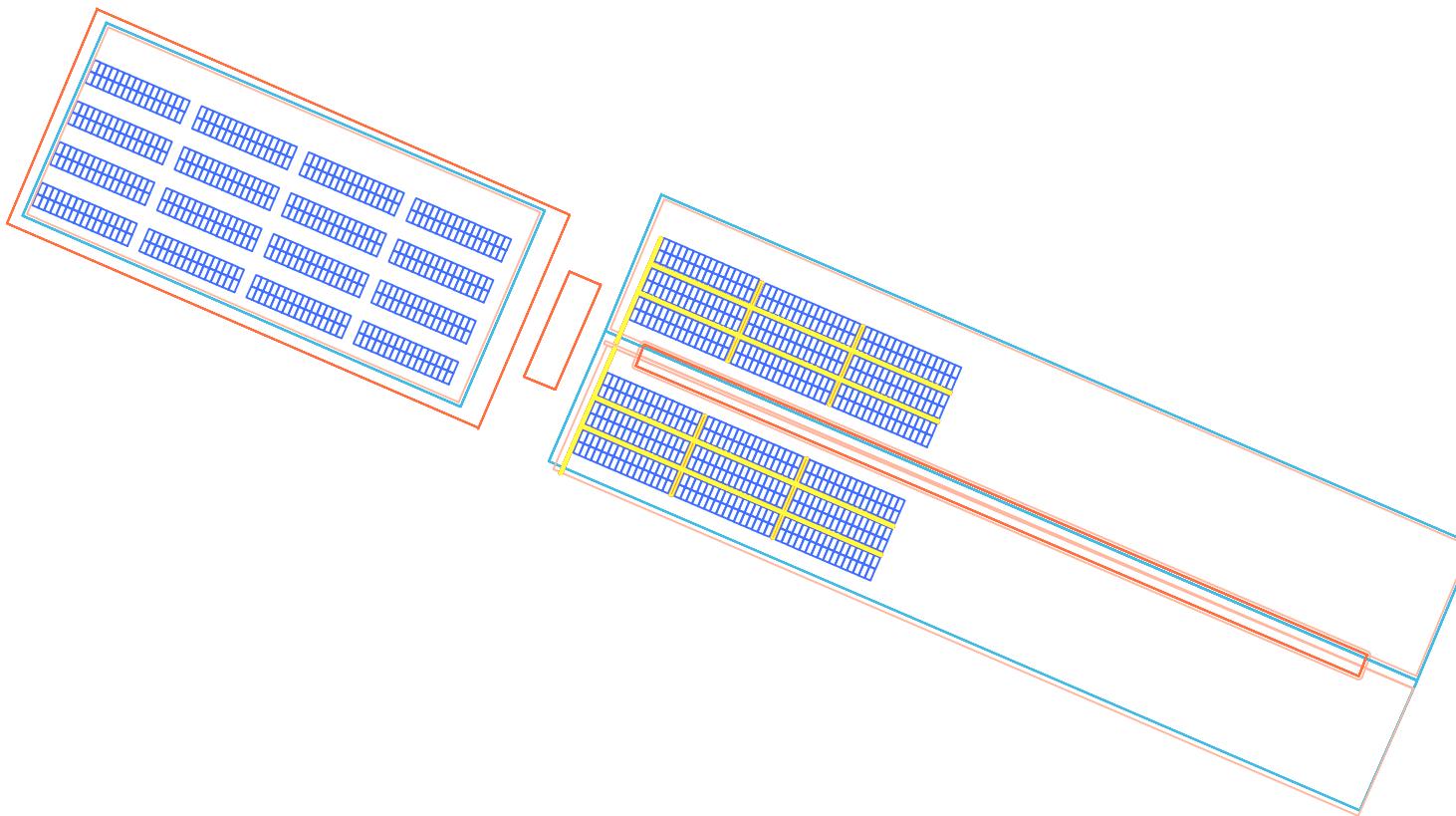
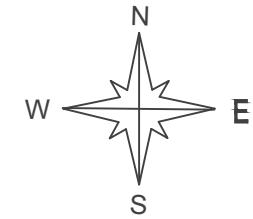
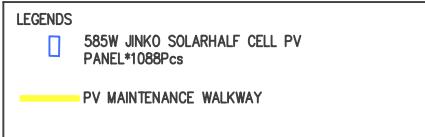
Htet Zarni Naing

Schedule Of Solar Drawings & Design

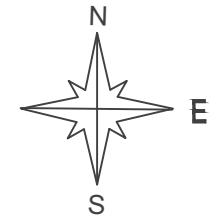
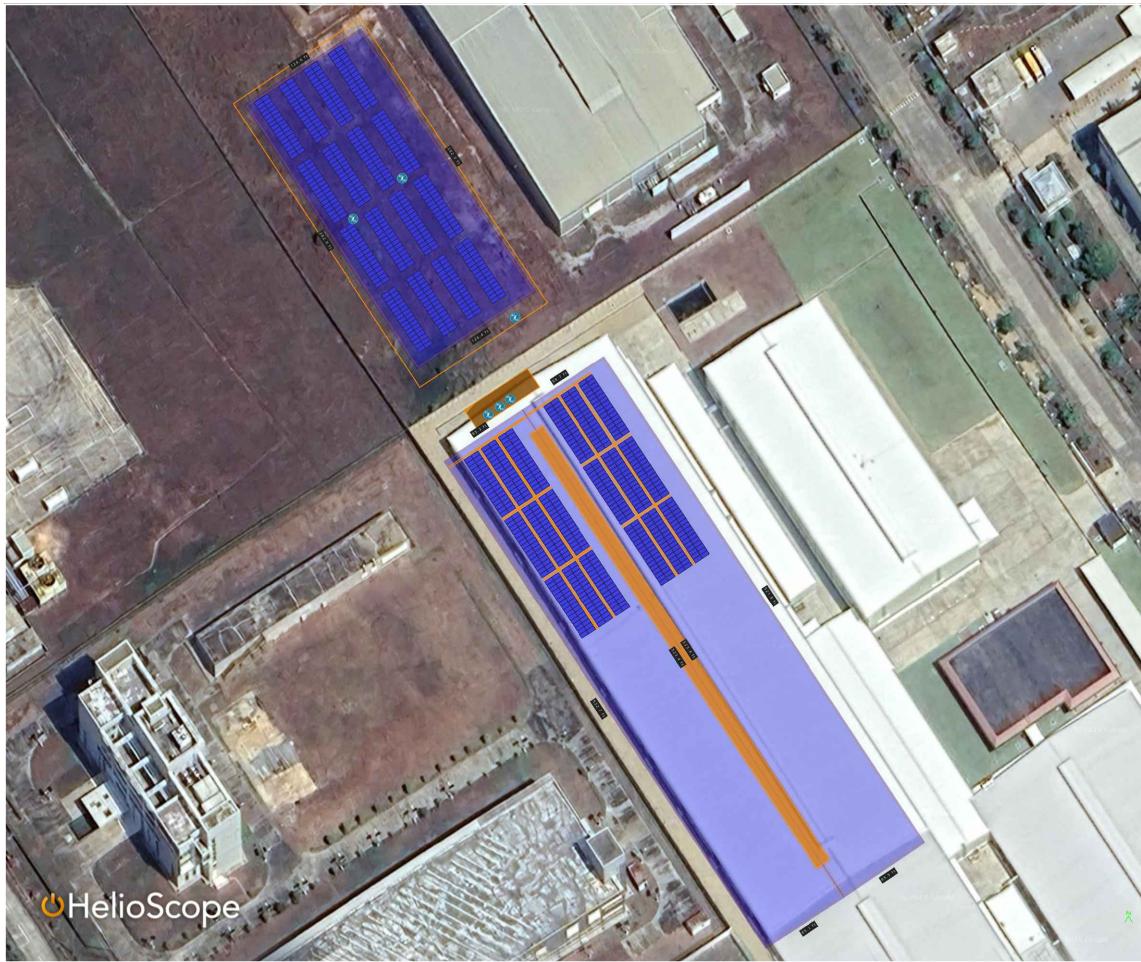
NO.	DESCRIPTION	DRAWING NO.	ISSUE DATE	REVISION	REMARK
1.	COVER		19. 04. 2025	0	
2.	SOLAR SITE LAYOUT PLAN	NS/NSM/01	19. 04. 2025	0	
3.	SOLAR MODULE LAYOUT PLAN	NS/NSM/02	19. 04. 2025	0	
4.	SOLAR DESIGN SET UP PLAN	NS/NSM/03	19. 04. 2025	0	
5.	SINGLE LINE DIAGRAM	NS/NSM/04	19. 04. 2025	0	
6.	DESIGN SIMULATION REPORT		19. 04. 2025	0	
7.	SHADING SIMULATION REPORT		19. 04. 2025	0	



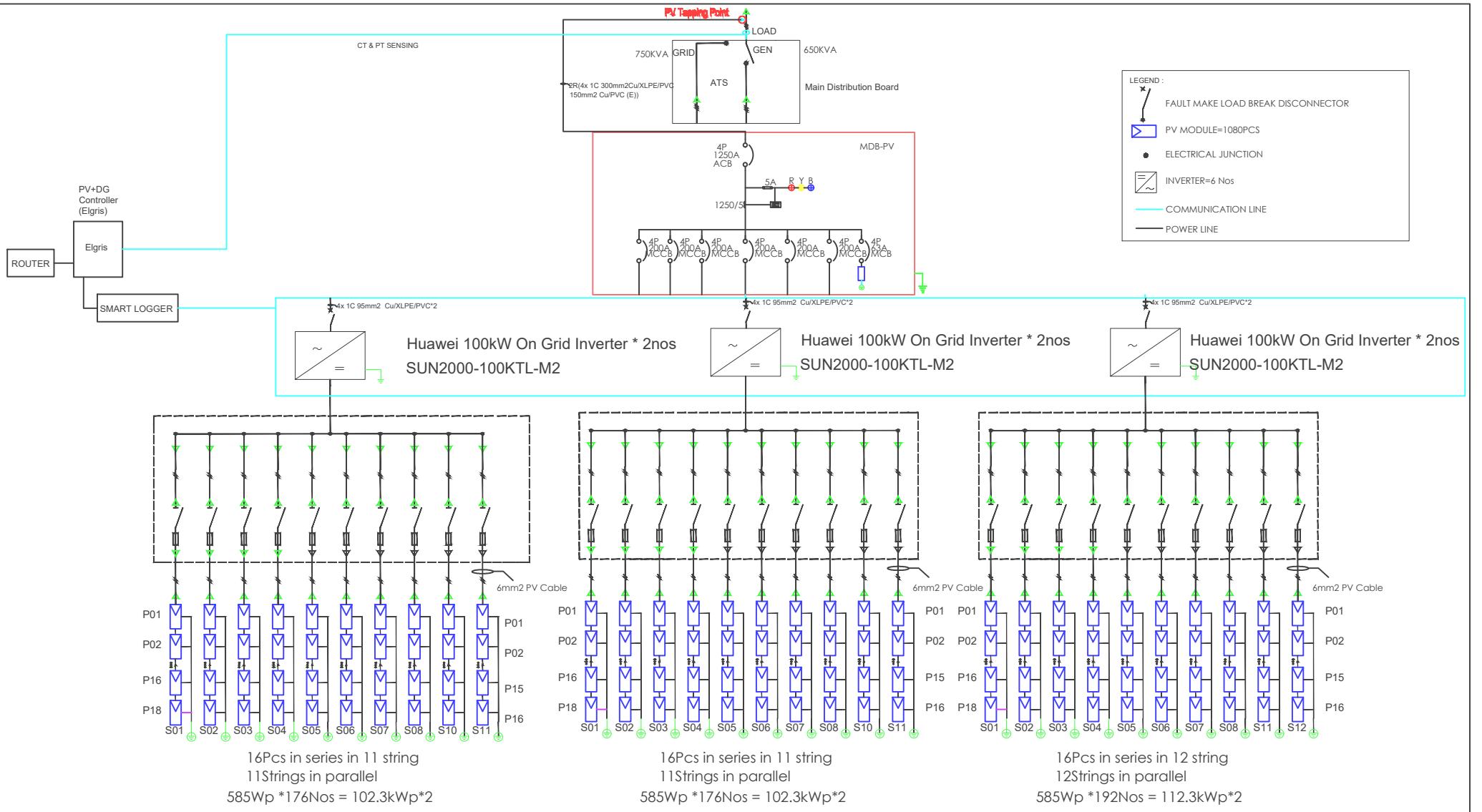
DEVELOPED BY,	Owner/Applicant	Proposal Drawing			Draw By:	Htet Zarni Naing
NICOLAS SOLAR	Project Name	Latitude : 16.678088		Longitude : 96.26806		
	Subject	Date	Description		Rev No.	Check By:
NOTE: THIS DRAWING IS THE PROPERTY OF NICOLAS M SOLAR COMPANY LIMITED UNDER THE INFORMATION HEREON MAY NOT BE USED OR COPIED IN ANY MANNER WITHOUT WRITTEN PERMISSION OF SEC SOLAR COMPANY LIMITED	Drawing No.	19.04.2025	ISSUE FOR CUSTOMER		REV:00	
	Revision No.	Scale				Approve By:
Rev:00	NTS	Sheet No.				
	Sheet:01					Date: 19.04.2025



DEVELOPED BY, NICOLAS SOLAR	Owner/Applicant	Nippo Sanso Myanmar		Proposal Drawing			Draw By: Thet Min Aung
	Project Name	636.5kWP On Grid Solar System		Latitude : 16.678088		Longitude : 96.26806	
Subject	Solar Module Layout Plan		Date	Description		Rev No.	Check By:
			19.04.2025	ISSUE FOR CUSTOMER		REV:00	
NOTE: THIS DRAWING IS THE PROPERTY OF NICOLAS SOLAR COMPANY LIMITED UNDER THE INFORMATION HEREON MAY NOT BE USED OR COPIED IN ANY MANNER WITHOUT WRITTEN PERMISSION OF SEC SOLAR COMPANY LIMITED	Drawing No.	NS/NSM/02					Approve By:
	Revision No.			Scale			
Rev:00		NTS		Sheet No.			Date: 19.04.2025
Sheet:01							



DEVELOPED BY, NICOLAS SOLAR	Owner/Applicant	Nippon Sanso Myanmar		Proposal Drawing			Draw By: Htet Zarni Naing
	Project Name	636.5kWP On Grid Solar System		Latitude : 16.678088	Longitude : 96.26806		
NOTE: THIS DRAWING IS THE PROPERTY OF NICOLAS SOLAR COMPANY LIMITED UNDER THE INFORMATION HEREON MAY NOT BE USED OR COPIED IN ANY MANNER WITHOUT WRITTEN PERMISSION OF SEC SOLAR COMPANY LIMITED	Subject	Design Setup Layout Plan		Date 19.04.2025	Description ISSUE FOR CUSTOMER	Rev No. REV:00	Check By: Approve By:
	Drawing No.	NS/NSM/03					
	Revision No.	Scale	Sheet No.				Date: 19.04.2025
	Rev:00	NTS	Sheet:01				



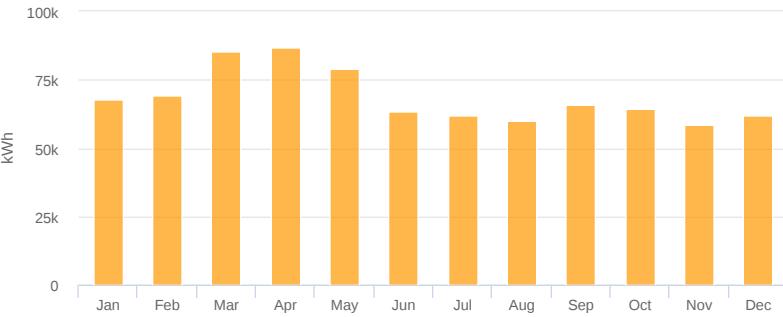
DEVELOPED BY, NICOLAS SOLAR	Owner/Applicant	Nippon Sanso Myanmar		Proposal Drawing		Draw By: Htet Zarni Naing
	Project Name	636.5kWP On Grid Solar System		Latitude : 16.678088	Longitude : 96.26806	
NOTE: THIS DRAWING IS THE PROPERTY OF NICOLAS SOLAR COMPANY LIMITED UNDER THE INFORMATION HEREON MAY NOT BE USED OR COPIED IN ANY MANNER WITHOUT WRITTEN PERMISSION OF SEC SOLAR COMPANY LIMITED	Subject	Single Line Diagram		Date	Description	Rev No.
	Drawing No.	NS/NSM/04		19.04.2025	ISSUE FOR CUSTOMER	REV:00
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	Rev:00	NTS	Sheet:01			
						Date: 19.04.2025

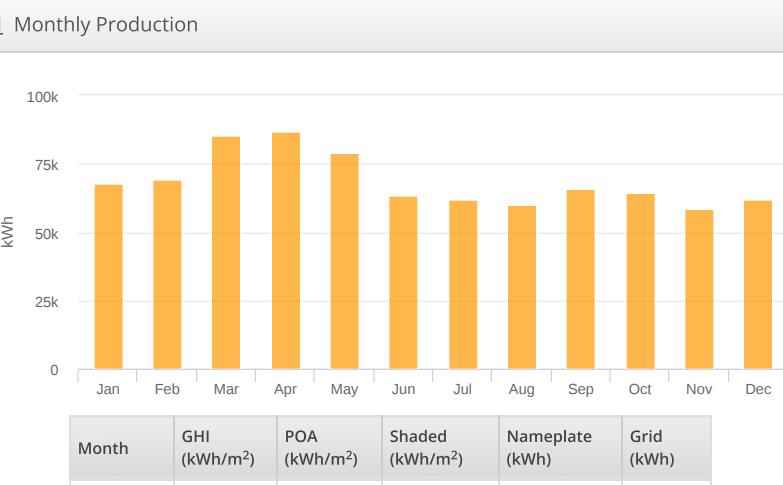
Design Planning Nippon Sanso Myanmar, 16.678088430088653, 96.26806226070424

Report	
Project Name	Nippon Sanso Myanmar
Project Description	On Grid Solar System
Project Address	16.678088430088653, 96.26806226070424
Prepared By	Htet Zarni Naing rainbowlay1497@gmail.com

System Metrics	
Design	Design Planning
Module DC Nameplate	636.5 kW
Inverter AC Nameplate	600.0 kW Load Ratio: 1.06
Annual Production	823.9 MWh
Performance Ratio	79.9%
kWh/kWp	1,294.5
Weather Dataset	TMY, 10km Grid, Meteonorm 8 (meteonorm_v8)
Simulator Version	198abfcc19-b875aeaaa0-4d05e0cf09-9143d3c25c

Project Location	
 <p>Google Map data ©2025 Imagery ©2025 Airbus, Maxar Technologies</p>	

Monthly Production																																																																															
	<table border="1"> <thead> <tr> <th>Month</th> <th>GHI (kWh/m²)</th> <th>POA (kWh/m²)</th> <th>Shaded (kWh/m²)</th> <th>Nameplate (kWh)</th> <th>Grid (kWh)</th> </tr> </thead> <tbody> <tr><td>January</td><td>138.2</td><td>132.5</td><td>131.2</td><td>78,436.7</td><td>67,588.0</td></tr> <tr><td>February</td><td>140.3</td><td>136.4</td><td>135.4</td><td>81,398.4</td><td>69,235.7</td></tr> <tr><td>March</td><td>171.0</td><td>170.8</td><td>168.5</td><td>101,731.8</td><td>85,594.8</td></tr> <tr><td>April</td><td>170.4</td><td>172.4</td><td>170.4</td><td>103,104.0</td><td>86,624.8</td></tr> <tr><td>May</td><td>152.3</td><td>155.6</td><td>153.6</td><td>92,931.9</td><td>78,809.8</td></tr> <tr><td>June</td><td>121.6</td><td>123.4</td><td>121.8</td><td>73,526.0</td><td>63,416.0</td></tr> <tr><td>July</td><td>118.2</td><td>120.8</td><td>119.0</td><td>71,771.1</td><td>62,010.6</td></tr> <tr><td>August</td><td>115.2</td><td>116.1</td><td>114.7</td><td>69,095.0</td><td>59,850.5</td></tr> <tr><td>September</td><td>128.8</td><td>128.7</td><td>127.1</td><td>76,613.5</td><td>65,786.2</td></tr> <tr><td>October</td><td>127.8</td><td>126.2</td><td>124.6</td><td>74,818.5</td><td>64,340.4</td></tr> <tr><td>November</td><td>118.6</td><td>115.4</td><td>113.9</td><td>68,180.8</td><td>58,668.8</td></tr> <tr><td>December</td><td>127.1</td><td>122.3</td><td>120.8</td><td>72,043.8</td><td>62,007.6</td></tr> </tbody> </table>	Month	GHI (kWh/m²)	POA (kWh/m²)	Shaded (kWh/m²)	Nameplate (kWh)	Grid (kWh)	January	138.2	132.5	131.2	78,436.7	67,588.0	February	140.3	136.4	135.4	81,398.4	69,235.7	March	171.0	170.8	168.5	101,731.8	85,594.8	April	170.4	172.4	170.4	103,104.0	86,624.8	May	152.3	155.6	153.6	92,931.9	78,809.8	June	121.6	123.4	121.8	73,526.0	63,416.0	July	118.2	120.8	119.0	71,771.1	62,010.6	August	115.2	116.1	114.7	69,095.0	59,850.5	September	128.8	128.7	127.1	76,613.5	65,786.2	October	127.8	126.2	124.6	74,818.5	64,340.4	November	118.6	115.4	113.9	68,180.8	58,668.8	December	127.1	122.3	120.8	72,043.8	62,007.6
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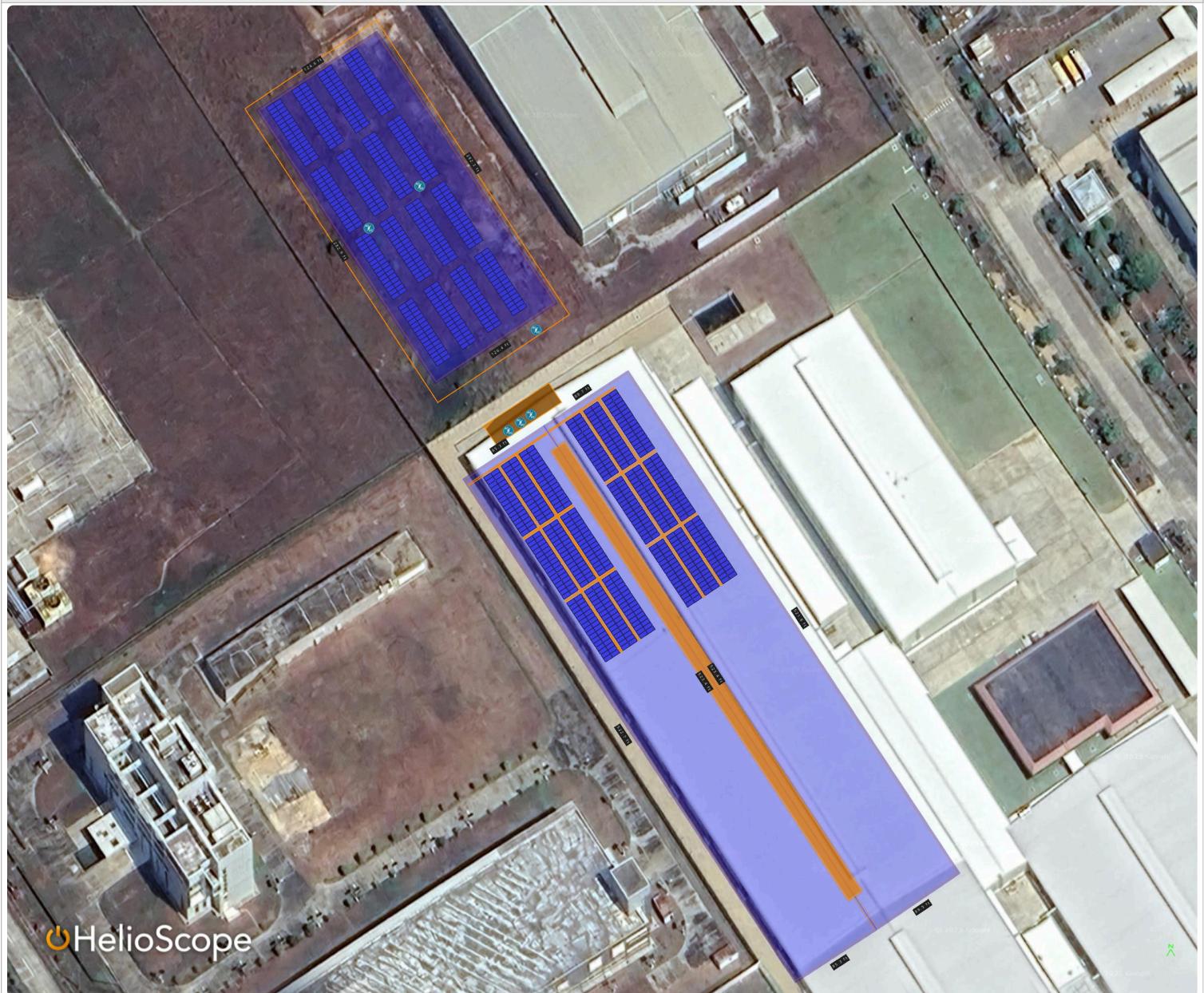
Sources of System Loss																							
	<table border="1"> <thead> <tr> <th>Source</th> <th>Percentage</th> </tr> </thead> <tbody> <tr><td>AC System</td><td>0.2%</td></tr> <tr><td>Inverters</td><td>1.6%</td></tr> <tr><td>Clipping</td><td>0.0%</td></tr> <tr><td>Wiring</td><td>0.4%</td></tr> <tr><td>Mismatch</td><td>3.6%</td></tr> <tr><td>Shading</td><td>1.2%</td></tr> <tr><td>Reflection</td><td>3.5%</td></tr> <tr><td>Soiling</td><td>2.0%</td></tr> <tr><td>Irradiance</td><td>0.7%</td></tr> <tr><td>Temperature</td><td>8.7%</td></tr> </tbody> </table>	Source	Percentage	AC System	0.2%	Inverters	1.6%	Clipping	0.0%	Wiring	0.4%	Mismatch	3.6%	Shading	1.2%	Reflection	3.5%	Soiling	2.0%	Irradiance	0.7%	Temperature	8.7%
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⚡ Annual Production			
	Description	Output	% Delta
Irradiance (kWh/m ²)	Annual Global Horizontal Irradiance	1,629.6	
	POA Irradiance	1,620.6	-0.5%
	Shaded Irradiance	1,601.1	-1.2%
	Irradiance after Reflection	1,544.7	-3.5%
	Irradiance after Soiling	1,513.8	-2.0%
Total Collector Irradiance		1,513.8	0.0%
Energy (kWh)	Nameplate	963,651.5	
	Output at Irradiance Levels	957,164.8	-0.7%
	Output at Cell Temperature Derate	873,582.4	-8.7%
	Output After Mismatch	842,456.9	-3.6%
	Optimal DC Output	838,945.5	-0.4%
	Constrained DC Output	838,943.9	0.0%
	Inverter Output	825,520.8	-1.6%
	Energy to Grid	823,933.2	-0.2%
Temperature Metrics			
Avg. Operating Ambient Temp		29.7 °C	
Avg. Operating Cell Temp		43.5 °C	
Simulation Metrics			
Operating Hours		4576	
Solved Hours		4576	

☁ Condition Set											
Description		Condition Set 1									
Weather Dataset		TMY, 10km Grid, Meteonorm 8 (meteonorm_v8)									
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					
Soiling (%)	Carport			-3.56	-0.075	3°C					
	J	F	M	A	M	J	J	A	S	O	N
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 & Component Characterizations	Type	Component			Characterization						
	Module	JKM585N-72HL4-V (Jinko Solar)			Spec Sheet Characterization, PAN						
	Inverter	SUN2000-100KTL-M2 (400V) (Huawei)			Spec Sheet						

📁 Components		
Component	Name	Count
Inverters	SUN2000-100KTL-M2 (400V) (Huawei)	6 (600.0 kW)
Transformer	Primary Side: 400Y/230V, Secondary: Medium Voltage (11kV)	1
AC Panels	6 input AC Panel	1
AC Home Runs	95 mm ² (Copper)	6 (2,593.0 ft)
AC Home Runs	300 mm ² (Copper)	1 (67.0 ft)
Strings	6 mm ² (Copper)	68 (18,521.6 ft)
Module	Jinko Solar, JKM585N-72HL4-V (585W)	1,088 (636.5 kW)

🏗 Wiring Zones										
Description		Combiner Poles		String Size			Stringing Strategy			
Wiring Zone		-		16-16			Along Racking			
🏗 Field Segments										
Description	Racking	Orientation	Tilt	Azimuth	Intrarow Spacing	Frame Size	Frames	Modules	Power	
RT-1	Flush Mount	Portrait (Vertical)	10°	236.49149°	3.5 ft	2x1	144	288	168.5 kW	
GM 1	Fixed Tilt	Portrait (Vertical)	Module: 16°	Module: 56.53333°	11.9 ft	2x1	256	512	299.5 kW	
RT-2	Flush Mount	Portrait (Vertical)	10°	56.53333°	3.5 ft	2x1	288	288	168.5 kW	

 Detailed Layout2

Design Planning Nippon Sanso Myanmar, 16.678088430088653, 96.26806226070424

Shading Heatmap



Shading by Field Segment

Description	Tilt	Azimuth	Modules	Nameplate	Shaded Irradiance	AC Energy	TOF ²	Solar Access	Avg TSRF ²
RT-1	10.0°	236.5°	288	168.5 kWp	1,602.3 kWh/m ²	213.0 MWh ¹	93.5%	99.9%	93.4%
GM 1	Module: 16.0°	Module: 56.5°	512	299.5 kWp	1,581.1 kWh/m ²	393.2 MWh ¹	94.3%	97.7%	92.1%
RT-2	10.0°	56.5°	288	168.5 kWp	1,635.2 kWh/m ²	217.7 MWh ¹	95.5%	99.7%	95.3%
Totals, weighted by kWp			1,088	636.5 kWp	1,601.1 kWh/m ²	823.9 MWh	94.4%	98.8%	93.3%

¹ approximate, varies based on inverter performance
² based on location Optimal POA Irradiance of 1,716.1 kWh/m² at 24.5° tilt and 175.0° azimuth

Solar Access by Month												
Description	jan	feb	mar	apr	may	jun	jul	aug	sep	oct	nov	dec
RT-1	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
GM 1	98%	99%	97%	98%	98%	98%	97%	97%	98%	98%	97%	98%
RT-2	99%	100%	100%	100%	100%	100%	100%	100%	100%	99%	100%	100%
Solar Access, weighted by kWp	99.0%	99.2%	98.6%	98.8%	98.7%	98.7%	98.6%	98.8%	98.8%	98.7%	98.7%	98.7%
AC Power (kWh)	67,588.0	69,235.7	85,594.8	86,624.8	78,809.8	63,416.0	62,010.6	59,850.5	65,786.2	64,340.4	58,668.8	62,007.6

