SMARTER ENERGY SOLUTION

Preventive Maintenance Solar System

Customer Name :	Shambala Inverter 1	Maintenance :	MA	Date :	12 December 2024

Solar Panel				Inverter		
Brand	Model	Capacity	Install	Brand	Model	S/N
		Kwp.	Panels			

Before Preventive Maintenance Solar System

Solar Panels	Operating Voltage / Current			Time	Inspection		Remark
String 1 ____ Panels	Voc 517.4 Vdc	Vmp 442.3 Vdc	Isc 3.00 A.	13 : 30	☑ Pass	☐ Not Pass	
String 2 ____ Panels	Voc 518.1 Vdc	Vmp 440.6 Vdc	Isc 2.95 A.	:	☑ Pass	☐ Not Pass	
String 3 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 4 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 5 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 6 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 7 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 8 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 9 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 10 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 11 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 12 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	

After Preventive Maintenance Solar System

Solar Panels	Operating Voltage / Current			Time	Inspection		Remark
String 1 ____ Panels	Voc 524.8 Vdc	Vmp 439.2 Vdc	Isc 2.98 A.	15:00	☑ Pass	☐ Not Pass	
String 2 ____ Panels	Voc 523.4 Vdc	Vmp 428.2 Vdc	Isc 3.01 A.	:	☑ Pass	☐ Not Pass	
String 3 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 4 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 5 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 6 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 7 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 8 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 9 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 10 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 11 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 12 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	

Inverter Inspection

Device	Readings from Smarter Meter	Readings from Inverter Display	Field Measured Readings	Remark
Inverter	AC Line Voltage	AC Line Voltage	AC Line Voltage	back up voltage
	Phase L1 to Grd : ____ Vac	Phase L1 to Grd : ____ Vac	Phase L1 to Grd : 231.1 Vac	L1 231.7 Vac
	Phase L2 to Grd : ____ Vac	Phase L2 to Grd : ____ Vac	Phase L2 to Grd : 231.3 Vac	L2 232.2 Vac
	Phase L3 to Grd : ____ Vac	Phase L3 to Grd : ____ Vac	Phase L3 to Grd : 231.9 Vac	L3 232.3 Vac
	AC Line Current	AC Line Current	AC Line Current	
	Phase L1 to Grd : ____ A	Phase L1 to Grd : ____ A	Phase L1 to Grd : 1.81 A	
	Phase L2 to Grd : ____ A	Phase L2 to Grd : ____ A	Phase L2 to Grd : 6.68 A	
	Phase L3 to Grd : ____ A	Phase L3 to Grd : ____ A	Phase L3 to Grd : 7.97 A	

Comment :

SMARTER ENERGY SOLUTION

Electrical Room Inspection

Customer Name :		Date :	

Solar Panel				Inverter		
Brand	Model	Capacity	Install	Brand	Model	S/N
		Kwp.	Panels			

Device	Ambient Temperature	Temperature					Remark
Inverter	43.3 C	Inside : 47.3 C		Outside : 44.6 C		Heatsync : 49.1 C	
AC Cabinet	36.7 C	MCB Breaker : 32 A. / 37.1 C		RCCB Breaker : ____ A. / ____ C		AC SPD : 3 Phase / 37.2 C	
		AC Cable : 10 Sq.m.		Smart Meter : [redacted] C		CT Ratio : ____ / ____ A.	
		AC Terminal : 37.2 C		____ Phase		Meter Ratio : ____ A.	
		String No.	DC Fuse	DC Breaker	DC SPD	MC4 Connector	
DC Cabinet 1	36.4 C	String 1	36.7 C / ____ A.	36.7 C / ____ Vdc ____ A.	36.6 C / ____ Vdc ____ A.	37.9 C	
		String 2	36.7 C / ____ A.	36.8 C / ____ Vdc ____ A.	37.2 C / ____ Vdc ____ A.	37.8 C	
		String 3	____ C / ____ A.	____ C / ____ Vdc ____ A.	____ C / ____ Vdc ____ A.	____ C	
		String 4	____ C / ____ A.	____ C / ____ Vdc ____ A.	____ C / ____ Vdc ____ A.	____ C	
EE Room	36.7 C	AC Cable : 25 Sq.m.		Main Breaker : 100 A.		MCCB Feed : ____ A. / ____ C	
		Wireway : 37.9 C		MDB / LC : 38.1 C			

Comment : _____

Inspection By : _____

(Bunharn Libnoy)
Project Engineer

Date : ____/____/____

SMARTER ENERGY SOLUTION

Preventive Maintenance Solar System

Customer Name :	Shambala Inverter 2	Maintenance :	MA	Date :	12 December 2024

Solar Panel				Inverter		
Brand	Model	Capacity	Install	Brand	Model	S/N
		Kwp.	Panels			

Before Preventive Maintenance Solar System

Solar Panels	Operating Voltage / Current			Time	Inspection		Remark
String 1 ____ Panels	Voc 608.4 Vdc	Vmp 488.7 Vdc	Isc 2.97 A.	13:30	☑ Pass	☐ Not Pass	
String 2 ____ Panels	Voc 609.4 Vdc	Vmp 505.3 Vdc	Isc 2.69 A.	:	☑ Pass	☐ Not Pass	
String 3 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 4 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 5 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 6 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 7 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 8 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 9 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 10 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 11 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 12 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	

After Preventive Maintenance Solar System

Solar Panels	Operating Voltage / Current			Time	Inspection		Remark
String 1 ____ Panels	Voc 617.0 Vdc	Vmp 510.4 Vdc	Isc 2.92 A.	15:00	☑ Pass	☐ Not Pass	
String 2 ____ Panels	Voc 621.0 Vdc	Vmp 527.7 Vdc	Isc 2.83 A.	15:00	☑ Pass	☐ Not Pass	
String 3 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 4 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 5 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 6 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 7 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 8 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 9 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 10 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 11 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	
String 12 ____ Panels	Voc ____ Vdc	Vmp ____ Vdc	Isc ____ A.	:	☐ Pass	☐ Not Pass	

Inverter Inspection				Remark
Device	Readings from Smarter Meter	Readings from Inverter Display	Field Measured Readings	
Inverter	AC Line Voltage	AC Line Voltage	AC Line Voltage	
	Phase L1 to Grd : ____ Vac	Phase L1 to Grd : ____ Vac	Phase L1 to Grd : 231.2 Vac	
	Phase L2 to Grd : ____ Vac	Phase L2 to Grd : ____ Vac	Phase L2 to Grd : 231.4 Vac	
	Phase L3 to Grd : ____ Vac	Phase L3 to Grd : ____ Vac	Phase L3 to Grd : 231.8 Vac	
	AC Line Current	AC Line Current	AC Line Current	
	Phase L1 to Grd : ____ A	Phase L1 to Grd : ____ A	Phase L1 to Grd : ____ A	
	Phase L2 to Grd : ____ A	Phase L2 to Grd : ____ A	Phase L2 to Grd : ____ A	
	Phase L3 to Grd : ____ A	Phase L3 to Grd : ____ A	Phase L3 to Grd : ____ A	

Comment :

SMARTER ENERGY SOLUTION

Electrical Room Inspection

Customer Name :		Date :	

Solar Panel				Inverter		
Brand	Model	Capacity	Install	Brand	Model	S/N
		Kwp.	Panels			

Device	Ambient Temperature	Temperature				Remark
Inverter	42.8 C	Inside : 47.9 C	Outside : 44.3 C	Heatsync : 49.3 C		
AC Cabinet	36.4 C	MCB Breaker : 32 A. / 37.8 C	RCCB Breaker : ___ A. / ___ C	AC SPD : 3 Phase / 38.8 C		
		AC Cable : [illegible] Sq.m.	Smart Meter : ___ C	CT Ratio : ___ / ___ A.		
		AC Terminal : 36.4 C	___ Phase	Meter Ratio : ___ A.		
		String No.	DC Fuse	DC Breaker	DC SPD	MC4 Connector
DC Cabinet 1	36.5 C	String 1	36.8 C / ___ A.	36.8 C / Vdc ___ A.	36.7 C / Vdc ___ A.	37.9 C
		String 2	36.1 C / ___ A.	36.7 C / Vdc ___ A.	36.4 C / Vdc ___ A.	38.2 C
		String 3	___ C / ___ A.	___ C / Vdc ___ A.	___ C / Vdc ___ A.	___ C
		String 4	___ C / ___ A.	___ C / Vdc ___ A.	___ C / Vdc ___ A.	___ C
EE Room	37.1 C	AC Cable : 25 Sq.m.	Main Breaker : 100 A.	MCCB Feed : ___ A.		
		Wireway : 38.4 C	MDB / LC : 39.7 C	___ C		

Comment : _____

Inspection By : _____

(Bunharn Libnoy)
Project Engineer

Date : ____/____/____

SMARTER ENERGY SOLUTION

Preventive Maintenance Solar System

SMARTER ENERGY SOLUTION

Item	Solar System Inspection	Inspection		Remark
1	Clean the Solar panel (Use clean water) ทำความสะอาดแผงโซล่า เซลล์ (ใช้น้ำสะอาด)	☑ Pass	☐ Not Pass	
2	Check to see if the solar panel's condition ตรวจสอบการแตกร้าวของแผงโซล่า เซลล์	☑ Pass	☐ Not Pass	
3	Inspect the mounting points of the roof mounting support legs for the risk of water leaking. (Use water Proof , Polyurethane PU,Sika MultiSeal AP to prevent water leakage) ตรวจสอบจุดยึดของ Support ที่ยึดกับหลังคา ว่ามีจุดเสี่ยงที่จะทำให้เกิดน้ำร้าวได้หรือไม่ (ใช้ water proof , สิริโครน PU , แผ่นซิก้าป้องกันน้ำ)	☑ Pass	☐ Not Pass	
4	Inspect the mounting parts of the solar cell. ตรวจสอบสภาพโครงสร้างทั้งหมด เพื่อดูว่า PV. Mounting และอุปกรณ์ประกอบอื่นๆ ไม่หลวม	☑ Pass	☐ Not Pass	
5	Inspect the condition of all cables to make sure The cables does not sag down to the roof. ตรวจสอบสภาพของสายทั้งหมดเพื่อให้แน่ใจว่า สายไม่หย่อนลงไปที่หลังคา	☑ Pass	☐ Not Pass	
6	Inspect the tightness of the wire terminals. ตรวจสอบความแน่นของขั้วสายไฟ			
6.1	-AC - Grid in Inverter	☑ Pass	☐ Not Pass	
6.2	-Back - up in Inverter (Specific model Hybrid)	☑ Pass	☐ Not Pass	
6.3	-Battery (Specific model Hybrid)	☑ Pass	☐ Not Pass	
6.4	-AC Breaker	☑ Pass	☐ Not Pass	
6.5	-DC Breaker	☑ Pass	☐ Not Pass	
6.6	-Fuse Holder	☑ Pass	☐ Not Pass	
6.7	-Surge Protection	☑ Pass	☐ Not Pass	
6.8	- Smarter Meter & CT (Current Transformer)	☑ Pass	☐ Not Pass	
7	Check whether the SISO Switch is defective ตรวจสอบ SISO Switch ว่าชำรุดหรือไม่	☑ Pass	☐ Not Pass	
8	Inspect for malfunctions of the inverter and other related electrical equipment. ตรวจสอบความผิดปกติของอินเวอร์เตอร์และอุปกรณ์ไฟฟ้าอื่น ๆ ที่เกี่ยวข้อง	☑ Pass	☐ Not Pass	
9	Insapect heat of the solar panel whether there is an abnormal heat point or not (checked by using a thermal camera) การตรวจสอบความร้อนของแผงโซลาร์เซลล์ว่ามีจุดความร้อนผิดปกติหรือไม่ (ตรวจสอบโดยใช้กล้องถ่ายภาพความร้อน)	☑ Pass	☐ Not Pass	

Comment : _____

Inspection By : _____

(Bunharn Libnoy)
Project Engineer

Date : _____/_____/_____