

# SMARTER ENERGY SOLUTION

## Preventive Maintenance Solar System



Customer Name : Sanan Samae Maintenance : MA Date : 13 December

Solar Panel				Inverter			
Brand	Model	Capacity	Install	Brand	Model	S/N	
<u>Sonnax</u>	<u>SNX-D60ND-480M</u>	<u>3 Kwp.</u>	<u>16 Panels</u>	<u>Solips</u>	<u>86-GRIP91C</u>	<u>1802030224140606</u>	

Before Preventive Maintenance Solar System							
Solar Panels	Operating Voltage / Current			Time	Inspection		Remark
String 1	Panels Voc <u>487.4</u> Vdc	Vmp <u>476.6</u> Vdc	Isc <u>1.31</u> A.	<u>19:00</u>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 2	Panels Voc <u>162.4</u> Vdc	Vmp <u>157.7</u> Vdc	Isc <u>1.38</u> A.	:	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 3	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 4	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 5	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 6	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 7	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 8	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 9	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 10	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 11	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 12	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	

After Preventive Maintenance Solar System							
Solar Panels	Operating Voltage / Current			Time	Inspection		Remark
String 1	Panels Voc <u>480.6</u> Vdc	Vmp <u>471.7</u> Vdc	Isc <u>1.26</u> A.	<u>16:00</u>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 2	Panels Voc <u>160.4</u> Vdc	Vmp <u>158.0</u> Vdc	Isc <u>1.33</u> A.	:	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 3	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 4	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 5	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 6	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 7	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 8	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 9	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 10	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 11	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 12	Panels Voc _____ Vdc	Vmp _____ Vdc	Isc _____ A.	:	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	

Inverter Inspection				Remark
Device	Readings from Smarter Meter	Readings from Inverter Display	Field Measured Readings	
Inverter	AC Line Voltage			AC Line Voltage
	Phase L1 to Grd : <u>236.8</u> Vac	Phase L1 to Grd : <u>236.1</u> Vac	Phase L1 to Grd : <u>236.9</u> Vac	
	Phase L2 to Grd : _____ Vac	Phase L2 to Grd : _____ Vac	Phase L2 to Grd : _____ Vac	
	Phase L3 to Grd : _____ Vac	Phase L3 to Grd : _____ Vac	Phase L3 to Grd : _____ Vac	
	AC Line Current			AC Line Current
	Phase L1 to Grd : <u>1.36</u> A	Phase L1 to Grd : <u>1.40</u> A	Phase L1 to Grd : <u>1.82</u> 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 Kwp.	Install Panels	Brand	Model	S/N

Device	Ambient Temperature	Temperature				Remark
Inverter	36.0 C	Inside : 40.3 C	Outside : 36.9 C	Heatsync : 41.7 C		
AC Cabinet	30.7 C	MCB Breaker : 25 A. 30.9 C	RCCB Breaker : _____ A. _____ C	AC SPD : 1 Phase 30.7 C		
		AC Cable : 6 Sq.m.	Smart Meter : 34.2 C	CT Ratio : 150/5 A.		
		AC Terminal : 31.5 C	1 Phase	Meter Ratio : 30 A.		
		String No.	DC Fuse	DC Breaker	DC SPD	MC4 Connector
DC Cabinet 1	30.6 C	String 1	30.0 C	30.0 C	30.2 C	30.7 C
		String 2	30.6 C	30.5 C	30.7 C	31.5 C
		String 3	_____ C	_____ C	_____ C	_____ C
		String 4	_____ C	_____ C	_____ C	_____ C
EE Room	_____ C	AC Cable : _____ Sq.m.	Main Breaker : _____ A.	MCCB Feed : _____ A.		
		Wireway : _____ C	MDB / LC : _____ C	_____ C		

Comment : \_\_\_\_\_

Inspection By : \_\_\_\_\_

( Bunharn Libnoy )  
Project Engineer

Date : \_\_\_\_ / \_\_\_\_ / \_\_\_\_



# SMARTER ENERGY SOLUTION

## Preventive Maintenance Solar System



Item	Solar System Inspection	Inspection		Remark
1	Clean the Solar panel ( Use clean water ) ทำความสะอาดแผงโซลาร์เซลล์ ( ใช้น้ำสะอาด )	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
2	Check to see if the solar panel's condition ตรวจสอบการแตกร้าวของแผงโซลาร์เซลล์	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> 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 ว่ามีจุดเสี่ยงที่จะทำให้เกิดน้ำรั่วได้หรือไม่ ( ใช้ water proof , สีโรครัน PU , แคนซีก้าป้องกันน้ำ )	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
4	Inspect the mounting parts of the solar cell. ตรวจสอบสภาพโครงสร้างทั้งหมด เพื่อตัว PV, Mounting และอุปกรณ์ประกอบอื่นๆ ไม่หลวม	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
5	Inspect the condition of all cables to make sure The cables does not sag down to the roof. ตรวจสอบสภาพของสายทั้งหมดเพื่อให้แน่ใจว่า สายไม่หย่อนลงไปที่หลังคา	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
6	Inspect the tightness of the wire terminals. ตรวจสอบความแน่นของขั้วสายไฟ			
6.1	-AC - Grid in Inverter	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
6.2	-Back - up in Inverter ( Specific model Hybrid )	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
6.3	-Battery ( Specific model Hybrid )	<input type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
6.4	-AC Breaker	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
6.5	-DC Breaker	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
6.6	-Fuse Holder	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
6.7	-Surge Protection	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
6.8	- Smarter Meter & CT ( Current Transformer )	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
7	Check whether the SISO Switch is defective ตรวจสอบ SISO Switch ว่าชำรุดหรือไม่	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
8	Inspect for malfunctions of the inverter and other related electrical equipment. ตรวจสอบความผิดปกติของอินเวอร์เตอร์และอุปกรณ์ไฟฟ้าอื่นๆ ที่เกี่ยวข้อง	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
9	Inspect heat of the solar panel whether there is an abnormal heat point or not (checked by using a thermal camera) การตรวจสอบความร้อนของแผงโซลาร์เซลล์ว่ามีจุดความร้อนผิดปกติหรือไม่ (ตรวจสอบโดยใช้กล้องถ่ายภาพความร้อน)	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	

Comment :

Inspection By : \_\_\_\_\_

( Bunharn Libnoy )  
Project Engineer

Date : \_\_\_\_ / \_\_\_\_ / \_\_\_\_