

# SMARTER ENERGY SOLUTION Preventive Maintenance Solar System



Customer Name : Christian Hans Maintenance : MA Date : 30 November 2024

Solar Panel				Inverter		
Brand	Model	Capacity	Install	Brand	Model	S/N
<u>Eastlux</u>	<u>GL450MS-60H</u>	<u>10</u> Kwp.	<u>22</u> Panels	<u>Solis</u>	<u>3P10K-4G</u>	<u>1107A2216070018</u>

### Before Preventive Maintenance Solar System

Solar Panels	Operating Voltage / Current				Time	Inspection		Remark	
String 1	<u>11</u> Panels	Voc <u>407.6</u>	Vdc	Vmp <u>344.9</u>	Vdc	Isc <u>6.97</u> A.	<u>10:30</u>	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Not Pass	
String 2	<u>11</u> Panels	Voc <u>408.1</u>	Vdc	Vmp <u>342.2</u>	Vdc	Isc <u>6.86</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	<u>11</u> Panels	Voc <u>419.1</u>	Vdc	Vmp <u>340.9</u>	Vdc	Isc <u>11.40</u> A.	<u>11:30</u>	<input checked="" type="checkbox"/> Pass <input type="checkbox"/> Not Pass	
String 2	<u>11</u> Panels	Voc <u>420.2</u>	Vdc	Vmp <u>342.9</u>	Vdc	Isc <u>11.46</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

Device	Readings from Smarter Meter	Readings from Inverter Display	Field Measured Readings	Remark
Inverter	<b>AC Line Voltage</b>			
	Phase L1 to Grd : <u>230.6</u> Vac	Phase L1 to Grd : <u>231.5</u> Vac	Phase L1 to Grd : <u>230.9</u> Vac	
	Phase L2 to Grd : <u>230.7</u> Vac	Phase L2 to Grd : <u>232.8</u> Vac	Phase L2 to Grd : <u>231.9</u> Vac	
	Phase L3 to Grd : <u>231.9</u> Vac	Phase L3 to Grd : <u>232.8</u> Vac	Phase L3 to Grd : <u>231.4</u> Vac	
	<b>AC Line Current</b>			
	Phase L1 to Grd : <u>5.10</u> A	Phase L1 to Grd : <u>5.7</u> A	Phase L1 to Grd : <u>6.11</u> A	
	Phase L2 to Grd : <u>4.90</u> A	Phase L2 to Grd : <u>5.7</u> A	Phase L2 to Grd : <u>6.37</u> A	
	Phase L3 to Grd : <u>4.80</u> A	Phase L3 to Grd : <u>5.8</u> A	Phase L3 to Grd : <u>6.11</u> 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	43.8 °C	Inside : 42.8 °C	Outside : 44.1 °C	Heatsync : 47.1 °C		
AC Cabinet	34.6 °C	MCB Breaker : 4 A.	RCCB Breaker : _____ A.	AC SPD : 3 Phase		
		AC Cable : 35.7 °C	Smart Meter : 39.5 °C	CT Ratio : 120 VA.		
		AC Terminal : 36.7 °C	3 Phase Meter Ratio : 30 A.			
		String No.	DC Fuse	DC Breaker	DC SPD	MC4 Connector
DC Cabinet 1	34.7 °C	String 1	38.7 °C	41.2 °C	36.7 °C	36.7 °C
		String 2	38.9 °C	40.8 °C	35.2 °C	36.4 °C
		String 3	_____ °C	_____ °C	_____ °C	_____ °C
		String 4	_____ °C	_____ °C	_____ °C	_____ °C
EE Room	35.0 °C	AC Cable : 25 Sq.m.	Main Breaker : 100 A.	MCCB Feed : _____ A.		
		Wireway : 34.7 °C	MDB / LC : 36.4 °C	_____ °C		

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

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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 : \_\_\_\_\_  
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Inspection By : \_\_\_\_\_  
 ( Bunharn Libnoy )  
 Project Engineer  
 Date : \_\_\_\_ / \_\_\_\_ / \_\_\_\_