

# SMARTER ENERGY SOLUTION

## Preventive Maintenance Solar System



Customer Name : Lavan Vacation House Maintenance : MA Date : 15 November 2024

Solar Panel				Inverter			
Brand	Model	Capacity	Install	Brand	Model	S/N	
<u>Exxon</u>	<u>EX480 TD</u>	<u>5 Kwp.</u>	<u>14 Panels</u>	<u>Solar</u>	<u>S6-GRIP BK</u>	<u>1802090224140998</u>	

### Before Preventive Maintenance Solar System

Solar Panels	Operating Voltage / Current				Time	Inspection		Remark
String 1	<u>7</u> Panels	Voc <u>267.2</u> Vdc	Vmp <u>233.9</u> Vdc	Isc <u>9.72</u> A.	<u>13:30</u>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 2	<u>7</u> Panels	Voc <u>267.0</u> Vdc	Vmp <u>219.2</u> Vdc	Isc <u>10.15</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>7</u> Panels	Voc <u>285.1</u> Vdc	Vmp <u>239.1</u> Vdc	Isc <u>9.51</u> A.	<u>14:20</u>	<input checked="" type="checkbox"/> Pass	<input type="checkbox"/> Not Pass	
String 2	<u>7</u> Panels	Voc <u>290.8</u> Vdc	Vmp <u>240.8</u> Vdc	Isc <u>9.42</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	AC Line Voltage		AC Line Voltage	
	Phase L1 to Grd : _____ Vac	Phase L1 to Grd : _____ Vac	Phase L1 to Grd : <u>233.3</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 : _____ A	Phase L1 to Grd : _____ A	Phase L1 to Grd : <u>19.67</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	Install	Brand	Model	S/N
		Kwp.	Panels			

Device	Ambient Temperature	Temperature					Remark
Inverter	53.7 C	Inside : 56.4 C	Outside : 34.8 C	Heatsync : 57.0 C			
AC Cabinet	34.6 C	MCB Breaker : 63 A.	RCCB Breaker : _____ A.	AC SPD : 1 Phase			
		36.1 C	_____ C	42.4 C			
		AC Cable : 10 Sq.m.	Smart Meter : 44.7 C	CT Ratio : 150 5 A.			
		AC Terminal : 44.6 C	1 Phase	Meter Ratio : 30 A.			
		String No.	DC Fuse	DC Breaker	DC SPD	MC4 Connector	
DC Cabinet 1	44.2 C	String 1	49.1 C	49.6 C	43.2 C	41.9 C	
			A.	Vdc A.	Vdc A.		
		String 2	49.1 C	49.9 C	41.8 C	41.6 C	
			A.	Vdc A.	Vdc A.		
		String 3	_____ C	_____ C	_____ C	_____ C	
			A.	Vdc A.	Vdc A.		
		String 4	_____ C	_____ C	_____ C	_____ C	
			A.	Vdc A.	Vdc A.		
EE Room	40.8 C	AC Cable : 16 Sq.m.	Main Breaker : 63 A.	MCCB Feed : _____ A.			
		Wireway : 40.5 C	MDB / LC : 38.7 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 :

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

( Bunharn Libnoy )  
Project Engineer

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