

SMARTER ENERGY SOLUTION

Electrical Room Inspection



Customer Name : <u>บริษัท อีแมค จำกัด</u>				Date : <u>18/8/2564</u>		
Solar Panel				Inverter		
Brand	Model	Capacity	Install	Brand	Model	S/N
eastLux	EL-450M5-60H	450 Kw.p.	148 Panels	Solis	S5-AC60K	1812092226190055

Device	Ambient Temperature	Temperature				Remark	
Inverter	<u>39.2</u> °C	Inside : <u>40.2</u> °C	Outside : <u>35.1</u> °C	Heatsync : <u>35.0</u> °C			
AC Cabinet	<u>35.7</u> °C	MCB Breaker : <u>125</u> A.	RCCB Breaker : <u>-</u> A.	AC SPD : <u>3</u> Phase			
		<u>37.2</u> °C	<u>-</u> °C	<u>34.4</u> °C			
		AC Cable : <u>50</u> Sq.m.	Smart Meter : <u>35.6</u> °C	CT Ratio : <u>150</u> / <u>5</u> A.			
		AC Terminal : <u>33.7</u> °C	3 Phase Meter Ratio : <u>150</u> A.				
DC Cabinet 1	<u>35.0</u> °C	String No.	DC Fuse	DC Breaker	DC SPD	MC4 Connector	
		String 1	<u>39.1</u> °C	<u>38.2</u> °C	<u>36.3</u> °C	<u>35.0</u> °C	
			A.	Vdc A.	Vdc A.		
		String 2	<u>41.1</u> °C	<u>42.5</u> °C	<u>39.0</u> °C	<u>37.0</u> °C	
			A.	Vdc A.	Vdc A.		
		String 3	<u>39.9</u> °C	<u>41.3</u> °C	<u>37.9</u> °C	<u>39.0</u> °C	
			A.	Vdc A.	Vdc A.		
		String 4	<u>37.0</u> °C	<u>36.6</u> °C	<u>37.3</u> °C	<u>37.0</u> °C	
			A.	Vdc A.	Vdc A.		
		DC Cabinet 2	String 5	<u>36.9</u> °C	<u>37.3</u> °C	<u>35.8</u> °C	<u>35.9</u> °C
				A.	Vdc A.	Vdc A.	
			String 6	<u>35.7</u> °C	<u>34.9</u> °C	<u>35.3</u> °C	<u>34.7</u> °C
				A.	Vdc A.	Vdc A.	
			String 7	<u>39.0</u> °C	<u>37.9</u> °C	<u>37.0</u> °C	<u>36.3</u> °C
				A.	Vdc A.	Vdc A.	
			String 8	<u>37.1</u> °C	<u>35.3</u> °C	<u>35.3</u> °C	<u>34.6</u> °C
	A.		Vdc A.	Vdc A.			
DC Cabinet 3	String 9	<u>38.7</u> °C	<u>38.2</u> °C	<u>37.0</u> °C	<u>36.5</u> °C		
		A.	Vdc A.	Vdc A.			
	String 10	<u>37.3</u> °C	<u>37.9</u> °C	<u>36.2</u> °C	<u>35.5</u> °C		
		A.	Vdc A.	Vdc A.			
	String 11	°C	°C	°C	°C		
		A.	Vdc A.	Vdc A.			
	String 12	°C	°C	°C	°C		
		A.	Vdc A.	Vdc A.			
EE Room	<u>30.1</u> °C	AC Cable : <u>50</u> Sq.m.	Main Breaker : <u>125</u> A.	MCCB Feed : _____ A.			
	Wireway : <u>30.9</u> °C	MDB / LC : <u>35.7</u> °C					

Comment : _____

Inspection By : _____

(Bunharn Libnoy)
Project Engineer

Date : ____/____/____

SMARTER ENERGY SOLUTION

Preventive Maintenance Solar System



Customer Name : <u>25000 2/2/2019 01/01</u>				Maintenance : _____		Date : <u>18/8/2019</u>	
Solar Panel				Inverter			
Brand	Model	Capacity	Install	Brand	Model	S/N	
<u>East Lux</u>	<u>EL450M5-60H</u>	<u>450</u> Kwp.	<u>1AS</u> Panels	<u>Solis</u>	<u>S5-DC60K</u>	<u>1812092226190055</u>	

Before Preventive Maintenance Solar System											
Solar Panels		Operating Voltage / Current				Time	Inspection		Remark		
String 1	Panels	Voc 456.1 Vdc	Vmp	Vdc 6.56 A.	10 : 17	☐ Pass	☐ Not Pass				
String 2	Panels	Voc 435.0 Vdc	Vmp	Vdc 6.95 A.	10 : 17	☐ Pass	☐ Not Pass				
String 3	Panels	Voc 523.4 Vdc	Vmp	Vdc 4.61 A.	10 : 18	☐ Pass	☐ Not Pass				
String 4	Panels	Voc 450.8 Vdc	Vmp	Vdc 4.46 A.	10 : 18	☐ Pass	☐ Not Pass				
String 5	Panels	Voc 442.2 Vdc	Vmp	Vdc 4.86 A.	10 : 18	☐ Pass	☐ Not Pass				
String 6	Panels	Voc 436.4 Vdc	Vmp	Vdc 10.74 A.	10 : 18	☐ Pass	☐ Not Pass				
String 7	Panels	Voc 507.1 Vdc	Vmp	Vdc 9.00 A.	10 : 18	☐ Pass	☐ Not Pass				
String 8	Panels	Voc 585.7 Vdc	Vmp	Vdc 8.47 A.	10 : 19	☐ Pass	☐ Not Pass				
String 9	Panels	Voc 581.9 Vdc	Vmp	Vdc 7.71 A.	10 : 19	☐ Pass	☐ Not Pass				
String 10	Panels	Voc 585.0 Vdc	Vmp	Vdc 7.87 A.	10 : 19	☐ 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	
String 13	Panels	Voc	Vdc	Vmp	Vdc	Isc	A.	:	☐ Pass	☐ Not Pass	
String 14	Panels	Voc	Vdc	Vmp	Vdc	Isc	A.	:	☐ Pass	☐ Not Pass	
String 15	Panels	Voc	Vdc	Vmp	Vdc	Isc	A.	:	☐ Pass	☐ Not Pass	
String 16	Panels	Voc	Vdc	Vmp	Vdc	Isc	A.	:	☐ Pass	☐ Not Pass	
String 17	Panels	Voc	Vdc	Vmp	Vdc	Isc	A.	:	☐ Pass	☐ Not Pass	
String 18	Panels	Voc	Vdc	Vmp	Vdc	Isc	A.	:	☐ Pass	☐ Not Pass	
String 19	Panels	Voc	Vdc	Vmp	Vdc	Isc	A.	:	☐ Pass	☐ Not Pass	
String 20	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 <u>445.6</u> Vdc	Vmp	Vdc	Isc <u>7.54</u> A.	<u>11 : 26</u>	☐ Pass	☐ Not Pass	
String 2	Panels	Voc <u>414.8</u> Vdc	Vmp	Vdc	Isc <u>7.37</u> A.	<u>11 : 26</u>	☐ Pass	☐ Not Pass	
String 3	Panels	Voc <u>431.0</u> Vdc	Vmp	Vdc	Isc <u>11.81</u> A.	<u>11 : 26</u>	☐ Pass	☐ Not Pass	
String 4	Panels	Voc <u>432.7</u> Vdc	Vmp	Vdc	Isc <u>7.45</u> A.	<u>11 : 26</u>	☐ Pass	☐ Not Pass	
String 5	Panels	Voc <u>421.7</u> Vdc	Vmp	Vdc	Isc <u>7.20</u> A.	<u>11 : 26</u>	☐ Pass	☐ Not Pass	
String 6	Panels	Voc <u>405.7</u> Vdc	Vmp	Vdc	Isc <u>12.12</u> A.	<u>11 : 27</u>	☐ Pass	☐ Not Pass	
String 7	Panels	Voc <u>508.6</u> Vdc	Vmp	Vdc	Isc <u>8.83</u> A.	<u>11 : 28</u>	☐ Pass	☐ Not Pass	
String 8	Panels	Voc <u>590.1</u> Vdc	Vmp	Vdc	Isc <u>8.28</u> A.	<u>11 : 28</u>	☐ Pass	☐ Not Pass	
String 9	Panels	Voc <u>583.9</u> Vdc	Vmp	Vdc	Isc <u>9.30</u> A.	<u>11 : 28</u>	☐ Pass	☐ Not Pass	
String 10	Panels	Voc <u>577.7</u> Vdc	Vmp	Vdc	Isc <u>9.01</u> A.	<u>11 : 28</u>	☐ 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
String 13	Panels	Voc	Vdc	Vmp	Vdc	Isc A.	:	☐ Pass	☐ Not Pass
String 14	Panels	Voc	Vdc	Vmp	Vdc	Isc A.	:	☐ Pass	☐ Not Pass
String 15	Panels	Voc	Vdc	Vmp	Vdc	Isc A.	:	☐ Pass	☐ Not Pass
String 16	Panels	Voc	Vdc	Vmp	Vdc	Isc A.	:	☐ Pass	☐ Not Pass
String 17	Panels	Voc	Vdc	Vmp	Vdc	Isc A.	:	☐ Pass	☐ Not Pass
String 18	Panels	Voc	Vdc	Vmp	Vdc	Isc A.	:	☐ Pass	☐ Not Pass
String 19	Panels	Voc	Vdc	Vmp	Vdc	Isc A.	:	☐ Pass	☐ Not Pass
String 20	Panels	Voc	Vdc	Vmp	Vdc	Isc A.	:	☐ Pass	☐ Not Pass

Comment : _____

SMARTER ENERGY SOLUTION

Preventive Maintenance Solar System



Device	Inverter Inspection			Remark
	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 : <u>227.2</u> Vac	Phase L1 to Grd : <u>224.3</u> Vac	Phase L1 to Grd : <u>232.4</u> Vac	
	Phase L2 to Grd : <u>230.4</u> Vac	Phase L2 to Grd : <u>231.9</u> Vac	Phase L2 to Grd : <u>236.3</u> Vac	
	Phase L3 to Grd : <u>222.4</u> Vac	Phase L3 to Grd : <u>230.3</u> Vac	Phase L3 to Grd : <u>219.8</u> Vac	
	AC Line Current	AC Line Current	AC Line Current	
	Phase L1 to Grd : <u>37.2</u> A	Phase L1 to Grd : <u>21.5</u> A	Phase L1 to Grd : <u>44.53</u> A	
	Phase L2 to Grd : <u>29.8</u> A	Phase L2 to Grd : <u>21.1</u> A	Phase L2 to Grd : <u>46.53</u> A	
	Phase L3 to Grd : <u>42.4</u> A	Phase L3 to Grd : <u>21.4</u> A	Phase L3 to Grd : <u>46.72</u> A	

Item	Solar System Inspection	Inspection		Remark
1	Clean the Solar panel (Use clean water) ทำความสะอาดแผงโซลาร์ เซลล์ (ใช้น้ำสะอาด)	☒ Pass	☐ Not Pass	
2	Check to see if the solar panel's condition ตรวจสอบการแตกร้าวของแผงโซลาร์ 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 ว่ามีจุดเสี่ยงที่จะทำให้เกิดน้ำรั่วได้หรือไม่ (ใช้ water proof , สิริโครน PU , แผ่นซีก้าป้องกันน้ำ)	☒ 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	Inspect 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 : / /

SMARTER ENERGY SOLUTION

Inverter Setting Inspection



Customer : USM 2/24/2020 Inverter : Solis / 35-GC60K No. : 01 Password : 0010

Item	Manu	Select 1	Select 2	Select 3	Select 4	Remark
1	Inverter Address	☒ 01	☐ 02	☐ 03	☐ _____	
2	Select Standard	☐ PEA	☒ MEA	☐ _____	☐ _____	
3	Grid ON/OFF	☐ ON	☐ OFF	☐ _____	☐ _____	
4	24Hrs. Switch	☐ Enable	☐ Disable	☐ _____	☐ _____	
5	Internal EPM Set > Mode Select	☐ Meter In Grid	☐ Meter In Load	☐ Consumption	☐ NO Meter	
6	Internal EPM Set > Backflow Power	☐ 0	☐ +100	☒ + <u>000 100W</u>	☐ - _____	
7	Internal EPM Set > Fail Safe ON/OFF	☒ ON	☐ OFF	☐ _____	☐ _____	
8	Internal EPM Set > Backflow Work Mode	☒ Mode 1	☐ Mode 2	☐ _____	☐ _____	
9	HMI Update	☐ YES	☐ NO	☐ _____	☐ _____	
10	DSP Update	☐ YES	☐ NO	☐ _____	☐ _____	
11	External EPM Set	☐ 5G-EPM	☐ Others-EPM	☐ _____	☐ _____	

Inverter : Solis / _____ No. : _____ Password : 0010

Item	Manu	Select 1	Select 2	Select 3	Select 4	Remark
1	Inverter Address	☐ 01	☐ 02	☐ 03	☐ _____	
2	Select Standard	☐ PEA	☐ MEA	☐ _____	☐ _____	
3	Grid ON/OFF	☐ ON	☐ OFF	☐ _____	☐ _____	
4	24Hrs. Switch	☐ Enable	☐ Disable	☐ _____	☐ _____	
5	Internal EPM Set > Mode Select	☐ Meter In Grid	☐ Meter In Load	☐ Consumption	☐ NO Meter	
6	Internal EPM Set > Backflow Power	☐ 0	☐ +100	☐ + _____	☐ - _____	
7	Internal EPM Set > Fail Safe ON/OFF	☐ ON	☐ OFF	☐ _____	☐ _____	
8	Internal EPM Set > Backflow Work Mode	☐ Mode 1	☐ Mode 2	☐ _____	☐ _____	
9	HMI Update	☐ YES	☐ NO	☐ _____	☐ _____	
10	DSP Update	☐ YES	☐ NO	☐ _____	☐ _____	
11	External EPM Set	☐ 5G-EPM	☐ Others-EPM	☐ _____	☐ _____	

Inspection By : _____
 (Bunharn Libnoy)
 Project Engineer
 Date : ____/____/____