# SMARTER ENERGY SOLUTION
## Preventive Maintenance Solar System

SMARTER ENERGY SOLUTION

| Customer Name : | | Maintenance : | | Date : | 19/09/68 |
|---|---|---|---|---|---|

| Solar Panel | | | | Inverter | | |
|---|---|---|---|---|---|---|
| Brand | Model | Capacity | Install | Brand | Model | S/N |
| [illegible] | MOPW-72 M550 JAM 540M-72HL-V | 550 540 Kwp. | 10 10 Panels | SOLIS | S1-1H3P50K-ND-H | 10331L0245K0124 |

### Before Preventive Maintenance Solar System

| Solar Panels | Operating Voltage / Current | | | Time | Inspection | | Remark |
|---|---|---|---|---|---|---|---|
| String 1 | 10 Panels | Voc 387 Vdc | Vmp 327 Vdc | Isc 9 A. | 10 : 30 | ☑ Pass | ☐ Not Pass | |
| String 2 | 10 Panels | Voc 317 Vdc | Vmp 290 Vdc | Isc 9.73 A. | 10 : 30 | ☑ 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 | |
| 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 | 10 Panels | Voc 396 Vdc | Vmp 326 Vdc | Isc 9.79 A. | 11 : 25 | ☑ Pass | ☐ Not Pass | |
| String 2 | 10 Panels | Voc 321 Vdc | Vmp 297 Vdc | Isc 10.50 A. | 11 : 25 | ☑ 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 | |
| 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 : _____

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19/9/68

# SMARTER ENERGY SOLUTION
## Electrical Room Inspection

SMARTER ENERGY SOLUTION

| Customer Name : | | Date : | |
|---|---|---|---|

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

| Device | Ambient Temperature | Temperature | | | | Remark |
|---|---|---|---|---|---|---|
| Inverter | 45.6 °C | Inside : 81 °C | Outside : 81 °C | Heatsync : 68.9 °C | | |
| AC Cabinet | 32.7 °C | MCB Breaker : 40 A. 34.9 °C | RCCB Breaker : 40 A. 82.8 °C | AC SPD : 3 Phase 82.6 °C | | |
| | | AC Cable : 10 Sq.m. | Smart Meter : ____ °C | CT Ratio : 100 /40 mA | | |
| | | AC Terminal : — °C | — Phase | Meter Ratio : ____ A. | | |
| | | String No. | DC Fuse | DC Breaker | DC SPD | MC4 Connector |
| DC Cabinet 1 | 34.8 °C | String 1 | 45 °C 16 A. | 40.7 °C 800 Vdc 16 A. | 86.9 °C 800 Vdc ___ A. | 87 °C |
| | | String 2 | 43.1 °C 16 A. | 40.9 °C 800 Vdc 16 A. | 36.8 °C 800 Vdc ___ A. | 37.6 °C |
| | | String 3 | ___ °C ___ A. | ___ °C ___ Vdc ___ A. | ___ °C ___ Vdc ___ A. | ___ °C |
| | | String 4 | ___ °C ___ A. | ___ °C ___ Vdc ___ A. | ___ °C ___ Vdc ___ A. | ___ °C |
| DC Cabinet 2 | ___ °C | String 5 | ___ °C ___ A. | ___ °C ___ Vdc ___ A. | ___ °C ___ Vdc ___ A. | ___ °C |
| | | String 6 | ___ °C ___ A. | ___ °C ___ Vdc ___ A. | ___ °C ___ Vdc ___ A. | ___ °C |
| | | String 7 | ___ °C ___ A. | ___ °C ___ Vdc ___ A. | ___ °C ___ Vdc ___ A. | ___ °C |
| | | String 8 | ___ °C ___ A. | ___ °C ___ Vdc ___ A. | ___ °C ___ Vdc ___ A. | ___ °C |
| DC Cabinet 3 | ___ °C | String 9 | ___ °C ___ A. | ___ °C ___ Vdc ___ A. | ___ °C ___ Vdc ___ A. | ___ °C |
| | | String 10 | ___ °C ___ A. | ___ °C ___ Vdc ___ A. | ___ °C ___ Vdc ___ A. | ___ °C |
| | | String 11 | ___ °C ___ A. | ___ °C ___ Vdc ___ A. | ___ °C ___ Vdc ___ A. | ___ °C |
| | | String 12 | ___ °C ___ A. | ___ °C ___ Vdc ___ A. | ___ °C ___ Vdc ___ A. | ___ °C |
| EE Room | 32 °C | AC Cable : 35 Sq.m. | Main Breaker : 100 A. | MCCB Feed : 40 A. | | |
| | | Wireway : 35.8 °C | MDB / LC : — °C | 34.5 °C | | |

**Comment :** _____

**Inspection By :** _____

( Bunharn Libnoy )
Project Engineer

Date : ____/____/____

# SMARTER ENERGY SOLUTION
## Preventive Maintenance Solar System

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| 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 : 236.7 Vac | Phase L1 to Grd : 238.9 Vac | |
| | Phase L2 to Grd : — Vac | Phase L2 to Grd : 240 Vac | Phase L2 to Grd : 241 Vac | |
| | Phase L3 to Grd : — Vac | Phase L3 to Grd : 238 Vac | Phase L3 to Grd : 239.7 Vac | |
| | **AC Line Current** | **AC Line Current** | **AC Line Current** | |
| | Phase L1 to Grd : — A | Phase L1 to Grd : 11 A | Phase L1 to Grd : 6.8 A | |
| | Phase L2 to Grd : — A | Phase L2 to Grd : 0.5 A | Phase L2 to Grd : 1.2 A | |
| | Phase L3 to Grd : — A | Phase L3 to Grd : 7.8 A | Phase L3 to Grd : 3.2 A | |

| Item | Solar System Inspection | Inspection | | Remark |
|---|---|---|---|---|
| 1 | Clean the Solar panel ( Use clean water )<br>ทำความสะอาดแผงโซล่า เซลล์ ( ใช้น้ำสะอาด ) | ☑ Pass | ☐ Not Pass | |
| 2 | Check to see if the solar panel's condition<br>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)<br>ตรวจสอบจุดยึดของ Support ที่ยึดกับหลังคา ว่ามีจุดเสี่ยงที่จะทำให้เกิดน้ำรั่วได้หรือไม่ ( ใช้ water proof , สิริโครน PU , แผ่นซิก้าป้องกันน้ำ ) | ☑ Pass | ☐ Not Pass | |
| 4 | Inspect the mounting parts of the solar cell<br>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.<br>ตรวจสอบสภาพของสายทั้งหมดเพื่อให้แน่ใจว่า สายไม่หย่อนลงไปที่หลังคา | ☑ Pass | ☐ Not Pass | |
| 6 | Inspect the tightness of the wire terminals.<br>ตรวจสอบความแน่นของข้ำสายไฟ | | | |
| 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<br>ตรวจสอบ SISO Switch ว่าชำรุดหรือไม่ | ☐ Pass | ☑ Not Pass | No have |
| 8 | Inspect for malfunctions of the inverter and other related electrical equipment.<br>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)<br>การตรวจสอบความร้อนของแผงโซลาร์เซลล์ว่ามีจุดความร้อนผิดปกติหรือไม่ (ตรวจสอบโดยใช้กล้องถ่ายภาพความร้อน) | ☑ Pass | ☐ Not Pass | |

Comment : _____

Inspection By : _____
( Bunharn Libnoy )
Project Engineer

Date : ____/____/____

# SMARTER ENERGY SOLUTION
## Inverter Setting Inspection

SMARTER ENERGY SOLUTION

Customer : _____ 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 | ☐ _____ | ☐ _____ | |

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-FPM | ☐ Others-FPM | ☐ _____ | ☐ _____ | |

Inspection By : _____

( Bunharn Libnoy )
Project Engineer

Date : _____/_____/_____