# *SWMS (Safe Work Method Statement)*

| **Company Details:** | |
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| Installer's Company Name: | Phone Number: |
| Installer's Full Name: | Mobile Number: |
| Company's Address: | ABN Number: |

| **Project Scope:** | |
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| Scope of the work | Installation of Grid-Connect Residential Solar System |
| SWMS can be used by for the limited scope as mentioned above | Installers, Electricians, Roof-workers, Project Managers |
| High risk work activities covered by this SWMS. | 1. Person falling from more than 2 meters' height<br>2. Heavy object falling from more than 2 meters' height. For e.g., Panel, Rail<br>3. Electric Shock if exposed to live parts<br>4. Potential Exposure to asbestos<br>5. Working around/near mobile plant |
| References: Legislation, Australian Standards, Codes of Practice, SDS & SOP's | • Work Health and Safety Act / Regulation, AS/NZS 3000: Australian/New Zealand wiring rules; AS/NZS 5033: Installation of photovoltaic (PV)arrays; AS/NZS 4777: Grid connection of energy systems via inverters,<br>• And any other relevant Australian Standards and Legislation<br>• SafeWork NSW Guide to Safe Solar Panel Installation |
| Tools and equipment involved in the scope of SWMS | Edge Protection System,<br>Ladders, EWP |
| Equipment and Tools that to be maintained and checked prior to work | Vehicle (Tyres, Break, Registration etc.),<br>Harnesses,<br>Anchor Points,<br>Ropes and Lanyards,<br>First Aid kit,<br>Low Voltage Rescue Kit,<br>Hand/Power Tools,<br>Voltage Tester, |

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| | Scaffold (when required),<br>Skylight boards/Covers (when required) |
| High Risk" license classes required for the scope of work | Work at Height,<br>White Card,<br>Electrician – Unrestricted,<br>CEC Accreditation<br>High Risk Work Licence where the EWP has the capacity to reach over 11 meters |
| Other Training/ Certification | First Aid Certificate,<br>Yellow Card / Scissor Lift or High-Risk Work License for boom type (when required),<br>Asbestos Awareness Training (when required),<br>Working Safety in the Solar Industry (Victoria) |
| Personal Protective Equipment | High-Viz Garments,<br>Hearing Protection,<br>Wide brimmed hats,<br>Safety Glasses, Goggles<br>Safety Hats / Shoes<br>Gloves<br>Respirator |

| Task | Hazards | Risks to health and safety | Control measures | Who is responsible for implementing and monitoring the controls? |
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| • **Pre- start Inspection**<br><br>**(Quick Safety Tip: Cover the skylight)** | • Skylight<br>• Fragile Roof<br>• Overhead power lines<br>• Asbestos materials in roof panels<br>• Asbestos in electrical board<br>• Working over 2m<br>• Working with mobile plant, scissor lift, MEWP | • Serious injury<br><br>• Fatality | • Please check below for in-depth control measure for each type of hazards | • Installer<br>• Site Supervisor<br>• Workers |

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| • **Use of ladders (For e.g., step ladders and platform ladders)**<br><br>**(Quick Safety Tip: Ladder must be made of Fiber Glass and correctly secured at the top and bottom)** | • Strong wind gust causing fall from ladder<br>• Falling from ladder<br>• Falling objects –being struck/ crushed<br>• Trip, slip, fall due to lose grip | • Serious Injury<br>• Injury to others from falling object<br>• Fatality in extreme situation | • Use fiber glass and industry grade ladder while working with electricity<br>• Must be in good working order<br>• Damaged ladders are removed from service.<br>• Ladder is secured top and bottom<br>• Carry ladder horizontally, not vertically<br>• Ensure ladders are not protruding into roads, footpaths, driveways etc. and are on firm, stable, level ground<br>• Set up at correct height to avoid stretching<br>• Maintaining 4:1 ratio<br>• Be aware of people working around and pedestrians<br>• Face ladder when ascending / descending or working from it<br>• Ensure 3 points of contact remain on ladder at all times, (one hand and two feet)<br>• Hoist tools up in a tool belt when person reaches work position<br>• Ensure only 1 person working from each ladder.<br>• Ladder extends 1m past roof edge<br>• Do not stand higher than the second tread below the top plate of any stepladder<br>• Ladders are not to be used on scaffolding or an elevating work platform to get extra height<br>• Must not use tools that require a high degree of leverage force which, if released, may cause the worker to over balance and fall from the ladder | • Installer<br>• Site Supervisor<br>• Workers |
| • **Use of EWP (Quick Safety Tip: Check for overhead powerlines)** | • Fall from EWP<br>• Overturning of EWP<br>• Ejected from EWP | • Serious Injury<br>• Fatality<br>• Injury to others from falling objects | • Operator of a boom-type EWP must hold a High-Risk Work Licence<br>• Work must be performed from within the EWP<br>• Workers must not stand on the handrails of the EWP<br>• Ensure the EWP is operated on consolidated level ground | |

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| • **Working at height**<br><br>**(Quick Safety Tip: All workers, who are working more than 2 meters high, must have Working at Height certificate.)** | • Adverse weather -hot, cold, windy, wet<br>• Falls from a height<br>• Work at height above 2 meters'<br>• Equipment failure -Scaffold<br>• /trestle / ladder /EWP / harnesses etc.<br>• Overhead power lines | • Heat exhaustion, sunstroke, dehydration, Sunburn<br><br>• Wind gusts causing equipment failure or sudden movement resulting in fall from height causing serious injury or death<br><br>• Being struck by-lightning causing burns, electrocution<br><br>• Slips, trips & falls – fractures, sprains, strains | • Use an edge protection system on the working faces and applicable adjoining edges- edge protection system to comply with AS/NZS 4994- preference to be installed from ground<br>• Edge protection barriers, access gates must be strong enough to withstand the pressure of a person falling against it<br>• Use all height-access equipment as per manufacturer's instructions and for its designed purpose<br>• Make sure that any holes, other openings or fragile material like skylights are properly secured and covered to avoid stepping on it and falling through<br>• In rare circumstances, if an edge protection cannot be installed then a risk assessment must demonstrate the reasons why - Use of proper fall restraint system. Such as full body harness, with certified and load rated roof anchors in multiple locations to provide safe access and prevent worker falling<br>• Each anchor point should be so that the lanyard length is short enough to prevent the worker falling (fall restraint- NOT fall arrest)<br>• Set and maintain the lanyard length to prevent the person from reaching the edge<br>• Do not use rails or battens to tie the rope / lanyard<br>• Use correct Manual Handling techniques while placing panels<br>• Weather forecast is checked to ensure wet and windy conditions<br>• Work is not conducted in wet or slippery conditions i.e., condensation, frost, moss, rain, mould etc.<br>• Heat stress of workers monitored to prevent heat exhaustion.<br>• Set up exclusion zone below work area using cones/tape/barriers | • Installer<br>• Site Supervisor<br>• Workers |

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| • **Solar Panel Installation - Grid Connected**<br><br>**(Quick Safety Tip: Only walk on safe areas)** | • Plant – operating<br>• Working near / with electricity<br>• Exposure to Hazardous<br>• For e.g., Asbestos | • Electric shock<br>• Electrocution<br>• Exposure to asbestos causing serious illness | • Follow LOTO procedures before works are conducted<br>• Allow sufficient time for residual/stored energy to dissipate from the assembly.<br>• Follow Panels and Inverter's manufacturer instructions<br>• Always refer and follow designer's instruction<br>• Only walk on safe areas<br>• Check for electrical lines or other obstructions when handling panels.<br>• Only undertake work allowed under specific license.<br>• Ensure works comply with electrical safety guidelines and legislation in your State/territory and AS/NZS 3000<br>• Switchboard in clearly and permanently marked with warning labels<br>• (Dual energy), location of isolation switches to solar panels, inverter unit, mains etc.<br>• All cables are secured and protected under Panels<br>• Provide user instructions to recipient of panels including a shut-down procedure<br>• If it is mandatory, make sure Licensed Electrical Inspector to inspect completed install<br>• Issue Certification of Electrical Safety upon completion.<br>• When conducting maintenance on panels that have been connected to the grid/power:<br>• Electrician to test system components and ensure they are isolated (test for dead) | • Installer<br>• Site Supervisor<br>• Workers |

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| • **Electrical wiring Low voltage**<br><br>**(Quick Safety Tip: No live work is permitted)** | • Asbestos - exposure<br>• Electricity - Energized electrical equipment / installation | • Inhalation of dust or fibers - asbestos etc.<br>• Electrocution / Electric<br>• shock causing serious injury or death.<br>• Explosion / Fire / smoke | • LOTO (Lock out/tag out) procedures must be established. Include:<br>  • Shut down<br>  • Identify all energy sources<br>  • Identify all isolation points<br>  • Isolate all energy sources<br>  • De-energize all stored energies<br>  • Lock out all isolation points<br>  • Complete and attach Danger Tag and lock(s) at each isolation point<br><br>Test by "trying" to re-activate (without exposing the tester or others to risk).<br>While following LOTO procedures. Ensure:<br>• Circuit breakers, switches and combined fuse switch units are locked out<br>• Use locks or suitable temporary securing devices (that cannot be disrupted)<br>• Where isolation is done remotely, ensure all relevant conductors are bonded together and to general mass of earth at site.<br>On Completion:<br>• Test and commission the electrical installation as required<br>• Notify supervisor / property owner of restoration of electrical service | • Installer<br>• Site Supervisor<br>• Workers |

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| • **Disturbance of Asbestos Containing Material (ACM)**<br><br>**(Quick Safety Tip: Power tools not to be used on ACM)** | | | • If ACM is suspected, STOP work. Make area safe and inform home owner.<br>• Advice Sunboost installation team<br>• Advice homeowner to arrange for specialist asbestos removal contractor<br>• Make sure that roof cavity is well lit<br>• Carefully check presence of any venomous creature while working in roof cavity<br>NOTE – If work is likely to involve the disturbance of ACM, a separate SWMS shall be established.<br>• ACM is removed by a competent person and replaced with non- asbestos containing material<br>• Power tools are not used on ACM | • Installer<br>• Site Supervisor<br>• Workers |

**This SWMS has been developed in consultation and has been read, understood and signed by all workers undertaking the scope of works:**

Worker Declaration- by signing below the worker agrees to the following;

- ✓ I have been consulted and have assisted in the development of this SWMS.
- ✓ I have been given the opportunity to comment on the content of this SWMS.
- ✓ I have read and understood how to carry out the activities listed in this SWMS.
- ✓ I have been supplied with the Personal Protective Equipment identified on this SWMS and I have been given training in the safe use of these equipment.

| Name of Workers | Signatures: | Add Initials (If unable to sign) | Date: |
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## Risk Assessment Matrix

| | Extreme (1) | Major (2) | Moderate (3 | Minor (4) | Insignificant (5) |
|---|---|---|---|---|---|
| Almost certain | Very High | Very High | High | High | Medium |
| Likely | Very High | High | High | Medium | Medium |
| Possible | High | High | Medium | Low | Low |
| Unlikely | High | Medium | Low | Low | Low |
| Very Unlikely | Medium | Medium | Low | Low | Low |

## Matrix - Explained

| Likelihood Description | Rating |
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| Almost certain to occur/happen or is imminent | **Almost certain** |
| Will probably occur/happen, but not a persistent issue. | **Likely** |
| Likely to happen occasionally and has a reasonable chance of occurring. | **Possible** |
| Not expected to happen, but it is a possibility. | **Unlikely** |
| Very unlikely this will happen | **Very Unlikely** |

| Consequences | Risk Rating | Consequences | Risk Rating |
|---|---|---|---|
| • Single or Multiple Fatalities<br>• Severe injury or illness, resulting in permanent injury / disability or ill health to one or more persons<br>• Extreme stress and an inability to perform work duties in the foreseeable future<br>• You must stop working immediately and inform supervisor/manager for further risk assessment and set up adequate control measures. | **1 Extreme** | • Injury or illness requiring medical or psychological treatment to one or more people<br>• Lost Time Injury (LTI) impact (less than 10 days)<br>• Significant stress and a noticeable reduction on ability to perform regular duties in the immediate future | **3 Moderate** |
| • Major or Multiple injuries resulting in temporary disability or ill health to one or more persons<br>• Significant Lost Time Injury (LTI) impact (10 days or more)<br>• Major stress and an inability to perform work duties in the medium to long term<br>• Dangerous near miss or threat<br>• You must stop working immediately and inform supervisor/manager for further risk assessment and set up adequate control measures. | **2 Major** | • Minor injury, first aid treatment required. No lasting impact<br>• Minor concern and some reduction in ability to perform regular work duties in the short term | **4 Minor** |
| | | • No treatment required<br>• No or slight concern and no impact on regular work duties. | **5 Insignificant** |