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| Title | **Install solar panel** | | |
| Level | **2** | **Credits** | **8** |

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| Purpose | This competency standard is intended for those who carry out electrical operations. People holding credit for this competency standard are able to: Plan and prepare for installation; install solar photovoltaic array; carry out operational checks; and complete work |

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| Classification ISCED | 0713 Electricity and energy |

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| Available grade | Competent / Not yet competent |

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| Modification history | N/A |

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| **Competency Unit** | **Performance Criteria** | **Knowledge and Understanding** |
| **F1:**  **Plan and prepare for installation** | **P1-** Identify and obtain safety and other regulatory requirements for installation  **P2-** Determine location  **P3-** Set PVangles | **K1-** Safety requirements; Specifications; Hazard identification (Proper space requirement, load requirement  **K2-** Factors influencing the efficiency of solar panels; Physical structur, shading effects  **K3-** Summer and winter requirements  **K4-** Load analysis  **K5-** Existing combined distribution BUTU (Average & Maximum Angle) |
| **F2:**  **Install solar photovoltaic array** | **P1-** Interpret and confirm installation  **P2-** Connect PV panels and electrical components  **P3-** Arrange earthing  **P4-** Confirm installation | **K1-** Installation requirements  **K2-** Series and parallel circuit setup; Cable sizing; Forward and reverse diodes  **K3-** Requirements for properly bonded earthing  **K4-** Supervisor and/or client communication |
| **F3:**  **Carry out operational checks** | **P1-** Test and adjust component and/or parts  **P2-** Confirm operation of electrical product or appliance  **P3-** Explain operation of product or appliance to customer | **K1-** Functional tests and adjustments; Basic knowledge and calculation of open circuit voltage, on load voltage, short circuit current, maximum current load; Basic function of relay change over  **K2-** Basic operation of appliance and settings to adjust performance  **K3-** Communication skills (communicate with seniors or client after check up) |
| **F4:**  **Complete work**  **Work Completion** | **P1-** Complete work related documents and procedures  **P2-** Perform final quality inspection  **P3-** Clean up and store tools, equipment and materials | **K1-** Importance of documentation; Customer care procedures and techniques  **K2-** Importance of quality; handing over to client  **K3-** Waste disposal procedures; Care of tools and equipment |