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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 |