

National Occupational Standards



Repair & Maintenance of solar powered farm equipment/ machinery

Unit Code: AGR/N1150

Version: 1.0

NSQF Level: 4

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Description

This OS unit is about repair and maintenance of solar powered equipment/machinery used principally in agriculture, horticulture, and conservation and land management work.

Scope

The scope covers the following :

- Prepare for repair and maintenance work
- Carry out repair and maintenance work
- Complete repair and maintenance activities

Elements and Performance Criteria

Prepare for repair and maintenance work

To be competent, the user/individual on the job must be able to:

- PC1.** Select and inspect tools, equipment and materials appropriate to job requirements
- PC2.** use personal protective equipment according to job requirements and task to be undertaken
- PC3.** apply basic diagnostic techniques to assess the fault
- PC4.** Carry out dismantling of solar powered applications appropriately
- PC5.** Identify hazards in the workplace, assess and control risks appropriately

Carry out repair and maintenance work

To be competent, the user/individual on the job must be able to:

- PC6.** Confirm machinery and equipment faults, malfunctions and deterioration of components
- PC7.** Check for the applicability of warranty cover and process for repairs and replacements by product manufacturers / suppliers
- PC8.** Estimate scope and cost for repair and maintenance activity
- PC9.** Identify worn or damaged parts and remove or overhaul
- PC10.** Implement repair and replacement process for major repairs according to workplace requirements and manufacturers' specifications
- PC11.** Report complex faults and repairs and refer for specialist advice and remedial action appropriately
- PC12.** Retrieve lost equipment appropriately

Complete repair and maintenance activities

To be competent, the user/individual on the job must be able to:

- PC13.** Reassemble and test solar powered equipment/machinery for full function
- PC14.** Clean and store tools and equipment appropriately
- PC15.** Collect, treat, dispose of or recycle waste from service and repair activities appropriately
- PC16.** Clean, maintain and return work areas to operating condition
- PC17.** Document information appropriately

Knowledge and Understanding (KU)

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The individual on the job needs to know and understand:

- KU1.** Different types of solar-powered equipment/machinery used for agriculture
- KU2.** construction of solar powered equipment/machinery in agriculture and their maintenance requirements
- KU3.** Components of solar-powered equipment/machinery, maintenance requirements and repair procedures
- KU4.** working principles of solar-powered equipment/machinery
- KU5.** Applicable warranty covers for the solar-powered equipment/machinery
- KU6.** Alternating and direct current
- KU7.** AC and DC solar systems
- KU8.** types, characteristics, uses and limitations of solar- powered tools
- KU9.** tools required for service and repair activities of solar-powered equipment/machinery
- KU10.** basic diagnostic processes and techniques
- KU11.** environmental codes of practice with regard to maintenance activities
- KU12.** work health and safety legislative requirements

Generic Skills (GS)

User/individual on the job needs to know how to:

- GS1.** maintain work-related notes and records
- GS2.** read the relevant literature to get the latest updates about the field of work
- GS3.** listen attentively to understand the information being shared
- GS4.** communicate politely and professionally
- GS5.** plan and prioritize tasks to ensure timely completion
- GS6.** take quick decisions to deal with workplace emergencies/ accidents
- GS7.** identify possible disruptions to work and take appropriate preventive measures

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Assessment Criteria

Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
<i>Prepare for repair and maintenance work</i>	6	5	-	4
PC1. Select and inspect tools, equipment and materials appropriate to job requirements	-	-	-	-
PC2. use personal protective equipment according to job requirements and task to be undertaken	-	-	-	-
PC3. apply basic diagnostic techniques to assess the fault	-	-	-	-
PC4. Carry out dismantling of solar powered applications appropriately	-	-	-	-
PC5. Identify hazards in the workplace, assess and control risks appropriately	-	-	-	-
<i>Carry out repair and maintenance work</i>	6	14	-	4
PC6. Confirm machinery and equipment faults, malfunctions and deterioration of components	-	-	-	-
PC7. Check for the applicability of warranty cover and process for repairs and replacements by product manufacturers / suppliers	-	-	-	-
PC8. Estimate scope and cost for repair and maintenance activity	-	-	-	-
PC9. Identify worn or damaged parts and remove or overhaul	-	-	-	-
PC10. Implement repair and replacement process for major repairs according to workplace requirements and manufacturers' specifications	-	-	-	-
PC11. Report complex faults and repairs and refer for specialist advice and remedial action appropriately	-	-	-	-
PC12. Retrieve lost equipment appropriately	-	-	-	-
<i>Complete repair and maintenance activities</i>	4	5	-	2
PC13. Reassemble and test solar powered equipment/machinery for full function	-	-	-	-

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Assessment Criteria for Outcomes	Theory Marks	Practical Marks	Project Marks	Viva Marks
PC14. Clean and store tools and equipment appropriately	-	-	-	-
PC15. Collect, treat, dispose of or recycle waste from service and repair activities appropriately	-	-	-	-
PC16. Clean, maintain and return work areas to operating condition	-	-	-	-
PC17. Document information appropriately	-	-	-	-
NOS Total	16	24	-	10

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National Occupational Standards (NOS) Parameters

NOS Code	AGR/N1150
NOS Name	Repair & Maintenance of solar powered farm equipment/ machinery
Sector	Agriculture
Sub-Sector	
Occupation	Farm Machinery, Equipment Operation and Maintenance
NSQF Level	4
Credits	1.25
Minimum Job Entry Age	NA
Minimum Educational Qualification & Experience	<p>12th grade Pass (or equivalent) OR Completed 2nd year of the 3-year diploma after 10 (in Agriculture/Horticulture/Forestry/Agriculture Engineering/Veterinary Sciences/Animal Husbandry/Diary Technology) OR Previous relevant Qualification of NSQF Level (3.5) OR Previous relevant Qualification of NSQF Level (3) with 3 Years of experience of relevant experience in Agriculture and allied sectors</p>
Version	1.0
Last Reviewed Date	30/04/2024
Next Review Date	30/04/2027
NSQC Clearance Date	30/04/2024
Reference code on NQR	NG-04-AG-02549-2024-V1-ASCI
NQR Version	1.0
CCN Category	1