



**REPUBLIC OF KENYA**

**NATIONAL OCCUPATIONAL STANDARDS**

**FOR**

**AGRICULTURAL ENGINEERING TECHNICIAN**

**LEVEL 6**

**PROGRAMME ISCED CODE: 0716 454 A**



**TVET CDACC  
P.O. BOX 15745-00100  
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## HARNESS FARM GREEN ENERGY

**UNIT CODE:** 0716 451 15A

**TVET CDACC CODE:** ENG/OS/AGR/CR/06/5/MA

### **UNIT DESCRIPTION**

This unit specifies the competencies required by an Agricultural Engineering Technologist Level 6 to harness farm green energy. It involves, designing farm green energy harnessing system, installing farm green energy harnessing system and maintaining farm green energy harnessing system.

### **ELEMENTS AND PERFORMANCE CRITERIA**

<b>ELEMENT</b>	<b>PERFORMANCE CRITERIA</b>
These describe the key outcomes which make up workplace function.	These are assessable statements which specify the required level of performance for each of the elements. <i><b>Bold and italicized terms are elaborated in the Range.</b></i>
1. Design farm green energy harnessing system	1.1 <b><i>Farm green energy harnessing system</i></b> need assessment is performed as per work procedure 1.2 Farm green energy harnessing system work drawings are prepared as per work requirements 1.3 Farm green energy harnessing system design approvals are obtained as per work requirement 1.4 Farm green energy harnessing system bill of quantities are prepared as per approved design and drawings
2. Install farm green energy harnessing system	2.1 <b><i>Personal protective equipment</i></b> are worn based on OSHA 2.2 Farm green energy harnessing system tools and equipment are assembled as per work requirements. 2.3 Farm green energy harnessing system components are assembled as per work requirement 2.4 Farm green energy harnessing system is installed according to working drawings 2.5 Farm green energy harnessing systems are tested as per work requirements

3. Maintain farm green energy harnessing system	3.1 Personal protective equipment are worn based on OSHA 3.2 Farm green energy harnessing systems maintenance schedule is prepared as per work requirements 3.3 <b><i>Farm green energy harnessing systems tools and equipment</i></b> are assembled as per work requirement. 3.4 Farm green energy harnessing system is maintained according to operator's manual
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## RANGE

This section provides work environment and conditions to which the performance criteria apply.

It allows for different work environment and situations that will affect performance.

Variable	Range
1. Green energy harnessing system may include but are not limited to:	<ul style="list-style-type: none"> <li>• Solar powered system</li> <li>• Biogas plant</li> <li>• Hydropower system</li> <li>• Wind turbine system</li> </ul>
2. Personal protective equipment may include but are not limited to:	<ul style="list-style-type: none"> <li>• Gloves</li> <li>• Helmet</li> <li>• Safety boots</li> <li>• Overalls</li> <li>• Dust coat</li> <li>• Ear muffs</li> <li>• Face masks</li> </ul>
3. Farm green energy harnessing systems tools and equipment may include but are not limited to:	<ul style="list-style-type: none"> <li>• Hand tools</li> <li>• Land clearing machinery</li> <li>• Green energy installation kit</li> <li>• Construction tools and materials</li> <li>• Testing tools and accessories</li> <li>• Pipes and fittings</li> <li>• Excavators</li> </ul>

## **REQUIRED KNOWLEDGE AND SKILLS**

This section describes the knowledge and skills required for this unit of competency.

### **Required knowledge**

The individual needs to demonstrate knowledge of:

- Construction and maintenance of green energy technology structures
- Electrical installation
- Installation of pipes and fittings
- Use of construction machinery, tools and equipment
- Occupational Safety and Health Procedures

### **Required skills**

The individual needs to demonstrate the following skills:

### **Required Skills**

The individual needs to demonstrate the following skills:

- Logical thinking
- Problem solving
- Communication
- Analytical

## **EVIDENCE GUIDE**

This provides advice on assessment and must be read in conjunction with the performance criteria, required knowledge and skills range.

1. Critical aspects of competency	Assessment requires evidence that the candidate: 1.1 Worn personal protective equipment based on OSHA 1.2 Performed farm green energy harnessing system need assessment as per work procedure 1.3 Prepared farm green energy harnessing system working drawings as per work requirements 1.4 Prepared farm green energy harnessing system bill of quantities as per approved designs and drawings
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	<p>1.5 Installed farm green energy harnessing system according to work drawings</p> <p>1.6 Tested farm green energy harnessing system as per work requirements</p> <p>1.7 Prepared farm green energy harnessing system maintenance schedule as per work requirements</p> <p>1.8 Maintained farm green energy harnessing system according to operator's manual</p>
2. Resource implications	<p>The following resources should be provided:</p> <p>2.1 Appropriately simulated environment where assessment can take place</p> <p>2.2 Access to relevant work environment</p> <p>2.3 Resources relevant to the proposed activity or tasks</p>
3. Methods of assessment	<p>Competency in this unit may be assessed through:</p> <p>3.1 Practical's</p> <p>3.2 Projects</p> <p>3.3 Portfolio of Evidence</p> <p>3.4 Third Party Reports</p> <p>3.5 Written tests</p> <p>3.6 Oral assessment</p>
4. Context of assessment	<p>Competency may be assessed:</p> <p>4.1 Workplace</p> <p>4.2 Simulated work environment</p>
5. Guidance information for assessment	Holistic assessment with other units relevant to the industry sector and workplace job role is recommended.