

Domain

**POWER PLANT OPERATIONS**

Title:

**Demonstrate knowledge of wind power plant**

Level: 4

Credits: 6

### Purpose

This unit standard is intended for those who demonstrate knowledge of wind power plant. People credited with this unit standard are able to explain energy conversion from wind energy; and describe the operation of wind power plant.

This unit standard is intended for those who work as power station operators.

### Special Notes

1. Entry information:

Prerequisite

- *None*

2. This unit standard is to be delivered and assessed in the context of electrical power plant operation and should be assessed in conjunction with other relevant technical units selected from this domain.

3. To demonstrate competence, at a minimum, evidence is required of describing wind power plant operation.

4. Assessment evidence may be collected from a real workplace or a simulated workplace environment in which generation of power through wind power plant.

5. Glossary of terms:

- '*Specifications*' refers to any, or all of the following: manufacturers' specifications and recommendations, workplace specific requirements, national and international standards and legislations
- '*ISO*' refers to International Organization for Standards
- '*SANS*' refers South African National Standards.

6. Regulations and legislation relevant to this unit standard include the following:

- National Energy Fund Act of 2000
- ISO 14001 (Environmental Management Standard)
- Electricity Act No.4 of 2007
- SANS 10142-1 and SANS 10142-2 electrical wiring codes and all subsequent amendments to any of the above.

## **Quality Assurance Requirements**

This unit standard and others within this subfield may be awarded by institutions, which meet the accreditation requirements set by the Namibia Qualifications Authority and the Namibia Training Authority and which comply with the national assessment and moderation requirements. Details of specific accreditation requirements and the national assessment arrangements are available from the Namibia Qualifications Authority on [www.namqa.org](http://www.namqa.org) and the Namibia Training Authority on [www.nta.com.na](http://www.nta.com.na).

## **Elements and Performance Criteria**

### **Element 1: Explain energy conversion from wind energy**

#### **Performance Criteria**

- 1.1 Properties of wind energy are identified and described.
- 1.2 Wind-to-power principles are described.
- 1.3 Conversion of energy from wind energy is described.

### **Element 2: Describe the operation of wind power plant**

#### **Performance Criteria**

- 2.1 Generation principles and processes are explained.
- 2.2 Wind turbine power station sub-systems are identified and their operation is explained.
- 2.3 Monitoring of power generation is explained.
- 2.4 Optimization of power generation is explained.

## **Registration Data**

<b>Subfield:</b>	Electrical Engineering
<b>Date first registered:</b>	23 November 2023
<b>Date this version registered:</b>	23 November 2023
<b>Anticipated review:</b>	23 November 2028
<b>Body responsible for review:</b>	Namibia Training Authority