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DRAFT TANZANIA STANDARD

(Draft for comments only)

Wind energy generation systems - Part 12-1: Power performance measurements of electricity producing wind turbines

TANZANIA BUREAU OF STANDARDS

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1. National Foreword

This draft Tanzania Standard is being prepared by the Renewable Energy Technical Committee, under the supervision of the Electrotechnical Divisional Standards Committee (EDC)

This draft Tanzania Standard is an adoption of the International Standard **IEC 61400-12-1:2022**, *Wind energy generation systems - Part 12-1: Power performance measurements of electricity producing wind turbines,* which has been prepared by the International Electrotechnical Commission (IEC).

2. Terminology and conventions

Some terminologies and certain conventions are not identical with those used in Tanzania Standards; Attention is drawn especially to the following:

1) The comma has been used as a decimal marker for metric dimensions. In Tanzania Standards, it is current practice to use “full point” on the baseline as the decimal marker.

2) Where the words “International Standard(s)” appear, referring to this standard they should read “Tanzania Standard(s)”.

3. Scope

This draft Tanzania Standard specifies a procedure for measuring the power performance characteristics of a single wind turbine and applies to the testing of wind turbines of all types and sizes connected to the electrical power network. In addition, this document defines a procedure to be used to determine the power performance characteristics of small wind turbines when connected to either the electric power network or a battery bank. The procedure can be used for performance evaluation of specific wind turbines at specific locations, but equally the methodology can be used to make generic comparisons between different wind turbine models or different wind turbine settings when site-specific conditions and data filtering influences are taken into account. Considerations which can be of relevance to the assessment of uncertainty of power performance tests on multiple turbines are presented in Annex R on an informative basis.

This document defines a measurement methodology that requires the measured power curve and derived energy production figures to be supplemented by an assessment of uncertainty sources and their combined effects. Uncertainty sources of wind measurements are assessed from procedures described in the relevant wind measurement equipment standards while uncertainty of the power curve and annual energy production are assessed by procedures in this document.