



**The Gambia
Standards Bureau**

Rating of direct coupled photovoltaic (PV) pumping systems

ICS No.: 27.160

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DATE OF PUBLICATION

This Gambian Standard was Gazetted under the authority of the Bureau on 17 November 2017.

THE GAMBIA STANDARDS BUREAU

The Gambia Standards Bureau is a statutory Government specialized Agency established by The Gambia Standards Bureau Act 2010 to standardize products, methods, systems and for connected matters. Hence, the Bureau is the sole National Standardization Body. As such, it has been a member of International Standardization Bodies such as the International Organization for Standardization (ISO) since 2011, International Electrotechnical Commission (IEC) and the Standards and Metrology Institute for Islamic Countries (SMIIC) from 2012.

The objectives of the Bureau, as specified in its Act, are to: establish and promulgate standards for imported and locally-produced goods; facilitate domestic and international trade; foster and promote standards both for industrial efficiency and advancing economic development; promote the health and safety of consumers; enhance international cooperation in relation to standards and standardization. Thus, the National Quality Policy details the responsibilities of the Bureau in Standardization, Metrology and Conformity Assessment services in Testing, Inspection and Certification.

Therefore, the functions, of the Bureau are to define, prepare, publish, modify or amend Standards Specifications as well information-dissemination of standards. In addition to providing Testing, Inspection and Certification services for goods, systems and processes independently or in relation to conformity with its Standards Mark, the Bureau also conducts training and research. In Metrology, the Bureau serves as the custodian of primary national reference measurement standards through its National Metrology Laboratories and conducts calibration of measurement devices and physical standards.

The development of Gambian Standards (GAMS) is carried out by the Bureau through Technical Committees composed of a balanced representation of stakeholders, as may be appropriate to the subject in question. The Bureau ensures that Standards are developed in accordance with the *ISO_IEC_Guide_21-1_2005: Regional or National adoption of International Standards and other International deliverables* and the *World Trade Organization Code of good practice for the preparation, adoption and application of standards*. To the greatest extent possible, Gambian Standards are aligned to or are adoptions of relevant international standards.

For further information on and copies of Gambian Standards, please contact The Gambia Standards Bureau.

TECHNICAL COMMITTEE RESPONSIBLE: NATIONAL ELECTROTECHNICAL COMMITTEE

The National Electrotechnical Committee (NEC) developed this National Wiring Standard. The NEC was initially set up by PURA in 2008 when they became a member of IEC. Upon establishment of the Bureau and replacement of PURA at IEC, the Bureau took over the NEC in 2012 and began the work of development of standards in the electrotechnical field.

The NEC consists of representatives from the following Institutions/Organizations:

- Public Utilities Regulatory Authority
- National Water and Electricity Company
- Gambia Telecommunications Company
- Ministry of Energy
- Ministry of Information and Communication Infrastructure
- University of The Gambia
- Gambia Technical Training Institute
- New Gambia Industrialists
- ComAfrique Intelizon Initiative
- Renewable Energy Association of The Gambia
- Consumer Protection Association of The Gambia
- The Gambia Chamber of Commerce and Industry

The Gambia Standards Bureau is the Secretariat and Secretary to the NEC.

FOREWORD

- 1) The IEC (International Electrotechnical Commission) is a worldwide organization for standardization comprising all national electrotechnical committees (IEC National Committees). The object of the IEC is to promote international cooperation on all questions concerning standardization in the electrical and electronic fields. To this end and in addition to other activities, the IEC publishes International Standards. Their preparation is entrusted to technical committees; any IEC National Committee interested in the subject dealt with may participate in this preparatory work. International, governmental and non-governmental organizations liaising with the IEC also participate in this preparation. The IEC collaborates closely with the International Organization for Standardization (ISO) in accordance with conditions determined by agreement between the two organizations.
- 2) The formal decisions or agreements of the IEC on technical matters, prepared by technical committees on which all the National Committees having a special interest therein are represented, express, as nearly as possible, an international consensus of opinion on the subjects dealt with.
- 3) They have the form of recommendations for international use published in the form of standards, technical reports or guides and they are accepted by the National Committees in that sense.
- 4) In order to promote international unification, IEC National Committees undertake to apply IEC International Standards transparently to the maximum extent possible in their national and regional standards. Any divergence between the IEC Standard and the corresponding national or regional standard shall be clearly indicated in the latter.

International Standard IEC 1702 has been prepared by IEC technical committee 82: Solar photovoltaic energy systems.

The text of this standard is based on the following documents:

DIS	Report on voting
82(C0)30	82(C0)49

Full information on the voting for the approval of this standard can be found in the report on voting indicated in the above table.

1. Scope

This National Standard defines predicted short-term characteristics (instantaneous and for a typical daily period) of direct coupled photovoltaic (PV) water pumping systems. It also defines minimum actual performance values to be obtained on-site. It does not address PV pumping systems with batteries.

The parameters defining the photovoltaic power generating system (PVPGS) and the standard days, used to provide data in figure 1, should be in accordance with IEC standards, in preparation, on the reference solar day.