

**RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022**

ARRANGEMENT OF REGULATIONS

Regulation

Preliminary Provisions

1. Purpose of Regulations
2. Application of Regulations

Duties and Requirements

3. Duty to comply with requirements
4. Prohibition of manufacture, importation, offer for sale, sale, storage, donation, disposal, installation or use of inverter
5. Category of inverter
6. Efficiency star rating of inverter
7. Capacity and output waveform of inverter
8. Measurement methods
9. Use of circumvention device
10. Technical documentation
11. Labelling and information requirements

Registration of Inverters

12. Renewable Energy Product Register
13. Application for registration
14. Consideration of application
15. Grant of application

Duties of Dealers and Suppliers of Inverters

16. Duty of dealer to keep, maintain and provide technical documentation
17. Duty of supplier to keep, maintain and provide technical documentation
18. Duty of supplier to keep, maintain and provide Product Information Sheet
19. Duty of supplier to provide information for statistical purposes
20. Duty of supplier to ensure accuracy of information

**RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022**

21. Access to information on technical documentation and Product Information Sheet
22. Product brochure in respect of inverter

Information

23. Public information
24. Information in respect of mail order and other distance selling
25. Obligations of audio or audio-visual broadcasting service provider
26. Obligations of e-commerce platform
27. Misleading information
28. Restriction on disclosure of information

Powers of Enforcement

29. Power of enforcement authority to require technical documentation
30. Power of enforcement authority to inspect inverter
31. Power of enforcement authority to detain or seize record or inverter
32. Power of enforcement authority to test inverter

Detention, Re-Exportation and Seizure

33. Procedure for market surveillance and verification
34. Order to access premises to inspect, detain or seize inverter or record
35. Procedure for detention of inverter
36. Procedure for re-labelling of detained inverter
37. Procedure for re-exportation of imported inverter
38. Procedure for seizure of inverter

Petition and Compensation

39. Petition against seizure
40. Forfeiture and destruction of seized inverter
41. Compensation for loss of inverter or record seized
42. Recovery of expenses by enforcement authority

**RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022**

Miscellaneous Provisions

43. Offences and penalties
44. Interpretation
45. Transitional provision

SCHEDULES

FIRST SCHEDULE

Standards

SECOND SCHEDULE

Minimum Efficiency Standards

THIRD SCHEDULE

The Label

FOURTH SCHEDULE

Product Information Sheet

FIFTH SCHEDULE

Verification Procedure for Market Surveillance

**RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022**

IN exercise of the power conferred on the Minister responsible for Energy, acting on the recommendation of the Board, by paragraphs (d) and (e) of section 50 of the Renewable Energy Act, 2011 (Act 832), these Regulations are made this 28th day of June, 2022.

Preliminary Provisions

Purpose of Regulations

1. The purpose of these Regulations is to promote the efficient use of inverters in the country and mitigate related climate change by

- (a) providing for
 - (i) the enforcement of Standards set out in the First Schedule and the minimum efficiency standards set out in Part One of the Second Schedule;
 - (ii) the labelling of inverters;
 - (iii) supplementary product information on inverters; and
 - (iv) the registration of models of inverters in the Renewable Energy Product Register; and
- (b) prohibiting the manufacture, importation, offer for sale, sale, storage, donation, disposal, installation or use of an inverter that does not meet the minimum efficiency standards set out in Part One of the Second Schedule.

Application of Regulations

2. These Regulations apply to

- (a) an inverter intended for use in a
 - (i) stand-alone energy system; or
 - (ii) utility-interactive energy system;where the output of the inverter is a stable alternating current of constant frequency; and
- (b) a single-phase inverter or a three-phase inverter intended for use in a
 - (i) stand-alone energy system; or

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

(ii) utility-interactive energy system intended to be operated in parallel with an electric power system to supply power to common loads manufactured in the country or imported into the country for display, sale or use.

Duties and Requirements

Duty to comply with requirements

3. (1) A person who manufactures, imports, offers for sale, sells, stores, supplies, distributes, donates or otherwise disposes of an inverter for use in the country shall ensure that each model of the inverter

- (a) is registered with the Commission; and
- (b) meets the
 - (i) Standards set out in the First Schedule;
 - (ii) minimum efficiency standards set out in Part One of the Second Schedule;
 - (iii) labelling requirements set out in the Third Schedule; and
 - (iv) information requirements set out in the Fourth Schedule.

(2) A person who advertises an inverter shall comply with the provisions of Part Five of the Fourth Schedule.

Prohibition of manufacture, importation, offer for sale, sale, storage, donation, disposal, installation or use of inverter

4. (1) A person shall not manufacture, import, offer for sale, sell, store, donate, or otherwise dispose of, install or use an inverter in the country unless the inverter meets

- (a) the minimum efficiency standards as set out in Part One of the Second Schedule; and
- (b) the requirements of the Standards.

(2) An enforcement authority shall

- (a) detain, cause to be re-exported or seize and destroy an inverter imported for use in the country contrary to subregulation (1); or

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

- (b) seize and destroy an inverter manufactured for use in the country contrary to subregulation (1).

Category of inverter

5. The category of an inverter shall be determined in accordance with the categories set out in Part Two of the Fourth Schedule.

Efficiency star rating of inverter

6. The efficiency star rating of an inverter shall be determined in accordance with the ratings set out in Part One of the Second Schedule.

Capacity and output waveform of inverter

7. The manufacturer of an inverter shall ensure that the rated capacity in terms of the input power and output power in watts and the output waveform of an inverter is printed conspicuously and displayed on the base or side of the inverter.

Measurement methods

8. The information to be provided pursuant to regulations 10 and 11 shall be obtained by

- (a) a reliable, accurate and reproducible measurement which takes into account recognised state-of-the-art measurements; and
(b) calculation methods

in accordance with the Standards.

Use of circumvention device

9. (1) A manufacturer, an importer or an authorised representative of the manufacturer shall not use a circumvention device during the conduct of a test of an inverter.

(2) A person shall not manufacture, import, offer for sale, sell, store, donate, or otherwise dispose of, install or use an inverter which is designed to

- (a) detect that the inverter is being tested by recognising the test conditions or test cycle; or
(b) react specifically by automatically altering the performance of the inverter during the test with the aim of reaching a more favourable level for any of the parameters declared by

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

the manufacturer, importer or authorised representative of the manufacturer in the technical documentation or included in any other documentation provided.

(3) The efficiency of an inverter and any of the other declared parameters shall not deteriorate after a

- (a) software; or
- (b) firmware

update, when measured with the same test standard originally used for the declaration of conformity, except with the consent of the Commission and the Standards Authority, before the update.

(4) A manufacturer, an importer or an authorised representative of the manufacturer shall inform the Commission and the Standards Authority in writing, with reasons, prior to an update of the software or firmware.

Technical documentation

10. (1) A person shall not manufacture, import, offer for sale, sell, store, distribute, donate or otherwise dispose of an inverter for use in the country, unless that person has provided the Commission with sufficient technical documentation to enable the Commission

- (a) ascertain the accuracy of the information contained
 - (i) in the Product Information Sheet; or
 - (ii) on the label; and
- (b) register each model of the inverter in the Renewable Energy Product Register.

(2) The technical documentation referred to in subregulation (1) shall

- (a) be in the English language;
- (b) include the Product Information Sheet set out in Part One of the Fourth Schedule; and
- (c) contain the information set out in Part Three of the Fourth Schedule marked "Technical Documentation".

(3) The technical documentation shall

- (a) be prepared for each model of an inverter placed on the market; and

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

- (b) include
- (i) the name and address of the supplier;
 - (ii) the description of the inverter, for purposes of identification;
 - (iii) the model identifier of the manufacturer;
 - (iv) the relevant drawings on the main design features of the model and parameters of the inverter that affect the efficiency of the inverter;
 - (v) reports of relevant measurement tests carried out in compliance with the Standards;
 - (vi) details of calculations, extrapolations and tests carried out to verify the accuracy of calculations;
 - (vii) the installation and operating instructions; and
 - (viii) the period within which the model of the inverter was manufactured.

Labelling and information requirements

11. (1) A person shall not manufacture, import, offer for sale, sell, store, supply, distribute, donate or otherwise dispose of an inverter for use in the country, unless the inverter and the packaging of the inverter meet the following requirements:

- (a) the inverter shall bear a label
 - (i) in the form set out in the Third Schedule; and
 - (ii) placed on the base of the inverter;
- (b) the information in respect of the inverter indicated on the packaging of the inverter shall be in the English language;
- (c) the Product Information Sheet in respect of the inverter shall be as set out in Part One of the Fourth Schedule;
- (d) the label on the packaging containing an inverter shall
 - (i) contain the information set out in the Third Schedule; and
 - (ii) be printed in colour;
- (e) the labels on the inverter and the packaging of the inverter shall include the following information:

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

- (i) the Quick Response Code;
 - (ii) the name or trade mark of the manufacturer;
 - (iii) the model identifier of the manufacturer;
 - (iv) the efficiency star rating of the inverter, determined in accordance with the test procedures specified in the Standards;
 - (v) the input power or wattage of the inverter, measured in accordance with the test procedures specified in the Standards;
 - (vi) the output waveform of the inverter, determined in accordance with the test procedures specified in the Standards;
 - (vii) the sound power level of the inverter expressed in dB (A) re 1pW and rounded to the nearest integer;
 - (viii) the year of manufacture of the inverter;
 - (ix) the country of origin of the inverter; and
 - (x) the type of inverter;
- (f) the label on the inverter shall be printed in colour on a waterproof material and pasted conspicuously on the inverter;
- (g) the background of a label printed or pasted on each packaging containing the inverter shall be gold in colour;
- (h) all the stars on the label of the inverter shall be shaded in black; and
- (i) the text on the label of the inverter shall be black in colour.
- (2) Despite regulation 21, an update to the Standards shall take precedence over the requirements specified in paragraph (e) of subregulation (1) and the Second Schedule.
- (3) Where
- (a) a side of the packaging is not large enough to contain a label and the blank border; or
 - (b) a label would cover more than fifty per cent of the surface area of the largest side of a packaging,
- the label and the blank border shall be reduced to not less than forty per cent of the largest side of the packaging and pasted on the largest side of the packaging.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

(4) A person shall not remove the label on an inverter or the packaging containing an inverter before the first retail purchase of the inverter.

(5) For the purposes of this regulation, “first retail purchase” means the purchase of an inverter by an end user.

Registration of Inverters

Renewable Energy Product Register

12. (1) The Commission shall establish, keep and maintain a Renewable Energy Product Register.

(2) The Renewable Energy Product Register shall contain the information specified in subregulation (5) of regulation 13.

Application for registration

13. (1) A person who

- (a) manufactures an inverter in the country; or
- (b) imports an inverter into the country

for use in the country shall, prior to the manufacture or importation, ensure that each model of the inverter is registered with the Commission.

(2) A person who

- (a) manufactures an inverter in the country; or
- (b) imports an inverter into the country

for use in the country shall apply to the Commission for registration of the inverter.

(3) An application for registration under subregulation (2) shall be made in writing or electronically on the website of the Commission and accompanied with the prescribed fee.

(4) An application for registration shall be accompanied with a test report from an accredited test laboratory that demonstrates that

- (a) the inverter meets the minimum efficiency standards set out in the Second Schedule; and
- (b) the test report corresponds to the efficiency that is provided on the efficiency label of the inverter.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

(5) The following information shall be provided for each registration of a model of an inverter:

- (a) the brand or trademark, if any, used in connection with a supply of the model;
- (b) the model identifier issued by the manufacturer for each model covered by the registration;
- (c) the Product Information Sheet of the model;
- (d) the date the registration takes effect;
- (e) the unique identifier for the registration issued by the Commission;
- (f) the names and contact details of the applicant and contact person in relation to the registration;
- (g) if the model is to be registered as a replacement model of an earlier registered model, that fact and details to identify the replaced model, including the date the replacement was made;
- (h) if a model to be registered is affected by a replacement, that fact and details to identify the replaced model and replacement model, including the date the replacement was made;
- (i) any information specified in these Regulations in relation to that model of inverter; and
- (j) any other information the Commission may consider appropriate.

Consideration of application

14. (1) The Commission shall, on receipt of an application for registration of an inverter, consider the application.

(2) The Commission shall, in considering the application, have regard to the requirements specified in subregulation (5) of regulation 13.

Grant of application

15. (1) The Commission may, within fourteen days after receipt of an application, grant or refuse an application.

(2) Where the Commission decides to grant an application, the Commission shall

- (a) within three days after the date of the decision, inform the applicant, in writing or electronically as the case may be, of the decision; and

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

- (b) enter the information specified in subregulation (5) of regulation 13 in the Renewable Energy Product Register.
- (3) Where the Commission refuses to grant an application, the Commission shall within three days after the date of the decision communicate to the applicant, in writing or electronically as the case may be,
- (a) the reason for the refusal; and
 - (b) the applicable Standards the model of the inverter is required to meet.

Duties of Dealers and Suppliers of Inverters

Duty of dealer to keep, maintain and provide technical documentation

16. (1) A dealer shall keep and maintain technical documentation in respect of an inverter for a period of not less than two years after the date of manufacture or importation.

(2) A dealer shall, within two days after a request by an enforcement authority, provide the enforcement authority with technical documentation in respect of an inverter for inspection.

(3) Where a dealer fails to provide technical documentation in respect of an inverter within two days after the request, the enforcement authority shall detain the inverter.

(4) A dealer shall ensure that

- (a) each inverter, at the point of sale, including at trade fairs, bears the label provided by a supplier in accordance with regulation 3, with the label being displayed conspicuously on the face of the inverter;
- (b) in the event of distance selling, the label and Product Information Sheet are provided in accordance with the Third and Fourth Schedules;
- (c) an audio advertisement, including radio and local information broadcast network, on a specific model of an inverter where the brand, capacity, size, category or price is mentioned, contains information on the efficiency class and the range of efficiency classes available in accordance with Part Five of the Fourth Schedule;

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

- (d) a visual advertisement for a specific model of inverter, including an advertisement on the internet, contains information on the efficiency class and the range of efficiency classes available on the label, in accordance with Part Five of the Fourth Schedule; and
- (e) a technical promotional material concerning a specific model of inverter, including technical promotional material on the internet, which describes the specific technical parameters of the inverter, includes the
 - (i) efficiency class of that model; and
 - (ii) range of efficiency classes available on the label in accordance with Part Five of the Fourth Schedule.

Duty of supplier to keep, maintain and provide technical documentation

17. (1) A supplier shall keep and maintain technical documentation in respect of each model of an inverter for a period of not less than two years after the date of manufacture or importation.

(2) A supplier shall, on request by an enforcement authority, provide the enforcement authority with the technical documentation of the inverter for inspection.

(3) Where a supplier fails to provide technical documentation in respect of an inverter within two days after the request, the enforcement authority shall detain the inverter.

Duty of supplier to keep, maintain and provide Product Information Sheet

18. (1) A supplier shall keep and maintain in the possession of the supplier a Product Information Sheet in respect of each inverter in the form set out in Part One of the Fourth Schedule.

(2) A supplier shall, on request by an enforcement authority, provide the enforcement authority with a Product Information Sheet which shall be in the

- (a) English language; and
- (b) form set out in Part One of the Fourth Schedule.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

Duty of supplier to provide information for statistical purposes

19. (1) A person who manufactures in the country, imports into the country or exports out of the country an inverter or an assembly of components that incorporates an inverter shall provide the Commission with the following information not later than four months after the end of each year:

- (a) the number of inverters of each model that the person manufactured, exported or imported into the country in the relevant year;
- (b) the number of inverters of each model that the person sold in the country in the relevant year;
- (c) the number of inverters of each model that the person exported from the country in the relevant year;
- (d) the name of each model that the person discontinued
 - (i) manufacturing in the relevant year;
 - (ii) exporting in the relevant year; or
 - (iii) importing in the relevant year; and
- (e) a copy of any existing test report, or other performance data specified by the Commission, for each model specified under paragraph (d).

(2) Upon a written request by the Commission, a person who manufactures an inverter for use in the country or imports an inverter into the country shall provide the following information to the Commission not later than forty days after receiving the request:

- (a) the number of inverters in each product class specified by the Commission that the person sold to a purchaser in the country in each of the preceding three years; and
- (b) the performance characteristics of the inverters as specified in the request.

Duty of supplier to ensure accuracy of information

20. (1) A supplier shall ensure that the information indicated on a

- (a) Product Information Sheet; or
- (b) label

in respect of an inverter is accurate.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

(2) The duty imposed on a supplier under subregulation (1) does not affect any other right of action which a person may have by law against a person with respect to the inaccuracy of information on a Product Information Sheet or on a label.

Access to information on technical documentation and Product Information Sheet

21. (1) The information required under regulations 10, 11, 16, 17 and 18 shall be obtained in accordance with the test procedures required by the Standards.

(2) Information obtained in a manner other than in accordance with subregulation (1) shall, for the purposes of these Regulations, be invalid.

Product brochure in respect of inverter

22. Where a supplier provides a product brochure in respect of an inverter, the brochure shall contain a Product Information Sheet which shall be in the

- (a) English language; and
- (b) form set out in Part One of the Fourth Schedule.

Information

Public information

23. (1) The information provided by a supplier on the Product Information Sheet or on a label of an inverter is deemed public information.

(2) A supplier is deemed to have consented to the publication of the information indicated on a Product Information Sheet or label in respect of an inverter.

Information in respect of mail order and other distance selling

24. (1) Where a person offers an inverter for sale to another person in the country through a medium of communication including a mail order or any other distance selling medium, that person shall provide information in respect of the inverter.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

- (2) The information referred to in subregulation (1) shall
- (a) be in the English language;
 - (b) include the product registration number assigned by the Commission upon registration in the Renewable Energy Product Register;
 - (c) include the information set out in Part Four of the Fourth Schedule; and
 - (d) be written in a manner that is legible.

Obligations of audio or audio-visual broadcasting service provider

25. Where an audio or audio-visual broadcasting service provider advertises an inverter, and the information in the advertisement includes the brand, model, size, price and any other information that is specific to a particular model, that service provider shall ensure that

- (a) the advertisement has been vetted and approved by the Commission; and
- (b) the advertisement includes
 - (i) information on the efficiency star rating of the inverter;
 - (ii) a statement that the advertisement has been vetted and approved by the Commission; and
 - (iii) any other information required under Part Five of the Fourth Schedule.

Obligations of e-commerce platform

26. (1) A person shall not offer for sale, sell, supply, distribute or otherwise dispose of an inverter through a promotion on the internet, unless

- (a) the efficiency rating of the inverter is posted next to the price of the inverter; and
- (b) the label of the inverter is made available to consumers in the same medium of communication.

(2) Where an e-commerce service provider allows the direct sale of an inverter through the website of the service provider, the service provider shall

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

- (a) enable the display of the
 - (i) electronic label; and
 - (ii) electronic Product Information Sheet
 provided by the dealer on the display mechanism in accordance with Part Six of the Fourth Schedule; and
- (b) inform the dealer of the obligation to display the electronic label and electronic Product Information Sheet.

Misleading information

27. (1) A person shall not display a label, mark, symbol or inscription which relates to the efficiency of an inverter, if the display is likely to be

- (a) deceptive;
- (b) misleading; or
- (c) false.

(2) A person shall not broadcast an advertisement relating to the minimum efficiency of an inverter if the information in the advertisement is likely to be

- (a) deceptive;
- (b) misleading; or
- (c) false.

(3) Subregulations (1) and (2) do not apply to

- (a) a label;
- (b) a mark;
- (c) a symbol; or
- (d) an inscription

displayed under an environmental labelling scheme or endorsement labelling scheme.

Restriction on disclosure of information

28. (1) An enforcement authority shall not disclose information which consists of a

- (a) secret manufacturing process; or
- (b) trade secret

that was obtained by that enforcement authority in the course of the exercise of a power or duty conferred on the enforcement authority by these Regulations.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

(2) Despite subregulation (1), an enforcement authority may disclose information if

- (a) the information is public information; or
- (b) the disclosure is made
 - (i) for the purpose of facilitating the exercise of power by an enforcement authority under these Regulations or any other enactment;
 - (ii) in connection with the investigation of an offence; or
 - (iii) for the purpose of a civil or criminal proceeding.

Powers of Enforcement

Power of enforcement authority to require technical documentation

29. Where an enforcement authority suspects that the information given

- (a) in a Product Information Sheet; or
- (b) on a label,

in respect of an inverter is incorrect, that enforcement authority may, by notice served on the supplier or importer of the inverter, require the supplier or importer to furnish the enforcement authority with the technical documentation referred to in regulation 10 within the period stipulated in the notice.

Power of enforcement authority to inspect inverter

30. An enforcement authority may, at any reasonable time, enter any premises to inspect an inverter if the enforcement authority has reason to believe that the premises are being used for a purpose in contravention of these Regulations.

Power of enforcement authority to detain or seize record or inverter

31. (1) Subject to these Regulations, where an enforcement authority has reasonable cause to suspect that an offence has been committed or is being committed, that enforcement authority may

- (a) at any reasonable time enter premises other than a dwelling place, and conduct an inspection in accordance with subsection (3) of section 52 of the Energy Commission Act, 1997 (Act 541);

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

- (b) require a person engaged in a business or employed in connection with a business to produce a record in respect of an inverter;
- (c) detain or seize an inverter that is
 - (i) not labelled;
 - (ii) not properly labelled; or
 - (iii) labelled in a deceptive or misleading manner;
- (d) detain or seize an inverter that is imported without technical documentation which justifies the label affixed on the inverter;
- (e) detain or seize an inverter to enable tests to be carried out;
- (f) detain or seize a record to be used as evidence in proceedings in respect of an offence under these Regulations;
- (g) cause a container to be opened for the purpose of inspection;
- (h) break open a container, where implementation of paragraph (g) is not practicable; or
- (i) detain or seize an inverter if the model is not registered in the Renewable Energy Product Register.

(2) For the purposes of paragraphs (b) and (f) of subregulation (1), the enforcement authority may request for information stored electronically to be made available to the enforcement authority in printed form.

Power of enforcement authority to test inverter

32. (1) An enforcement authority may

- (a) obtain, remove and test an inverter; or
- (b) order the testing of an inverter

to ascertain whether a provision of these Regulations has been contravened.

(2) A person who suspects that an inverter offered for sale does not comply with the provisions of these Regulations may lodge a complaint with an enforcement authority.

(3) The enforcement authority may, upon receipt of a complaint under subregulation (2), detain and test the inverter.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

(4) The test to be conducted in respect of an inverter purchased, obtained or detained under regulation 31 shall be carried out in accordance with the test procedures required by the Standards.

Detention, Re-Exportation and Seizure

Procedure for market surveillance and verification

33. (1) Despite regulation 32, the Commission and the Standards Authority shall conduct market surveillance to ascertain whether an inverter on the market conforms to these Regulations.

(2) The Commission and the Standards Authority shall apply the verification procedure specified in the Fifth Schedule to conduct the market surveillance.

Order to access premises to inspect, detain or seize inverter or record

34. Where

- (a) an enforcement authority is refused entry to premises;
- (b) a notification to enter premises would defeat the purpose of the entry;
- (c) the premises to be entered are unoccupied; or
- (d) the occupier of premises to be entered is temporarily absent,

the enforcement authority may apply to a court for an order to enter the premises to inspect, detain or seize an inverter or record, if the enforcement authority has reasonable grounds to believe that an inverter or record on the premises may assist in the disclosure of evidence of the commission of an offence under these Regulations.

Procedure for detention of inverter

35. (1) An enforcement authority that exercises a power of detention under these Regulations shall immediately give a written notice to the person against whom the power has been exercised.

(2) The written notice shall state

- (a) the inverter that has been detained; and
- (b) the reason for the detention.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

(3) Where an enforcement authority detains an inverter, that inverter may be kept in a warehouse or other secure location reserved for the purpose.

Procedure for re-labelling of detained inverter

36. (1) Subject to these Regulations, where an enforcement authority detains an inverter under paragraph (e) of subregulation (1) of regulation 31, the enforcement authority shall

- (a) within two days after the detention, submit a sample of the inverter for testing; and
- (b) within two days after receipt of the test results, give a notice in writing to the supplier of the inverter to properly label the inverter if the minimum efficiency standards have been complied with.

(2) The notice under paragraph (b) of subregulation (1) shall require an inverter to be re-labelled in the required manner or exported out of the country within twenty-eight days.

(3) Where a supplier is required under subregulation (2) to re-label an inverter, the supplier shall re-label the inverter under the supervision of an officer authorised for the purpose by the Commission or the Standards Authority.

- (4) Where a supplier fails to
 - (a) re-label the inverter; or
 - (b) export the inverter

within twenty-eight days after the notice given under paragraph (b) of subregulation (1), the Commission shall, in consultation with the Standards Authority, destroy the inverter in a manner that the Commission may determine.

Procedure for re-exportation of imported inverter

37. (1) An enforcement authority that exercises a power of detention or seizure under these Regulations shall, within seven days after the detention or seizure, give an order in writing to the person against whom the power has been exercised to re-export the inverter.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

- (2) The order referred to in subregulation (1) shall state
- (a) the inverter to be re-exported;
 - (b) the reason for the order;
 - (c) the period within which the inverter is to be re-exported; and
 - (d) the fact that the supplier shall be responsible for the cost associated with the re-export.

(3) Where an inverter is kept within premises that are under the control of the owner of the inverter, the owner shall pay a security deposit against any breach of the re-exportation order.

(4) A security deposit under subregulation (3) shall be forfeited in the event of a breach of the re-exportation order, including the sale or destruction of an inverter which has been ordered to be re-exported.

(5) Where a person fails to pay a security deposit imposed under subregulation (3), the Commission may recover the amount imposed as a civil debt.

Procedure for seizure of inverter

38. (1) An enforcement authority that exercises a power of seizure under these Regulations shall, within seven days after the seizure, give a written notice to the person against whom the power has been exercised.

- (2) The written notice under subregulation (1) shall state
- (a) the inverter that has been seized;
 - (b) the reason for the seizure; and
 - (c) the venue and the period within which a petition against the seizure may be brought under regulation 39.

(3) Where an enforcement authority seizes an inverter, that inverter may be kept in a warehouse or other secure location reserved for the purpose.

(4) The owner of the inverter may be required to pay a deposit to cover the cost of destruction if the inverter does not meet the minimum efficiency standards.

(5) Where an inverter is kept within premises that are under the control of the owner of the inverter, the owner shall pay a security deposit against any breach of the seizure order.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

(6) A security deposit under subregulation (5) shall be forfeited in the event of a breach of the seizure order, including the sale or destruction of an inverter which has been seized.

(7) Where a person fails to pay a security deposit imposed under subregulation (5), the Commission may recover the amount imposed as a civil debt.

Petition and Compensation

Petition against seizure

39. (1) Subject to these Regulations, a person whose inverter is seized may, within seven days after receipt of the written notice specified in subregulation (1) of regulation 38, petition the Executive Secretary for the release of the seized inverter.

(2) The Executive Secretary shall, within seven days after receipt of a petition under subregulation (1),

(a) confirm the seizure; or

(b) order the release of the seized inverter to the petitioner on a specific day.

(3) A person who is dissatisfied with a decision of the Executive Secretary under subregulation (2) may appeal to the Board within seven days after the receipt of the decision.

(4) The Board shall within thirty days after the receipt of an appeal under subregulation (3),

(a) consult the Standards Authority; and

(b) take a decision on the appeal.

(5) The Board may release the seized inverter to the petitioner only if the Commission and the Standards Authority fail to prove that an offence under these Regulations has been committed.

(6) A person who is dissatisfied with

(a) a decision of the Board under subregulation (4) may, within fourteen days after the decision; or

(b) the failure of the Board to make a decision within thirty days after receipt of the appeal may, within fourteen days after the failure

apply to the court.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

Forfeiture and destruction of seized inverter

40. (1) Where an appeal to the Board under subregulation (3) of regulation 39 is not successful, the enforcement authority shall, within twenty-eight days after the decision of the Board, notify the owner of the inverter of the forfeiture and date of destruction of the seized inverter.

(2) The Commission may, in consultation with the Standards Authority, destroy a forfeited inverter in a manner that the Commission may determine.

(3) Where under subregulation (6) of regulation 39, the court upholds or affirms the decision of the Board to forfeit and destroy the inverter, the Commission shall destroy the inverter within the period given by the court.

Compensation for loss of inverter or record seized

41. (1) Where an enforcement authority exercises power under these Regulations to seize an inverter or record, that enforcement authority is liable to pay compensation to the owner of the inverter or record for a loss or damage caused by the exercise of the power, if

- (a) these Regulations have not been contravened in relation to the inverter or record; and
- (b) the loss or damage is not attributable to the neglect or the fault of the owner but an official of the Commission.

(2) Paragraph (b) of subregulation (1) does not apply in a case of *force majeure*.

(3) The compensation payable under subregulation (1) for a loss or damage shall not exceed the value of the inverter or record.

(4) A dispute as to the

- (a) right to compensation; or
- (b) amount of compensation payable to a person under subregulation (1),

shall be determined in the first instance by arbitration in accordance with the Alternative Dispute Resolution Act, 2010 (Act 798).

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

Recovery of expenses by enforcement authority

42. (1) Where an enforcement authority

- (a) seizes;
- (b) tests; or
- (c) supervises the re-labelling or destruction of

an inverter, that enforcement authority may surcharge the dealer or supplier of the inverter for the expenses incurred for the seizure, testing or supervision.

(2) Despite subregulation (1), where a court convicts a person of an offence in respect of the contravention of a provision of these Regulations, the court may, in addition to any order that the court may make as to costs and expenses, order the person convicted to reimburse the enforcement authority for the expenditure incurred by the enforcement authority in connection with the seizure.

Miscellaneous Provisions

Offences and penalties

43. (1) A person who

- (a) manufactures, imports, offers for sale, sells, stores, advertises, distributes or otherwise disposes of an inverter that
 - (i) does not meet a requirement in respect of the minimum efficiency standards contrary to regulation 3;
 - (ii) is not accompanied by the required technical documentation contrary to regulation 10;
 - (iii) is not labelled or properly labelled contrary to regulation 11; or
 - (iv) is labelled in a deceptive or misleading manner contrary to regulation 27;
- (b) uses a circumvention device contrary to regulation 9;
- (c) fails to comply with a labelling requirement contrary to regulation 11;
- (d) fails to provide technical documentation contrary to regulation 10, 16 or 17;
- (e) fails to register a model of an inverter contrary to regulation 13;

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

- (f) fails to provide a Product Information Sheet contrary to regulation 18;
 - (g) fails to provide information on an inverter contrary to regulation 19;
 - (h) provides inaccurate information contrary to regulation 20;
 - (i) advertises an inverter without providing accurate information on the efficiency star rating of the inverter contrary to regulation 25;
 - (j) offers for sale or sells an inverter over the internet or other distance selling medium without providing the information required contrary to regulation 24 or 26;
 - (k) provides misleading information contrary to regulation 27;
 - (l) obstructs or interferes with an enforcement authority in the exercise of the powers of that enforcement authority contrary to regulation 31;
 - (m) fails to comply with the requirements for re-labelling contrary to regulation 36; or
 - (n) violates a seizure order or notice contrary to regulation 38
- commits an offence and is liable on summary conviction to a fine of not less than one hundred and twenty-five penalty units and not more than two hundred and fifty penalty units or to a term of imprisonment of not less than six months and not more than twelve months or to both.

(2) A person who commits a second or subsequent offence under subregulation (1) after an earlier conviction under subregulation (1) is liable on summary conviction to a fine of not less than two hundred and fifty penalty units and not more than five hundred penalty units or to a term of imprisonment of not less than twelve months and not more than twenty-four months or to both.

(3) Where an offence under these Regulations is committed by a body corporate or by a member of a partnership or other firm, every director or officer of that body corporate or any member of the partnership or other person concerned with the management of the firm shall be deemed to have committed that offence and is liable, on summary conviction, to a fine of not less than five hundred penalty units and not more than one thousand penalty units, and is in addition liable to the payment of compensation for the damage resulting from the breach.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

- (4) A person shall not be convicted of an offence under subregulation (3), if it is proved that
- (a) the person exercised due diligence to secure compliance with the provisions of these Regulations, and
 - (b) the offence was committed without the knowledge, consent or connivance of that person.

Interpretation

44. In these Regulations, unless the context otherwise requires,

“accredited test laboratory” means a test laboratory that is recognised by the Standards Authority for laboratory testing and product certification;

“active mode” means the state in which an inverter is carrying out useful work in response to a prior or concurrent

(a) user input; or

(b) instruction over the network

which state includes active processing, seeking data from storage, memory or cache, including idle state time while awaiting further user input and before entering low power modes;

“annual total energy consumption” means the electricity consumed by a product over specified periods of time across defined power modes and states;

“audio or audio-visual broadcasting service provider” means a person who provides a service which delivers radio programmes or programmes with hearing and sight components to persons with equipment appropriate for receiving that service, whether the delivery is effected by means of or uses the radio frequency spectrum, cable, optical fibre, satellite, internet radio via streaming media on the internet, or any other means or a combination of those means intended to reach a wide audience;

“capacity” means the rated DC power input and the rated AC power output of the inverter measured in volt-amperes and watts respectively under test conditions specified by the Standards;

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

- “circumvention device” means any control, control device, software, component or part that alters the operating characteristics of an inverter during any test procedure, resulting in measurements that are unrepresentative of the true characteristics of the inverter that may occur during normal use under comparable conditions;
- “container” means a receptacle or enclosure for holding a product for storage, packaging and shipping;
- “court” means a court of competent jurisdiction;
- “dealer” means a retailer or other person who displays, offers for sale or sells an inverter to an end user;
- “distance selling” means the sale of goods or services without the buyer and seller being physically present simultaneously;
- “dwelling place” means place of residence;
- “electronic Product Information Sheet” means a document containing the following information in electronic format:
- (a) basic product information;
 - (b) efficiency information label; and
 - (c) special features and characteristics;
- “end user” means the first user of an inverter;
- “endorsement labelling scheme” includes a voluntary labelling scheme that guarantees the performance standards of an inverter, that are equal to or exceed the minimum threshold established by a recognised advisory body;
- “efficiency rating” means the ratio of the lighting service time to the effective power input for a set of rating conditions specified in the Standards;
- “enforcement authority” means
- (a) an authorised officer of the Commission;
 - (b) an authorised officer of the Standards Authority;
 - (c) an authorised officer of the Customs Division of the Ghana Revenue Authority;
 - (d) an authorised officer of the Police Service; or

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

- (e) any other authorised person designated by the Customs Division of the Ghana Revenue Authority, the Commission or the Standards Authority to carry out inspections for the purposes of these Regulations;
- “environmental labelling scheme” means a voluntary labelling scheme that provides detailed information on the environment in respect of the performance characteristics of an inverter;
- “GS” means Ghana Standards;
- “importer” means a person who places an inverter from a foreign country on the Ghanaian market and supplies that inverter for use;
- “inverter” means a device that converts direct current generation to conventional alternate current electricity compatible for use with the grid or grid-connected equipment;
- “label” means a material attached to an inverter the inscription of which contains information on the efficiency of the inverter;
- “model identifier” means the code, usually alphanumeric, which distinguishes a specific product model from other models with the same trademark or the same name of the manufacturer, importer or authorised representative;
- “premises” means land and any building, store, shop, apartment, or other structure on the land used for the storage of an inverter;
- “product brochure” includes a pamphlet or booklet that contains introductory information about a product;
- “Product Information Sheet” means a standard table of information related to an inverter;
- “renewable energy product” includes a solar panel, an inverter, a renewable energy battery and an improved biomass cookstove;
- “Renewable Energy Product Register” means an official record, kept and maintained by the Commission on performance information in respect of models of renewable energy products that have been certified by the Commission and the Standards Authority for use in Ghana;

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

“Quick Response Code” means a matrix barcode included on the energy label of a product model that links to the information of the model in the public part of the product register;

“rated voltage” means the voltage marked on an inverter in volts;

“record” includes a book, document, label, mark, symbol, inscription or information in electronic form;

“sale” means the exchange of a product for consideration including hire purchase, credit sale and purchase by instalment;

“Standards” means quality specifications for inverters as stipulated in the First Schedule;

“Standards Authority” means the Standards Authority established under the Standards Authority Act, 1973 (NRCD 173);

“supplier” means a person or organisation that provides a product and includes

(a) a manufacturer or the authorised representative of a manufacturer resident in the country; and

(b) an importer or the person who introduces an inverter on the Ghanaian market;

“supply” includes an offer to supply, contract to supply and an advertisement for the supply of an inverter but excludes the exhibition at a trade fair of an inverter that is prohibited by these Regulations;

“wattage” means the power marked on an inverter, in watts (W); and

“year” means the period from 1st January to 31st December.

Transitional provision

45. A person who, before the coming into force of these Regulations, has

(a) manufactured in the country; or

(b) imported into the country

an inverter that does not comply with these Regulations, shall, within one year after the coming into force of these Regulations, sell, distribute, donate or otherwise dispose of that inverter.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

SCHEDULES

FIRST SCHEDULE

STANDARDS

(regulations (1)(a)(i), 3(1)(b)(i) and 44)

1. GS IEC 61683:1999 - Photovoltaic (PV) Systems-Power conditioners - Procedures for efficiency measurements.
2. GS IEC 62109-1:2011 - Safety of power converters for use in Photovoltaic (PV) power systems - Part 1: General requirements.
3. GS IEC 62109-2:2011 - Safety of power converters for use in Photovoltaic (PV) power systems - Part 2: Particular requirements for inverters.
4. GS IEC 62116:2014 - Utility interconnected PV inverters- Test procedure of islanding prevention measures.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

SECOND SCHEDULE

MINIMUM EFFICIENCY STANDARDS

(regulations 1(a)(i), 1(b), 3(1)(b)(ii), 4(1)(a), 6, 11(2) and 13(4)(a))

PART ONE

(regulations 1(a)(i), 1(b), 3(1)(b)(ii), 4(1)(a), and 6)

Efficiency Specifications

The efficiency of an inverter is measured by the Power Efficiency (η_p) of the inverter defined as the ratio of active output power and the active input power and is calculated using the following formula expressed in per cent.

$$\eta_p = \frac{P_{aAC}}{P_{aDC}} \times 100\%$$

Where

η_p is the power efficiency

P_{aAC} is the alternating current (a.c.) active power

P_{aDC} is the direct current (d.c.) active power

The power efficiency is affected by several factors including the following:

- (a) power level;
- (b) input voltage;
- (c) output voltage;
- (d) power factor;

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

- (e) harmonic content;
- (f) load non-linearity;
- (g) temperature; and
- (h) output waveform.

The impact of all the factors on inverter efficiency therefore require that a standardised procedure for measurement be adopted to establish an acceptable technical basis for comparison of efficiency performance values of an inverter.

Efficiency (η) Star Rating of Inverters

The efficiency class for an inverter is determined on the basis of a 5-star rating of the Power Efficiency (η) of the inverter as set out in Table 1.

Table 1: Proposed Efficiency Star Rating

Efficiency Star Rating	Power Efficiency, η (%)
5-Star	$\eta > 95.0$
4-Star	$92.0 < \eta \leq 95.0$
3-Star	$89.0 < \eta \leq 92.0$
2-Star	$86.0 < \eta \leq 89.0$
1-Star	$83.0 \leq \eta \leq 86.0$

The proposed minimum efficiency of an inverter manufactured or imported into Ghana shall be eighty-three per cent and the inverter shall be compliant with the test methods and measurement procedures required by the Standards.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

PART TWO

Evaluation of Efficiency (η) Star Rating of Inverter

The Standards set out in the First Schedule provide the means to evaluate the power efficiency of an inverter by a direct measurement of input and output power under standard test conditions and the measurements to be done as Type Tests for each model of inverter.

The efficiency rating for the inverter, η , is therefore calculated from standard test measurement results using the following formula expressed in percentages:

$$\eta_p = \frac{P_{aAC}}{P_{aDC}} \times 100\%$$

Where

η_p is the power efficiency

P_{aAC} is the alternating current (a.c.) active power

P_{aDC} is the direct current (d.c.) active power

Active power, P_a , is calculated as

$$P_a = \frac{1}{T} \int^T v(t)i(t)dt = \frac{1}{T} \int^T p(t)dt$$

Where

$v(t)$ is the time-varying voltage

***RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022***

$i(t)$ is the time-varying current

$p(t)$ is the time-varying active power

$\int_{.q}^T q$ is the integration time (duration of one cycle)

The power efficiency of an inverter is sensitive to the harmonic content of the direct current voltage and current parameters at the inverter input and the quality of the alternative current sinusoidal, whether voltage or current waves, produced at the output terminals of the inverter.

Details of the total harmonic tests and results obtained shall be provided in the Product Information Sheet and the waveform pattern type indicated on the label.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

THIRD SCHEDULE

THE LABEL

(regulations 3(1)(b)(iii), 11(1)(a)(i), 11(1)(d)(i) and 16(4)(b))

1. Label design

The design of the label for an inverter shall be in accordance with Figure 1 and shall include the information required by the notes.

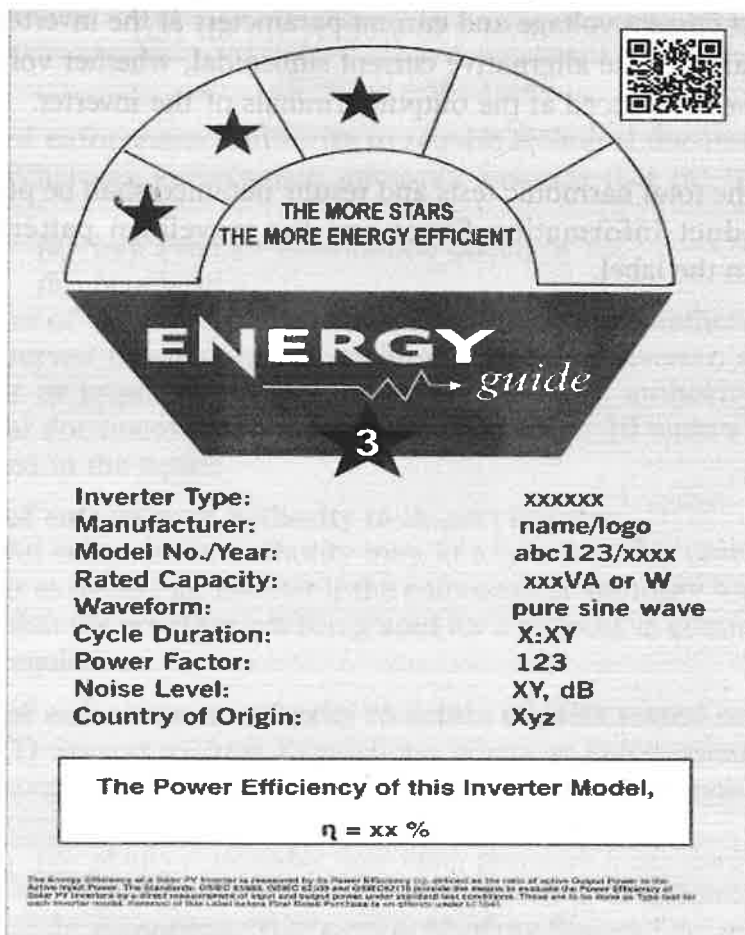


Figure 1: Label of Inverter

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

2. Notes to Figure 1

The following notes define the information to be included on the label:

- (a) the Quick Response Code;
- (b) the type of inverter: (XXX);
- (c) the model identifier of the manufacturer;
- (d) the name or trade mark of the supplier;
- (e) the country of origin;
- (f) the power efficiency star rating of the inverter (marked “%”);
- (g) the rated (input) d.c. bus voltage or range (marked “V” or “volt”);
- (h) the rated (output) a.c. voltage (marked “V”);
- (i) the rated frequency (marked “Hz”);
- (j) the rated current (marked “Amps”);
- (k) the rated capacity - input or output power (marked “VA” or “Watts”);
- (l) the waveform;
- (m) the power factor (marked “p.f.”);
- (n) the noise level;
- (o) the ambient temperature; and
- (p) the Ingress Protection (IP) rating of the inverter.

3. Printing

- (1) Figure 2 defines aspects of the label.
- (2) The dimensions of the labels shall be in accordance with the illustration in Figure 2 and shall be placed on the side or container of the inverter.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

- (3) Colours are to be used on the label in accordance with the following:
 - (a) all text shall be in black or gold as illustrated;
 - (b) the background shall be gold;
 - (c) all stars shall be in black; and
 - (d) the border line shall be in black.

4. Dimensions of labels

The dimensions of the labels are shown in Figure 2.

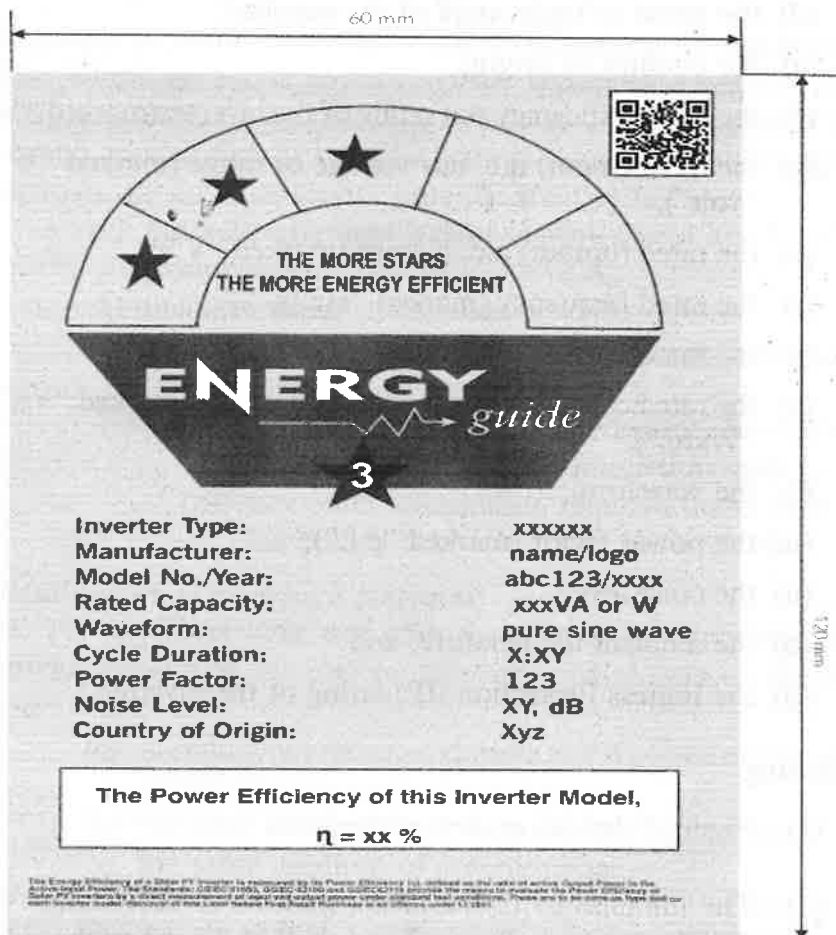


Figure 2: Label dimensions for inverters

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

FOURTH SCHEDULE

PRODUCT INFORMATION SHEET

*(regulations 3(1)(b)(iv), 3(2), 5, 10(2)(b) and (c), 11(1)(c), 16(4)(b), (c),
(d) and (e), 18(1), 18(2)(b), 22(b), 24(2)(c), 25(b)(iii), 26(2)(a))*

PART ONE

(regulations 10(2)(b), 11(1)(c), 18(1), 18(2)(b) and 22(b))

The Product Information Sheet shall contain the information specified below. The information may be given in the form of a table covering a number of inverters supplied by the same supplier and in the following order:

- (a) the name or trade mark of supplier;
- (b) the model identifier of supplier;
- (c) the type or category of inverter;
- (d) the rated capacity in watts of the inverter;
- (e) the efficiency class of the model;
- (f) the minimum duration of the guarantee offered by the manufacturer regarding sound power levels at standard rating conditions;
- (g) the references to the standards and other technical specifications applied, where appropriate;
- (h) the technical parameters, standards and test methods used for measurements and the test results obtained and used for determining the efficiency performance rating of the inverter model;
- (i) the user instructions including disposal, if necessary; and

**RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022**

- (j) the weblink to the website of the manufacturer where the information on the model of the inverter is found.

**PART TWO
(regulation 5)**

Category of Inverter

Description in information sheet	Category	(Tick as appropriate)
Inverter technology	String (or centralized)	
	Power optimizer Systems	
	Microinverters	
Inverter Type (by connectivity)	Off-grid	
	On-grid	
	Hybrid (on/off Grid)	
Waveform of output current	Pure (true) sine wave	
	Modified square wave	
	Square wave	
Recommended type of use	Residential or Non-residential	
Rated current		
Rated capacity		
Rated power efficiency		
Conversion factor		
Power factor used for the test		
Recommended Temperature range for efficient performance		

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

PART THREE
(regulation 10(2)(c))

Technical documentation

The technical documentation referred to in regulation 10 shall include the following elements:

- (a) the information as set out in Part One of this Schedule; and
- (b) the information as set out in Part Two of this Schedule in addition to the following:
 - (i) a general description of the inverter model, to enable the inverter to be unequivocally and easily identified;
 - (ii) the references to the Standards applied;
 - (iii) calculation methods, measurement standards and specifications used;
 - (iv) identification and signature of the person empowered to bind the supplier;
 - (v) the technical parameters for measurements established in accordance with the Second Schedule;
 - (vi) overall dimensions; and
 - (vii) sound power levels expressed in dB(A) re 1 pW, rounded to the nearest integer.

A supplier may include additional information at the end of the above list.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

Where the information included in the technical documentation file for a particular inverter model has been obtained by calculation on the basis of design, or extrapolation from other equivalent products, or both, the documentation shall include details of such calculations or extrapolations, or both, and of tests undertaken by a supplier to verify the accuracy of the calculations undertaken. The information shall also include a list of all other equivalent product models where the information was obtained on the same basis.

PART FOUR
(regulation 24(2)(c))

Mail Order and other Distance Selling

1. Mail order catalogues and other communication shall contain the following information given in the order specified below:
 - (a) the efficiency class of the model as defined in the Second Schedule;
 - (b) the rated capacity in VA (input) or W(output); and
 - (c) sound power levels expressed in dB(A) re1 pW, rounded to the nearest integer.
2. Where other information contained in the Product Information Sheet is also provided, it shall be in the form and order set out in Part One of this Schedule.
3. The size and font in which all the information referred to in paragraph 1 is printed shall be legible.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

PART FIVE

(regulations 3(2), 16(4)(c), (d) and (e) and 25(b)(iii))

Information to be provided in audio advertisements, visual advertisements, in technical promotional material, in distance selling, except distance selling on the internet

1. In an audio advertisement, for the purposes of ensuring conformity with the requirements laid down in subregulation (2) of regulation 3, the efficiency class of the model of inverter being advertised and the range of efficiency classes available on the market shall be stated in the advertisement.
2. In a visual advertisement, for the purposes of ensuring conformity with the requirements laid down in subregulation (2) of regulation 3, the efficiency class and the range of efficiency classes available on the label shall be shown as set out in paragraph 5 of this Part.
3. In technical promotional material, for the purposes of ensuring conformity with the requirements laid down in subregulation (2) of regulation 3, the efficiency class and the range of efficiency classes available on the label shall be shown as set out in paragraph 5 of this Part.
4. Any paper-based distance selling shall show the efficiency class and the range of efficiency classes available on the label as set out in paragraph 5 of this Part.
5. The efficiency class and the range of efficiency classes shall be shown, as indicated in Figure 1, with
 - (a) an arrow, containing the letter of the efficiency class in hundred per cent white, Calibri Bold and in a font size at least equivalent to the font of the price, when the price is shown;

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

- (b) the colour of the box shall be gold;
- (c) the range of available efficiency classes in hundred per cent black; and
- (d) the size shall be such that the box is clearly visible and legible.

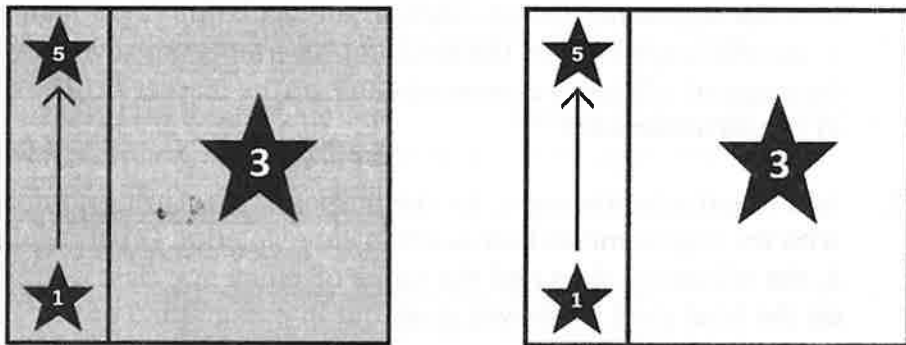


Figure 1: Coloured/monochrome Star Rating with range of efficiency classes indicated

- 6. The number embedded in the black star corresponding with the efficiency class of the product star shall be in hundred per cent white and positioned in the center of the black star in the box, with a border of 0.5pt in hundred per cent black placed around the box and the star showing the efficiency star rating class.
- 7. By way of derogation, if the visual advertisement, technical promotional material or paper-based distance selling is printed in monochrome, the box can be in monochrome in that visual advertisement, technical promotional material or paper-based distance selling.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

8. Telemarketing-based distance selling shall specifically inform the customer of the efficiency class of the product and of the range of efficiency classes available on the label, and that the customer can access the full label and the Product Information Sheet through a free access website, the public part of the Renewable Energy Product Register of the Commission or by requesting a printed copy.
9. For all the situations mentioned in paragraphs 2 to 4 and paragraph 8, it shall be possible for the customer to obtain, on request, a printed copy of the label and the Product Information Sheet.

PART SIX

(regulation 26(2)(a))

Information to be provided in the case of distance selling through the Internet

1. The appropriate label made available by suppliers in accordance with the Third Schedule shall be shown on the display mechanism in proximity to the price of the product.
2. The size shall be such that the label is clearly visible and legible and shall be proportionate to the size specified in the Third Schedule.
3. The label may be displayed using a nested display, in which case the image used for accessing the label shall comply with the specifications laid down in paragraph 5 of this Part.
4. If nested display is applied, the label shall appear on the first mouse click, mouse roll-over or tactile screen expansion on the image.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

5. The image used for accessing the label in the case of nested display, as indicated in Figure 2, shall
- be a box in gold colour with a black star and an embedded number corresponding to the efficiency star rating of the product on the label;
 - indicate the efficiency star rating of the product in the box in hundred per cent black, Calibri Bold and in a font size equivalent to that of the price;
 - have the range of available efficiency classes in hundred per cent black; and
 - have one of the following two formats, and the size of the image shall be such that the box is clearly visible and legible. The number showing the efficiency star rating shall be positioned in the centre of the box, with a visible border in hundred per cent black placed around the box and the number of the efficiency star rating:

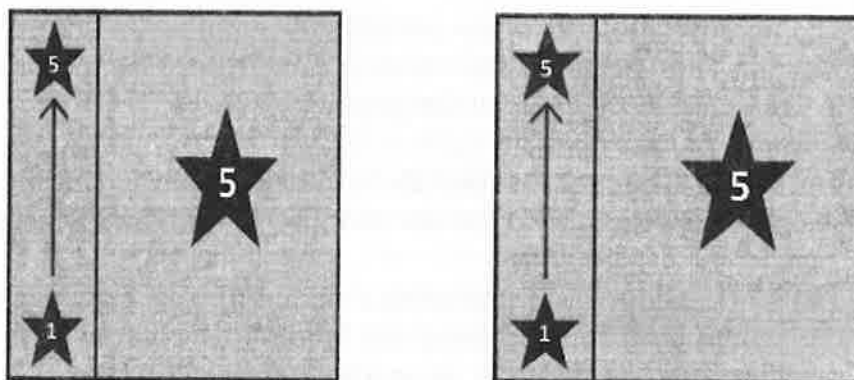


Figure 2: Coloured Star-Rating with Range of Efficiency Ratings indicated

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

6. In the case of a nested display, the sequence of display of the label shall be as follows:
 - (a) the image referred to in paragraph 5 of this Part shall be shown on the display mechanism in proximity to the price of the product;
 - (b) the image shall link to the label set out in the Third Schedule;
 - (c) the label shall be displayed after a mouse click, mouse roll-over or tactile screen expansion on the image;
 - (d) the label shall be displayed by pop up, new tab, new page or inset screen display;
 - (e) for magnification of the label on tactile screens, the device conventions for tactile magnification shall apply;
 - (f) the label shall cease to be displayed by means of a close option or other standard closing mechanism; and
 - (g) the alternative text for the graphic, to be displayed on failure to display the label, shall be the efficiency class of the product in a font size equivalent to that of the price.
7. The electronic Product Information Sheet made available by suppliers in accordance with subregulation (2) of regulation 26 shall be shown on the display mechanism in proximity to the price of the product. The size shall be such that the Product Information Sheet is clearly visible and legible. The Product Information Sheet may be displayed using a nested display or by referring to the product database, in which case the link used for accessing the Product Information Sheet shall clearly and legibly indicate 'Product Information Sheet'. If a nested display is used, the Product Information Sheet shall appear on the first mouse click, mouse roll-over or tactile screen expansion on the link.

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

FIFTH SCHEDULE

VERIFICATION PROCEDURE FOR MARKET SURVEILLANCE
(regulation 33(2))

1. The verification tolerances set out in this Schedule relate only to the verification of the declared parameters by the Commission and the Standards Authority and shall not be used by the supplier as an allowed tolerance to establish the values in the technical documentation.
2. The values and classes on the label or in the Product Information Sheet shall not be more favourable for the supplier than the values reported in the Technical Documentation.
3. Where a model has been designed to be able to detect that the model is being tested by recognising the test conditions or test cycle, and to react specifically by automatically altering the performance of the model during the test with the objective of reaching a more favourable level for any of the parameters specified in these Regulations or included in the technical documentation or included in any of the documentation provided, the model and all equivalent models shall be considered not compliant.
4. When verifying the compliance of a product model with the requirements laid down in these Regulations, the Commission and the Standards Authority shall apply the following procedure:
 - (a) the Commission and the Standards Authority shall verify one single unit of the model;
 - (b) the model of the inverter shall be considered to comply with the provisions set out in Table 1 of the Second Schedule, if efficiency is not less than the declared value minus 0.05%;
 - (c) the efficiency shall be established in accordance with the test procedures in the Second Schedule;

*RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022*

- (d) the model of the inverter shall be considered to comply with the provisions set out in these Regulations, as applicable, if the maximum sound power level does not exceed more than 2 dB(A) of the declared value;
- (e) if the result referred to in paragraph (b) is not achieved, the Commission and the Standards Authority shall randomly select three additional units of the same model for testing;
- (f) the model of the inverter shall be considered to comply with the provisions set out in Table 1 of the Second Schedule if the average of the three units for the efficiency is not less than the declared value minus 0.05%;
- (g) the efficiency values shall be established in accordance with the Second Schedule; and
- (h) if the results referred to in paragraph (f) are not achieved, the model shall be considered not to comply with these Regulations.

HON. DR. MATTHEW OPOKU PREMPEH

Minister responsible for Energy

***RENEWABLE ENERGY (STANDARDS AND LABELLING)
(INVERTERS) REGULATIONS, 2022***

Date of *Gazette* notification: 5th July, 2022.

Entry into force: 2nd November, 2022.