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IN exercise of the power conferred on the Minister responsible for Energy by subparagraph (i) of paragraph (a) of subsection (1) of section 56 of the Energy Commission Act, 1997 (Act 541) and on the advice of the Board, 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 and conservation of energy 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 energy performance standards set out in Part One of the Second Schedule;
 - (ii) the labelling of electric mains-operated industrial fans;
 - (iii) supplementary product information on electric mains-operated industrial fans; and
 - (iv) the registration of models of industrial fans in the Appliance Energy Efficiency Register; and
- (b) prohibiting the manufacture, importation, offer for sale, sale, storage, donation, disposal, installation or use of an industrial fan that does not meet the minimum energy performance standards set out in Part One of the Second Schedule.

Application of Regulations

2. (1) These Regulations apply to an industrial fan
- (a) with electric input power in the range of 0.125 kW to 500 kW; or
 - (b) integrated in other energy-related products manufactured in the country or imported into the country for display, sale or use.
- (2) These Regulations do not apply to
- (a) a box industrial fan;
 - (b) a powered roof ventilator;
 - (c) an air curtain;

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- (d) an industrial fan integrated in
 - (i) a product with a sole electric motor of not more than 3 kW, where the industrial fan is fixed on the same shaft used for driving the main functionality;
 - (ii) a laundry and washer dryer with not more than 3 kW maximum electrical input power; or
 - (iii) a kitchen hood with less than 280 W total maximum electrical input power attributable to the industrial fan;
- (e) an industrial fan which is designed
 - (i) specifically, to operate in a potentially explosive atmosphere; and
 - (ii) for emergency use only, at short-time duty, with regard to fire safety requirements; or
- (f) an industrial fan designed specifically to operate
 - (i) where operating temperatures of the air being moved exceed 100 °C;
 - (ii) where operating ambient temperature for the motor is located outside;
 - (iii) where the annual average temperature of the air being moved or the operating ambient temperature for the motor, if located outside the air stream, is lower than - 40 °C;
 - (iv) with a supply voltage above 1000 V AC or 1 500 V DC;
 - (v) in a toxic, highly corrosive or flammable environment; or
 - (vi) in an environment with abrasive substances.

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 industrial fan for use in the country shall ensure that each model of the industrial fan

- (a) is registered with the Commission; and
- (b) meets the

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- (i) Standards set out in the First Schedule;
- (ii) minimum energy performance 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 industrial fan 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 industrial fan

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

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

(2) An enforcement authority shall

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

Category of industrial fan

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

Minimum energy performance standard of industrial fan

6. The minimum energy performance standard of an industrial fan shall be determined in accordance with the methods and procedures set out in Part One of the Second Schedule.

Voltage, input power or wattage of industrial fan

7. The manufacturer of an industrial fan shall ensure that the rated voltage, input power or wattage of that industrial fan is printed conspicuously and displayed on the base of the industrial fan.

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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 industrial fan.

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

(a) detect that the industrial fan is being tested by recognising the test conditions or test cycle; or

(b) react specifically by automatically altering the performance of the industrial fan during the test with the aim of reaching a more favourable level for any of the parameters declared by the manufacturer, importer or authorised representative of the manufacturer, in the technical documentation or included in any other documentation provided.

(3) The energy consumption of an industrial fan 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.

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Technical documentation

10. (1) A person shall not manufacture, import, offer for sale, sell, store, distribute, donate or otherwise dispose of an industrial fan 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 industrial fan in the Appliance Energy Efficiency 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 industrial fan placed on the market; and

(b) include

(i) the name and address of the supplier;

(ii) the description of the industrial fan, 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 industrial fan that affect the energy consumption of the industrial fan;

(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

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(viii) the period within which the model of the industrial fan 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 industrial fan for use in the country unless the industrial fan and the packaging of the industrial fan meet the following requirements:

- (a) the industrial fan shall bear a label
 - (i) in the form set out in the Third Schedule; and
 - (ii) placed on the industrial fan;
- (b) the information in respect of the industrial fan indicated on the packaging of the industrial fan shall be in the English language;
- (c) the Product Information Sheet in respect of the industrial fan shall be as set out in Part One of the Fourth Schedule;
- (d) the label on the packaging containing the industrial fan shall
 - (i) contain the information set out in the Third Schedule; and
 - (ii) be printed in colour;
- (e) the labels on the industrial fan and the packaging of the industrial fan shall include the following information:
 - (i) the Quick Response Code;
 - (ii) the name or trade mark of the manufacturer;
 - (iii) the model identifier of the manufacturer;
 - (iv) the year of manufacture of the industrial fan;
 - (v) the type of industrial fan;
 - (vi) the rated input power or wattage of the industrial fan measured in accordance with the test procedures specified in the Standards;
 - (vii) the overall efficiency, η_e , of the industrial fan measured in accordance with Part Two of the Second Schedule;
 - (viii) the rated air volume flow rate and pressure of the industrial fan at optimum operating point measured in accordance with Part Two of the Second Schedule;

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- (ix) the rated rotational speed per minute at optimum energy efficiency point of the industrial fan;
 - (x) the efficiency grade of the industrial fan at optimum energy efficiency point; and
 - (xi) the country of origin or manufacture of the industrial fan;
- (f) the labels on the industrial fan shall be printed in colour on a waterproof material and pasted conspicuously on the industrial fan;
- (g) the background of a label printed or pasted on each packaging containing the industrial fan shall be gold in colour; and
- (h) the text on the label of the industrial fan 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 Part Two of 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.

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

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

Registration of Industrial Fans

Appliance Energy Efficiency Register

12. (1) The Commission shall establish, keep and maintain an Appliance Energy Efficiency Register.

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

Application for registration

13. (1) A person who

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

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

(2) A person who

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

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

(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 industrial fan meets the minimum energy performance standards set out in the Second Schedule; and
- (b) the test report corresponds with the energy consumption that is provided on the energy efficiency label of the industrial fan.

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

- (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) a 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;

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- (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 industrial fan; 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 industrial fan, 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

(b) enter the information specified in subregulation (5) of regulation 13 in the Appliance Energy Efficiency 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 industrial fan is required to meet.

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Duties of Dealers and Suppliers of Industrial Fans

Duty of dealer to keep, maintain and provide technical documentation

16. (1) A dealer shall keep and maintain technical documentation in respect of a model of an industrial fan 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 industrial fan for inspection.

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

(4) A dealer shall ensure that

- (a) each industrial fan, 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;
- (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 industrial fan where the brand, size, category or price is mentioned, contains information on the range of overall efficiency of the models available in accordance with Part Five of the Fourth Schedule;
- (d) a visual advertisement for a specific model of industrial fan, including an advertisement on the internet contains information on the range of overall efficiency of the models available on the label, in accordance with Part Five of the Fourth Schedule; and
- (e) a technical promotional material concerning a specific model of industrial fan, including technical promotional material on the internet, which describes the specific technical parameters of the industrial fan includes
 - (i) the overall efficiency class of that model; and

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- (ii) the overall efficiency of models 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 industrial fan 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 technical documentation of the industrial fan for inspection.

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

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

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

(2) A supplier shall, on request by an enforcement authority, provide that 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.

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 industrial fan or an assembly of components that incorporates an industrial fan shall provide the Commission with the following information not later than four months after the end of each year:

(a) the number of industrial fans of each model that the person manufactured, exported or imported into the country in the relevant year;

(b) the number of industrial fans of each model that the person sold in the country in the relevant year;

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- (c) the number of industrial fans of each model that the person exported from the country in the relevant year;
- (d) the name of each model of industrial fan 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 energy 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 industrial fan for use in the country or imports an industrial fan into the country shall provide the following information to the Commission not later than forty days after receiving the request:

- (a) the number of industrial fans 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 energy performance characteristics of the industrial fans 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 industrial fan is accurate.

(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.

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(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 industrial fan

22. Where a supplier provides a product brochure in respect of an industrial fan, 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 industrial fan 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 industrial fan.

Information in respect of mail order and other distance selling

24. (1) Where a person offers an industrial fan 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 industrial fan.

- (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 Appliance Energy Efficiency 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 industrial fan, and the information in the advertisement

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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 minimum energy performance standards of the industrial fan;
 - (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, donate or otherwise dispose of an industrial fan through a promotion on the internet unless

- (a) the minimum energy performance of the industrial fan is posted next to the price of the industrial fan; and
- (b) the label of the industrial fan is made available to consumers in the same medium of communication.

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

- (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 energy consumption of an industrial fan, if the display is likely to be

- (a) deceptive;

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

(2) A person shall not broadcast an advertisement relating to the energy performance of an industrial fan 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 an 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.

(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.

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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 industrial fan is incorrect, that enforcement authority may, by notice served on the supplier or importer of the industrial fan, 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 industrial fan

30. An enforcement authority may, at any reasonable time, enter any premises to inspect an industrial fan 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 industrial fan

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 Act;
- (b) require a person engaged in a business or employed in connection with a business to produce a record in respect of an industrial fan;
- (c) detain or seize an industrial fan that is
 - (i) not labelled,
 - (ii) not properly labelled, or
 - (iii) labelled in a deceptive or misleading manner;
- (d) detain or seize an industrial fan that is imported without technical documentation which justifies the label affixed on the industrial fan;

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- (e) detain or seize an industrial fan 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 industrial fan if the model is not registered in the Appliance Energy Efficiency 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 industrial fan

32. (1) An enforcement authority may

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

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

(2) A person who suspects that an industrial fan 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 industrial fan.

(4) The test to be conducted in respect of an industrial fan 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 industrial fan 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.

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Order to access premises to inspect, detain or seize industrial fan 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 industrial fan or record if the enforcement authority has reasonable grounds to believe that an industrial fan 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 industrial fan

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 industrial fan that has been detained; and
- (b) the reason for the detention.

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

Procedure for re-labelling of detained industrial fan

36. (1) Subject to these Regulations, where an enforcement authority detains an industrial fan 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 industrial fan for testing; and
- (b) within two days after receipt of the test results, give a notice in writing to the supplier of the industrial fan to properly label the industrial fan if the minimum energy performance standards have been complied with.

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(2) The notice under paragraph (b) of subregulation (1) shall require an industrial fan 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 industrial fan, the supplier shall re-label the industrial fan 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 industrial fan; or
 - (b) export the industrial fan

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 industrial fan in a manner that the Commission may determine.

Procedure for re-exportation of imported industrial fan

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 industrial fan.

- (2) The order referred to in subregulation (1) shall state
- (a) the industrial fan to be re-exported;
 - (b) the reason for the order;
 - (c) the period within which the industrial fan 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 industrial fan is kept within premises that are under the control of the owner of the industrial fan, 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 industrial fan 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.

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Procedure for seizure of industrial fan

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 shall state

(a) the industrial fan 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 industrial fan, that industrial fan may be kept in a warehouse or other secure location reserved for the purpose.

(4) The owner of the industrial fan may be required to pay a deposit to cover the cost of destruction, if the industrial fan does not meet the minimum energy performance standards.

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

(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 industrial fan 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 industrial fan 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 industrial fan.

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

(a) confirm the seizure; or

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(b) order the release of the seized industrial fan 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 industrial fan 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.

Forfeiture and destruction of seized industrial fan

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 industrial fan of the forfeiture and date of destruction of the seized industrial fan.

(2) The Commission may, in consultation with the Standards Authority, destroy a forfeited industrial fan 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 industrial fan, the Commission shall destroy the industrial fan within the period given by the court.

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Compensation for loss of industrial fan or record seized

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

- (a) these Regulations have not been contravened in relation to the industrial fan 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 industrial fan 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).

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 industrial fan, that enforcement authority may surcharge the dealer or supplier of the industrial fan 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 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.

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Miscellaneous Provisions

Offences and penalties

43. (1) A person who

- (a) manufactures, imports, offers for sale, sells, stores, advertises, distributes, donates or otherwise disposes of an industrial fan that
 - (i) does not meet a requirement in respect of the minimum energy performance 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;
 - (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 industrial fan contrary to regulation 13;
- (f) fails to provide a Product Information Sheet contrary to regulation 18;
- (g) fails to provide information on an industrial fan contrary to regulation 19;
- (h) provides inaccurate information contrary to regulation 20;
- (i) advertises an industrial fan without providing accurate information on the minimum energy performance standards contrary to regulation 25;
- (j) offers for sale or sells an industrial fan over the internet or other distance selling medium 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;

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(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 any 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.

(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;

“airborne acoustical noise emission” means the sound power level of an industrial fan, expressed in dB(A);

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- “appliance” means a device or machine for performing a specific task;
- “Appliance Energy Efficiency Register” means an official record kept and maintained by the Commission on energy efficiency information in respect of models of electrical appliances that have been certified by the Commission and Standards Authority for use in Ghana;
- “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;
- “axial fan” means a type of fan where the airflow through the impeller, contained in a cylindrical housing, is mainly parallel to the axis of rotation;
- “axial flow” means in-line air movement parallel to the fan or motor shaft;
- “backward-inclined fan” means a group of centrifugal fans with blades that angle back from the direction of industrial fan rotation;
- “centrifugal fan” means a fan design in which air is discharged perpendicular to the rotational axis of the impeller;
- “circumvention device” means any control, control device, software, component or part that alters the operating characteristics of an industrial fan during any test procedure, resulting in measurements that are unrepresentative of the true characteristics of the industrial fan 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 industrial fan to an end user;

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- “distance selling” means the sale of goods or services without the buyer and seller being physically present simultaneously;
- “dwelling place” means place of residence;
- “efficiency grade” is a parameter in the calculation of the target energy efficiency of an industrial fan of specific electric input power at the optimum energy efficiency point of the industrial fan, expressed as parameter ‘N’ in the calculation of the energy efficiency of the industrial fan;
- “electric mains-operated industrial fan” means an industrial fan that operates on electricity supply from the grid of 230 ($\pm 10\%$) volts of alternating current at 50 Hz;
- “electronic Product Information Sheet” means a document containing the following information in electronic format:
- (a) basic product information;
 - (b) energy label information; and
 - (c) special features and characteristics;
- “end user” means the first user of an industrial fan;
- “endorsement labelling scheme” includes a voluntary labelling scheme that guarantees the performance standards of the industrial fan, that are equal to or exceed the minimum threshold established by a recognised advisory body;
- “energy efficiency of an industrial fan” means the overall efficiency of the industrial fan;
- “energy efficiency rating of an industrial fan” means the heat efficiency of the industrial fan;
- “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
 - (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;

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- “environmental labelling scheme” means a voluntary labelling scheme that provides detailed information on the environment about the performance characteristics of an industrial fan;
- “equivalent model” means a model which has the same technical characteristics relevant for the technical information to be provided, but which is placed on the market or put into service by the same manufacturer, importer or authorised representative as another model with a different model identifier;
- “fan static pressure” means the fan total pressure minus the fan dynamic pressure corrected by the Mach factor;
- “fan total pressure” means the difference between the stagnation pressure at the fan outlet and the stagnation pressure at the fan inlet;
- “GS” means Ghana Standards;
- “heat efficiency” means the ratio of the effective output energy to the input electrical energy of the industrial fan measured in percentages (%) in accordance with standard test methods and procedures set out in the Standards of the First Schedule;
- “importer” means a person who places an industrial fan from a foreign country on the Ghanaian market and supplies that industrial fan for use;
- “industrial fan” means a machine which has the primary function to provide and accommodate a large flow of air or gas to various processes of many industries;
- “label” means a material attached to an industrial fan the inscription of which contains information on the energy consumption of the industrial fan;
- “mach factor” means a correction factor applied to dynamic pressure at a point, defined as the stagnation pressure minus the pressure with respect to absolute zero pressure which is exerted at a point at rest relative to the air around it and divided by the dynamic pressure;
- “measurement category” means a test, measurement or usage arrangement that defines the inlet and outlet conditions of the industrial fan under test;

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- “measurement category A” means an arrangement where the industrial fan is measured with free inlet and outlet conditions;
- “measurement category B” means an arrangement where the industrial fan is measured with free inlet and with a duct fitted to the outlet of the industrial fan;
- “measurement category C” means an arrangement where the industrial fan is measured with a duct fitted to the inlet of the industrial fan and with free outlet conditions;
- “measurement category D” means an arrangement where the industrial fan is measured with a duct fitted to the inlet and outlet of the industrial fan;
- “minimum energy performance standards” mean a set of procedures and regulations that prescribe the minimum allowable values of energy efficiency or energy performance of manufactured products;
- “model identifier” means the code, usually alphanumeric, which distinguishes a specific product model from other models with the same trademark of the same name of the manufacturer, importer or authorised representative;
- “overall efficiency” means static efficiency or total efficiency, whichever is applicable;
- “premises” means land and any building, store, shop, apartment, or other structure on the land used for the storage of an industrial fan;
- “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 industrial fan;
- “Quick Response Code” means a matrix barcode included on the energy label of a product model that links to the information of a model in the public part of the product database;
- “rating plate” means a name plate that indicates the measurable performance capability of an industrial fan;

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- “rated voltage” means voltage or voltage range marked on the industrial fan, in volts (V);
- “record” includes a book, document, label, mark, symbol, inscription or information in electronic form;
- “sale” means the exchange of the product for consideration including hire purchase, credit sale and purchase by instalment;
- “static efficiency” means the energy efficiency of an industrial fan, based upon measurement of the ‘fan static pressure’;
- “stagnation pressure” means the pressure measured at a point in a flowing air if the pressure were brought to rest via an isentropic process;
- “Standards” means quality specifications for industrial fans 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 industrial fan on the Ghanaian market;
- “supply” includes an offer to supply, a contract to supply and an advertisement for the supply of an industrial fan but excludes the exhibition at a trade fair of an industrial fan that is prohibited by these Regulations;
- “target energy efficiency” (η_{target}) means the minimum energy efficiency an industrial fan must achieve in order to meet the requirements;
- “total efficiency” means the energy efficiency of an industrial fan, based upon measurement of the fan total pressure;
- “variable speed drive” means an electronic power converter integrated or functioning as one system with the motor and the fan, that continuously adapts the electrical power supplied to the electric motor in order to control the

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mechanical power output of the motor according to the torque-speed characteristic of the load being driven by the motor, excluding variable voltage controllers where only the supply voltage for the motor is varied;

“wattage” means the power marked on an industrial fan, 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 industrial fan 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 industrial fan.

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SCHEDULES

FIRST SCHEDULE

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

STANDARDS

1. ISO 5801: 2017 Industrial fans – Performance testing using standardized airways.
2. ISO 5802: 2001 Fans – Performance testing in situ.
3. ISO 12759: Fans – Efficiency classification for fans.
4. ISO 12759-6: 2020 – Fans – Efficiency classification for fans – Part 6: Calculation of the Fan Energy Index.
5. ISO 12499 : 1999 – Industrial Fans – Mechanical safety of fans – Guarding.
6. ISO 13348 : 2007 – Industrial Fans – Tolerances, methods of conversion and technical data presentation.
7. ISO 13349 : 2010 – Fans – Vocabulary and definitions of categories.
8. IEC 60704 -2-7 : 1997 – Household and similar electrical appliances – Test code for determination of airborne acoustical noise – Part 2-7: Particular requirements for fans.
9. ISO 13350: 2015 Industrial fans – Performance testing of jet fans.
10. ISO 12759-5: 2019 – Fans – Efficiency classification for jet fans.

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SECOND SCHEDULE

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

MINIMUM ENERGY PERFORMANCE STANDARDS

PART ONE

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

1. Efficiency Specifications

1. The efficiency level of an industrial fan under these Regulations is defined in terms of the overall efficiency of the industrial fan based on the efficiency grade of the industrial fan, which is determined in accordance with measurement methods, test procedures and calculations, corresponding to the measurement category of the industrial fan as specified in the Standards of the First Schedule.

2. Overall efficiency could either be *overall static efficiency* based on static pressure or *total efficiency* based on total pressure whichever is applicable, dependent on the efficiency category of the fan.

2. Minimum Energy Performance Standards for Industrial Fans

1. To meet the minimum energy performance standards requirements under these Regulations, the overall efficiency, η_e , of an industrial fan calculated according to the appropriate method set out under Part Two of this Schedule shall be equal to or greater than the target value, η_{target} , set by the efficiency grade (N).

2. The minimum energy performance standards in terms of target efficiency for industrial fans under these Regulations are provided in Table 1.

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Table 1: Target efficiency (η_{target}) MEPS for fans

Fan types	Measurement category (A-D)	Efficiency category (static or total)	Power range, P (kW)	Target energy efficiency (η_{target})=	Efficiency grade (N)
Axial fan	A, C	Static	$0.125 \leq P \leq 10$	$2.74 \times \ln(P) - 6.33 + \frac{N}{40}$	
			$10 < P \leq 500$	$0.78 \times \ln(P) - 1.88 + N$	
	B, D	Total	$0.125 \leq P \leq 10$	$2.74 \times \ln(P) - 6.33 + \frac{N}{58}$	
			$10 < P \leq 500$	$0.78 \times \ln(P) - 1.88 + N$	
Centrifugal forward curved fan & centrifugal radial B, D bladed fan	A, C $10 < P$	Static	$0.125 \leq P \leq 10$	$2.74 \times \ln(P) - 6.33 + N$	
			$10 < P \leq 500$	$0.78 \times \ln(P) - 1.88 + N$	
	T $10 < P$	Total	$0.125 \leq P \leq 10$	$2.74 \times \ln(P) - 6.33 + \frac{N}{49}$	
			$10 < P \leq 500$	$0.78 \times \ln(P) - 1.88 + N$	
Centrifugal backward curved fan without housing	A, C $10 < P \leq 500$	Static	$0.125 \leq P \leq 10$	$4.56 \times \ln(P) - 10.50 + N$	
			$10 < P \leq 500$	$1.10 \times \ln(P) - 2.60 + N$	
Centrifugal backward curved fan with housing	A, C $10 < P$	Static	$0.125 \leq P \leq 10$	$4.56 \times \ln(P) - 10.50 + N$	61
			$10 < P \leq 500$	$1.10 \times \ln(P) - 2.60 + N$	
	B, D	Total	$0.125 \leq P \leq 10$	$4.56 \times \ln(P) - 10.50 + N$	64
			$10 < P \leq 500$	$1.10 \times \ln(P) - 2.60 + N$	

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Mixed flow fan	A, C Static 10 < P	0.125 ≤ P ≤ 10	4.56 x ln(P) - 10.50 + N
		P ≤ 50	1.10 x ln(P) - 2.60 + N
	B, D Total	0.125 ≤ P ≤ 10	4.56 x ln(P) - 10.50 + N
		10 < P ≤ 500	1.10 x ln(P) - 2.60 + N
Cross flow fan	B, D Total	0.125 ≤ P ≤ 10	1.14 x ln(P) - 2.60 + N
		10 < P ≤ 500	N

PART TWO

(regulations 11(1)(e)(vii) and (viii) and 11(2))

Measurements and calculations

For the purposes of compliance and verification of compliance with the requirements of these Regulations, measurements and calculations must be made using a reliable, accurate and reproducible method, which takes into account the generally recognised state-of-the-art measurement methods, and whose results are deemed to be of low uncertainty, including methods set out in the First Schedule.

1. Measurements

The tests and measurements for an industrial fan under these Regulations are based on measurement categories A, B, C or D, defined in terms of the installation configuration or usage arrangement that describes the inlet and outlet conditions of the industrial fan as set out under Part Two of the Fourth Schedule.

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1.2 Fan Pressure measurement categories

The fan air power, $P_u(s)$ (kW), is calculated according to the measurement category test method chosen by the supplier of the industrial fan:

- (a) where the industrial fan has been measured according to measurement category A or C, fan static air power, $P_u(s)$ is used from the equation

$$P_u(s) = q \times p_{sf} \times k_{ps}$$

Where

q = air volume flow rate in m^3/sec

p_{sf} = fan static air pressure in Pascal (Pa)

k_{ps} = compressibility coefficient for the calculation of fan static air power

- (b) where the fan has been measured according to measurement category B or D, fan air power, P_u is used from the equation $P_u = q \times p_f \times k_p$;

Where

p_f = fan total air pressure (in Pa)

k_p = compressibility coefficient for the calculation of fan total air power.

2. Calculations

The energy efficiency of an industrial fan is calculated as the ratio of air power to electrical input power to the motor, where fan air power is the product of air volume flow rate and pressure difference across the industrial fan. The pressure is either the static pressure or the total pressure, which is the sum of static and dynamic pressure depending upon the measurement category and efficiency grade.

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Industrial fan supplied as final assembly

Where the industrial fan is supplied as a 'final assembly', the air power and the electric input power of the industrial fan are measured at the optimum energy efficiency point of the industrial fan as follows:

- (a) where the industrial fan does not include a variable speed drive, the overall efficiency is obtained using the formula in equation marked (1)

$$\eta_e = P_{u(s)} / P_e \dots\dots\dots(1)$$

where

η_e = the overall efficiency;

$P_{u(s)}$ = the fan air power, determined according to paragraph 1.2 of this Part when the fan is operating at its optimal energy efficiency point; and

P_e = the electrical input power measured at the mains input terminals to the motor of the fan when the fan is operating at its optimal energy efficiency point.

- (b) where the industrial fan includes a variable speed drive, the overall efficiency is obtained using the formula in equation marked (2)

$$\eta_e = (P_{u(s)} / P_{ed}) \times C_c \dots\dots\dots(2)$$

where

η_e = the overall efficiency;

$P_{u(s)}$ = the fan air power, determined according to paragraph 1.2 of this Part when the fan is operating at its optimal energy efficiency point;

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P_{ed} = the electrical input power measured at the mains input terminals to the variable speed drive of the fan when the fan is operating at its optimal energy efficiency point; and
 C_c = a part load compensation factor with values provided in Table 1.

Table 1: Determination of values for C_c

Power range, P	Value of C_c
$P_{ed} \geq 5 \text{ kW}$	1.04
$P_{ed} < 5 \text{ kW}$	$1.03 \ln(P_{ed}) + 1.088$

Industrial fan not supplied as final assembly

Where the industrial fan is supplied as ‘not final assembly’, the overall efficiency of the industrial fan is calculated at the optimum energy efficiency point of the impeller, using the following formula in equation marked (3):

$$\eta_e = \eta_r \times \eta_m \times \eta_T \times C_m \times C_c \dots\dots\dots(3)$$

where:

η_e = the overall efficiency;

η_r = the fan impeller efficiency according to $P_{u(s)} / P_a$

where:

$P_{u(s)}$ = fan air power determined at the point of optimal energy efficiency for the impeller and according to appropriate measurement category in paragraph 4;

P_a = the fan shaft power at the point of optimal energy efficiency of the impeller;

η_m = the nominal rated motor efficiency as provided by manufacturer or in case no motor is supplied a default η_m

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is calculated for the motor using the formulas provided in Table 2.

Table 2: Default values for motor efficiency

Input power, P_e, kW	Formula for calculating motor efficiency, η_m
$P_e \geq 0.75$ kW	$0,000278 \times (y^3) - 0,019247 \times (y^2) + 0,104395 \times y + 0,809761$
$P_e < 0.75$ kW	$0,1462 * \ln(P_e) + 0,8381$
where $y = \lg(P_e)$, and P_e is the electrical input power at motor terminal	

The electric input power P_e recommended by the manufacturer of the industrial fan should be enough for the industrial fan to reach its optimum energy efficiency point, taking into account losses from transmission systems if applicable.

η_T = the efficiency of the driving arrangement for which the default values in Table 3 are used.

Table 3: Default values for transmission efficiency (η_T)

Drive Type description	$P_a \leq 1$ kW	1 kW $< P_a < 5$ kW	$P_a \geq 5$ kW
Direct drive 1.00.00	1.00		
Low efficiency drive	0.80.175	$x P_a + 0.8725$	0.96
High efficiency drive	0.90.010	$x P_a + 0.9300$	0.98
<i>P_a is fan shaft power at the point of optimal energy efficiency of the impeller</i>			

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C_m = the compensation factor to account for matching of components = 0,9;

C_c = the part load compensation factor with default values provided in Table 1.

Methodology for calculating the target energy efficiency

The target energy efficiency, η_{target} , is the energy efficiency an industrial fan from a category must achieve in order to comply with the MEPS requirements set out in the Second Schedule and expressed in full percentage points.

The target energy efficiency is calculated by efficiency formulas that include the electrical input power, **P_e** or **P_d** as appropriate, and the minimum industrial fan efficiency grade. The complete power range is covered by two formulas as provided in the Second Schedule for the following categories:

- (a) an industrial fan with an electric input power from 0.125 kW up to and including 10 kW; and
- (b) an industrial fan with an electric input power above 10 kW up to and including 500 kW.

There are three series of industrial fan types for which target energy efficiency formulas are developed and used in the Second Schedule as to reflect the different characteristics of various industrial fan types including

- (a) axial fans, centrifugal forward curved fans and centrifugal radial bladed fans (axial fan within);
- (b) centrifugal backward curved fans without housing, centrifugal backward curved fans with housing and mixed flow fans; and
- (c) cross flow fans.

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THIRD SCHEDULE

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

THE LABEL

1. Label design

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

ENERGY guide

MEPS FOR INDUSTRIAL FAN
(Target Efficiency)
 $\eta_{\text{target}} = \text{XX} \%$

Fan Type/(A,B,C,D)	XXX/Y
Efficiency Category (Static/Total)	XXXX
Manufacturer/Supplier	XXXX
Trademark/Logo	XXXX
Efficiency Grade	XX
Rated Flow Rate	XX (m ³ /s)
Rated Pressure	XX (Pa)
Rated Input Power	XX (kW)
Noise Level	XX (dBA)
Country of Origin	Abc

Overall Efficiency (η_e) of this model is: XX%

When tested in accordance with BSISO 5801, 5802, 12759 consumption will depend on how the appliance is used. Further information is contained in the Product Information Sheet.
Removal of the label before First Purchase is an offence under the Law.

Figure 1: Label of Industrial Fan

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2. Notes to label of industrial fans

- (1) The following notes define the information to be included on the label:
- (a) Quick Response Code;
 - (b) fan type or measurement category (“A, B, C or D”);
 - (c) fan type or efficiency category (“static or total”);
 - (d) name or trademark of supplier;
 - (e) model identifier of supplier;
 - (f) trade mark and number;
 - (g) year of manufacture;
 - (h) country of origin;
 - (i) efficiency grade at optimum energy efficiency point;
 - (j) overall efficiency η_e rounded to 1 decimal place;
 - (k) rated flow rates and pressures at optimum energy efficiency point ($\text{m}^3/\text{s}/\text{Pa}$);
 - (l) rated rotational speed per minute at optimum energy efficiency point;
 - (m) rated motor input power in watts (marked “W” or “watts”);
 - (n) Variable Speed Drive (VSD) status declaration (capability/integration); and
 - (o) noise level (dB) rounded to the nearest integer.

Note * : The information should also be marked on the regulator of the industrial fan

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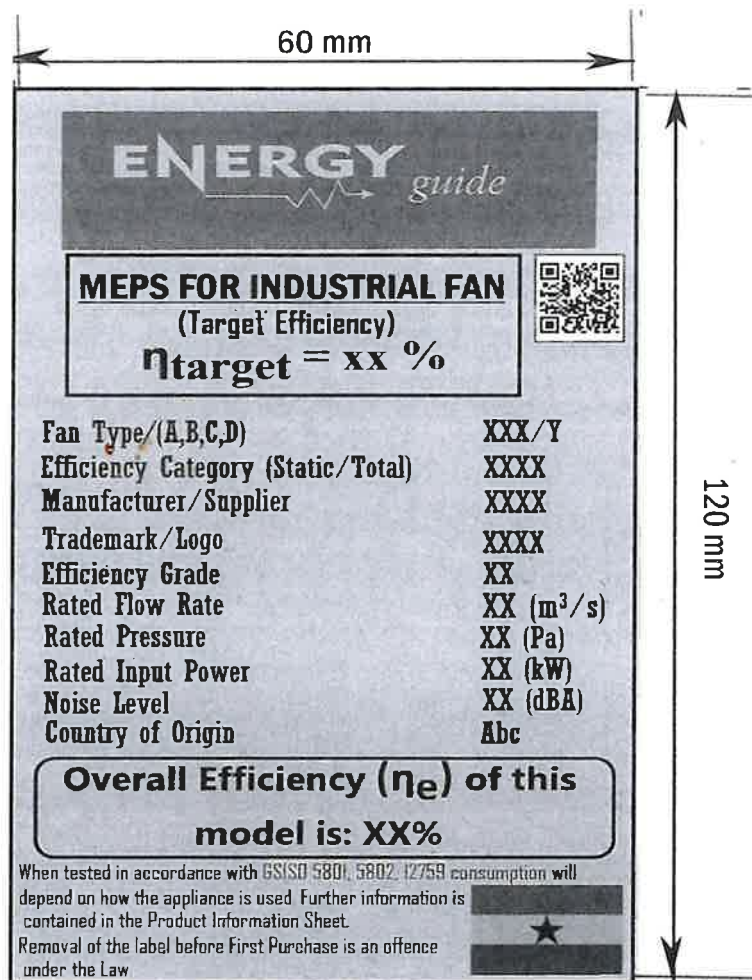


Figure 2: Label Dimensions of Industrial Fan

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3. Printing

- (1) Figure 2 defines aspects of the label.
- (2) The dimensions of the label shall be in accordance with the illustration in Figure 2 and placed on the container.
- (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; and
 - (c) the border line shall be in black.

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FOURTH SCHEDULE

(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) and 26(2)(a))

PART ONE

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

Product Information Sheet

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 fans supplied by the same supplier, in which case it shall be given in the order specified, or given in the description of the industrial fans.

- (a) Quick Response Code;
- (b) type or measurement category ("A, B, C or D") of industrial fan;
- (c) type or efficiency category ("static or total") of industrial fan;
- (d) name of manufacturer;
- (e) name of supplier;
- (f) trademark (if any) and number;
- (g) year of manufacture;
- (h) country of origin;
- (i) efficiency grade at optimum energy efficiency point;
- (j) overall efficiency η_e rounded to 1 decimal place;
- (k) rated flow rates and pressures at optimum energy efficiency point ($\text{m}^3/\text{s}/\text{Pa}$);
- (l) rated rotational speed per minute at optimum energy efficiency point;
- (m) rated motor input power in watts (marked "W" or "watts");
- (n) variable speed drive status declaration (capability/integration)- whether the calculation of fan efficiency assumed use of a variable speed and if so, whether the VSD is integrated within the fan or the variable speed drive must be installed with the 'specific ratio';

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- (o) information relevant for facilitating disassembly, recycling or disposal at end-of-life;
- (p) user instructions including installation, use, maintenance and disposal of the industrial fan; and
- (q) description of additional items used when determining the energy efficiency of the industrial fan, such as ducts, that are not described in the measurement category and not supplied with the fan.

PART TWO

(regulation 5)

Types or Categories of Industrial fans

Table 1 presents the types of industrial fans, in terms of the measurement categories and corresponding efficiency classes and features that are subject to the test methods, test conditions, procedures and calculations set out in the Standards of the First Schedule.

The measurement categories A-D are as follows:

- (a) Measurement category A – an arrangement where the industrial fan is measured with free inlet and outlet conditions.
- (b) Measurement category B – an arrangement where the industrial fan is measured with free inlet and with a duct fitted to its outlet.
- (c) Measurement category C – an arrangement where the industrial fan is measured with a duct fitted to its inlet and with free outlet conditions.
- (d) Measurement category D – an arrangement where the industrial fan is measured with a duct fitted to its inlet and outlet.

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Table 1: Type or Category of Industrial Fan

Type	Measurement Category	Efficiency Category	Fan Input Power 1. $P \geq 0.125$ kW 2. $P < 0.75$ kW 3. $P \geq 0.75$ kW 4. $P > 1$ kW 5. $P \geq 5$ kW 6. $P > 10$ kW 7. $P \leq 500$ kW (indicate range)	Variable speed drive capability	
				Yes/No (Please specify)	Integrated
Axial fan	A, Static				
	B, Total				
Centrifugal forward curved fan & centrifugal radial bladed fan	A, C	Static			
	B, D	Total			
Centrifugal backward curved fan without housing	A, C	Static			

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Centrifugal backward, curved fan with housing	C	Static			
	B, D	Total			
Mixed A, C flow fan		Static			
	B, D	Total			
Cross flow fan	B, D	Total			

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

Technical documentation

1. The technical documentation referred to in regulation 10 shall include the following elements:
 - (a) the information set out in Part One of this Schedule; and
 - (b) the information set out in Part Two of this Schedule.
2. The exact wording used in the list provided under Part One and Part Two does not need to be repeated. It may be displayed using graphs, figures or symbols rather than text.
3. Manufacturers shall provide information in the manual of instruction on specific precautions to be taken when fans are assembled, installed or maintained.
4. If the product information requirements indicate that a variable speed drive must be installed with the industrial fan, a manufacturer shall provide details on the characteristics of the variable speed drive to ensure optimal use after assembly.

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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) overall efficiency η_e rounded to 1 decimal place;
 - (b) measurement category used to determine the energy efficiency (A-D);
 - (c) efficiency category (static or total);
 - (d) efficiency grade at optimum energy efficiency point;
 - (e) whether the calculation of fan efficiency assumed use of a variable speed drive and if so, whether the variable speed drive is integrated within the industrial fan or the variable speed drive must be installed with the industrial fan; and
 - (f) the information in Part One and Part Two of this Schedule.
2. The size and font, in which all the information referred to in paragraph 1 is printed, shall be legible.

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 overall efficiency of the industrial fan measured at optimum energy efficiency point of the model being advertised shall be compared with

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the specified minimum energy performance standards, listed in Part One of the Second Schedule and 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 overall efficiency of the industrial fan measured at optimum energy efficiency point of the model and the target efficiency value of the industrial fan set out in the Second Schedule shall be made available on the label and 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 overall efficiency of the industrial fan measured at optimum energy efficiency point of the model and the target efficiency value of the industrial set out in Part One of the Second Schedule shall be made available on the label and be shown as set out in paragraph 5 of this Part.
4. Any paper-based distance selling must show the energy performance characteristics of the model and the ranges of energy performance characteristics available on the label as set out in paragraph 5 of this Part.
5. The overall efficiency of the fan measured at optimum energy efficiency point of the model and its target efficiency value shall be shown, as indicated in Figure 1, with:
 - (a) an arrow, containing the overall efficiency of the industrial fan measured at optimum energy efficiency point in hundred per cent white, Calibri Bold and in a font size at least equivalent to that of the price, when the price is shown;
 - (b) the colour of the box shall be gold;
 - (c) the target efficiency value shall be in hundred per cent black; and

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(d) the size shall be such that the box is clearly visible and legible.

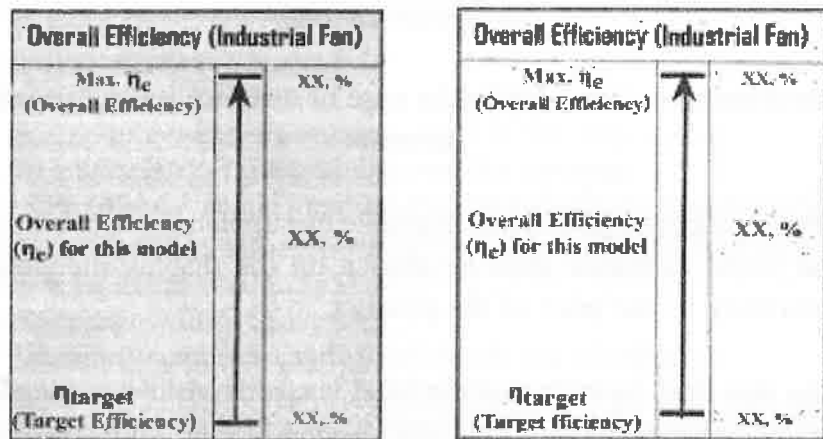


Figure 1: Coloured or monochrome minimum energy performance standard indicated for Industrial Fan

6. 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.
7. Telemarketing-based distance selling shall specifically inform the customer of the overall efficiency of the fan measured at optimum energy efficiency point of the model and its target efficiency value listed in Part One of the Second Schedule on the label, and that the customer can access the full label and the Product Information Sheet through a free access website, public part of the Appliance Energy Efficiency Register of the Commission or by requesting a printed copy.
8. For all the situations mentioned in paragraphs 2 to 4 and paragraph 7, it shall be possible for the customer to obtain, on request, a printed copy of the label and the Product Information Sheet.

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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.
5. The image used for accessing the label in the case of nested display, as indicated in Figure 2, shall
 - (a) indicate the overall efficiency of the industrial fan measured at optimum energy efficiency point of the product in the box in hundred per cent black, Calibri Bold and in a font size equivalent to that of the price; and
 - (b) have the target efficiency value in hundred per cent black.

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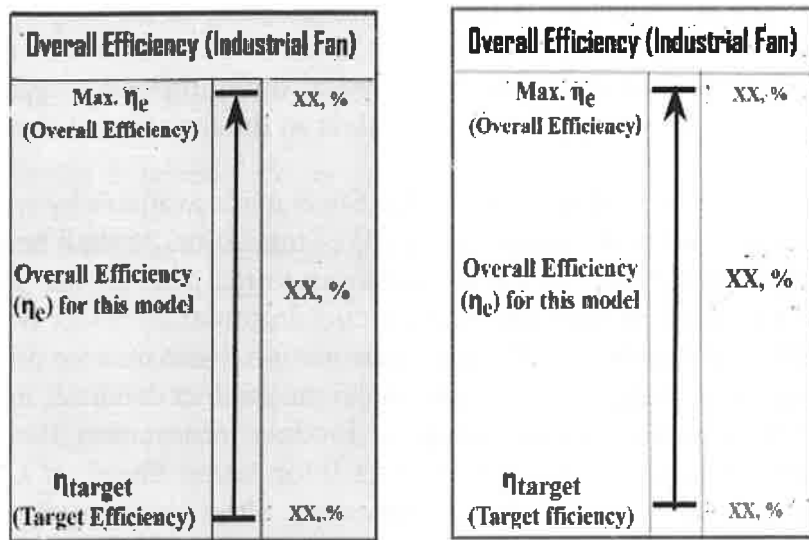


Figure 2: Coloured or monochrome minimum energy performance standard indicated for Industrial Fan

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

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- (g) the alternative text for the graphic, to be displayed on failure to display the label, shall be the overall efficiency of the industrial fan measured at optimum energy efficiency point in a font size equivalent to the font size 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.

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FIFTH SCHEDULE

(regulation 33(2))

VERIFICATION PROCEDURE FOR MARKET SURVEILLANCE


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 it is being tested, by recognising the test conditions or test cycle, and to react specifically by automatically altering its performance 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 industrial fan shall be considered to comply with the provisions set out in Table One of the Second Schedule as applicable to these Regulations, if measured overall efficiency, η_e , of the industrial fan is at least ninety per cent of the target energy efficiency value ($0.9 \times \eta_{\text{target}}$), calculated using the formulas in the Second Schedule and the applicable efficiency grades;

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- (c) The overall efficiency shall be established in accordance with the specifications and calculations in the Second Schedule and test methods and measurement procedures set out in the Standards of the First Schedule;
- (d) If the result referred to in paragraph (b) is not achieved, the Standards Authority and the Commission shall randomly select three additional units of the same model for testing;
- (e) The model of the industrial fan shall be considered to comply with the provisions set out in Table One of the Second Schedule, if the average of the overall efficiency, η_e , of the three units is at least ninety per cent of the target energy efficiency value ($0.9 \times \eta_{\text{target}}$) - calculated using the formulas in the Second Schedule and the applicable efficiency grades;
- (f) The overall efficiency values shall be established in accordance with the Second Schedule; and
- (g) If the results referred to in paragraph (e) are not achieved, the model shall be considered not to comply with these Regulations.

HON. DR. MATTHEW OPOKU PREMPEH
Minister responsible for Energy

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Entry into force: 2nd November, 2022.