

ENERGY PERFORMANCE STANDARDS AND LABELLING (IMPROVED BIOMASS COOKSTOVES) REGULATIONS, 2019

IN exercise of the powers conferred on the Minister responsible for Energy by section 50 (e) of the Renewable Energy Act, 2011 (Act 832) these Regulations are made this (xx) day of (Month) 2019.

Purpose of Regulations

1. The purpose of these Regulations is to provide for:

(a) the enforcement of minimum performance requirements for improved biomass cookstoves prescribed in these Regulations and measured in accordance with the Ghana-ISO standard test sequence for emissions and performance, safety and durability (GS ISO 19867-1) as may be repealed, amended or replaced; and

(b) the labelling of improved biomass cookstoves.

Application of Regulations

2. These Regulations apply to commercially available portable improved biomass cookstoves manufactured in Ghana or imported for use in Ghana.

Duty to comply with Regulations

3. (1) A person who manufactures or imports improved biomass cookstoves for use in Ghana shall comply with:

(a) the minimum performance standard prescribed in Table 1 of Schedule I and measured in accordance with GS ISO 19867-1; and

(b) the labelling requirements prescribed in Schedule II.

(2) All improved biomass cookstoves offered for sale in Ghana shall meet the minimum performance requirement of 20% for thermal efficiency and a safety score of 70 measured in accordance with GS ISO 19867-1.

Labelling requirements and information

4. (1) A person shall not import, store, offer for sale, sell, distribute or otherwise dispose of an improved biomass cookstove unless the cookstove bears a label that indicates the minimum performance.

(2) The label on an improved biomass cookstove shall:

(a) conform to the form provided in Schedule II; and

(b) contain the information specified in Schedule II.

(3) The label shall be:

(a) in the English language; and

(b) affixed conspicuously on both the body of the cookstove and package that contains the cookstove.

(4) The label shall be in:

(a) “black and white” with the print and background in colours which preserve the legibility of the label where the printing is done on the package; and

(b) full colour if the label is affixed on the package.

(5) Where the label is affixed on the stove, it shall be in colour, printed on a waterproof material and affixed conspicuously onto the stove so that it remains clearly visible and is not obscured whenever the stove is displayed.

(6) A person shall not remove the label on an improved biomass cookstove before the first retail purchase of the cookstove.

(7) For the purposes of this regulation, “first retail purchase” means purchase of an improved biomass cookstove by the first end user.

Technical documentation

5. (1) A person shall not import, store, offer for sale, sell, distribute or otherwise dispose of an improved biomass cookstove unless that person has made available sufficient technical documentation to enable the accuracy of the information contained in an information sheet or on a label to be assessed.

(2) The technical documentation referred to in sub-regulation (1) shall include:

- (a) the name and address of the manufacturer and/or the importer;
- (b) the type of biomass fuel used by the cookstove;
- (c) relevant drawings on the main design features of the model and parameters of the cookstove which affects its thermal efficiency and safety;
- (d) reports of relevant tests undertaken by an accredited third party cookstove testing laboratory to verify the performance of the cookstove as prescribed in GS ISO 19867-1; and
- (e) operating instructions.

(3) A manufacturer or importer shall make the technical documentation available for inspection by an enforcement authority as and when requested.

Duties of manufacturer or importer in respect of information sheet

6. (1) A manufacturer or importer of an improved biomass cookstove shall provide an information sheet which shall:

- (a) be in the English language;
- (b) contain the information provided in Schedule III; and
- (c) be in the form prescribed in Schedule III.

(2) The category of the cookstove shall be determined in accordance with the categories specified in Schedule IV.

(3) The thermal efficiency star rating of an improved biomass cookstove shall be determined in accordance with the ratings provided in Schedule I.

(4) The safety score of an improved biomass cookstove shall be determined in accordance with the procedure prescribed in GS ISO 19867-1.

(5) Where the manufacturer or importer provides a product brochure with the cookstove, the brochure must contain the information sheet.

(6) Where a manufacturer or importer provides a cookstove without a product brochure, the manufacturer or importer must provide the information sheet with any other relevant document.

Access to information on technical documentation and information sheet

7. (1) The information required under regulations 4, 5 and 6 shall be obtained in accordance with the test procedures specified in GS ISO 19867-1.

(2) Information obtained in a manner contrary to sub-regulation (1) shall for the purposes of these Regulations be deemed not to be valid.

Duty of manufacturer or importer to ensure accuracy of information

8. (1) A manufacturer or importer shall ensure that the information in an information sheet or on a label in respect of an improved biomass cookstove that the manufacturer or importer supplies is accurate.

(2) The duty required of a manufacturer or importer under sub-regulation (1) does not deviate from any other right of action which a person may have by law against the manufacturer, importer or any other person with respect to the inaccuracy of information in an information sheet or on a label.

Consent to publication of information

9. The manufacturer or importer shall be deemed to have consented to the publication of the information given in an information sheet or on a label of an improved biomass cookstove which that manufacturer or importer deals in.

Information in respect of mail order and other distance selling

10. (1) Where a person offers an improved biomass cookstove for sale to a consumer in this country through a particular medium of communication, that person shall ensure that the communication:

(a) is in the English Language;

(b) includes the information specified in Schedule V; and

(c) describes the cookstove in accordance with the thermal efficiency star ratings provided in Schedule I, the safety score and the categories of Schedule IV.

(2) Where other information is provided as required in an information sheet, it shall be incorporated in the information required under sub-regulation (1) (b) and (c) in the form provided and in the sequence indicated in Schedule III.

Misleading information

11. (1) A person shall not display a label, mark, or symbol or inscription which relates to the performance of a stove if the display is likely to be deceptive, misleading or false.

(2) Sub-regulation (1) shall not apply to a label, mark, symbol or inscription displayed under an environmental, endorsement or other existing labelling schemes.

Power of enforcement authority to require technical documentation

12. Where an enforcement authority has reason to suspect that the information given in an information sheet or on a label is incorrect, the authority may by notice served on the manufacturer or importer of the stove, require the manufacturer or importer to provide the authority with the technical documentation referred to in regulation 5 within a specified time period.

Power of enforcement authority to inspect stove

13. An enforcement authority may at any reasonable time:

(a) enter any premises or place where that authority has reason to believe that biomass cookstoves are being manufactured, assembled, distributed, offered for sale or being disposed of; and

(b) examine a stove

(i) displayed for sale;

(ii) at the point of import; or

(iii) at a warehouse

to ascertain whether the stoves comply with the provisions of these Regulations.

Power to seize and detain stove and supporting document

14. (1) Where an enforcement authority has reason to believe that any provision of these Regulations has been violated, that authority may:

(a) at any reasonable time enter premises other than a dwelling place and inspect any biomass cookstove;

(b) require a person engaged in a stove business or employed in connection with a stove business to produce supporting document in respect of stove;

(c) seize a stove that is not properly labelled or that is labelled in such a way as to be deceptive, misleading or false;

(d) seize and detain a stove for the purpose of testing to verify the information on the label;

(e) seize and detain any relevant document to be used as evidence in proceedings in respect of an offence committed under these Regulations;

(f) cause a container containing imported items at the port or a warehouse in-land to be opened for the purpose of inspection; and

(g) break open a container or warehouse where efforts made to get it opened under sub-regulation (1) (f) has failed.

(2) For the purposes of sub-regulation (1) (b) and (e), the enforcement authority may require information stored electronically to be made available to the authority in printed form.

Powers of enforcement authority to test stove

15. (1) An enforcement authority may purchase and test a biomass stove to determine whether a provision of these Regulations has been violated.

(2) An enforcement authority shall have the power to obtain and test a stove to determine whether a provision of these Regulations has been violated.

(3) Where an enforcement authority is requested by any person to test a stove to verify information on the label and it is practicable for the authority to comply with the request, the authority shall seize, detain and test the stove.

(4) The test conducted on a stove purchased under sub-regulation (1), obtained or seized and tested under sub-regulations (2) (3), shall be in accordance with the procedures specified in the Standards.

Order to access information or obtain stove

16. (1) An enforcement authority may apply to the court within which jurisdiction that authority exercises powers for an order to enter premises where a stove is being manufactured or stored, if the authority has reason to believe that a stove or

document which the authority has power to inspect or seize, can assist in the disclosure of evidence of any of these Regulations being violated, where:

- (a) the authority is refused entry to the premises; or
- (b) a notification to enter premises would defeat the object of the entry; or
- (c) the premises are unoccupied or the occupier is temporarily absent.

(2) The court may grant an order to enter the premises, which shall be valid for a period of one month.

(3) With respect to sub-regulations (1) and (2), an enforcement authority shall as soon as practicable serve the person against whom the power has been exercised, a written notice which shall:

- (a) state precisely what has been seized and detained; and
- (b) explain where, within what period and on what grounds a petition against the seizure or detention may be brought under regulation 18.

Procedure for re-labelling seized stove

17. (1) Where an enforcement authority seizes a stove from a manufacturer or importer under regulation 14 (1) (d), the enforcement authority shall within forty-eight hours of detention of these stoves give notice to the manufacturer or importer to properly label the stoves if the minimum performance requirements have been complied with.

(2) The notice shall state that the stove must be re-labelled in the required manner or withdrawn from the market within twenty-eight days. Imported stoves that have failed to re-label must be exported out of the country within twenty-eight days.

(3) Where a manufacturer or an importer is required under sub- regulation (1) to re-label a stove, the re-labelling shall be done under the supervision of an officer authorised for the purpose by the Energy Commission or the Ghana Standards Authority.

(4) Where a manufacturer or an importer fails to re-label a stove, it shall be destroyed in accordance with regulation 22 (2).

Petition against detention or seizure

18. (1) A person whose stove is detained or seized under regulation 14, may within seven days after the detention or seizure petition the Commission for the release of the seized or detained stove.

(2) The Commission shall within seven days of receiving the petition either confirm the seizure or order the seized stoves to be released to the petitioner.

Compensation for loss of stove or supporting document

19. (1) Where an enforcement authority exercises power under these Regulations to seize and detain any stove or supporting document, the enforcement authority shall be liable to pay compensation to any person who has an interest in the stove or supporting document for any loss or damage caused by the exercise of the power if:

(a) there has been no contravention of these Regulations in relation to the stove or supporting document; and

(b) the exercise of the power is not attributable to the negligence of that person.

(2) A dispute as to the right to or the amount of compensation payable shall be determined by arbitration at the first instance.

Recovery of expenses by enforcement authority

20. (1) Where an enforcement authority incurs costs in the:

(a) seizure, detention, test, or supervision of re-labelling under these Regulations; or

(b) destruction of a stove which does not meet the minimum performance requirements of these regulations

the enforcement authority shall surcharge the manufacturer or importer with the costs incurred.

Restrictions on disclosure of information

21. (1) A person shall not disclose information:

(a) obtained by that person for the purpose of its communication to another person to ensure compliance with a requirement imposed by these Regulations; or

(b) which consists of a secret manufacturing process or trade secret and that was obtained by that person in the course of the exercise of a power or duty conferred on the person by these Regulations.

(2) despite sub-regulation (1), a person may disclose information if the information is a public information or the disclosure is made:

(a) for the purpose of the facilitation of the exercise of powers by an enforcement authority under these Regulations or any other enactment;

(b) in connection with the investigation of a criminal offence; or

(c) for the purposes of a civil or criminal proceeding.

Forfeiture and destruction of seized stove

22. (1) A biomass stove found on the market which does not conform to these Regulations is liable for seizure and forfeiture.

(2) The Minister shall acting on the recommendation of the Commission given in collaboration with the Ghana Standards Authority, destroy any forfeited biomass stove or re-export any imported stove that is liable for forfeiture.

Offences and penalties

23. A person who:

(a) manufactures locally or imports a stove that does not meet the minimum performance requirement contrary to regulation 3;

(b) fails to comply with a labelling or re-labelling requirement contrary to regulation 4 and 17, respectively;

(c) removes the label on a portable stove contrary to regulation 4 (6);

(d) fails to provide technical documentation contrary to regulation 5;

(e) fails to provide an information sheet contrary to regulation 6;

(f) provides inaccurate information sheet contrary to regulation 8;

(g) fails to comply with the communication requirements contrary to regulation 10;

(h) provides misleading information contrary to regulation 11;

(i) obstructs or interferes with an enforcement authority in the exercise of that authority's powers

commits an offence and is liable on summary conviction to a fine not exceeding two hundred and fifty penalty units or imprisonment for a term not exceeding twelve months or both.

Offence by corporate bodies

24. (1) Where an offence under these Regulations is committed by a body corporate or by a member of a partnership or a firm, every director or officer of the body corporate or a member of the partnership or any other person concerned with the management of the firm shall be deemed guilty of that offence and is liable on summary conviction to a fine not exceeding one thousand penalty units and is in addition liable to the payment of compensation for any damage caused from the breach to the satisfaction of the court.

(2) Contrary to sub-regulation (1), a person shall not be convicted of an offence if it is proved that:

(a) due diligence was exercised to ensure compliance with the provisions of these Regulations; and

(b) the offence was committed without that person's knowledge, consent or involvement.

Aiding and abetting

25. An enforcement authority that:

(a) assists a person to contravene these Regulations; or

(b) discloses information contrary to regulation 21

commits an offence and is liable on summary conviction to a fine not exceeding two hundred and fifty penalty units or imprisonment for a term not exceeding twelve months or both.

Transitional provisions

26. Except for a used stove, a person who has placed a stove on the market before the commencement of these Regulations shall within six months after the commencement of these Regulations, comply with the labelling requirements of these Regulations if that stove meets the minimum thermal efficiency requirements of these Regulations.

27. This Regulations shall enter into force 24 months after its passage.

Interpretation

28. In these Regulations unless the context otherwise requires:

“Act” means the Renewable Energy Act, 2011 (Act 832);

“biomass” means solid fuels from plant and animal sources such as charcoal, firewood, briquette, and pellets;

“CO” means carbon monoxide;

“Carbon monoxide” means toxic gas formed during the incomplete combustion of carbonaceous material;

“Commission” means Energy Commission;

“communication” means the manner in which a stove is offered for sale, whereby the potential customer cannot be expected to see the stove displayed such as a written offer, a mail order catalogue, advertisement on the internet or other electronic media;

“court” includes a lower court;

“dwelling place” means a place of residence;

“emissions” means *carbon monoxide* and or *particulate matter*;

“endorsement labelling scheme” includes a voluntary labelling scheme that guarantees stove performance standards that is equal to or exceeds the minimum threshold established by a recognized advisory body;

“end user” means the final user of an appliance;

“enforcement authority” means

- (a) Officers of Customs Division, Ghana Revenue Authority;
- (b) Inspectors of the Energy Commission;
- (c) Officers of the Ghana Standards Authority; and
- (d) any other authorized officer designated by the Customs Excise and Preventive Service, the Energy Commission or the Ghana Standards Authority;

“importer” means a person who places a stove from a foreign country on the Ghanaian market and supplies that stove for the first time;

“improved biomass cookstove” means a biomass cookstove that has a thermal efficiency of $\geq 20\%$ and a safety score of 70 measured in accordance with GS ISO 19867-1;

“information sheet” means standard table of information related to a stove;

“ISO” means International Organisation for Standardisation

“label” means a label relating to a biomass cookstove which contains information on its consumption of biomass and emissions (whether or not it also contains other information);

“Minister” means Minister responsible for Energy;

“PM” means particular matter which are fine solids and liquids of a sufficiently small size to be suspended in air;

“PM_{2.5}” means fine *particulate matter* such that the aerodynamic equivalent diameter of the particles is less than or equal to 2.5 μm

“product brochure” includes a pamphlet or booklet that contains introductory information about a product;

“safety” is the ability of a cookstove to be operated at an acceptable level of risk of harm

“sale” includes a hire-purchase sale;

“standards” means the ISO 19867-1:2018(E);

“stove or cookstove” means an appliance primarily employed for the cooking of food, but which can also be employed for space or water heating, or other purposes;

“supporting document” includes a book, document, label, mark, symbol inscription and a record in a non-documentary form;

“thermal efficiency” means the ratio of useful energy delivered for heating the contents of a cooking vessel to the energy in the raw fuel as fired;

“traditional cookstove” is a type of *cookstove* or three-stone open fire that has been in long existence in a region and has been established from generation to generation.

Commencement

28. Regulation 23 shall commence after the commencement of these Regulations.

SCHEDULE I

Performance Rating for Biomass Cookstoves

(Regulation 3(1)(a))

1. Definitions of performance star rating of cookstoves

The performance of an improved biomass cookstove shall be classified using the ranges specified in Table 1.

Table 1

Star Rating	Thermal Efficiency (%)	Emissions ^a	
		CO (g/MJd)	PM _{2.5} (mg/MJd)
4	≥50	≤3.0	≤5
3	≥40	≤4.4	≤62
2	≥30	≤7.2	≤218
1	≥20	≤11.5	≤481

^aThe emissions rate values refer to ‘fugitive’ emissions that are emitted directly into the kitchen. For unvented stoves (without chimney) total emissions are used for the emission rate values whereas for vented stoves (with chimney) usually most of the emissions are emitted to the exterior of the kitchen, hence only ‘fugitive’ emissions are measured. CO is measured in grams per megajoule delivered to the pot (g/MJd) and PM_{2.5} is milligrams per megajoule delivered to the pot (mg/MJd).

A cookstove that is tested shall be assigned a star rating for thermal efficiency performance. For example: a cookstove with thermal efficiency of ≥40 would be rated 3-star for thermal efficiency. The ratings for emissions are demonstrative of equivalent thresholds for PM_{2.5} and CO in similar categories.

2. Definition of star rating categories

The star rating categories for thermal efficiency, CO, and PM_{2.5} shall be defined as in Table 2 (adapted from the ISO voluntary performance targets for cookstoves based on laboratory testing: ISO/TR 19867-3:2018(E)).

Table 2

Star Rating Category	Thermal Efficiency	CO	PM_{2.5}
Highest (4)	Represents the best existing combustion technology for solid biomass cookstoves	Cookstoves under this category would give emissions that would result in kitchen CO concentration that meets the WHO 24-hour mean air quality guideline value of 7 mg/m ³ .	Cookstoves under this category would give PM _{2.5} emission rate that would result in kitchen indoor air quality that meets the WHO annual mean air quality guideline value of 10 µg/m ³ . This level of PM _{2.5} has been found to be associated with minimal adverse health risk, and has a Relative Risk (RR) ^a of 1.0 for child Acute Lower Respiratory Infections (ALRI).
Intermediate (1-3)	1-star represent cookstoves with simple technology improvements over the baseline (open-fires or 'coal pot'). The rating is evenly spaced based on four (4) rating categories.	Cookstoves that are 1-star for CO have been set to cover 97% of homes that would give emissions that would result in kitchen CO concentration at or below 230 mg/m ³ during cooking events, a level associated with slight headache and impaired judgment with 203 hours from the start of exposure. The intermediate emission rate 2- to 3-star represent equal mathematical divisions between 1- and 4-star for the percentage of homes covered at 7 mg/m ³ daily average CO concentration.	Intermediate emission rate stars have been set to achieve levels of indoor air quality that are equivalent to RR of 3.0 (1-star), 2.5 (2-star), and 1.5 (3-star), based on the Integrated Exposure Response (IER) function for child ALRI.

Lowest (0)	The thermal efficiency observed with ‘traditional’ cookstoves including open fires and ‘coal pots’	An emission rate higher than 1-star, observed with open fires, ‘coal pots’ and other simple solid fuel cookstove technologies.	An emission rate higher than 1-star, observed with open fires, ‘coal pots’ and other simple solid fuel cookstove technologies.
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^aRelative Risk (RR) is the risk of a disease experienced by an individual exposed to a higher level of a risk factor compared to the risk experienced by individuals exposed to a lower level of the risk factor. A RR of 1.0 implies no additional risk, while a RR of 2.5 and 3.0 means two and a half, and thrice the risk, respectively.

3. Fuel efficiency or savings based on thermal efficiency

The fuel efficiency or savings of cookstoves that do not produce charcoal used as fuel shall be estimated against the thermal efficiency of the baseline cookstove (the traditional aluminum cookstove or ‘tree-stone-fire’) using the formula:

$$\text{Percent fuel savings} = 1 - [\eta_T/\eta_x]$$


Where

η_T is the traditional cookstove thermal efficiency, %;

η_x is the new cookstove thermal efficiency, %.

Table 3 shows potential fuel savings, against a traditional biomass cookstove of thermal efficiency 18%.

Table 3

Dimensions and Ratings	Star Rating	Thermal Efficiency	Fuel Savings
Better 	4	>50%	>64%
	3	>40%	>55%
	2	>30%	>40%
	1	>20%	>10%
	0	<18%	-

SCHEDULE II

(Regulations 3(b), 4(2)(a) and (b))

1. Label design

The label shall be in accordance with Figure 1 and shall include the information in the notes.

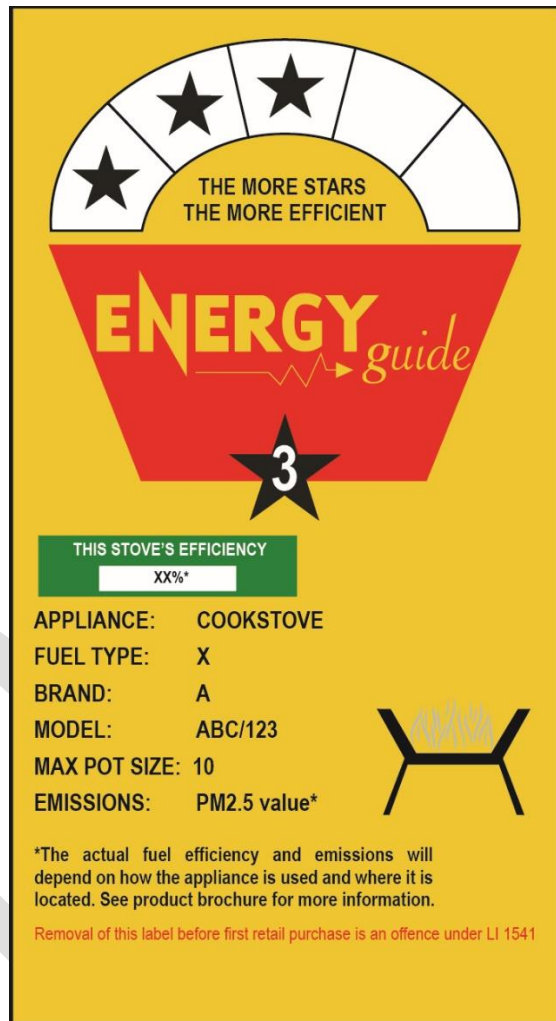


Figure 1

2. Notes to Figure 1

The information to be included in the label are provided in the following notes:

- (1) Type of appliance
- (2) Type of solid biomass fuel used by the appliance
- (3) Brand name or trademark
- (4) Manufacturer's model identifier or number
- (5) Maximum pot size the stove can support, using the local aluminum pot sizes
- (6) The potential emission value for the release of PM_{2.5} measured in milligram per mega joules of energy delivered (mg/MJd) determined in accordance with the test procedures of ISO 19867-1:2018(E)
- (7) The potential emission value for the release of CO measured in gram per mega joules of energy delivered (g/MJd) determined in accordance with the test procedures of ISO 19867-1:2018(E)
- (8) The thermal efficiency star rating shall be determined in accordance with Schedule I, Table 1
- (9) The fuel efficiency of the stove shall be determined in accordance with Schedule I, Table 3

An “emissions approved” symbol or logo shall be used in accordance with Figure 2 when the stove achieves a four star rating for PM_{2.5} and CO, in accordance with Schedule I, Table 1.

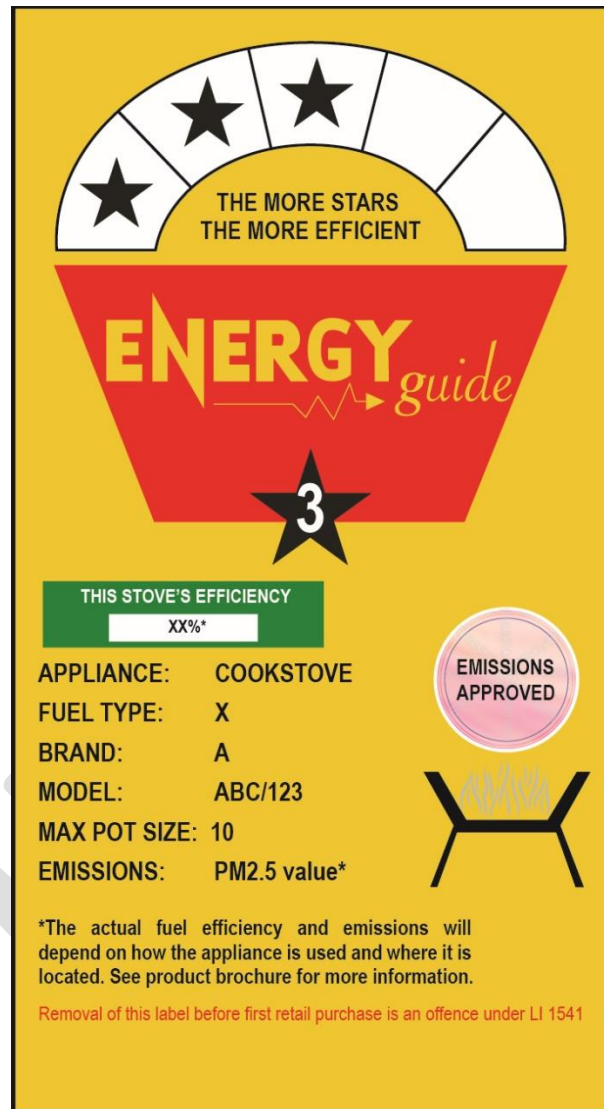


Figure 2

3. Printing

The dimensions of the label shall be as illustrated in Figure 3 and shall be placed visibly on the body of the cookstove or packaging. The following colour scheme shall apply:

- (1) All text in black, gold, white or red as illustrated
- (2) The background of the label shall be in gold
- (3) All stars shall be in black
- (4) Border line shall be in black

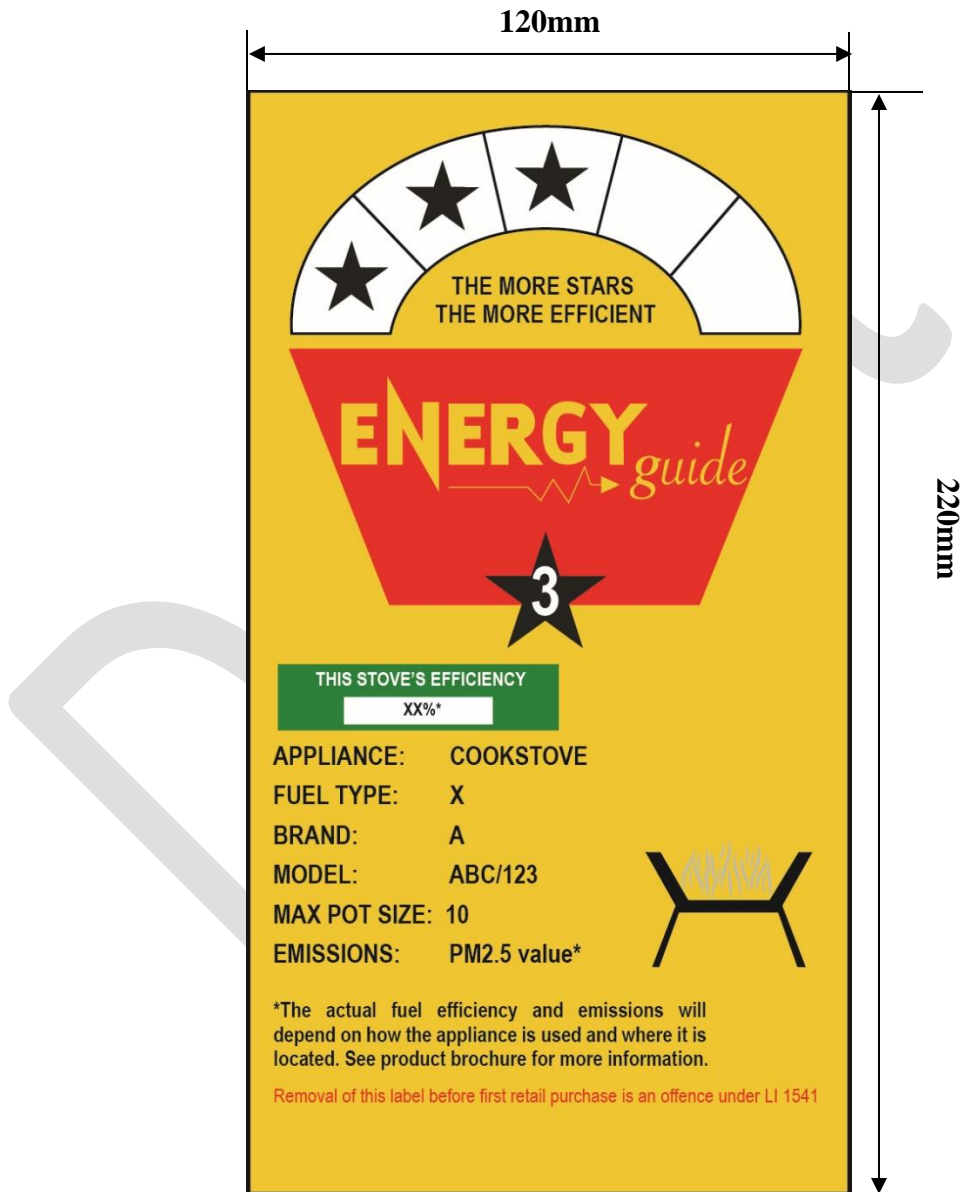


Figure 3

SCHEDULE III
Regulation 6(1)(b) and (c)
The Information Sheet

1. The information sheet shall contain the information specified below. The information may be presented in a tabular form in the order specified covering all cookstoves supplied by the same importer or manufacturer.

- (1) Importer's or manufacturer's name or trade mark
- (2) Manufacturer's model identifier or number
- (3) Type of appliance as follows

<i>Category</i>	<i>Description in information sheet</i>
1.	Natural draft domestic stove
2.	Natural draft institutional stove
3.	Forced draft domestic stove
4.	Forced draft institutional stove

- (4) The type of solid biomass fuel the stove uses
 - (5) The maximum capacity of the stove, using the traditional aluminum pot sizes
 - (6) The thermal efficiency star rating of the model as defined in Schedule I, expressed on a scale of 1 to 4 with 1-Star being the least efficient and 4-Star the most efficient
 - (7) The fuel efficiency or savings based on thermal efficiency determined in accordance with Schedule I and expressed as per cent. The actual fuel efficiency will depend on how the stove is used and where it is placed
 - (8) The PM_{2.5} emissions of the stove determined in accordance with the test procedures of the Standard, expressed in mg/MJd
 - (9) The CO emissions of the stove determined in accordance with the test procedures of the Standard, expressed in g/MJd
 - (10) The safety score determined in accordance with the test procedures of the Standard
2. The information contained in the label may be given in the form of a copy of the label, either in colour or in black and white. In this case, the further information given only in the information sheet must still be included.

SCHEDULE IV
Regulation 6(2)
Categories of Stoves

The biomass cookstoves regulated under this Regulations shall be grouped under the following categories:

<i>Category</i>	<i>Description</i>
1.	Natural draft domestic stove
2.	Natural draft institutional stove
3.	Forced draft domestic stove
4.	Forced draft institutional stove

SCHEDULE V
Regulation 10(1)(b)
Mail Order and Other Distance Selling

1. Mail order catalogues and other marketing related communication shall contain the following specified information:
 - (1) the fuel used by the stove in accordance with paragraph 1(4) of Schedule III
 - (2) maximum pot capacity of the stove in accordance with paragraph 1(5) of Schedule III
 - (3) thermal efficiency star rating of the model in accordance with paragraph 1(6) of Schedule III
 - (4) fuel efficiency or savings in accordance with paragraph 1(7) of Schedule III
 - (5) the potential PM_{2.5} emissions to be released by the stove in accordance with paragraph 1(8) of Schedule III
 - (6) the potential CO emissions to be released by the stove in accordance with paragraph 1(9) of Schedule III
 - (7) safety score in accordance with paragraph 1(10) of Schedule III
2. The size and font in which all the information referred to in paragraph 1 is printed, shall be legible.