



DECREE No. 2021-010/MERN/MHUE/MDC/PR/2017

Implementing Articles 11 and 12 of Law No. 90/AN/15/7th L relating to minimum energy performance standards and their labeling for air conditioners, refrigerators, freezers, combined appliances, and light bulbs.

THE PRESIDENT OF THE REPUBLIC, HEAD OF GOVERNMENT,

Having regard to the Constitution of 15th September 1992;

Having regard to Constitutional Law No. 92/AN/10/6th L revising the Constitution;

Having regard to Law No. 51/AN/09/6th L of 1st July 2009 enacting the Environmental Code;

Having regard to Law No. 140/AN/11/6th L of 8th December 2011 enacting the Customs Code;

Having regard to Law No. 134/AN/11/6th L of 1st August 2012 adopting the Commercial Code of Djibouti;

Having regard to Law No. 167/AN/12/6th L establishing the Djiboutian Agency for Energy Management;

Having regard to Law No. 42/AN/14/7th L reorganizing the Ministry of Energy and Natural Resources;

Having regard to Law No. 55/AN/14/7th L of 25th June 2014 organizing the Ministry Delegate to the Ministry of Economy and Finance in charge of Trade, SMEs, Crafts, Tourism and Formalization;

Having regard to Law No. 53/AN/14/7th L of 23th June 2014 organizing the Ministry of Budget;

Having regard to Law No. 54/AN/14/7th L of 23th June 2014 reorganizing the Ministry of Housing, Urban Planning and Environment;

Having regard to Law No. 33/AN/18/8th L adopting the national system of standardization and quality promotion;



Having regard to Law No. 90/AN/15/7th L establishing the legislative framework on energy efficiency;

Having regard to Decree No. 99-0078/PR/MFEN of 8th June 1999 on the definition and management of administrative public establishments;

Having regard to Decree No. 2004-066/PR/MHUEAT of 20th April 2004 regulating the importation of ozone-depleting substances;

Having regard to Decree No. 2016-109/PRE of 11st May 2016 appointing the Prime Minister;

Having regard to Decree No. 2016-110/PRE of 12nd May 2016 appointing members of the Government and defining their responsibilities;

Having regard to Decree No. 2016-148/PRE of 16th June 2016 defining the responsibilities of Ministries;

On the joint proposal of the Minister of Energy responsible for Natural Resources, the Minister of Housing, Urban Planning and Environment, and the Minister Delegate for Trade, SMEs, Crafts, Tourism and Formalization;

Having deliberated in the Council of Ministers at its session of 19th November 2019;

DECREES:

CHAPTER I – PURPOSE AND DEFINITIONS

Article 1: The purpose of this Decree is to define the modalities for labeling and the display of labels for the following appliances manufactured, assembled, imported or sold in Djibouti:

- Residential and commercial air conditioners, including:
 - * (1) mobile air conditioners,
 - * (2) single-unit systems,
 - * (3) split systems, and
 - * (4) centralized air conditioners, whether single or double-duct, mobile or otherwise;



- Refrigerators, freezers and combined appliances, with a maximum storage volume of 1,500 liters;
- Products providing domestic lighting for the residential and tertiary sectors, both on-grid and off-grid.

* For on-grid lighting, this includes, without limitation: incandescent lamps, tungsten halogen lamps, compact fluorescent lamps, and light-emitting diodes (LED s). Excluded are the lamps listed in Annex 1.

* For off-grid lighting, this includes:

- (1) fixed separate lighting systems (indoor),
- (2) portable separate lighting systems,
- (3) integrated portable systems, and
- (4) integrated fixed systems (outdoor).

This Decree also determines the categories of appliances and establishes the model of the label and related documentation.

Article 2: With regard to air conditioners, the equipment concerned includes units with a capacity of up to 20 kW. The provisions of this Decree apply exclusively to appliances designed to be powered by the electrical grid. Appliances powered by non-electrical energy sources shall be excluded from the scope of this Decree.

With regard to refrigerators, freezers and combined appliances, the following categories are concerned :

- Refrigerators with one or more compartments for the storage of fresh foodstuffs;
- Refrigerators with cellar compartments, cellars, or wine-storage appliances;
- Refrigerators with compartments for highly perishable foodstuffs and refrigerators with non-star compartments;
- Refrigerators with “one-star” compartments;
- Refrigerators with “two-star” compartments;
- Refrigerators with “three-star” compartments;
- Refrigerator-freezers;
- Upright freezers;
- Chest freezers;
- Multi-purpose and other types of refrigeration appliances.



Article 3: For the purposes of this Decree, the terms below shall bear the following definitions:

1. Air Conditioners

An “air conditioner” means an appliance capable of cooling indoor air through a vapor-compression cycle driven by an electric compressor. This includes (i) air conditioners equipped with additional functions such as dehumidification, air purification or ventilation, and (ii) appliances that may use water (either condensation water from the evaporator or externally supplied water) for evaporation at the condenser,

provided that such appliances are also capable of operating without an external water source, i.e. with air only.

A “single-unit system” (monobloc) means an air conditioner installed directly in a window or wall opening, with all components housed in a single casing and equipped with a motor to circulate air through the unit.

A “split system” means an air conditioner consisting of an outdoor unit, containing the compressor and condenser, and an indoor unit, containing the evaporator.

A “multi-split system” means an air conditioning system comprising several indoor units, all connected to a single outdoor unit, allowing separate temperature control for each indoor unit.

“Portable air conditioners” are air conditioners that can be moved from one room of a building to another and are not permanently fixed to the structure.

The “Energy Efficiency Ratio (EER)” of an air conditioner corresponds, for a defined cooling demand under reference conditions, to the cooling capacity (kW) divided by the electrical power input (kW) required to meet that demand.

$$\text{EER} = (\text{Cooling capacity in watts}) / (\text{Electrical power input in watts}).$$

“Inverter air conditioners” are variable-speed compressor systems, enabling the unit to operate at partial load for improved efficiency.

“Nominal capacity” means the cooling capacity of the air conditioning unit under standard reference conditions.



“Standard reference conditions” mean the specific combination of indoor and outdoor temperatures and humidity levels that define the operational conditions for determining the nominal capacity and EER of the air conditioner.

“Power” means the maximum power of equipment, as indicated by the manufacturer.

“Off-mode” means the condition in which the air conditioner is connected to the mains but provides no function.

“Standby-mode” means the condition in which the equipment (i) is connected to the mains supply, (ii) depends on mains power for normal operation, and (iii) provides only the following functions for an indefinite duration: a reactivation function, or a reactivation function combined with only an indication showing that reactivation is enabled, and/or the display of information or status.

“Global Warming Potential (GWP)” means a measure, expressed in kg CO₂ equivalent over a 100-year period, of the contribution to climate change of one kilogram of refrigerant used in the vapor-compression cycle.

2. Refrigerators, Freezers and Combined Appliances

A “household refrigeration appliance” means an insulated cabinet with one or more compartments, used for refrigerating or freezing foodstuffs, or for storing refrigerated or frozen foodstuffs, cooled by one or more energy-consuming processes.

A “refrigerator” means a refrigeration appliance intended for the preservation of foodstuffs, comprising at least one compartment suitable for storing fresh food and/or beverages.

A “refrigerator-freezer” means a refrigeration appliance comprising at least one compartment for storing fresh foodstuffs and at least one other compartment suitable for freezing fresh foodstuffs and storing frozen foodstuffs under “three-star” storage conditions (the food-freezing compartment).

A “refrigerator with cellar compartment” means a refrigeration appliance with at least one compartment for storing fresh foodstuffs and a cellar compartment, but without any compartment for storing frozen foodstuffs, for highly perishable foodstuffs, or for ice-making.

A “multi-purpose appliance” means a refrigeration appliance that comprises exclusively one or more multi-purpose compartments.



A “frozen food storage compartment” means a low-temperature compartment specifically designed for the storage of frozen foodstuffs, classified according to temperature as follows:

- (i) “one-star (*) compartment”: storage compartment where the temperature does not exceed $-6\text{ }^{\circ}\text{C}$;
- (ii) “two-star (**) compartment”: storage compartment where the temperature does not exceed $-12\text{ }^{\circ}\text{C}$;
- (iii) “three-star (***) compartment”: storage compartment where the temperature does not exceed $-18\text{ }^{\circ}\text{C}$;
- (iv) “food-freezing compartment” (or “four-star (****) compartment”): compartment suitable for freezing at least 4.5 kg of foodstuffs per 100 liters of storage volume — and in no case less than 2 kg — from ambient temperature down to $-18\text{ }^{\circ}\text{C}$ within 24 hours, also suitable for storing frozen foodstuffs under “three-star” conditions and which may include “two-star” areas;
- (v) “non-star compartment”: compartment where the temperature is below $0\text{ }^{\circ}\text{C}$, which may also be used for ice-making and storage, but not for the storage of highly perishable foodstuffs.

A “chest freezer” means a food freezer with one or more compartments accessible from the top of the appliance, or with both top-opening and front-opening compartments, provided that the gross volume of the top-opening compartments exceeds 75% of the total gross volume of the appliance.

A “top-opening” or “chest” appliance means a refrigeration appliance whose compartments are accessible from the top of the appliance.

“Annual energy consumption (AC)” (kWh/year) means the annual energy consumption calculated taking into account the conditions of use in Djibouti.

“Standard annual energy consumption (SC)” (kWh/year) means the annual energy consumption calculated solely on the basis of the characteristics of the appliance.

The “Energy Efficiency Index (EEI)” means the ratio between the annual energy consumption (AC) of an appliance and the standard annual energy consumption (SC), both expressed in kWh/year.

“Climatic class” refers to the range of ambient temperatures within which a refrigeration appliance must be capable of maintaining the required storage temperatures in all its



compartments simultaneously. It is indicated by a letter marked on the appliance's rating plate. Climatic classes ensure normal use of the appliance, taking into account the environment in which the refrigeration appliance is located, since normal cooling capacity varies with ambient temperatures.

- (i) ST – Subtropical: from +16 °C to +38 °C
- (ii) T – Tropical: from +16 °C to +43 °C

3. Lamps

A “ballast” means a device placed between the power supply and one or more discharge lamps, serving to limit the current in the lamp(s) to the required value. A ballast may also include a transformer for the supply voltage, a light flux regulator, power factor correction elements, and may, alone or in combination with a starting device, provide the conditions required for lamp ignition.

“Colour rendering (Ra)” means the effect of an illuminant on the chromatic appearance of objects it illuminates, as consciously or unconsciously compared with the appearance of the same objects under a reference illuminant.

A “compact fluorescent lamp” means a lamp which cannot be dismantled without irreversibly damaging it, equipped with a cap and incorporating a fluorescent lamp as well as all additional components necessary for re-ignition and stable operation.

“Correlated colour temperature (T_c [K])” means the temperature of a Planckian radiator (black body) whose perceived colour, under specified observation conditions, most closely resembles that of a given stimulus of the same brightness.

A “lamp” means a source designed to produce optical radiation, generally visible.

A “directional lamp” means a lamp in which at least 80% of the emitted light falls within a solid angle of 1 steradian (corresponding to a cone with a 120° angle).

A “discharge lamp” means a lamp in which light is produced, directly or indirectly, by an electric discharge through a gas, a metallic vapor, or a mixture of several gases and vapors.

An “incandescent lamp” means a lamp in which light is produced by a filamentary conductor heated to incandescence by the passage of an electric current, whether or not the lamp contains gases influencing the incandescence process.



A “fluorescent lamp” means a low-pressure mercury vapor lamp in which most of the light is emitted by one or more layers of luminescent substances excited by the ultraviolet radiation of the discharge.

A “high-intensity discharge lamp” means a discharge lamp in which the arc producing the light is stabilized by the thermal effect of its enclosure and has a surface power density exceeding 3 watts per square centimeter.

A “lamp base (cap)” means the part of a lamp that enables connection to the electric supply by means of a socket or connector and, in most cases, also secures the lamp in the socket.

“Lamp efficacy” means the ratio of the luminous flux emitted (Φ) to the power consumed by the lamp (P_{lamp}): $\eta_{\text{lamp}} = \Phi / P_{\text{lamp}}$ (units: lm/W).

“Lamp ignition time” means the time required, after the power supply is switched on, for the lamp to ignite and remain illuminated.

“Lamp warm-up time” means the time required for the lamp, once ignited, to emit a defined proportion of its stabilized luminous flux.

A “light-emitting diode (LED)” means a semiconductor device that directly converts electrical energy into light.

“Power factor” means the ratio of the absolute value of active power (P) to apparent power under periodic conditions.

The “rated lifetime” of a lamp means the lifetime marked on the lamp or declared by the responsible manufacturer/vendor.

The “rated power” of a lamp means the power marked on the lamp or declared by the responsible manufacturer/vendor.

A “special-purpose lamp” means a lamp not intended for the illumination of household rooms, either due to its technical parameters or because product information indicates that it is unsuitable for such use.

A “halogen lamp” means a filament lamp in which the filament is made of tungsten and surrounded by a gas containing halogens or halogen compounds.



The “capacity” of a cell or battery means the quantity of electricity (electric charge), usually expressed in ampere-hours (Ah), that a fully charged battery can deliver under specified conditions.

The “IP rating (Ingress Protection)” means the degree of protection provided by enclosures of electrical equipment against the ingress of foreign objects, dust, and water.

“Mobile products or subsystems” are portable when two or more of the main components (energy source, energy storage, and light source) are connected, rendering the product or subsystem easily transportable.

In “integrated products,” the solar module is incorporated into the same casing as the other components or connected via a cable short enough to allow the solar module to collect external energy while the other components remain indoors.

In “separate products,” no solar module is present, or the solar module is connected to the components via a sufficiently long cable allowing the module to collect external energy while the other components remain indoors.

CHAPTER II – MINIMUM ENERGY PERFORMANCE REQUIREMENTS

Article 4: All products must comply with the minimum energy performance requirements as well as the environmental performance standards established by the applicable legislation and regulations.

1. Air Conditioners

All air conditioning products must meet the following specifications:

Air Conditioner Type	GWP - Global Warming Potential	MEPS - Minimum Energy Performance Standard Value
Mobile air conditioner	Not indicated	EER >2,8
Other air conditioners and air conditioning products	<150	EER >2,8
	>150	EER >3,1



EER: Energy Efficiency Ratio

All air conditioning systems must meet the following specifications for off and standby modes (off and standby power values are provided by the manufacturers):

- Maximum off power < 0.5 W
- Maximum standby power < 0.5 W (for a reactivation function only)
- Maximum standby power < 1 W (for a reactivation function and only an indication that the reactivation function is activated, and/or the display of information or status)

2. Refrigerators, freezers, and combination refrigerators

All refrigeration appliances must meet the following specifications:

- Climate class: T (tropical) or ST (subtropical)
- Subtropical class: EEI < 42
- Tropical class: EEI < 55

EEI: Energy Efficiency Index

3. Lamps

Lamps must meet the minimum performance levels indicated in Appendix 2.

Article 5: For air conditioners, the Energy Efficiency Ratio (EER) is calculated as the cooling capacity in watts divided by the electric power input in watts, under reference test conditions (outdoor temperature 35°C, indoor temperature 27°C, relative humidity 50%). For refrigeration appliances, the Energy Efficiency Index (EEI) shall be calculated in accordance with Annex 3.

CHAPTER III – DISPLAY OF CHARACTERISTICS AND ENERGY PERFORMANCE

Article 6: When offered for sale, for rental, or for hire-purchase, refrigerators, air conditioners, refrigerator-freezer combinations, and lamps referred to in Article 1 must be:

- fitted with a label affixed to the appliance and its packaging, and reproduced in the user manual supplied by the manufacturer.



1- For air conditioners, the information shall include the following:

1. General information (at the top of the label):

- a. Manufacturer;
- b. Reference model;
- c. Type of air conditioner, namely:
 - i. Portable air conditioner (upright, etc.);
 - ii. Monobloc (window unit, etc.);
 - iii. Split system (single unit, multi-units);
 - iv. Centralized system.

2. Minimum energy performance values (central section):

- d. Minimum EER for this type of appliance (under test conditions);
- e. EER of the appliance sold (under test conditions).

3. Annual energy consumption, expressed in kWh/year (under test conditions).

4. An indication of the performance of the appliance sold (for example, in the form of an energy label).

5. Technical characteristics (at the bottom of the label):

- f. Nominal power (W);
- g. Noise level (indoor, dB(A));
- h. Noise level (outdoor, dB(A));
- i. Refrigerant fluid (and its GWP).

2. For refrigerator-freezer combinations, the information shall include the following:

1. General information (at the top of the label):



- a. Supplier's name or brand;
- b. Model reference;
- c. Category of refrigeration appliance.

2. Energy performance values (central section):

- d) Climatic class;
- e) Annual energy consumption, expressed in kWh/year;
- f) Percentage of relative performance between the appliance and the minimum requirement, calculated as the ratio between the difference in energy consumption and the minimum requirement, indicated for example by the energy label;
- g) Energy efficiency class according to European classification.

3. Technical characteristics (at the bottom of the label):

- h. "Autonomy of X hours," defined as "the temperature rise time";
- i. "Freezing capacity," expressed in kg/24h;
- j. Volume of fresh food compartment (liters);
- k. Volume of frozen food compartment (liters);
- l. Noise level (external, dB(A)).

3. For lamps, the information shall include the following:

- For grid-connected lighting:

- * Manufacturer;
- * Product name and model number;



- * Warranty period;
- * Luminous efficacy – indicated precisely at each level in lumens;
- * An indication of the performance of the equipment sold (for example, in the form of an energy label);
- * Type of lamp;
- * Operating time.

- For off-grid lighting, in addition:

- i. Charger capacity (for example PV power or mechanical charging time);
- ii. Battery capacity.

Article 7: The label referred to in Article 5 above shall conform to the model set out in Annex 4. The label shall be provided by the manufacturer or importer who offers to the consumer any of the appliances listed in Article 2 of this Decree.

It shall be affixed by the person who places the appliance on sale, for rental, or for hire-purchase, to the upper part of the front face of the appliance, in such a way as to be clearly visible.

Article 8: Additional information may be provided, including in the form of diagrams, calculations, technical data sheets concerning the materials and key components used in the manufacture of the appliance, relating to the essential characteristics of the product design, particularly with regard to elements having a significant influence on its energy consumption.

CHAPTER IV – CONTROL AND IMPLEMENTATION



Article 9: Customs clearance and placing on the market of the appliances listed in Article 2 of this Decree may only occur where the importer or supplier is in possession of a certificate of conformity issued by the Djiboutian Agency for Standards and Quality (ADN), upon presentation of technical documentation relating to the labeling information, valid for a period of five (5) years from the date of the last production of the same model.

Article 10: The agents of the Agency for Standardization and of ADME shall be responsible for verification and shall ensure the strict enforcement of this Decree in accordance with the legislation and regulations in force. This control shall be carried out jointly by ADN and ADME agents.

Article 11: This Decree shall be reviewed at regular intervals not exceeding ten (10) years, and where necessary updated to reflect technical progress in the appliances concerned.

Article 12: All relevant ministries, each in their respective areas of competence, shall be responsible for the implementation of this Decree, which shall enter into force six (6) months after its signature.

Done in Djibouti, on 14th January 2021.

The President of the Republic,

Head of Government

ISMAÏL OMAR GUELLEH