

Procurement guidelines for general appliances

Televisions

May 2021



Introduction

About the Procurement Guidelines

These guidelines supply technical criteria that can be directly inserted into procurers' tenders and are calibrated to the most **energy-efficient** products in Argentina's local markets. They are meant only for electric and gas appliances with an **Energy Efficiency Label**.

Following these guidelines ensure the acquisition of products that consume less energy and emit **fewer greenhouse gases** throughout their lifetime.

About Topten Argentina

Toptenargentina.org is an online consultation tool that presents the most energy-efficient appliances available in Argentina's market. It offers the consumer the necessary information in order to incorporate the variable of energy consumption when buying new equipment. It is also an instrument that serves to make manufacturers and politicians aware of the importance of energy efficiency.

The website was launched in 2015 by [Fundación Vida Silvestre Argentina](#), an environmental NGO from the WWF network. It is the local version of the international [Topten initiative](#) (launched in Switzerland in 2000), and is part of the [Topten Latin-America group](#).

All television sets displayed on Topten Argentina **meet the criteria** contained in these guidelines. Procurers can therefore use the website to check the availability and assortment of products currently on the market, which meet the [Topten selection criteria](#).

Why use this guide?

How much can you save in energy?

Considering television sets listed on toptenargentina.org and the assumptions listed below, it is possible to achieve the savings indicated in Table 1.

Assumptions:

- Frequency of use: 4 hours / day, throughout the 365 days of the year
- Lifetime expectation: 15 years
- Electricity cost¹: 6,00 \$ / kWh

Table 1: Comparison in energy consumption between a Topten TV and an inefficient model

	Topten model	Inefficient model	Topten model	Inefficient model
Screen diagonal	80 cm / 32"	80 cm / 32"	139 cm / 55"	139 cm / 55"
Resolution ²	1366 x 760	1366 x 760	3840 x 2160	3840 x 2160
Energy class	A+	B	A+	B
Energy consumption (kWh/year)	32	65	103	194
Use cost (electricity in 15 years)	\$ 2.880	\$ 5.850	\$ 9.300	\$ 17.496
Savings	51% energy / unit 2.970 \$ / unit		47% energy / unit 8.196 \$ / unit	

Differences in electricity consumption between inefficient and Topten models rise alongside the **screen size** (diagonal), leading to higher energy savings and consequently greater money benefits. As the example shows, the total savings can reach similar percentages in both cases, but it implies a bigger capital in the models with larger screen size.

According to the IRAM³ standard for energy efficiency labelling (IRAM 62411:2012), the energy consumption is measured over the assumption of a 4 hours basis. A longer **daily usage** (for example, when using TVs in a professional environment) will lead to higher consumption than the one reported on the label.

¹ The price per kWh is obtained by making an average between the rates of electricity companies from different provinces. Calculations are made for Urban Users with Small Demands (consumption between 450 and 500 kWh/month). In addition, an average tax of 35% is considered, which includes IVA at 21%, IIBB of 5%, and a Municipal tax that can range from 1% to 10% according to each case.

² For more information, go to Notes on implementation.

³ Argentine Institute of Standardization and Certification.

Procurement criteria

The following criteria can be inserted directly into tendering documents. The Topten selection criteria and the product lists are **updated regularly**. The newest versions are always available at <https://toptenargentina.org/>.

Energy efficiency class

Classifying them by their screen size (diagonal), televisions must comply with at least the following conditions:

Table 2: Procurement criteria for the acquisition of energy-efficient models – Energy efficiency class

Screen diagonal (cm)	Energy efficiency class
≤ 80	A+
80 - 120	A+
> 120	A+

Superficial energy consumption

By normalizing the TV on-mode power (declared in agreement with the Energy Label) with the screen surface area (measured using the square of the TV’s diagonal), it is possible to evaluate the **energy consumption of a surface unit**. Taking this into account, televisions must comply with the following conditions:

Table 3: Procurement criteria for the acquisition of energy-efficient models – Superficial energy consumption

Screen diagonal (cm)	On-mode power / diagonal ² ratio (W/cm ²)
≤ 80	< 0,0041
80 - 120	< 0,0040
> 120	< 0,0037

Energy consumption

As mentioned before, energy consumption rises alongside the equipment screen size. In order to limit said consumption, as well as the CO2 emissions derived from the use of electricity, the procured models must abide by an **energy usage cap**.

Classifying them by their screen diagonal (cm), TVs must comply with the following criteria:

Table 4: Procurement criteria for the acquisition of energy-efficient models – Energy consumption

Screen diagonal (cm)	Energy consumption (kWh/year)
≤ 80	-
80 - 120	-
> 120	< 140

Verification

Bidders must supply the **Energy Label** and technical data, as it is stipulated in the disposition 219/2015 from the Commerce Secretary⁴. Information about the equipment’s energy efficiency class, energy consumption, screen diagonal, and on-mode power, can be found in the mentioned Energy Label.

Notes on implementation

Screen resolution

Screen resolution refers to the number of pixels that can be displayed by a TV. Conventionally, this parameter is described as the product between the pixels’ number of columns and rows. Thus, a resolution of 1920x1080 means that the screen can display 1920 pixels wide and 1080 pixels tall.

Table 5 shows some of the most frequent resolutions used in market-available TVs:

Table 5: Most frequent resolutions for TVs

Resolution	Other names
4,096 x 2,160	4K
3,840 x 2,160	Ultra HD, Ultra High Definition, UHD, 4K UHDV
1,920 x 1,080	Full HD, FHD
1,366 x 768	Wide Extended Graphics Array, Wide XGA, HD
1,280 x 720	HD, High Definition

⁴ Link to the disposition: <http://servicios.infoleg.gob.ar/infolegInternet/anexos/250000-254999/251748/norma.htm>.

Energy efficiency class

According to the IRAM 62411:2012 standard, the **energy efficiency class** of TVs is established based on an **Energy Efficiency Index (IEE)** as follows:

Table 6: Energy efficiency class for TVs

Energy Efficiency Index	Energy efficiency class
$IEE \leq 0,23$	A+
$0,23 \leq IEE < 0,30$	A
$0,30 \leq IEE < 0,42$	B
$0,42 \leq IEE < 0,60$	C
$0,60 \leq IEE < 0,80$	D
$0,80 \leq IEE < 0,90$	E
$0,90 \leq IEE$	F

The Energy Efficiency Index can be calculated as the quotient between the on-mode power of the device and the referential on-mode power, both measured following the methods defined in the IRAM 62411:2012 standard. This index is not listed on the Energy Label; therefore, it is only represented by the letter indicating its class.

Energy Label

The **Energy Efficiency Label** for televisions provides information on their energy consumption, based on the use of the efficiency classes (scale: A+ to F).

Two different IRAM standards are used in the Energy Label:

- Standard 62411 regulates consumption on mode.
- Standard 62301 regulates consumption in standby mode.

The label is attached to the equipment and has the form presented in Figure 1.

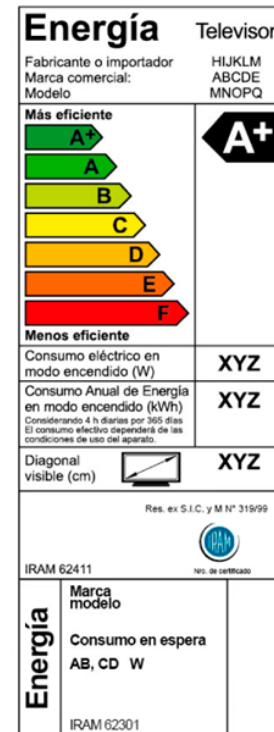


Figure 1: Energy Efficiency Label for TVs

Life cycle costs

To increase savings and reduce environmental impact, procurers should evaluate **life cycle costs** when tendering for televisions. Thus, it is advisable to include in the tender a costing exercise - even if simple - for the product life cycle costs.

Table 7: Example of a breakdown costs table, to be filled in by bidders

	Information details	Different unit costs (\$)	Total cost (\$)
Delivery			
Installation			
Use*			
Maintenance			
Recycling and disposal			

*In order to estimate the **cost of use**, procurers must take into account their appliance **frequency** of use, its **lifetime** expectation or replacement rate, its energy **consumption** (as it is specified in the energy label), and the local **electricity costs**, among other possible factors. A step-to-step explanation can be found in toptenargentina.org.

It's important to note that **prices** for electricity are **highly variable**. They not only depend on the distribution company and the amount of energy consumed by the user, but they can also change significantly over time. Therefore, it is recommended that procurers make their **own estimates** of the energy consumption of an appliance, using the **tariff table** corresponding to their situation.

Advice and support

For further assistance in using the information presented in this guideline, please contact Argentina's Topten team (<https://toptenargentina.org/site/contact>).

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