



Guidelines for Front Runner Public Procurers

Water Coolers

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Why follow Topten criteria?

- Topten (www.topten.eu) is a European web portal helping professionals, public procurers and large buyers to find **the most energy efficient products available in Europe**. The products are selected and updated continuously, according to their high energy and environmental performances, independently from the manufacturers.
- At the moment, there are no water coolers displayed on www.topten.eu. The Topten criteria for water coolers are based on the ENERGY STAR® (www.energystar.gov). Products that meet the criteria contained in these guidelines can be found in the ENERGY STAR database. Procurers can use the database to check the availability and assortment of products currently on the market. Database under <https://www.energystar.gov/productfinder/product/certified-water-coolers/results>

How much can you save?

There are units with bottles and units connected to tap water, stand-alone units and table-top units, but concerning energy consumption the relevant distinction is between water coolers that provide cold water only and those that provide hot and cold water.

Considering the models in the ENERGY STAR database and the following assumptions, it is possible to achieve the savings indicated in the next tables.

Assumptions {

- Life time expectation: 6 years
- Electricity cost: 0,20 €/kWh

		ENERGY (kWh/day)	REFRIGERANT	ENERGY (kWh/year)	ELECTRICITY COSTS (€ in 6 years)	SAVINGS (€ in 6 years)
WATER COOLER COLD ONLY	Efficient model	0.13	R290	47.5	57	57% energy/unit 75 €/unit
	Inefficient model	0.30	R134a	110	132	



WATER COOLER HOT AND COLD	Efficient model	0.13	R290	47.5	57	85% energy/unit 315 €/unit
	Inefficient model	0.85	R134a	310	372	

Comparing similar models, the most efficient models allow electricity savings, in 6 years, more than 300 €/unit for hot and cold water and approximately 75 €/unit for cold only water coolers. Best models consume more than 50% less energy than inefficient models, and 85% less in the case of hot and cold units.

Water coolers with climate-friendly refrigerants are starting to enter the market (e.g. R290 or R600a).

Procurement criteria

The following criteria can be inserted directly into tendering documents. The newest version of this document is always available at www.topten.eu/pro.

SUBJECT: HIGHLY ENERGY-EFFICIENT WATER COOLERS

TECHNICAL SPECIFICATIONS

1. Energy use per day

Water coolers must use no more energy than given in the following table, measured according to the method described by ENERGY STAR under:

https://www.energystar.gov/ia/partners/product_specs/program_reqs/ES_WC_V2_Spec.pdf

Table 1: Procurement criteria for water coolers

CATEGORY	ENERGY USE (ON MODE WITH NO WATER DRAW)
Cold Only	≤ 0.16 kWh/day
Hot and Cold	≤ 0.18 kWh/day

Verification

Bidders must supply the energy use measured according to the procedure defined by ENERGY STAR.



2. Standby mode

Water coolers must have the ability to go into standby mode.

Verification

Bidders must supply the manual and indicate the page(s) with instructions regarding standby mode.

3. Refrigerants (optional)

Water coolers must use refrigerants with global warming potential below 150, such as R290 (propane) or R600a (isobutane).

Verification

Bidders must supply the information on refrigerant type, charge in kg and global warming potential (GWP).

BACKGROUND FACTS

According to EU F-Gas Regulation No. 517/2014 commercial plug-in refrigerators and freezers that contain refrigerants with global warming potential of 150 or more will be banned from 1 January 2022. This will also apply to water coolers. First water coolers using refrigerants with global warming potential below 150 such as R290 (propane) or R600a (isobutane) are on the market.

The best choice for hot and cold water coolers is “on-demand” units. They do not store hot water in a tank but produce it on demand with a flow heater or thermoblock. This makes an enormous difference. Units with a tank use 5 times more energy than on-demand units. ENERGY STAR notes that there may be a wait of a few minutes for hot water with on-demand units.

Water coolers do not need to be on around the clock. Experiences with other refrigerating appliances like beverage coolers show that energy consumption can be reduced by 15 - 45% when the unit is operated in standby mode during the night and weekends.

NOTES ON IMPLEMENTATION

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



Table 2: Example of a breakdown costs table, to be filled in by bidders.

	Information details	Different unit costs in € (excluding tax)	Total cost in € (excluding tax)
Delivery			
Installation			
Use	Energy use in kWh/day x 365 days/year x n ⁰ units	Electricity cost: 0,20 €/kWh*	
Maintenance			
Recycling and disposal			

* This figure is just an example. The procurer can use the average electricity price paid during the last 2 or 3 years, and also include subscription fee and taxes.

Advice and support

If you would like further assistance in using the information presented here in your own procurement actions or more information please contact your national Topten team (find the links on www.topten.eu/pro).