

# Guidelines for Frontrunner Public Procurers

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## Water Coolers

Updated: August 2016



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## Why follow Topten/ProCold criteria?

- ProCold ([www.topten.eu/pro-cold](http://www.topten.eu/pro-cold)) is an EU-project aiming to **improve energy efficiency in plug-in cabinets** and speed up the **switch to climate-friendly refrigerants**. The project provides help for manufacturers, suppliers, food and beverage companies, retailers, gastronomy, hotels, public authorities, media and other stakeholders.
- Topten ([www.topten.eu](http://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](http://www.topten.eu). The Topten/ProCold-criteria for water coolers are based on the ENERGY STAR® ([www.energystar.gov](http://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 (download the excel to see availability in Europe). Database under <https://www.energystar.gov/productfinder/product/certified-water-coolers/results>
- [Topten.eu/pro-cold](http://www.topten.eu/pro-cold) links to national partners' Topten websites and is developed under the ProCold-project, supported by the European Union through the Horizon 2020 programme.

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## 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	Topten model	0.15	R290	55	66	50% energy/unit 66 €/unit
	Inefficient model	0.30	R134a	110	132	
WATER COOLER HOT AND COLD	Topten model	0.17	R290	62	74	80% energy/unit 298 €/unit
	Inefficient model	0.85	R134a	310	372	

Comparing similar models, the Topten models allow electricity savings, in 6 years, up to 300 €/unit for hot and cold water and around 65 €/unit for cold only. Best models consume about 50% less energy than inefficient models, and even 80% 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-cold](http://www.topten.eu/pro-cold).

**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](https://www.energystar.gov/ia/partners/product_specs/program_reqs/ES_WC_V2_Spec.pdf)

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 Regulation No. 517/2014 (so-called “f-gas regulation”) 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.

More info under [www.topten.eu/pro-cold/emd/](http://www.topten.eu/pro-cold/emd/)

## 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.

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)
<b>Delivery</b>			
<b>Installation</b>			
<b>Use</b>	Energy use in kWh/day x 365 days/year x n° units	Electricity cost: 0,20 €/kWh*	
<b>Maintenance</b>			
<b>Recycling and disposal</b>			

\* 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-cold](http://www.topten.eu/pro-cold)).