



solutions for europe

natural refrigerants

19 & 20 April, 2016 – Barcelona



**natural refrigerants**

19 & 20 April, 2016 – Barcelona

**Marketing and green procurement  
tools for commercial plug-in  
refrigerators:**

**The EU Horizon 2020 project  
"ProCold"**

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# About ProCold

- ProCold is an EU-project aiming to improve energy efficiency in **plug-in** cabinets and speed up the switch to climate-friendly refrigerants.
- Product groups: refrigerated storage cabinets, refrigerated display cabinets, beverage coolers, ice cream freezers, vending machines, wine coolers and minibars.













- The project involves manufacturers, suppliers, food & beverage companies, retailers, restaurants, hotels and public authorities on the EU-level and in 8 European countries.
- ProCold publishes on-line references of the best models and organizes a product competition [www.topten.eu/pro-cold](http://www.topten.eu/pro-cold)





# Topten product lists

														
Brand	Porkka	Porkka	Porkka	Liebherr	Porkka	Liebherr	Liebherr	Electrolux Professional Ecostore Touch 727300 (EST71FFC)	Gram	Liebherr	Gram	Gram	Electrolux Professional	Gram
Model	Inventus FX7	Inventus F7	Inventus F8	GGPv 6590	Inventus F6	GGv 5060	GGv 5860		TWIN F 660 LSG	BGPv 8470	MIDI F 625 LSG	TWIN F 600 RSG	Ecostore Premium 727314 (ESP71FFC)	PLUS F 600 RSG
Other models						GGv 5010	GGv 5810		TWIN F 660 CXG, TWIN F 660 RSG	BGPv 8420	MIDI F 625 CXG, MIDI F 625 RSG	TWIN F 600 CXG	Ecostore Premium 727315 (ESP71FFLC)	PLUS F 600 CXG, PLUS F 600 CXG
Electricity costs (€ in 8 years)	1227	1667	1859	1862	1694	1992	2162	2994	3331	4253	3368	3266	3816	3614
Net volume (liters)	501	489	491	477	335	337	388	513	473	677	449	422	513	441
Storage temperature (°C)	-26...-15	-26...-15	-26...-15	-10...-35	-26...-15	-14...-28	-14...-28	-22...-15	-25...-5	-10...-35	-25...-5	-25...-5	-22...-15	-25...-5
Climate class	4	4	4	4	4	5 - heavy-duty	5 - heavy-duty	4	4	5 - heavy-duty	4	4	4	4
Energy efficiency class	A	B	B	B	B	C	C	C	D	D	D	D	D	D
Energy Efficiency Index	19.5	26.8	29.9	30.5	33.9	39.73	39.98	46.8	54.7	55.3	57.1	57.5	59.6	62
Energy (kWh/year)	767	1'042	1'162	1'164	1'059	1'245	1'351	1'871	2'082	2'658	2'105	2'041	2'385	2'259
Refrigerant	R290	R290	R290	R600a	R290	R290	R290	R290	R290	R290	R290	R290	R290	R290

														
Brand	Gamko	Rhino	Gamko	Gamko	Rhino	Liebherr	Frigoglass	Frigoglass	Klimasan	Frigoglass	Rhino	Liebherr	Liebherr	Inefficient model
Model	E3/2222GMU84	Oslo 1350H	E3/2222GMU84	E3/222GMU84	Monaco 900H	FKUv 1610	IC00L-1300 HD C (R744)	IC00L-300 C (R290)	ECOrio 372	IC00L-150 C (R600a)	Milan 600H	BCDv 4313	FKvsl 4113	
Other models	E3/2222GMU82, E3/2222GMUCS82, E3/2222GMUCS84, E3/2222MU82, E3/2222MU84, E3/2222MUCS82, E3/2222MUCS84		E3/222GMU82, E3/222GMUCS82, E3/222GMUCS84, E3/222MU82, E3/222MU84, E3/222MUCS82, E3/222MUCS84	E3/22GMU82, E3/22GMUCS82, E3/22GMUCS84, E3/222MU82, E3/222MU84, E3/222MUCS82, E3/222MUCS84		FKUv 1660		IC00L-500 C (R290), IC00L-800 C (R290)						
Electricity costs (€ in 8 years)	1642	1051	1542	1098	789	576	3797	970	1005	630	725	1560	1510	4264
Net volume (liters)	665	330	495	325	208	130	1247	245	254.7	120	138	364	346	500
Storage temperature (°C)	+2...+18	-1...+7	+2...+18	+2...+18	-1...+5	+1...+15	0...+10	0...+10	0...+13	0...+10	-1...+5	+2...+12	0...+15	0...+15
Temperature class	M1	M2	M1	M1	M1		M2	M2	M2	M2	M1	M2	M1	M1
❖ Draft energy index	29.1	34.0	35.5	36.0	36.5	36.6	37.8	39.7	39.9	42.2	44.4	46.6	47.0	97.3
Energy (kWh/year)	1'026	657	964	686	493	360	2'373	606	628	394	453	975	944	2'665
Refrigerant	R600a	R600a	R600a	R600a	R600a	R600a	R744	R290	R600a	R600a	R600a	R600a	R600a	R134a
Cooling	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air
Countries available	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU

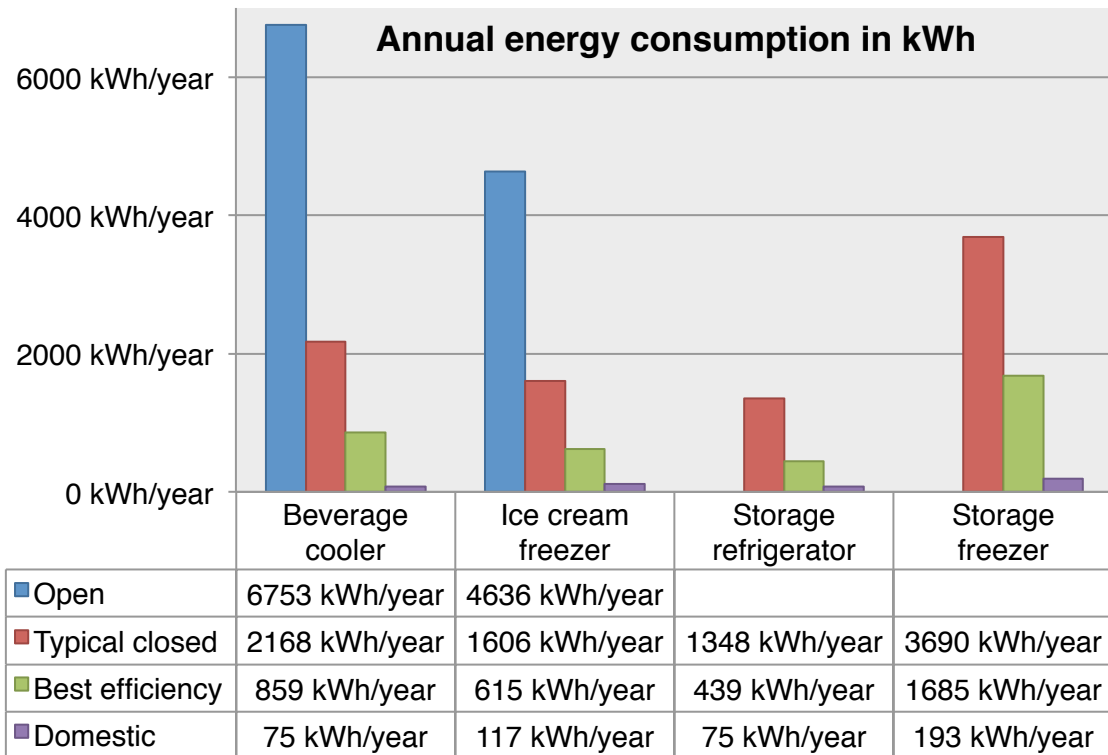
# Topten product lists

														
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Electricity costs (€ in 8 years)														
Net volume (liters)														
Storage temperature (°C)														
Climate class														
Energy efficiency class														
Energy Efficiency Index														
Energy (kWh/year)														
Refrigerant														
<div><div></div><div><ul style="list-style-type: none"><li>• Currently 131 products listed</li><li>• All products using natural refrigerants (R600a, R290, CO2/R744)</li><li>• All products with highest efficiency (data according to EN standards)</li></ul></div></div>														
Brand	<a href="#">Gamko</a>	<a href="#">Rhino</a>	<a href="#">Gamko</a>	<a href="#">Gamko</a>	<a href="#">Rhino</a>	<a href="#">Liebherr</a>	<a href="#">Frigoglass</a>	<a href="#">Frigoglass</a>	<a href="#">Klimasan</a>	<a href="#">Frigoglass</a>	<a href="#">Rhino</a>	<a href="#">Liebherr</a>	<a href="#">Liebherr</a>	Inefficient model
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Electricity costs (€ in 8 years)	1642	1051	1542	1098	789	576	3797	970	1005	630	725	1560	1510	4264
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Temperature class	M1	M2	M1	M1	M1		M2	M2	M2	M2	M1	M2	M1	M1
Draft energy index	29.1	34.0	35.5	36.0	36.5	36.6	37.8	39.7	39.9	42.2	44.4	46.6	47.0	97.3
Energy (kWh/year)	1'026	657	964	686	493	360	2'373	606	628	394	453	975	944	2'665
Refrigerant	R600a	R600a	R600a	R600a	R600a	R600a	R744	R290	R600a	R600a	R600a	R600a	R600a	R134a
Cooling	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air	Forced-air
Countries available	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU	EU

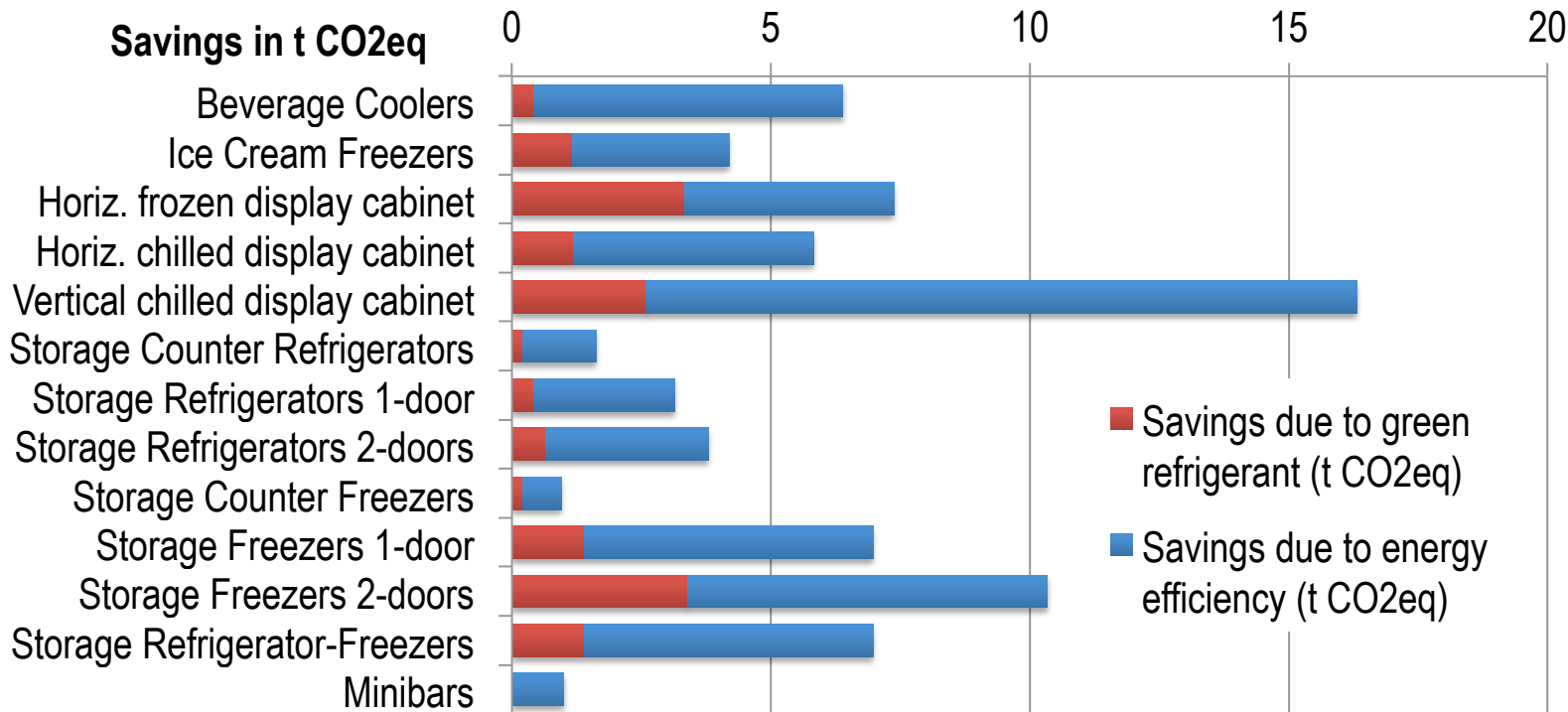


# Energy saving potentials

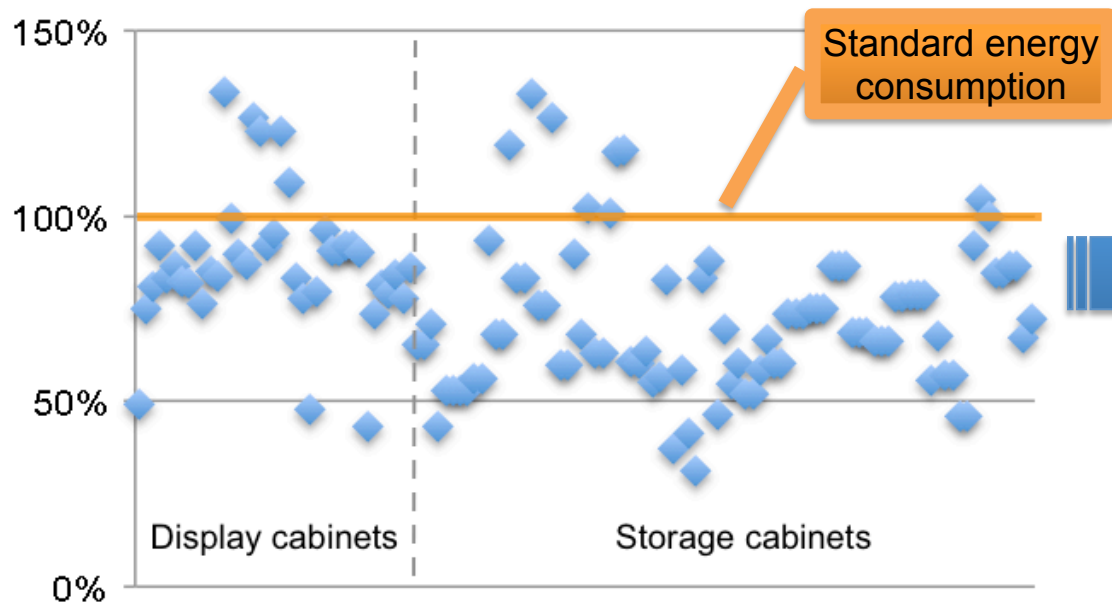
- Efficient models use 2-3 times less energy than typical models
- Open products use the most energy: 8 times more than efficient models



# Greenhouse gas emission savings



## Looking at kWh values in catalogues...



Energy consumption values in catalogues cannot be compared and are typically lower than standard energy consumption

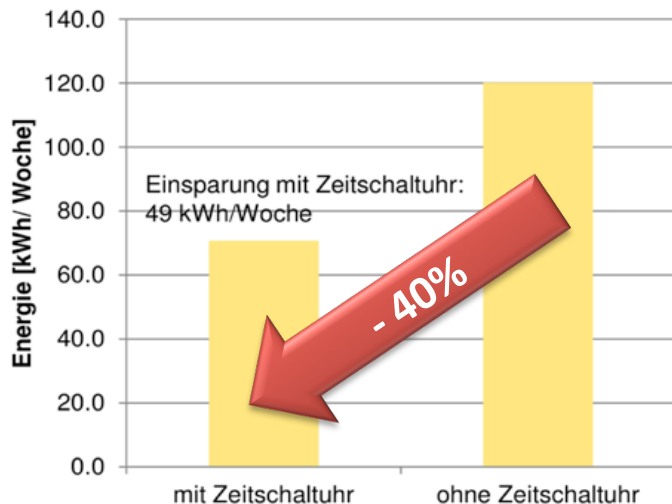
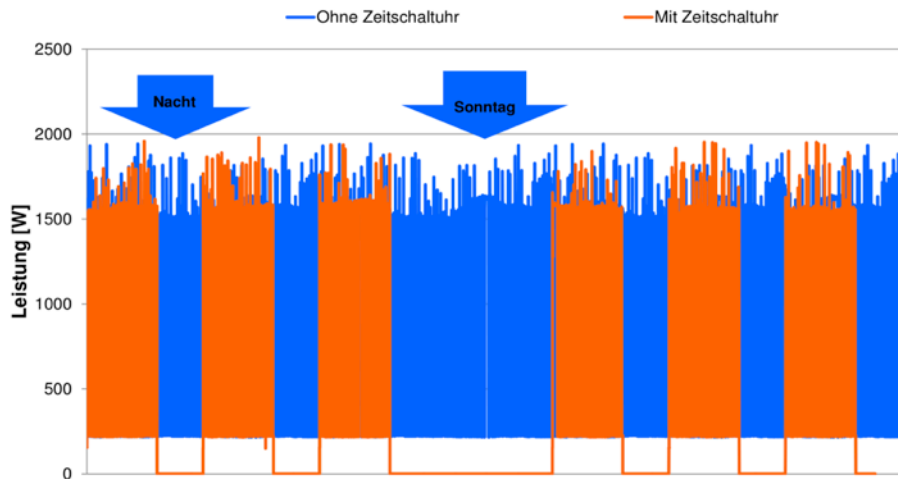
Topten product lists make it easy to find energy-saving products



## Factsheet Energy Management Devices

Energy management systems or devices (EMS or EMD)  
put beverage coolers and vending machines into sleep-mode during off-hours → reducing energy costs by 15-45%

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



## Categories:

1. Vertical chilled storage cabinets
2. Beverage coolers
3. Small ice cream freezers
4. Vertical supermarket refrigerator cabinets
5. Refrigerated glass fronted vending machines



**Deadline** for product submission: **30 September 2016**

[www.topten.eu/pro-cold-award](http://www.topten.eu/pro-cold-award)

Verification tests according to EN standards (published or drafts)

Award ceremony at EuroShop 5 - 9 March 2017

Promotion of winning products at Host 20 - 24 October 2017

Winning criteria:

- ✧ Plug-in type
- ✧ Natural refrigerant
- ✧ Best energy efficiency index

## Swiss rebate programme

- 25% of purchase price reimbursed
- Eligible: Topten listed products (plug-in, natural refrigerant, highest efficiency)
- Product must be placed in Switzerland

[www.topten.eu/rebates/](http://www.topten.eu/rebates/)

	25% of the purchase price up to the following amount :		
	Regions with partner	All other regions in Switzerland	
Beverage Coolers	600 CHF	240 CHF	
Ice Cream Freezers	400 CHF	160 CHF	
Horizontal Display Freezers	1200 CHF	480 CHF	
Horizontal Chilled Display Cabinets	1000 CHF	400 CHF	
Vertical Chilled Display Cabinets	2500 CHF	1000 CHF	
Vertical Freezers With Glass Doors	1200 CHF	480 CHF	
Small Counter-Top Freezers	250 CHF	100 CHF	
Storage Counter Refrigerators	200 CHF	80 CHF	
Storage Refrigerators 1-Door	800 CHF	320 CHF	
Storage Refrigerators 2-Doors	1000 CHF	400 CHF	
Storage Counter Freezers	200 CHF	80 CHF	
Storage Freezers 1-Door	1200 CHF	480 CHF	
Storage Freezers 2-Doors	1400 CHF	560 CHF	
Storage Refrigerator-Freezers	1500 CHF	600 CHF	
Minibars	300 CHF	120 CHF	

## ProCold details + partners

**Coordinator:** ADEME, French agency for environment and energy management

**Partners:**

- Austria: Austrian Energy Agency, AEA
- Czech Republic: The Energy Efficiency Center, SEVEN
- France: Guide Topten
- Germany: Oeko-Institut e.V.
- Italy: Politecnico di Milano
- Portugal: Quercus
- Sweden: Swedish Society for Nature Conservation
- Switzerland: Bush Energie

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

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Thank you  
very much!