

Cold Wash

Do Prejudices Impede High Energy Savings?

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Introduction

- Washing of clothes and textiles is part of our everyday routine
 - Using energy and water puts a strain on our environment
 - Main share electricity: heating up
 - Rethinking of the everyday routine: low wash temperatures save up to 70 % electricity
 - This high savings potential lies idle
- It is worthwhile to take up the issue of «cold wash» EU-wide and to push its implementation



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Topics

- Occurrence of cold wash
- Energy savings potentials
- Best Available Technology (BAT) of washing machines in Europe according to Topten.eu
- Detergents for 15° / 20°
- Prejudices against cold wash
- Experiences from a Swiss campaign on cold wash
- EU Policy recommendations

Basis: Study «Kaltwaschen – Verhindern Vorurteile das grosse Energiesparpotential?»

Barbara Josephy, Eric Bush, Jürg Nipkow. 2013.

On behalf of the Electrical utility of the district of Zurich EKZ



Ocurrence of Cold Wash


- Outside of Europe

- Common e.g.
 - USA
(warm water from the tap, 100 – 150 liters water / 5 kg laundry)
 - Japan, China
(cold water from the tap)
 - Highly alkaline chemicals

- Europe

- Dissemination strongly differs between countries
 - Common: Spain, also Italy (and France)
 - Not common: e.g. Germany, Austria, Switzerland, East Europe
- Most selected cycles: 40° / 60° e.g. Germany, Lot 14
- Average washing temperature: $\approx 40^\circ$ estimation Topten

Energy Savings Potential for EU-27

	Savings		
	%	TWh (billions kWh)	Nuclear power plants
Mid-term 20°C: 40% 40°C: 50% 60°C: 10%	30%	15 TWh	1 x Fessenheim* (FR) 
Long-term 20°C: 75% 40°C: 20% 60°C: 5%	50%	25 TWh	2 x Fessenheim (FR) *Currently oldest still operating French nuclear plant; Annual production: 12 TWh (2010, wikipedia)

Assumptions

- Energy consumption washing machines: ≈ 51 TWh/year
stock ≈ 167 Mio. washing machines (preparatory study, Lot 14)
- Mainly selected washing temperatures: 40° / 60°
- See also Study «Kaltwaschen – Verhindern Vorurteile das grosse Energiesparpotential?»
Barbara Josephy, Eric Bush, Jürg Nipkow. On behalf the Electrical utility of the district of Zurich EKZ



Topten for policy makers, researchers and procurers: find the best products of Europe, EU policy recommendations and procurement guidance on topten.eu



Europe

Topten for consumers: Find the best products in your country on national Topten websites



China

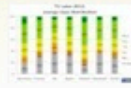


European countries



USA

News



Topten publishes its **TV market monitoring 2007-2012**, showing the developments leading to 39% class A / A+ sales in Europe in 2012. (July 2013)



Swiss appliance sales data 2004 - 2012 have been published: 100% class A driers and 56% of A+++ washing machines sales reflect a highly efficient market (July 2013).



Topten Global Report 2012: how Topten supports market transformation towards better energy efficiency (May 2013)



Selecting the most energy efficient products: The **Topten manual** summarizes the programme and its mechanisms (November 2012)

[News Archive](#)

Topten: global project for the most energy efficient products

Topten is an independent international program to create a dynamic benchmark for the most energy efficient products.

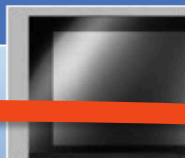
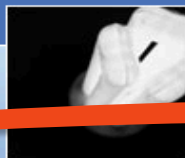
In 20 countries around the world, Topten presents the best products on national markets for an increasing range of electric products. Topten is neutral, rigorous and transparent in that there is no influence from manufacturers or retailers and the selection methodology is explained online. Apart from consumer information, Topten aims at providing policy recommendations based on its overview on the high efficiency product market.

» [more](#)

Topten = Reference for BAT

www.topten.eu - Best products of Europe

Online in China, 18 European countries, USA



Cars

Household

Lighting

Office
Equipment

Consumer
Electronics

Building
Components

Professional
Refrigerators

Best products



- Refrigerator
- Refrigerator Freestanding
- Chest Freezers
- Upright Freezers
- Tumble Dryers
- Vacuum Cleaners
- Coffee Machines
- Washing machines
- Dishwashers

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The Regulatory Committee has approved the **Ecodesign regulation for vacuum cleaners**, including a power cap (1600W / 900W). (March 2013) » [more](#)

[News Archive](#)
[Topten Focus](#) (Registration)

Energy efficiency for consumers, in policy and procurement



Topten reveals the best products in Europe:

Topten is a web portal guiding consumers to the most energy efficient appliances and cars in Europe. Find the best products available in your country, with a simple click! » [Fact sheet](#)



Topten documentation:

All Topten policy recommendations and other publications related to energy efficient products can be accessed [here](#).



Professional procurement:

[Topten Pro](#) gives purchasing guidance for public procurers and other professional buyers. It provides clear guidance on tender criteria to buy the most efficient product on the market.





Product Competition

Who Will Supply Europe's Most Energy Efficient Products?
[Announcement and Rules](#)

- | | |
|----------------------------|--------------------------------|
| Austria | Lithuania |
| Belgium | Luxembourg |
| Croatia | Norway |
| Czech Rep. | Poland |
| Finland | Portugal |
| France | Romania |
| Germany | Spain |
| Greece | Sweden |
| Italy | Switzerland |
| | United Kingdom |

topten.info Global Topten network

Washing machines: BAT according Topten.eu

Brand	V-ZUG	V-ZUG	Electrolux	V-ZUG	Electrolux	AEG	AEG
Model	Adora SLQ-WP	Adora SLQ	WA SL2 E	Adora SL	WA GL6 E	Bella 3661	Regina 2661
Other models						Bella 3461	Regina 2461
Costs for electricity and water (€/15 years)	653	698	709	741	801	801	759
Capacity (kg)	8	8	8	8	8	8	8
Energy efficiency class	A+++	A+++	A+++	A+++	A+++	A+++	A+++
Energy Efficiency Index	27.1	31.7	32.6	36	37.7	37.7	38.9
Spin-drying class	A	A	A	A	A	A	A
Energy (kWh/year)	116	136	141	155	162	162	163
Energy (kWh/cycle) 60 / 60 _{1/2} / 40 _{1/2}	0.62 / 0.48 / 0.43	0.78 / 0.62 / 0.37	0.83 / 0.54 / 0.43	0.94 / 0.67 / 0.37	0.90 / 0.65 / 0.49	0.90 / 0.65 / 0.49	0.89 / 0.74 / 0.49
Water (litres/year)	9'900	9'900	9'899	9'900	11'031	11'031	9'899
Programme time (min) 60 / 60 _{1/2} / 40 _{1/2}	170 / 155 / 155	225 / 220 / 215	220 / 184 / 179	210 / 190 / 190	208 / 156 / 156	208 / 156 / 156	223 / 190 / 171
Left-on/off (W)	0	0	1 / 0.05	0	1 / 0.6	1 / 0.6	1 / 0.05
Max. spin speed (rpm)	1'600	1'600	1'600	1'600	1'600	1'600	1'600
Cold wash	yes	yes	yes	yes	yes	yes	yes
Hot/Rain water supply	no / option	option / option	no / no	option / option	no / no	no / no	no / no
Countries available	on demand	on demand	on demand	on demand	on demand	on demand	on demand
							

August 2013

A+++ / A: 32 models (7–11 kg)

15° / 20° : 22 models (mandatory from 2014 according to the Ecodesign requirements)

Detergents for Cold Wash

- 2007 / 08: First detergents not only for 30° - 60° / 95° , but also for 15° / 20°
- Today: Many detergents from 15° / 20° - 60° / 95° are available on the European market
 - 15° / 30° / 40° / 60°
 - 20° / 30° / 40° / 60°
 - 15° / 30° / 40° / 60° / 95°
 - 20° / 30° / 40° / 60° / 95°
- e.g. Procter & Gamble, Henkel, Unilever, Mibelle Group
- Heavy-duty (with/without bleach) Colour



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Facts versus Traditions, Habits and Prejudices

Facts



High efficient washing machines with 15° /20° -cycle are available.
Appropriate detergents for cold wash are available too.



Traditions, habits, prejudices



www.geo.de

Prejudices Against Cold Wash

- Concerns related to detergents
 - Does the laundry get clean at 15° / 20° ?
 - Does cold wash need more detergent?
 - Does cold wash need stronger chemicals?
- Concerns related to hygiene
 - Is cold wash dangerous for health?
 - Will biofilm occur in the washing machine?

Does the Laundry Get Clean at 15° / 20° ?

- Normally soiled laundry gets clean at low washing temperatures
 - e.g. clothing for office life, bed linens, kitchen linen, towels



40° / 60°



15° / 20°

de.123rf.com

Does the Laundry Get Clean at 15° / 20° ?

- Non-satisfying washing result may have other reasons than 15° / 20° , e.g.
 - Not appropriate pre-sorting of the laundry
 - No or false (pre-)treatment of stains
 - Over or under loading of the washing machine
 - Not correct dosage of the detergent

Does Cold Wash Need More Detergent?

- Washing at 15° / 20° needs the same amount of detergents as at higher wash temperatures



40° / 60°



15° / 20°

ruhrnachrichten.de

Does Cold Wash Need Stronger Chemicals?

- Cold wash needs the same detergents with the same components as used when washing with higher temperatures



40° / 60°



15° / 20°

Components detergents

Surfactants, builder, bleach, alkalis, processing aids, foam regulators, anti redeposition agent, dye transfer inhibitors, optical brighteners, perfumes, fragrances

For low washing temperatures: enzymes → non-problematic for the environment (Source: SKW)

Is Cold Wash Dangerous for Health?

- Washing at 15° / 20° does not endanger health
 - Precaution:
 - Sick people (e.g. diarrhoea, weakened immune system, dust mite allergy)
 - Public institutions (e.g. hospitals, care facilities)
- Important: Take out the laundry of the machine and dry it asap



40° / 60°



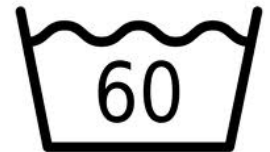
15° / 20°

Will Biofilm Occur in the Washing Machine?

- Biofilm can occur, but can be avoided, if the consumers:
 - Take out laundry asap
 - Leave open machine's door and rinse tray after washing (to allow the remaining moisture to evaporate)
 - Occasionally run a 60° -cycle



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Campaign on Cold Wash

- Swiss retailer Migros
- Swiss-wide campaign
June – November 2008
- Posters
advertisements
add-ons on TV
- For the then newly
developed detergents
which wash also at 20°
(Mibelle Group)



Campaign on Cold Wash: Experiences

- Success of promotion campaigns in general difficult to measure (many other influences)
- Detergent market heavily depends on sales promotions; price war
- Constant repetition and education needed to change washing habits (disconnection mother – daughter – granddaughter, needs time)

(Source: Marcel Frauchiger, Migros)

Summary

- Cold wash: up to 70% less electricity consumption
 - Savings potential EU-27: 15 TWh/year (mid-term)
 - High efficient washing machines are available on the European market and in trend
 - Detergent for 15° / 20° is available, too
 - Cold wash is suitable for normally soiled laundry, which is the most usual case
- Time is ready to push the implementation of cold wash and to overcome prejudices

EU Policy Recommendations

- EU policies, manufacturers (washing machines, detergent), retailers
 - Active and continued advertisement of «cold wash»
 - Optimization 15° / 20° -cycles, detergents, promotion
- Organizations (environmental, consumer), energy agencies
 - Active and continued information and education of the consumers on washing performance at low wash temperatures, dosage, chemicals, hygiene
- Science, test institutes
 - Publication of studies (consumer and technical)
 - Tests on «cold wash»

Thank you for your attention

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