eceee 2021 Summer Study on energy efficiency

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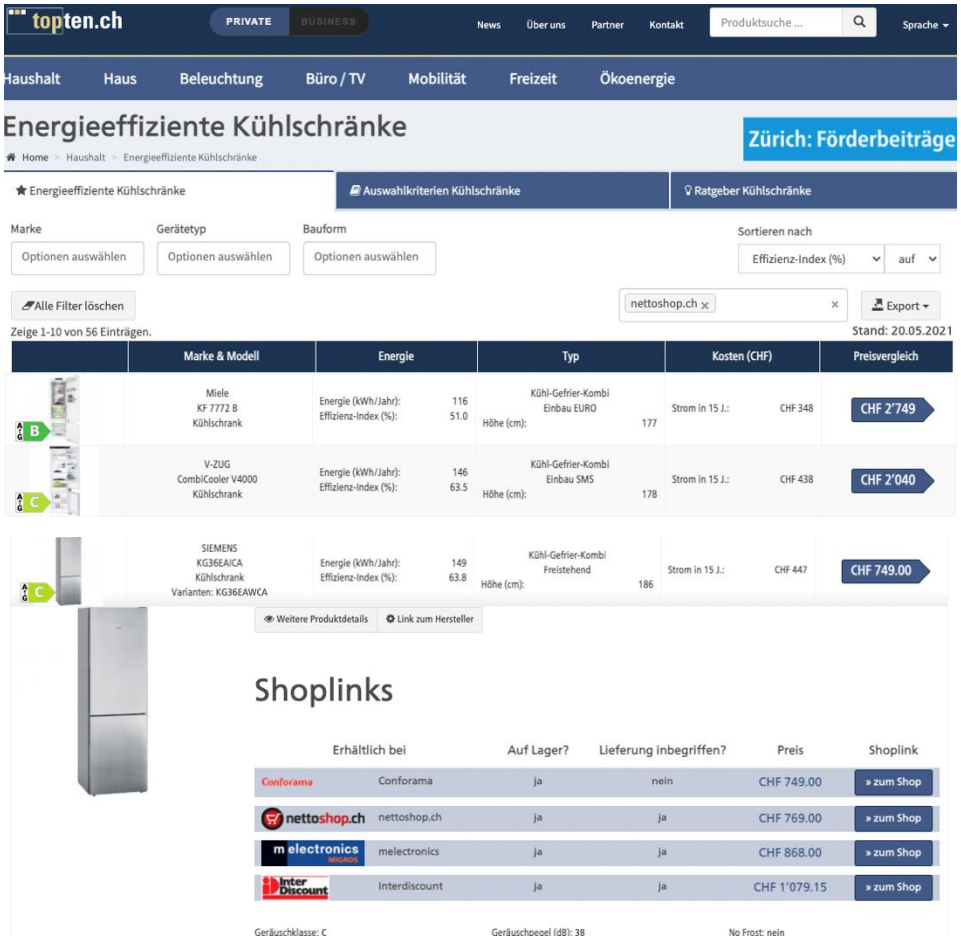
Energy efficiency labels for residential and commercial coffee makers

Topics

- About Topten
- Energy consumption of coffee makers
- Residential coffee makers & the Swiss Energy Efficiency Label
- Commercial coffee makers: are they different?
- Focus on energy losses
- Conclusions

Topten.ch – the energy efficiency platform

- Online platform for best products: energy efficiency, environment, performance
- 70 product lists, 8‘000 products
- 520‘000 sessions, 1.9 million pageviews per year
- Basis for rebate programmes
- Founded in 2000 in Zurich, online in 19 countries worldwide
- European platform: www.topten.eu



Energy consumption of making coffee

The stock of **residential** coffee makers in the EU is estimated 100 Mio units, consuming 17 TWh per year. Estimates of annual sales are roughly 30 Mio units by 2025.

The stock of **commercial** coffee makers in the EU is estimated at 5.9 Mio units, consuming 13.6 TWh per year. Estimates of annual sales are roughly 700,000 by 2025.

The Swiss approach

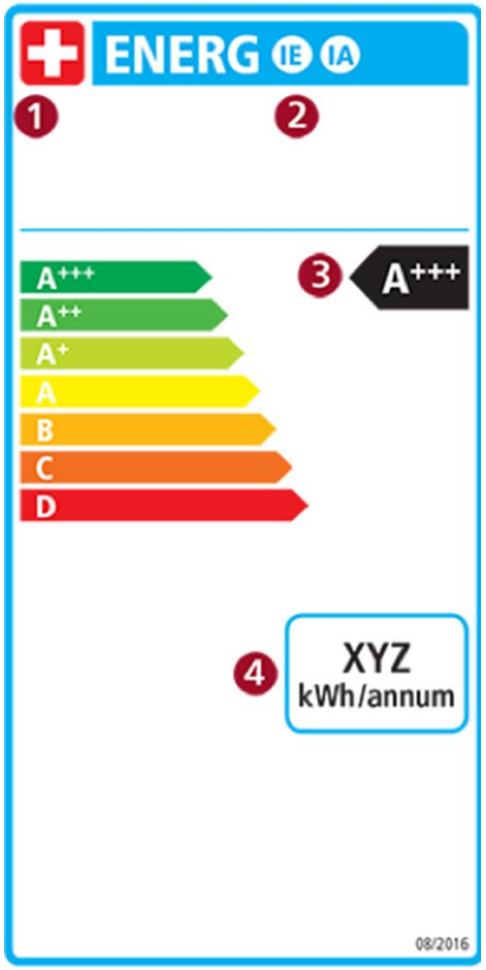
2009: introduction of a voluntary energy label

2010-2014: development of new testing method by manufacturers (CECED, FEA)

2015: Introduction of mandatory label with new testing method (FEA)

2016: Revision of label, based on international testing method EN60661:2014, as well as the European Regulation on Standby → auto-shut off of 30min as a factory setting.

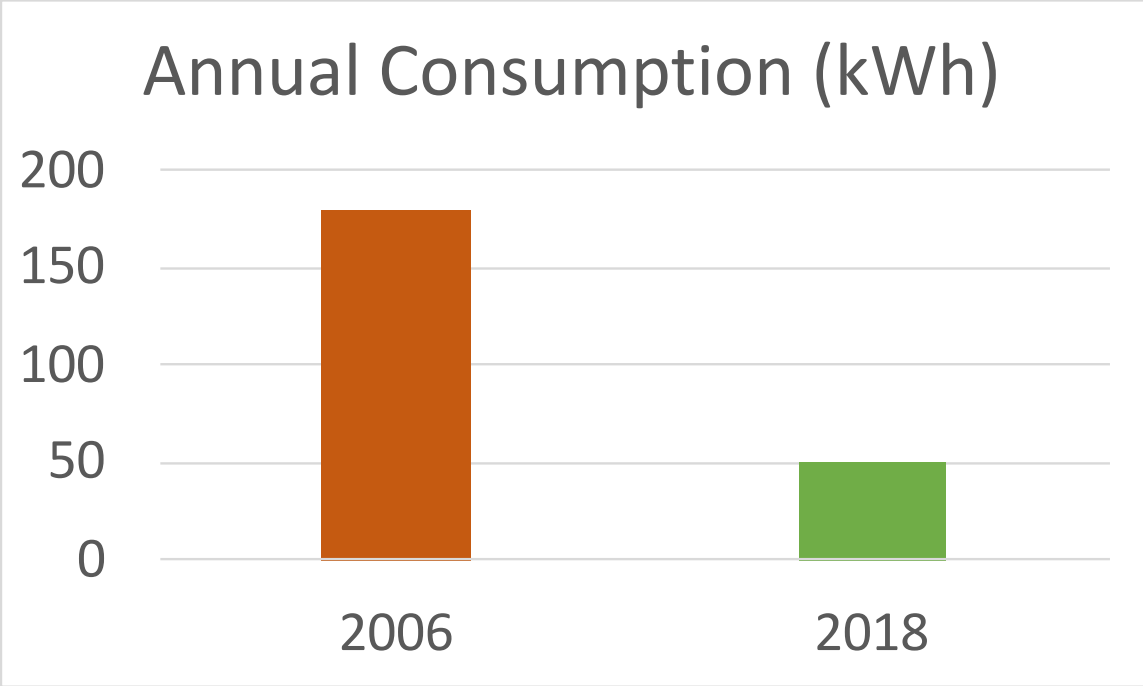
Swiss Energy Label for Residential Coffee Makers



- Energy consumption is shown by measuring each function on its own:
  - e.g., production of coffee, espresso, steam for milk foam, etc)
  - Unproductive functions such as cup-warmer, reheating, rinsing, etc.
- Values are added and multiplied for the annual consumption.

Resulting Market Development in Switzerland

The annual consumption of coffee makers dropped from an average of 180 kWh (2006) to below 50 kWh for efficient models (2018).



Commercial Coffee makers

2014: Preliminary study for Ecodesign WP 3

2016: Commercial Coffee makers were dropped from WP 3

2021: Preliminary study for Ecodesign WP 4 → Saving potential 2.4 TWh/a

→ Currently not in the scope of WP4, but proposition to include them in “professional cooking appliances”

Ongoing: Development of new testing standard CLC/TC 59X/WG 21 by CENELEC

Differences of residential and commercial

- Product variety (coffee varieties, tea, hot milk)
- Speed of production (higher capacity of cups / hour)
- Simultaneous production (steam, coffee, teawater)
- Higher automation in places with no staff
- Use of fresh milk: needs to be refrigerated → causes higher energy consumption than keeping it in the fridge (residential)

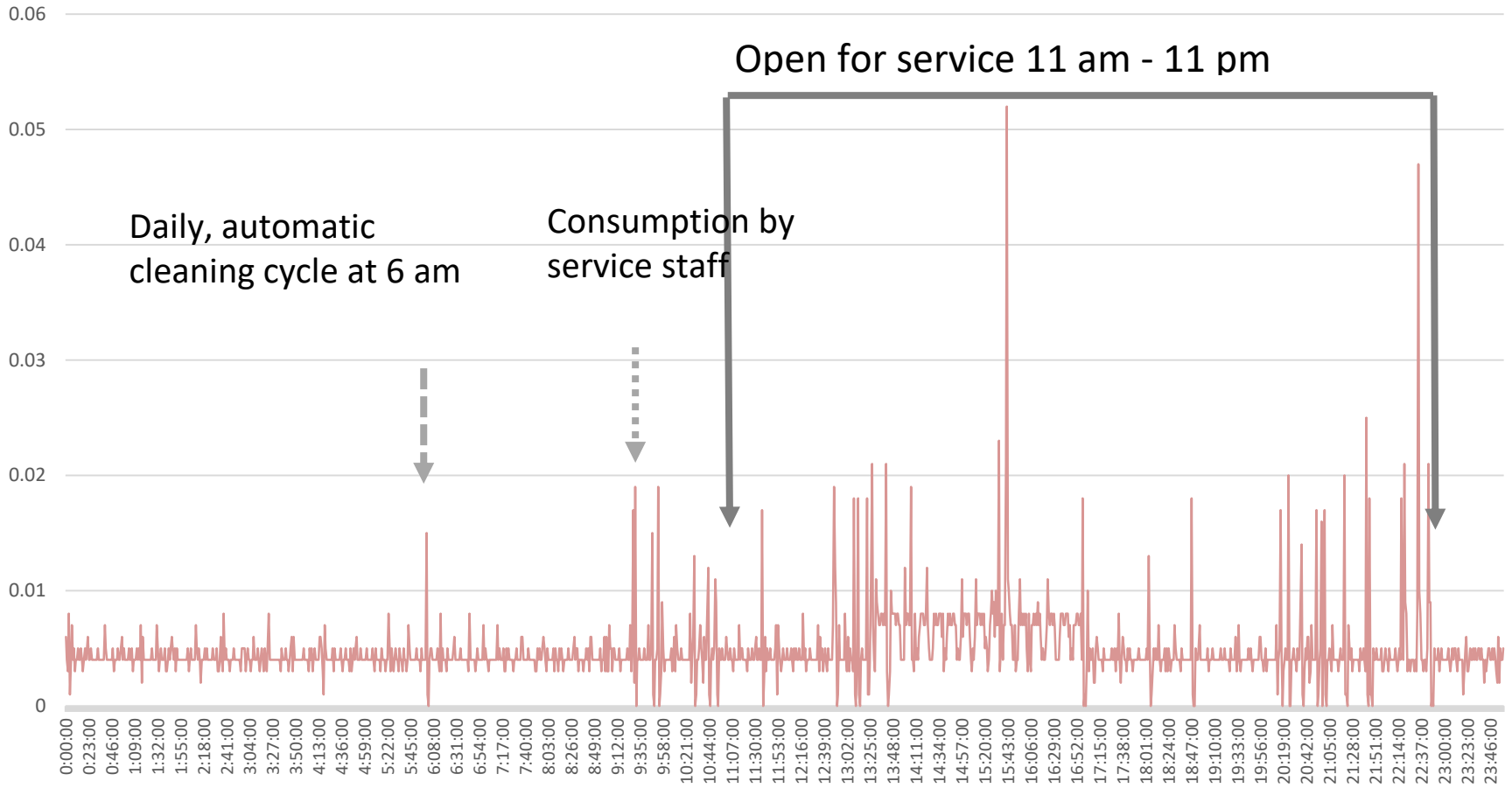
Topten approach: Focus on Energy loss

DIN 18873-2:2016 defines the energy losses as the energy that is needed despite not producing a single coffee (heating up, keep warm, rinsing).
Note: Refrigeration of fresh milk is not included (measured separately).

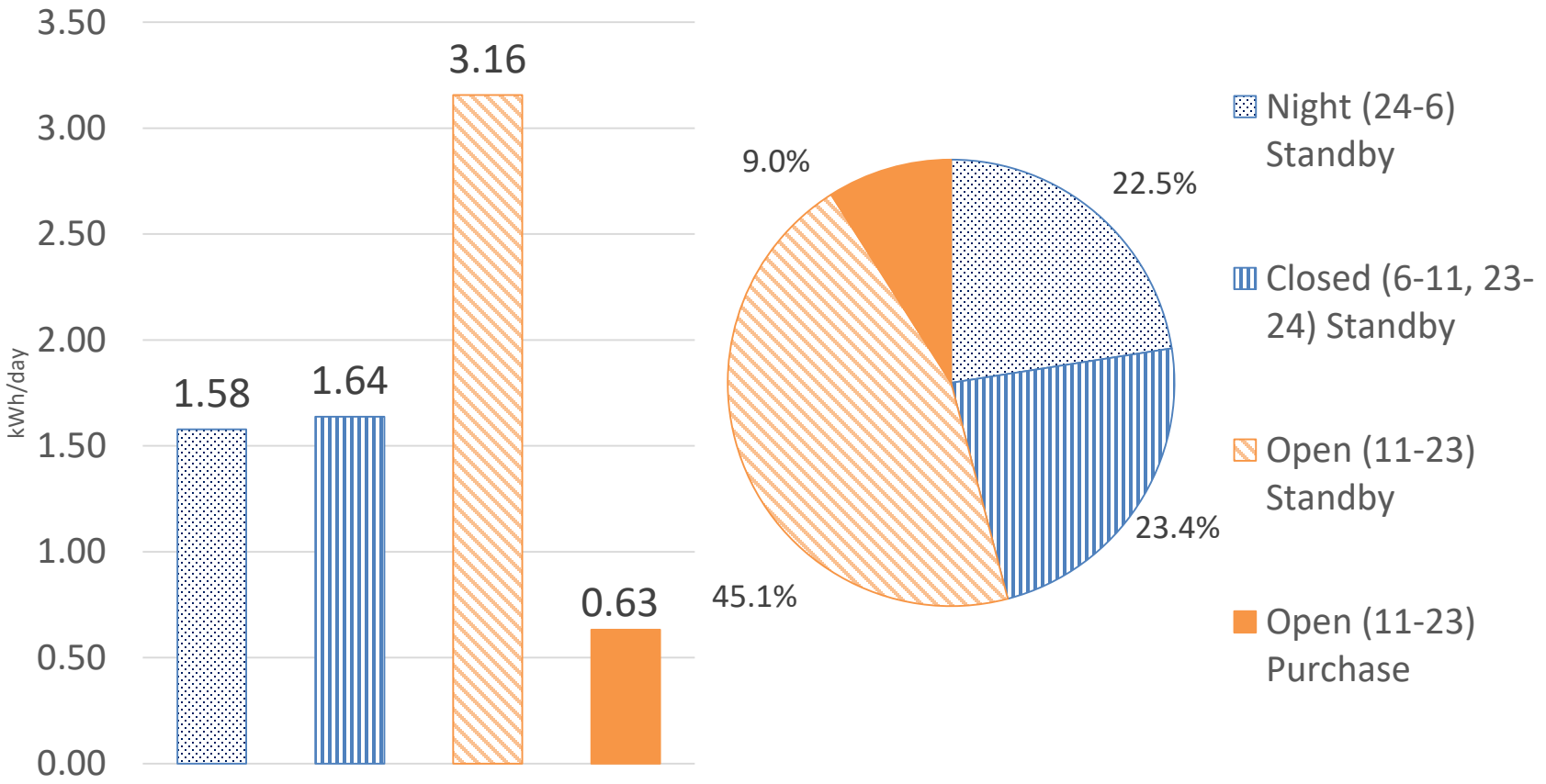
Assumption: the production of the actual beverage is not that different between models and manufacturers. Daily number of cups produced depends a lot on the location (unlike households which are rather similar)

Find the current product list here:
www.topten.eu/commercial-coffee-makers

Energy consumption over the day (restaurant)



Portafilter espresso machine, Energy consumption (kWh/day)



Conclusions residential coffee makers

- Introduction of European Energy Label for residential coffee makers, based on EN60661:2014

→Can easily be adopted from the Swiss Energy Label, no new testing required

→Many machines are already tested and labelled for the Swiss market.

Conclusions commercial coffee makers

- MEPS for commercial coffee makers
  - Standby: Adoption of Commission Regulation 1275/2008 and 801/2013
  - Mandatory timetables for on/off settings automatic Shut-off after cleaning cycle
  - Promotion of Eco-mode (reduction of keep-warm-temperature after 15min of inactivity)
- Label for commercial coffee makers
  - Adapted from the Swiss label for residential coffee makers and in the future, using the new testing standard CLC/TC 59X/WG 21 by CENELEC

Or

- Based on energy losses (DIN 18873-2:2016)

Next steps

More data is needed to test the applicability to commercial coffee makers of the testing norms EN60661:2014 and DIN 18873-2:2016

Energy efficiency of coffee makers needs to stay on the agenda of policy makers, manufacturers and users.

Thank you for your attention!