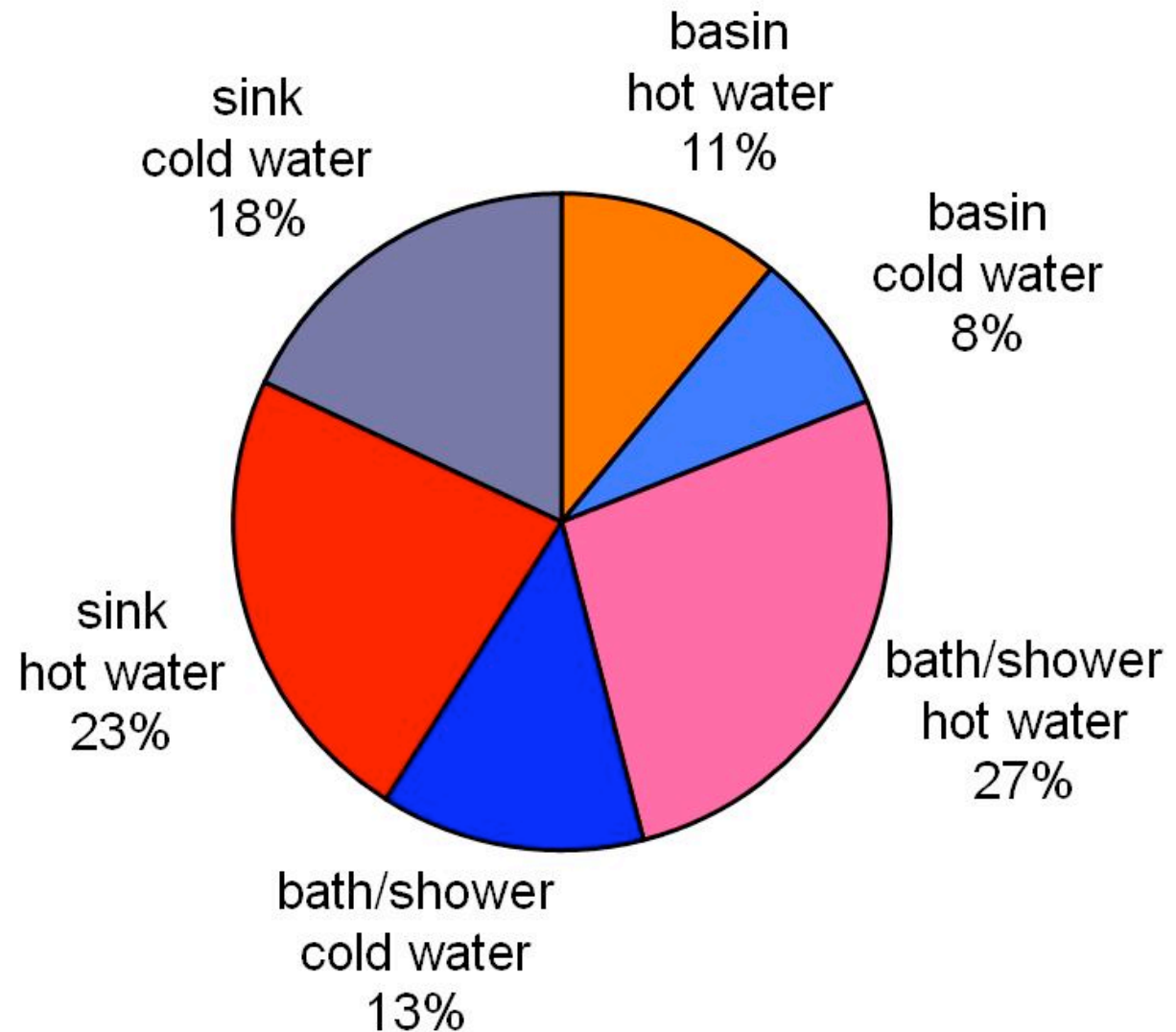
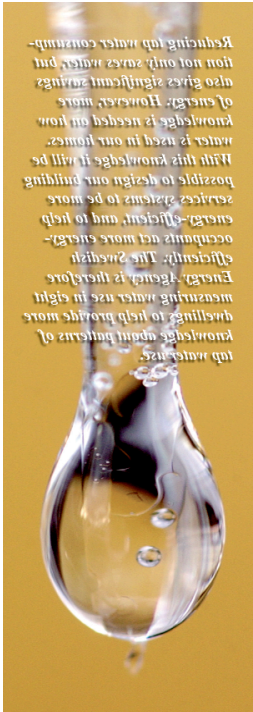


Test methods and scheme rules for energy labeling of tap water devices



Åsa Wahlström, CIT Energy Management

Hot water: 20% of a household's energy use



Energy efficient products

Single-lever mixer

- High pressure drop
- Ceramic leak tightener
- Easy temperature and flow control
- *Flow straightener*
- *User behavior technique*



Different water and energy savings techniques

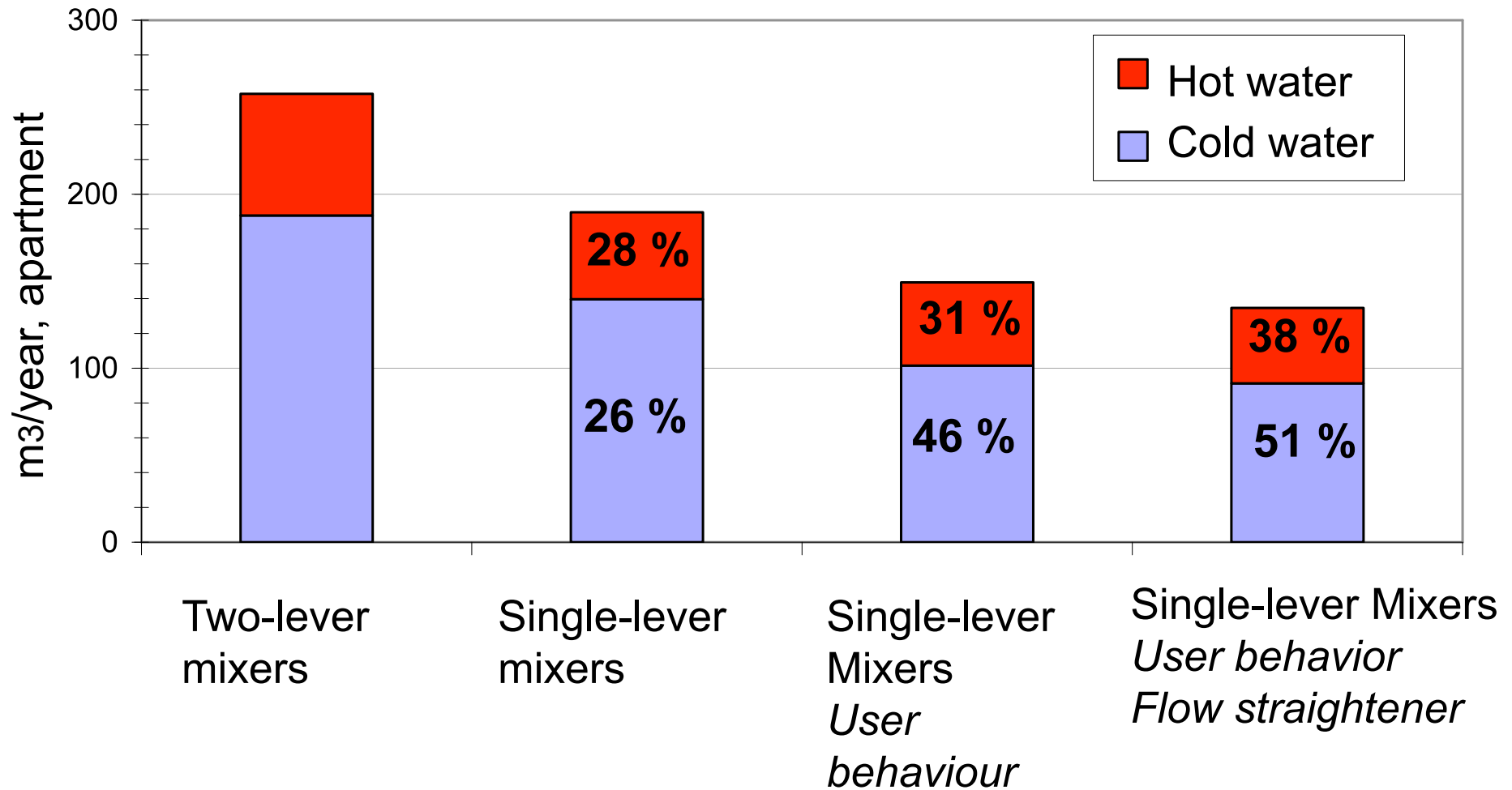


Eco-effect



Which one is the best?

•Pay back time of 1 – 4 years



Isn't energy efficiency luxury?



- Standard EN 817 existit for;
 - flows
 - temperatures
 - sound
 - mechanics of materials
 - temperature and pressure stabilities



No standard for energy efficiency

Measurements of energy use in kWh
for a standardized use of the product
– use less water with the same comfort

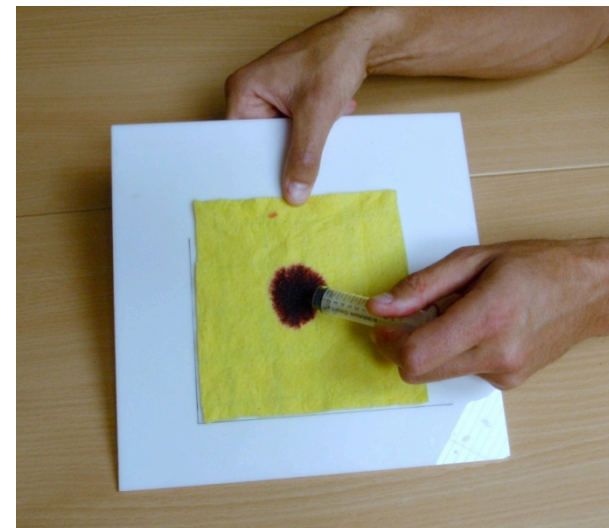
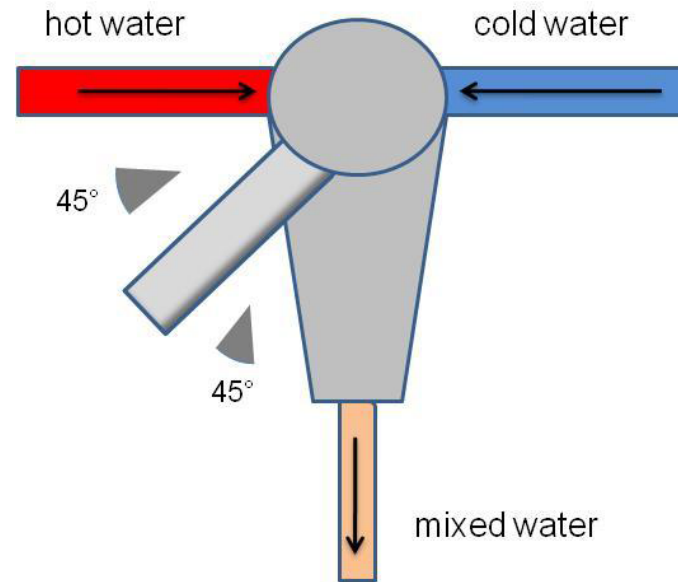
Project participants



Series of activities

Use of water during 60 seconds at defined pressure, flow, temperature and set position of the control stick

Time for rinsing a spot of coloring



Energy use for one activity

$$Q_{activity} = \dot{V}_{mixed} \cdot t_{activity} \cdot (T_{mixed} - T_{coldw}) \cdot C_p \cdot \rho / 3600$$

The mixer's total energy use

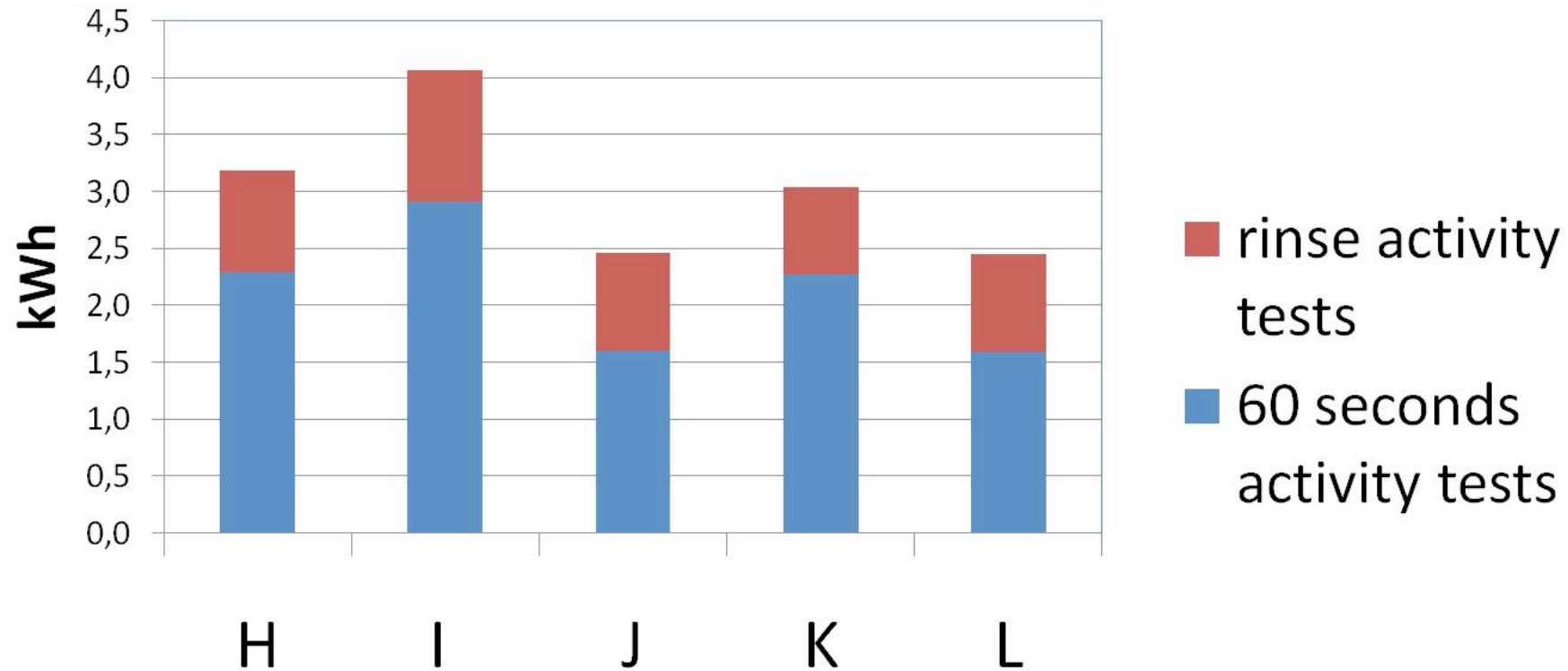
$$Q_{mixer} = \sum_{i=activity}^6 Q_i + 2 * \sum_{7=activity}^{12} Q_i$$

Laboratory test

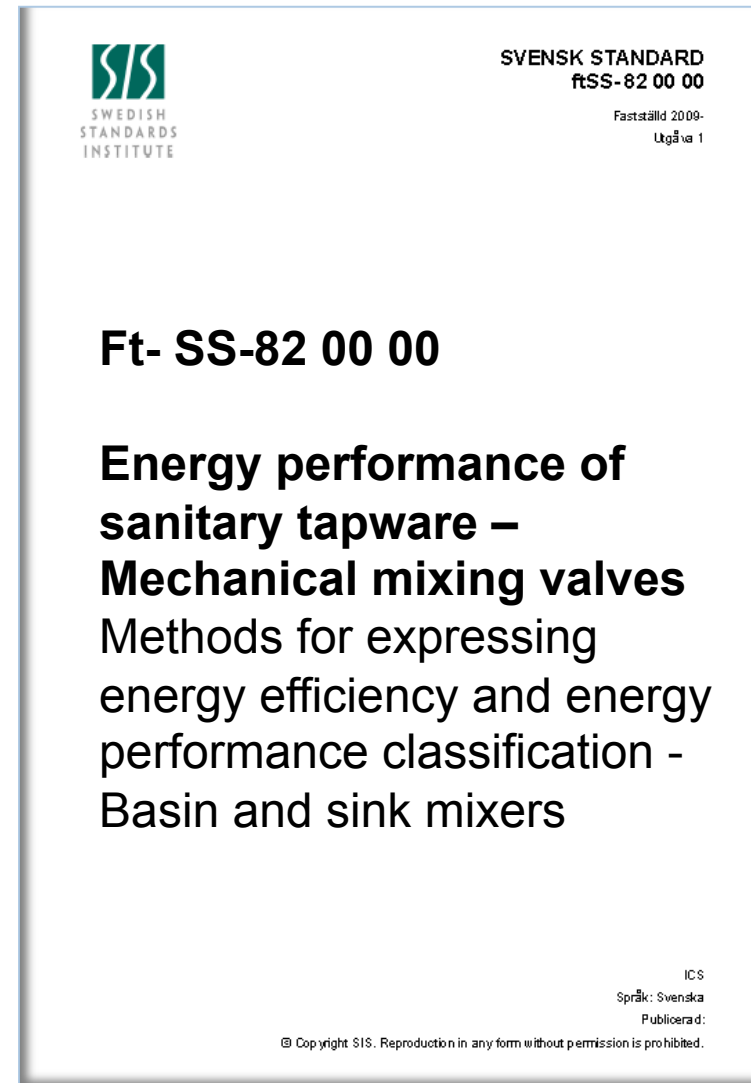
- SP Swedish Technical Research Institute
- Kiwa (the Netherlands)

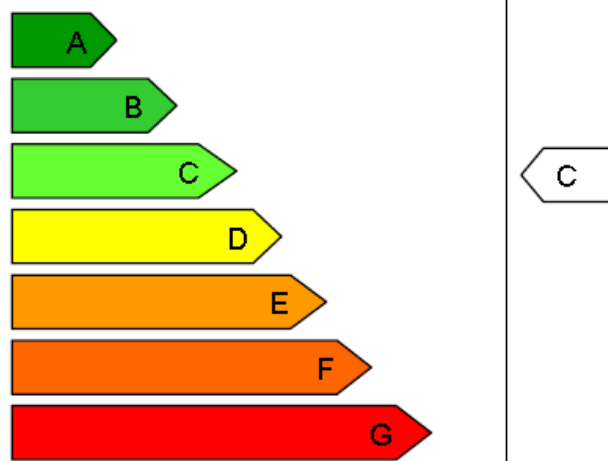


Tests with five sink mixers



Standard has been out for consideration



Energy certificate of tap water devices	Energy label of tap water devices Sink mixer XXX with flow straightener XXX
	Energy performance according standard ft-SS-820000, 2009
	<p>Very energy efficient</p>  <p>Not energy efficient</p>
Manufacturer: Sveriges vattenarmaturer Energy labeled the 21 th of February 2009 Certificate valid until the 21 th of February 2019 Certifier name and signature: Anna AI, C-byrå	

- Next out:
- Schower/bath devices
 - EU-level

Questions to discuss?

- Is it possible to define a standardized use?
- Do we need energy labeling on tap water devices?
- Could this work be done also on European level?

