

Save energy with efficient tapware

When the handle on a single-lever mixer is moved to full-flow hot water and stays there, energy consumption goes way up. With an energy-efficient mixer, the lever automatically returns to an “energy-saving mode” with a lower water temperature and flow. You save energy and water.

On average a household can nearly halve its energy consumption of hot water by replacing old mixers with new in kitchens, washbasins and showers. The investment pays for itself in only a few years’ time.

ONE FIFTH OF A HOUSEHOLD’S energy goes to hot water. The percentage in flats is even higher. Yet, it has been demonstrated that a lot of hot water is used unnecessarily, such as when it makes no difference whether the water used is hot or cold.

In the wake of a specific design competition, there is now new tapware for kitchens, washbasins and showers that matches usage to the actual need. In a household converting to new mixers for three fixtures, the energy consumption can go down by more than 1,000 kWh annually. In many cases up to 40% of energy consumption for hot water can be saved.

Hot water actively chosen

The energy savings are due to several features of the new tapware. The mixers conserve water yet maintain normal water pressure with the same rinsing efficiency but using less water. Compared with the market’s most sold single lever mixers for showers, kitchen sinks and washbasins, the new energy-efficient tapware saves approximately 40 percent of both energy and water consumption.

Shower heads are combined with a new nozzle that provides optimally sized drops. The drops should not be too small, and thereby lose heat before hitting the body, nor should they be too large in order to maintain the

feeling of a body-wrapping shower.

Regular single-lever mixers for washbasins and kitchen sinks mix hot and cold water when the handle is pointed straight out. The new efficient mixers release only cold water in this position, when it is usually the “working power of water” that is wanted, not heat.

Should tepid or warm water be wanted, the lever must be actively moved to the side. To get truly hot water, exceeding a pre-programmed temperature, the lever must be held far to the side. When the lever is released, it drifts back from the hot position. In addition to saving energy, this feature protects against scalding.

Saves at least 1,000 kWh annually

A small household can save at least 1,000 kWh energy annually using the new tapware. In addition, a great deal of water is saved. The savings for a small apartment are about € 1,000 calculated on a fifteen-year lifetime for the tap and a real rate of interest of four percent on the investment. See Figures 1 and 2.

A large household consuming 5,000 kWh energy for its hot water can save about 1,600 kWh annually by converting to the new mixers. The total savings in a house becomes about € 1,750 over 15 years.



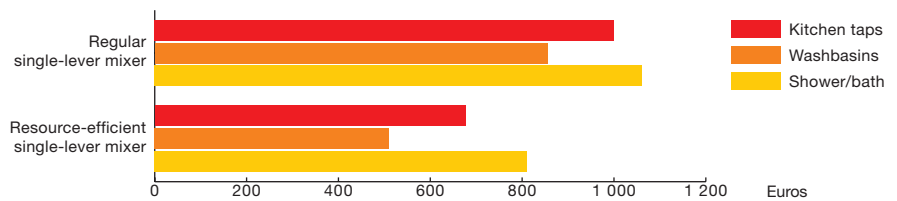


Figure 1. Three regular taps cost € 3,225 in purchase and usage over 15 years. The example shown uses 2,500 kWh and 67 cubic meters of water annually. The corresponding costs for resource-efficient mixers totals € 2,225. Consumption for these are 1,500 kWh and 37 cubic meters of water annually. The costs include investment at 4% real rate of interest, energy consumption (€ 0.07 per kWh) and water consumption (€ 1.56 per cubic meter). The investment costs includes VAT.

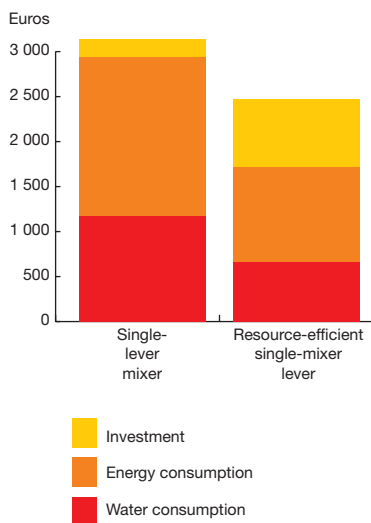


Figure 2. 15 years' total costs for three mixers by investment, water and energy costs, given the same assumptions as in Figure 1. The histograms show that the regular mixer is cheaper to buy, but more expensive to use. The resource-efficient taps cost more to purchase, but are cheaper when all the costs are considered, because they use less energy and water.

Three “regular” mixers for kitchen sinks, washbasins and showers together cost between € 170 and € 280 including VAT. The resource-efficient mixers cost between € 450 and € 550, including VAT. The price difference is earned back somewhere between the first and third year via reduced energy and water costs, without any loss in comfort or quality of life.

Reduced environmental impact

If all Swedish households were to switch to resource-efficient taps, the national energy consumption would go down by at least 4 TWh. This corresponds to the total energy consumption from 160,000 single-family houses, and would thus entail a reduced environmental impact.

Technology procurement

The new energy-efficient mixers were

developed during a technology procurement competition jointly conducted by the Swedish Energy Agency and the City of Stockholm’s Office for the Local Investment Programmes (LIP).

The technology procurement began in 2000, and the winning mixer, from AB Gustavsberg, was announced in 2003. It has been tested by the laboratory at the Norwegian Building Research Institute and in field trials conducted by the Danish Technological Institute.

A purchasers’ group was involved in the procurement, and will be using the new mixers. The purchasers’ group included the following organizations and companies: HBV, Familjebostäder, JM AB, Villaägarnas riksförbund, SBC (Sveriges BostadsrättsCentrum AB) and experts from both the National Board of Housing, Building and Planning (Boverket) and Svensk Industridesign.

