

Water Saving Calculations Sample Using Maric Flow Controllers

(Dubai U.A.E. 2006)

Water Waste Occurs:

- When users are not concerned about waste or the high cost of water –e.g. “House Help”, “Hotel Guests”, “Children”, etc.
- When two or more taps are simultaneously in use and one is closed down, flow rate in the one’s that are open might increase, creating waste.
- When the water pressure in pipes is very high and the water tap would need to be adjusted to reach the desirable flow rate. In this adjustment period considerable amount of water could be wasted.

Maric flow control valves automatically maintain a fixed, maximum constant flow rate, and are often used to save water in homes, hotels and commercial buildings in the following outlets:

- **Bath Showers • Toilet Showers • Kitchens Sinks • Basins • Garden Irrigation**

The following calculations demonstrate how an average home can save Dhs. 1140.00 per year after installing Maric flow controllers to just the shower alone. The fitting of flow controllers to kitchen and bathroom basins, etc., will further increase savings.

Assumptions:

• Family size	4 people
• 4 x 10 minute showers per day	40 minutes
• Average water consumption in shower	15 litres per minute, x 40 = 600 litres, or 159 gallons of warm water
• Average ambient water temperature	25° C
• Average shower water temperature	40° C
• Cost of water & sewerage combined	1.0 U.S. gallon (3.785 litres) = Dhs. 0.0305
• Cost of electricity	Dhs. 0.2 per KiloWatt Hour
• 1 KiloWatt Hour (KWH) heats Avg. 100 litres	8.5° C
• Shower water heating required	For approximately half the year only.

Water Saving Calculations:

With a 7 lpm shower flow controller installed, 8 lpm will be saved, x 40 minutes = 320 litres per day. (84 gallons)
84 gallons x 365 days = 30,660 gallons per year saved. (117 Kilolitres)

30,660 gallons @ Dhs. 0.0305 per gallon = Dhs. 935.00 per year saved.

Electricity Saving Calculations:

Lift in temperature required =15°C

If Avg. 100 litres heated 8.5°C = Electric consumption of 1.0 KWH
> 57 litres heated 15.0°C = Electric consumption of 1.0 KWH
therefore 117000 litres heated 15.0°C = Electric consumption of 2050.0 KWH

Assuming water heaters are used for only half the year due to ambient temperature conditions in Dubai
= 2050.0 KWH ÷ 2 = 1025 KWH

1025 KWH x Dhs. 0.2 per KWH = Dhs. 205.00 per year saved.

Total Annual Savings:

Savings per year Water Dhs. 935.00
Savings per year Electricity Dhs. 205.00
Dhs.1140.00 (total annual savings per hotel room or family home in the shower only).

Installing Maric Valves in the kitchen, bathroom basins, and toilet showers will demonstrate considerable savings in payment of utility bills and contribute to saving our environment.

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