

## 2.6 Residential Clothes Washer Incentive Program

### A. *Applicability*

This BMP can be implemented by any Municipal Water User Group (“utility”) that has residential customers. A utility that has initiated some of the program elements listed below prior to adopting the BMP can provide documentation of a previous clothes washer incentive program as described in Section F. Once a utility decides to adopt this BMP, the utility should follow the BMP closely in order to achieve the maximum water efficiency benefit from this BMP.

### B. *Description*

Under this BMP, the utility would develop and implement an incentive program to encourage customers to purchase efficient clothes washers. Water efficiency for clothes washers is best described by using water factor (“WF”) terminology. WF is calculated by dividing the gallons of water used to wash a full load of clothes by the capacity of the washer tub in cubic feet. An efficient washer using 27 gallons for a full load of clothes and a 3 cubic foot tub would have a WF of 9. According to the tiers recommended by the Consortium for Energy Efficiency (“CEE”) in 2004, a clothes washer would need to have a WF equal to or less than 9.5 to be considered an efficient washing machine.<sup>1</sup>

In 2001, Texas passed legislation requiring washing machine manufacturers to report on the efficiency of clothes washers sold in Texas. The report for 2002 showed that only 4.4 percent of washers sold in Texas had a WF equal to or less than 9.5. The report<sup>2</sup> for 2003 showed that 9.4 percent of washers imported into Texas had a WF equal to or less than 9.5. While the trend in Texas is positive, the market share is well below the reported 30 percent market share in Washington State and 50 percent market share in the Seattle area where a regional incentive and marketing program for efficient washers has been in place for several years.<sup>3</sup>

Conventional top-loading clothes washers use 41 gallons per load on average while efficient clothes washers use 11 to 25 gallons per load. The typical household washes an average of just more than one load per day.<sup>4,5</sup> Manufacturers started producing efficient clothes washer models in the late 1990s in anticipation of rules being adopted by the Department of Energy (“DOE”) setting higher efficiency standards. The DOE did adopt rules in 2001 with a two-step phase-in of higher efficiency standards. Clothes washers manufactured after 2004 will be required to meet a modified energy factor (“MEF”) of 1.04 (20 percent more efficient than the current standard). This level will remain in effect until 2007, at which time an MEF of 1.26 (35 percent higher than the current standard) will be required.

If manufacturers continue with current trends in design of efficient clothes washers, the 2007 standard should result in significant water savings. However, some manufacturers may design washers with a normal cold-water wash and rinse cycle to be used with specially formulated soaps that could meet the 2007 standard without any increase in water efficiency.

It is possible for states to adopt more stringent standards than will result from the DOE rulemaking. For example, the California Energy Commission (“CEC”) has adopted rules requiring that residential clothes washers not exceed a WF of 8.5 by 2007, decreasing to a WF of 6.0 in 2010.

To be effective, the incentive offered should bridge at least one-half of the gap in the price difference between the efficient machines and conventional ones. As with any incentive program, the amount of the incentive will impact the participation in the program. Fully featured inefficient machines cost approximately \$400 while the least expensive efficient machines cost from \$600 to more than \$1000. So for the least expensive machines, the price difference is \$200. The price difference is the most important part of the buying decision for low-income customers. In addition, low and moderate income customers would be more likely to purchase the efficient washer if they got the incentive in the form of a discount at the time of purchase rather than waiting four to six weeks for a rebate.

A clothes washer incentive program is most effective when offered in conjunction with local gas and/or electric utilities since the incentive can be increased and the marketing reach should expand. The energy savings are a result of more efficient motors, less energy required for heating hot water as less hot water is used, and shorter drying time because the spin cycle on efficient washers is much faster. Many water utilities in Texas and in other parts of the country have already successfully partnered with a local energy company.

Incentives should only be given to those customers who install washers that qualify as water efficient. A list of efficient washers is maintained and regularly updated by the Consortium for Energy Efficiency (“CEE”). CEE, a nonprofit public benefits corporation, develops national initiatives to promote the manufacture and purchase of energy-efficient products and services. The U.S. Department of Energy and Environmental Protection Agency both support CEE through active participation as well as funding. The CEE Residential Clothes Washer Program has tiers for both water and energy efficiency. The CEE list has been used by many utilities as the source of qualifying washers to receive an incentive.

### ***C. Implementation***

Develop and implement a clothes washer incentive program designed to increase the market share of efficient clothes washers to at least 20 percent by the second year of implementation. The program should be offered to customers in single-family homes (including duplexes and triplexes) and in multi-family units that have in-unit washer connections. Approach the local gas and/or electric utility to join in a partnership to implement the program. Organize stakeholder meetings. Develop a marketing plan for educating customers, appliance stores, and realtors about this program. Initiate the program.

### ***D. Schedule***

The following schedule should be considered:

- 1) Plan, implement and market an efficient clothes washer incentive program within six (6) months of adopting this BMP.
- 2) Continue marketing efforts to achieve at least 20 percent market penetration for efficient washers by the end of the second year after implementing this BMP.

### ***E. Scope***

In order to accomplish this BMP, the utility should perform the following:

- 1) Develop and implement a plan to offer incentives for the purchase of efficient clothes washers.
- 2) Within two years of implementing this program, increase the market share of efficient clothes washers to at least 20 percent of local clothes washer sales.

### ***F. Documentation***

To track this BMP, the utility should gather the following documentation:

- 1) The number of single-family homes and multi-family units with in-unit washer connections;
- 2) The average number of persons per household for single-family homes and for multi-family residences;
- 3) The number of efficient clothes washer incentives issued each year, by year, including brand, model, and water factor of each efficient washer;
- 4) Estimated water savings per efficient washer; and
- 5) Average total washer sales per year in the service area.

### ***G. Determination of Water Savings***

$$\text{Savings} = \text{EWS} \times 5.6 \times \text{Hs} + \text{EWM} \times 5.6 \times \text{Hm}$$

Where EWS = Number of single family efficient washer incentives

EWM = Number of in-unit multi-family washer incentives

Hs = Number of people in average single family household

Hm = Number of people in average multi-family household

#### **Single Family:**

5.6 = gallons saved per capita per day

#### **Multi-Family In-Unit:**

5.6 = gallons saved per capita per day

### ***H. Cost Effectiveness Considerations***

The rebates to the customers for installation of water efficient clothes washers are the most significant costs of this program. If the rebate cost for the clothes washer is set too low, only those customers already planning to buy an efficient washer will do so. If the rebate is set too high, the utility will be overpaying for customers to retrofit. Most utilities that implement this

BMP have found a rebate to work effectively if set between \$50 and \$100 per efficient clothes washer. If partnering with an energy utility, the gas or electric utility rebate will add an additional \$50 to \$100. Some utilities have started offering tiered rebates based on the efficiency of the washer; the higher rebates are offered for washers in the lowest water factor tier.

Administration of the program can be conducted by utility staff or contracted out. Washer inspections are sometimes performed in order to verify installation and discourage fraud. Labor costs range from \$15 to \$35 per clothes washer. Marketing and outreach costs range from \$5 to \$15 per clothes washer. Administrative and overhead costs range from 10 to 20 percent of labor costs.

To calculate the total cost per unit, total all costs and divide by the number of units being retrofitted.

### ***I. References for Additional Information***

- 1) Consortium for Energy Efficiency Clothes Washer Page  
<http://www.cee1.org/resid/seha/rwsh/rwsh-main.php3>
- 2) *Waste Not, Want Not: The Potential for Urban Water Conservation in California*, Pacific Institute, November 2003.  
[http://www.pacinst.org/reports/urban\\_usage/waste\\_not\\_want\\_not\\_full\\_report.pdf](http://www.pacinst.org/reports/urban_usage/waste_not_want_not_full_report.pdf)
- 3) Energy Star Clothes Washer Sales Data for Seattle and Washington State, Al Dietemann, Seattle Public Utilities, July 2004.
- 4) *Residential End Uses of Water*, AWWA Research Foundation, 1999.
- 5) *US DOE Volume Purchase Program*, Sandi Edgemon, Pacific NW National Laboratory, 1997.
- 6) *Impacts of Demand Reduction on Water Utilities*, AWWA Research Foundation, 1996.
- 7) *BMP Cost Savings and Guide*, California Urban Water Conservation Council, July 2000.
- 8) *Seattle Home Water Conservation Survey*, Aquacraft, Inc., 2001  
<http://www.aquacraft.com/>
- 9) *Handbook of Water Use and Conservation*, Amy Vickers, Waterplow Press, May 2001.
- 10) California Energy Commission  
[http://www.energy.ca.gov/appliances/clothes\\_washers/notices/2003-09-17\\_Washer\\_Final.PDF](http://www.energy.ca.gov/appliances/clothes_washers/notices/2003-09-17_Washer_Final.PDF)
- 11) Energy Star  
[http://www.energystar.gov/index.cfm?c=clotheswash.pr\\_clothes\\_washers](http://www.energystar.gov/index.cfm?c=clotheswash.pr_clothes_washers) Austin WashWise Program <http://www.ci.austin.tx.us/watercon/sfwasher.htm>
- 12) *Seattle Home Water Conservation Study*, Aquacraft Inc., 1999  
<http://www.aquacraft.com>