FEASIBILITY OF ENERGY EFFICIENT WASHERS

TCO 341

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BACKGROUND/PROBLEM

Mercer University has a green report card score of a C+. Little by little this can be improved. One way to improve the green report card would be to start implementing energy efficient appliances. Washers that are at least ten years old, use twice the amount of water used by new washers. Newer washers also use less electricity to run.

Not only would these new washers improve Mercer's Green Report Card, it would significantly reduce operating costs associated with the dorm rooms. This would have the potential to draw in students, if amenities and dorms were nicer competing with some of the larger schools in Georgia and the Nation.

CONCLUSION

Mercer University should replace the old washers in all the dorms and apartments with new high efficiency washers, that have been government certified. There are two models that stand out due to cost and efficiency one by GE and one by Maytag.

CRITERIA FOR EVALUATION

When considering replacing Mercer's current washers there are three factors to consider in choosing a government certified energy efficient model:

1. The Annual Water Usage (gallons/year)
2. The Annual Electricity Usage (kWh/year)
3. If the washer is front loading or top loading, this makes a difference not only in price but in the water and electricity usage.
4. Price, the most efficient washer for the money

RELEVANCE OF THE CRITERIA

Annual Water Usage (gallons/year)

On average older washers use up to twice as much water as the high efficiency washers being produced today. Using less water not only saves money it helps protect the environment, with drought an always present concern in the local media.

Annual Electricity Usage (kWh/year)

The new energy efficient models also use less electricity. With a majority of Mercer's electricity coming from non -renewable energy sources Mercer would go a long way to reducing local emissions. The new washers on average cost $60 a year to run, using 270 kWh/year.

RELEVANCE OF CRITERIA CONTINUED

Front loading or Top Loading

Front loading washers use less water then the top loading models. Both washers use about the same amount of energy. The use of regular detergent that is not specially marked for the front loading washers can cause overflows and break downs. Front loading washers can also save space, as they can be stacked together.

Purchase Price

The front loading washer cost significantly more then the top loading washers. This can negate the savings spent on energy for years to come.

Comparisons between models

These are the figures for the actual models (to be followed by rating based on a scale).

Brand	Model	Water Usage (gallons/year)	Energy Usage (kWh/year)	Price
Front Loading	-	-	-	-
GE	WCVH4800	3,742	122	999
LG	WM1355HW	4,036	108	1,049
Maytag	MHW6000XW	4,551	127	1,199
Top Loading	-	-	-	-
GE	PTWN8050MWW	7,885	263	1,099
LG	WT5001CW	7,025	250	949
Maytag	MVWX500XW	5,106	122	699

Comparisons Continued

This is on the points scale, the prior slide showed the actual numerical values for each of the criteria.

Brand	Model	Water Usage	Energy Usage	Price	Points Total
Front Loading	-	-	-	-	-
GE	WCVH4800	10	9	8	27
LG	WM1355HW	8	10	6	24
Maytag	MHW6000XW	9	8	5	22
Top Loading	-	-	-	-	-
GE	PTWN8050MWW	6	6	7	19
LG	WT5001CW	5	7	9	21
Maytag	MVWX500XW	7	9	10	26

RECOMMENDATION

The top two washers were only one point apart on the numerical scale used to compare the models. However there are significant differences in the water usage and price. The difference in water usage is 1,364 gallons a year. Further information on the current water usage is needed to determine if the $300 per washer price difference is cost effective.

Brand	Model	Water Usage	Energy Usage	Price	Points Total
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GE	WCVH4800	3,742	122	999	27
Top Loading	-	-	-	-	-
Maytag	MVWX500XW	5,106	122	699	26

QUESTIONS?

RESOURCES

- *Cloths washers*. Retrieved from http://www.energystar.gov/index.cfm?fuseaction=find_a_product.showProductGroup&pgw_code=CW
- United States. Dept. Of Energy. Office of Energy Efficiency and Renewable Energy. Department Of Energy, Office of Energy Efficiency and Renewable Energy. (2002). *Domestic water conservation technologies* (68216877). Washington, DC: Retrieved from http://www1.eere.energy.gov/femp/pdfs/22799.pdf
- American Council for an Energy-Efficient Economy, ACEEE. (2010, June). *Laundry*. Retrieved from http://www.aceee.org/consumer/laundry
- Environmental Protection Agency, Department of Energy. (2004). *Energy star for higher education*. Retrieved from http://www.energystar.gov/index.cfm?c=higher_ed.bus_highereducation

- Prices of washers found at geappliences .com, lg.com, and maytag.com