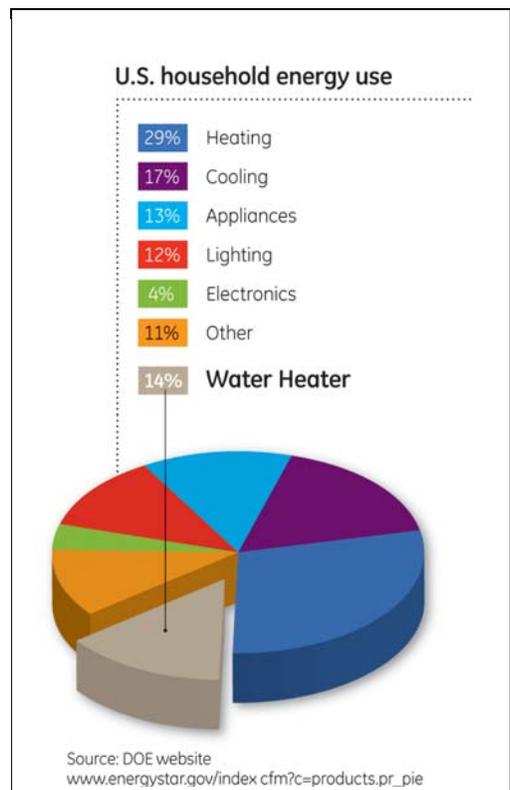


Green Home Project

The current Branch Area Career Center (BACC) Building Trades Program home presents an opportunity for the BACC and the Coldwater Board of Public Utilities (CBPU) to partner together on a unique model home project. This model home would incorporate the latest energy efficiency/resource conservation technologies and building techniques. The model home would not only provide an excellent education opportunity for the BACC students on the future of building construction, but it could be used as a showcase to the community and area builders to educate them on the true benefits of energy optimization and resource management.

As the DOE graphic indicates, 25% of residential energy consumption occurs in lighting and appliances. The focus of the CBPU partnership will be to provide funding through a grant and in-kind matching funds to install new technologies for appliances and lighting, so that the net effect to the original project cost is not affected. Partnerships with suppliers will also be pursued to broaden the marketability and focus of the project. Figure 1 shows the concept of the appliance and monitoring technologies (less the hot water heater) that is planned to be deployed.

The thought is that this model home would then be benchmarked against another BACC constructed home that was built to more standard construction measures. To do this savings verification, the model home and the benchmarked home would have metering installed on the major energy components, including water and natural gas. This information would then be available in a format displaying the savings on a real time basis and long term return on investment analysis – ideally accessible via the CBPU and BACC web sites.



In summary, the following are the key benefits and opportunities that of the **Green Home** project will provide:

- An excellent opportunity for the CBPU to partner with the BACC curriculum to provide the training to a future workforce that will be depended upon to support energy efficiency and resource conservation standards. On the same note, a unique learning opportunity for the BACC students to acquire the skills and obtain exposure to the future technology of home construction – making them more marketable in a very competitive job market.

- No added cost to the BACC project due to the CBPU investing the funds to offset the new technology. It will also set the home apart from others on the housing market because of the added value of being extremely energy efficient.
- A real-world home for the community to see the true financial benefit of energy and resource conservation.
- A showcase that can then be used to educate the area builders and other building trades programs.
- The opportunity to encompass other BACC curriculum in the project development, documentation, marketing and financial evaluation of the project.
- Look to areas outside of the building envelope to promote conservation, such as landscaping features like rain gardens and permeable driveways to control storm water run-off; rain barrels for vegetation irrigation; and proper tree planting to obtain optimal shading for the home.
- An ongoing educational tool that can be incorporated into training curriculum well into the future. The project would also be an excellent reference standard for future home remodeling and retrofit projects.

Figure 1

GE Energy Management & Demand Response Appliances



Utility companies that have implemented time-of-use pricing communicate their daily rate schedules to the home.

GE's Demand Response Appliances react, saving money while lowering peak demand and the need for more power generation.

Optionally, the GE Home Energy Manager correlates rates with user-preferences to balance cost, comfort, and convenience.

<p>Home Energy Manager This energy brain works in conjunction with you and your home to help understand and optimize energy use.</p>	<p>Refrigerator This Profile refrigerator can reduce energy use on demand and delay defrosts to inexpensive rate periods.</p>	<p>Range & Microwave Cooking energy is reduced and with dual cavities, the range can preference the smaller upper oven.</p>	<p>Dishwasher The dishwasher is aware of expensive rate periods and can wait to run when energy costs are lower.</p>	<p>Laundry Pair When high rates arise, this laundry pair will save you money while getting your clothes clean and dry.</p>	<p>Hybrid Water Heater The water heater can switch to heat-pump mode and modify temperature settings during high rates.</p>