

Mad River Valley Energy Series

Presented by the Mad River Valley Planning District with support from the Vermont Energy Climate Action Network

Part 5 of 5: Conservation, Weatherization and Efficiency

December 13, 2011

Big Picture Theater, Waitsfield, VT

Summary by Vickie Trihy

Taking Energy Conservation to its Limits, presented by Richard Czaplinski

Ten years ago, the Swiss Federal Institute of Technology (ETH) in Zürich developed the vision of a "2000-Watt Society." This model for energy policy demonstrates how it is possible to consume no more energy than worldwide energy reserves would permit and environmental impacts would justify. Based on the earth's population at the time, it was determined that this was possible if every person in every society limited their entire energy consumption to a yearly maximum of 2000 watts. To meet that goal, the U.S. would have had to reduce its average consumption by 83%. Given the growth in population and in energy use in the U.S. since this ten-year-old model was developed, the yearly maximum per person would be even lower now and the reduction needed would be higher.

Mr. Czaplinski and his wife Kinny Perot have taken measures to limit their energy consumption at their two Vermont homes. In Adamant they use approximately 2083 watts per year, and in Warren, 4,360. Fuel used for their vehicles is included in these figures. (By contrast, the average energy use per person in the U.S. in 2000 was 12,000 watts.) These low levels of consumption were accomplished by using energy-efficient design and appliances as well as energy conservation.

The house in Adamant is less than 700 square feet, requiring less energy to heat, and to conserve energy used for heating the house in Warren part of the house is closed off and unheated in winter. Electricity consumption at both solar-powered homes is net zero, and in winter food is kept cool in the root cellar instead of running the refrigerator. Growing their own food and using a bicycle to run errands rather than a motorized vehicle keeps gasoline consumption low. Mr. Czaplinski conducts tours of his Adamant home for those who are interested.

Energy Monitoring of Small Businesses in the MRV, presented by Chris Badger, VT Energy Investment Corporation (VEIC)

The Mad River Valley received a grant in 2011 to educate business owners about their energy efficiency options. Energy "detectives" helped interested local businesses monitor their existing energy use and develop a plan for reducing it. Monitoring use at the Warren Store both during and after store hours helped its owner to identify the times of highest energy use and what accounted for it. This resulted in replacing halogen lighting, which generated a lot of heat, with cooler and more efficient LED fixtures, reducing the need for air conditioning. It also identified the need to replace old, inefficient refrigeration equipment, improve insulation/air sealing, and upgrade the heating system.

It is hoped that business owners who make these types of improvements will spread the word among owners of similar establishments, and those owners will be more inclined to take steps to find out their own energy usage and how it can be reduced.

Tackling Home Energy Efficiency—Making a Plan, presented by Laurie Fielder, Central VT Community Action Council (CVCAC) and Brad Cook, Building Performance Services, LLC

Ms. Fielder outlined the programs offered to help Vermonters weatherize their homes. Financial assistance or incentives are available depending on income. Button Up workshops help homeowners understand how to evaluate their weatherization needs, and Weatherization Skillshops provide hands-on demonstrations for do-it-yourselfers. CVCAC posters were available to the audience, illustrating and outlining the options and steps required for participation in their weatherization programs, beginning with an energy assessment by an authorized auditor.

Mr. Cook described the energy assessment, which should be done by an auditor certified by the Building Performance Institute (BPI). A list of accredited auditors can be found at efficiencyvermont.com. The auditor will perform a blower door test and inspect insulation, heating equipment, windows and doors, and so forth to identify leaks where heat is lost. Another blower door test is performed after improvements have been made, and that test is compared with the original to determine that energy savings required for rebates have been achieved.