What Is Low Home Energy Use In The Ohio Valley? (2 hrs)

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2.0 continuing education hours for engineers, contractors, designers and energy professionals

Course Description

Residential energy use and cost vary substantially. This is partly because the unit costs and energy content of common residential energies vary substantially. It is also partly because houses and households vary substantially in size, style and age. Weather variations also cause large variations in heating and cooling energy use from year to year and location to location. These facts mean that just comparing energy bills is often not a good way to compare, understand or rank home energy use, especially when comparing households of different sizes from different neighborhoods, with different energy sources and suppliers, or in different or multiple years. This presentation provides energy-focused residential designers, engineers, contractors and energy program managers more and better insight into the expected ranges and rankings of current and recent residential energy use. It also presents what may be lowest probable Ohio Valley home energy use.

Course begins by examining national average energy use statistics from the U.S. Energy Information Administration (EIA), in which energy usage is compared by size of household and size and age of house in terms of equivalent BTUs per sf and per person. Current national home energy usage trends are also examined, including home size increasing, heating efficiencies improving, cooling and electronics energy usage growing. Then Robbins presents and compares his own data for Ohio Valley households from his household energy surveys 2001-2012. From these 2 sources, indices are established for identifiable levels of 15% less, 30% less and 50% less than average energy use per sf and per person. Consistent and intermittent data from some Ohio Valley survey participants seem to demonstrate energy use as low as 50% below average. Robbins shares what kinds of conservation, efficiency and renewable energy options are common in such lower energy using households. Household annual energy costs are also examined, as well as the wide-ranging residential costs for equivalent energy content.

Learning Objectives

- Learn how site energy is converted to equivalent BTUs. Gain an understanding of the widely varying BTU contents and costs for common residential energy sources.
- Become familiar with national and Ohio Valley home energy performance in terms of BTUs per sf of home floor area and per person of home occupancy.
- Learn how per-sf and per-person energy use are sometimes compared to heating and cooling degree-days for the purpose of analyzing home energy performance over different years or climate regions.
- Understand better why and how much local household energy performance actually varies.
- Examine, analyze and compare a few actual home energy usage examples versus national and local averages.
- Learn what appears to be lowest demonstrated home energy usage in the Ohio Valley.

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