

## **ENERGY SYSTEMS LABORATORY**

Texas Engineering Experiment Station  
Texas A&M University System

3581 TAMU  
College Station, Texas 77843-3581

October 10<sup>th</sup>, 2011

Ms. Brenda Edwards  
U.S. Department of Energy  
Building Technologies Program – MS EE-2J  
Building Energy Codes  
1000 Independence Ave  
Washington, D.C. 20585-0121

Docket No. EERE-2011-BT-BC-0046

Dear Ms Edwards,

The Energy Systems Laboratory (ESL) submits the following comments regarding the Building Energy Codes Cost Analysis notice in the Federal Register (Vol. 76, No. 177, pp 56413 to 56425, September 13, 2011).

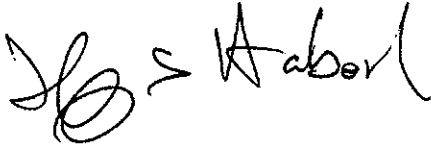
On page 56414, under the heading “Energy Simulation Tool”, the notice states “DOE intends to use an hour-by-hour simulation tool to calculate annual energy consumption for relevant end uses. For most situations, the EnergyPlus software, developed by DOE, would be the tool of choice.” The ESL would like to recommend that the DOE not base its analysis solely on the use of the EnergyPlus software to determine the annual energy consumption for relevant end uses.

The ESL recommends that the DOE perform the analysis with a combination of software, which includes the latest version of the EnergyPlus program and the DOE 2.1e program. In addition, the DOE should submit both programs for Certification to the RESNET Certification process, which is the only recognized certification process for IECC code-compliant software in the United States that is also supported by the DOE. The ESL is concerned that the sole use of EnergyPlus for determination of future ICC code requirements, without review could result in significant differences in simulation results versus results obtained by RESNET Certified simulations, many of which are DOE-2.1e based.

In addition, it is anticipated that significant differences between answers resulting from the use of RESNET Certified simulation programs and the EnergyPlus simulation program will need to be adequately explained to the building community before promulgating code changes nationwide, or else the DOE risks losing the confidence of U.S. builders and state and local code officials who rely on accurate, repeatable, performance-based analysis for determining code compliance using RESNET Certified software.

Finally, it is recommended that the DOE make available the input files for the EnergyPlus and DOE-2.1e simulation programs used to perform the Building Energy Codes Cost Analysis in adequate time for the simulations to be reviewed. The DOE should convene an IECC residential energy code simulation committee, comprised of nationally-recognized, knowledgeable individuals who are familiar with the RESNET Certification process, to provide input to the DOE regarding the use of simulations by the DOE to support the Building Energy Codes Cost Analysis notice in the Federal Register's National Laboratory.

Sincerely,

Handwritten signature of Jeff S. Haberl in black ink.

Jeff S. Haberl, Ph.D., P.E., FASHRAE  
Professor and Associate Director

Handwritten signature of Bahman Yazdani in black ink.

Bahman Yazdani, P.E.  
Associate Director