

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460



**OFFICE OF  
AIR AND RADIATION**

May 21, 2003

Dear ENERGY STAR Partner or Other Interested Party,

As you may know, the ENERGY STAR specification for programmable thermostats (PTs) has been in place for over eight years. Based on a recent review of the specification's effectiveness, the Environmental Protection Agency (EPA) has concluded that difficulty-of-use has led to under utilization of the energy saving features of these products, thereby reducing the overall savings potential associated with ENERGY STAR qualified PTs. We seek your input on revisions to the ENERGY STAR specification that would enhance user-friendliness and improve the quality of PTs bearing the ENERGY STAR mark.

EPA is interested in working with all willing parties to determine what changes should be made to the ENERGY STAR specification for PTs. As a first step, EPA is offering for your consideration a proposal intended to demonstrate our vision and objectives for revising the specification. This proposal is the result of many months of research into the PT market to better understand the types of products being sold and the nature of their use. In pursuing this research, we concentrated on identifying the link between product features, settings and user interfaces, as well as the habits of diverse user groups in different geographic regions.

While there are some user-friendly PTs on the market today, EPA recognizes that it may take some time before a sufficient selection can be offered by a range of manufacturers. Accordingly, EPA anticipates a phased approach to revising the ENERGY STAR specification for PTs.

In the near term (Phase I), EPA hopes to:

- refine default program temperature settings so that more people will use them
- add a battery back-up with low battery indicator requirement so that changes to the default program won't have to be reprogrammed
- add a "hold" button indicator requirement so that users are aware when they have overridden the default program
- include a indicator requirement for auxillary heat so that consumers are aware when their heating equipment is operating in a high energy-use mode
- include a default time requirement for PTs that include a "change filter" feature so that users won't have to program a time

In a second phase of the revised specification, EPA is considering more prescriptive user interface requirements consistent with the characteristics that make PTs more user-friendly. These could include:

- a refined “hold” feature
- screen size and backlighting requirements
- a “holiday” key
- a copy button
- a requirement for permanent instructions
- a manufacturer help-line requirement

In addition, there are topics not explicitly addressed by the proposal that EPA has identified for continued discussion.

- Default settings for PTs. Including:
  - Setback and Setup values
  - Celsius conversion
  - Energy Saving Units
- Intelligent recovery systems
- Cycling rates
- Filter change default settings
- Test criteria to ensure quality and accurate performance
- Manual use of the up and down arrows to change the program, while keeping the setbacks/setups the same
- Vacation default settings
- Availability of current, and soon to be released models

We encourage you to provide feedback on these issues with your comments on the proposal. As far as user habits go, we are particularly interested in your input concerning:

- PT usage pattern data or use of the following:
  - manual settings, default program, user-defined programs, frequency and nature of override-- ideally as related to thermostat features or to demographics
  - insights as to why consumer limit the use of programmable/automatic features
  - the extent to which interface design changes could increase usage
- Characterization of differences between temperature regimes for households using manual thermostats compared to households using PTs
- Characterization of PT users (reasons for purchase, time of purchase – with HVAC purchase vs. came with house, etc)
- Consumer response including reported satisfaction, questions, etc.

EPA’s research findings are generally consistent with the idea that the more user-friendly the thermostat, the more likely the consumer is to maximize energy savings without sacrificing comfort. We are encouraged by the enthusiastic response of manufacturers to improving the user

experience. While it is clear that developing a specification that ensures greater user-friendliness will be challenging, we hope that you will consider this proposal as an important first step in developing a framework for future technical discussions.

Please provide feedback and comments to Gwen Duff at ICF Consulting at [gduff@icfconsulting.com](mailto:gduff@icfconsulting.com) , (202)862-1230 by **July 30, 2003**. In the interest of process transparency, EPA plans to post written comments on the ENERGY STAR website ([www.ENERGYSTAR.gov](http://www.ENERGYSTAR.gov)). Stakeholders who do not wish to have their comments posted should so indicate.

Thank you for your consideration. I look forward to working with you to improve the ENERGY STAR specification for programmable thermostats.

Sincerely,

A handwritten signature in black ink, appearing to read 'Andrew Fanara', with a long horizontal flourish extending to the right.

Andrew Fanara  
ENERGY STAR, Products in Development

Enclosure