

Implementing the National Academy of Sciences Recommendations to Achieve a More Energy Efficient and Low-Carbon Future

As Congress considers the most effective way to move America toward a more energy efficient, low-carbon future, the American Gas Association (AGA) strongly urges that it follow the recommendations of the National Academies, which found full-fuel-cycle measurement to be the most appropriate method to accurately capture energy consumption and environmental impact.

Giving consumers accurate information is critical to creating the changes in energy use necessary for achieving the nation's goal of reducing greenhouse gas emissions and conserving precious energy resources. Legislative implementation of the NAS recommendations is the first step in ensuring consumers have the information needed to make smarter energy choices.

Background

Section 1802 of the Energy Policy Act of 2005 required the Department of Energy (DOE) to commission a study by the highly esteemed, nonpartisan National Academy of Sciences on whether site-based (light switch or burner-tip) or source-based (well-head or mine-mouth) energy measurement is the more appropriate for purposes of measuring energy efficiency. DOE currently calculates appliance efficiency based solely on the energy consumed at the point of use. Site-based measurement of energy use does not account for energy lost in the production, generation and transportation of energy to the point of end use. Site measurement also fails to provide a basis for calculation of the potential carbon footprint of appliances and other impacts that can only be completely accounted for by considering the full-fuel-cycle – or source-based energy measurement.

“ For appliances for which there is a choice of fuel, such as storage water heaters and heating equipment, efficiency ratings should be calculated using the extended site measure of energy consumption...”

- Recommendation of the
National Academies

National Academies Recommend that DOE Move Toward Source-Based Energy Measurement

On May 27, 2009, the National Academies (comprised of the National Academy of Sciences, the National Academy of Engineering, the Institute of Medicine and the National Research Council) released its long awaited assessment -- [Review of Site \(Point-of-Use\) and Full-Fuel-Cycle Measurement Approaches to DOE/EERE Building Appliance Energy Efficiency Standards](#). The study letter sets forward five important recommendations, including:

- DOE should consider changing its measurement of energy use to one based on the full-fuel cycle, which takes into account the amount of energy consumed and lost from the fuel's production through the final point of use. This measurement provides consumers with more complete information on energy use and environmental impacts, especially greenhouse gas emissions.
- Appliance efficiency should be evaluated based on an “extended site” measurement of consumption for appliances where there is a choice of end use fuel (such as electricity or natural gas), until DOE can complete a full transition to using full-fuel-cycle measurement. The “extended

site” measurement is equivalent to “source” energy as currently defined by the U. S. Environmental Protection Agency for use in the EnergyStar™ program.

- DOE should and work with the Federal Trade Commission to provide more comprehensive information to the public – particularly through the addition to the EnergyGuide label of an indicator of the greenhouse gas emissions associated with an appliance’s total energy consumption.

Congressional Action Needed

To implement these sound recommendations, Congressional action is required to make changes to the Energy Conservation chapter of the U.S. Code (42 U.S. C. 6291) which include:

- Adding the definition of “source energy” consistent with the report’s definition of “extended site” efficiency and with EPA’s definition of “source energy”; and
- Modifying the statutory definitions of “energy use” and “energy efficiency” to reflect that they are is most appropriately measured on a source basis.

Without these statutory changes, the DOE will not have the authority to undertake appliance rulemakings and other activities based on source energy considerations, as recommend by the National Academies.

Adding Carbon Footprint to EnergyGuide Appliance Efficiency Labels

Congress also has the opportunity to incorporate critical carbon footprint criteria – a provision currently proposed in the American Clean Energy and Security Act of 2009 – into federal appliance labeling standards.

AGA strongly supports the carbon labeling provisions, and urges Congress to ensure this provision is ultimately enacted.

- Including carbon footprint information on the currently used EnergyGuide label – similar to the illustration provided here -- would support the intended goals of the National Academies and its fifth recommendation that looked to “adding to the Energy Guide label an indicator of how an appliance’s total energy consumption might affect levels of greenhouse gas emissions.”
- Updating the federal appliance labeling standards is a pro-consumer, pro-climate, low-cost policy initiative that will give consumers the information they need to make smart energy choices.
- There is a need for consistent, comparable, verifiable information about the total energy use and environmental impact associated with the use of residential appliances, in order to eliminate consumer confusion over “green” claims.

Congressional action that ensures full-fuel-cycle measurement will provide consumers with the information they need to make smart energy choices to reduce energy inefficiencies and reduce greenhouse gas emissions.

