American Gas Association

July 10, 2009

U.S. Environmental Protection Agency
ENERGY STAR HOMES Program
1200 Pennsylvania Ave., NW
Washington, DC 20460

Subject: American Gas Association Comments on "Proposed New Guidelines for ENERGY STAR Qualified New Homes"

Dear Sir/Madam:

The American Gas Association (AGA), founded in 1918, represents 202 local energy companies that deliver natural gas throughout the United States. There are nearly 70 million residential, commercial and industrial natural gas customers in the U.S., of which 92 percent — more than 64 million customers — receive their gas from AGA members. Today, natural gas meets almost one-fourth of the United States' energy needs.

The use of natural gas in high efficiency residential applications is key to any attempt to lower U.S. greenhouse gas emissions. In a recent study funded by the American Gas Foundation, it was shown that increased direct use of natural gas in residential and commercial applications can increase the productivity of available energy supplies, reduce overall energy cost, and reduce related CO2 emissions in all scenarios considered.[1]

AGA supports the U. S. Environmental Protection Agency's (EPA) ENERGY STAR HOMES program and has been a commenter on previous guidelines and criteria development activities. ENERGY STAR HOMES provides an important opportunity to reduce environmental impacts of new homes through more energy efficient building designs and practices. EPA's success is likely as long as the program maintain focus on requirements and measures of efficiency that relate specifically to energy efficiency and resulting environmental impacts, particularly to emissions of atmospheric carbon.

AGA's comments address procedural issues and substantive Guideline elements.

Procedural Issues

AGA continues to maintain, as stated in previous comments on the ENERGY STAR HOMES Program, that EPA's approach for review and comment on draft guidelines is insufficient. The new Guidelines proposed by EPA should be promulgated as a rule in accordance with the notice and comment procedures of the Administrative Procedures Act ("APA"). The decision making process regarding the proposed 2011 program requirements would be significantly

[1] "Direct Use of Natural Gas: Implications for Power Generation, Energy Efficiency, and Carbon Emissions," American Gas Foundation, April 2008.
http://www.gasfoundation.org/ResearchStudies/directuse.htm

improved if such requirements were published in the Federal Register. Notice in the Federal Register would reach a wider audience and provide the agency with more diverse comments from the public than simply soliciting comments through the internet.

Robust public comments on the proposed requirements would strengthen the agency's decisions and lead to more sustainable rules. More importantly, the proposed program requirements are by their very nature "legislative rules" that are required to be promulgated through the notice and comment procedures of APA § 553. Legislative rules have the force and effect of law.[2] In this case, the proposed 2011 program requirements would establish binding requirements on home builders that would seek to obtain the ENERGY STAR HOMES designation. The agency's language is telling. "To qualify as ENERGY STAR, a home *shall* meet the minimum requirements specified below, be verified and field-tested . . . , and meet all applicable codes." (emphasis added). The proposal thus defines the rights and obligations and has binding effect on those seeking to obtain the ENERGY STAR HOMES designation and on the agency in making determinations as to whether any particular home can obtain such designation.[3] The language of the proposal speaks in mandatory terms.[4] The agency cannot avoid the requirement to promulgate regulations through notice and comment simply by characterizing its actions as not rulemaking when in reality its actions create legally binding norms.[5]

Recent legislative efforts to promote efficiency have highlighted the role of the Energy Star program in achieving efficiency goals. Both the Energy Policy Act of 2005 and the Energy Independence and Security Act of 2007 contain provisions mandating that federal agencies increase efficiency through procurement of Energy Star rate products and leased office space.[6] Thus, even if the agency at one time considered the Energy Star program to be voluntary or that its requirements were merely guidelines or interpretive, recent legislation has created significant rights and imposed significant obligations on federal agencies and others who participate in the ENERGY STAR HOMES program. For all of these reasons, AGA urges EPA to provide notice of the proposed 2011 ENERGY STAR Qualified Homes program requirements in the Federal Register and an opportunity for public comments on such requirements prior to making a final decision.

Guidelines Elements

---

[2] *See Appalachian Power Co. v. EPA*, 208 F.3d 1015, 1020 (D.C. Cir. 2000).

[3] *See Corplife America v. EPA*, 329 F.3d 876, 883 (D.C. Cir. 2003) (holding that in determining whether an action constitutes a regulation, one line of analysis focuses on the effects of the agency action, i.e., whether it imposes any rights and obligations or leaves itself discretion, and a second line of analysis focuses on the agency's expressed intentions, i.e., whether, among other things, the action has binding effects on private parties or on the agency).

[4] *See State of South Dakota v. Ubbelohde*, 330 F.3d 1014, 1028 (8th Cir. 2003) (holding that a manual was a regulation that was required to be promulgated under the notice and comment procedures of the APA because, among other things, the "Manual speaks in mandatory terms.").

[5] *See Croplife*, 329 F.3d at 883 ("the agency's characterization of own action is not controlling if it self-servingly disclaims any intention to create a rule with the 'force of law,' but the record indicates otherwise.").

[6] *See* Energy Policy Act of 2005 § 104, Pub. L. No. 109-58, 119 Stat. 609 (Aug. 8, 2005) codified at 42 U.S.C. § 8259b (requiring federal agencies to procure Energy Star products); and Energy Independence and Security Act of 2007 § 435, Pub. L. No. 110-140 (Dec. 19, 2007) (requiring federal agencies to lease space in Energy Star labeled buildings).

ENERGY STAR Prescriptive Path

Water Heaters. The Guidelines list electric resistance storage water heaters in its Reference Design requirements, which is inconsistent with current ENERGY STAR criteria for residential water heaters. In developing the criteria for residential water heaters, the U. S. Department of Energy (DOE), with extensive review and comment from stakeholders, decided not to provide ENERGY STAR recognition to electric resistance storage water heaters. ENERGY STAR HOMES, likewise, should not include this technology in its reference design requirements, regardless of energy factor (EF) efficiency.

The Guidelines proposal for electric storage water heaters is only 2 to 3% greater than current minimum efficiencies for these products, which on a "source energy" basis are significantly less efficient than other technologies available for ENERGY STAR Qualified Homes. "Source energy" and efficiency is currently used in EPA's ENERGY STAR ratings procedures for commercial buildings. EPA's reasoning for this approach is as follows:

> "EPA has determined that ***source energy*** is the most equitable unit of evaluation. Source energy represents the total amount of raw fuel that is required to operate the building. It incorporates all transmission, delivery, and production losses, thereby enabling a complete assessment of energy efficiency in a building."[7]

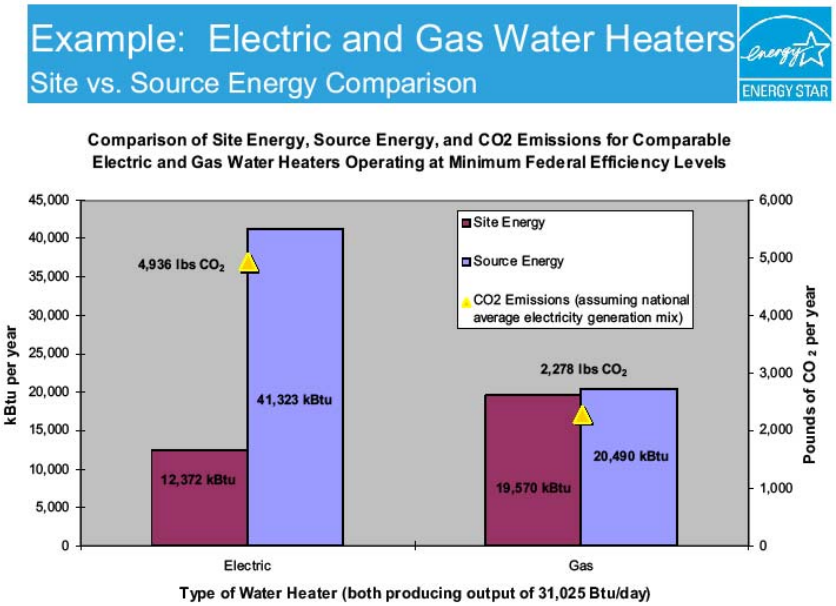
The same logic applies to appliances and equipment. In fact, carbon footprint calculations cannot be made without measurements that go beyond the EF rating, which includes only energy consumed at the site, and toward source energy measurement.

EPA recognizes the importance of source efficiency and its relationship to atmospheric carbon contribution. The following slide was presented by Ms. Kathleen Hogan, Director, Climate Protection Partnership Division, EPA, at a meeting of the National Academy of Sciences project comparing site energy versus source energy measurement for storage water heater efficiency.[8] As the slide shows, both energy consumption and carbon dioxide contributions are very high for electric resistance storage water heaters, contradicting the inference that a high EF rating for these products corresponds to overall efficiency. In view of the inherent limitations of electric resistance as a means of efficiently heating water, this technology does not belong in an ENERGY STAR Qualified Home.

---

[7] "Understanding Source and Site Energy: EPA ENERGY STAR," April 9, 2008. http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_benchmark_comm_bldgs

[8] "ENERGY STAR and Measuring Energy Efficiency," Kathleen Hogan, Director, Climate Protection Partnerships Division, U. S. EPA, National Academy of Sciences, February 2008 (PowerPoint™ presentation).



AGA notes that while it represents natural gas utility interests, propane-fired water heaters may produce generally comparable source energy advantages over electric resistance storage water heaters. As a result, ENERGY STAR HOMES Guidelines could delete references to electric resistance storage water heaters without the need to address issues of availability of natural gas distribution services.

IAQ and Durability. The prohibition of "ventless combustion appliances" under the "Indoor Air Quality Checklist" has not been justified by EPA and represents a serious interference in the installation of appropriately design certified gas appliances. Gas fired "unvented" and "vent-free" appliances are design certified under the American National Standards Institute (ANSI) recognized Z21 series of standards, which include air emissions for the combustion products carbon monoxide and nitrogen dioxide. EPA provides no discussion of the adequacies or inadequacies of these design standards in its banning of these products, which have source efficiencies approaching 90%, under the Guidelines. EPA provides no rationale in the form of data or other evidence that these appliances, as currently or installed, represent issues of unacceptable indoor air quality. Furthermore, EPA does not even identify the contaminants of concern.

In developing a rationale for banning these products, it is expected that EPA has studied these products and presented in its technical support for the Guidelines information on emission rates of specific products of combustion, generated exposures, and thresholds for unacceptable emission exposures for combustion products of concern. EPA has provided no evidence that it has done this in proposing the banning of these products. Furthermore, EPA provides no analysis addressing the relationship of ventilation requirements based on ASHRAE Standard 62.2 (2007) and its adequacy or inadequacy in addressing exposures of any indoor air contaminant, including combustion products. Clearly, the interaction of the ventilation requirements and emissions from any product are important.

As a consequence of the lack of technical support for banning "ventless combustion appliances," issuing Guidelines including this ban would be, in AGA's opinion, in violation of EPA's Office of Management and Budget (OMB) Information Quality Guidelines.[9] Since the Guidelines have not been issued, AGA makes no claim at this time of such a violation. However, AGA seeks to resolve this issue with EPA before the Guidelines are issued.

The Indoor Air Quality Checklist prohibits location of air handlers and return ducts within garages. Here, again, EPA provides no justification for this restriction, which is a common building practice in various regions of the U. S. At the same time, the Guidelines requirement to meet ASHRAE Standard 62.2 (2007) presents an inconsistency with this prohibition since Standard 62.2 provides requirements for minimizing leakage of such systems when they are installed in garages. EPA has not provided information or an argument on why this Standard 62.2 does not provide adequate protection of IAQ, presumably from leakage of garage contaminants into the home.

The Indoor Air Quality Checklist also requires installation of a "carbon monoxide detector" [*sic*]. Carbon monoxide (CO) alarms are life safety devices that are currently covered by model national codes, including the 2009 International Residential Code, and many state codes and ordinances. Requirements for these devices are properly the responsibility of local officials and the applicable codes, not ENERGY STAR HOMES raters and the Guidelines. As the proposed "2011 National Program Requirements" state:

> "To qualify as ENERGY STAR, a home shall meet the minimum requirement…and meet all applicable codes."[10]

Additionally, CO alarms as life safety devices do not provide information on "indoor air quality," either in terms of its acceptability or objective measures relevant to specific environmental health concerns. Like smoke detectors and with proper response, they advise occupants to evacuate before CO exposures inhibit evacuation and life safety hazards. Inclusion of these devices in the Guidelines would infer that occupants might be protected from adverse health effects from CO in homes, which would not be justified based on the design performance of CO alarm as certified to the current standards. Specifically, current CO alarms are design certified to activate in environments analogous to exposures that would produce 5 to 10% carboxyhemoglobin (COHb) in subjected exposed. In contract, the current EPA outdoor standard for CO (a protective standard based on health criteria) uses COHb levels under 3.0 as the basis for the standards. CO alarms would provide no protection for the public from exposures sufficient to produce these levels. As a result, buyers of ENERGY STAR HOMES would be getting misleading information on protection provided by the Guidelines-required CO alarm.

ENERGY STAR Performance Path

[9] "Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity, of Information Disseminated by the Environmental Protection Agency," EPA/260R-02-008, October 2002 (as amended through May 13, 2005)

[10] "DRAFT ENERGY STAR Qualified Homes: 2011 National Program Requirements," ENERGY STAR, Revised 4/20/2009.

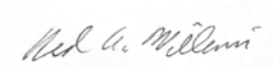
This approach to meeting ENERGY STAR HOMES requirements through performance has been based on meeting Home Energy Rating (HERS) index criteria. However, elsewhere within the EPA ENERGY STAR, source energy criteria are being used.[11] Since source energy calculations are needed to calculate carbon footprint (and are used in the EPA ENERGY STAR Commercial Buildings Program through the Target Finder and Profile Manager tools), it is timely for ENERGY STAR HOMES to change to performance rating based on source energy performance.

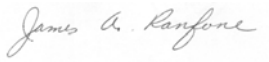
Source energy performance and HERS ratings are not equivalent. In fact, previous approaches to modify HERS to better reflect source energy criteria (such as the implementation of "normalized modified loads") have not gone forward. In 2002, AGA published an analysis of HERS rated buildings showing the source energy discrepancy between all-electric homes and gas heated and water heated homes.[12] While the objective of this study was to show superiority of natural gas homes in various parts of the country with respect to source energy, emissions, and other aspects, the larger point with respect to ENERGY STAR HOMES is that the HERS system performs inequitably in capturing carbon footprints across fuel types. EPA's continued reliance upon HERS ratings procedures will produce less than optimal outcomes in efforts to influence builders and consumers toward lower carbon homes.

AGA strongly encourages EPA to examine implementing a source energy based performance rating approach comparable to Target Finder and Portfolio Manager. EPA movement in this direction would be consistent with the findings of the recently completed National Academy of Sciences study of appliance efficiency standards. This study suggested that, in the long run, DOE move toward full fuel cycle criteria for setting minimum efficiency standards and, in the nearer term, incorporating source based measurements where fuel types compete.[13]

This concludes AGA's comments on the draft Guidelines. AGA looks forward to additional interactions with EPA staff on this subject.

Sincerely,





Ted A. Williams
Director, Codes & Standards

James A. Ranfone
Managing Director, Codes & Standards

cc: P. Lacey, AGA
A. Soto, AGA

---

[11] "How the Rating System Works: ENERGY STAR," http://www.energystar.gov/index.cfm?c=evaluate_performance.pt_neprs_learn

[12] "EPA ENERGY STAR HOMES Program: Energy and Environmental Implications," GARD Analytics, Inc. for American Gas Association, October 2002.

[13] Review of Site (Point-of-Use) and Full-Fuel-Cycle Measurement Approaches to DOE/EERE Building Appliance Energy-Efficiency Standards--Letter Report," Committee on Point-of-Use and Full-Fuel-Cycle Measurement Approaches to Energy Efficiency Standards; National Research Council, May 15, 2009. http://www.nap.edu/catalog.php?record_id=12670