

HPBA COMMENTS ON DOE’S REGULATORY BURDEN RFI
76 Fed. Reg. 6123 (February 3, 2011)

March 21, 2011

The Hearth, Patio & Barbecue Association (HPBA) appreciates the opportunity to respond to a Department of Energy’s (DOE’s) request for information – published at 76 Fed. Reg. 6123 (February 3, 2011) – seeking comment and information to assist DOE in reviewing its existing regulations to determine whether such regulations should be modified or repealed pursuant to Executive Order 13563 (“Improving Regulation and Regulatory Review”), issued by President Obama on January 18, 2011. HPBA is the North American industry trade association for manufacturers, retailers, distributors, representatives, service firms, and allied associates for all types of hearth, patio and barbecue appliances, fuels and accessories, and represents the interests of its members in legislative, regulatory, and other governmental policy matters of concern to them. As explained below, HPBA believes that one of DOE’s immediate priorities in implementing Executive Order 13563 should be to repeal its energy conservation standards for direct heating equipment as they apply to decorative vented gas fireplaces.

The regulations in question effectively ban decorative vented gas fireplaces, effective April 16, 2013. See 75 Fed. Reg. 20112 at 20234-5 (April 16, 2010). Because decorative vented gas fireplaces account for more than 70% of all vented gas fireplace sales, **the ban on decorative vented gas fireplaces will have a devastating impact on the gas fireplace industry**, with severe economic and employment consequences for many of HPBA’s members, including manufacturers of these products, their suppliers, and other related businesses. **DOE adopted its ban on decorative vented gas fireplaces without notice or opportunity for comment, and without any consideration of the adverse impact the ban would have on the gas fireplace industry.** DOE also failed to consider the actual impact that a ban on decorative vented gas fireplaces would have on overall energy consumption. Indeed, **DOE adopted its ban with virtually no information concerning decorative vented gas fireplaces and without any credible analysis at all.** A plainer or more egregious violation of the core principles of Executive Order 13563 is difficult to imagine. Not surprisingly, the results will be disastrous: **the ban on decorative vented gas fireplaces will devastate the gas fireplace industry and is virtually certain to be counterproductive from an overall energy conservation standpoint.**

The ban on decorative vented gas fireplaces can easily be repealed. HPBA respectfully submits that the public interest demands that it be repealed. Good faith implementation of Executive Order 13563 surely requires its repeal.

DISCUSSION

A. Decorative Vented Gas Fireplaces

For a number of years, building codes in the United States have required that new homes be equipped with central heating systems sufficient to satisfy the heating needs for the entire home. As a result, new homes very rarely require fireplaces for utilitarian heating purposes. Nevertheless, fireplaces have continued to be one of the most popular new home amenities. As a result, the percentage of newly-constructed homes that have fireplaces has been relatively high and quite consistent for decades. As Figure 1 shows, approximately 49% of all newly constructed occupied housing units completed over the last two decades have come with fireplaces installed. This pattern is extremely consistent: even the largest change seen (in the 2005-2008 period) was small, and the standard deviation around the mean of 49.0% is only 1.3%.

Traditionally, most residential fireplaces are conventional wood-burning fireplaces. Such fireplaces are desirable for their aesthetic and cultural appeal, and – as DOE is well aware – they have little if any utility as heating appliances. See Attachment A. Instead they are “a contribution to interior decoration, designed to cheer your heart and soul, but not to warm your body.” See Attachment B. Decorative vented gas fireplaces were developed as a direct substitute for traditional wood-burning fireplaces. Like traditional wood-burning fireplaces, these products are not utilitarian heating appliances, but are instead designed for aesthetic use: to be enjoyed during family or social gatherings, romantic evenings, and leisure time. Their reason for being is to provide the same aesthetic appeal as a traditional wood-burning fireplace, not to serve as utilitarian heating appliances. These products are not heating appliances and there is ample information demonstrating that they are used for different purposes and in entirely different ways than heating appliances. See J. Houck, *Residential Decorative Gas Fireplace Usage Characteristics*, provided with Attachment C.

B. Development of the Regulation at Issue

The final rule banning decorative vented gas fireplaces was part of a rule ostensibly regulating “direct heating equipment” (DHE). By statute, DHE is a category of “covered products” subject to energy conservation standards. 42 U.S.C. §§6292(a)(9) and 6295(e)(3). Provisions addressing this particular category of “covered products” were adopted in the National Appliance Energy Conservation Act of 1987 (the NAECA), Pub. L. 100-12. The NAECA required that DHE meet minimum heating efficiency standards, and specified annual fuel utilization efficiency (AFUE) as the “efficiency descriptor” for that class of products. 42 U.S.C. §§6295(e)(3) and 6291(22)(A). As discussed in Attachment C, the AFUE test methodology for DHE was specifically designed to apply to vented gas space heaters, which – unlike decorative vented gas fireplaces – are strictly utilitarian heating appliances. The statutorily-imposed energy conservation standards for DHE consisted of separate standards specific to each then-existing category of vented gas space heater: “wall,” “floor” and “room” DHE, which were well-defined product categories for which specific American National Standards Institute (ANSI) standards

existed.¹ At the time this statutory scheme was adopted, decorative vented gas fireplaces existed, but they were recognized as a different category of products subject to a different ANSI standard: the ANSI Z21.50 standard. The ANSI Z21.50 standard had been developed specifically for products “intended to be decorative rather than a source of heat,” and it defined the name of the class of products to which it applied (“vented decorative gas appliance”) as “a vented appliance whose only function lies in the esthetic effect of the flames.” ANSI Z21.50-1986 Standard at ii and 48. Decorative vented gas fireplaces plainly were not considered to be DHE, and rightly so: these products were not used as heating appliances, and were (and remain) so different from space heaters in use and function that the AFUE methodology is not even applicable to them. See Attachment C.

Although there was no such thing as a vented gas fireplace *heater* when the standards for DHE were developed, such products were introduced later, leading to the development of a new ANSI Z21.88 standard for “vented gas fireplace heaters” in the late 1990s. DOE participated in the development of the ANSI Z21.88 standard, which was expressly designed to cover the vented gas fireplaces that would ultimately be regulated under the NAECA. See ANSI Z21.88-2009 standard at 1.1.4. While decorative vented gas fireplaces continue to account for most gas fireplace sales, vented gas fireplace heaters – commonly referred to as “heater-rated” products – have significant appeal and now account for an estimated 20-30% of vented gas fireplace sales.

When DOE commenced development of the long-awaited regulation addressing vented gas fireplace heaters, it clearly expressed an intent to regulate heater-rated vented gas hearth products, not decorative (*i.e.*, non-heater) vented gas fireplaces. For example, DOE’s presentation materials for its January 16, 2007 public meeting stated that DOE was proposing to regulate certain hearth products because they “are used to provide residential space heating” and “are tested using the vented home heating equipment test procedure,” statements that are applicable to heater-rated products but not decorative vented gas fireplaces. DOE’s materials went on to state that it believed that heating efficiency standards should apply to products that have thermostats or are marketed as space heaters or on the basis of their heating function or efficiency, an approach that would regulate heater-rated but not decorative vented gas fireplaces. The focus on heater-rated rather than decorative products was also clear from the scope of DOE’s data collection effort. For example, HPBA members have confirmed that DOE’s manufacturer visits and interviews were focused exclusively on heater-rated products, with no information concerning decorative vented gas fireplaces being requested or obtained.

In its proposed rule, DOE confirmed its intention to regulate vented gas fireplace heaters: products with the same function and utility as the space heaters already regulated as DHE. 74 Fed. Reg. 65852 at 65867 (December 11, 2009). In response to industry comment, DOE expressly based its proposed definition of the hearth products to be covered by the rule on the “vented gas fireplace heater” definition from the ANSI Z21.88 standard: *i.e.*, on the definition for the range of products covered by the ANSI Z21.88 standard. See 74 Fed. Reg. at 65867-68. The analysis justifying the proposed regulation confirmed that only heater-rated products would be

¹ The ANSI Z21.44 and Z21.49 standards applied to vented wall furnaces, the ANSI Z21.48 standard applied to vented floor furnaces, and the ANSI Z21.11.1 standard applied to vented room heaters. These ANSI standards were harmonized in, and replaced by the ANSI Z21.86 (“vented gas-fired space heating appliances”) standard in 1998.

regulated at all: DOE indicated that the universe of covered products consisted of products with a weighted average AFUE efficiency of 67% (by definition, heater-rated products),² and suggested that manufacturers would be able to maintain existing shipments simply by making “relatively minor changes” as necessary to boost the efficiency of these heating products as necessary to meet the new efficiency standards. See 74 Fed. Reg. at 65931, 65945, and 65991. Moreover, DOE referred directly to industry concerns that overly-stringent efficiency standards for heater-rated products could cause price increases that would induce purchasers to switch to lower-cost decorative products, and acknowledged that strictly decorative hearth products “are not covered by this rulemaking.” See 74 Fed. Reg. at 65922.

C. The Final Rule

Shockingly, the final rule banned decorative vented gas fireplaces with a maximum BTU input rate over 9,000 BTUs/hour. 75 Fed. Reg. 20112 at 20234-5 (April 16, 2010). As discussed below, this limit is so low that it effectively outlaws all decorative vented gas fireplaces. DOE had never even suggested the possibility of a maximum BTU input limit for decorative vented gas fireplaces – let alone a limit so low that would effectively eliminate this entire category of products – nor had it sought information or comment concerning the impact that a ban on decorative vented gas fireplaces would have.

Despite this truly massive change in the scope and impact of its rule, DOE did not even attempt to alter its basic analysis of the rule’s impacts: it continued to focus only on the impact that its heating efficiency standards would have on vented gas fireplace heaters, relying on the same analysis it had presented in its proposed rule. See 75 Fed. Reg. at 20231. It addressed decorative products only by assuming that it would be easy for manufacturers to meet the 9,000 BTU/hour maximum input limit, suggesting – without ever having raised the issues for comment – that existing decorative products with adjustable input capacities “operate at or below this input capacity limit” and that manufacturers could easily and inexpensively comply with the new input limit through the use of restrictor plates. See 75 Fed. Reg. at 20129.

At least DOE’s intent in banning decorative vented gas fireplaces was clear, and it had nothing at all to do with the regulation of heating appliances: DOE chose to impose an input capacity limit on decorative products as a means to ban vented gas fireplaces that are unambiguously decorative (i.e., products designed to produce an appealing aesthetic effect *without producing significant heat*). DOE reasoned that such products “could have a very high input capacity and use a lot of energy” while still surviving a rule under which heat output matters. See 75 Fed. Reg. at 20129. It then adopted a low BTU input limit for decorative vented gas fireplaces for the specific purpose of banning such products. Id. In short, DOE decided that decorative vented gas fireplaces – even those that most plainly aren’t heating appliances – simply shouldn’t be allowed to exist.

² In general, AFUE efficiency information is available only for heater-rated products. Decorative vented gas fireplaces are not “heater-rated” and typically are not AFUE tested. Accordingly, there is no basis to determine an average AFUE efficiency for these products.

D. Impacts of the Final Rule

1. DOE's Ban on Decorative Vented Gas Fireplaces Will Devastate the Gas Fireplace Industry.

HPBA believes that more than 70% of the products currently being produced by the vented gas fireplace industry are decorative vented gas fireplaces, and is aware of only one existing product that meets DOE's 9,000 BTU/hour maximum input limit. This one product – appropriately called “The Torch” – is an attractive product to be sure, but it is a niche product that doesn't even resemble a conventional gas fireplace. See Attachment D. As a result, DOE's 9,000 BTU/hour input limit effectively bans the entire existing population of decorative vented gas fireplaces. The wholesale loss of more than 70% of the products currently being produced by the vented gas fireplace industry will obviously be devastating for the entire industry, including manufacturers, their suppliers, and other related businesses. That, however, is the impact that DOE's rule will have, because it leaves no reasonable hope of survival for decorative vented gas fireplaces.

DOE did not suggest that any significant number of decorative vented gas fireplaces could be converted into vented gas fireplace heaters, and rightly so. Decorative vented gas fireplaces are not designed for heating efficiency, and many have very low heating efficiencies. Some of these decorative vented gas fireplaces have essentially the same operating characteristics as gas log sets, which DOE appropriately recognized as decorative products rather than heating appliances: they use room air for combustion and consequently have very low heating efficiencies. Other decorative vented gas fireplaces – particularly some of the economically-important higher-end products – are specifically designed to limit heat output so that they can be used to provide a beautiful fire without overheating the room in which they are installed. Such products would become virtually unusable if they were redesigned to be efficient heaters: they would effectively become too hot for use. For example, the product shown in Attachment E uses a 90,000 BTU/hour input to produce a gorgeous visual effect. If this product had a 68% AFUE efficiency – as required by DOE's final rule – it would have a heat output of over 61,000 BTU/hour, which would make the product far too hot for its intended use.³ Other decorative vented gas fireplaces are more similar to vented fireplace heaters in broad design, but lack the features necessary to achieve the high efficiencies required for heater-rated products. These products are aimed at the decorative market, and there would be little point in trying to redesign them to serve as heaters (i.e., significantly more expensive products that are less suitable for decorative use).

The option of reducing the input rate of decorative products to meet DOE's maximum BTU input limit is no option at all. Contrary to DOE's suggestion in the final rule preamble (75 Fed. Reg. at 20129), the use of restrictor plates to lower the input rate of decorative vented gas fireplaces is absolutely out of the question. As explained in Attachment F, there are safety issues involved, and a substantial redesign would generally be required before products could comply with a maximum input rate of 9,000 BTUs/hour. In any event, there is a good reason why there

³ The incompatibility of high heat efficiency with decorative use is by no means limited to exotic high-end products. If one assumes that two people are at rest in an average-sized living room in a typical home, with a 35°F outdoor temperature, a 67% AFUE efficient gas fireplace of roughly average input for a decorative fireplace (30,000 BTU/hour) would heat the room from 65°F to 85°F in less than 35 minutes.

are no true decorative vented gas fireplaces with a maximum input of 9,000 BTUs/hour (and indeed, why few if any of these products even have *minimum* input rates that low): a 9,000 BTUs/hour input rate may be sufficient for a modest stove-top burner, as DOE noted (75 Fed. Reg. at 20129), but it isn't adequate to simulate a fire in a conventional wood-burning fireplace. Attachment G shows what happens when a fairly typical decorative vented gas fireplace is reduced to an input rate of 9,000 BTUs/hour: the result obviously isn't a saleable product.

2. DOE's Ban on Decorative Vented Gas Fireplaces Can Be Expected to Increase Overall Energy Consumption.

There may be people who believe that no one should have the right to burn gas for purposes of aesthetic enjoyment, but DOE's concern that decorative vented gas fireplaces might "use a lot of energy" (75 Fed. Reg. at 20129) is misplaced. Unlike utilitarian heating appliances – which can be assumed to see heavy use – decorative vented gas fireplaces are used infrequently and for short periods of time, averaging far less than 100 total operating hours per year.⁴ A ban on these products isn't justified as a means to save energy and cannot reasonably be expected to save any energy at all.

As already indicated, the demand for fireplace products is high, and approximately half of all newly-constructed dwelling units can be expected to contain one or more fireplaces. See Figure 1. The mix of products serving this market has changed over time, but the market itself has not. For example, Figure 2 shows that vented gas products have gained significant market share in recent years (while the percentage of occupied homes with usable fireplaces has only crept up slightly), and Figure 1 shows that the percentage of new homes with fireplaces installed has remained virtually unchanged over the same period. The elimination of decorative vented gas fireplaces can be expected to create a void in the market, but there is nothing to suggest that overall demand will change significantly. Instead, the market share now held by decorative vented gas fireplaces can be expected to go to other fireplace products. To understand the resulting energy conservation impacts, it is important to consider the products that are likely to be substituted for decorative vented gas fireplaces after the ban takes effect. In this regard, vented fireplace heaters will be an option, but one that will generally be more expensive less well-suited to decorative use than other obvious alternatives.

The most obvious market substitute for decorative vented gas fireplaces is decorative wood-burning fireplaces. After all, decorative vented gas fireplaces were invented to compete directly with traditional wood-burning fireplaces, and they still do. Today there are prefabricated decorative wood-burning fireplaces that are quite similar to decorative vented gas fireplaces; indeed some companies manufacture both wood-burning and gas fireplaces on the very same chassis. These prefabricated products are generally comparable in price to decorative vented gas fireplaces and can be expected to replace them on a significant scale when the ban on vented gas fireplaces takes effect. While this outcome would superficially appear to produce at least some gas savings, the fact is that it will likely prove counterproductive from an overall energy conservation standpoint. The reason is straight-forward: conventional wood-burning fireplaces have significant issues from an overall energy conservation standpoint. Indeed, DOE advises the

⁴ See J. Houck, *Residential Decorative Gas Fireplace Usage Characteristics* (provided with Attachment C) at ii, 10-14.

public that a conventional wood-burning fireplace “literally sends your energy dollars right up the chimney along with volumes of warm air.” As DOE explains:

A roaring fire can exhaust as much as 24,000 cubic feet of air per hour to the outside, which must be replaced by cold air coming into the house from the outside. Your heating system must warm up this air, which is then exhausted through your chimney.

http://www1.eere.energy.gov/consumer/tips/printable_versions/fireplaces.html (copy provided as Attachment A).

Moreover, as DOE is also aware, the loss of warmed air through the chimney flues of conventional wood-burning fireplaces is a significant energy conservation issue even when the fireplaces are not in use. <http://www.blackhillspower.com/fireplce.htm> (copy provided as Attachment B).

As a result, conventional wood-burning fireplaces – from an energy conservation standpoint – are simply no competition for decorative vented gas fireplaces.

The other obvious substitute for decorative vented gas fireplaces is gas log sets. Gas log sets can be (and often are) installed in prefabricated wood-burning fireplaces as a direct alternative to vented gas fireplaces. This combination of products is generally no more expensive than vented gas fireplaces, and offers outstanding aesthetic appeal. When the ban on decorative vented gas fireplaces takes effect, a shift to gas log sets should thus be expected to occur. Again, a net increase in overall energy consumption should be expected to result, because gas log sets burn at least as much gas as decorative vented gas fireplaces and – when they are not operating – the loss of warmed air through the fireplace flue would present the same energy conservation issues as conventional wood-burning fireplaces.

E. DOE Can Easily Repeal its Ban on Decorative Vented Gas Fireplaces

DOE clearly has the authority to repeal its ban on decorative vented gas fireplaces. While DOE cannot “prescribe any amended standard which increases the maximum allowable energy use . . . or decreases the minimum required energy efficiency, of a covered product,” there is nothing to say that it cannot correct an erroneous determination that certain products are “covered products” in the first place. 42 U.S.C. §6295(o)(1).

The statute makes it abundantly clear that decorative vented gas fireplaces are not DHE, and there is no other theory under which these products would qualify as “covered products” under the statute. While the statute does not expressly define DHE, it does specify both an energy efficiency descriptor and specific energy conservation standards for this category of products. 42 U.S.C. §§6291(22)(A) and 6295(e)(3). As explained in Attachment C, the sole energy descriptor prescribed by statute for DHE was designed for – and is only appropriate to – vented gas space heating appliances used strictly for utilitarian heating purposes. See Attachment C. The statutory energy efficiency standards required for DHE – not just required for some DHE, but for DHE without limitation – are standards specific to particular categories of utilitarian vented gas space heating appliances. 42 U.S.C. §6295(e)(3). Decorative vented gas fireplaces existed at the

time these statutory provisions were adopted, and then – as now – they were completely different from utilitarian heating appliances in use and function; so completely different that the conceptual basis for the energy conservation standards for DHE makes no sense and the test method for compliance simply doesn't apply. See Attachment C. It is perfectly clear that these products were not considered to be heating appliances and were not intended to be considered DHE.

Although the meaning of the statute is clear enough from its language and structure, it is important to note that the NAECA was a legislative adoption of provisions developed through negotiations between industry and public interest groups. Manufacturers of decorative vented gas fireplaces – including current HPBA members – were represented in those negotiations and would have objected to any suggestion that decorative vented gas fireplaces be considered DHE. There was no such suggestion, and Robert Bauer, President and Chief Executive Officer of HPBA member Empire Comfort Systems, Inc., testified in support of legislation adopting the product of the negotiations.⁵ Public interest advocates involved in the negotiations also clearly equated DHE with conventional space heaters, as written testimony in support of the legislation shows.⁶

It is one thing to suggest that DHE might be read to include utilitarian space heating products that did not exist as a recognized category of products at the time the legislation addressing DHE was adopted, but it is quite another to suggest that DHE includes a category of products that existed at the time and obviously wasn't considered DHE. In any event, decorative vented gas fireplaces simply are not "heating equipment" of any kind: they are designed for aesthetic enjoyment rather than heating efficiency. As already discussed, the utility of many of these products would be actively compromised if they had high heating efficiencies (see footnote 3 and accompanying text). Some of these products are expressly advertised for their ability to provide an aesthetically pleasing fire *without producing too much heat*.⁷ To insist that such products are heating appliances that should be regulated as DHE is to ignore their very purpose. Decorative vented gas fireplaces simply are not DHE within the meaning of 42 U.S.C. §§6292(a)(9) or 6295(e)(3). DOE can and should repeal its ban on decorative vented gas fireplaces on that basis.

CONCLUSION

DOE's ban on decorative vented gas fireplaces was adopted without adequate public ventilation of the issues as contemplated under Section 2 of Executive Order 13563, and without any information or analysis remotely sufficient to justify it. In contravention of the principles of

⁵ S. Hrg. 99-943, Hearing on S. 2781 Before the Subcommittee on Energy Regulation and Conservation of the Senate Committee on Energy and Natural Resources, 99th Congress, 2nd Sess. (1986) at 107-114.

⁶ Id. at 138, 147.

⁷ For example, Lennox Hearth Product's literature for its decorative Merit™ Series gas fireplaces states that "you can enjoy the convenience of gas with the natural beauty of a wood fire" and, more specifically, that these fireplaces produce "roaring flames without great amounts of heat, resulting in a pleasurable experience that can be enjoyed for hours."

Section 1 of Executive Order 13563, the ban fails to “promot[e] economic growth, innovation, and job creation” and instead imposes crippling and completely unwarranted burdens on the vented gas fireplace industry without providing any public benefit at all. Indeed, the ban is virtually certain to increase overall energy consumption. **If any rule warrants repeal in response to Executive Order 13563, this one does.**

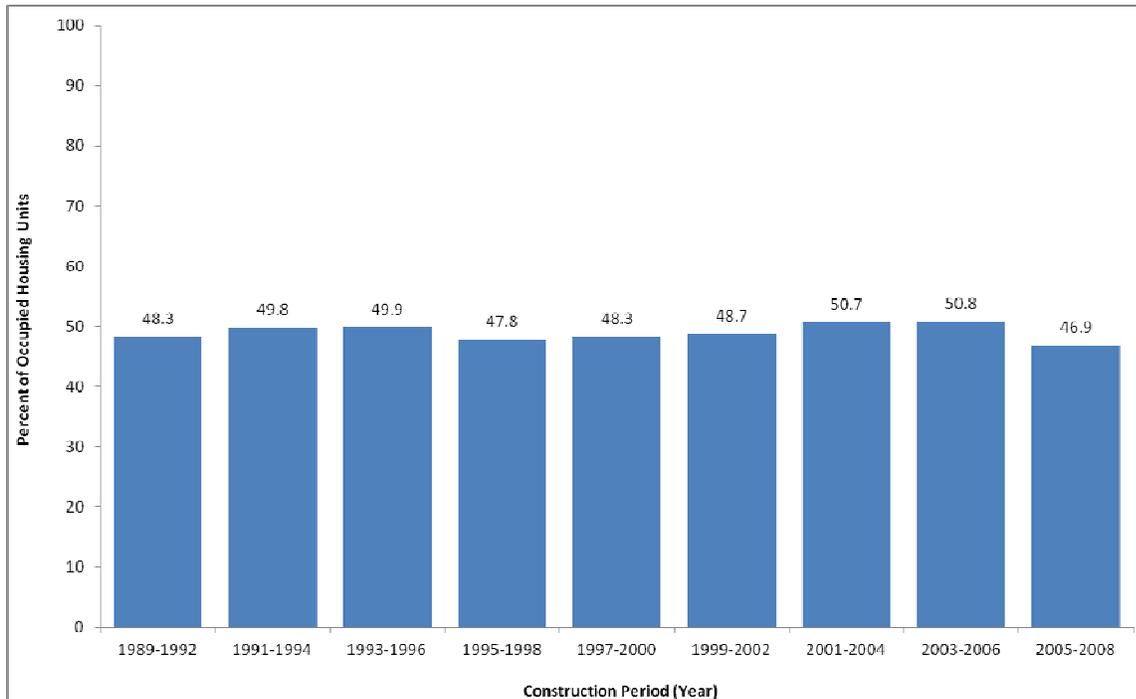
DOE has the authority to repeal its ban on decorative vented gas fireplaces, and HPBA urges it to do so without delay.

Respectfully submitted,



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Figure 1
The Demand for Fireplaces in New Housing Units
(National AHS Data¹⁻⁹)



References

1. American Housing Survey for the United States: 1993, Current Housing Reports, issued February 1995, U.S. Department of Housing and Urban Development and U.S. Department of Commerce.
2. American Housing Survey for the United States: 1995, Current Housing Reports, issued July 1997, U.S. Department of Housing and Urban Development and U.S. Department of Commerce.
3. American Housing Survey for the United States: 1997, Current Housing Reports, issued September 1999, U.S. Department of Housing and Urban Development and U.S. Department of Commerce.
4. American Housing Survey for the United States: 1999, Current Housing Reports, issued October 2000, U.S. Department of Housing and Urban Development and U.S. Department of Commerce.
5. American Housing Survey for the United States: 2001, Current Housing Reports, issued October 2002, U.S. Department of Housing and Urban Development and U.S. Department of Commerce.

6. American Housing Survey for the United States: 2003, Current Housing Reports, issued September 2004, U.S. Department of Housing and Urban Development and U.S. Department of Commerce.

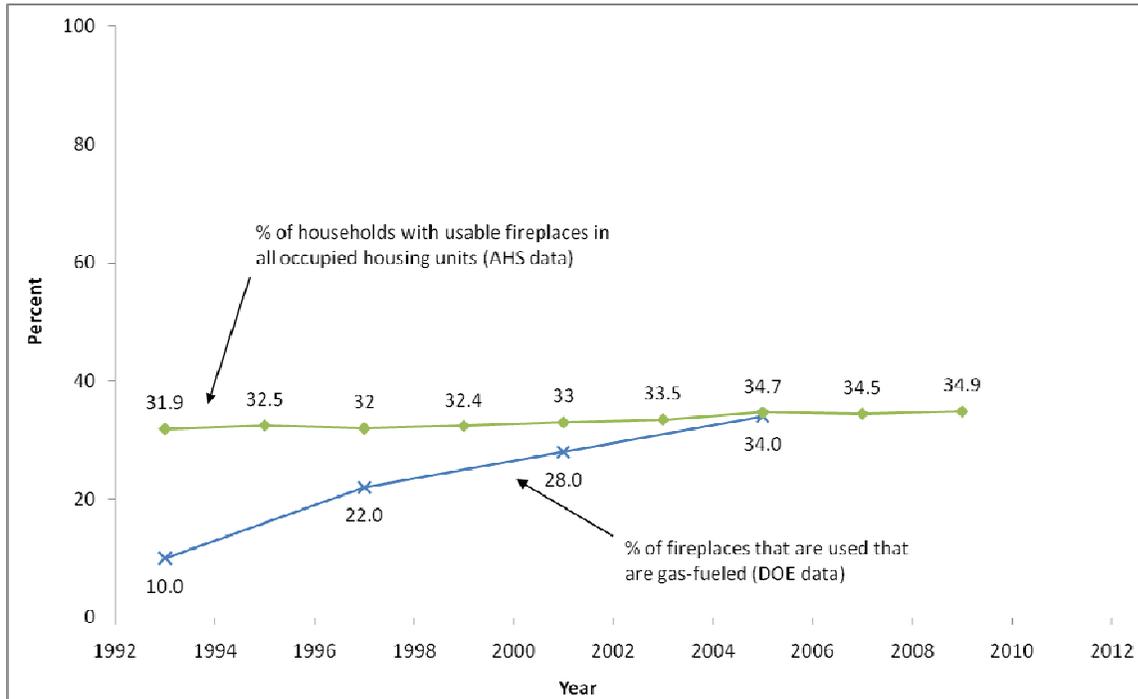
7. American Housing Survey for the United States: 2005, Current Housing Reports, issued August 2006, U.S. Department of Housing and Urban Development and U.S. Department of Commerce.

8. American Housing Survey for the United States: 2007, Current Housing Reports, issued September 2008, U.S. Department of Housing and Urban Development and U.S. Department of Commerce.

9. American Housing Survey for the United States: 2009, Current Housing Reports, U.S. Department of Housing and Urban Development and U.S. Department of Commerce, <http://www.census.gov/hhes/www/housing/ahs/ahs09/ahs09.html>.

Figure 2

**Percentage of Homes with Usable Fireplaces and
Percentage of Usable Fireplaces that are Gas-Fueled
(AHS²⁻¹⁰ and EIA¹ National Data)**



References

1. U.S. Energy Information Administration, Residential Energy Consumption Survey, <http://www.eia.doe.gov/emeu/recs/>
2. American Housing Survey for the United States: 1993, Current Housing Reports, issued February 1995, U.S. Department of Housing and Urban Development and U.S. Department of Commerce.
3. American Housing Survey for the United States: 1995, Current Housing Reports, issued July 1997, U.S. Department of Housing and Urban Development and U.S. Department of Commerce.
4. American Housing Survey for the United States: 1997, Current Housing Reports, issued September 1999, U.S. Department of Housing and Urban Development and U.S. Department of Commerce.
5. American Housing Survey for the United States: 1999, Current Housing Reports, issued October 2000, U.S. Department of Housing and Urban Development and U.S. Department of Commerce.

6. American Housing Survey for the United States: 2001, Current Housing Reports, issued October 2002, U.S. Department of Housing and Urban Development and U.S. Department of Commerce.
7. American Housing Survey for the United States: 2003, Current Housing Reports, issued September 2004, U.S. Department of Housing and Urban Development and U.S. Department of Commerce.
8. American Housing Survey for the United States: 2005, Current Housing Reports, issued August 2006, U.S. Department of Housing and Urban Development and U.S. Department of Commerce.
9. American Housing Survey for the United States: 2007, Current Housing Reports, issued September 2008, U.S. Department of Housing and Urban Development and U.S. Department of Commerce.
10. American Housing Survey for the United States: 2009, Current Housing Reports, U.S. Department of Housing and Urban Development and U.S. Department of Commerce, <http://www.census.gov/hhes/www/housing/ahs/ahs09/ahs09.html>