
From: Hershey, Steven P. [mailto:Steven.Hershey@pgworks.com]
Sent: Tuesday, September 30, 2014 3:47 PM
To: Cymbalsky, John; Wagner, Maureen R
Cc: Bert Kalisch (bkalisch@apga.org); DMcCurdy@aga.org; richard_spiegelman@casey.senate.gov; Exparte Communications; wmill@McCarter.com
Subject: RE: DOE Furnace Rule

Mr. Cymbalsky,

We are pleased to learn from your email below that you do not infer anything from PGW's inability to produce responsive data. Your APGA visitors had a different impression.

Let me emphasize what I hoped was clear from PGW's May 4, 2012 email (copied below), which is that the sort of data that DOE was seeking was simply not available for the reasons spelled out in the email. PGW has gathered data about the EnergySense Program to:

1. Determine the cost-effectiveness of the program,
2. provide a basis for paying the various contractors, and
3. respond to various requirements of the Pennsylvania Public Utility Commission.

In the context of whether a condensing standard would cause fuel switching, PGW's data would be both meaningless (because of the reason and manner in which collected and aggregated) and subject to manipulation by those with a pre-set agenda. The more salient point (noted in our September 23 letter to you), which seems to get missed in all of this, is that, but for PGW's intervention in the marketplace with substantial subsidies (in the case of low income households) and rebates (for others), installation of high efficiency condensing furnaces would be unlikely to occur in our area in a significant number of households and hence the imposition of a condensing standard without adequate subsidy or adequate rebate would likely cause substantial fuel switching. It should be apparent from PGW's actions in the marketplace that we seek to foster installation of high-efficiency furnaces, but we understand that such an outcome cannot be achieved by simply mandating a condensing standard, as that will precipitate fuel switching away from natural gas, which is wholly counterproductive from the standpoint of fuel efficiency. It would likely also cause harm to families struggling to survive with other heat sources that, while cheaper to install, are much more costly to operate. Our experience in that latter situation is that to many of those families rely on kerosene, which causes toxic indoor fumes when not adjusted properly and causes many fires, or continue to rely on a furnace so old and broken that the risks of carbon monoxide become very real.

As noted in my September 23 letter, PGW would be pleased to meet with DOE to discuss this matter as confusion about the data and its significance profits no one.

Please add this entire email to the rule-making docket in this matter.

Steve

COPY OF MAY 4, 2012 EMAIL SENT IN RESPONSE TO EMAIL FROM STEPHEN CAPANNA:

From: Hershey, Steven P.

Sent: Friday, May 04, 2012 2:52 PM

To: 'Capanna, Stephen'; Grant, Charles J; Adamucci, Denise

Cc: richard.spiegelman@casey.senate.gov; liz.hermsen@casey.senate.gov; Crowell, Brad; Cohen, Daniel; Barhydt, Laura; 'JHanger@eckertseamans.com'

Subject: RE: Furnace efficiency follow-up

Dear Steve,

Thank you again for providing PGW with the opportunity to present some of its concerns with the furnace efficiency rule. I apologize for the delay in responding to your request for data.

Your requests seek data that would be generated from some programs, but not from PGW's EnergySense, as we explain below. We have spent time in an attempt to find local Philadelphia data that would suit your needs, but have been only partially successful.

As we mentioned at our meeting, PGW's energy conservation program, EnergySense, includes a low income component which provides free weatherization services to customers who participate in our low income bill payment program, the Customer Responsibility Program (CRP), and are high users of gas. CRP provides the low income customer with a fixed monthly bill based solely on a percentage of household income. The CRP customers' unpaid, actual usage costs are paid by non-CRP ratepayers.

Our low income weatherization program, the Enhanced Low Income Retrofit Program (ELIRP), is the only component of the larger PGW program in which we are actively involved in actual installation of efficiency measures or equipment, but it does not focus on single, prescriptive measures; in addition, the costs of our program are not the retail costs that you seek, but are wholesale costs. As such, it is not a conventional weatherization program. Instead, ELIRP was designed with a "whole house" approach. As you likely know, it is not nearly as effective to install a new furnace if much of the heated air continues to leak from the rest of the home. Thus, instead of only replacing a furnace, for example, ELIRP also includes air sealing, insulation, and other measures that ensure that a home's thermal envelope is tight so that heated air stays in the home. This entire package of weatherization measures is analyzed at one time, based on their interactive impacts and cost-effectiveness overall.

PGW developed cost-effectiveness protocols that apply to the suite of measures to be done on a home, which is described below in greater detail. Consistent with ELIRP's whole-home approach, it is completely acceptable to include individual measures that are not cost-effective by themselves, as long as the full mix of measures achieves a cost-effective result.

Therefore, ELIRP can and does involve the installation of single measures, such as new gas furnaces, that would not be a cost-effective weatherization measure by itself. Given the above, ELIRP's installation rate of gas furnaces and their "cost effectiveness" does not provide an accurate example of the true cost-effectiveness of individual equipment.

In addition, PGW uses contractors to provide the ELIRP services. These contractors were hired pursuant to an RFP process, where price for work on a large number of homes was one of the factors for consideration. The prices that the selected contractors charge PGW are lower, probably much lower, than the pricing that an individual consumer would obtain in the retail market for equivalent services, material and equipment. These contractors also do similar bulk contract work for other large programs and are able to leverage the large scale of

their work to obtain the best prices. They purchase their furnaces and installation products wholesale, decreasing the price they pay per unit. An average Philadelphia resident who purchases a furnace through a residential contractor will pay more for heating equipment and installation than PGW pays our ELIRP contractors. As a result, our per home costs and per measure costs do not match the costs that the individual customer would pay.

While we are therefore unable to provide the kind of data that you have requested from PGW's direct experience, the City of Philadelphia's EnergyWorks Program^[1] does work on a retail basis with individual consumers and already provides that retail data to DOE's Energy Efficiency and Renewable Energy (EERE) division.

ELIRP COST-EFFECTIVENESS PROTOCOLS – The Total Resource Cost Test

PGW adheres to a program-level Total Resource Cost (TRC) test for its Enhanced Low-Income Retrofit Program (ELIRP). The TRC test, as it applies to ELIRP, has the following components:

1. Costs

- a. Program administration costs
- b. Measure Costs

2. Benefits

- a. Avoided costs of supply for energy (gas and electricity)
- b. Avoided costs of supply for non-energy benefits (water)

There are no customer costs under ELIRP and PGW does not include any environmental or low-income adders to the benefits side. Additionally, it is important to note that the sharp drop in natural gas prices over the past few years has pushed PGW's projected avoided cost of natural gas down significantly.

In calculating both costs and benefits, and their comparison, the following considerations are taken into account when analyzing costs: measure costs, labor costs, retrofit costs (keep in mind that the current furnace is still working), and program administrative costs. It should be noted that labor costs heavily depend on individual project circumstances. Unfortunately, condensing furnaces have a litany of issues associated with retrofit installations, and labor costs can outpace measure costs. The following considerations are taken into account when analyzing the benefits for a home: weather-normalized usage; characteristics of the existing home; characteristics of the retrofitted home; the value of the energy savings (i.e. long term avoided costs of supply – which has been steadily falling; energy savings; present value discounting calculations).

As described above, ELIRP examines cost-effectiveness at the program-level (and somewhat at a project-level), which entails a focus on savings from the full package of measures for a given home (including the furnace) against what that full package of measures would cost to deliver. For a contractor making that decision on the ground, the decision to replace the furnace is more driven by the entire opportunities that exist in that home, and not just by what benefits the furnace provides.

For example, if doing air sealing, insulation, and replacing the furnace will cost \$6,000 and save 30 MMBtus over 20 years (with a present value of \$8,000), then the contractor should do them all. However, on its own the furnace might cost \$3,500 to replace and save only 10

MMBtus for 20 years (with a value of \$3,000). On its own, the furnace is not cost-effective, but the project as a whole is. The other savings are carrying the deficit from the furnace replacement.

CATEGORY IV FURNACE INSTALLATION REQUIREMENTS

1. The availability of fresh air intakes from outside of the property must be properly located above grade and correct distances from other exhaust products and from windows.
2. Ductwork may have to be replaced or added for proper circulation and heat conductivity to conditioned spaces.
3. Venting of a Category IV heater using the chimney as a chase would require venting of the water heater through a new and separate flue.
4. A condensate category IV heater may need an external pump and pipe work to move condensate to a drain.
5. A Category IV heater vented to the outside through the wall, leaving the automatic water heater vented into the chimney by itself will cause the chimney to deteriorate quicker because moisture will accumulate more quickly. As a result, a separate chimney liner would be required for the water heater.
6. Category IV heater may not be vented into a manifold. Multi unit installations will require separate vent lines.

We hope that this information is helpful. We look forward to continuing the conversation begun in Senator Casey's office.

Steve

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From: Cymbalsky, John [<mailto:John.Cymbalsky@EE.Doe.Gov>]
Sent: Tuesday, September 23, 2014 4:34 PM
To: Wagner, Maureen R
Cc: Hershey, Steven P.; Bert Kalisch (bkalisch@apga.org); DMcCurdy@aga.org;
richard_spiegelman@casey.senate.gov
Subject: RE: DOE Furnace Rule

Thank you for this it will be placed in the rulemaking docket.

Just to clarify what I said at the meeting - I was simply asking for the actual data from the DSM program that PGW runs. I assume these data exist – for example for house x what was the cost to do the venting etc? I did not imply that the mere existence of your program meant anything - I just reiterated my request for the data.

I was basing my request for data from this document on your website
http://www.greenenergyeconomics.com/wp-content/uploads/2012/08/DSM-IMPLEMENT-PLAN-FY13-DRAFT_050212- FINAL.pdf specifically the information on page 34 and beyond.

In any event, thanks for passing this along.

From: Wagner, Maureen R [<mailto:Maureen.Wagner@pgworks.com>]
Sent: Tuesday, September 23, 2014 3:18 PM
To: Cymbalsky, John
Cc: Hershey, Steven P.; Bert Kalisch (bkalisch@apga.org); DMcCurdy@aga.org;
richard_spiegelman@casey.senate.gov
Subject: DOE Furnace Rule

SENDING ON BEHALF OF STEVEN P. HERSHEY

Attached is a letter to the Department of Energy and an affidavit previously filed with the US Court of Appeals.

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[1] The City of Philadelphia's EnergyWorks is a public program that makes energy efficiency improvements easy and affordable. Serving homeowners and commercial building owners in the Greater Philadelphia region, EnergyWorks provides, among other things, federally subsidized, low-interest loans that can be used for a wide range of energy efficiency improvements.