

From: [Harvey Sachs](#)
To: [Hunt, Marshall](#)
Subject: Re: Furnace Negotiation Task
Date: Thursday, June 25, 2015 8:03:20 AM
Attachments: [image001.jpg](#)

Wonderful!

I arrive Friday AM late. Could do supper Friday or Saturday. Have meetings 3:00 – 6:00 Friday; All AM and afternoon Saturday, and then things settle down a bit. What works for you?

Harvey

BTW, I grew up in Atlanta, was born just a couple of miles from downtown, and graduated from HS about 3 mi. from the HQ hotel. 1962. And then left immediately, over 50 years ago. So I know nothing about the place any more.

harvey

From: Marshall B Hunt
Date: Thursday, June 25, 2015 at 7:23 AM
To: harvey sachs
Subject: RE: Furnace Negotiation Task

Harvey

I am here in Atlanta staying at my Nephew's house and will commute to the meetings on MARTA. I will make time to meet with you whenever you are available.

Marshall B. Hunt
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From: Harvey Sachs [<mailto:HSachs@aceee.org>]
Sent: Wednesday, June 24, 2015 7:29 PM
To: Stanonik, Frank; Hunt, Marshall
Subject: Re: Furnace Negotiation Task

Thanks, Frank.

I haven't been able to put time into this yet. I will be in Atlanta, arriving before lunch Friday (with a 3:00 – 6:00 RAC meeting that day), and leaving early afternoon Wednesday. Love to get together.

I really appreciate your kicking this off, or "motivating" me. Here are some things I've learned:

- PGW folk have anecdotes about house sizes, but no data on anything. Steve Nadel is getting some data from the folks who do weatherization there, but that's likely mostly about condensing installs (problems seem to be over-estimated by some parties).
- One key (I think) is modeling, and recognizing that annual energy use, HDD, and furnace sizing are

cousins, not siblings.

- Modeling means explicit assumptions about construction and condition, and the weatherization folk may be our best source for that. We also need to remember that almost all row houses, the subjects of most concern, have two side walls that aren't exposed to weather, and are bound to have interior chimneys. End units might be exceptions.
- ASHRAE 103 uses 70% oversizing (but you knew that); my gut tells me that most houses have much bigger furnaces with low duty cycles. But, they recover fast from setbacks.

Marshall Hunt was having some modeling done by PG&E; by copy I'm asking what they found. My gut tells me that the maximum capacity needed for this stock with these HDD is way smaller than APGA will believe, much less accept.

But, let's chat.

Thanks,
harvey

From: Frank Stanonik
Date: Wednesday, June 24, 2015 at 6:37 PM
To: harvey sachs
Subject: Furnace Negotiation Task

Harvey,

At the June 11, 2015 meeting at AGA on revised residential furnace standards, we were assigned a task to identify or define the tools and information that could be used to assess the appropriate input rate breakpoint for a minimum 80% AFUE standard, i.e. the minimum AFUE standard for models with input "X" and lower would be 80%. (I had left you a voicemail about this early last week.)

One of the tools I have found that I think should be considered is Table C-11-AO from the American Housing Survey, conducted by HUD and the U.S. Census Bureau. Here is the link:
<http://census.gov/programs-surveys/ahs/data/2013/national-summary-report-and-tables---ahs-2013.html>.

This table provides information of the number of housing units in various square footage ranges, both on a national basis and by census region. The 2013 edition includes all housing units; the 2011 edition only includes single detached homes and mobile home. I am not sure which we want to use, but that information along with some information that would allow us to estimate heating loads, will provide the ability to estimate how many housing units would be affected by, or, looked at another way, would use an 80% furnaces of a certain input rate.

If you will be in Atlanta at the ASHRAE meetings, we can discuss this further. Otherwise please reply or call me tomorrow.

Best Regards,
Frank

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