

STATE OF NEW HAMPSHIRE

PUBLIC UTILITIES COMMISSION

November 22, 2013 - 1:48 p.m.  
Concord, New Hampshire

NHPUC DEC11'13 PM 1:03

RE: DE 13-298  
RENEWABLE ENERGY FUND:  
Renewable Energy Incentive Program for  
Commercial and Industrial Bulk Fuel-Fed  
Wood Pellet Central Heating Systems.  
*(Hearing to receive public comments)*

PRESENT: Chairman Amy L. Ignatius, Presiding  
Commissioner Robert R. Scott  
Commissioner Michael D. Harrington

Sandy Deno, Clerk

APPEARANCES: (No appearances taken)

Court Reporter: Steven E. Patnaude, LCR No. 52

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CHAIRMAN IGNATIUS: Welcome, everyone.

This is a public comment hearing in our Docket DE 13-298, that's addressing the terms for the PUC's Renewable Energy Fund application for, let's see, I'll get this wrong if I don't read it, non-residential bulk fuel-fed wood pellet central heating boilers and furnaces. And, thank you. We have noticed this to hear from people who may be interested, either as providers of developing these systems or customers who would want to obtain one of these systems and put out a request to hear your comments today. We also have an opportunity for people to submit written comments, but I'm going to ask Staff to remind me what the deadline would be for that?

MR. WIESNER: It's December 3rd, madam Chair.

CHAIRMAN IGNATIUS: Thank you. So, comments in writing by December 3rd. It could be people who are here today, who want to add additional thoughts in writing, or anyone who isn't able to be here today, but want to just submit something in writing. It looks as though there are some folks who have already signed up asking to speak today. I have four sheets of people who would like to speak. And, if there's any others who

1 didn't fill out a form, but would like to speak, please do  
2 so, and we'll add you to the pile. And, if anyone comes  
3 later, of course, we'll give them a chance as well. Good.  
4 Thank you. Looks like we have --

5 MS. BERNSTEIN: Two more.

6 CHAIRMAN IGNATIUS: -- one other  
7 definitely wanting to speak, and someone who is going to  
8 think about it. See how it goes and, if needed, it sounds  
9 like, will add his voice.

10 So, why don't we just begin, unless  
11 there's a requested order of who to begin, I can just take  
12 what's on the top of the sheet and work from there, unless  
13 Staff wanted to make any opening comments?

14 MS. BERNSTEIN: Go right ahead.

15 CHAIRMAN IGNATIUS: Okay. All right.  
16 Looks like not. Then, why don't we begin with Ms. Ohler,  
17 from the Department of Environmental Services.

18 MS. OHLER: Thank you, madam Chair.  
19 Thank you very much. Again, I'm Rebecca Ohler, with the  
20 Department of Environmental Services. And, I just have  
21 very few comments, I just -- and not on the application  
22 form, *per se*, directly. But I just wanted to comment that  
23 I think, number one, that this is a good use of the  
24 program dollars under the Renewable Energy Fund. And, I

1 think we've seen a demonstrated need in the market for --  
2 demonstrated desire for the pellet technology, but a need  
3 to have a little bit of a rebate to get over that initial  
4 investment hump. And, just wanted to applaud the fact  
5 that the program is going to be requiring a benchmarking  
6 of some form. I think it's important that all of the  
7 programs from the PUC be looked at holistically. So, this  
8 is from the Renewable Energy Fund, but it should be done  
9 in conjunction with the needs of the broader energy  
10 efficiency efforts. And, I think that we've had it fairly  
11 well demonstrated through a number of studies, the  
12 independent studies, the GDS Potential Study, more  
13 recently the Energy Efficiency Resource Standards study,  
14 the importance of information in the marketplace to lead  
15 to market transformation. And, by requiring the  
16 benchmarking as a -- sort of a precursor to being eligible  
17 for the rebate is going to help build that information in  
18 the marketplace, and I think that's a very important part  
19 of this application form. Thank you.

20 CHAIRMAN IGNATIUS: Thank you. All  
21 right. The next in the list, unless anyone wants to jump  
22 ahead, would be Mr. Van Valkenburgh. I apologize if I got  
23 that wrong.

24 MR. VAN VALKENBURGH: You got that

1 perfectly. Thank you. I'm Jim Van Valkenburgh. I'm with  
2 Froling Energy. We're in Peterborough. And, we are  
3 installers of pellet boiler systems, and as well as dry  
4 chip systems. We have about 100 boilers placed as of this  
5 date. And, in other words, there's a lot of experience  
6 here. Both in installation, as well as in the marketing  
7 or the sales of these devices. The need -- I fully  
8 support this program. I believe that the efforts here  
9 will definitely help a number of different types of  
10 organizations, not just commercial enterprises that are  
11 reluctant to invest, but, specifically, I've talked to  
12 many churches, non-profits that have big, old buildings.  
13 It seems like this is -- these types of boilers are very  
14 much directed at the large, old buildings that are  
15 difficult to insulate, difficult for organizations to keep  
16 heated. And, this is a wonderful program that I believe,  
17 and whether it be an old town hall or an old school  
18 building or whatever, will be very well-utilized. And,  
19 this is where we find the market is a great deal, but a  
20 lot of these places don't have the financial wherewithal.  
21 And, so, to be able to just project fuel savings is one  
22 thing, but to have a little bit of a boost, because fuel  
23 savings are, you know, as we see this winter, things  
24 change a little bit, go up and down, and people just

1 aren't so sure. But this would definitely, and I also  
2 really appreciate the fact that it's only 30 percent, I  
3 think people need to participate in it. So, a full grant  
4 for a small group of people is not as desirable as smaller  
5 grants up to this 30 percent to a larger group. Because  
6 part of what we're trying to do is show off local  
7 successes. Every locality is proud of that garage or that  
8 building or that town hall that's being heated this way  
9 when it is a success. So, you're helping to break open  
10 the market, and we really appreciate that.

11 One question I had specifically on the  
12 -- it was just on Number 12, and it was the last point,  
13 the (f). And, it's just -- it's kind of semantics.  
14 Because I believe you're saying what I think you ought to  
15 say, but the second sentence says "A pellet central boiler  
16 or furnace to be funded under this rebate program must be  
17 capable of being the only or primary central heating  
18 system, though it may also provide hot water" and so  
19 forth. "There may be also other supplemented space  
20 heating sources, interconnected back-up systems in the  
21 building" and so forth.

22 You know, I kind of know what you're  
23 saying there, it just seems like it's sort of around the  
24 barn. What I would say is that, yes, it's wonderful to be

1 a 100 percent system, it's also just as good to be about  
2 an 80 percent system or so, where you're covering that  
3 much fuel, and that means it's kind of a peaking system.  
4 In fact, what we find is, we can put in about half the  
5 amount of boiler power in a building using pellets, which  
6 is a rather expensive boiler, and we can keep -- we can  
7 peak it with a conventional fuel, perhaps the existing  
8 boiler, and that's about a 10 percent of -- out of all the  
9 fuel you're using, all the Btus you're generating, you  
10 would get about 10 percent of those from fossil fuels, so,  
11 propane or oil, and 90 percent using a pellet boiler.

12 So, just sort of using that, I just say  
13 the intent I think is there, I just think it's worded a  
14 little funny. It made me think, when I first read it,  
15 that, "boy, you have to be a 100 percent system", because  
16 that's not as practical for sure. Go ahead.

17 CHAIRMAN IGNATIUS: Can I just ask you  
18 to tell me again which section you're reading. Because I  
19 thought it was 12, and I wasn't finding it in 12.

20 MR. VAN VALKENBURGH: Well, it's 12, and  
21 I believe it's 12(f). I think I've got that right.

22 CHAIRMAN IGNATIUS: All right.

23 MR. VAN VALKENBURGH: Yes, 12, and then  
24 all the way down, (a), (b), (c), (d), down to (f), which

1 is the last point of that section, right above 13.

2 CMSR. HARRINGTON: So, you're referring  
3 to where it says, because you had used the term  
4 "100 percent", but I think what you're referring to, it  
5 says "provides warmth to the whole interior of a  
6 building"?

7 MR. VAN VALKENBURGH: Right. That's  
8 okay. That's okay. It's the second sentence. It says "A  
9 pellet central boiler...must be capable of being the  
10 only", and then it says "or primary central", it's sort of  
11 a funny statement, because it's saying you can have it all  
12 or partial. I guess that's okay to say that. It just  
13 seemed a little bit like "where are we going here?" And,  
14 maybe that's what I'm -- my comment is kind of extraneous,  
15 too, just as a result of it --

16 CMSR. HARRINGTON: What you're saying is  
17 that, in some cases, it may be just simply more economical  
18 to put in something that covers 80, 90 percent of the  
19 heat, or maybe one particular room in an old building just  
20 isn't worth running the piping to that. And, you could  
21 use some more conventional form of heating. But, overall,  
22 you would get somewhere, 85 percent or whatever it was of  
23 the entire load.

24 MR. VAN VALKENBURGH: Right. Well, part

1 of what we say, when we're peaking is, when it's minus 10  
2 to minus 20 outside, our boiler can't handle the whole  
3 thing.

4 CMSR. HARRINGTON: Right.

5 MR. VAN VALKENBURGH: But that period,  
6 when it's really, really cold like that, is pretty rare,  
7 even though we all remember those really cold days, it's  
8 really a very small percentage. And, a boiler that has  
9 half the power, you know, BTU output, can actually provide  
10 for about 90 percent of the year --

11 CMSR. HARRINGTON: Yes. That makes  
12 sense.

13 MR. VAN VALKENBURGH: That's what I'm  
14 saying. And, I guess that's all kind of beside this  
15 point. I just wanted to be sure it was clear that you  
16 could do a 100 percent system or you could do this partial  
17 system. And, it's just worded okay. It's just not as  
18 perfectly clear. Go ahead.

19 CHAIRMAN IGNATIUS: That's helpful.  
20 Thank you for bringing that up.

21 MR. VAN VALKENBURGH: Okay. Thank you.

22 CHAIRMAN IGNATIUS: Can we come back to  
23 you?

24 MR. FLANDERS: Well, it was in

1 relationship to this question.

2 CHAIRMAN IGNATIUS: Okay. Can you give  
3 us your name please?

4 MR. FLANDERS: I think the language  
5 could be --

6 CHAIRMAN IGNATIUS: Sir, your name?

7 MR. FLANDERS: Bob Flanders.

8 CHAIRMAN IGNATIUS: Thank you.

9 MR. FLANDERS: I think the language  
10 could be cleaned up very simply. Where it says "be  
11 capable of being", it says "the only or primary", take the  
12 "only" out of there, "of being the primary heating  
13 system". That would solve that problem completely, if you  
14 just removed those words.

15 CHAIRMAN IGNATIUS: Okay. Thank you.  
16 And, things that are unclear are also very -- this is  
17 great to get that identified, because we can't expect  
18 people to supply the information if they can't figure out  
19 what we're asking for. So, we appreciate both the policy  
20 arguments, but also just plain old readability, anything  
21 like that is good to know.

22 MR. VAN VALKENBURGH: Good. Otherwise,  
23 I'm fine. And, like I say, I really support this program.

24 CHAIRMAN IGNATIUS: Thank you.

1 Commissioner Scott, a question.

2 CMSR. SCOTT: Thank you. Good  
3 afternoon. I almost said "good morning". It's morning  
4 someplace. You introduced yourself by saying you're  
5 involved with both pellet and dry chip systems?

6 MR. VAN VALKENBURGH: That's right.

7 CMSR. SCOTT: Are you aware of dry trip  
8 -- dry chip systems that would fit into this range that  
9 makes sense?

10 MR. VAN VALKENBURGH: A dry chip is a  
11 30 percent or drier chip, 30 percent moisture or less.  
12 And, yes. Yes.

13 CMSR. SCOTT: So, is -- obviously,  
14 there's some, for want of a better word, cleanliness,  
15 emissions requirements and whatnot that are built into  
16 this. Are we being too narrow in excluding -- in saying  
17 "pellets"?

18 MR. VAN VALKENBURGH: I don't know. I  
19 don't know. It's possible. It's a pretty big system.  
20 You know, those start out at half a million Btus and up.  
21 So, let me read through this and use that administration.  
22 I guess I didn't notice that "chips" are simply not  
23 mentioned in this at all, is that what you're saying?

24 CMSR. SCOTT: Uh-huh. Yes.

1 MR. VAN VALKENBURGH: Okay. It would be  
2 -- dry chips are difficult to come by that are really  
3 refined and, you know, just right, but they're coming more  
4 and more into the marketplace. So, I guess I would  
5 encourage you to have dry chips within this. And, wet  
6 chips, the difference of wet chips and dry chips, for  
7 anybody that doesn't know, is that you're basically --  
8 pellets are 5 percent moisture, dry chips are as high as  
9 30 percent moisture. Even within that range, you're  
10 burning more chips to be able to boil off the water that's  
11 in the chips to begin with. And, if you get up to  
12 50 percent, you have spent a lot of wood to just dry them  
13 out.

14 Now, pellets, you burn a lot of chips,  
15 wet chips and so forth, in a factory to be able to create  
16 those pellets. So, it's all -- it's kind of moot as to  
17 who does it, but you can really regulate the central where  
18 -- and then distribute this really fine fuel that are the  
19 pellets. So, yeah, if there are dry chips available, I  
20 think it would be a good thing to include it for certain  
21 scale projects that would be of that larger size.

22 CMSR. SCOTT: Thank you.

23 CHAIRMAN IGNATIUS: Thank you. And,  
24 we'll ask Staff to consider how that might be worked in,

1 if there's any reasons why it's an issue that's not a good  
2 suggestion, and, if it is, then try to figure out the  
3 drafting to accommodate that.

4 All right. Thank you very much. The  
5 next person who is listed is Laura Richardson from the  
6 Jordan Institute.

7 MS. RICHARDSON: Good afternoon. And,  
8 thank you. I'm Laura Richardson, with the Jordan  
9 Institute. I have a couple of comments. First, I want to  
10 mention that I think this is a fantastic program. I'm  
11 delighted that the Public Utilities Commission is moving  
12 in this direction, and recognizing the need for  
13 encouraging a little bit more market transformation, so  
14 that this particular sector can really start moving and  
15 switching fuels. So, congratulations.

16 Two content comments I have. The first  
17 one is listed on the Program Summary page, as well as  
18 throughout the document. And, that's related to the  
19 rebate for the thermal storage, at \$25 a gallon up to  
20 \$5,000. Thermal storage is a really important component  
21 for many pellet systems to run most effectively. And, so,  
22 I'm delighted to see that this concept is included in the  
23 program. However, I'm not sure that \$25 a gallon is the  
24 right amount to use, because that would really sort of max

1 out the incentive, you would be looking at a 200 gallon  
2 water tank, which costs about \$2,000, I believe. And, so,  
3 you'd be getting a \$5,000 rebate on a \$2,000 product, and  
4 that doesn't really jibe.

5 Now, many of the projects that will be  
6 happening under this program will be significantly larger  
7 and need something quite a bit bigger than a 200 gallon  
8 tank. So, I wasn't involved in determining the \$25  
9 amount, but it may be appropriate for much larger systems.  
10 I think, with some ease, you could either tweak the  
11 number. You know, I think the \$5,000 rebate is great as a  
12 cap. But, if you were to say "30 percent of the" --  
13 "30 percent of the cost of the thermal storage system, at  
14 \$25 a gallon, up to \$5,000", that that would cover that  
15 issue, so that you wouldn't be getting more than the  
16 thermal storage tank in rebate value, if that makes sense.

17 So, a lot of these systems are going to  
18 be 1,000 gallon systems, 2,000 gallon systems. But, for a  
19 small business that qualifies under this program, they may  
20 not need that much. My home thermal storage system is  
21 600 gallons. And, so, I would get a \$5,000 rebate if I --  
22 you know, if I were a business out of my home, I would get  
23 a \$5,000 rebate for something that's worth quite a bit  
24 less. So, I think that number is just a little out of

1 whack.

2 CHAIRMAN IGNATIUS: I guess we're  
3 reading it differently. I had thought it meant you can  
4 get an additional rebate of \$25 per gallon, but, if you  
5 have -- if the size of the system is smaller than that,  
6 you only get the number of gallons that you have times 25.

7 MS. RICHARDSON: Correct. And, so, if  
8 you have had a 200 gallon system, times \$25 a gallon, you  
9 would hit \$5,000.

10 CHAIRMAN IGNATIUS: Oh, I see what  
11 you're saying. Okay.

12 MS. RICHARDSON: And, the cost of that  
13 product is quite a bit less than that.

14 CHAIRMAN IGNATIUS: I see what you're  
15 saying. Okay.

16 CMSR. HARRINGTON: So, what you're  
17 saying basically is you're not taking issue with the  
18 \$5,000 as much as you are with the amount per gallon?

19 MS. RICHARDSON: Correct. And, just  
20 that the scale, the scale is really focused on a smaller  
21 system with the way the rebate is set up right now, the  
22 \$25 a gallon. But, if it were to match the other  
23 incentive in the program, at 30 percent, up to a certain  
24 amount, then, I think that would make sense. And, I'm not

1 necessarily the one to make that decision. I mean, there  
2 are other people who work in the field with the product  
3 all the time that might have a better idea. I think, when  
4 that number was initially floated, it was -- the thinking  
5 was about much larger systems.

6 CHAIRMAN IGNATIUS: All right. Thank  
7 you.

8 MS. RICHARDSON: Yes. You're welcome.  
9 And, so, the other point that I wanted to make, if I may,  
10 relates to the benchmarking, echoing Ms. Ohler's comment,  
11 benchmarking in the buildings I think is really important,  
12 and something that we need to be implementing across a lot  
13 of or all of our programs. That said, --

14 (Court reporter interruption.)

15 MS. RICHARDSON: So, benchmarking is  
16 really important. And, I think it should be implemented  
17 in all of these rebate programs. That said, Portfolio  
18 Manager is not the only benchmarking program out there.  
19 And, there are some other new products that are coming on  
20 the market that are very sophisticated and appropriate for  
21 the commercial/industrial building sector. And, I would  
22 just like for them -- there to be some language that would  
23 allow for a different program that is approved by the  
24 Commission, but, you know, doesn't need to be named at

1 this point to be allowable. And, so, my recommendation  
2 would be that that second sub bullet read "Participation  
3 in the EPA's Portfolio Manager program or equivalent  
4 program" -- "an equivalent and approved program to  
5 benchmark the building's energy use", to open it up a  
6 little bit.

7 Other than that, I think this is a  
8 terrific program. And, I guess one other quick point is  
9 that the -- this program builds off of the Residential  
10 Pellet Rebate Program, which has really started to  
11 transform the marketplace. One of the motivators for that  
12 particular program was market transformation of the fuel  
13 delivery. So, right now, wood chips have a pretty mature  
14 wood product delivery infrastructure. There are a lot of  
15 those trucks out there in the market. There are a handful  
16 of very expensive wood pellet delivery trucks that are on  
17 the market. And, so, by focusing these few public dollars  
18 in that one area, that will -- that will help create more  
19 of a market for that fuel delivery. And, thank you.

20 CHAIRMAN IGNATIUS: Thank you.

21 Mr. Flanders, did you have a comment?

22 MR. FLANDERS: Yes. I just wanted to  
23 suggest how you could correct that deficiency. If it was  
24 "\$25 per gallon of storage, not to exceed the cost of the

1 system, up to a maximum of \$5,000." That will solve it.

2 CHAIRMAN IGNATIUS: We're going to put  
3 you to work full time as an editor. You're very good at  
4 this. That's a good suggestion. So, "\$25 per gallon, not  
5 to exceed the cost of the system, and a maximum of 5,000"  
6 was your suggestion?

7 MR. FLANDERS: Yes.

8 CHAIRMAN IGNATIUS: Thank you. The next  
9 form filled out is from Scott Nichols, and we also have  
10 your written comments that were received through the  
11 e-mail. So -- and that's in the file the Commissioners  
12 all have. So, if you want to reference that, highlight  
13 any of that, you don't need to read it into the record,  
14 because we have it. But feel free to comment however you  
15 wish.

16 MR. NICHOLS: Okay. Thank you. I'm  
17 Scott Nichols. I represent Tarm USA, out of Lyme, New  
18 Hampshire. We're an importer of wood and wood pellet and  
19 wood chip boilers. I want to speak to several of the  
20 points that others have made, a point that was made in the  
21 last hearing for installers and sellers of this equipment,  
22 and also reference the e-mail that I sent to Barbara  
23 Bernstein, I think yesterday.

24 I want to start with the EPA performance

1 benchmark requirement. And, that is -- I think I spoke my  
2 opinion on that pretty clearly or wrote my opinion on that  
3 pretty clearly in the e-mail I sent to Barbara. I have  
4 serious concerns about a program that is only nine months  
5 long, but which relies on EPA. Given what we've seen with  
6 the federal government and its shutdown only, what, three  
7 weeks ago, for three weeks time, and my understanding is  
8 that we're coming up against another vote at the federal  
9 level that could end up in another shutdown. And, I do  
10 not want this program to be relying on EPA for that  
11 reason. But, also, I feel like, in this state, we're  
12 doing more to advance biomass renewable energy than the  
13 Feds are. And, we have, within this state, a lot of data  
14 available to us that would enable us to benchmark  
15 buildings and the equipment that is installed in the  
16 buildings. At the installers meeting, or I guess it  
17 wasn't a hearing, a meeting that we had a couple years ago  
18 -- a couple weeks ago to discuss this program, Mr. Henry,  
19 who is sitting over here, suggested that some simple  
20 benchmarks might be best initially, such as the amount of  
21 fuel it's taking to heat a square foot or a cubic volume  
22 of building space, or the dollars that are being spent to  
23 provide heat in that building.

24 We have, as one of the handouts today, a

1 chart from Biomass Commodities, which I feel is a pretty  
2 accurate assessment of what systems cost, how much fuel  
3 they use, etcetera. And, I think that alone is, maybe not  
4 a benchmark, but a very fair starting point. This chart,  
5 taken together with all of the grant recipients that the  
6 PUC has awarded funds to, plus the recipients of other  
7 funds that New Hampshire knows about, should provide a  
8 very adequate benchmark for this inaugural Commercial  
9 Pellet Boiler Program, without having to rely on a federal  
10 program that's complicated, and potentially could put us  
11 completely on hold if the government shuts down.

12 CHAIRMAN IGNATIUS: And, Mr. Nichols,  
13 are you referring to a chart I'm holding up? Is this the  
14 thing that you're talking about?

15 (Non-verbal response given.)

16 CHAIRMAN IGNATIUS: Great. And, that  
17 says "Examples for Commercial Pellet Boiler Equipment  
18 Cost and Payback", developed in November 2012?

19 MR. NICHOLS: Yes, that's correct. And,  
20 these guys are actually competitors of mine, Biomass  
21 Commodities. I assume their -- their logo is on the top  
22 right corner, I assume they put this together. But, even  
23 though they're a competitor, I believe that this is  
24 exactly what I see in the marketplace as well. So, I

1 think that -- I think this is pretty accurate.

2 CHAIRMAN IGNATIUS: Thank you. That's  
3 helpful. You also referred to an e-mail that you had sent  
4 to Barbara Bernstein, and I think we don't have that, so,  
5 we should make sure we get it. We have something that you  
6 sent in October 15th.

7 MR. NICHOLS: Okay.

8 CHAIRMAN IGNATIUS: One-page comments.  
9 But, if you have something in addition you want us, we'll  
10 just get from Ms. Bernstein, we'll get a copy of that into  
11 the file.

12 MR. NICHOLS: Okay. Yes. In addition  
13 to what I've said, I write much better than I speak, I  
14 think. And, in addition to that, one of the problems with  
15 the EPA program, and maybe it's a personal problem on my  
16 behalf, but for years we have been trying to get EPA to  
17 recognize biomass appliances with their ENERGY STAR label,  
18 and they won't do it. And, I've called people at the  
19 ENERGY STAR Program to ask why, and the answer is -- was,  
20 the last time I spoke to them was a year ago, that  
21 "biomass is a carbon-neutral product fuel, therefore, the  
22 appliances that burn it cannot fall under the ENERGY STAR  
23 Program."

24 Now, I know that biogenic emissions, as

1 it relates to carbon dioxide emissions -- I'm sorry,  
2 biogenic fuel, as it relates to carbon dioxide emissions,  
3 has been an evolving or revolving topic at EPA. And, I  
4 don't even know where it stands right now. It might be in  
5 the court system. But, for them -- for us to be part of  
6 an ENERGY STAR Program, where they will not recognize our  
7 products, is absurd. And, if I have a customer that's  
8 looking at a biomass boiler, goes to the ENERGY STAR site  
9 and sees an ENERGY STAR labeled propane boiler, knows that  
10 that -- and knows that they can buy propane for \$1.50 a  
11 gallon, which is cheaper than wood pellets, what are they  
12 going to do? So, here we are, trying to encourage the use  
13 of a biomass product made here in New Hampshire, we send  
14 people off to a federal site where other products are  
15 advertised and labeled and made to look more energy  
16 efficient than what we've got. So, I just feel like, for  
17 our state money, to be beholding to an EPA program that  
18 doesn't benefit us is nonsensical.

19 CHAIRMAN IGNATIUS: Thank you.

20 MR. NICHOLS: As for this program, and  
21 chips versus pellets as fuel, that's a tough one. I sell  
22 products that burn both. But I think it's probably best  
23 for us to focus on pellets right now. And, the reason for  
24 that is that our bulk pellet infrastructure is heavily

1     reliant on large pellet-burning customers. And, we need  
2     more of them. We have seen a decline in bulk pellet  
3     delivery trucks, not an increase, in the last three years.  
4     And, that is because the economy has been so soft. And,  
5     even with all the great work that the PUC is doing with  
6     the Residential Pellet Boiler Rebate Program, and other  
7     incentives, the industry is continuing to teeter-totter  
8     between success and failure. And, so, at this point, I  
9     think it's best to focus on pellets, get more big pellet  
10    consumers out there, so that people who own delivery  
11    trucks are able to deliver more fuel more efficiently.  
12    It's the big -- it's the big pellet users who allow pellet  
13    delivery companies to make profitable deliveries. The  
14    little 3-tons-at-a-time deliveries are not profitable for  
15    those people.

16                   Switching gears again. Thermal storage  
17    costs, I'm afraid that I may have been responsible for the  
18    \$25 per gallon, with a cap of \$5,000 recommendation. And,  
19    I was thinking about larger storage tanks when I made that  
20    recommendation to Charlie Niebling, who may have made that  
21    recommendation to Barbara. We were, I don't know, on an  
22    airplane or someplace, and he asked me off-the-cuff and I  
23    didn't think the whole thing through. \$25 per gallon is  
24    probably too high. On the one hand, for instance, a 2,000

1 gallon -- a 200 gallon tank, at \$25 per gallon, would be  
2 rebated \$5,000 under this program, which is exactly \$3,000  
3 more than that tank costs at retail. On the other hand,  
4 that tank comes with other -- or, requires other  
5 components, such as insulation, piping, oftentimes an  
6 expansion tank, and labor. And, so, the cost could get up  
7 to maybe \$4,000. We're still -- I think the \$25 per  
8 gallon incentive is still too high. And, I think that, in  
9 retrospect, it should be 30 percent, it should be very  
10 similar to the boiler rebate, with a 30 percent rebate and  
11 a cap of 5,000.

12 CHAIRMAN IGNATIUS: All right.

13 MR. NICHOLS: Two more things. In Item  
14 Requirement 12(c)(iii), which talks about "automatic  
15 cleaning", on Page 3. It says "The system automatically  
16 cleans the burn chamber and the heat exchanger, or, the  
17 system requires routine cleaning for approximately each  
18 ton of pellet" -- "premium pellets used, or more  
19 frequently to maintain optimal efficiency and safety."  
20 Having been in this business since about 2001, when we  
21 first started selling commercial pellet boilers, that were  
22 not self-cleaning, I can say with a high degree of  
23 confidence that we should not be incenting machines that  
24 are not fully automatic with regard to ash cleaning. When

1     you get into a commercial setting, institutional setting,  
2     or industrial setting, you oftentimes do not have a good  
3     steward of the equipment. And, oftentimes the steward of  
4     the equipment changes. The boiler operator or the  
5     maintenance person, in a church, the member of the board  
6     of trustees that has to wash the boiler that week, you  
7     often have this problem with chain of custody, and the  
8     maintenance is often forgotten or neglected, or the person  
9     just doesn't have any idea how to maintain it. And, so,  
10    having a requirement that -- or, having the ability to  
11    have the ashes removed automatically by the machine,  
12    instead of having to shut the machine down and require  
13    somebody to brush it or shovel it out is very important in  
14    a commercial installation. This language appears to be  
15    the same language as what was used in the residential  
16    program. I think it's just too weak in a commercial  
17    program.

18                   CHAIRMAN IGNATIUS: Can I ask you a  
19    couple questions about that?

20                   MR. NICHOLS: Yes.

21                   CHAIRMAN IGNATIUS: Is the concern one  
22    of safety, if it's not being maintained, or the efficiency  
23    of the unit, if it's not maintained?

24                   MR. NICHOLS: It's efficiency and

1 reliability. And, if we are wanting to improve the  
2 industry, cause the industry to grow, by putting money  
3 into these machines and these installations, I think we  
4 ought to shoot for best practice, rather than so-so  
5 practice. What we don't want is we don't want a facility  
6 owner or manager saying "this pellet stuff is for the  
7 birds, because I always have to go clean it. And, if I  
8 don't, I get soot everywhere", and, you name it, I've  
9 heard it. So, yes, efficiency, I think it could be  
10 safety, if it got really bad, but more -- it's more about  
11 efficiency and reliability.

12 CHAIRMAN IGNATIUS: And, what's your  
13 understanding of the industry, the providers in this  
14 state, who -- do most of them have the self-cleaning  
15 systems or are there quite a number that are promoting the  
16 large units that are not self-cleaning?

17 MR. NICHOLS: Yes and yes. I think,  
18 once you're -- most of the equipment over 200,000 Btus an  
19 hour will be self-cleaning, if not all, that I'm aware of.  
20 When you get under 200,000 Btus, Barbara might be able to  
21 answer better than I, but probably half, half of the  
22 appliances accepted in the residential program do not  
23 automatically self-clean. So, it's a size thing. And,  
24 so, I think there's -- there's plenty of equipment, and

1 there's an expectation of the equipment in the commercial  
2 realm, in the commercial/industrial/institutional realm  
3 that it be self-cleaning.

4 CMSR. HARRINGTON: Just to follow up on  
5 that, I would assume that, when you get into the  
6 commercial and industrial size ones, that most of these  
7 are ordered to size? In other words, it's not a boiler  
8 unit where, I mean, it's not a warehouse where someone's  
9 got a whole mess of these sitting around waiting to sell.  
10 That they wait till they get an order and they order it  
11 from the manufacturer, and, if they wanted to specify  
12 automatic cleaning, they could?

13 MR. NICHOLS: No. That's not the case.  
14 I would say that none of them are custom-built that would  
15 be applying to this program.

16 CMSR. HARRINGTON: No, I guess what I'm  
17 trying to say is, is there an option on these, if you get  
18 into the larger ones, does it come with or without  
19 automatic cleaning or is it just one way or the other,  
20 that's it?

21 MR. NICHOLS: It's usually one way or  
22 the other.

23 CMSR. HARRINGTON: But people would  
24 order these when they wanted to actually install one.

1 It's not as if some supplier in New Hampshire has 50 of  
2 these that don't have automatic cleaning stacked up in his  
3 shop someplace or --

4 MR. NICHOLS: I don't think -- yes. So,  
5 they're manufactured either as being capable of automatic  
6 ash removal or not. And, I couldn't speak to whether  
7 somebody has a warehouse full of boilers that would be  
8 omitted from the program. I know that I carry boilers up  
9 to 500,000 Btus an hour that are all automatic ash  
10 removal. So, you know where I come from. And, in the  
11 commercial realm, I am not aware that I'm competing with  
12 anybody who does not have automatic ash removal. And, I  
13 would hate to see somebody start competing and offering a  
14 low price unit through this program that failed to meet  
15 the needs of the operator.

16 CMSR. HARRINGTON: I guess my question  
17 would be is, when someone goes to install a commercial  
18 size boiler, are they waiting until they get the order to  
19 do it and then they place an order with a manufacturer and  
20 buy it? Or are they buying the unit in advance?

21 MR. NICHOLS: They're in stock. They're  
22 in stock.

23 CMSR. HARRINGTON: They're in stock, at  
24 their facility, they buy and store them up themselves?

1 MR. NICHOLS: Yes.

2 CMSR. HARRINGTON: Okay.

3 CHAIRMAN IGNATIUS: Commissioner Scott.

4 CMSR. SCOTT: On the same topic, looking  
5 at 12(c)(iii), I can understand the desire, as you stated,  
6 for automatically cleaning. But the way I read this, even  
7 if it doesn't automatically clean, the second part of  
8 that, where it says "or", and it says "or requires routine  
9 cleaning", either per ton or more frequently, that would  
10 imply to me, if the design of that was such that it was  
11 clogging up with ash continuously, that would still  
12 qualify, because it requires more frequent cleaning. So,  
13 how does that help -- how does that language help  
14 anything?

15 MR. NICHOLS: It doesn't. I would stop  
16 with the word "exchanger", "heat exchanger". So, "the  
17 system automatically cleans the burn chamber and the heat  
18 exchanger." And omit everything else.

19 CMSR. SCOTT: So, I'm not missing  
20 anything when I -- and, your early statement, I just want  
21 to -- you pretty much said, and I want to make sure I'm  
22 sure that I understand, you had issues with the EPA system  
23 for benchmarking, but you don't disagree with having  
24 benchmarking of some sort, is that correct?

1 MR. NICHOLS: I don't like the word  
2 "benchmark" period.

3 CMSR. SCOTT: Okay.

4 MR. NICHOLS: I would like -- because  
5 I'm not sure there is a single benchmark, and I'm not a  
6 student of this topic, but the word "benchmark" may or may  
7 not work. I would like this state to know what the  
8 average cost per square foot is, and how much putting in a  
9 pellet boiler decreases that cost per square foot for  
10 heating. And, there are a huge range of buildings, as Mr.  
11 Van Valkenburgh said. There a lot of buildings where it  
12 is almost impossible to improve the building envelope  
13 efficiency, historic buildings, churches, or buildings  
14 that would have to be really torn down to improve the  
15 envelope.

16 And, so, I'm totally in favor of our  
17 state understanding what the costs are for heating  
18 buildings with different fuels and how we can improve  
19 efficiency. But my biggest concern is that we, as a  
20 state, have a lot of information, we lead the nation on  
21 this topic. We have incented a huge number of buildings  
22 through PUC and other programs to install pellet boilers  
23 and chip boilers, and to do building updates. And, we  
24 lack for a database. We don't share all the grant

1 proposals, where there's a whole huge amount of return on  
2 investment information and cost information. And, if we  
3 all had better access to that, it would be much more  
4 valuable than an EPA benchmark.

5 CMSR. SCOTT: Thank you for that. And,  
6 back to my earlier question for Mr. Froling [Mr. Van  
7 Valkenburgh?], regarding wood chips versus wood pellets,  
8 and I heard, obviously, I heard you about you prefer this  
9 to focus on wood pellets to help incent the delivery  
10 mechanisms, and I think I understood that. But a more  
11 basic question I was wondering if you could help me with  
12 is, the characteristics, particularly in 12, that are  
13 listed here, is that, forgetting the fact that we cite  
14 "pellet", "wood pellet", is that -- are those  
15 characteristics that a wood chip device is even capable of  
16 meeting?

17 MR. NICHOLS: It is capable. And, I  
18 would like to elaborate a little bit, if I could. We are  
19 introducing a dry chip boiler. We're one of the few  
20 companies that is doing that. And, we desperately need  
21 companies who not only produce dry chips, but deliver  
22 them. Despite that, I would like to see the state  
23 continue to focus on pellets, because we're close, we're  
24 really close to getting over the top of the mountain and

1 having a nice downhill slide, where pellets are fully  
2 accepted and this state can hopefully stop incenting it  
3 and it's really ready to take off. We've got a much  
4 steeper hill to climb with chips. And, so, I don't think  
5 it's the time. I would like to us focus on pellets for  
6 now.

7 CMSR. SCOTT: Thank you. And, you  
8 anticipated my next -- my last question, which was about  
9 market transformation. So, you do feel this would, well,  
10 you just said it, this would potentially put us on a path  
11 where we wouldn't have to keep putting money in to have  
12 this happen?

13 MR. NICHOLS: That's my hope. And, you  
14 know, the main thing is that a lot of people are starting  
15 to talk about wood pellets, where they didn't talk about  
16 it in the past, so.

17 I have one last thing. And, it's a  
18 small issue. But this program requires the use of premium  
19 wood pellets. This is on Page 2, in the shaded box.  
20 Actually, I'm not sure if it is requiring premium wood  
21 pellets. I just -- there's one statement in that  
22 paragraph that the use of non-premium pellets will reduce  
23 the life expectancy of the system significantly, and that  
24 is not true. It's just not true. It will significantly

1 increase the maintenance and operation costs, but  
2 non-premium wood pellets will not necessarily decrease the  
3 life of the boiler.

4 CHAIRMAN IGNATIUS: So, would your  
5 request be that there be no statement regarding "premium  
6 wood pellets" or that it be rewritten to say that it will  
7 "significantly reduce the operation and maintenance"?

8 MR. NICHOLS: I'm only worried about the  
9 setting of a precedent. In nine months, nobody is going  
10 to probably use or specify non-premium wood pellets. But  
11 what I don't want the state to say is that "non-premium  
12 wood pellets are bad". Because it may be that, in five  
13 years, we can't get wood without bark on it. And, we may  
14 not be able to get wood that is only premium. And, we  
15 don't want to look back at earlier programs and say "look,  
16 premium pellets are the only way to go." I think we  
17 should be more fuel agnostic and leave that more open. I  
18 see no harm in saying "premium wood pellets are better"  
19 and saying to look -- and having this program point out to  
20 the consumer that many warranties do require the use of  
21 premium wood pellets. But I don't think the state should  
22 eliminate -- or, use language that would appear to  
23 eliminate the viability of non-premium wood pellets.

24 CHAIRMAN IGNATIUS: Thank you. I like

1 how you signed your email, "Feeling good about wood."

2 MR. NICHOLS: That's my standard  
3 sign-off.

4 CHAIRMAN IGNATIUS: All right. The next  
5 person identifying being interested in speaking is Dick  
6 Henry. Hello.

7 MR. HENRY: I'm Dick Henry, representing  
8 HotZero. And, I have a couple of general comments and  
9 then some specific comments. In general, my sort of  
10 50,000 foot level is, I would encourage the Commission, in  
11 general, to support performance, rather than specific  
12 technologies. And, so, this comes to this question of  
13 chips versus pellets, *etcetera*. And, when I initially  
14 came to the work session, I was feeling moderately  
15 passionate about this, and trying to develop some of these  
16 performance standards that we could use, not so much as  
17 benchmarking, but as baselines from which we're working,  
18 and then subsequently show results based on whatever was  
19 installed. And, in general, I think I still hold that  
20 view, that we should not be picking technologies, we  
21 should be picking and encouraging outcomes.

22 But I also hear what Scott is saying is  
23 that, you know, momentum has built up on pellets, we have  
24 this bottleneck on delivery. If we could just get over

1 that delivery, things could maybe improve quite a bit.

2 On the other hand, I also see that the  
3 technology is improving rapidly, both on the appliance  
4 level and on the fuel level. And, it's going to be hard  
5 for us to predict, in five years, whether or not pellets  
6 will still be the desirable fuel, or advances in dry chips  
7 have stepped forward, or whether pallet grindings have  
8 suddenly become, you know, much more cost-effective.  
9 There's just a lot going on right now. And, you wouldn't  
10 want to get yourself into a position where you looked back  
11 in three to five years and say "Jees, why did we back  
12 pellets, because nobody knew that XYZ was just around the  
13 corner."

14 And, so, I think when you endorse a  
15 performance standard, then you allow the market to come up  
16 with new creative ideas that meet those performance  
17 standards. And, so, I'm just maybe offering this as a  
18 cautionary note, and not really taking a side one way or  
19 the other, because I hear the arguments that the current  
20 suppliers and vendors are making.

21 CHAIRMAN IGNATIUS: Do you have a  
22 recommendation on what the performance standard would be?

23 MR. HENRY: Well, that's an excellent  
24 question. How do we make a performance standard simple so

1 that everybody can understand it, is what I've been  
2 searching for. And, what I've come up with is this  
3 concept of cost per square foot, because anybody can  
4 figure that out in their head in about 30 seconds. You  
5 know, I spent \$6,000 on fuel last year. I have a 3,000  
6 square foot building. I'm spending \$2.00 a square foot.  
7 A vendor then comes in and says "well, if you do what I'm  
8 doing, it's going to cost you a buck and a quarter a  
9 square foot." And, you go "Oh." I got it. You know, if  
10 I get into MMBtus per square foot or megawatts per square  
11 foot or kilowatts per square foot, you know, people just  
12 glaze over.

13 Now, there's some -- there's some  
14 hazards with cost per square foot, because fuels change in  
15 cost, and, you know, there's a bunch of variables in  
16 there. But, in general, you're pretty safe with a cost  
17 per square foot figure.

18 And, fundamentally, I've seen, over the  
19 years in the various jobs I've had, people make these  
20 decisions, commercial folks make these decisions for two  
21 reasons. One is, they want to reduce costs, and the other  
22 is they want stability in fuel costs. The instability of  
23 oil, the volatility of the price just reeks havoc with  
24 school districts and commercial entities and so forth and

1 so on. So, one of the advantages with wood is that we  
2 have a pretty stable price, that's stayed that way for a  
3 long time, and is probably going to stay that way for a  
4 long time to come. And, that is the other major selling  
5 point that a commercial enterprise will take serious  
6 consideration of.

7 So, again, when you deal with price per  
8 square foot, you end up with something that everybody  
9 understands and you don't have to explain it. So, you  
10 could modify this program to say, you know, bulk-fed wood  
11 central boilers and furnaces, and leave the technology  
12 development on the fuel side up to the market. Or, if you  
13 choose, you can say "well, we're going to bet on pellets,  
14 because we've come so far, and we think that's a good  
15 idea, for the next couple of years or three years, until  
16 the market takes over and we don't have to run the program  
17 at all." But I'm just raising a yellow flag here that  
18 these things are changing rapidly.

19 The second thing that is at the sort of  
20 50,000 foot level, and I'm not sure whether it's intended  
21 or not, is that, according to the way the regulations on  
22 the financing for the commercial and industrial RFP  
23 Program is worded, that if you have an incentive program  
24 for anything, it prohibits you from applying the

1 commercial and industrial RFP award system. And, I just  
2 think that people should be aware that, when you set this  
3 program up, is that your intent? Which, from my point of  
4 view, being interested in chips is a good thing, because  
5 it takes all the pellet guys out of the competition, or  
6 whether that's an unintended consequence of setting up a  
7 pellet-subsidized program. You're looking confused.

8 CHAIRMAN IGNATIUS: I'm getting a little  
9 bit lost. Is there language in the application you're  
10 referring to --

11 MR. HENRY: Yes.

12 CHAIRMAN IGNATIUS: -- or are you  
13 talking about other programs and how they interrelate?

14 MR. HENRY: I'm talking about another  
15 program and how it interrelates. And, once a year you  
16 have an RFP for commercial and industrial --

17 (Court reporter interruption.)

18 MR. HENRY: You have a -- so far, so  
19 good, Jack?

20 MR. RUDERMAN: So far.

21 MR. HENRY: You have a Commercial and  
22 Industrial Request for Proposal Program, which is a  
23 competitive process, in which you give out over a million  
24 dollars. And, it specifically says in that wording that,

1 "if there is an incentive program for what you're applying  
2 for, you can't apply for it." All right? So,  
3 hypothetically, this has a \$50,000 limit. If you had a  
4 really big manufacturing facility, you wanted to put in a  
5 two and a half million dollars wood boiler, if it were  
6 burning pellets, which it probably wouldn't, but, if it  
7 were, you couldn't apply under the RFP Program. And, I'm  
8 just saying to be aware of that, because that might have  
9 been an unintended consequence in the commercial and  
10 industrial sector.

11 CHAIRMAN IGNATIUS: Do you think that  
12 provision is a good thing or a bad thing?

13 MR. HENRY: Well, selfishly, I think  
14 it's a good thing, for the reasons I've said. I'm  
15 interested in chip systems. And, so, this would prohibit  
16 pellet -- large pellet systems from applying under the RFP  
17 Program. But, you know, that's just a personal opinion  
18 from where I stand at the moment. But it did strike me  
19 that the language in the statute specifically makes that  
20 prohibition.

21 So, now, I can get into my --

22 CHAIRMAN IGNATIUS: Okay. I'm still  
23 lost, though.

24 MR. HENRY: Okay.

1                   CHAIRMAN IGNATIUS:  What's the downside  
2     to directing people away from the commercial RFP, if they  
3     have another opportunity to obtain money through the  
4     rebate system?

5                   MR. HENRY:  The only downside is this  
6     will only fund you up to \$50,000.  If you had wanted to  
7     put in a pellet system that was significantly larger than  
8     that, before this program became available, you could  
9     apply for the RFP competitive bid and be a viable  
10    applicant.  Once you install this program, those large  
11    users of pellets will be prohibited from applying under  
12    the competitive program.

13                  CHAIRMAN IGNATIUS:  If this program has  
14    a cap on it, though, then why is it -- I guess I'm not  
15    following then, the very large systems wouldn't be  
16    eligible for this incentive program, so they wouldn't be  
17    excluded from the RFP, right?

18                  MR. HENRY:  No, no.  A very large  
19    program would still be eligible for this, this new rebate  
20    program.

21                  CHAIRMAN IGNATIUS:  Okay.  I  
22    misunderstood then.  I thought you said that this was  
23    capped.  So, I, obviously, need to understand better the  
24    limits of this program.

1 MR. RUDERMAN: If I may?

2 CHAIRMAN IGNATIUS: Yes.

3 MR. HENRY: I'm sorry. Continue.

4 MR. RUDERMAN: I think what Mr. Henry is  
5 pointing out is, if you look at, for instance, our  
6 Commercial and Incentive -- Commercial and Industrial  
7 Solar Incentive Program, there's not only a cap on the  
8 rebate amount, but a cap on the size of the system. So,  
9 you can only get a rebate for a system up to 100 kW. So,  
10 if you have a system, a 3 megawatt system, you can apply  
11 for the commercial RFP. But, because this program, as  
12 we've designed it so far, doesn't have a cap on system  
13 size, then a system of any size is eligible for the  
14 rebate, and, therefore, theoretically, is not eligible for  
15 the RFP grant opportunity.

16 CHAIRMAN IGNATIUS: That helps. Thank  
17 you. I assumed it had a size cap, as well as a financial  
18 cap. All right. Mr. Henry, you're trying to get to the  
19 next part and we won't let you get there. Go ahead.

20 MR. HENRY: No. No, that's fine. So,  
21 then, down into sort of the weeds. On the second page, I  
22 want to reinforce what others have said about properly  
23 sized systems. In general, of all the biomass systems  
24 I've been involved with installing in commercial

1 applications, you rarely design the system for more than  
2 50 percent of the design load. That's the coldest day of  
3 the year. And that, with that design criteria, you  
4 actually operate the system about 90 percent of the time.  
5 Okay? So, this desire under "Properly Sized Systems" not  
6 to oversize the boiler, I would suggest perhaps adding a  
7 sentence that is nonbinding, but says "typically, this  
8 means 40 to 50 percent of design load." Because I've seen  
9 too many engineering firms and vendors design biomass  
10 systems for 60, 70, 80 percent of design load, which is  
11 just grossly oversized, and these boilers do not modulate  
12 down to much less than 35 percent. So, they're not  
13 running optimally most of the time, which is something you  
14 want to avoid.

15 So, you already have an existing system  
16 in almost all of these commercial buildings, using it as  
17 Scott suggested as a peaking unit is an excellent use. It  
18 only runs 10 percent of the year, but it cuts your capital  
19 costs. And, more importantly, it means the boiler you do  
20 put in will run in its efficient bandwidth, somewhere  
21 around 65 percent maximum load, rather than trying to chug  
22 along at 20 percent, where it's not doing anybody any  
23 good.

24 CMSR. HARRINGTON: Let me just follow up

1 on that. In Section 12, on Page 3, when it says --

2 MR. HENRY: Yes.

3 CMSR. HARRINGTON: -- "greater thermal"  
4 -- "thermal efficiency rating of greater than 80 percent",  
5 and I'm just not that familiar with this technology. So,  
6 is the thermal efficiency rating given at -- is that at  
7 100 percent output or is it some band?

8 MR. HENRY: No. Usually, it's in the 90  
9 to 95 percent. I mean, Scott could answer better than I  
10 can, but maximum efficiency of most systems is near  
11 capacity, yes?

12 MR. NICHOLS: Many of the systems I'm  
13 familiar with are as efficient operating at maximum output  
14 as they are operating at 30 percent of their maximum  
15 output. Most automatically fired biomass systems perform  
16 poorly when they're -- when you try to run them below  
17 30 percent of their rated output.

18 CMSR. HARRINGTON: So, the 80 percent  
19 figure there, is that obvious then, when someone says its  
20 rated at 80 percent, that's the manufacturer's rating  
21 given to it, and it's assumed that they're running in this  
22 somewhere between 30 and 100 percent band is where they  
23 obtain the 80 percent efficiency?

24 MR. NICHOLS: One would think.

1 CMSR. HARRINGTON: Okay.

2 (Laughter.)

3 MR. NICHOLS: No, I don't mean to be  
4 obnoxious. There is simply no U.S. efficiency program for  
5 commercial size biomass boilers. In this program, the  
6 state will have to rely heavily, as many of the appliances  
7 are made in Europe, on the European efficiency rating,  
8 which tests the appliance at 100 percent of its rated  
9 output, and 30 percent, and averages the two.

10 CMSR. HARRINGTON: Oh, okay. All right.  
11 That's good to know. Maybe that's something we can  
12 incorporate into the rules then. And, this only goes  
13 along with what you, you and the gentleman next to you was  
14 saying earlier, that you really don't want to build a  
15 system, install a system that's going to give you the  
16 coldest day of the year and be able to handle 100 percent  
17 of it, because then, on moderate days, it's probably going  
18 to be running less than 30 percent, and that's where the  
19 efficiency drops off?

20 MR. NICHOLS: Correct.

21 CMSR. HARRINGTON: I assume, if the  
22 efficiency drops off, probably the pollution goes up?

23 MR. NICHOLS: That's correct. Yes.

24 MR. HENRY: And, so, that ties in on

1 Page 4 to what has been mentioned before, this kind of  
2 vague language about "primary central heating system".  
3 You know, if it's 40 percent of design load, someone would  
4 say "well, that's not the primary system." When you look  
5 at the run time, where it's running 90 percent of the  
6 time, it is the primary system. So, I just think that  
7 language out to have suggestions in it that says "don't  
8 put in a biomass system for 100 percent of the design  
9 load", it won't do well under those circumstances.

10 On Page 3, 12(b), I think that -- I  
11 would suggest that that read "total particulate matter",  
12 and now I feel as though I'm bringing coals to New  
13 Castle --

14 (Court reporter interruption.)

15 MR. HENRY: I said I thought I was  
16 bringing coals to New Castle in front of Commissioner  
17 Scott. But I was just doing the math quickly on the back  
18 of an envelop here. The 0.32 pounds per MMBtu heat output  
19 seems pretty high to me for total particulate emissions.  
20 If we assume 3,200 hours of operation time in a typical  
21 winter heating system, for a 600,000 Btu system, that  
22 would generate about 614 pounds of particulates. You can  
23 buy pellet stoves on the market right now that put out one  
24 gram of particulates an hour for 50,000 Btus. And, if you

1 had enough of them to make 600,000, that would generate 85  
2 pounds a year. So, I think that figure, and, again, I  
3 defer to the manufacturers and representatives, but I  
4 think that figure is a little high. But maybe I'm being  
5 too picayune here. It's a lot better than a wood stove.

6 CMSR. HARRINGTON: Excuse me, one other  
7 question on the figure. Does that need to be set to a  
8 percentage output? In other words, the emissions rating  
9 is so many pounds per MMBtu output, at 100 percent, or at  
10 50 percent? Because I think, as we just discussed, it  
11 could vary drastically, depending on the percent of the  
12 output of the boiler that you're using. In other words,  
13 in order to make sure that that makes sense, now I'm  
14 asking this as a question, does it need to be tied to at  
15 100 percent of output or at 75 percent of output or  
16 something like that?

17 MR. HENRY: I think most of these  
18 figures are coming from EPA standards that are just sort  
19 of like "okay, if you have this system, this is about what  
20 you can expect it to put out for a year." And, so, it's  
21 sort of a nationalized average that they have developed.

22 CMSR. HARRINGTON: Oh, okay.

23 MR. HENRY: To actually measure this  
24 stuff is way too expensive for anybody to afford. So,

1 kind of stick with --

2 CMSR. HARRINGTON: Because the  
3 manufacturer must do some type of testing up front?

4 MR. HENRY: Yes. Yes. Let Scott speak  
5 to it.

6 MR. NICHOLS: The 0.32 pounds per  
7 million is a threshold that was created by EPA as part of  
8 their Voluntary Compliance Program for outdoor wood  
9 boilers. That is the current threshold. It is  
10 anticipated that EPA will ratchet that down within five  
11 years, to 0.15 pounds per million Btus of output. And,  
12 that is probably about where most modern pellet boilers  
13 already are.

14 But there is no -- there is no benchmark  
15 number available. There is no mandatory compliance number  
16 that is used for systems of this size in the U.S. right  
17 now. And, the Biomass Thermal Energy Council is working  
18 hard at this moment to try to come up with an efficiency  
19 standard. Because, unless the appliance falls under the  
20 EPA Voluntary Compliance Program, there is no other, there  
21 is no other program.

22 So, if the PUC would desire to set a  
23 different emissions limit, I don't know how you would do  
24 it. Honestly, there's too much argument and not enough

1 progress about that type of thing right now.

2 CHAIRMAN IGNATIUS: Mr. Flanders?

3 MR. FLANDERS: Yes. I just have a  
4 question. And, I'm not as well educated on these subjects  
5 as some of these other gentlemen. But it appears to me  
6 that the particulate output would be tied directly with  
7 the quality of the fuel input. So, wouldn't that standard  
8 go all over the place, if somebody used a poorer grade  
9 pellet?

10 MR. HENRY: I'll defer to Scott, it's  
11 more his line of questioning.

12 MR. NICHOLS: In the past, wood pellets  
13 have been defined as being a "premium pellet", a "standard  
14 grade pellet", and an "industrial pellet". And, the  
15 differentiation came from the amount of ash and other  
16 contaminants, salts, metals that might have been in the  
17 pellets.

18 As time has gone on, we see almost no  
19 standard grade or industrial grade pellets on the market,  
20 which were basically made from the entire tree. So,  
21 instead of having one percent ash that you get from the  
22 stem of the tree, you get three percent from grinding up  
23 the whole tree. But, historically speaking, there have  
24 not been pellets with contaminants in them, such as

1 plastics and other garbage. It's mostly just a question  
2 of ash. And, that probably wouldn't impact the emissions  
3 performance of most appliances, unless the huge volume of  
4 ash caused a maintenance program and the boiler stopped  
5 running well.

6 MR. HENRY: And, if I can keep chugging  
7 along here?

8 CHAIRMAN IGNATIUS: Please.

9 MR. HENRY: On 12(c)(ii), I understand  
10 what the language here is trying to accomplish with the  
11 modulating based on demand. I would suggest the program  
12 might want to consider, particularly in commercial  
13 applications, that an outdoor reset be also included here.  
14 This allows the system to calculate the outside  
15 temperature, the inside demand, then modulate the boiler  
16 to meet that difference in temperature. So, on a really  
17 cold day, when it's a 50 degree difference, the boiler  
18 cranks up. And, on a really 50 degree day, it doesn't  
19 have to crank up as much. And, that outdoor reset is a  
20 good way of controlling energy use, and also, I believe,  
21 would control emissions as well.

22 CHAIRMAN IGNATIUS: So, you're saying  
23 that that should be a requirement, that the system must  
24 have that?

1 MR. HENRY: Again, you know, I'm not  
2 saying it's a requirement. But, I think, maybe in  
3 something like this, a suggestion, you know, "typically,  
4 an outdoor reset will save an owner more", might be all  
5 that was needed.

6 CHAIRMAN IGNATIUS: I tell you, I know  
7 nothing about these systems. And, so, I don't know  
8 whether that would mean most systems have that, and so  
9 it's not a big requirement, or that you've just closed  
10 out, you know, 75 percent of the manufacturers, because  
11 most don't have it. I really know nothing. And, I don't  
12 know if anyone here does know and could put that in  
13 context. Ms. Richardson, and then Mr. Nichols.

14 MS. RICHARDSON: Thank you. Just a  
15 thought that there could be a blurb in the Program  
16 Recommendations section on Page 2, that that could be  
17 considered part of the system and, therefore, covered in  
18 the rebate, but that it wouldn't have to be, it wouldn't  
19 have to be -- it wouldn't be a requirement of the program.  
20 So, if the engineer designing the system wanted to include  
21 the outdoor reset, that they could do that, and there  
22 would be some support for that installation. Just a  
23 thought.

24 MR. HENRY: I would add that it's a size

1 situation. If you have a mom-and-pop store with 2,000  
2 square feet, that this is not relevant. If you've got  
3 35,000 square feet, and 200,000 plus on the boiler, then  
4 an outdoor reset makes a lot of sense. If you have  
5 multiple boilers, you can modulate them down and really  
6 take advantage of it.

7 CHAIRMAN IGNATIUS: Mr. Nichols.

8 MR. NICHOLS: Thank you. One of the  
9 problems with this program that I should have mentioned  
10 earlier is that it uses the word "system" all over the  
11 place. And, sometimes it ought to make a differentiation  
12 between the "heating system" and the "heating appliance",  
13 because they're two separate things. And, it actually is  
14 material to the way the rebate is written. So, where the  
15 PUC intends to address the appliance, it should address  
16 the appliance, and the heating system ought to be  
17 considered separately.

18 With that in mind, I would say that it  
19 should not be a requirement that the appliance itself, nor  
20 the system, have an outdoor reset. However, I would  
21 highly recommend an outdoor reset either on the appliance  
22 or on the system, because it does really help the  
23 operation of biomass boilers. And, it's oftentimes much  
24 less expensive to put it on the system, and not the

1 appliance, and to actually make a drastic improvement in  
2 the comfort of the occupants of the building, too.

3 CHAIRMAN IGNATIUS: Thank you.

4 MR. HENRY: Moving to Page 5, in  
5 parallel with the benchmarking or baseline requirement in  
6 the earlier part of the program, Item Number 24 I think is  
7 really critical, which is the ability to collect data on  
8 the system once it's installed, and, in this case, it's  
9 suggested for ten years. What we've found, when I -- in  
10 previous incarnations, we have found that that monitoring  
11 of fuel usage is a very effective way of telling fairly  
12 quickly whether or not the system is working correctly.  
13 It's a consumer protection. And, so, having the ability  
14 to collect that data, and, then, of course, have somebody  
15 look at it, is really, really important.

16 And, here again, when you get back to a  
17 simple metric, like cost per square foot, the customer can  
18 say "Wait a minute. You told me this was going to cost me  
19 a buck 25 a foot, and I was going to use 70 tons of  
20 pellets, and so far this year I've used 140 tons of  
21 pellets. And, what's going on here?" And, then, the  
22 vendor can come back and say "Whoops. You're right. This  
23 thing is not set right, and we need to fix it." So, the  
24 collection of that post-installation data I think is --

1 goes hand-in-hand with the baseline data that you collect  
2 at the beginning. And, as Scott said, there's a lot of  
3 this information out there that's been generated through  
4 various programs that the PUC is overseeing that could be  
5 very effectively utilized. So, I'm just saying that's a  
6 really good thing to have.

7 I'd also like to say that I think the  
8 quality control of the installer in Number 28 is very  
9 important. And, I think that you should, the last  
10 sentence there, if someone doesn't install it right, they  
11 "may be barred from future program participation". I  
12 think keeping track of the success rate of vendors who  
13 participate is a very good protection for the program, and  
14 an excellent component of what's in here.

15 Those are my comments.

16 CHAIRMAN IGNATIUS: Thank you. You had  
17 said that using a cost per square foot measure might be a  
18 good way to go, but I don't know if you gave us a  
19 recommendation of what the level should be. Are you  
20 saying you should set a number in -- as part of the  
21 application?

22 MR. HENRY: You're trying to reach out  
23 to people that have an expensive reality right now. It  
24 would be helpful, I think, to the consumer, if the vendor

1 could say, and with my suggested solution, "you're now" --  
2 "I anticipate you're now going to reduce your costs by X  
3 percent." You might want to set a percentage reduction  
4 between the baseline and the desired outcome as a entry  
5 requirement to the program. If the installation is only  
6 going to reduce costs 5 percent, eh, that's not so great.  
7 If it's going to reduce it 30 percent, then it would pass  
8 the threshold and automatically come into the program.  
9 You may or may not want to get that sophisticated. But I  
10 think knowing how much, what your cost per square foot was  
11 beforehand, and what your cost per square foot was  
12 anticipated to be, based on the vendor's recommendation,  
13 and then what it actually turned out to be, would be  
14 useful information.

15 CHAIRMAN IGNATIUS: But I'm still not  
16 following. Are you saying it would be interesting to  
17 gather that information or there should be threshold  
18 requirements for participation in the program, either of a  
19 cost or of a percentage reduction?

20 MR. HENRY: I tend to be favoring  
21 performance requirements. So, my recommendation would be  
22 to have some kind of minimal performance requirements,  
23 similar to what you had in the Pay For Performance Program  
24 that was run under some of the ARRA funding, some that the

1 PUC ran, where you had to have a 15 percent improvement to  
2 even qualify for admission. I think that encourages the  
3 vendor, the architect, the engineer, the consumer all to  
4 be as creative as possible to try and at least get to a  
5 minimum level of improvement. And, as we can move more  
6 and more of these programs to performance standards, we're  
7 going to incent the market to be more creative. If we  
8 stick strictly to rebate for appliance programs, we're  
9 stuck with trying to predict what the best technology is  
10 going to turn out to be, which we can't do.

11 CHAIRMAN IGNATIUS: And, what would the  
12 reduction from baseline percentage be? I mean, we've got  
13 to write something in these materials and adopt them in  
14 rules. So, I understand you're saying it's a better way  
15 to go, but what does that really mean? What should we be  
16 requiring, in your view?

17 MR. HENRY: Well, I think, typically,  
18 moving from, you know, oil to pellets, most customers are  
19 at least seeing a 25 or 30 percent reduction in their  
20 cost, and many are seeing much higher than that. I'd ask  
21 some of the vendors, you know, what kind of -- 15,  
22 20 percent minimum? You know, is that in the ballpark? I  
23 mean, what do you --

24 MR. NICHOLS: At least that, yeah.

1 MR. VAN VALKENBURGH: I guess I would  
2 say that you could look at it a number of different ways.  
3 One thing is degree days have a lot to do with this. You  
4 know, a person buys a system. Last winter was terrible.  
5 They expect to save close to 50 percent is what we often  
6 say, it's very common that they will get a 50 percent  
7 reduction in their actual costs. But there's the  
8 fluctuations of how bad was this winter. Suddenly you're  
9 into a winter that your -- 20, 30 percent less fuel is  
10 used in that winter. Twenty percent was a figure that was  
11 common a couple years ago. And, so, it was sort of hard  
12 to say, "jeez, you know, we didn't get the savings, but we  
13 didn't have the costs." You know, so, it's a tough one.  
14 But, if you qualify it by degree days of the actual year,  
15 I think that would be good. And, whether it's dollars or  
16 tons, you know, one thing to think about, Dick, is that  
17 you'll have some systems that are at 100 percent, I  
18 suppose, and there are some systems that are going to be  
19 90, and are going to be down to 75 percent. So, there's  
20 going to be a different level of payback. They're still  
21 relying perhaps 25 percent on oil. So, they aren't going  
22 to have quite the extreme reduction. You know, so maybe,  
23 you know, it gives you a tough area for that true general  
24 qualification.

1 MR. HENRY: And, that's why I think I  
2 would suggest starting out with something that wasn't too  
3 aggressive. You know, anybody ought to be able to get 10  
4 or 15 percent.

5 MR. VAN VALKENBURGH: Easily.

6 MR. HENRY: Falling out of bed.

7 MR. VAN VALKENBURGH: In fact, people  
8 won't even consider this, because they're putting up money  
9 on this thing. They're putting up 70 percent of this.  
10 And, you know, so, they aren't going to consider it unless  
11 there's something close to that 40 percent or so. That's  
12 where we project it to be in an average. So, 30 percent  
13 you could say would be qualifying, or 25 at least.

14 MR. HENRY: And, again, it's going to be  
15 all over the map depending on size. If someone has a  
16 little thousand square foot thing and they're burning  
17 600 gallons a year, you know, the cost, the savings per  
18 square foot is not going to be huge. Well, wait a minute,  
19 let me --

20 MR. VAN VALKENBURGH: Well, it should be  
21 the same, shouldn't it?

22 MR. HENRY: No, no. It will be the  
23 same. I'll take that back. I'll take that back.

24 (Court reporter interruption - multiple

1 parties speaking at the same time.)

2 MR. HENRY: Okay, strike what I said.

3 MR. PATNAUDE: Don't worry about that.

4 (Laughter.)

5 MR. HENRY: I would keep -- I'll suggest  
6 20 percent. A 20 percent improvement should be a  
7 threshold to enter the program.

8 CHAIRMAN IGNATIUS: And, that's  
9 improvement in cost over the course of a year?

10 MR. HENRY: Yes, cost per square foot.  
11 And, Scott's right -- I mean, Jim's right. It is related  
12 to heating degree days, but we don't need to spell that  
13 out right this minute. I'll write something up that will  
14 give that to you.

15 CHAIRMAN IGNATIUS: Ms. Richardson?

16 MS. RICHARDSON: Thank you. Just one  
17 sort of tie-on with that. I think a lot of the experience  
18 that we're thinking about right now, talking about,  
19 relates to retrofit projects. This program does not  
20 disqualify new construction. And, so, in that situation,  
21 you have a brand-new building, you don't have any baseline  
22 information to judge it to. You certainly can do energy  
23 modeling. You could -- energy, you know, you could do the  
24 energy modeling and focus first on oil and what the

1 replacement would be for pellets. I mean, there are ways  
2 to get around it. But I do want to point out that, as  
3 this market starts to transform, new construction will be  
4 installing these systems. And, I think this rebate will  
5 be very helpful to encourage that decision-making process.  
6 Thank you.

7 CHAIRMAN IGNATIUS: That's a good point,  
8 that it could be something other than the retrofitting the  
9 existing program. What about -- I guess my -- let me  
10 start again. To impose a requirement of a certain  
11 reduction in cost over the course of a year, could either  
12 be done as a projected savings, and, if you can show that  
13 that's what's projected, you qualified, or it could be  
14 that you've got to actually demonstrate it, and you don't  
15 get the rebate until 12 months after installation, or you  
16 have to give back your rebate, if you didn't meet the  
17 test. Have people thought about what we really should be  
18 requiring here? And, once you start getting into actual  
19 measurement, it becomes a very different kind of program.  
20 Ms. Ohler, and then Ms. Richardson.

21 MS. OHLER: Thank you. I'm sitting here  
22 scratching my head about why the PUC, who is implementing  
23 a renewable energy program, should be getting to the point  
24 where they're setting eligibility limits based on a cost

1 savings. I guess I see that as the -- kind of the purview  
2 of the vendors. They should be out there selling their  
3 product based on the cost savings, and the rebate should  
4 be used to help them make their cost case. But the point  
5 of the Renewable Energy Fund is to switch people to  
6 renewable energy and get them off the fossil fuels.

7 So, I'm just having a hard time  
8 understanding why there would be a minimum cost per square  
9 foot eligibility requirement on this. I'm not sure, I  
10 think that that's -- I think that that's a wise thing for  
11 the person considering putting it in to consider, and I  
12 certainly think it should be something that the vendors  
13 should be marketing their systems on, and saying "my  
14 system is more cost-effective than my competitor's  
15 system." But I guess I would just say we should be  
16 keeping in mind the purpose of this rebate program, which  
17 is to get new renewable energy systems in use.

18 CHAIRMAN IGNATIUS: So, even if the  
19 system were as expensive to operate as your old oil  
20 system, that still would be a positive result, from the  
21 perspective of switching to renewable fuels?

22 MS. OHLER: Sure. Or, even if I want to  
23 go from a relatively low-cost natural gas system, to -- I  
24 mean, this is not all oil to wood pellet. What if

1 somebody says "I want to get off fossil fuels. I've got a  
2 relatively efficient natural gas system, but I still want  
3 to go to pellets." Would they not be eligible for this?  
4 And, I'm not sure that that's the direction this should go  
5 in.

6 CHAIRMAN IGNATIUS: Thank you.

7 Ms. Richardson, did you want to add to that or no?

8 MS. RICHARDSON: Not really. Thank you.  
9 She covered it.

10 MR. VAN VALKENBURGH: I would just like  
11 to --

12 CHAIRMAN IGNATIUS: Yes.

13 MR. VAN VALKENBURGH: Jim Van  
14 Valkenburgh again. I would like to concur on that. You  
15 know, from what we were saying before these efficiency  
16 changes and so forth, she's absolutely right. That we're  
17 looking to get people to change. We talk to people who  
18 want to get off natural gas. Or, they have natural gas  
19 coming right down the street, and they say "No, we're  
20 doing pellets." I mean, there's certainly that kind of  
21 attitude out there. And, all these other, the minutia  
22 that we've gotten here, you know, which has been very  
23 effective, I think is pointing towards rather efficient  
24 systems that are not going to be big trouble in the

1 marketplace. You know, when a guy gets it, it's going to  
2 end up being a dealer or an installer that has done it  
3 very poorly. It's not going to be the equipment's fault.  
4 And, I'm not sure we're in that business to make  
5 warranties and so forth for you to be doing that. And, I  
6 agree, if you have to wait a year and say "well, how did  
7 that go?" Then, you have to have degree days to be worked  
8 into it, and it would be -- you guys would be getting your  
9 calculators out for the next couple of years to verify  
10 these things. And, that's probably foolish. So, I'm with  
11 not going that direction. So, here we are.

12 CHAIRMAN IGNATIUS: Commissioner Scott,  
13 questions?

14 CMSR. SCOTT: I have some general  
15 questions. So, I guess, whoever feels they can answer,  
16 and maybe help me on this. Back to the particulate matter  
17 standard that's here, I was a little bit alarmed to hear  
18 Mr. Nichols say, if I understood you right, you thought it  
19 was tied to the Outdoor Wood Boiler standard that EPA has,  
20 the Phase II standard, I assume?

21 MR. NICHOLS: Correct.

22 CMSR. SCOTT: Okay. So, -- and, again,  
23 for those who don't know, outdoor wood boilers are burning  
24 big, big chunks of wood. I guess I would argue that, if

1 that's the standard they're meeting, I'm wondering why we  
2 need a standard in here at all, because I can't imagine a  
3 wood pellet appliance wouldn't be able to meet the  
4 standard, just because?

5 MR. NICHOLS: Yes. The 0.32 pounds per  
6 million is a relatively new compliance threshold that EPA  
7 has instituted. And, there are somewhere around 20 to 30  
8 appliances that meet that standard under the EPA Voluntary  
9 Program. Some of them are pellet boilers. Some of them  
10 are improved outdoor wood boilers. But they have  
11 definitely -- they're definitely cleaner than the outdoor  
12 wood boilers that are seen as the serious offenders.

13 Just for a little history, before the  
14 EPA got involved with outdoor wood boilers and a Voluntary  
15 Program, some of these outdoor boilers were making  
16 multiple pounds, whole pounds of emissions per million  
17 Btus. The first program that EPA started with ratcheted  
18 their Voluntary Program down to 0.6 pounds per million  
19 Btus. They then went down the next step to 0.32. And, as  
20 I said, they're hoping to get to 0.15, I believe it is.  
21 If you look at the EPA Table of Appliances who have met  
22 the 0.32 pounds per million, you will see the actual  
23 particulate emissions for those appliances, and many of  
24 the pellet boilers are way under that threshold.

1                   The problem is, we don't have any other  
2                   measure, other than the European test standard. And, so,  
3                   until you get up into the boilers that would fall under  
4                   the Area Source Rule, very large boilers, which almost  
5                   certainly won't be involved with this rebate program. So,  
6                   at this point in time, in order for a manufacturer to  
7                   prove that it's compliant with this proposed program, they  
8                   would either have to be a European manufacturer with  
9                   European test results, or be a manufacturer that complies  
10                  with the Voluntary EPA Program, or the Canadian standard,  
11                  B -- whatever it is, I can't remember. But I guess the  
12                  0.32 pounds per million is not very stiff, but where to  
13                  set it, it's a very -- that's a tough one, because there's  
14                  no -- there's no compliance, there's no mandatory  
15                  compliance, and there is no generally recognized standard  
16                  for testing.

17                   CMSR. SCOTT: Well, I believe we'd agree  
18                   that we don't want to require, to participate in here, you  
19                   have to have your own individual little stack test to go  
20                   on it doesn't make a lot of sense. Thank you. And, then,  
21                   again, for whoever thinks is best to answer this, maybe  
22                   even Staff, I'm looking under 12(c), under the "basic  
23                   attributes", and the language of particularly iv and v I  
24                   struggle with. I think, number iv, I read that to mean,

1 if I'm burning a premium pellet, which, in theory, would  
2 be lower in ash content, ash may be required to be  
3 automatically -- or, "may be required to be automatically  
4 or manually removed from the system once per month." So,  
5 I guess I would ask the first question would be, is the  
6 intent of that to be meaning, if you have a low ash fuel,  
7 that you shouldn't develop so much ash that it needs to be  
8 emptied more than once a month? Is that what that is  
9 trying to say?

10 MS. BERNSTEIN: Hi. This is Barbara  
11 Bernstein. Is this on?

12 CMSR. SCOTT: You may get help in the  
13 back here, I think.

14 MS. BERNSTEIN: Oh.

15 MR. VAN VALKENBURGH: Yes. I was just  
16 thinking on that is that, is the intent, you know, in the  
17 basic attributes, it turns itself off, it modulates, it  
18 automatically cleans itself. It has an automatic ash  
19 removal system. I think everything else within that  
20 sentence is a little much. You know, "based on premium  
21 fuel" and all that, you don't really need to say that. We  
22 want an automatic way of removing -- you know, you're  
23 saying "automatic or manual". But what it turns out to be  
24 is that you want ash to be removed from the burn chamber

1 into a container, which is manually removed. Just about  
2 all of the systems have that. They don't have any way to  
3 take that can that sits underneath everything that  
4 automatically fills up and emptying it. That has to be  
5 manually done. But most all of them that I'm aware of, I  
6 should say the credible ones that we would sell, have a  
7 way of pull -- an auger that pulls ash out off the fire  
8 box and puts it into a container that can be easily  
9 emptied.

10 CMSR. SCOTT: I guess I would -- if  
11 that's the intent, I don't think this says that.

12 MR. VAN VALKENBURGH: I don't think it  
13 does, and I think maybe that is the intent. Do you think  
14 that's the intent? I don't know. Okay. There we are. I  
15 would prefer that to be the intent from what it says here.  
16 And, I think the idea of talking about the fuel doesn't  
17 make any sense there, you know, the premium versus  
18 whatever.

19 CMSR. SCOTT: Okay. And, the next one,  
20 which is v, I can't even get that far as to try to  
21 understand what it means. "Other than routine  
22 maintenance, including cleaning" -- "Other routine  
23 maintenance, including cleaning, may be required annually  
24 and is strongly recommended." So, what does that -- what

1 does that mean?

2 MR. VAN VALKENBURGH: You have to clean  
3 these annually or every ten tons. You know, that's the  
4 way we usually put it. So, just rather than say "is  
5 strongly recommended", these need to be cleaned annually.

6 CMSR. SCOTT: But -- okay. I get that.  
7 So, I think we're saying we want these to be cleaned  
8 annually.

9 MR. VAN VALKENBURGH: Yes.

10 CMSR. SCOTT: But I think any appliance  
11 would fit this "needs to be cleaned at least once a year",  
12 I think you would probably be able to fit any appliance,  
13 no matter how dirty, in there. So, I guess I'm -- Ms.  
14 Ohler.

15 MS. OHLER: The way I'm reading this, I  
16 think -- I think, perhaps, that belongs under the "Program  
17 Recommendations". I think that that's more of a heads-up  
18 to the consumers that "please be aware", that it seems to  
19 me that that's the way it reads. Because it's saying it's  
20 "strongly recommended". So, it's a recommendation, and  
21 maybe it goes up to that "Program Recommendations" box,  
22 instead of here.

23 CMSR. SCOTT: Okay. Thank you. So, my  
24 point to all that, obviously, is, if these are going to be

1 the attributes by which we say you're in or out, I think  
2 we need to get a little bit tighter on that.

3 MR. HENRY: Commissioner Scott, just  
4 speaking to your question before that, on Item iv. These  
5 are commercial systems. They're going to be all over the  
6 place, in terms of size and the number of tons they burn a  
7 year. And, I don't think using months or annually is a  
8 good metric. It should, as Tom [Jim?] and Scott  
9 suggested, be per 10 tons or per tonnage, because you  
10 might have a system that was burning 250 tons a winter.  
11 In the middle of January, somebody better be paying  
12 attention every three days, you know.

13 MR. VAN VALKENBURGH: Yes. Yes.

14 MR. HENRY: So, I would just change that  
15 metric to usage of fuel.

16 CMSR. HARRINGTON: Yes. I think the  
17 question here is, as we just discussed, is that these are  
18 really more program suggestions and not basic attributes  
19 of the particular system. I mean, the fact that it needs  
20 to be -- that ash may be required to be automatically or  
21 manually removed, okay, that's fine. But, once a month, I  
22 don't care if it's once a week or once every five years,  
23 that's not a system attribute, that's a practice that you  
24 want people to do, that's all. So, I think this just

1 needs to be moved around, both iv and v.

2 MS. BERNSTEIN: Sure.

3 MR. VAN VALKENBURGH: Could I go back to  
4 number iv, just repeat what you say on that. I think that  
5 ought to say "automatic ash removal from the burn  
6 chamber".

7 CMSR. HARRINGTON: Then, it would be a  
8 system requirement.

9 MR. VAN VALKENBURGH: Oh, is that number  
10 iii? That's number iii. I'm sorry, number iii.

11 CMSR. HARRINGTON: That's already there.  
12 Yes.

13 MR. VAN VALKENBURGH: Yes. Okay.

14 CHAIRMAN IGNATIUS: Are we clear about  
15 that? Because iii says that "The system automatically  
16 cleans the burn chamber and the heat exchanger", and the  
17 conversation here has been the phrase that it  
18 "automatically removes the ash". Are those synonymous?

19 MR. VAN VALKENBURGH: That's a good  
20 point. Scott.

21 MR. NICHOLS: As I recall, this  
22 conversation started during the Residential Rebate Work  
23 Group meetings that we, when one of the manufacturers  
24 claimed that they had a special coating on their heat

1 exchange surfaces that caused the ash to fall off. But  
2 that's neither here nor there. But that's how this came  
3 to be. And, I think with a commercial system, you are  
4 astute to recognize that we're talking about -- I would  
5 prefer that it be something more active. And, I thought  
6 about using the word "active ash removal" or "active ash  
7 cleaning", but then I backed away, because it began to get  
8 complicated for me. And, I --

9 CHAIRMAN IGNATIUS: That's where Mr.  
10 Flanders comes in, he can write us the language. Well, it  
11 may be that we can't figure that out on the fly today, but  
12 that, in a session, either exchange of written suggestions  
13 or a meeting among all of you afterwards, to kind of  
14 compare drafting and come up with some other approach  
15 might solve it. Ms. Richardson?

16 MS. RICHARDSON: Yes. Thank you. Just  
17 want to keep in mind that this is open to all  
18 commercial/industrial projects. So, some of these may be  
19 relatively small buildings. And, they may be expecting a  
20 product, a system that really would be used on a  
21 residential basis. So, I think some of the caveats that  
22 have been included in this, that have been pulled over  
23 from the residential program, I think there's some  
24 validity to keeping that in there. We don't want to

1       assume that this is all going to go to really large  
2       buildings, because it won't. And, there are some pellet  
3       systems out there that are not really what we want to be  
4       encouraging for installation in this state. So, I think  
5       some of these thresholds are not really as vigorous as  
6       they could be, but they're better than a lack of a  
7       standard. In which case, there's some really bad stuff  
8       out there that we just don't want.

9                       CHAIRMAN IGNATIUS: Is it helpful to  
10       structure these requirements to say "for units below X,  
11       these are the requirements; for units above Y, these are  
12       the requirements"?

13                      MR. HENRY: I think that's an excellent  
14       idea.

15                      MS. RICHARDSON: Yes, I agree. And, I'm  
16       not sure what that threshold point is, but -- which is not  
17       very helpful, but I think we just need to be sensitive to  
18       the fact that there are some installation companies and  
19       manufacturers that will look to go with the least vigorous  
20       program.

21                      MR. VAN VALKENBURGH: I don't see a lot  
22       of difference between big systems and little systems. You  
23       know, little systems being, say, for commercial, you know,  
24       200,000 Btus, something like that, and on up to something

1 that's, you know, half million or so. You end up with a  
2 variable here that turns into, you know, let's just look  
3 at the "basic attributes". That it turns itself on and  
4 off, it modulates, it automatically cleans the burn  
5 chamber, it automatically, you know, cleans the tubes and  
6 so forth, the -- you know, there's a cleaning mechanism  
7 within the tubes, it automatically cleans that. And,  
8 then, number iv is, it automatically removes ash from the  
9 burn chamber into a collecting system. And, then, the  
10 annual routine maintenance is that recommendation, I think  
11 that should maybe be elsewhere. But "is automatically  
12 conveyed from the bulk storage container/area to the burn  
13 chamber", there's no real differences on the scale with  
14 those things considered. And, there's even things like,  
15 you know, efficiency standards, should not be considered  
16 with the scale, because those should be held up high on  
17 all of these. You don't want to just have somebody put in  
18 a big one.

19           The one point that I wanted to make is  
20 that, you know, we don't just sell giant systems. You can  
21 buy a 1, 2, 3 million Btu boiler. But what happens, in  
22 practical usage, and often times, like Dick said, is that  
23 these get specified by engineering firms without a lot of  
24 experience, they just know that this building is going to

1 need a big boiler, so they put a big boiler in there.  
2 And, what happens is, they can't turn it on until after  
3 Thanksgiving, and they turn it off somewhere around March  
4 30th or so, and even then it was smoking pretty bad,  
5 because they throttled it back so badly.

6 What we often do is put in multiple  
7 smaller boilers, and that should be encouraged, because --  
8 and that's something you could say in the encouragement  
9 section, is to say "these can be big" -- I admit these are  
10 going to be big commercial systems at times. And, to have  
11 multiple boilers is preferred to big, big boilers.  
12 There's different things you could say. Now, that's the  
13 experience talking. There's other people that have  
14 different experiences with different products and  
15 approaches. But, you know, those are the sorts of things  
16 I would say are highly recommended.

17 CHAIRMAN IGNATIUS: Thank you.  
18 Mr. Flanders.

19 MR. FLANDERS: Yes. I was just going to  
20 comment, in a larger system, I agree with what Scott said,  
21 and there's another aspect to that. If you have three  
22 boilers, and one of them goes down, it's not a big deal,  
23 because you've got time to fix it. If you've got one  
24 boiler that goes down, and it's in the dead of winter, the

1 building is going to freeze up if you don't do something  
2 like right now. And, sometimes the repair isn't going to  
3 be something you can facilitate in that short period of  
4 time.

5 CHAIRMAN IGNATIUS: Thank you. Ms.  
6 Ohler.

7 MS. OHLER: Yes. This conversation just  
8 raised a question in my mind. If I'm replacing a big old  
9 oil boiler, and I want to put in three wood pellets, can I  
10 get three rebates?

11 MR. NICHOLS: It's one system.

12 MR. VAN VALKENBURGH: It's one system.

13 MR. HENRY: It's one, yes.

14 MS. OHLER: Okay. I think that just  
15 needs to be clarified, and so that that's not -- that  
16 question doesn't come up after the program is implemented.

17 CHAIRMAN IGNATIUS: Thank you. That's  
18 very good. It's a very practical consideration, and we  
19 would get that question. Mr. Henry.

20 MR. HENRY: I just wanted to respond to  
21 Ms. Ohler's earlier comment about this question of  
22 performance standard versus essentially switching to a  
23 renewable fuel. Again, it comes back to what I began  
24 with, which is I am trying to suggest that moving to a

1 performance standard, in the long run, is going to get us  
2 better results than a direct, specified appliance rebate  
3 solution. And, I've been struggling with how to design  
4 this for a long time. And, I, obviously, have not come up  
5 with a perfect answer at all. But I think it's an  
6 important goal to try and move towards a performance-based  
7 criteria that allows the market to maximize its creativity  
8 to meet those performance standards. And, Ms. Ohler is  
9 absolutely right, there are weaknesses in what I propose,  
10 if you're on a cheaper fuel, and you want to go from gas  
11 to a renewable.

12 I guess I would raise the question, with  
13 limited funds, is that really who we want to target? Or  
14 are we more interested in getting both an environmental  
15 and an economic benefit for the state from programs like  
16 this? And, in which case, the performance standard helps  
17 you make some of those distinctions.

18 CHAIRMAN IGNATIUS: All right. Ms.  
19 Ohler.

20 MS. OHLER: I am in complete agreement  
21 with performance standards versus prescriptive rebates --

22 (Court reporter interruption.)

23 MS. OHLER: I think that, in the long  
24 run, performance standards are the better way to go, but

1 I'm not sure. I mean, I'm not sure that we've designed  
2 the right one for this. I guess that that probably gets  
3 back to why I think that there's a huge importance to  
4 doing the initial benchmarking, whether it's with  
5 Portfolio Manager or some other PUC-approved program, and  
6 whether you call it "benchmarking" or something else.

7 But, you know, that, with the Better  
8 Buildings Program, did low interest loans, and they  
9 required an audit, plus 15 percent energy efficiency  
10 savings to get the low interest loan on a boiler. I guess  
11 maybe that, you know, if we're going to do performance  
12 standards, I would do it based on overall efficiency  
13 improvements, plus the move to renewable fuel, versus at a  
14 cost per square foot. And, I just -- because I think we  
15 do have such limited public dollars, and it's important  
16 that we be keeping the multiple goals of all of our energy  
17 programs in mind in the development of any one of our  
18 energy programs, and that they can't just be focused on  
19 that singular goal of "we need more renewable energy".  
20 Well, we need renewable energy, we need energy efficiency.  
21 Therefore, we need to be doing more of these measurements,  
22 helping the whole market go in that direction.

23 CHAIRMAN IGNATIUS: Thank you. Mr.  
24 Henry, one more, and then we're moving on.

1 MR. HENRY: One more, then I'm done.  
2 Just we have an example of this already in the CORE  
3 programs, where, you know, there's the calculator that you  
4 plug your energy usage into. And, if you're in a certain  
5 zone, then you qualify for the CORE programs. And, if  
6 your building is already in pretty good shape, you don't  
7 qualify for the programs. So, there are some precedents  
8 in sort of deciding where to spend the money.

9 CHAIRMAN IGNATIUS: Mr. Flanders, did  
10 you decide that there was other things you wanted to  
11 address?

12 MR. FLANDERS: There's one other thing  
13 I'd like to present, madam Chairman. On Page 4, Item 19,  
14 it says "Any wood pellet central boiler or furnace system  
15 must comply with all manufacturers' requirements and the  
16 State Building Code", and then it goes on to mention  
17 "National Electric Code 2008". Well, the National  
18 Electrical Code, since July 1st of 2012, has been the 2011  
19 Electrical Code. And, I think you're on a slippery slope  
20 if you go any further than say "requirements of the State  
21 Building Code". All these codes are updated every three  
22 years. And, if you're going to mention that Electrical  
23 Code, then what about the three or four NFPA Codes that  
24 apply, and what about the International Building Code

1 requirements, and the International Mechanical Code, and  
2 the International Plumbing Code. So, if you mention one  
3 code, I think you're going to end up with a very long  
4 paragraph, which will go out of date every three years.

5 CHAIRMAN IGNATIUS: And, is just a  
6 reference to the "State Building Code" sufficient, in your  
7 view?

8 MR. FLANDERS: It is. Yes.

9 CHAIRMAN IGNATIUS: Because those, in  
10 turn, will pick up whatever the most current are of the  
11 others?

12 MR. FLANDERS: Right. The code will  
13 update. For about eight years, before I retired, I was  
14 working as a consultant for the Building Inspection & Code  
15 Enforcement. So, this is an area I'm pretty familiar  
16 with.

17 CHAIRMAN IGNATIUS: All right. Good  
18 suggestion. Thank you. Anything else, sir?

19 MR. FLANDERS: Nope. That's it.

20 CHAIRMAN IGNATIUS: We also -- I just  
21 want to note, so that everyone is aware that we received  
22 it, we have written comments from Harry Dresser, from  
23 Charlie Niebling, from David Robins, and from Mark  
24 Froling. We will receive further written comments from

1 any of you today, or anyone else who wants to submit,  
2 until close of business December 3rd. And, I really would  
3 encourage you to work together, if you have the time,  
4 either this afternoon or to, you know, get together by  
5 phone or some e-mail exchanges, to think about some of the  
6 recommendations, because you, obviously, have good  
7 experience, and you can each refine each other's thoughts,  
8 because of your own individual knowledge, different ways  
9 in which you come to this. And, so, I found it very  
10 helpful to hear how you can work together. One, in  
11 particular, Mr. Nichols, you had said that the application  
12 switches between "system" meaning the entire heating  
13 system and "system" meaning the actual appliance. It  
14 would probably help if you went through and kind of  
15 circled which you think should be "appliance" and which  
16 should be "heating". I suppose others as well, if you'd  
17 like to, but that's the kind of practical eye towards it  
18 that would really be helpful.

19 And, although we haven't scheduled other  
20 times for people to come together, you're free to do any  
21 amount of that that you're able to, and that you have the  
22 time to do, either in person or by a phone conference, the  
23 Staff can facilitate that, if you're able. I think it  
24 improves the product tremendously. And, this is not one

1 where we have any really opposition to the program. It's  
2 not a fundamental difference. It's really fine-tuning it  
3 and making it as clear as can be and as effective as it  
4 can be. So, any further work on that is really helpful to  
5 us. We appreciate it. You know, we take the best stab we  
6 can, but we're not in the business. You are, and you  
7 bring to it tremendous experience, and then overlay that  
8 with some of the policy goals and the reasons why we have  
9 these programs in the first place, and try to mesh those  
10 two together is really the challenge. And, I appreciate  
11 everybody trying to think about that today.

12 Unless there's anything else anyone  
13 wants to mention?

14 (No verbal response)

15 CHAIRMAN IGNATIUS: We'll adjourn the  
16 public comment hearing -- period, we'll take a look at  
17 anything written that comes in, this is by December 3rd,  
18 and then finalize the terms of the program. So, thank you  
19 all for your participation. We're adjourned.

20 **(Whereupon the hearing was adjourned at**  
21 **3:37 p.m.)**