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STATE OF NEW HAMPSHIRE

PUBLIC UTILITIES COMMISSION

August 30, 2010 - 10:11 a.m.
Concord, New Hampshire

RE: DE 10-212
ESTABLISHING A COMMERCIAL AND
INDUSTRIAL RENEWABLE ENERGY
REBATE PROGRAM.
(Hearing to receive public comments)

PRESENT: Chairman Thomas B. Getz, Presiding
Commissioner Clifton C. Below

Sandy Deno, Clerk

APPEARANCES: (No appearances taken)

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

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1 P R O C E E D I N G

2 CHAIRMAN GETZ: Okay. Good morning,
3 everyone. We'll open the hearing in docket DE 10- 212.
4 This docket concerned the establishment of a Commercial
5 and Industrial Renewable Energy Rebate Program. The
6 Public Utilities Commission is charged with administering
7 the State's Renewable Energy Fund, which, pursuant to RSA
8 362-F:10, is to be used to support thermal and electrical
9 energy initiatives. To date, the Commission has
10 established rebate programs for small residential
11 electrical renewable energy facilities, as required by RSA
12 362-F:10. And, it's also established a Residential Solar
13 Water Heating Incentive Program. The Commission is
14 permitted also to establish additional incentive or rebate
15 programs for customer-sited thermal and electrical
16 installations of up to 100 kilowatts or equivalent thermal
17 output. And, the purpose of this proceeding is to
18 consider establishing a C&I Rebate Program.

19 A Notice of Opportunity to Comment was
20 issued on August 10. That notice also indicated that a
21 technical session would be held on August 30. We have
22 several documents that have been filed by Staff. The
23 first was a design document that was dated July 26th, and
24 was referenced in the Notice of Opportunity to Comment.

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1 And, subsequent to the technical session, Staff also filed
2 on August 26 a revised design document that reflects some
3 input from the technical session.

4 Today, the procedure will be, we'll
5 start with Staff, who will give a summary of the
6 background and of some discussion of the original design
7 document and the revised document. And, then, we'll
8 provide an opportunity for parties to comment. I have a
9 sign-up sheet, and I'll just go through that and will call
10 folks up to the podium. Just make sure that you identify
11 yourself and speak clearly, so Mr. Patnaude can get the
12 comments in the transcript. I also note that the notice
13 provided that we'll accept written comment through
14 September 30. So, Ms. Amidon -- or, I'm sorry,
15 September 3, not 30, off one digit.

16 Ms. Amidon, is there anything else that
17 we should address before we proceed?

18 MS. AMIDON: No, I think that you
19 summarized the proceeding here this morning very well.
20 Kate Epsen, who is an Analyst in the Sustainable Energy
21 Division, will address the Staff's recommendations that
22 were recently filed with the Commission.

23 CHAIRMAN GETZ: All right. Thank you.
24 Please proceed.

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1 MS. EPSEN: My name is Kate Epsen with
2 the PUC. And, first, I'll go through some of the main
3 program parameters that were in the original "straw man"
4 proposal, and then I will go through some revised "straw
5 man" recommended changes as a result of the August 19th
6 technical session.

7 The C&I Program in the original "straw
8 man" proposal indicated that the rebate program would be
9 open to solar electric and solar thermal technologies of
10 100 kilowatts or equivalent or less. And, it would be
11 open to the non-residential community, which would include
12 businesses, nonprofits, governmental entities, and
13 multifamily housing entities, that are not already
14 eligible for the residential programs.

15 The program funding, originally, in
16 Order 25,092, the Commission set aside a million dollars
17 for the C&I program. And, it's proposed to increase this
18 funding by \$500,000 to \$750,000. The allocation of funds
19 between the solar electric and solar thermal technologies
20 was originally proposed to be 75 percent toward solar
21 electric and 25 percent to solar thermal.

22 The rebate structure for PV, solar
23 electric, is going to -- was proposed as a declining tier
24 rebate, beginning at \$1.25 per watt for the first

1 20 kilowatts of the system. That would decline to \$1.00
2 per watt for the next 35 kilowatts of the system. And,
3 then decline a third time to 75 cents per watt for the
4 remaining 55 [45?] kilowatts, up to 100 kilowatts of the
5 system. And, the overall rebate would be capped at
6 25 percent of the cost of the facility, or \$50,000,
7 whichever is less. That CAP also would hold for solar
8 thermal systems, but that would be a rebate level based on
9 7 cents per rated or modeled Btu per year.

10 Okay. So, that -- those highlighted the
11 original and primary features of the program. And, then,
12 some of the main recommended revisions toward these
13 program parameters include the "multifamily housing"
14 definition would be considered as a "master metered
15 building, with three units or more." The program would
16 not require a length of prior existence or prior
17 operations to qualify for the rebate. The program will
18 require that the applicant is the project owner and an
19 end-use customer of a provider of electricity located in
20 New Hampshire. And, this requirement falls under Puc Rule
21 2500, which can be referenced specifically in Puc 2507.04.

22 The funding flexibility for this program
23 is recommended to change, to say that "no less than
24 25 percent of total funds and no more than 75 percent of

1 total funds shall be allocated to only solar electric
2 projects, or only solar thermal projects."

3 System expansions would be eligible at a
4 reduced rebate amount relative to new systems. Program
5 terms and conditions would include a term whereby, if an
6 installer demonstrates poor performance under the program,
7 by evidence of a third party inspection and independent
8 monitoring, that same installer would be barred or
9 prohibited from future participation in the rebate
10 program. The program would require a third party
11 inspector sign-off on the system before the final rebate
12 check is issued.

13 The program will require all applicants,
14 for purposes of even an equal comparison, to submit
15 RETScreen modeling analysis of projected system output.
16 The program will require, at a minimum, a Level II audit,
17 thermal and electric; a "Level II audit" being one step
18 beyond the Level I audit, which generally consists of a
19 walk-through of the building and revision of utility bills
20 over the past year. So, a Level II might include a blower
21 door test or thermal screening of the building as well,
22 and a more detailed modeling of the building.

23 And, then, outstanding program
24 parameters that may require additional testimony today or

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1 in writing will include the tracking and reporting of
2 system output, the process by which a few selected larger
3 systems, larger than 45 kilowatts, may receive an
4 incentive that exceeds the \$50,000 cap. Whether this be
5 through an RFP or a reverse auction process, that's still
6 up for discussion. And, then, the issue of having a cap
7 or a quota on installer participation in the rebate
8 program. Thank you.

9 CHAIRMAN GETZ: Is that all, Ms. Amidon?

10 MS. AMIDON: Yes, I would just say that
11 some of these recommendations came out of the technical
12 session discussions that -- where we had about 22 members
13 of the community here discussing the various proposals on
14 the initial "straw man". In addition, Ms. Epsen has also
15 reviewed comparable requirements in other states to -- and
16 the development of these specifications and some of the
17 technical requirements. So, I just wanted to inform the
18 Commission that some of the recommendations come from her
19 review of other state programs.

20 CHAIRMAN GETZ: Okay. All right. Thank
21 you. All right. Then, we'll begin with Carl Orio.

22 MR. ORIO: Good morning, Commissioners.
23 My name is Carl Orio. I have prepared a written testimony
24 here, which I would highlight in the interest of time. I

1 have three copies, which I can pass to whomever they would
2 get those.

3 CHAIRMAN GETZ: Okay. You can give one
4 to Mr. Patnaude, and then --

5 (Mr. Orio distributing documents to the
6 court reporter.)

7 CHAIRMAN GETZ: Thank you.

8 MR. ORIO: Than you very much. My
9 comments relate to the Section 6, "whether the proposed
10 program should be limited to photovoltaic and solar
11 electric." My name is Carl Orio. I'm Chairman of Water
12 Energy Distributors, in Hampstead, New Hampshire. We are
13 a woman-owned business, three generations family, been in
14 geothermal involvement since 1970, for about 14,000
15 installations. We are not installers; we are distributors
16 and designers. We represent about 145 heating and
17 ventilating companies in New Hampshire. And, to manifest
18 the interest in geothermal, in the past, I think it's
19 three months, we've had over 21,000 hits on our webpage
20 just from New Hampshire.

21 My request is, under Section 6 of the
22 draft proposal, to include geothermal heat pumps. And,
23 we'll develop some thoughts on the value of that to the
24 photovoltaics and the solar electric.

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1 A properly designed heating and cooling
2 system with geothermal meets requirements for all
3 commercial buildings of all sizes, and, of more
4 importance, develops an amplifying factor for what we're
5 looking to, towards, namely, electric solar. For every
6 one watt of electric solar, whether it's PV or solar
7 electric, I can generate out of the earth, solar energy,
8 four or five watts of energy. So, what you're looking at
9 here, under the C&I Program, is actually an amplifier, if
10 you include geothermal. So, for every dollar spent under
11 the C&I Program, if you include geothermal under this, you
12 will harvest four to five dollars of energy savings.
13 Please keep that in mind. And, that's my primary thrust
14 that I'm driving at here.

15 In terms of energy in a building,
16 heating and ventilating represents the largest source of
17 energy use. You have not included that in this program;
18 I'm suggesting that you do. In terms of payback, it will
19 be a longer payback, as suggested by the U.S. EPA. But,
20 if you combine it with the low-hanging fruit, namely the
21 lightbulbs, which are a very fast payback, we know that,
22 you will gather a larger energy savings for the State of
23 New Hampshire.

24 Also, you will inhibit emissions. By

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1 using geothermal, you will inhibit the burning of fossil
2 fuels. The burning of oil generates about 21 pounds of
3 carbon dioxide, plus about 11.6 pounds of carbon dioxide
4 used in transporting the oil to that location. Thirty-two
5 pounds of carbon dioxide for every pound of oil -- for
6 every gallon of oil. I can marginalize that cost, and
7 there's been a study, which is referenced here in the
8 paper, that says "marginalized cost is about \$104 per ton
9 of carbon dioxide" towards community health. Let's say an
10 office building is 30,000 square feet, typical. That
11 would represent, in that community, for that building
12 alone, \$16,000 of community health benefits saved; using
13 the photovoltaic energy, even more so. So, what you're
14 doing is you're affecting community health as well.

15 Geothermal energy is not new. It's been
16 in existence for, in my life, since about 1974. The
17 largest geothermal system in New England is right now in
18 Boscawen, New Hampshire. It's a 235,000 square foot
19 Merrimack County Nursing Home. It's been functional, I
20 think it's gone through three winters now; a very
21 successful installation. But, in the past, New Hampshire
22 has been lagging behind in terms of geothermal
23 applications, geothermal incentives. New Hampshire,
24 Public Service of New Hampshire, in particular, has been

1 the leader in the United States on residential geothermal,
2 and has a program that has been in existence for well over
3 ten years, which has worked very, very well.

4 But, in terms of commercial/industrial,
5 it's been lagging. And, as you can see by the list that I
6 have here, which run anywhere from that large building,
7 the largest in New England, all the way down to home --
8 dormitory homes at the University of New Hampshire, the
9 New Hampshire Social Service Office, in Nashua, has just
10 installed and is operational in a geothermal building.

11 It, combined with this program, would
12 represent the very best energy management responsibility.
13 And, I'm appealing to the Commission that this be included
14 into the C&I Program. Keep in mind that it is an
15 amplifier for the photovoltaics and the photo -- solar
16 energy that you're looking at, multiplying that by a
17 factor of four to five.

18 Thank you very much. Any questions?

19 CMSR. BELOW: Yes. Do you have an idea
20 of what kind of incentive program you would imagine would
21 make a difference for commercial geothermal?

22 MR. ORIO: We've had some -- what would
23 make a difference? I think in two levels, Commissioner.
24 Number one would be a recognition, which is the starting

1 point, which is not here at all. Number two, not unlike
2 our neighbors to the south, in Massachusetts, is demanding
3 that it be part of, and not a stand-alone. In other
4 words, it's a part of a PV system, it's part of a solar
5 electric system. That would be my recommendation.

6 In terms of quantitative numbers, we
7 have not -- we've got experience in Connecticut. In
8 Massachusetts, we can offer our experience. I cannot
9 offer you anything right now, other than those first two
10 steps; number one, make it part of, and, two, make it a
11 combined program with geothermal, not geothermal alone,
12 but PV and solar with geothermal. Any other questions?

13 CMSR. BELOW: Thank you.

14 CHAIRMAN GETZ: Thank you.

15 MR. ORIO: Thank you very much.

16 CHAIRMAN GETZ: Steve Hall.

17 MR. HALL: Thank you, Mr. Chairman. My
18 comments will be brief today, because PSNH will be
19 supplementing its comments in writing later on this week.

20 My name is Steve Hall. I'm with Public
21 Service of New Hampshire. We appreciate the opportunity
22 to provide comments to the Commission on their -- on the
23 Staff's "straw man" proposal. My comments today, I have
24 three general areas where, again, PSNH will supplement its

1 comments later on this week, in these three areas, and
2 perhaps other areas as well.

3 And, the first area is with regard to
4 the Staff "straw man", where the proposal appears to limit
5 the application to "customer-sited thermal and electrical
6 installations". The statute doesn't use the word
7 "customer-sited". If you combine that comment, along with
8 the section of the Commission's order of notice where they
9 define "eligible participants" to include "businesses,
10 non-profit and governmental entities, and multi-family
11 housing [units] that aren't eligible for the residential
12 incentive program", there's a potential contradiction
13 between the "customer-sited" requirement and that
14 requirement. And, in particular, what PSNH thinks the
15 Commission should do is they should make it clear that
16 utilities are also eligible for these rebate programs,
17 since there's nothing in the statute that precludes
18 utilities from participating in the programs.

19 The second area of comment that I have
20 today is that, in the Staff's proposal, the rebates are
21 limited to "commercial and industrial scale solar electric
22 arrays and solar water heating systems". I would note
23 that RSA 362-F:10, VIII, calls for competitive grant
24 opportunities for "thermal and electric energy projects

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1 cited in New Hampshire." We understand there's probably
2 a limited availability of funds, so it may well be that
3 it's entirely appropriate to limit the rebate program to
4 "solar electric arrays and solar heating systems", but the
5 statute doesn't limit such projects to "solar only", as
6 the "straw man" does. And, one thing we'd ask the
7 Commission to consider, to think about, is whether the
8 applicability ought to be broadened.

9 Finally, --

10 CHAIRMAN GETZ: Is that an issue of
11 discretion or are you saying the statute requires us to do
12 something in particular?

13 MR. HALL: I don't think the statute
14 requires it. I'm suggesting that the Commission has the
15 discretion to. And, our recommendation is that you
16 consider that, but you don't simply discard it out of
17 hand.

18 Lastly, with regard to criteria among
19 choosing between competing requests or grants, we would
20 recommend that the Commission's rules that they issue
21 contain a clearly defined list of criteria. And, in our
22 written comments, PSNH will provide recommendations on
23 what that -- what those criteria ought to be.

24 And, as I said earlier, we will be

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1 supplementing our comments in writing later this week.
2 And, we sincerely appreciate the opportunity to provide
3 these comments.

4 CHAIRMAN GETZ: Okay. Thank you.

5 MR. HALL: Thank you very much.

6 CHAIRMAN GETZ: All right.

7 Mr. Niebling.

8 MR. NIEBLING: Thank you, Chairman Getz,
9 Commissioner Below. Thank you very much for the
10 opportunity this morning to speak to the proposed C&I
11 Renewable Energy Rebate Program. My name is Charlie
12 Niebling. I'm General Manager of New England Wood Pellet,
13 in Jaffrey, New Hampshire. We're a manufacturer of wood
14 pellet fuels. I, too, will be submitting written remarks
15 later this week, so I'll just paraphrase a few of the key
16 points that we'll be making later this week in writing.

17 To the question of "whether there should
18 be a C&I Program?" Absolutely, yes. We completely
19 embrace the intent of the program, and would like to
20 recognize the Staff for the good work that they have done
21 in putting together the "straw man". A lot of thought has
22 gone into this, and we're well aware of that.

23 I think the key point that we'd like to
24 raise today is the importance of opening the program up to

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1 any and all qualifying renewable energy technologies that
2 meet the intent of the statute, and specifically RSA
3 362-F, which is open-ended with respect to electric and
4 thermal renewable energy projects, and also meets the
5 purposes of 362-F, which you're very familiar with, the
6 intent of public policy behind the renewable energy or
7 Renewable Portfolio Standard.

8 And, we think it's important that the
9 notion and the concept of "principle of technology
10 neutrality" be established at the outset. And, that any
11 technology that meets the intent is -- will qualify. We
12 recognize that, at the outset, there are limited funds
13 available, at least initially, and there is a significant
14 administrative burden in implementing these programs. But
15 we believe the concept of "neutrality in technology"
16 trumps those factors, frankly.

17 It's important to remember a couple
18 things. One is, this part of the country is more
19 dependent on fossil fuel for making heat than any other
20 part of the country. We rely heavily on Number 2 heating
21 oil. We're second only to Maine in terms of our
22 dependence on heating oil. Heat is the single largest
23 bill that most commercial and industrial entities will
24 pay, compared to electricity or hot water. And, yet, or

1 unless you're using your solar hot water system to heat
2 your building, the program does not encompass any
3 technology that is heat-producing, for, specifically, for
4 the purpose of space heating or industrial process heat.

5 So, I think it's important that this be
6 established right at the outset. And, if not now, when?
7 When will we see the implementation of rebate and
8 renewable energy incentive programs administered by the
9 PUC put forth in a unbiased and technology-neutral way as
10 possible? Where the PUC is identifying the purposes and
11 the goals that you seek to achieve, and then encouraging
12 and enabling the private sector to step forward with the
13 technologies that most cost-effectively achieve the goals,
14 rather than specifying or limiting access to the programs
15 to certain technologies.

16 The other comment I'd like to raise has
17 to do with the 100 kW limit on qualifying applications.
18 And, I understand that your current rules do specify a
19 limit. But, if my recollection is correct, and perhaps
20 your recollection is better than mine, that limit was set
21 to make the statute consistent with -- or, I'm sorry, the
22 Administrative Rules consistent with the net metering
23 statute as it existed at the time. And, per House
24 Bill 1353 this session, the cap on systems that can

1 qualify under net metering has been raised to a megawatt
2 under certain circumstances. And, I believe you've been
3 petitioned to open a docket relative to rulemaking, to
4 modify the net metering rules so that they're consistent
5 with the new direction from the General Court.

6 Is this a good time to sort of raise the
7 question of whether there should be a higher threshold?
8 And, that, certainly, doing so or addressing this question
9 some way would address the question that you've raised in
10 your "straw man" about whether and under what
11 circumstances larger systems should have access to the
12 fund, either through some -- what was referred to as an
13 "auction" or a "competitive RFP". So, I just ask the
14 question, given changes that took place in the statute --
15 in the Legislature earlier this year.

16 I'll have more to say in our remarks,
17 but I'd be happy to answer any questions.

18 CMSR. BELOW: What do you imagine what
19 would be a meaningful, but an appropriate, incentive for
20 other technologies? I mean, how would you define that?

21 MR. NIEBLING: Sure. I think somewhere
22 between 25, 30 percent of the installed capital cost, with
23 a cap, is -- seems to be what triggers people's serious
24 consideration of alternatives, in the absence of, you

1 know, prevailing market forces, just making the payback so
2 attractive that it works on its own.

3 The federal tax credits under
4 Section 48, which already apply to solar PV, solar hot
5 water, geothermal, wind, but not biomass, or at least not
6 biomass thermal, they do to biomass electric, is, in
7 general, there are some nuances in the federal IRS regs,
8 but, in general, it's a 30 percent credit against the
9 installed capital cost, with no cap. So, a lot of thought
10 has been given over the years to what kind of incentive
11 will encourage people to take the step. And, that seems
12 to be kind of the area where people will consider it.

13 In our case, in the case of commercial
14 scale or industrial scale biomass heating systems, they're
15 generally two to three times more expensive than
16 comparable oil or natural gas or propane systems. So, to
17 overcome that capital hurdle, you need -- most people need
18 a little help or a little incentive. At least until or
19 unless oil gets up to 4.50 a gallon again, and we
20 certainly don't wish that on anyone. It was terribly
21 disruptive to our economy and our state when it happened
22 two years ago. But it will probably come back again some
23 day. At which point, I think you could consider whether
24 an incentive -- certain incentives are even necessary, if

1 just prevailing market forces are driving all the
2 decisions all on their own.

3 But we're not they're today. And, I
4 think, you know, we and others are right to be asking the
5 PUC to open this up to any technology that meets the
6 intent of the statute.

7 CHAIRMAN GETZ: Let me just follow up on
8 that. And, I think, putting aside the fact that there's
9 limited funds, which I think you and everyone else would
10 probably agree puts us in a position where we have to make
11 some hard decisions. But, if you had a technology-neutral
12 program that had substantially more funds available to it
13 than we have at present, would you -- I guess I'm
14 wondering how it would be administered? Would you, I
15 expect, have to have different rebate approaches for each
16 technology? Would that be fair?

17 MR. NIEBLING: If you wanted to operate
18 it as an application process, where everyone who meets the
19 parameters that you set forth for each technology,
20 qualifies, to the extent that funds are available, that's
21 the way you would do it. If you wanted to open it up and
22 make it competitive, so that the technologies that best
23 meet the public purposes of the statute, whether those
24 purposes are to reduce reliance on foreign fossil energy,

1 increase local and state economic development and create
2 jobs, reduce emissions of greenhouse gases, or whatever
3 set of criteria, you know, we all know what they are that
4 we're trying to achieve by a more progressive energy
5 policy, each of those can be articulated or defined in
6 terms of metrics. And, then, it becomes the applicant's
7 responsibility to demonstrate how their project meets,
8 fulfills or reduces the various -- or, addresses the
9 various objectives that you're trying to achieve.

10 CHAIRMAN GETZ: So, it's somewhere
11 between a rebate -- a "first come/first serve" kind of
12 rebate program and a kind of a full-blown open RFP?

13 MR. NIEBLING: Correct. And, believe
14 me, I understand, from an administrative standpoint, the
15 benefit of operating a clean, well-defined rebate program,
16 that has clear procedures to the applicant, a minimum
17 criteria that you have to meet, and then the PUC and its
18 staff administer the funds, to the extent that the
19 application qualifies. I understand it's a lot easier to
20 administer that way. It's a lot more difficult to
21 administer the way I and others have been advocating for
22 several years now. But then it's --

23 CHAIRMAN GETZ: But it's something
24 different from like kind of the RFP program approach that

1 we've used in the RGGI funds, is what you're thinking of?

2 MR. NIEBLING: Certainly, the RFP
3 process that you've used to date with the RGGI funds,
4 that's correct. It is somewhat different. But I think
5 it's getting government out of the business of deciding
6 which technologies will have access to the funds and which
7 won't, and letting the private sector compete, based on
8 the strength and the -- of the idea. And, I think the
9 latter approach, or what I've been advocating, is likely
10 to spur innovation and technology, because people will
11 constantly be striving for higher efficiency. Sort of the
12 combination of technologies that Mr. Orio alluded to
13 earlier. It's creates a lot more incentive to do better,
14 I think, if you structure it that way. And, I understand
15 it's complicated, and it puts the PUC in the position of
16 making somewhat subjective decisions about which ideas
17 prosper or not. But that it seems to me like there's a
18 way to quantify all that, if we put our heads together.

19 CHAIRMAN GETZ: All right. Thank you.

20 MR. NIEBLING: Okay. Thank you very
21 much.

22 CHAIRMAN GETZ: Mr. Morano, it was a
23 "maybe"?

24 MR. MORANO: No comment at this time,

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1 sir.

2 CHAIRMAN GETZ: Okay. Mr. Gerry or
3 "Gerry"?

4 MR. GERRY: My name is Doug Gerry. I'm
5 from Springvale, Maine. We're installers, solar
6 installers. I'm sort of a leftover from the last round
7 that died off in the '70s. Reinstated in -- when the
8 credits came back. I'm here to give a plug on solar
9 thermal today, and what I feel is an under-utilized, an
10 unrewarded, and unrecognized technology. So, I made some
11 comparisons between photovoltaic and solar thermal, so
12 that you can hopefully make some adjustments. And, I was
13 here several weeks ago, made some comments. On my way
14 home, I decided I'd look at some process hot water users
15 in the state. I got a very quick education. Most of this
16 area is gas. And, anybody or industry that is using or
17 making hot water is using gas. And, I started to look at
18 the cost of gas and what it takes. Visited one place,
19 briefly mentioned -- as soon as you mention that there's
20 funds available, most people will listen. Invited me into
21 his boiler room, had six Rinnais on the wall, instant hot
22 water. I had already told him "I think we could handle
23 half your load", and he said "That's pretty good. Let me
24 show you what I have." He spent \$12,000, and his bill

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1 went from \$1,500 to \$800 a month. And, he simply said
2 "You want me to get a mortgage and do what? You know, to
3 put solar on the roof? It just doesn't make sense." So,
4 we started to look at what it is in this state up against
5 gas, which, essentially, except the far reaches where
6 there is no industry, very difficult. Solar thermal can
7 rock on hot water, processed hot water.

8 So, I have some suggestions. It's
9 difficult for me to stand here and not come off as a greed
10 ball. And, if you lay that charge to me, I'll accept it.
11 But I'd at least like to make and let you know what I've
12 done.

13 Solar thermal, compared to PV, I did a
14 quick analysis on RETScreen and PV watts. This is not, by
15 the way, a slighting today against any other technology,
16 including PV. It's a wonderful thing. It's what most
17 people want. If I was a smart businessman, I'd be there
18 right now. But my heart has been in solar thermal,
19 because I can sell it with a straight face and it really
20 does something. It's just not applied here. It is in
21 Europe and other areas, but not here.

22 So, in the analysis, I took a 6 kW
23 system or a 5 kW system, that, right here in Concord, puts
24 out about 6 kW, depending on whether you use pvcalc or

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1 PVWATTS, pretty close, and call that an install price of
2 \$6.00 a watt. Maybe somebody else can correct me, but I
3 thought that was a fair assessment.

4 I took a thermal system, that would be
5 30,000, but of equal value, and that would put out 24 kW,
6 converted the Btus that tend to go with thermal, and
7 converted it to kilowatts. Said "okay, well, what do we
8 actually get for our money?" Because I'm not sure how it
9 is here, when you go out into the world, they want to know
10 what they're going to get and how much they're going to --
11 you know, what are actually going to see here? And, so,
12 what I found is that this technology, in most cases, goes
13 unrewarded.

14 Now, just to smoosh you for a second, I
15 believe that this is the best that I have seen, as far as
16 an analysis on solar and PV. It's a lot of -- good
17 homework is done, and I am thoroughly agreed with
18 rewarding on the Btu output of the system or the watts of
19 the system. Why not? If you're going to give more, you
20 get more.

21 But I have a few comments that I think
22 would help us guide this, in light of what I know in my
23 own experiences. And, I have spent more than a casual
24 amount of time doing this.

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1 So, on the solar thermal rebates, I
2 would lower the cap. I think more people will enjoy this,
3 if you whack this out at 50,000, if anybody can come up
4 with that, I'm not sure that I could make that case right
5 now. But a cap that high is -- means that fewer people,
6 larger companies, can take advantage of that. And, so, I
7 believe personally that, and what I did on this one
8 particular case was I did a RETScreen performance, and I'm
9 coming up with a 14 and a half year payback, up against
10 instantaneous. Modulated condensing, it's a 15.7 year
11 payback, and this is on gas now, it's where it seems to
12 be. There is some oil here. But, in my state, it's --
13 which is Maine, is mostly oil in our district. So, I know
14 that, and I know, when I got over here, I was shocked how
15 poorly solar thermal does up against gas. And, natural
16 gas was more expensive ten years ago, when you look at the
17 charge from National Grid.

18 So, I brought along some suggestions
19 here, as far as just looking, people need something to
20 look at. And, so, what do you do when you have to analyze
21 something, most of the programs seem to be, in the other
22 state, it's all rearview mirror stuff. You look at what
23 happened and you make your adjustments. So, in trying to
24 see which way that would go, I'd like to give you some

1 real data from what's happening out in the world, or what
2 I perceive at least. And, I'm seeing across the board
3 about a 25 percent hit in fuel on these process places.
4 Laundries, I can't find a motel with a "no vacancy" sign
5 on it, perhaps down at the beach about one week. But
6 industry is not moving in that department.

7 So, what are other states doing? Took a
8 quick look at that. And, so, and this where the solar
9 thermal is moving a little better. In Colorado, they give
10 30 percent, or 16K; Vermont is 30 percent, cost of the
11 system, no cap; Oregon, 35 percent/no cap; Georgia, 35
12 percent or a \$100,000 cap; Hawaii, 35 percent or a 250
13 cap; North Carolina, 35 percent, or a 2.5 million cap;
14 Delaware gives 33 and a third for PV, wind, and others,
15 except solar thermal they give 50 percent, 250 cap;
16 Louisiana, which I thought had -- they have a 50 percent,
17 but only on the first 25,000, which gives 12,5 (12,500).
18 This is for a technology that's 4x over our counterpart in
19 PV. And, so, it's limited. They limit the amount.

20 As far as -- I would like to see
21 something higher. I don't have a real direct handle on
22 that. But, when I look at PV, they take the ratings on
23 the panel, and the rewards come from that. On solar
24 thermal, we're -- at 7 cents, it equates to 31 and a

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1 quarter cents a kilowatt, all right? PV, for the same as
2 a kilowatt, a kilowatt is a kilowatt, and we're up to the
3 dollar range, dollar and a quarter, whatever it is. It's
4 so much less for the same kilowatt delivered. And, so, if
5 they're allowed to take the rating on their panels, we
6 could take Column C sunny and multiply it times 7 cents
7 and do more. And, there's some ratings from SRCC where
8 they're taking Column C cloudy, it's a conservative
9 estimate, but I believe it's low, because you come out
10 with these long paybacks, in the teens. We used to throw
11 stones at PV, because that's where they were. Now,
12 they're laughing at us, and we're up in the teens up
13 against this gas. So, what I'm saying is, I believe, from
14 what I've seen in the last two weeks, and I visited a
15 number of businesses, including in Massachusetts. You go
16 down there and they're giving 50 percent from National
17 Grid. And, I go in and I say "Hey, you think you can do
18 anything?" "Sorry, the solar guys were here two years
19 ago." It just doesn't make any sense. Call National
20 Grid: "How many systems have you done at 50 percent?"
21 "Fourteen or twelve." "How many this year?" "Two." Why?
22 Economics. So, it's a question to, from what I'm seeing,
23 of economics of this will even work up against -- if
24 somebody wants to put in instantaneous for 12,000 grand,

1 or 30 or 40 or \$50,000 for a solar system, this doesn't
2 have to be stand-alone economics, but it needs to be
3 closer, and then you may pull the green people over and
4 say "okay, it needs to be some part of green."

5 So, that's what I have to say on that
6 part, on the assessment, of -- we're considering shading
7 issues. We're going to use the Solar Pathfinder. That's
8 a method of telling what type of shading you have. And,
9 it's a very heavily weighted, for photovoltaic, in other
10 words, photovoltaic will make heat earlier than we will.
11 We make heat about six hours of the day. I did an
12 analysis last night. For those six hours, 9:30 to 3:30,
13 we had clear sun for that entire period and we come out
14 with a 25 percent shading issue, on a clear day. So, what
15 I'm saying is is that needs to be looked at and adjusted
16 somehow.

17 As far as the one person or one company
18 walking away with too much, I think it's a good rule,
19 personally. And, I'm not against that. What I am against
20 is selective enforcement. I faced enough of that in my
21 life. And, I don't think that part -- so, you need to
22 find a fair and equitable way that all people can go in.

23 As far as a certification for this
24 field, I hate to see you stop new people from coming in.

1 What I see in this is, we go to the certification classes,
2 and it's all old guys like me in there. And, there needs
3 to be new blood in this industry. And, right now, I don't
4 see a lot that. They're on the computer doing something
5 else. And, it's rugged work. I am on the roof, I am in
6 the tank, I do this work. And, it has tremendous
7 potential.

8 I saw the other day they want to do
9 sidewalk snow melt, and temperatures down there are --
10 efficiency is way up there, all right, terrific. Haven't
11 touched absorption chilling with thermal. Ever heard of
12 "BTES"? Borehole Thermal Energy Storage, up in Canada,
13 Drakes Island -- Drakes Landing. They bored 144 holes,
14 120 feet down, 800 panels, 50 homes, they do 90 percent of
15 their heat loads. All this stuff has so much potential.
16 And, to me, personally, PV is boring, all right? Put the
17 panels up, they will tell you what string inverters to use
18 or micro-inverters. It's plug-and-play, and it works
19 terrific. And, it's a big moneymaker, all right? But it
20 doesn't share the potential that solar thermal does.

21 By the way, and I'm not just putting a
22 plug in for my company, we are heating buildings, all
23 right? A 5,000 square foot building, over in Lebanon,
24 Maine, no other heat. All right? The boiler room is now

1 the owner's office. All right? And, that's it. That's
2 the only -- and, we heat homes. You can do all this. But
3 we ask the state "Can we have some help?" "Well, we have
4 a hot air rebate, but we don't have one for that." And,
5 it's "well, it's all about heat, isn't it? You're trying
6 to heat the home?" "Yes, that's what hot air is about."

7 And, well, so I'd like to see this
8 technology move ahead, because it has so much potential
9 and it has so much good thermal output. But we're
10 struggling up against the gas part right now. When I was
11 here before I hadn't done any analysis. So, I have all
12 this to submit today. And, I'm hopeful that it will be
13 helpful to you in guiding and looking, because I know
14 there's really no way you can know what's going on out
15 there until you actually do the analysis. Any questions?

16 CHAIRMAN GETZ: No. Thank you. And, if
17 you have copies of your analysis, if you could just
18 actually maybe provide them to Ms. Amidon, we will see
19 that it gets into the record.

20 MR. GERRY: Very good. Thank you for
21 the opportunity to speak to you today.

22 CHAIRMAN GETZ: Mr. Weissflog.

23 MR. WEISSFLOG: Good morning. My name
24 is Mark Weissflog. I work with KW Management of Nashua.

1 I'd like to applaud the Staff again for their hard work on
2 this. I know it's a long time in coming, but it's a great
3 move forward.

4 The first item I'd like to just address
5 is the tiers that are proposed: The \$1.25, the \$1.00, and
6 the 75 cents. I believe those tiers are a little bit
7 slighted to the smaller side of the system scale. And,
8 what I'd like to see and propose is that those are changed
9 to encourage larger systems, by spending the same monies
10 or maybe a little bit more and capitalizing on more PV
11 versus less PV. Currently, it caps out at 45 kW. And, if
12 those tiers were reorganized, let's say the first 25 kW at
13 \$1.25, which incentivizes the smaller systems, and the
14 next 25 kW at 75 cents, that then leverages 50 kW of solar
15 for around \$24,000, a little below the cap, a little more
16 PV.

17 For a 58 or \$59,000, you can leverage up
18 to a 80 kW system, if that last 50 to 100 kW tier was 50
19 cents. And, again, that then leverages larger systems
20 with close to or equal to the same monies, or you could
21 cap it at \$60,000. That then promotes larger systems for
22 the same or a little bit more monies again. And, I
23 believe that's what we want to do, is we want to try and
24 get the most or the larger systems, because they're more

1 -- more cost-effective, for the same monies or a little
2 bit more money. Currently, like I said, it's a 50K,
3 \$50,000 account.

4 The other item is allocations, I think
5 that was touched on earlier. I believe that the
6 Commission should include a either a dollar limit or a
7 quantity limit on installers, so that we limit domination
8 of the program. There is some information from other
9 states that programs that have reduced funding levels
10 could be subscribed in the first 20 minutes, let's say; \$4
11 million was spent twice in Massachusetts in under a half
12 an hour. So, not to say that's going to happen in New
13 Hampshire, because of the paper process. They had an
14 automated internet-based process. So, those allocation
15 limits would then limit that domination by any one
16 company, and tie up the incentives, when, in fact, those
17 systems may not get installed. They're just trying to put
18 their application in to reserve their monies.

19 Data monitoring, I believe it should be
20 an utmost requirement that any systems over 10 kW solar or
21 certain size in solar thermal should have automatic
22 reporting and tracking systems. That would ensure the
23 maintenance and the longevity of those systems. And,
24 something that the Commission could use to review. As you

1 get into the larger systems, especially photovoltaics, it
2 becomes a smaller and smaller incremental fraction of the
3 overall system cost. Fifty (50) kW systems, you know, in
4 the \$300,000 range, are actually probably \$270,000 range
5 now. And, for the three or four thousand dollars that a
6 good data acquisition system, with weather station, would
7 add a lot of benefits to the consumer, to the general
8 public, and to the Commission.

9 Level II energy audit, I concur with the
10 Staff that should be strongly encouraged to have a -- or
11 mandate a Level II audit, with strong recommendation to
12 install those improvements for a simple payback of two to
13 three years.

14 One of the items was a stringent -- they
15 were -- you will require a stringent material/labor
16 warranty, but that was the statement with no definition.
17 Typically, for photovoltaic modules, it's a 25 year
18 warranty on modules, with 80 percent power production, 10
19 years on the inverter is pretty standard, and two to five
20 years for the installation itself, no less than two years,
21 but some states require five.

22 On the application, there was a line
23 that the 100 kW limit, that net metering limit, is
24 actually, at least by Public Service, is defined by the

1 inverter size, not by the quantity of modules. So, that
2 may want to be reviewed, just to see what that 100 kW
3 entails. One of the two is a limiting factor. If you
4 have a 100 kW worth of inverters, you might have a system
5 of 110 or 120 kW in size, being that it can't put through
6 that energy.

7 New Hampshire jobs: I'd appreciate the
8 Commission at least to review some way to ensure that some
9 of these monies could stay in New Hampshire.

10 And, just to address the gentleman on
11 the solar thermal. He's absolutely correct; solar thermal
12 systems are more effective, when you're doing a
13 head-to-head paper comparison of solar electric systems.
14 However, one thing they don't accomplish is
15 over-production in the summertime, lifecycle costing in
16 the long run. And, those things being equal is
17 maintenance. Both design and maintenance issues on large
18 solar thermal systems or larger solar thermal systems
19 typically plague those systems. And, if they're not
20 maintained properly, because those are mechanical systems,
21 they seem to go down in production and inevitably get
22 abandoned.

23 So, while solar thermal systems do have
24 the capacity and the capability to produce more per

1 installation or square foot of array area, they do have
2 some drawbacks. And, that's -- any questions?

3 CHAIRMAN GETZ: I think we're all set.

4 MR. WEISSFLOG: Okay. Thank you.

5 CHAIRMAN GETZ: Thank you,

6 Mr. Weissflog. Mr. Steltzer.

7 MR. STELTZER: My name is Eric Steltzer,
8 Energy Policy Analyst for the Office of Energy & Planning.
9 I'd like to thank the Commissioners for an opportunity to
10 speak this morning. Also like to thank the PUC Staff for
11 their diligent efforts that they put forward to get this
12 together. It's very clear that a substantial amount of
13 research for what other states are offering was collected
14 and put into the efforts for this program.

15 We do support the PUC Staff's direction
16 on this application. However, we do have two comments
17 regarding that direction. First, we recognize that the
18 challenge that has been mentioned here is we're trying to
19 do a lot with a little amount of money. And, the
20 direction that the state should be taking on these funds
21 is to go for fuel neutral technologies and allow the
22 technologies to be competing. That said, we also
23 recognize the immense challenges that that puts forward,
24 as far as administering these programs, and that it might

1 not necessarily be practicably reasonable.

2 First off, we recognize that the
3 industry is looking for rebates, you know, and asking for
4 the ease of accessing and businesses to get the funding
5 themselves. It's much easier to do a rebate program.
6 They can think about it ahead of time, and know that
7 there's a source of funding for them. When they choose to
8 go forward on a project, they can do that within any time
9 of the year. However, the ease of implementing the
10 program through an RFP process is much easier for the
11 competitive nature. And, however, it's a little bit -- it
12 stems the ability for the businesses then to access those
13 programs, in that they have to wait until the RFP is
14 available. So, it's very challenging for the Commission,
15 in the situation that they have been put in, to weigh out
16 those two issues. That said, it is certainly a direction
17 that we need to be looking forward to go, to make these
18 programs fuel neutral and allow the technologies to
19 compete.

20 Lastly, I'd just like to mention the
21 perspectives of third party ownership. And, this is going
22 to be a crucial component that -- to allow third party
23 ownerships of these systems. And, appears that there may
24 be some conflict within the PUC rules, and so we would

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1 highly encourage the Commissioners to take a look at those
2 PUC rules, to enable the ownership of these projects to be
3 as wide as possible, to allow the competition to exist
4 naturally.

5 And, with that, I'd just like to thank
6 the Commissioners for the opportunity to speak. And, I'm
7 glad to take any questions.

8 CHAIRMAN GETZ: Thank you, Mr. Steltzer.
9 And, Mr. Button.

10 MR. BUTTON: Please excuse my
11 appearance. I just found out about this about 20 minutes
12 ago. I do residential energy audits. But I was
13 encouraged to come up here by the business I was visiting
14 in Concord. Just to say that the lack of incentives, in
15 general, has driven me out of the state, basically. I do
16 90 percent of my work in Maine. Drive to Massachusetts on
17 a regular basis. And, I think that something needs to get
18 set up here to be comparable to what they have got going
19 on in Mass. and Maine and Vermont. So, thank you for your
20 time.

21 CMSR. BELOW: Could you elaborate? Are
22 you referring to in the audit, in the audit field or --

23 MR. BUTTON: Yes. Yes. For instance,
24 Maine has Efficiency Maine and Vermont has Efficiency

1 Vermont. Both of these programs, they operate a little
2 bit differently, but Efficiency Vermont is basically a
3 clearing house for contractors or auditors. People can
4 put in their zip code and they can find people who can do
5 the weatherization, the weatherization work, or to bring
6 in an auditor. Efficiency Maine is being run by a company
7 out of Massachusetts. They have a \$9 million rebate
8 program. Basically, what it is is, they have -- they will
9 bring in someone like myself to do an audit, it's
10 required. And, then, the project is modeled into their
11 modeling software. And, the client is given basically a
12 contract. And, then, it's up to them to get qualified
13 weatherization contractors in, and they can do that
14 through Efficiency Maine, and the rebates are outstanding.
15 For what they call "Tier 1", 25 percent efficiency being
16 modeled, in the model, it's \$1,500. And, they're now
17 offering a summer bonus program of \$1,000. And, this is
18 cash rebates; no tax credits. It's actually in lieu of
19 tax credits.

20 Then, if you can model the building to
21 have a projected energy savings of 50 percent or more,
22 it's \$3,000 cash, or half the cost of the project,
23 whichever is less. And, then, on top of that is this
24 \$1,000 summer special bonus. And, I'm basically going up

1 there and participating strongly in that program. Thank
2 you for your time.

3 CHAIRMAN GETZ: Thank you, Mr. Button.
4 That's, I believe, everyone that's indicated they wanted
5 to speak this morning. Ms. Amidon, did you have anything
6 further?

7 MS. AMIDON: Yes. Mr. Ruderman, who is
8 the Director of the Sustainable Energy Division, has a
9 couple of comments he would like to present, based on what
10 he's heard today.

11 CMSR. BELOW: I also had another
12 follow-up question that occurred to me, before we get to
13 that. I think, Mr. Gerry, I was curious if you had a
14 reaction to the Staff recommendation from last Thursday
15 that "solar thermal systems [be required to] have a Btu
16 meter to measure output if the system has a collector area
17 of approximately 500 square feet or more"? I was just
18 curious if you had a --

19 MR. GERRY: I had a comment on that. I
20 meant to, I'm sorry. I think you're going to be busy with
21 a Btu meter. However, as this gentleman recommended, Web
22 monitoring is very easy, and it's not that expensive. If
23 you put the system up there for everybody to see, we're
24 going to know what you did, right or wrong. If you got

1 180 on the roof and you got 100 in your tank, you didn't
2 put enough copper in the tank, you haven't got a big
3 enough pipe, you haven't got a big enough pump. If it
4 isn't done properly for everybody to see, so it gives some
5 accountability.

6 As far as the Btu meters, they're going
7 to read a lot of different things. There's one on the one
8 that I have, but it's just not accurate, and it's
9 dependend on the device that reads the flow, which is
10 either transit time or dopler, and it reads particulates,
11 and it works well for variable speed pumps. But, so far,
12 they haven't coordinated that into the program.

13 So, my suggestion would be, for over
14 whatever size systems, I like it because we can see what's
15 going on with the system and monitor it. And, if there's
16 a problem, we know it right away. So Web monitoring, and
17 there's a bunch of it out there, there's some that you can
18 put ten -- ten sensors in your home, you can -- you're on
19 vacation and the power goes down, you can tell what the
20 temperature is anywhere in your house where you have a
21 sensor. The power goes out on us a lot. And, so, that's
22 the direction I would take is Web monitoring.

23 Knowing the Btus before, look, if we go
24 into a place and we do heat reclaiming, it's going to be

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1 different before and after. It's going to make the solar
2 look better than it really is. If you're going to replace
3 the boiler at the same time, it's going to be different.
4 So, I'm not sure how that all equates, if you do multiple
5 replacements in a system.

6 But Web monitoring will at least give
7 some accountability. If your delta-T's [sic], the maximum
8 change between what goes up, what comes back, if that's
9 too large, somebody didn't do something correctly. And,
10 you will learn that. You'll know whether it's working
11 correctly. People here will have that figured out, and
12 they will say "hey, there needs to be a standard for how
13 much", you know, because a system could be -- not enough
14 copper put in, not enough -- big enough raised plate, type
15 of heat exchangers, there's lots of ways to do that. But
16 it will bring accountability, because it will be up there
17 for everybody to see. I look at people's systems all over
18 the United States on this website. And, I'll look at some
19 and "You've got to be kidding me. What are they doing?"

20 You know, and a lot of people, we've
21 seen these systems, we get brought in, and six tube array
22 or six racks of tubes to heat a home on staple-up. And, I
23 ran the number -- they did a wonderful job, but somebody
24 didn't do the very basic on what you're going to need to

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1 heat a home. All it does is heat their hot water. These
2 people got ripped off 20 grand, for a six rack system.
3 It's ashamed. And, people don't know. Web monitoring will
4 put it all up there. People will know, because it will
5 all be available, and these people will be watching it.
6 So, I highly recommend it. Plus, it's much less
7 expensive. So, did I answer that right?

8 CMSR. BELOW: I was just looking for
9 your reaction to that particular recommendation. That's
10 fine. I mean, you're saying that there's -- there is
11 probably some threshold for larger systems where it makes
12 sense to have that as part of the system?

13 MR. GERRY: Yes. Yes, you know, I think
14 so. And, you have it and then you'll know. Just my own
15 opinion.

16 CMSR. BELOW: Okay. Thank you.

17 CHAIRMAN GETZ: Thank you. Sir.

18 MR. BINGHAM: I'm Jack Bingham, from
19 Seacoast Energy Alternatives. I just wanted to add a
20 little clarity to that. It's a fairly simple matter to
21 monitor a hot water system online for production, not
22 pinned specifically to Btus. I agree that Btu meters are
23 a little on the iffy side. It is fairly easy to build a
24 system that monitors the temperature on the roof, monitors

1 the amount of energy in the tank at any given time. And,
2 I think we have to be careful here to not get ourselves
3 tied into a tool that is not terribly accurate, that will
4 determine how these things perform. We need to be careful
5 about picking some sort of approach to this that's
6 reasonable, and not failing -- prone to failure. And, I
7 think Btu meters potentially fit into that category.

8 CHAIRMAN GETZ: All right. Thank you.

9 CMSR. BELOW: Okay.

10 CHAIRMAN GETZ: Mr. Seiler, do you have
11 something?

12 MR. SEILER: Yes. My name is Farrell
13 Seiler. I'm here in two roles; one as a Chairman of the
14 New Hampshire Wind Energy Association, but also as a
15 principal of Granite State Energy Consultants. We provide
16 consultancy to the mush market; municipals, utilities,
17 schools, and hospitals, mostly nonprofits, in a size range
18 vaguely less than 1 megawatt, but above 100 kW, usually
19 two, three, perhaps four machines, depending on the
20 particular project.

21 My principal comment, basically, is that
22 the way I read the design considerations is that you're,
23 obviously, tilting the entire process towards PV and solar
24 hot water. I think that's a wrong-headed approach.

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1 Because, essentially, what is being recommended is that
2 the PUC start picking winners and losers here, in terms of
3 renewable technologies. My sense or understanding of the
4 way the Legislature was thinking about this was not to
5 pick winners or losers, but more or less to keep a -- sort
6 of a level playing field, at least among renewable energy
7 technologies.

8 That said, my conclusion is that the
9 definition should be broadened to include all
10 cost-effective renewable energy technologies. Whether it
11 be hydro or geothermal or biomass, and also of wind. Wind
12 has some specific limitations. I shouldn't say so much
13 "limitations", but considerations. For example, if you
14 say "customer-sited" if you look at it through the prism
15 of PV and solar hot water, you're talking about a building
16 or a structure where the energy would be applied to that
17 particular building or structure's load. We have one
18 project we're looking at now is a hospital. You don't put
19 a wind turbine in a hospital parking lot. You put it on a
20 knoll, maybe, I think, in our case, it was about
21 three-eighths of a mile away, and you simply wire, you
22 transmit that power coming from a three wind turbine
23 project to that hospital, which has a 24 hour load, a
24 significant 24 hour load.

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1 So, the question that is specific to
2 wind, when you say "customer-sited", are we going to have
3 to put a wind turbine in that hospital parking lot and
4 still qualify for a rebate, were it to be available?

5 So, that's one consideration that you
6 would be making, after you decide to say "all renewable
7 energy technologies". And, I would suggest that you keep
8 this docket open, after you make that decision, so that
9 the wind energy folks and the geothermal folks and the
10 biomass folks can come back and say what is specific to
11 their particular technology and their application.
12 Because that does affect the amount of the rebate, the way
13 the rebate is going to be structured.

14 And, with all do respects, in New
15 Hampshire, we don't see a mush market. As a matter of
16 fact, all of our work is west of the Mississippi, because
17 that's where the wind is, for the most part. You don't
18 have sewage treatment plants located at 1,800 feet, that
19 make wind turbines feasible economically. You've got a
20 relatively densely populated area on the Seacoast, which
21 makes siting issues paramount. I think there are four
22 communities on the coast that have restrictive zoning
23 ordinances in terms of height. We don't even look at a
24 wind turbine installation at less than 150 foot or 40

1 meter hub height. It doesn't make any sense in the
2 atmospheric physics of it all to generate enough
3 electricity to make it cost-effective. These are some of
4 the considerations that we would like to address, if the
5 Commission decides to broaden the definition of what would
6 be included in the rebate program.

7 But, I think, finally, essentially,
8 we're saying the Commission should stay technology neutral
9 here, and that we should be able to compete on a level
10 playing field, in terms of reasonable payback periods, of
11 cost-effectiveness, of the history of the particular
12 technology. I don't think the PUC should be in the role
13 of putting "yes" or "no" to a given technology. Simply,
14 what appears to me, to stimulate the development of an
15 industry, a PV/SHW installation industry here in the State
16 of New Hampshire. Thank you.

17 CHAIRMAN GETZ: Mr. Seiler, I did have
18 one question. When you talk about this, the "mush
19 market", and, for instance, this hospital that you're
20 talking about, what's the size of the rebate that would be
21 necessary to make a project like that cost-effective?

22 MR. SEILER: I don't have it. My son
23 does all the heavy lifting, in terms of the economic
24 analysis. In one particular project that we're looking

1 at, the land that the wind turbines would be located is
2 not owned by the hospital. It's owned by a director of
3 the hospital, who was kind enough to allow his land to be
4 used.

5 I'd have to come back later on with some
6 research on that, to say what particular states have
7 incentives. Some states, because of the fact that we're
8 dealing with nonprofits or municipalities or universities,
9 have a different financial structure, where they cannot
10 necessarily use a rebate. We then look maybe at third
11 party financing, third party ownership, a contractual
12 relationship, similar to a PPA, between the entity that
13 has the load and the supplier of the electricity using
14 wind to meet that load. So, it's a little bit -- it's
15 almost a case-by-case, state-by-state, specific type of
16 application or understanding of that.

17 So, if the Commission, as a result of
18 this proceeding, does expand the definition to include
19 "all reasonable renewable energy technologies", we would
20 be prepared to come back with some information along those
21 lines.

22 CHAIRMAN GETZ: Okay. Thank you. Mr.
23 Ruderman.

24 MR. RUDERMAN: Thank you, Mr. Chairman.

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1 Just a few quick comments. First, on the issue of
2 geothermal or ground source heat pumps, we've heard the
3 request today that that technology be included in the
4 rebate program. My understanding of the law is that
5 that's not something that we can do with the Renewable
6 Energy Fund. The Renewable Energy Fund was created
7 through the Renewable Portfolio Standard law, which the
8 Legislature enacted in 2007, which is RSA 362-F. And, in
9 that statute, they define the eligible range of renewable
10 technologies. Ground source heat pumps are not included
11 in that. Geothermal is, but that's referring to
12 geothermal in which you drill deep into the earth and tap
13 into heat that use steam to spin a turbine and generate
14 electricity. So, I believe our rules essentially
15 incorporate the state's RPS definitions of renewable
16 energy technologies as those technologies that will be
17 eligible for rebate programs. So, my understanding is
18 that, at present, the way the law and the rules are
19 written, we could not extend this program to the
20 geothermal systems that we heard about from Mr. Orio.

21 Likewise, we've heard a request that
22 audits be incentivized, energy audits. And, again, I
23 don't think that's really within the scope of the law.
24 The law in RSA 362-F:10 says that "the Renewable Energy

1 Fund is to be used to support electrical and thermal
2 renewable energy initiatives." And, I think a plain
3 reading of that would exclude energy audits, which tends
4 to be grouped more often in the energy efficiency category
5 than under renewable energy.

6 And, you know, my third comment is
7 addressing the thorniest issue here, which is the request
8 that we've heard from more than one speaker, that our
9 programs be fuel neutral, and that we don't pick winners
10 and losers. And, I guess my comment there would be, I
11 completely agree. In an ideal world, we would be fuel
12 neutral. But, in an ideal world, we would have funding in
13 the range of 10 to \$12 million a year, as was projected
14 when the law was written, which would give us sufficient
15 funds to cover a wide range of fuels and technologies. We
16 also would have more Staff resources. Because, quite
17 frankly, it is an incredibly labor-intensive process to
18 create a rebate program for a single technology, let alone
19 for all technologies, and figuring out some way in which
20 all of them could be put on a level playing field. What
21 you heard from Mr. Niebling was, "Don't know exactly how
22 that will be done, but, if we put our heads together, we
23 can figure it out." And, that's possible. But it's not
24 realistic, given that we have here barely enough funding

1 for a very modest commercial PV and solar thermal program.
2 I think you're talking a months' long intensive effort if
3 we were to try to create a program that allowed every fuel
4 to compete.

5 But, I also would say, "give us a little
6 time." We've had funds now for 13 months. Thirteen
7 months we have created rebates for wind, for PV, for solar
8 thermal, and for wood pellets. So, it's not as if we're
9 just picking one or two winners and saying "we're not
10 interested in the alternatives." And, again, it's a very
11 natural progression to go to wood pellets to wood chip
12 heating systems when we have some money. But, right now,
13 if we were to create a program that allowed for, in the
14 commercial sector, all of the various renewable energy
15 technologies that could be eligible, we would have (a) a
16 very large task ahead of us, which would delay this
17 program, I would estimate by 6 to 12 months, and (b) we
18 wouldn't have meaningful funding amounts in those
19 programs, so you would have a wood chip heating rebate
20 system that would probably have a very small amount of
21 money in it. It would be tapped out pretty quickly. And,
22 then, you would have frustrated consumers who would be
23 saying "how could you create a rebate program and run out
24 of money in your first week or your first month?" We've

1 seen this happen in other states with the PV technology,
2 as Mr. Weissflog mentioned. "We've seen \$4 million go out
3 the door in a half hour in Massachusetts for PV."

4 So, it's a laudable goal, and it's one
5 we're working toward in the long-term, as this fund
6 increases in dollar amounts coming in, which we hope will
7 be the case, as our staffing capability adds up. As we
8 build success for the programs that we're putting in place
9 now, we'll have a platform to develop additional programs.
10 But I just think it is completely impractical to argue
11 that, at the moment, with one million or one and a half
12 million dollars, we should create a fuel neutral,
13 open-to-all-comers rebate program. It's just not
14 practical, in my opinion.

15 So, I understand the concerns that we're
16 hearing about this. We're responsive to those concerns.
17 We will try to get to as many technologies as we can, as
18 funds and staff time allow. And, we agree, long term, the
19 goal should be fuel neutrality. We're just, I think, at
20 this point, it's a little bit premature to say "let's
21 implement it right now." Thank you.

22 CHAIRMAN GETZ: Thank you. Oh.
23 Representative Kaen.

24 REP. KAEN: My name is Naida Kaen. I

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1 came here to listen today, but I'd just like to weigh in,
2 having served on the Science, Technology & Energy
3 Committee for the last 15 years. I came here pretty much
4 with the mindset that, what Mr. Ruderman just said, is
5 probably what you and the PUC are up against. I think,
6 from a legislative standpoint, we would ultimately like to
7 see a fuel neutral approach. I'm just wondering if it
8 might be possible, as a compromise here, to put something
9 official in writing or some confirmation that the long-run
10 goal, once we get past this first stage, might be to open
11 it for alternatives.

12 It's not practicable now. That makes
13 perfect sense. But I don't know what the mechanism might
14 be for doing that. It's just a suggestion.

15 CHAIRMAN GETZ: Well, certainly, I think
16 that, without getting ahead of ourselves, I think it's a
17 reasonable observation. And, I think we've all recognized
18 that's there's limited funds. It puts the Commission in a
19 position where it needs to make decisions about what's the
20 best application of those funds in the short-term. But, I
21 think, consistent with what Mr. Ruderman has said, that,
22 ultimately, the goal is to address all reasonable
23 technologies in a way that can encourage and foster the
24 development of those technologies.

1 REP. KAEN: I think it would be
2 reflective of the legislative intent, too, to be balancing
3 the staff time and the growth of the bureaucracy in this
4 -- in this office against the outcomes, also, in the short
5 run versus the long run. Both of those need to be
6 balanced. And, I think the approach that you're taking
7 makes sense. If we can provide the confidence going
8 forward that our goal, if and when additional funds become
9 available, it will be opened up, and we can take the time
10 to design a broader program.

11 CHAIRMAN GETZ: And, I think that is our
12 goal. And, I think that's also, like Mr. Ruderman noted,
13 has kind of been the track record of trying to develop and
14 apply the funds as we've been going and to growing the
15 breadth of the system.

16 REP. KAEN: Thank you.

17 CHAIRMAN GETZ: Thank you. All right.
18 If there's nothing else this morning, then we will close
19 this hearing for the purpose of taking public comment.
20 And, we will wait for any written comments that may be
21 submitted, and take the matter under advisement. Thank
22 you, everyone.

23 (Whereupon the hearing ended at 11:33
24 a.m.)

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