

STATE OF VERMONT
DEPARTMENT OF PUBLIC SERVICE

Comprehensive Energy Plan
Energy Supply, Renewable Energy, Energy Efficiency
Noble Hall, Montpelier, Vermont
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1 COMMISSIONER MILLER: Good morning. So
2 you all don't know this, but you helped me win
3 a bet today and so I want to thank you for
4 that right off the bat.

5 Dave Lamont, our planning director, when
6 we were planning for this event told me that
7 it would be lightly attended. In fact, I
8 think, Dave, you said --

9 MR. LAMONT: I said six.

10 COMMISSIONER MILLER: -- six. I told
11 him he was crazy and placed a bet with him.
12 So then I had an extra incentive to get the
13 invitation out and change the room to a larger
14 size and draw all of you in. So it was just
15 my secret plan to win the bet. So I
16 appreciate it.

17 I'm Elizabeth Miller. I'm Commissioner
18 of the Department of Public Service, and I
19 just want to welcome all of you here today.
20 This is really our first -- this is literally
21 the kickoff for our comprehensive energy
22 planning process at the Department, and it's
23 just really exciting to have so many people
24 engaged with us here today to get us started.

25 It's a real honor to be leading the

1 Department at this time because I really do
2 view this as a critical process for the state,
3 and while I'm excited to be in the leadership
4 role at the Department I can't do it without a
5 really great team, and so before we get
6 started substantively I do just want to
7 introduce all of you to the team from the
8 Department that's here today and will be
9 working on the energy planning process with
10 me.

11 Dave Lamont, planning director, and Dave
12 is a long time state employee, about 30 years,
13 is that right, and is retiring from state
14 government at the end of the month, taking the
15 wise course to go into the private sector for
16 a little bit of time, but is still available
17 to the Department and will be helping us with
18 the planning process going forward, and we
19 really appreciate your leadership. So thank
20 you, Dave.

21 Kelly Launder is also here. She's the
22 assistant director of our planning department.
23 She's back there. Just wave. There you go,
24 Kelly.

25 Let's see. Andy Perchlik, who is

1 sitting right next to Dave, is the executive
2 director of the Clean Energy Development Fund
3 at the Department.

4 TJ Poor is our energy efficiency
5 specialist. He couldn't be here with us today
6 because of a family issue, but TJ is
7 absolutely critical to the energy efficiency
8 work that the Department does and is a key
9 member of our team for this process.

10 Ed Delhagen, who is standing here in the
11 blue shirt, is one of our energy program
12 specialists at the Department. He's also a
13 very experienced facilitator for energy and
14 environmental issues both here in the state,
15 nationally, and internationally as well, and
16 when we were talking about this process Ed was
17 one of the folks at the Department who came to
18 me and said, you know what, I really want to
19 work on this, and so I'm very happy to have Ed
20 facilitate for us today and work with us on
21 the program.

22 George Nagle. George, where are you?
23 George is over here by the window, one of our
24 utility planners in Dave's department, and
25 finally Karin McNeill right here near the

1 entrance table. Karin is an energy grant
2 specialist at the Department, and she is
3 another individual who saw what we were doing
4 and came to me and said can I be part of the
5 team, and the answer of course was absolutely.
6 Karin's been very helpful in the process. So
7 that's the team. You'll see them today as we
8 go forward, and I just wanted to introduce
9 them right off the bat.

10 We can't do it all just at the
11 Department, of course, and so just very
12 briefly there are many state agencies and
13 departments involved. Some of them are
14 represented here today: Agency of Natural
15 Resources, including the Department of
16 Environmental Conservation, of course, is key,
17 and we're lucky today to have the Deputy of
18 ANR Chris Recchia with us over by the window
19 here.

20 Agency of Transportation has been
21 incredibly helpful. Gina Campoli, who I'm not
22 sure if I saw her walk in, she will be here
23 later today, has been meeting with us on the
24 process.

25 Agency of Agriculture of course.

1 Secretary Ross and I have had a number of
2 meetings on this subject and will be working
3 closely with them going forward.

4 Agency of Commerce and Community
5 Development with regard to all of the work
6 force and economic policy issues in the energy
7 plan will be a key partner.

8 The Agency of Human Services on
9 weatherization and efficiency issues in
10 particular; and, finally, Department of
11 Buildings and General Services because the
12 state must lead by its example in its own
13 infrastructure, and the Department of
14 Buildings and General Services has already
15 been and will continue to be a key in that
16 role.

17 It's not just the State, of course.
18 It's also frankly all of you, and I just want
19 to very quickly point out that in this room
20 today we have folks representing a wide range
21 of industries and organizations involved in
22 energy planning, policy, and execution. We
23 have representatives of our utilities here,
24 various energy services companies and
25 consultants, a number of public interest and

1 community organizations, the business
2 community itself is represented, as well as
3 many town energy committees, and I think it's
4 important as we start this process to ensure
5 that we're having a wide cross-section of
6 folks in Vermont involved, and really that was
7 the purpose of having all of you here today.
8 So thank you.

9 The goal really for us is to get your
10 feedback on our planning process and goals for
11 the state energy plan. So Ed will discuss in
12 more detail just very briefly the format
13 today. We are going to have a few substantive
14 presentations to lay the groundwork of where
15 we are at the moment on energy resource and
16 renewables issues. We're going to have an
17 opportunity for breakout smaller discussions
18 so that we really have a chance to hear from
19 all of you, and then we're going to come back
20 and have a facilitated group discussion to
21 provide in the larger framework feedback from
22 those that have come today, and, again, it's
23 really setting the path for this planning
24 process.

25 Today is just the beginning. We do have

1 future engagements planned. The kickoff
2 meeting this afternoon on energy efficiency
3 will be a part of that, as well as the
4 meetings that we have planned on April 7th on
5 transportation and land use issues. Those
6 will also be held here in order to accommodate
7 a number of folks who would like to attend.

8 We'll be offering after that web-based
9 comment opportunity in the form of written
10 surveys that you will be receiving. So
11 anything that you feel you didn't follow up on
12 or have a chance to submit today you will have
13 that opportunity after this meeting.

14 We're also committed to making sure that
15 as the process goes forward we have a chance
16 for more technical engagement on issues.
17 There are people in this room who are experts
18 on biomass, on solar, on thermal, whatever the
19 issue is there are experts in this room, and
20 as we go forward we do want to have the
21 ability to have meetings and discussions with
22 you, and frankly welcome that. So please keep
23 that in mind and feel free to contact the
24 Department as this process goes forward.

25 We're aiming toward public hearings on a

1 new comprehensive energy plan draft this
2 summer, and so again the process today is
3 starting that off. The goal is October 15th.
4 The Governor has asked for final
5 recommendations on the state energy plan by
6 that date.

7 So what is the Comprehensive Energy Plan
8 just to kick us off and remind us why we're
9 here. The statute requires that the
10 Comprehensive Energy Plan include a
11 comprehensive analysis and projections
12 regarding the use, cost, supply, and
13 environmental effects of all forms of energy
14 resources used within Vermont, and that it
15 contain recommendations for state
16 implementation actions on those issues.

17 We are also using the Comprehensive
18 Energy Plan to fulfill our electric plan
19 obligations at the Department. That's a
20 narrower section obviously just on electricity
21 as opposed to all forms of energy usage, but
22 we felt that given the integration with energy
23 planning issues it was important to update the
24 electrical plan at the same time and we will
25 be doing that.

1 So why do we create a Comprehensive
2 Energy Plan? The statutes answer that
3 question, and so just to set us all on the
4 path we do it to assure, to the greatest
5 extent practicable, that Vermont can meet its
6 energy service needs in a manner that is
7 adequate, reliable, secure, and sustainable;
8 that assures affordability and encourages the
9 state's economic vitality, the efficient use
10 -- and provides for efficient use of energy
11 resources in a manner that's environmentally
12 sound.

13 It's a lot of words, but I think it's
14 really important to focus on that as we go
15 forward. This is the path the Legislature has
16 set for us in the planning process. In doing
17 this we are to ensure that the state energy
18 planning process is consistent with all state
19 laws that touch upon the subject. So, for
20 example, state statutes on greenhouse gas
21 emission reductions must be taken into
22 account. The SPEED goals that the Legislature
23 has already set must be taken into account.
24 The standard offer program, those are just
25 some examples.

1 There's a few things that the
2 Comprehensive Energy Plan does not do and I
3 just want to lay those out because the
4 question has already come up a number of times
5 to me and I'm sure will come up going forward.
6 It doesn't prescribe outcomes on specific
7 pending projects. There is a, as you know, a
8 Public Service Board process for specific
9 pending projects and the state energy plan
10 itself is forward looking, and so just, for
11 example, on renewables the state energy plan
12 will be addressing renewables, what the proper
13 mix should be in-state versus out-of-state
14 generation, what the trade-offs are, and those
15 are things that one would expect and we expect
16 the Comprehensive Energy Plan to address. It
17 won't be going back and looking at, for
18 example, pending projects such as Kingdom Wind
19 which are in front of the Board right now, and
20 by the time October 15th comes that process
21 will be at whatever place that process is.
22 The Comprehensive Energy Plan will not revisit
23 or take a position with respect to Lowell
24 different than the Public Service Board
25 process has already engaged.

1 Similarly, on Vermont Yankee it's -- the
2 Comprehensive Energy Plan will not be a
3 document that will reanalyze the pros and cons
4 of relicensing of that facility. The
5 Comprehensive Energy Plan is -- the Governor I
6 think has been very clear about should help
7 Vermont plan for a post-Vermont Yankee future.
8 The base case, as economists sometimes say, is
9 Yankee we have that right now and we know what
10 that energy path looks like for Vermont
11 because we're going through it at this moment.
12 What we need to plan for and what I am
13 committed in leading the Department to plan
14 for is the post-Vermont Yankee future. So
15 just to be real clear at the outset that's the
16 point of the document. It's forward looking,
17 how do we get there in the State of Vermont.

18 So overarching goals. The statute has a
19 lot of words, but I think it's important just
20 to kind of pull out the keys. First of all,
21 it has to address all energy sectors; not just
22 electricity, but home heating and
23 transportation as well. We have to strive for
24 the lower greenhouse gas footprints required
25 by state law, and we have to do it at a cost

1 that keeps Vermont regionally competitive to
2 ensure economic vitality.

3 The stakeholder draft. When I sent out
4 the invitation I provided a link to our web
5 site which contains an old draft from the
6 planning process that began back in about
7 2007/2008 I believe. It was never finished.
8 So just to kind of go through the history the
9 Department hasn't actually adopted a
10 Comprehensive Energy Plan since 1998. We did
11 adopt an electric plan in 2005. That's the
12 document that will also be updated in this
13 process.

14 The 2008 process the Department started
15 did provide a draft and in that draft which
16 we've provided in the link, and there's some
17 hard copies here today, the staff did attempt
18 to include all of the details required by the
19 statute and has been working very hard on
20 updates actually since 2008. It was my
21 judgment coming in that many of you had not
22 had a chance to see that work and that it was
23 important to get that draft and that old work
24 out there because, indeed, there are a number
25 of both factual material in it as well as

1 ideas that deserve attention and will
2 certainly be informing our process going
3 forward, but it's just a starting point. It's
4 not the draft that will come out this summer.

5 In fact, we're looking for input from
6 you today on how, if at all, to use that
7 former work product, whether it's by way of an
8 appendix for reference to the plan that we
9 create or actually an editing process of that
10 document. I think there are opinions. We're
11 looking for input on that today.

12 There's a -- real quickly there's a lot
13 of other state activity going on that touches
14 upon the energy planning process. I probably
15 don't need to list all of them that are up
16 here on the board, but the Legislature is
17 currently looking at energy legislation. Any
18 new statutory mandates will of course have to
19 be considered in the energy planning process.

20 It's my understanding the Legislature is
21 also planning on its own public engagement
22 process. There's a joint hearing coming up on
23 March 31st. I'm not exactly sure whether they
24 are doing morning or afternoon, but you can
25 find it on the legislative calendar, Senate

1 Natural Resource and Senate House Natural
2 Resource, both Senate and House will be having
3 that public hearing.

4 There's other climate initiatives
5 obviously going on at the cabinet level, as
6 well as interagency, such as the climate
7 neutral working group. We actually have an
8 annual report of that group that will be
9 issued very shortly cataloging the efforts to
10 date.

11 The state agency energy plan which
12 exists is in the process of revision and
13 updating. VTrans is going through its own
14 planning process including climate reduction
15 goals. The Agency of Agriculture of course
16 has a number of energy initiatives for our
17 working farms, and Commerce and Community
18 Development is working on green energy jobs
19 initiatives. We have those processes in mind,
20 and we're trying to integrate and harmonize as
21 much as possible.

22 We're also aware of many examples of
23 great work that's already been done by frankly
24 the folks that are here today. I can't
25 possibly list of all of them, but we are

1 cataloging and reviewing those. Renewable
2 Energy Atlas, for example, some of you may
3 have had a chance to look at. It's a fabulous
4 tool and it's something that at the Department
5 we'll be looking at as we engage in the
6 planning process. A number of organizations
7 have come out with their own ideas and plans,
8 and those are things that we want to draw upon
9 where possible to frankly not reinvent the
10 wheel in this Department for work that you all
11 have already done that deserves to be a part
12 of the process.

13 The State ultimately doesn't implement
14 the entire plan. The State sets the policy,
15 and it's really important that the business
16 community, the energy services companies, the
17 communities have a role in the planning
18 process because frankly it's at that level
19 that it will be implemented.

20 So thank you for coming. Appreciate
21 everybody's attention and opportunity to
22 comment today. I'm going to go ahead and turn
23 it over to Dave; is that correct? Are you
24 going to go next? Ed, Ed is going to go next
25 and tell us quickly about the day before we

1 turn to the substance. Thank you.

2 MR. DELHAGEN: Thanks so much,
3 Commissioner Miller. Thank you all for coming
4 today. It's a honor to be here and working
5 with you on helping us build the Comprehensive
6 Energy Plan for the State of Vermont.

7 As we get started today I would like to
8 give everyone a little bit of a sense of what
9 we're going to be doing, what we're planning
10 for the rest of the activities. Before we do
11 that I would kind of like to get a sense of
12 who is here. So if you would just by show of
13 hands give me a sense how many people here are
14 representative of local government. Raise
15 your hand. Okay.

16 How many people are representative of
17 community groups? Maybe the local energy
18 groups and what have you. Okay.

19 How many people here work with utilities
20 or power generators? Okay. A lot.

21 How many folks work with units of local
22 government, state government, federal
23 government? Okay. Several in that space too.
24 Nice diversity.

25 Non-profits. Okay. Lot of non-profits.

1 How about academic institutions;
2 universities, colleges, schools and what have
3 you?

4 COMMISSIONER MILLER: They are in class.

5 MR. DELHAGEN: We have a nice
6 distribution.

7 AUDIENCE: Manufacturers.

8 MR. DELHAGEN: Who else did I miss? Who
9 else is here that we might have missed? Any
10 folks who are not here from Vermont? Okay.
11 Fantastic. Great.

12 Okay. So we have a couple of different
13 pieces to go through right now. First slide.
14 Okay. So here we have an agenda for today.
15 Boy, that came out microfiche. People should
16 have a copy of the agenda. The paper's on the
17 desk.

18 This basically is our outline for today.
19 The first part we have already gone through.
20 In a moment we'll go through some objectives
21 what we're going to try to cover here during
22 the course of the day. We'll then move into a
23 series of short presentations by DPS staff and
24 by the Clean Energy Development Fund. They
25 will provide some context and background for

1 our conversation.

2 After that we're going to move into
3 small group discussions, and we have about 50
4 people in the room right now so we'll break
5 into small groups. There are a series of
6 breakout rooms down below and we'll spend
7 about half an hour, 45 minutes maximum
8 providing an opportunity to share your
9 thoughts.

10 We have some focus questions that will
11 help guide those conversations, but the
12 conversation obviously won't be limited to
13 just those points. We're here to listen to
14 you and hear your points of view and that
15 should give you more opportunity to engage.

16 After that we'll come back together for
17 a large group conversation, and again we'll
18 try to see if we can draw out some ideas on
19 the process on goals and your specific
20 thoughts on both the Comprehensive Energy Plan
21 itself and the process that we're trying to
22 move through to bring it to fruition.

23 We'll wrap up somewhere in the ball park
24 of 11:45 and then plan on time for lunch at
25 noon. How does that sound, everyone? Good.

1 Okay.

2 A couple of housekeeping pieces. If
3 you're already here and you have not had a
4 chance to move around, they have restroom
5 facilities over here on the side, and that's
6 -- I believe that's where there's some water
7 and other places where you can store
8 materials, if you want to hang your coats if
9 you haven't already done that.

10 Okay. As we move into the day's work I
11 would like to suggest some working agreements
12 just so we can have a most productive
13 conversation possible. Try to stay focused on
14 this morning's conversation which deals with
15 the topic of energy supply and renewable
16 energy. That by itself is a very large topic,
17 but we also recognize some people may not be
18 able to attend some of our subsequent
19 meetings. So if this is the only time you can
20 be here and you feel you need to talk about
21 other aspects of the plan, please we welcome
22 your comments, but to the greatest extent
23 possible we're going to try to focus on
24 consideration today on energy supply questions
25 and renewable energy.

1 Later on this afternoon we'll delve into
2 questions having to do with energy efficiency,
3 and as Commissioner Miller said, on April 7th
4 we'll talk to the questions of transportation
5 and land use.

6 We have a lot of people in the room. By
7 my gauge we have about 50 folks in here or so.
8 So I'll ask folks to try to keep your comments
9 brief, minute or two, to allow room for other
10 people to participate.

11 Again, this is the beginning of the
12 process. There will be more opportunities for
13 people to share their comments. There will be
14 more opportunities to provide written comments
15 to the Department throughout the next couple
16 of weeks and months.

17 Once we get started and ask folks to try
18 to keep one person at a time so I don't have
19 to figure out where the whole conversation is
20 flowing, and then we'll do our best -- we've
21 started more or less on time, and we'll do our
22 best to end right at noon so that people can
23 move on with their lunch break. Does that
24 sound like a set of working agreements we can
25 all work with? Yup. Okay.

1 Great. That brings us to our first
2 presentation. We're going to turn the
3 conversation over to Dave Lamont who is the
4 director of the planning and resources
5 division here at the Department of Public
6 Service, and he's going to share a couple
7 thoughts and then you can introduce Andy.

8 MR. LAMONT: Again, thank you all and
9 regarding the bet I admit I lost, and this
10 whole planning thing has always been a
11 challenge for me so I don't know what I was
12 thinking, but I'm actually glad I lost. I'm
13 glad you're all here and hopefully we can have
14 a productive discussion.

15 So I'm going to go over some of the
16 background of energy use in Vermont and give
17 you, you know, just the basics which you
18 already know, but I think it will give us a
19 common platform to kind of focus our
20 discussions or round our discussions.

21 AUDIENCE: Will these presentations be
22 available online?

23 COMMISSIONER MILLER: Yes. We'll post
24 them on the web site.

25 MR. LAMONT: All right. So here's our

1 basic energy supply pie and it's got some pies
2 in it, but it's really interesting because
3 it's kind of a third, a third, a third. We
4 have a third residential and process, third
5 commercial and industrial, and a third
6 transportation, and of that we've got -- if
7 you look at the residential sector, we've got
8 a lot of electric use, some oil use, little
9 bit of renewable. Transportation obviously
10 mostly all gas petroleum use, and if we look
11 at our commercial and industrial sector, very
12 much a lot of electricity use in that sector
13 and some other fuels. So it's a mix of fuel,
14 a fair amount of electricity, a fair amount of
15 dependence still on oil and a little bit on
16 natural gas.

17 If we look at our history of
18 consumption, I think it's interesting. Even
19 here in Vermont our consumption of energy
20 continues to increase, and this goes up
21 through 2005 and I expect it drops off a
22 little bit as we hit into the economic
23 recession that we're in, but nonetheless we
24 see it increasing, and if we look at -- if we
25 look at the electricity sector, you can see

1 that is growing quite a bit, and if we look at
2 transportation, that seems to be growing quite
3 a bit.

4 So despite our efforts and despite our
5 ethics, nonetheless, our energy use is growing
6 and we're continuing to put not only a burden
7 on our supply chain and a burden on the
8 environment in terms of emissions, and I want
9 to paraphrase George Carlin here a little bit
10 and say that you know it's interesting. If
11 you think about how much energy the average
12 person uses, it's really interesting when you
13 think half the people use even more than that.
14 So it's -- his comment was how stupid the
15 average person was and goes on from there, but
16 nonetheless it applies to energy. We're all
17 guilty. We all do it. Somebody is making up
18 the components of this chart, somebody in this
19 room and elsewhere within Vermont.

20 A while back the Governor did a climate
21 change report and this is one of the outputs
22 of that. This is the base case report, and in
23 terms of looking at carbon emissions going
24 forward and as you can see on the bottom
25 that's the electric -- down here is our

1 electric future, and this is essentially the
2 high emission scenario where essentially all
3 the electric -- all of our expiring contracts
4 were essentially replaced with emitting
5 sources, but potential for a big increase in
6 carbon emissions from the electric sector.
7 Some of this with the new Hydro-Quebec
8 contract is now non-emitting. So I think
9 assuming that contract gets approved by the
10 Board that will go down, and you see
11 residential, commercial and industrial pretty
12 flat in terms of use, not a lot of projected
13 savings there the base case, and I think
14 that's what we're all about here, trying to
15 change the base case.

16 And transportation as well. I think
17 you'll see a slight increase in
18 transportation. As the stock of vehicles
19 turns over vehicles will get more efficient
20 even under a base case scenario so we will use
21 less energy for transportation. The housing
22 stock, on the other hand, much longer
23 turnover, much more difficult to achieve kind
24 of end-of-life savings or replacement types of
25 savings in that sector.

1 There's many, many uncertainties. I'm
2 not going to read these, but that's the issue
3 with planning for energy is that it's so
4 uncertain because there's so many factors that
5 are just out of our control in the energy
6 sector that decisions that you make today you
7 really don't know what they are going to be in
8 the future, and so you have to do the best you
9 can with the information that you have and
10 that's what kind of this whole planning
11 process is really all about.

12 We do have a potential game changer, and
13 I think this is kind of interesting this whole
14 development of shale gas which has a number of
15 implications especially in the electric
16 industry, and I think the biggest is -- is the
17 fact that it's likely that these huge deposits
18 of gas that have been found in Pennsylvania,
19 and I realize there are some environmental
20 issues with extracting it, but I think there's
21 the potential -- well but there's
22 environmental issues with all forms of energy,
23 and I think if the potential I think for
24 keeping prices down in the electric sector is
25 large because within New England and for that

1 matter within the rest of the country a lot of
2 our electricity is driven by natural gas, and
3 to the extent electric prices are lower that's
4 good for things like electrification of
5 vehicles, electrification of other home and
6 industrial processes, but it's not good for
7 renewables because renewables in some sense
8 have to compete in this market, and so to the
9 extent that the kind of the base clearing
10 price, energy prices are lower makes it more
11 difficult for renewable electric supplies to
12 compete, but it is good for fuel substitution
13 kind of things.

14 I think it also has the potential to
15 alter somewhat the climate debate in that to
16 the extent that this kind of gas can be used
17 as a substitute for coal, this may provide
18 some impetus and some value in terms of
19 offsetting coal use and looking at the impacts
20 of other electric generation on the climate.

21 So I think it's a real potential game
22 changer. I think we have to see how it plays
23 out and see what the results are, but it's
24 there and it will be a force going forward.

25 There's also other issues of uncertainty

1 that, again, planning in an era of uncertainty
2 is who knew months ago or a year ago gas
3 prices were low, everybody was happy, things
4 were good. Now we've got the events in the
5 Middle East really have an effect on these
6 things. So a lot of times these things happen
7 that are just out of our control, and we
8 really have to plan to have a robust and an
9 energy future that is able to withstand the
10 various pressures that we know are out there,
11 and as well as the uncertainty that we see
12 going forward.

13 Looking at the electric side we have a
14 -- because of the new -- because of our new
15 Hydro-Quebec contract, which is this right
16 here, this gray bar, we fulfill a substantial
17 amount of what I call or what we call the
18 white space going forward, and the white space
19 is the uncommitted resources out there. I
20 think I've got the Commissioner to realize the
21 white space is not a problem but an
22 opportunity, and again that's another thing
23 we'll look at here, how we want to fill this
24 white space, but as a state we do have --
25 compared to other states we have a fair amount

1 of committed resources.

2 On the electric side customers know what
3 roughly two-thirds or half of their power is
4 going to be going forward for a fairly long
5 time. That's unusual within the other New
6 England states. So we're fortunate that we've
7 maintained our utility structure the way it
8 is. We have resources that have been procured
9 for the benefit of ratepayers and we'll
10 continue to do so out into the future.

11 So, again, there are many reasons to
12 plan for a thoughtful energy future, and I
13 think that to the extent we can craft together
14 a rational energy future, one that's robust
15 and can withstand some of these pressures, I
16 think that's what this process is all about,
17 and hopefully we can devise policies that will
18 accomplish that goal.

19 So, again, thank you for coming and I'm
20 going to turn it over to Andy who is the
21 Director of the Clean Energy Development Fund
22 to talk about the renewable energy in Vermont.
23 So thank you.

24 MR. PERCHLIK: All right. As Dave said,
25 I'm the Director of Clean Energy Development

1 Fund. I'm not officially a member of the
2 Department of Public Service yet. That's why
3 I get to use a cool background.

4 This is not supposed to be a thorough
5 investigation of all renewables, but just a
6 quick overrun of what are we talking about.
7 Renewables. There's still some debate what we
8 should call renewables and what we should or
9 shouldn't. So this will give you a quick idea
10 what we're looking at when we talk about
11 renewables.

12 You know in that sense this is -- the
13 Comprehensive Energy Plan it's not just about
14 electricity. We're talking about electricity
15 and thermal usage, whether that's process heat
16 or just heating our homes and businesses
17 throughout the winter. So this gives you a
18 quick rundown of the five basics; biomass,
19 geothermal, hydro, solar, and wind, and then
20 some subgroups in there, and these are, you
21 know, things that can be discussed as part of
22 the energy plan as we move forward.

23 This is -- Dave kind of had some of this
24 on his pie chart, but I think it was very
25 important. Simple pie chart to look at.

1 Electricity is about 40 percent. Gets a lot
2 of the attention, but it's just 40 percent,
3 but about half of that electricity is
4 renewables. So we're doing pretty good on
5 electricity, but even if we got to a hundred
6 percent of our electricity from renewables, we
7 would still have to deal with the 61 percent.
8 Only about five percent of that non-electric
9 energy is getting -- we're getting it from
10 renewables at this point, and these are all
11 averages.

12 So if you do the math, that comes to
13 about 23 percent of our total energy. Since
14 so much of our electricity is renewable we're
15 at about 23 percent of our total energy which
16 actually I was surprised that it was that
17 high. That's including out-of-state. So this
18 is including Hydro-Quebec to get to that 23
19 percent.

20 You know the two main legislative goals
21 around renewable energy, and there's a goal
22 and requirement. The goal is this 25 percent
23 by 2025, although to be clear that goal is
24 focused around in-state. So we wouldn't be so
25 close to meeting that goal because the 23

1 percent that I talked about includes
2 Hydro-Quebec. To reach the legislative goal
3 of 25 by '25 would be to meet it with in-state
4 resources.

5 AUDIENCE: You said residential is 2
6 percent renewable and commercial is 11 percent
7 renewable, transportation is zero. How do you
8 get to 23 percent given that earlier we saw --

9 MR. PERCHLIK: That was the non-electric
10 renewables, those figures. So, you know,
11 those pie charts Dave had, he had electricity
12 remember the industrial was 66 percent. Well
13 half of that 66 percent of electricity is
14 renewable because of the HQ contract and the
15 in-state renewables we have with hydro and
16 others.

17 The SPEED requirement is the five
18 percent growth in renewable energy by 2012.
19 It looks like we're going to meet that goal or
20 that requirement, and we can get into
21 specifics if you want.

22 So I'm going to go through the five
23 different renewals pretty quick here. There's
24 some basic facts that I threw out there on
25 each of the five renewables where we are.

1 Biomass is 6 and a half percent about. We
2 have quite a bit of electric generation
3 already going. We have several CHP plants
4 recently like Middlebury College, Green
5 Mountain College have done this. We have
6 older ones like at the North Country Hospital,
7 or we have industrial places like lumber
8 mills. We have a lot of schools, we have
9 colleges, many state buildings that are using
10 wood as heat. We still have a lot of
11 residential use of cord wood. We have pellets
12 are increasing. I couldn't find any recent
13 quick pellet data to throw up there, but we
14 know it's increasing quite quickly.

15 Farm methane about three megawatts right
16 now. This is going up. We have several more
17 that are going to be in construction this
18 spring and summer, and I think it won't be too
19 long where we'll be five megawatts of farm
20 methane digesters, and you can consider most
21 of those farm methane digesters and combined
22 heat and power because most of the heat is
23 being used on the farm.

24 More biomass, biodiesel. There's real
25 active efforts underway to increase in-state

1 uses of biodiesel, not about importing palm
2 oil from Indonesia, but actually using our
3 agricultural base to meet our agricultural use
4 for diesel fuel. And then we have landfill
5 methane, the three ones there about 12
6 megawatts of electricity we're getting from
7 landfill right now.

8 Geothermal, not a lot going on with
9 geothermal. Way under one percent of thermal
10 load. I don't even know if we have over a
11 hundred so I said dozens. There's -- we don't
12 even have good record keeping about geothermal
13 use in the state, but there's some examples of
14 big projects. The State Office Building in
15 Bennington is going to be putting a very large
16 geothermal system to heat and cool that entire
17 state building. Champlain College has put in
18 a really successful geothermal heating cooling
19 unit. NRG Systems in Hinesburg, and there's
20 other examples out there. No electricity,
21 remember, from that table at the beginning.
22 Only for heating and cooling.

23 Similar we're talking about PV for
24 electricity and solar thermal for heat. It's
25 still a very tiny percent of our electric

1 load. Maybe even less than .1 percent at this
2 point. We have a lot of PV for our state. We
3 have 719 net metered systems at last count and
4 we have more coming in every week. I
5 predicted by the end of 2012 we would have
6 about another megawatt of kind of residential
7 small scale systems going in. We have one
8 megawatt system that was installed last year,
9 but there's another 4.4 megawatts scheduled to
10 be constructed this next spring and summer,
11 plus some other kind of medium-sized projects.

12 On the thermal side we have around 500
13 solar systems in the state today. These are
14 usually smaller scale, home.

15 AUDIENCE: Are the, for instance, the
16 top bullet there about .1 percent, does that
17 include the projects that are due to go online
18 this year or are those in addition?

19 MR. PERCHLIK: It would be in addition
20 to that, but it's not going to change much.
21 The capacity factor's so low that it's going
22 to be hard to get over one percent. We have
23 to be pretty aggressive. There's the old
24 Grandpa's Nob turbine.

25 So right now wind is a -- isn't much

1 more than solar at this point since we don't
2 have a lot installed. We have .2 percent of
3 load today. We have -- there's a picture of
4 the Searsburg facility. That's a 6 megawatt
5 facility. Then I've listed the three that
6 have been granted conditional CPGs; Sheffield
7 has met their conditions. There's still an
8 appeal going on, and then we have Deerfield
9 and Georgia Mountain, and then in the
10 permitting process we have Lowell, and there's
11 145 net metered systems, but only going -- all
12 those together only 1.4 megawatts, and if you
13 build all that, if you build all of the wind
14 projects that got CPGs plus Lowell and kept
15 those included, the net metering, which is
16 pretty small on a capacity factor, it's about
17 six percent of our total electric load we
18 could meet with wind if all that was built.

19 AUDIENCE: And are you talking about
20 capacity or --

21 MR. PERCHLIK: Capacity, and I figured
22 it at 28, and then these are just some of the
23 questions. This is -- that was just the quick
24 run down of the five renewables that we're
25 looking at, and there's a whole bunch of

1 questions about all these renewables and we're
2 not here to tell you what they are, but to
3 hear what you guys think about all these
4 renewables and how we make these trade-offs
5 and how we go forward and do we go forward,
6 should we be promoting renewables or should we
7 not, and, if so, how do we do it and how do we
8 do these trade-offs and balances that we're
9 going to look at.

10 COMMISSIONER MILLER: Thank you. Ed is
11 going to send you off on your group.

12 MR. DELHAGEN: Thank you, Dave and Andy.
13 Okay. We're going to try to get back on our
14 schedule. We're a little bit beyond right
15 now, but we're going to be breaking up into
16 some small discussion groups, and we have a
17 set of focus questions that we would like to
18 get your input on.

19 When we head into our breakouts you'll
20 find in your area some yellow sheets that have
21 some questions on them. These are what we're
22 going to try to focus on, and those questions
23 basically deal with what are the top one or
24 two concerns or aspects of energy supply and
25 renewable energy to consider in the state's

1 energy future over the next ten years, and
2 what options do you see can help Vermonters
3 meet their energy needs in the future, and
4 then a final one, which Liz was framing at the
5 beginning, should the State set additional
6 goals or targets for energy areas, and, if so,
7 what targets and through what mechanisms
8 should they be encouraged or required.

9 These are some pretty open-ended
10 questions that we're looking for some feedback
11 on, and if you would like to, there will be
12 forms in each of the breakouts for you to use
13 if you want to write down some specific
14 comments and then submit them. That's for
15 your option. You don't need to do that unless
16 you want to, and if you would like to take
17 these with you and then fill them out and send
18 them in, you can do that as well.

19 In each of the groups will be a
20 facilitator who will be capturing notes and
21 bringing those notes back and that will be
22 part of our record for our conversation, and
23 we have about 60 people in the room right now
24 so I'm going to try to break us up into
25 relatively even numbers. We'll have roughly

1 12 or 13 per group. Try to encourage folks to
2 bring a diversity into your group. So if you
3 came here with three or four or five folks, I
4 encourage you split up and find different
5 groups so we don't have everybody sitting in
6 one group, and find that the conversation will
7 be richer if we have a diversity, and we saw
8 at the beginning we have a lot of people with
9 different organizations and different points
10 of view here so we would encourage that
11 conversation.

12 So to break out all breakout rooms are
13 in the lower area. When you head out through
14 these doors go down the stairs and there's a
15 library room and there are a series of rooms
16 attached to those. Your facilitator will help
17 you find your particular space, and I'm going
18 to try to do this relatively easily here.
19 Just going to use rows. So this first row
20 here will go with Karin. Where is Karin?
21 Okay. Karin, come on over so everyone can see
22 you.

23 Second row will go with George. George,
24 want to hold your hand up. Everyone from row
25 two, this is row two right here, everyone see

1 George. Okay.

2 Row three will go with Andy who was just
3 here. You all know Andy. Row four will go
4 with Dave. Okay. Row five will go with Kelly
5 right here. Row six will go with me. This
6 group here we're going to split and have folks
7 from this front area here go to one. You guys
8 can go to row two. You guys can go to three.
9 This group can go to four, this group five,
10 and back you can go to six.

11 So it's going to be relatively loosey
12 goosey.

13 (Small group discussions. Recess.)

14 MR. DELHAGEN: Thank you so much.
15 Sounded like there were some great
16 conversations. I heard a lot of chatting in
17 all the groups. We're off and running
18 catching a lot of good feedback. If you did
19 fill out one of these yellow forms, I'll place
20 a box by the door. Please make sure that you
21 put your comments in this box so we can get
22 them, and again if you have additional
23 thoughts, please feel free to take those forms
24 with you and send them back to us.

25 We're going to move into a larger

1 conversation, and I've posed a set of focus
2 questions for us to consider, and these
3 questions are a little bit more detailed and a
4 little more specific than what we started with
5 in our small group, and we recognize that some
6 folks may have other comments and other
7 thoughts that you would like to share with us
8 and we certainly welcome those.

9 These are a few questions that have been
10 very much on our minds as we think about the
11 Comprehensive Energy Plan, and as we talked
12 about and as Commissioner Miller identified at
13 the beginning, there are many different
14 aspects and facets for us to consider and many
15 choices to be made.

16 So there are questions that we have in
17 front of us, should give us an opportunity to
18 start to dig a little bit deeper and get a
19 sense what your thoughts are, what your
20 comments are. So, for example, one of the
21 questions is how much emphasis should the
22 state place on carbon as a driver for energy
23 policy versus other criteria for energy
24 development such as cost?

25 Second one is if you had to choose

1 between in-state renewables -- renewable
2 supplies with higher costs or out-of-state
3 non-renewable options with lower costs, what
4 would you choose? And some of these are
5 intended to try to tease apart your thinking
6 so we can get a better sense of what your
7 thoughts would be for us moving forward as a
8 state.

9 And the third one is if cost
10 effectiveness is an important criterion, what
11 should be included in price. Should that
12 include things like externalities like carbon,
13 other resource costs; for example, the lost
14 heat from -- that you are going to have to
15 make up for switching out an incandescent
16 light bulb. So there are a lot of factors
17 that can be brought into place.

18 So these are a handful of questions to
19 get us going, and I would like to start -- I
20 have asked a couple folks to help us get going
21 on this and provide some of their thoughts.
22 Again, if you have other things you would like
23 to speak about, please when you speak I would
24 ask you to identify yourself, and if you're
25 here with an organization and you would like

1 to represent that please do so, so our court
2 reporter can capture your name and
3 organization. Okay. All right.

4 Johanna, how about if we start with you,
5 share a couple comments.

6 MS. J. MILLER: I'm Johanna Miller. I'm
7 the energy program director at the Vermont
8 Natural Resources Council, and VNRC also is
9 coordinator of the Vermont Energy and Climate
10 Action Network with several organizations, and
11 VCAN is the umbrella of about a hundred
12 community energy groups in Vermont, and when,
13 again, talking with Liz and Ed, and the VNRC
14 is very excited about the public process
15 you're going through right now. We have our
16 roots in planning and land use and sustainable
17 solutions for the State of Vermont, and we
18 have long advocated for a Comprehensive Energy
19 Plan to guide us forward to figure out how the
20 State of Vermont is going to thoughtfully meet
21 our energy needs, and so we participated in
22 the 2008 draft.

23 We commented on that with some of our
24 colleagues and other organizations, and I just
25 would like to just comment on how radically

1 different this process is. It's a public
2 engagement process where you are asking us to
3 provide our input, and I just want to say
4 thank you so much for the leadership that
5 you're already demonstrating, and we are glad
6 to partner with you and be here with all of
7 you in this room who have some valuable ideas
8 to add to the equation.

9 So broadbrush overview, and I would also
10 say that we're starting from really solid
11 places. There's been a lot of work done, as
12 Commissioner Miller articulated, and we have a
13 really solid foundation to work from
14 including, you know, the existing drafts of
15 the plan. Those are recommendations. Now we
16 need implementation strategies.

17 The Governor's Climate Change
18 Commission, which was a couple year effort
19 that brought together lots of stakeholders and
20 good thinkers, they came up with a set of 38
21 policy recommendations that I would suggest
22 would be a really strong foundation to start
23 from as far as prioritizing where the State is
24 going to put its investments and where the
25 state is going to prioritize public policy.

1 Those -- so we have a strong foundation to
2 start from.

3 With regards to another thing with the
4 Comprehensive Energy Plan is that VNRC wants
5 to see increased development in efficiency and
6 renewables, and we know there's a better way
7 forward, and I think the Comprehensive Energy
8 Plan will also help us get away from site
9 fights.

10 In our small group discussion we talked
11 about it was mentioned for a wind siting
12 process, something that either says where we
13 shall not build or where we might look to
14 incentivize development. I think that's a
15 great point.

16 VNRC has also been working on biomass
17 projects, and this is another issue that's big
18 for communities across the State of Vermont.
19 A Comprehensive Energy Plan will help us get
20 away from the first-at-the-trough scenario.
21 So it's not just the people who are there with
22 the ideas first, it's the best ideas that are
23 going to move forward. So I think that's
24 really important.

25 So Ed asked just to comment on a couple

1 of these. I'm really looking forward to
2 hearing all of your comments, but I think with
3 the first answer to the question I would say
4 is how much emphasis the state places on
5 carbon I think would be significant. As
6 Commissioner Miller noted, we have state goals
7 and we are so far from meeting our current
8 reduction goals that we have to place an
9 emphasis on carbon, and that's going to be --
10 it's going to have to be by necessity the wave
11 of the future.

12 So if you had to choose between in-state
13 renewable supplies with higher costs or
14 out-of-state with lower costs, I would say
15 again renewables and energy efficiency is
16 going to be the wave of the future, but the
17 Department of Public Service also went through
18 a very robust process in 2007 where it asked
19 Vermonters to answer that and other questions,
20 and Vermonters answered. They said that they
21 want to see development of in-state renewable
22 supplies even if they had to pay more. So,
23 again, we have a foundation to start from and
24 we should.

25 And, lastly, this is a relevantly

1 important question and we talked about it in
2 our small groups just moments ago, but yes
3 without a doubt externalities should be
4 included in cost, and how we do that, that is
5 a big question. So I'm looking forward to
6 hearing from you all, and I really want to
7 just thank you again for what you're doing.

8 MR. DELHAGEN: Okay. Thank you. We
9 have asked some other folks who share
10 different points of view to try and help get
11 this conversation rolling. So I've asked Doug
12 Smith from Green Mountain Power to share a
13 couple comments as well.

14 MR. SMITH: Good morning, folks. I'm
15 Doug Smith. I manage energy resource planning
16 and rates at Green Mountain Power, and I
17 appreciate the opportunity to speak.

18 First, just this Comprehensive Energy
19 Plan is a very educational document and a
20 constructive one. Just on the form and
21 structure of that document I think a comment
22 that GMP has is the Department will want to
23 spend a good bit of emphasis on what you might
24 call the executive summary or teasing out what
25 the highlights are. There's a ton of good

1 information in there, but I think a common
2 theme that my colleagues had, and it sounded
3 like some of you folks, was there's so much
4 there what's the top priorities; the top, I
5 don't know, five or eight themes, in
6 particular, actionable items that in the next
7 five years look like the ones that in your
8 views would be the ones to hit, help to tease
9 that out visually and in the narrative and
10 that will be constructive. Leave a lot of
11 details in there and we wouldn't recommend
12 pruning them out, but a streamlining of the
13 message upfront would be helpful.

14 Secondly, it was impressive to see a
15 number of the slides that the Department
16 presenters put up to kick off this discussion.
17 It really captured current events in a number
18 of ways. In the power markets and in the
19 portfolios on the electric side, I'm an
20 electric planner, there's a lot that's been
21 going on in Vermont with respect to
22 procurement of new long term resources,
23 renewables, most of them low emission, stable
24 prices. We have a good core of portfolio
25 building and I think you captured that.

1 I do want to emphasize one thing Mr.
2 Lamont said about the transformation of the
3 electric industry. More generally power
4 prices are down and experts are telling us
5 they are going to stay down in part as a
6 result of the natural gas technology
7 developments that he mentioned.

8 Just to give you some sense that shale
9 gas, which provided a percent or two of the
10 country's natural gas a few years ago, is up
11 to about 20 right now and is probably headed
12 higher. It's not a cure all. GMP is not
13 planning its portfolio based on flat electric
14 prices in the future. Okay. I'm just telling
15 you though that now we are looking at prices
16 like five, six, seven cents a kilowatthour for
17 more than a few years, a decade of power.
18 That's a lot different than it looked a couple
19 years ago. A lot cheaper. We were looking at
20 8, 9, 10 cents a kilowatthour for renewable,
21 for gas fired or other emitting power sources.
22 That's a material change.

23 With respect to renewable procurement,
24 finally, the portfolios -- I liked the chart
25 the Department showed. Vermont right now is

1 on a path -- or I'll stick with my company,
2 GMP. We're on a path to be about 15 or 16
3 percent what you might call premium or class
4 one renewable in the sense that other states
5 classify new renewable sources. So that's
6 wind, new hydro, biomass, solar. That will
7 put us and I think a number of other utilities
8 in the state in a leading position relative to
9 what other utilities in the region are doing.
10 So we're -- we've got more to do, but we're
11 off to a good start.

12 With respect to the questions I'm not
13 going to swing at all of them, but a couple of
14 thoughts. First, with respect to emphasis on
15 carbon, clearly GMP believes that is a
16 material and important emphasis. The
17 touchstone themes of our energy plan are the
18 cost, carbon, and reliability. Now I mention
19 them altogether because our plan entails a
20 balance, and I think one of the themes that we
21 would put to the Department is to emphasize a
22 balance in terms of the various criteria. I
23 think state statute encourages us to do that
24 as well as common sense.

25 So a balance between lowering our carbon

1 and keeping our electric carbon footprint low
2 and the costs incurred to do that. I think
3 that would be our main message. Those wind
4 projects, Hydro-Quebec purchases, the ones
5 Dave Lamont mentioned earlier, those are our
6 examples of how to do renewables cost
7 effectively, and that's a message we would
8 also offer to do that, focus on the least
9 costly ones first.

10 Utility ownership of renewable power
11 sources can be a cost effective way to get
12 benefits from renewables not just over like a
13 10 or 20-year contract, but even longer than
14 that, and that's a good -- I think a
15 constructive theme for you all to consider as
16 well.

17 One thing I need to bring up though in
18 closing on the carbon, maybe this is a little
19 bit technical or wanky, but I think it's
20 important. The current renewable guidance of
21 statute in Vermont, so-called SPEED program or
22 rubric, entails the sale of renewable energy
23 certificates from new renewable power plants
24 developed in the state. That is a policy that
25 is intentioned, posing, if you will, with a

1 policy that I'm hearing a lot of folks in this
2 room emphasize which is we need to keep the
3 carbon down. It's a tradeoff the state will
4 need to make.

5 The Public Service Board is having a
6 proceeding on that topic, but if I had to pick
7 sort of one item that's in the front of the
8 public policy realm, it would be what are we
9 going to do with the SPEED program? Is it one
10 in which Vermont sells the renewable energy
11 certificates and basically supplies renewables
12 to other states, or is it one where we retire
13 them here and basically claim a very low
14 emitting high renewable portfolio.

15 The last comment I had for you was on
16 the second question, if you had to choose
17 between in-state renewables and out-of-state
18 which one? Well we've been choosing in our
19 own planning a lot of in-state renewables.
20 You're all familiar with the Kingdom Community
21 Wind project, which we think is a really cost
22 effective option for our customers. Solar and
23 hydro expansions as well. We have a lot going
24 on, but so in general, if it's not all that
25 much more costly than standard power from the

1 grid, in-state renewable looks good but not at
2 any cost, and in these circumstances I think
3 it's important, as Mr. Lamont said earlier, to
4 keep in mind that we can develop a
5 constructive power portfolio with a reasonable
6 pace of acquisitions of new renewable sources.

7 From a power portfolio perspective we
8 don't need to fill in all that white gap on
9 the chart immediately. If we keep up a
10 reasonable pace of renewable procurement, we
11 can balance the cost and not have what I call
12 undue electric rate pressure and really get to
13 a very diverse power supply that I think the
14 stakeholders in Vermont want. Thank you.

15 MR. DELHAGEN: Great. Thank you so
16 much. We have one other set of introductory
17 comments we asked to help kind of feed our
18 conversation and set some foundation, and this
19 is from Renewable Energy Vermont and Martha
20 Staskus is going to share some thoughts.

21 MS. STASKUS: First and foremost, I want
22 to reiterate again, I've heard it from several
23 folks, thank you. Thank you for doing this.
24 It is a pent-up energy, no pun intended, but
25 glad to see it happening. Glad to see a

1 pretty rapid timeline will give us some
2 foresight moving forward, and that sort of
3 leads to our -- the Renewable Energy Vermont
4 represents energy efficiency, and we are
5 concentrated on businesses and we're
6 concentrated on creating jobs. So a lot of
7 our focus is for long term creating certainty,
8 reducing uncertainty so that we can promote
9 businesses, create more jobs, and that we
10 think will be effective. You have to forgive
11 me. I've been out of town since last night so
12 I'm trying to get back into the groove here.

13 Another thing we would like to see we
14 recommend the promotion of in-state renewables
15 not only for the cost, we also think it will
16 help in considering -- and I hope that the
17 Department of Health is a part of this process
18 in bringing the concerns for creating -- it
19 will help reduce health costs as that
20 discussion goes forward, and I'm just going to
21 keep it real short here, Ed.

22 We are encouraged with what's going on.
23 We thank you for doing this. We also would
24 like to encourage and support, as I've heard
25 it stated earlier, walking the walk. Having

1 these -- the state look at renewables, solar
2 projects, reducing the cost of electricity at
3 the state facilities I think will be extremely
4 effective. I'll leave it at that.

5 MR. DELHAGEN: Okay. Great. So we have
6 heard a couple of opening themes, conversation
7 about renewables, reflections on carbon, and
8 pricing points. I would like to turn it over
9 to other members of the room. Very much like
10 to hear your comments.

11 Again, these are some of our focus
12 questions. You can talk to one or all, or if
13 there's other points you want to talk to as
14 well, but I would ask you to put your hand up.
15 Kelly is going to try to -- keep the mike --
16 please keep the mike close enough so we can
17 get good audio here.

18 MR. CERALDI: My name is Ted Ceraldi and
19 I'll speak now as an architect. Are there any
20 other architects in the room? I'm surprised.
21 I'm really surprised.

22 The international community worked on
23 the national building code a number of years
24 ago. I helped work on that. Presently by
25 2012, I don't know if this has anything to do

1 with this or not, by 2012 there will be an
2 international rebuilding code and this is
3 worldwide. This will preclude a lot of the
4 issues with regard to carbon, with regard to
5 energy use, with regard to how assembly
6 structures are built in this country. I
7 suggest that we adopt that as a state.

8 I also suggest that we implement
9 retrofitting buildings to come into
10 conformance with that, and as such we will
11 save enough energy to preclude putting in any
12 additional energy plants in this state. Thank
13 you.

14 MR. RENSTROM: One of the things -- my
15 name is Eric Renstrom (phonetic). I'm from
16 Mad River Valley, and one of the things nobody
17 has really talked about with carbon is what it
18 is all about, and there's only one state
19 province in North America has done anything
20 really about it in a big way and that's
21 British Columbia.

22 Now about four years ago they introduced
23 a carbon tax and that was thought of as being
24 a bad thing because retroactive or regressive,
25 sorry, and -- but it turned out it wasn't, and

1 it worked very, very well in British Columbia,
2 and the people, the legislators that brought
3 about the carbon tax in British Columbia got
4 re-elected the next term. It was that well
5 received and it works. It makes it so it
6 costs you to burn -- to use carbon, and that's
7 the only way that you're really going to work
8 is to hurt your pocketbook and then you'll do
9 something about it.

10 Also, I was at a meeting not too long
11 ago with our state representatives and federal
12 representatives and they all admitted we're a
13 very small state, but we can set an example,
14 and I think that's what we have to do here,
15 and it will tell the rest of the country that
16 states like California and Vermont are doing
17 something about it. Thank you.

18 MR. DELHAGEN: Thank you.

19 MR. WALKER: I'm Bob Walker. I'm
20 Director of Sustainable Energy Resource Group.
21 I appreciate that comment. I think part of
22 our problem that's gotten us into this mess we
23 are in now we've undervalued energy and the
24 associated costs with using it, and that
25 that's something we really need to look

1 closely at not only carbon, but the
2 environmental devastation that's taking place
3 with the shale oil extraction. We can't
4 continue to try to make our society live on
5 non-sustainable, non-renewable sources of
6 energy. We need to factor in all the true
7 externalities.

8 I think that a carbon tax would be a
9 good way of increasing the tax on
10 non-renewable or, excuse me, non-renewable
11 heating fuels or all fuels, and using those
12 monies to help pay for some incentivizing
13 renewable projects and efficiency projects.
14 We can look at offering payments to cover
15 these costs and then paying them back through
16 the on-bill payment to the utilities to help
17 pay back some of these costs so the fund is
18 there to keep paying for some of these
19 programs as we go forward.

20 We really need to include all the
21 externalities, carbon and others included, and
22 certainly we need to support in-state
23 renewables as much as possible so that we are
24 keeping the money in-state and not flowing out
25 of the state.

1 MR. DELHAGEN: Way in the back.

2 MR. MARKOWITZ: Paul Markowitz. I do
3 energy consulting on issues here in Vermont,
4 and I'm going to repeat what I said during the
5 small group because it really went to these
6 questions of criteria, and I think the
7 catch-22 is as human beings we make decisions
8 based on short term criteria. Really what we
9 need is an energy plan based on long term
10 impacts and criteria, and what I'm talking
11 about is, you know, oh energy prices, oh the
12 pump went down so I'll go out and get my gas
13 guzzler, oh energy prices go back up now I got
14 to get my hybrid.

15 So I think as a state we have a
16 responsibility to figure out how to
17 incorporate the whole range of criteria and
18 it's not just carbon or externalities, but
19 like the job creation impacts of in-state
20 renewables, the multiplier effect. Those
21 dollars staying in the local economy and
22 strengthening the local economy. Reviewing
23 our vulnerability to supply disruptions.
24 There's a huge amount of benefits to
25 developing our in-state resources even if they

1 cost more.

2 Then, of course, you have to say how do
3 you explain that to the ratepayers or people
4 paying at the pump, et cetera, and I think you
5 have to figure out somehow that you know to
6 incorporate those non -- what are they -- are
7 not described particularly dollar value, but
8 we need to come up with some type of matrix
9 where they are fully incorporated as we're
10 making long term energy decisions.

11 The other thing I just want to add is
12 that I think we need to keep in mind issues
13 about scale and efficiency, and in particular,
14 you know, if you look -- a woman came through
15 last month from northern Australia and they
16 are shifting -- doing an amazing job in terms
17 of shifting away from heating homes and
18 buildings with oil towards biomass, wood chips
19 and wood pellets, combined heat and power.

20 I forget what the numbers are, but they
21 are on the path toward eliminating fuel oil as
22 a heating source in their region and there's
23 absolutely no reason why Vermont cannot do
24 that. Let's replace our fuel oil trucks with
25 fuel pellet trucks. These are job creating

1 opportunities using available resources. So
2 thank you.

3 MR. DELHAGEN: Back of the room.

4 MR. GUYER: I'll come up here a little
5 bit farther. My name is Frank Guyer and I'm a
6 former legislator from South Burlington and I
7 am deaf in my left here. Right ear I can hear
8 a little bit out.

9 Just to give you a little bit of my
10 background I was trained as an energy manager
11 in South Burlington School District. I saved
12 20 percent of the energy costs or \$120,000 in
13 one year. I was taught by a company out of
14 Texas. I was told to go to the Legislature,
15 teach the Legislature how to turn off the
16 lights and save energy. I found that a lot
17 more difficult.

18 So what I did was I quit the Legislature
19 and now I've gone back to start my own team,
20 Guyer Energy Team, and basically doing a pilot
21 project for the State of Vermont to teach
22 people to shut off lights.

23 Now as a legislator I can talk in
24 soundbites or I can talk for an hour. You
25 don't want to hear the hour. So the soundbite

1 is this, is what I tell everybody, is save
2 Vermont, shut off the electric faucet, shut
3 down Vermont Yankee in 2012.

4 What do I mean by shut off the electric
5 faucet? Would you walk out of a bathroom and
6 leave the water faucet running? I don't think
7 so. When you walk out of a bathroom and leave
8 the electric light on it's the same as leaving
9 the electric faucet running. It's money down
10 the drain. Okay.

11 The State of Vermont uses -- that's my
12 soundbite. Okay. The State of Vermont uses
13 about 20 percent of the energy that is created
14 by Vermont Yankee to heat and light empty
15 rooms. What I teach is try to teach young
16 people because mostly old people, folks your
17 age, have a lot of bad habits and I have bad
18 habits. Trying to get us to shut off lights
19 is very difficult. So I try and teach young
20 people, elementary school kids, the same way
21 we taught them that cigarettes were bad we
22 teach being afraid of the dark is bad.

23 So what we do is teach them to tell
24 their parents shut off their lights you're
25 wasting energy. You're killing the polar

1 bears. You're doing all those things that are
2 going to kill us in the long run. Okay. So I
3 have to start with the elementary schools.

4 You folks I would love to teach you and
5 have you change your behavior. It's not as
6 easy as it might sound, and every dad who
7 knows that, they have been trying to tell
8 their kids shut off the lights, you know, ask
9 their wife shut off the lights pretty near
10 impossible.

11 So I'll leave it at that. I can give
12 you the hour explanation of how I teach people
13 to shut off lights in empty rooms some other
14 time.

15 MR. DELHAGEN: Thank you for those
16 comments.

17 MR. FRANCIS: Hi, I'm Clay Francis. I'm
18 the clean energy advocate with VPIRG. One
19 thing Paul mentioned was talking about how we
20 can decrease our dependency on fuel oil, and I
21 just want to let you guys know that today
22 we're going to have a special release or
23 report that I just wrote. It's called Clean
24 Heat. There are copies available at the table
25 here to discuss about the next 20 years what

1 we can do to reduce our dependency on fuel
2 oil. If there are reporters in the room, the
3 official release is Thursday. So please wait
4 if you don't mind.

5 Consider that, but there's also a report
6 on electricity that VPIRG did. So trying to
7 think about how we can attack these two very
8 important sectors; electricity, also thinking
9 about the residential fuel usage. So if
10 anybody would like to see those reports, they
11 are there and I would be more than happy to
12 discuss those on an individual basis. Thanks.

13 MR. MOORE: Okay. So this is a little
14 VPIRG corner. I'm James Moore. I work with
15 VPIRG on energy issues as well. I'm really
16 glad that the Department's embarked on this
17 process. I will say that everybody in the
18 room knows we've seen lots of energy plans and
19 documents over the last five years, most of
20 which have sat on the shelves after they have
21 been written and have collected a tremendous
22 amount of dust.

23 So what I would like to encourage the
24 Department to do is really put a focus on the
25 implementation pieces and the actions. I mean

1 that's what this will ultimately be judged by.
2 So I think along those lines we would stress a
3 regulatory structure that puts the incentives
4 in place to allow the businesses small and
5 large in Vermont to actually be the drivers of
6 the plan.

7 You know we have very limited public
8 dollars to put towards this. I think if we're
9 actually going to get to where we need to go
10 it's going to be the businesses here in
11 Vermont that make that possible and do it most
12 cost effectively. That's it.

13 MR. DELHAGEN: Couple more in the middle
14 here. We haven't hit the middle. Go out to
15 Indiana.

16 MR. GROSS: Hi. Dave Gross, East
17 Hardwick. I am a Commissioner on the Hardwick
18 Electric Department, but I'm not speaking for
19 them based upon that experience with them.

20 On the incentive question I think it's
21 very important that the state fund the
22 incentive independent of expecting utility
23 collections. We're a non-profit utility and
24 whenever there is a mandatory price that we
25 have to purchase power, even though it's a

1 small percentage of our power from a utility
2 or net metering, we absorb that cost, but
3 we're a non-profit so we pass that on and
4 divide it amongst our ratepayers. The net
5 effect is that the least economically
6 advantaged members of our rate population pay
7 for this, and you can argue don't necessarily
8 receive all the benefit from it, and the
9 perfect example is net metering sounds very
10 good, but a great portion, especially in
11 Hardwick, of our costs are maintaining our
12 transmission lines. Well somebody manages to
13 zero out for a year they are connected to our
14 grid, but they pay nothing for overhead costs.

15 So the State I know has gone ahead in
16 the legislation and made statements, but
17 actually what they have done is a lot of cost
18 shifting to the economically disadvantaged
19 population, and I think a lot of your plans
20 going forward really need to look to say who
21 is actually paying for this, and what I would
22 really recommend if it's a good idea, great.
23 The State writes the check and then they can
24 figure out how they are going to raise the
25 dollar for it.

1 MR. DELHAGEN: Couple hands up in the
2 front again.

3 MR. JENNINGS: I'm James Jennings of
4 Northern Power Systems. I live in Duxbury and
5 I have a professional hat on, but also my
6 personal hat. We just had a 23.8 percent
7 increase in our electric rates on the first of
8 January. So that's also weighing on my mind.

9 So affordability is certainly an issue,
10 but from a wind perspective there's a couple
11 things; places where the wind blows, places
12 where it does not blow, and one of the things
13 I would like to see is incentives of whatever
14 kind that encourage things that make sense. I
15 don't want to see incentives that start that
16 have people thinking about putting up wind
17 turbines where the wind is 4.2 meters per
18 second.

19 So to make that happen, one, is to make
20 sure that the incentives accelerate what make
21 sense rather than lower the bar to things that
22 make progressively less and less sense, and
23 that's as a taxpayer, ratepayer those things
24 are important, but also as someone in the wind
25 industry we have to have renewable energy that

1 produces. Again, capacity factors matters.

2 One other thing about Vermont. Vermont
3 is a rural state. In fact, it's the most
4 rural state in the United States. It's got
5 the highest percentage of the population
6 living in small towns. With that comes a grid
7 that's going to have spidering out fairly
8 small.

9 I would like to put in a word for
10 distributed generation and encouraging it to
11 avoid -- I mean the large power plants have
12 efficiency, true, but if you have more big
13 plants, you also need to upgrade a lot of the
14 transmission lines. Distributed generation
15 can help support -- provide grid stability and
16 it can bring power to where it's consumed in
17 our small towns.

18 One other -- two aspects to make that
19 happen. One is permitting and the other is
20 aggregation. If you can have people not see a
21 utility, an industrial wind farm, but if it's
22 something they can participate in locally,
23 whether it's 15 or 20 neighbors, one that
24 gives them an economic stake in it, but the
25 other thing that's important is it brings a

1 lot more consciousness to the power they are
2 generating and the power they are using.
3 There's a lot of energy systems that will have
4 screens so you can see how much energy is
5 consumed, how much is produced, and the
6 awareness of what you're consuming will do an
7 awful lot for efficiency for shutting lights
8 off and so forth.

9 COMMISSIONER MILLER: Can I just ask a
10 question, and it kind of gets to the gentleman
11 from Hardwick as well.

12 In looking at encouraging distributed
13 generation or helping with net metering which
14 has some benefits, but addressing your cost
15 point do you have ideas on exactly how the
16 costs should be socialized or shared? The
17 gentleman over here suggested state
18 legislation, which I assume you would want
19 through general fund collection rather than
20 through utilities was your idea, or I think I
21 also heard an idea about a charge on net
22 metering customers related to the overhead
23 costs of the utility perhaps.

24 Are there any ideas to encourage
25 distributed because one of the things I

1 continue to hear is bringing three phase
2 power, for example, to certain locations in
3 order to help with distributed generation has
4 a significant cost, upfront cost, and even if
5 we want to encourage the generation for other
6 reasons, how do we get past that cost barrier,
7 and so I'm sorry to get down in the weeds, but
8 any specific ideas are welcome.

9 MR. JENNINGS: That's a great question.
10 One thing I would like to see is the ability,
11 if there's consumers who put in a request,
12 whether it's a business or a group of people,
13 a neighborhood that wants to have some local
14 renewable energy, to allow the utility to put
15 it in for them and maybe charge a premium for
16 it. So they can do that on a bill. So this
17 way it's not the case that people are buying
18 power from separate sources.

19 People are used to getting an electric
20 bill and they are also used to getting
21 renewable energy is the way to combine those
22 as opposed to creating PPAs that create some
23 third party they are billing; who are they,
24 where is it from. Again, if there was a way
25 to administratively, if it wasn't a nightmare,

1 to allow a business or group of people to get
2 together and go to their utility and say we
3 would like to buy renewable power that is in
4 our community.

5 MR. DELHAGEN: That generates
6 conversation.

7 COMMISSIONER MILLER: I was trying.

8 MR. BERNSTEIN: You did good, Liz. It's
9 interesting how contradictory we are in our --
10 I wear two hats. I'm Barry Bernstein,
11 President of the Board of Washington Electric
12 Co-op. So we passed our 23.81 percent to our
13 members to cover our costs, and on that hat I
14 just want to say a couple things.

15 One is if you go over the small scale
16 distributed generation, which I happen to
17 support, and we do your idea and we say okay
18 we're going to do it but it's going to cost
19 you 75 cents a kilowatthour, you're not going
20 to be as happy about absorbing those costs
21 because that's some of the reality how we
22 socialize those. So it's a really big
23 question.

24 I want to drop over to my friend Doug
25 Smith over at Green Mountain Power. I think

1 you definitely have to break this down into
2 some short term reachable goals, five years
3 what can we do. I support renewable a hundred
4 percent, but I'm going to tell you we're
5 already getting static and will get static for
6 the 55 cents a month that's going to go onto
7 the electric bill for renewables for the clean
8 energy fund as we do for the energy efficiency
9 charge that's on our bills, and I support both
10 of them, but you know we have to be able to
11 somehow convey to a lot of Vermonters who want
12 the same things we do, but when it comes to
13 paying for them have a really difficult time
14 absorbing it; and we just had a public hearing
15 on our rate case and it doesn't always
16 translate equally.

17 I want to switch over to my other hat
18 which is I install thermal biomass heating
19 systems in New England. We just converted the
20 National Life Insurance Company from oil to
21 biomass and they are going to divert 200,000
22 gallons of oil in one year. It's a big deal.
23 Okay. The question is with limited dollars,
24 the Legislature not wanting to raise taxes in
25 the right way, we have to somehow come out of

1 an energy plan with some weighing what the
2 options are and where we want to put our money
3 first. Do you want to put it into 2,000
4 houses? Do you want to put it into 200 small
5 windmills on people's houses? Do you want to
6 put them into one Sheffield or one Lowell
7 project that each one of them has impacts and
8 we haven't been able to get past a way of
9 having each other listen to each other at
10 these meetings.

11 You know I'm an anti-nuclear person.
12 You go to one of these wind meetings and you
13 think you just stepped into the pro-nuclear
14 hat. So it's a bit of a struggle. I'm glad
15 you're doing this too. Thanks.

16 MR. DELHAGEN: We had several in this
17 quadrant over here.

18 AUDIENCE: I'm not sure I should be
19 speaking, but I live on grid, but I'm net
20 metered zero. I pay a connect charge every
21 month so I am paying into the grid to keep
22 that transmission system operating. Maybe it
23 needs to be more. Maybe, but it's distributed
24 generation. I'm helping keep rogue blackouts
25 from happening.

1 Bigger issue than I can handle, but
2 should the utility companies not be trying to
3 sell kilowatts? Should they be reconfigured
4 so that we're all in the same game together,
5 but that's bigger than I can --

6 MR. DELHAGEN: Back over here.

7 MR. FORWARD: I'm Jeff Forward. I'm a
8 renewable energy and energy efficiency
9 consultant. I'm also the town energy
10 coordinator for Richmond where I wear lots of
11 hats.

12 A couple of things. I wanted to follow
13 up on what Barry is saying relative to using
14 biomass for heat. You know biomass is a
15 limited resource, although it's probably our
16 largest indigenous resource, and we should be
17 prioritizing how we use that. We can offset a
18 great deal of fuel oil cost effectively and it
19 will become more cost effective as fuel oil
20 prices go up which they undoubtedly will.

21 I also wanted to have you think about
22 where else you might be able to find dollars.
23 One of the advantages to the Comprehensive
24 Energy Plan as opposed to the electric or
25 national gas plans the Department has

1 traditionally been able to develop it looks at
2 all fuels, and I think we should look to the
3 example of Efficiency Vermont that's been
4 really successful at doing demandside
5 management and applying that model to some of
6 our other fuels.

7 You know it's not anathema to think
8 about a tax on fuel oil that helps us reduce
9 its use. You know there's good synergy there.
10 There may even be good synergy between -- on
11 putting a tax on gasoline to fund refueling
12 stations that are either natural gas or
13 electric, you know, but it's not something
14 that, you know, would come up in the electric
15 plan likely, and this is a place to do it.

16 The last comment that I would have it's
17 kind of structurally. In the 1990's we had a
18 very active state energy office that was
19 housed in the Public Service Department and we
20 did a lot of stuff. The efficiency utility
21 idea came out of the state energy office. The
22 energy codes, we didn't have a residential
23 energy code in the early 1990's, and that idea
24 came out of very similar planning exercise to
25 this and was advanced and implemented through

1 the state energy office.

2 It's really a good function for state
3 government to have an energy office that's
4 housed in the agency that also regulates
5 utilities. I think it's the only one in the
6 country that does that and it really is
7 useful.

8 So I would encourage state government to
9 think about staffing state employees more
10 strategically than just trying to cut
11 employees, and the state energy office is a
12 good place to do it.

13 MR. GORDESKY: Thank you. Ben Gordesky.
14 I work for DC Energy Innovations, solar
15 installers. I'm also here, like everybody
16 else, for myself. So I manage to wear two
17 hats.

18 So well, first of all, I think that
19 carbon is certainly a very important driver
20 for the energy policy. As far as in-state
21 versus out-of-state I think certainly in-state
22 would be better, but I think it does make
23 sense to look region wide.

24 My issue with Hydro-Quebec is not that
25 it's out of state or out of country. It's

1 just the way the very, very large scale hydro
2 systems were constructed and the environmental
3 devastation that went on with it. At this
4 point I'm not putting up a fight about using
5 Hydro-Quebec, but I would look to that as a
6 temporary stop gap measure on our way to
7 getting -- we're about to get off Vermont
8 Yankee and then the next step will be to get
9 off Hydro-Quebec, and I'm thinking just on the
10 electricity side here so I realize there's a
11 whole thermal side to not addressing -- to the
12 energy picture in general.

13 As far as the incentivizing as far as
14 making renewable energy happen since that's
15 part of what I do for a living is the
16 incentives need to be stable. I think that's
17 -- I think most people in the business would
18 agree that there's been a lot of ups and downs
19 and changes and threats the program would end.
20 It needs to be stable as far as incentives go,
21 but the other -- there's two other pieces.
22 There's the economic -- the economics of a
23 project and then there's the financing of a
24 project.

25 So the financing of the project -- well

1 I'll start with the economics, that renewable
2 portfolio standards, I probably said this in a
3 few venues, but it seems to be a very
4 effective way to make renewable energy
5 projects economical, and for anyone who is not
6 aware that utilities are required to have a
7 certain percentage of their portfolio in
8 renewable energy or buy renewable energy
9 credits if they don't have the generation
10 sources they own themselves, and in
11 Massachusetts, for example, even in a
12 residential system you can get 35 cents per
13 kilowatthour for your -- for the solar part of
14 your solar electricity, and that's in addition
15 to the net metering benefits.

16 So if you know what your electric rates
17 are 35 cents is two or more times your
18 electric rate. So that's huge, and from what
19 I've heard, and some of the utility people
20 might correct me if they think I'm wrong, but
21 the increase in utility rates this causes is
22 between minus a half to plus one percent. So
23 it's like basically almost a very little
24 change in utility rates in the states that
25 have adopted it.

1 Every state in New England other than
2 Vermont has adopted some form of RPS. I think
3 it's almost half the states in the United
4 States have adopted this. In those states --
5 New Jersey is a very big state for solar.
6 It's not because New Jersey has a better solar
7 resource than we do, and Massachusetts is a
8 very big state for solar and that's not
9 because they have a better resource than we
10 do. It's because of RPS.

11 So the other piece is the financing and
12 the PACE programs are a great way of tackling
13 that, and I really appreciate all the efforts
14 of some of the non-profit groups here in
15 trying to get something going in the
16 Legislature to stop this legal obstacle that
17 the mortgage companies have put in the way of
18 PACE programs.

19 I live in Burlington so our power
20 program was already to roll and then this
21 happened, and Chris Burns at BED told me that
22 if the Legislature achieves what they are
23 trying to do, that January 2012 he could
24 finally roll out some programs. I mean that
25 deals mostly with the residential or smaller

1 community scale. Obviously for big one
2 megawatt projects or wind farms the PACE
3 program is really what's going to feed the
4 financing of that, but I think those things
5 together would make a huge difference in the
6 renewable energy history. Thank you.

7 MR. DELHAGEN: Okay. That was many
8 comments. Thank you. Do try to keep the
9 comments relatively brief. We know there's a
10 lot to be said, but there are also a lot of
11 other folks here who have thoughts.

12 As we move on I'm going to encourage
13 folks to try to share some information on a
14 few of the other important points and sections
15 that are covered in the Comprehensive Energy
16 Plan. We have many folks here working in the
17 world of biomass and biofuels. We have had a
18 lot of conversation on electric and that's
19 important, but please let's hear from other
20 folks in some of the other non-regulated
21 spaces as well.

22 MR. METHENY: Thanks. Good morning
23 everyone. My name is Hawk Metheny. I'm the
24 New England Regional Director with the
25 Appalachian Trail Conservancy.

1 First of all, I would like to extend
2 apologies to the folks that were in the
3 breakout room earlier. There was a similar
4 comment. Regarding question two about
5 in-state renewables versus out-of-state
6 non-renewables the question states with higher
7 costs, and on in-state renewables what I'm
8 going to focus on a little bit here is the
9 concern about the impact on Vermont's
10 landscape that maximum industrial wind
11 development would look like cumulative
12 impacts, and with that we encourage the
13 Department here to consider having influence
14 or creating statewide siting criteria for
15 industrial wind.

16 Right now each project is analyzed
17 independently and individually without taking
18 the whole system as a whole, and Vermont has
19 an opportunity to be a leader in this need.
20 Other states are doing it similarly, and
21 frankly some of them are kind of floundering
22 trying to figure out what the maximum buildout
23 would look like.

24 So that's an opportunity here that given
25 the ethics in the state about preserving the

1 landscape along with developing renewables to
2 become independent I would think people in
3 Vermont would be behind that, and at least I
4 would hope so. Thank you.

5 MR. WHITE: My name is Netaka White.
6 I'm the environmental program director at
7 Vermont Sustainable Jobs Fund. Thank you to
8 the Department and each of you on the team for
9 organizing this event, and I know you've got a
10 lot of work in front of you over the next few
11 months. I'm at your disposal. Give me a
12 call. We can talk about how to update the,
13 well, so far inadequate section on biofuels.
14 It's a good start, but there's a lot of new
15 information and updates around what's going on
16 in the state, particularly the farmer's
17 ability to produce fuel at a very cost
18 competitive rate and be able to provide feed
19 at the same time for dairy and livestock.

20 So that's all very encouraging progress.
21 I think, as I mentioned in the group this
22 morning, our farms over the next ten years
23 could virtually replace all of the diesel,
24 that's roughly 6 million gallons, with
25 biodiesel. It's not pie in the sky, but it

1 would take certain policy levers to help
2 encourage that and nothing more than just
3 showing a commitment by the state to help
4 farms be fuel independent or self sufficient
5 would be something I would like to encourage
6 and give a shout out for.

7 To address the carbon question I
8 encourage the Department to lean heavily on
9 the work on the Governor's Climate Change
10 Commission. The report that came out is deep
11 and broad, and there was quite a bit of
12 research and process that went into that, and
13 from that work we could look at how carbon as
14 a driver will play in any of the energy
15 technologies that are necessary to meet the
16 whole portfolio.

17 Another piece of work to point to, and
18 Paul Markowitz I think alluded to this but
19 I'll give it a name, the group on rural
20 development several years ago did a year-long
21 energy analysis looking at primarily
22 renewables but also the role of non-renewables
23 in the mix, and came up with a matrix that
24 pointed out all the various drivers; carbon,
25 job creation, various impacts at different

1 efficiencies of using any one resource for a
2 particular application.

3 So we looked at different scales of wind
4 development, different scales of biomass and
5 biofuel development, whether it's electric or
6 CHP or what have you, and that work is
7 available and I would encourage you to use it
8 also as a resource.

9 One last point on carbon. I applaud the
10 work of the Department being engaged in the
11 low carbon fuel standard. That is a regional
12 -- northeast regional process that's underway
13 and a lot can be gained from that, and
14 particularly any policy that gets implemented
15 in Vermont related to biofuels that we should
16 be looking at the life cycle carbon analysis
17 that work has been done nationally. We don't
18 have to reinvent that, but to dip into it and
19 take from it as we look at how we might
20 incentivise or popularize certain biofuel
21 pathways.

22 There are some that are not -- that are
23 very carbon intensive or potentially so.
24 Others that are very non-carbon intensive, and
25 again that work is out there to be drawn on

1 for this plan. Thank you.

2 MR. DELHAGEN: Okay. Keep it coming.
3 Who's next?

4 MR. SAVAGE: I'm Andrew Savage with All
5 Earth Renewables in Williston. Just wanted to
6 address point number two and it's kind of come
7 up a little bit in terms of cost.

8 I guess I would urge the Department
9 through process to consider the broader
10 economic benefits of local renewables. Just
11 to give an example when we are installing it's
12 a 2.2 megawatt solar farm like we're working
13 on in South Burlington right now or a simple
14 single or double tracker behind a barn or
15 Vermont home, what happens when we're making
16 those installations is we're manufacturing a
17 product. We're creating jobs in Williston.
18 We're also partnering with non-traditional or
19 traditional construction businesses like
20 Engineers Construction Incorporated or JA
21 Morrissey who receive products from companies
22 like NSA Industries in St. Johnsbury or
23 Grenin's Soldering in Bristol.

24 There's a pretty significant economic
25 benefit to the state, and so when we're taking

1 a look at in-state renewables versus
2 out-of-state non-renewables we really look at
3 the big picture benefit to the state in terms
4 of economic development and the multiplier
5 effects that go along with that. So I think
6 any process that can help capture that big
7 picture so that Vermonters aren't actually
8 choosing between essentially a false choice,
9 whether they are looking at five or six cent
10 per kilowatthour power would be very helpful.
11 So thanks very much.

12 MR. PATT: I'm Avram Patt, Washington
13 Electric Co-op. I wanted to address a
14 question that the Commissioner asked a little
15 while ago that was in response to a couple of
16 other comments, and this has to do with who
17 pays and the sort of the equity of who pays
18 for increased costs for renewables and
19 in-state generation.

20 I don't have an answer for that, but I
21 think that the plan really can't avoid this
22 question and needs to hit this one squarely
23 because as we move towards smaller scale
24 renewables, people doing it on their own,
25 people doing it in groups, community scale

1 wind projects, people having the option of
2 time-of-use rates, all of these things tend to
3 break apart the socialized payment system that
4 the utility structure has now, and makes it
5 possible for those that have the resources,
6 the money, the location, the work schedule to
7 take advantage of these, to take advantage of
8 these, and some of the costs get passed on to
9 everyone else.

10 So we need to find a way to make sure
11 that as we move towards the kind of choices
12 and small scale renewables that we're not
13 unduly making some people pay that and other
14 people getting all or most of the benefit.

15 Again, I don't have -- there's no easy
16 answer for that, but if you have a task force
17 assigned to that, I'll send my comments to
18 them.

19 MR. DELHAGEN: Yes.

20 MR. LAMONT: We're looking for a
21 Chairman.

22 AUDIENCE: Hi. I think we have to put a
23 tax on carbon to drive the market. They did
24 that in Germany and a lot of sustainable
25 industries got started. Politically

1 unpopolar, but we can do that and it's the
2 right thing to do. Really our goal should be
3 zero carbon economy. I mean that's the sane
4 and rational response to climate change. We
5 need to get away from putting so much carbon
6 in the air, and seems like we're talking about
7 responding to the climate crisis but in a way
8 that's not really up to the scale of the
9 problem.

10 So I encourage us all to really knuckle
11 down and work on this in the coming years.
12 And, finally, I've heard a lot of play talk
13 about shale gas today, and having studied that
14 recently I would like to say hydrofracking is
15 crazy in terms of polluting the water supplies
16 and bringing up radiation from the
17 substructure and maybe Vermont could pass
18 something to not do that here.

19 MR. FERLAND: I'm Brad Ferland. I'm
20 with the Vermont Energy Partnership and I also
21 thank the Department for this process.

22 Just want to point out a few things that
23 we've observed with electricity supply. One
24 is that Vermont currently has the lowest
25 carbon emissions with regards to electricity

1 of the whole country. We're either first or
2 second. So we right now have a portfolio that
3 is about as good as it gets.

4 The other thing that I think will be
5 significant to keep an eye on is that any
6 intermittent power that replaces base load
7 power is going to require base load power, and
8 if the base load power, if it's not nuclear or
9 hydro, it's very likely to be carbon driven.
10 So you can see an increase in your carbon
11 emissions; and, lastly, automobiles seem to be
12 as big a problem, bigger problem than
13 electricity supply right now in terms of
14 carbon, and if Vermont is going to go the way
15 of electric cars, it seems impractical to me
16 to have electricity supply. It's carbon
17 emitting. It's counterintuitive. Thanks.

18 MR. DELHAGEN: Okay. We're going to
19 head towards wrapping up here. So we have
20 several more comments.

21 MR. LEVIN: Hi, I'm Matt Levin. I work
22 for Vermonters for a Clean Environment. I
23 mentioned this in the small group. It's a
24 daunting challenge to figure out how to
25 balance all these different comments, and so

1 with that in mind I want to repeat something
2 that I said to the Commissioner before we
3 started and also follow up on what James Moore
4 said from VPIRG.

5 I think there's a lot of value in
6 focusing on implementation and reasonable
7 goals trying to balance the need for guidance
8 on a day-to-day year-to-year basis with 5, 10,
9 20-year ideas, and so, again, so what I said
10 to the Commissioner in terms of the plan
11 itself at this point we probably suggest a
12 shorter more streamlined plan. So someone
13 else said put a lot of good ideas in the
14 executive summary.

15 It's very challenging for the Department
16 to get so much right. For those of us who
17 have gone through the 2008 draft, which the
18 folks are working very hard to try to update,
19 any of us could go through and find all sorts
20 of things where facts are no longer accurate,
21 or some might take one of the things as bias
22 or another, and it may for the process in
23 answering these very difficult questions, sort
24 of goes against what I'm suggesting, it may be
25 a shorter plan that doesn't try to go so deep

1 into all of these details may help all of us
2 in the long run rather than trying to wrestle
3 them all to the ground in the next four, five
4 or six months.

5 So a more holistic comment for you all
6 to consider. Thanks.

7 MR. DELHAGEN: Thank you. Back here.

8 AUDIENCE: Really quick. The question
9 -- obviously we had a lot of discussions how
10 do we fill our energy gap, and I think one of
11 the things we can't take our eye off of that
12 increasing use of energy in Vermont as in the
13 world is not sustainable and needs to be
14 turned back down, and we need to focus on
15 efficiency and reducing waste and that's where
16 we're really going to have success.

17 And going to Hardwick again, one of the
18 nice things and a thing on Efficiency Vermont,
19 we have increased the number of our
20 ratepayers, about three percent every year,
21 but our delivered energy is going down by
22 three percent. You say well more people less
23 energy and that is Efficiency Vermont right
24 there. If we can do a similar thing in
25 Vermont, take that energy usage down and still

1 have an increase in population, we're well on
2 our way to a solution.

3 MR. DELHAGEN: Okay. We have one or two
4 more questions and I have a question I want to
5 pose to Mr. Lamont.

6 MS. NOTTERMANN: Just a couple things.
7 Some of this I did say in our small group
8 talking about long term goals, and really in
9 this plan it needs to be set out in one and
10 two-year increments because that's how we're
11 really going to get somewhere. People will
12 see the results.

13 Another huge component has to be
14 education around all the fuels we use. We'll
15 support town energy committees who are really
16 on the ground educating the public, and then
17 in relation to the architect whose name I
18 can't remember at this point, green building
19 code, something that's been going through my
20 mind.

21 I'm sorry. I didn't say who I was.
22 Nancy Nottermann with Central Vermont Regional
23 Planning Commission, energy coordinator, but
24 anyway green building codes it feels like
25 there needs to be a concerted effort to really

1 retrain the people who are contractors in this
2 state to really implement green building codes
3 in new buildings and retrofits and connect
4 that on the town level with the kind of
5 permits and supplying energy.

6 MR. CERALDI: Just a point about green
7 building codes. They are fine. The mandate
8 is for me to practice that as an architect
9 licensed in this state and a number of other
10 states. However, enforceability becomes an
11 issue in many towns because there aren't
12 planning commissions, there aren't building
13 departments, and that's going to be an issue.
14 So how that's enforced is something that's
15 going to have to come down from the state, and
16 if my town has to put in a building
17 department, we certainly can't afford one.
18 Thank you.

19 MR. DELHAGEN: We have time for one more
20 in the back.

21 MR. JOHNSON: Kerrick Johnson. Well as
22 the last one who got here perhaps this is
23 appropriate that I'm the last sort of comment.

24 Thank you very much, Commissioner. I
25 apologize for my lateness, but we were

1 attending a session where people were looking
2 for the electric industry to do more for
3 telecommunications. I'm sorry. Kerrick
4 Johnson with Vermont Electric Power Company,
5 VELCO, your friends in the transmission
6 industry.

7 I think a few things and good points I
8 heard to kind of unite these three questions.
9 James and a few other folks I think made good
10 points. One is that plan integration and
11 consistency, we have to come up every three
12 years with a statewide transmission plan. It
13 endeavors to look 20 years out and give people
14 an idea where we need to build transmission.
15 We submitted our first one in 2009 and
16 essentially -- honestly it was essentially
17 obsolete on the day it was delivered because
18 events overtake your planning documents. So
19 to the degree we can utilize online services
20 and make this as dynamic a plan as possible, I
21 would propose that would be a good thing.

22 Secondly, we have had to -- we
23 essentially quintupled our assets over a
24 six-year period. So we know about our land
25 use impacts. Those are serious, serious

1 things. We like to think we build them in
2 harmony with Vermont's working landscape, but
3 people have different points of view.

4 So to the degree whether it's in-state
5 utility scale renewables or out-of-state
6 renewables they are going to have to be
7 connected somehow to the grid unless it's off
8 the grid, and we love off-the-grid people, but
9 just be aware when you talk about costs
10 frequently what happens is a transmission
11 component isn't considered and how you're
12 actually going to connect them, and I think we
13 need to.

14 And then I think lastly I'll just say
15 Vermont we have to decide what we can
16 accomplish in our borders, but we're part of a
17 regional grid and there are forces happening
18 outside of Vermont that are going to directly
19 impact our sources here and who we're seeking
20 to build stuff through Vermont because many
21 people view Vermont as kind of a geostrategic
22 asset. We're between renewable resources, the
23 supply and the people who want to use them.
24 So what do we see, how do we extract the most
25 value for Vermont, and what role we can play.

1 We'll be willing to help you in any way
2 we can, but I want us to be aware -- one last
3 thing -- regional -- not regional, but federal
4 drivers, the federal government and
5 reliability standards are coming at us, and as
6 we chart our future with Vermont Yankee still
7 there or without it, and we're planning
8 without it right now as required, that's going
9 to require investments. It's going to require
10 probably transmission investments, and we're
11 going to be able to -- we're going to need to
12 understand how robust we need to build our
13 system in light of plug-in hybrids, in light
14 of yes energy usage has gone down, but I'm
15 here to tell you the peak uses of energy
16 continue to go up, and we have to plan to be
17 able to reliable -- reliably deliver energy
18 every time every hour of everyday.

19 Thank you and we look forward to working
20 with you.

21 MR. DELHAGEN: Okay. Well we're going
22 to bring this to a close on this point.
23 Obviously there are a lot of questions left to
24 be answered, and one piece that we talked
25 about before is that we are going to be

1 encouraging more feedback on a variety of
2 topics. There are many issues that didn't
3 even come up today. We didn't have much
4 conversation on the issue around smart meters.
5 There's questions about power markets, other
6 questions and topics about supplies and
7 reliability.

8 We're going to be trying to gather some
9 more specific feedback on a whole array of
10 these questions in both regulated and
11 non-regulated areas. So, again, this is just
12 the beginning of our process.

13 Before we close I'm going to ask
14 outgoing director Dave Lamont if you had a
15 chance to ask one question of this group that
16 you would like feedback on, what would you ask
17 of this group?

18 MR. LAMONT: Well I think the common
19 theme that I heard through both the small
20 groups and in this group is that people --
21 everyone wants a cleaner energy supply and to
22 use less of it and that's a laudable goal, but
23 I also heard a number of suggestions and
24 requests of how to pay for it and one
25 admission that we don't even know how to pay

1 for it.

2 So to me the issue, and I guess the
3 question I put back to you, is we all want the
4 same clean future, low energy future, but we
5 do have to pay for it in some way, and how do
6 we do that in a way that doesn't disadvantage
7 certain people that are unable to pay for it
8 or even those businesses that may be less
9 competitive as a result of the higher prices.
10 So how do we balance the costs and benefits
11 essentially of a clean energy economy going
12 forward?

13 MR. DELHAGEN: And that's an open
14 question. That's what we're going to be
15 looking for a lot more feedback from everybody
16 on, and I would like to turn it over to
17 Commissioner Miller for a few closing remarks
18 and then we will close this chapter. We are
19 going to be holding the next meeting starting
20 at 1:30 for those of you who are still full of
21 energy, and we'll be beginning the
22 conversation about energy efficiency which
23 picks up on many of the themes we talked
24 about, but in closing like to turn it over to
25 Commissioner Miller.

1 COMMISSIONER MILLER: Sure. Just want
2 to thank you all again for coming, and boy the
3 challenges are vast and a conversation like
4 today really points that out, but it also
5 points out to me just how great our resources
6 are for addressing the challenges.

7 We are, as Ed said, going to continue
8 the process. You should be expecting e-mails
9 asking for further comments by web. We will
10 be collecting those comments. One of the
11 goals that I have in this process is to make
12 sure that whatever the Comprehensive Energy
13 Plan adopted this fall is, it incorporates and
14 respects the comments that were received and
15 provides a resource for Vermonters to see
16 those comments and to reflect upon them.

17 So you have that commitment from me and
18 we'll be asking you to provide those comments
19 not just today. We've of course recorded
20 everything that you have said here today, but
21 also going forward. So look for that and look
22 for a public hearing process coming up this
23 summer, and of course feel free to contact not
24 only me, but anybody on the team at the
25 Department if you have specific questions or

1 want to make specific input going forward.

2 Thanks again very much.

3 MR. DELHAGEN: One last point. If you
4 filled out the yellow forms this morning with
5 points, please put them in the box, and we
6 also have another yellow sheet with space for
7 these larger questions. If you would like to
8 bring that with you, fill it out now and send
9 it in, or leave it in the box, or bring it
10 home, please do.

11 So once again thank you very much. If
12 you're going to stay for the second meeting,
13 we'll reconvene at 1:30.

14 (Luncheon recess.)

15 COMMISSIONER MILLER: Thanks all of you
16 for coming. Before I get started how many of
17 you just by show of hands were here this
18 morning? Okay. So I'm going to take that as
19 a majority and shorten my repeat comments
20 accordingly. I do want for the folks who have
21 come for just the afternoon meeting to give a
22 quick introduction to our meeting today and
23 the process going forward, but I will take
24 into account that there are a lot of folks who
25 heard this this morning and edit accordingly

1 as I go along.

2 So welcome everybody. I'm Elizabeth
3 Miller. I'm the Commissioner of the
4 Department of Public Service and I'm just very
5 excited to have so many attendees to our
6 kickoff meeting regarding the Comprehensive
7 Energy Plan because frankly we can't do it
8 without the input from all of you. So I
9 really appreciate it.

10 Let me just very briefly start by
11 pointing out the folks on my staff who are
12 helping the Comprehensive Energy Plan planning
13 process. They will be individuals that you
14 can call upon today. You'll see them in our
15 small group breakout later and I want to point
16 them out to you briefly.

17 Dave Lamont, our planning director who
18 is standing over here by the door, long time
19 state employee. Dave, thanks so much for your
20 willingness to participate in this process
21 despite pending state retirement.

22 Kelly Launder, assistant planning
23 director, over there in the doorway across.

24 Andy Perchlik is not with us this
25 afternoon because he had another meeting, but

1 he's our executive director of the Clean
2 Energy Development Fund and was a key
3 presenter this morning at the renewables
4 portion of the meeting.

5 TJ Poor, who is our energy efficiency
6 specialist at the Department and really runs
7 point for the Department on energy efficiency
8 issues. He had a family emergency and so he's
9 not able to be with us this afternoon, but we
10 have his presentation and Dave has volunteered
11 to make it for all of us in a few minutes
12 here.

13 Ed Delhagen who is our facilitator over
14 here at the window. Ed is an energy program
15 specialist at the Department and is one of the
16 folks who came forward when we were
17 revitalizing this comprehensive energy
18 planning process and said to me I want to be
19 involved and here's why I want to be involved.
20 I think this is such an important process for
21 the state. Ed has been a facilitator on
22 environmental and energy issues both here at
23 the state level as well as nationally and in
24 fact internationally. So he has a wealth of
25 experience and we're drawing it out of him in

1 this process and very grateful that he's
2 willing to facilitate today going forward.

3 George Nagle who is a member of our
4 utility planning division and is a planner
5 himself over here in the corner, and finally
6 Karin McNeil, a grant specialist with the
7 Department over by the doorway. Karin is
8 another individual at the Department who came
9 despite the job category and said regardless
10 of that I want to be involved in this process
11 because I think it's very important, and I
12 have the background to help and I want to
13 help. So these folks at the Department will
14 be very key going forward and you'll see them
15 today as we have some small group discussions.

16 It's not just the Department of Public
17 Service, however, but many parts of state
18 government that allow this planning process to
19 go forward, and some of the folks from other
20 departments and agencies are here today and I
21 just want to point them out.

22 Agency of Natural Resources, including
23 the Department of Environmental Conservation,
24 of course is key as we look at the
25 Comprehensive Energy Plan process. Brian

1 Woods is here somewhere in the back. Thank
2 you, Brian, for being here for the Agency of
3 Natural Resources.

4 Agency of Transportation. Also there's
5 quite a bit of the energy usage in the state
6 attributable to transportation, and Gina
7 Campoli from the Agency is here. Thank you,
8 January.

9 Agency of Agriculture has been very key
10 of course and will be going forward.
11 Secretary Ross and I have had a number of
12 meetings on this topic.

13 Is anyone from Agency of Agriculture
14 here this afternoon? I didn't see someone
15 walk in the door, and we will be working with
16 them closely, especially on the farms to
17 energy programs going forward in this process.

18 Agency of Commerce and Community
19 Development of course is helping with respect
20 to both the jobs aspects of the environmental
21 -- I'm sorry, the energy plan as well as the
22 green energy economy and how we can encourage
23 it in the state.

24 Agency of Human Services particularly
25 with respect to weatherization and efficiency

1 issues of course is a key partner, and,
2 finally, Department of Buildings and General
3 Services, and I did see Deb Baslow here. Deb
4 in the back. Thank you, Deb, for coming
5 today. The State really needs to lead by
6 example, and Buildings and General Services is
7 really leading that effort to make sure the
8 state facilities walk the walk in efficiency.
9 So thank you.

10 Of course it's not just state government
11 either. It's all of you that are going to be
12 helping us with this process and it's very
13 important that we have a cross-section of
14 Vermonters involved, and I think we really
15 have that here today; utilities, energy
16 service companies, and consultants, public
17 interest organizations and groups, as well as
18 the business community directly and the town
19 energy planning committees, and so that's just
20 incredibly exciting to me you're all able to
21 come to give us feedback on your planning
22 process and goals. That's the purpose of
23 these kickoff meetings.

24 Format very briefly. After we have a
25 substantive presentation on the state of

1 energy efficiency in Vermont now, we're going
2 to have an opportunity for breakout groups to
3 discuss some key questions regarding energy
4 efficiency issues and how they should play
5 into the comprehensive energy planning
6 process, and then we're going to come back
7 together and Ed will facilitate for us a
8 larger group discussion so that we can have
9 framework for our energy future, and I'm
10 really looking for feedback on the process
11 going forward in addition to specific ideas
12 you would like addressed in the Comprehensive
13 Energy Plan.

14 Today is just the beginning. You've
15 probably seen in invitations from the
16 Department that we're having a meeting again
17 on the 7th of April focused on the topics of
18 transportation specifically and land use.
19 There's many cross cutting issues on all of
20 these topics, but we thought that kicking off
21 by setting the framework on the four key
22 sectors, that is renewables and energy supply,
23 this afternoon efficiency, and then on the 7th
24 transportation and land use would be a great
25 way to get the maximum number of stakeholders

1 involved right from the beginning.

2 You'll then get from us a web based
3 opportunity to provide further comment. We've
4 been collecting e-mail addresses and we'll
5 send that out to you following these meetings
6 in early April. There will be further
7 opportunity for technical meetings with the
8 Department on topics of interest. You should
9 feel free to contact me or anybody else on the
10 team as we go forward with your ideas in that
11 regard.

12 We're frankly going to take these
13 opening meetings and engage in a planning
14 process at the Department on how best to use
15 that going forward. We're heading towards a
16 new draft Comprehensive Energy Plan this
17 summer. We will be having public hearings for
18 that draft and the target is early August
19 2011.

20 The goal is to finish the plan by
21 October 15th. It's a quick time frame
22 actually when you start looking at the
23 process, but the Governor has prioritized this
24 and has asked the Department to create a
25 planning process that allows for a final

1 recommended Comprehensive Energy Plan by mid
2 October.

3 As we just get started today let me
4 remind you of what the Comprehensive Energy
5 Plan is to be. The statute requires that it
6 contain a comprehensive analysis of
7 projections regarding the use, cost, supply,
8 environmental effects of all forms of energy
9 resources in Vermont, and that it contain
10 recommendations for state implementation
11 actions.

12 We are also going to use this process to
13 update the Department's electric plan which is
14 a separate statute requiring us to do that
15 electric plan as a segment. We, for the first
16 time, are using it as a part of the
17 comprehensive energy planning process rather
18 than as a stand alone document.

19 We're creating a Comprehensive Energy
20 Plan because as the statute states we need to
21 assure to the greatest extent practicable that
22 Vermont can meet its energy service needs in a
23 manner that's adequate, reliable, secure, and
24 sustainable, that assures affordability and
25 encourages the state's economic vitality and

1 the efficient use of energy resources and cost
2 effective demandside management. Those last
3 two, of course, being a specific topic at
4 issue this afternoon in a way that is
5 environmentally sound.

6 The recommendations and the
7 Comprehensive Energy Plan must take into
8 account state law on the subject and already
9 enacted state goals such as the greenhouse gas
10 reduction goals, the SPEED goals, the standard
11 offer program. Those are just a few examples.
12 The Department needs to create a state energy
13 plan with those in mind.

14 Just very briefly the Comprehensive
15 Energy Plan is forward looking. It's not
16 designed to do a couple of things; first, to
17 prescribe specific outcomes on pending
18 projects. We have a Board process for that as
19 I'm sure many of you are aware, and so
20 projects that are in the pipeline as it were
21 in front of the Board the energy plan will not
22 be a place to weigh in on the position.
23 Rather the Board is the proper forum for that.
24 For example, on the Lowell project which is
25 pending at the Board. I very much expect that

1 the energy plan will discuss renewable energy
2 in Vermont, what the recommended mix could be,
3 what the strategies are for getting there, but
4 it will not revisit the specific pending
5 project in front of the Board at the moment.
6 Obviously by the time the plan comes out there
7 may be a decision on Lowell and we'll take
8 that at whatever procedural point it is at the
9 time. This document is forward looking.

10 Similarly Yankee. It comes up quite
11 often so I just want to put it out there right
12 upfront. The Comprehensive Energy Plan is not
13 a place to analyze again the pros or the cons
14 of Yankee continuing beyond its present
15 license. The Governor has been very clear
16 that what he is seeking in the comprehensive
17 planning process is a plan that addresses
18 Vermont's post-Vermont Yankee future, and I'm
19 committed to making sure that the plan does
20 that because as we all know the base case the
21 present situation is Vermont Yankee running.
22 We know what that electricity future looks
23 like because we're in it right now.

24 What we need to do is plan for what
25 Vermont's future will look like at the point

1 that the plant is not running. So that's what
2 the Comprehensive Energy Plan will do.

3 The overarching goals of the
4 Comprehensive Energy Plan we need to address
5 all energy sectors. As I said, that includes
6 transportation and land use in addition to
7 electricity issues specifically because of the
8 state goals and global warming issues ought to
9 strive for a lower carbon footprint,
10 greenhouse gas footprint, generally towards
11 our state goal targets, and we need to do it
12 at a cost that keeps in mind Vermont's
13 regionally competitive framework.

14 So the stakeholder draft is very briefly
15 we sent out a link in the invitation to the
16 prior draft. I thought -- it was my judgment
17 that it was important to put that back out
18 there in the public so that you could see the
19 work that had already gone into the process
20 even though it was never completed. The
21 Department has not adopted a plan since 1998.
22 There was, however, quite a bit of work that
23 went into a 2008 process, including public
24 hearings and obviously quite a bit of work.

25 The staff actually had worked on updates

1 since 2008 and even into this year. None of
2 that had been out in the public because there
3 wasn't yet a forum for it. So, again, we
4 thought it was important to put it there as a
5 starting point. It's an engagement draft. It
6 is not the Comprehensive Energy Plan that we
7 will come up with and present to you at public
8 hearings this summer or present to the
9 Governor this fall, but it is a starting
10 point, and frankly as a part of this process
11 any feedback that you all have how we should
12 be using that document and what we should be
13 doing with it going forward would be very much
14 appreciated.

15 I'll just very quickly, since it's up
16 here on the slide, there's a number of other
17 state activities going on. We're very much
18 aware of the need to coordinate with other
19 state actions including, for example, the
20 cabinet level actions on climate, the climate
21 neutral working group is an example of that,
22 the state agency energy plan, VTrans planning
23 process which is going on right now, et
24 cetera, and we will be doing that.

25 The Legislature, in particular, I wanted

1 to mention I know that the Natural Resources
2 Committees in both the House and Senate will
3 be holding a joint hearing on the 31st, and I
4 expect the Legislature will have other
5 processes going forward, and certainly we'll
6 take those into account as we engage in our
7 process.

8 Many of you have been involved in very
9 good detailed important work here in Vermont
10 on these topics. We're inventorying and
11 reviewing all of those and frankly are happy
12 to not reinvent the wheel and to use the very
13 good work that's already been done and to
14 recognize and utilize that expertise.

15 So as we discuss things today or even in
16 the coming weeks and months please do feel
17 free to bring us the plans and work that you
18 have done and ask for our help in
19 incorporating them in our process.

20 So thank you very much for coming. I
21 want to ask Dave Lamont or Ed are you going to
22 go next? Okay. Good. We're going to ask Ed
23 to come up next and tell us more about the day
24 and we'll hear more about energy efficiency in
25 Vermont. Thank you for coming.

1 MR. DELHAGEN: George is getting my
2 slides up. How many folks are new here for
3 this afternoon's session, not been here this
4 morning? Okay.

5 So we do have quite a number of folks
6 here that were here this morning. Okay. Just
7 briefly the structure for the day for the
8 afternoon meeting will model after what we did
9 this morning. In essence we're going to begin
10 with a presentation that will provide some
11 background information. It will help set the
12 framework for some of the conversation about
13 energy efficiency.

14 The structure of the four stakeholder
15 groups by its nature has -- we can't get
16 everything in all spaces, and we realize that
17 there may be people here who have only one
18 opportunity to attend one of these meetings.
19 So although the particular focus on this
20 afternoon's meeting is energy efficiency, if
21 you feel that you have other comments that you
22 need to make, this would be an opportunity to
23 do that. We do have other times to talk about
24 the transportation and land use questions and
25 efficiency does come up in those spaces as

1 well.

2 Liz pretty much covered all of these
3 already. I'm going to spend just a minute
4 going over the agenda. Again this is a
5 microfiche. If you did not pick up a copy,
6 there was a paper copy over on the table, but
7 in essence we're going to move from this front
8 matter piece into our conversation on energy
9 efficiency with Dave Lamont, and unfortunately
10 TJ is not able to be here, but Dave will carry
11 out that piece.

12 Then we're going to break into small
13 group discussion, and because we got such good
14 feedback this morning we're going to try to
15 extend that a little bit and provide more
16 opportunity in the small group time for people
17 to provide their comments. After that we'll
18 circle about around 3 o'clock, 3:15 or so,
19 regroup and have a large group conversation.
20 This is your opportunity to share your
21 thoughts and introductory comments both on the
22 process and goals, and then specific elements
23 that you think are important for us to
24 consider as we go forward. We'll try to bring
25 it to a close around 4:15 and then be finished

1 by 4:30.

2 This morning we had a set of working
3 agreements and I would like to just repeat
4 these again and suggest them for new folks to
5 help us with our conversation. As I said
6 before, the focus this afternoon is on energy
7 efficiency. We're going to ask folks to try
8 and stay focused on that topic. There is
9 opportunity, if you're not going to be here
10 and you feel it's important to bring those
11 other pieces in please do so, but again we're
12 going to try to stay focused on the broad
13 topic of energy efficiency.

14 Try to the extent you can to keep your
15 comments and points relatively brief because
16 we did have a lot of people here and we want
17 to hear from as many people as we can.
18 We'll do that one person at a time using a
19 microphone so everyone has a chance to be
20 heard. We do have a court reporter taking
21 notes as well and it's important for us to be
22 all heard, and our commitment to you is we'll
23 try to be finished on time around 4:30 or so.

24 Again, this is the beginning of the
25 process. There will be many more

1 opportunities for comments. We will have some
2 written forms that you can use to submit input
3 today on the questions and discussion topics
4 that we put out. So, again, as we move
5 forward please feel free to use those recorded
6 points and submit the information in written
7 form as well as verbally during our breakout
8 sessions.

9 Okay, and with that I plan to turn it
10 over to Dave Lamont, and Dave is going to
11 provide a short presentation for us on energy
12 efficiency.

13 MR. LAMONT: Again thank you all for
14 coming, and the topic this afternoon is energy
15 efficiency, but I'm going to do two things.
16 I'm going to kind of go over the broad Vermont
17 energy picture and where we're at in terms of
18 energy use, a little bit about the future and
19 what the future looks like through my crystal
20 ball, which is probably as hazy as it is
21 anyone's, and then I'm going to talk more
22 specifically about energy efficiency and the
23 efforts that are going on there just so we can
24 all get a background in that.

25 Okay. So first this is our energy pie,

1 and this is kind -- if there's one picture
2 that says it all or says at least a thousand
3 words this is it, and if you look at the break
4 out of residential, commercial and industrial,
5 and transportation energy use it's pretty well
6 evenly split a third, a third, and a third,
7 and this morning Andy had slides that kind of
8 went along with this showing how renewables
9 fit into this, but there's quite a bit of
10 renewables in here, especially within the
11 electric sector which don't really show up in
12 this graph, but it's fairly diverse, although
13 you can see the commercial and industrial is
14 pretty heavily dependent on electricity, and
15 obviously transportation is very dependent on
16 fossil fuels, motor oil, and oil in general
17 and we're kind of at the end of the pipeline.

18 If you look at Vermont's energy
19 consumption over the years it's increasing,
20 and I say this despite our conservation ethic,
21 and I think everyone thinks that Vermonters
22 are a frugal society and make all the right
23 decisions and are really smart about these
24 things, but for whatever reason we seem to be
25 not unlike the rest of the world in terms of

1 using more energy. This only goes up to 2005
2 and I think that it's probably turned around a
3 little bit both in terms of the efficiency
4 efforts that we have done, especially in the
5 electric sector, and the economy. The economy
6 is a big driver of energy use, and I apologize
7 for using the same jokes this afternoon as I
8 did this morning, but there are some new
9 people here that would appreciate this, but --

10 AUDIENCE: We'll still laugh.

11 MR. LAMONT: Where did they get this
12 guy, right, but I kind of draw a parallel to a
13 George Carlin joke which was -- which was if
14 you think about how much energy the average
15 person uses, it's really scary because half
16 the people use even more than that, and his
17 point was more how stupid people are half the
18 people are stupider. It goes for energy too.

19 We're not unlike other sectors of
20 society and other states for that matter in
21 terms of our energy use. You can see both
22 electric and transportation are showing
23 tremendous increases going forward in time.
24 So, again, we're not totally unlike everybody
25 else, and if you look at this was -- I think

1 someone mentioned the Governor's Commission on
2 Climate Change earlier, but this is from their
3 report, and this is a projection of kind of a
4 business as usual case, and they called it the
5 electric supply high emission scenario, and
6 this was essentially when our two kind of
7 non-emitting contracts with Hydro-Quebec and
8 Vermont Yankee were replaced essentially with
9 emitting resources what would that do to our
10 carbon profile, and that's this area down here
11 where we look at a significant increase in
12 carbon output in business as usual scenario.

13 Again, I think that's another issue we
14 hope to tackle within the plan. We have taken
15 care of some of that with the new Hydro-Quebec
16 contract assuming that gets approved, but
17 there's still a fair amount. I'll show you a
18 slide a little bit later. A fair amount of
19 uncommitted resources where we can make the
20 choices.

21 I think the other interesting thing
22 about this is if you look at the green, which
23 is transportation, that is showing a decrease
24 even in the business as usual case, and I
25 think that's because cars are getting more

1 efficient and they are much shorter-lived
2 assets than houses or buildings or industries,
3 and so we can see that natural progression of
4 efficiency that will occur even in the base
5 case, whereas it doesn't happen so much in the
6 residential, commercial and industrial fuel
7 sector because houses last a long time.
8 People -- it takes an effort to make them more
9 efficient. There's just not a lot -- there's
10 some, but not a lot of replacement of
11 structures going on in the state.

12 So there's a lot of uncertainty and it
13 was interesting. A lot of things we talked
14 about at this morning's breakout sessions, I'm
15 sure the things we'll talk about this
16 afternoon, have to do with uncertainty, and I
17 think one of the advantages of energy
18 efficiency that even if you're wrong, even if
19 you're wrong about the future, you're still
20 accomplishing the same services with
21 essentially less energy, and so it's kind of a
22 win/win proposition, and I think there's a lot
23 of robustness built into an energy efficiency
24 solution. I think that's a huge advantage.

25 There is, however, a perpetual game

1 changer within the -- even that affects energy
2 efficiency and that is the discovery of shale
3 gas in the Pennsylvania area, and what this
4 means for energy efficiency is that electric
5 prices are forecasted to be much lower going
6 forward than they had been in the past. I
7 think we're looking at about a 30 percent --
8 these are wholesale prices, a 30 percent
9 reduction in forecasted electric prices going
10 forward. Doesn't mean your rates are going to
11 go down 30 percent. It just means the
12 wholesale components -- the power cost
13 component of future electric costs are 30
14 percent lower, and so when we look at energy
15 efficiency it makes it much more difficult to
16 create a cost justification or to have
17 measures what we call screen, and I'll talk a
18 little bit about that later, with these lower
19 costs, and so it's really something I think
20 that we need to keep in mind as we move
21 forward how more traditional fuels can fit in
22 and what role they should be and how we should
23 conduct our -- essentially our cost
24 effectiveness screening.

25 So, again, a lot of uncertainty to think

1 about, and as we're planning for the future,
2 which is really what we're doing, we really
3 have to weigh that because you can make --
4 again you can make decisions today based on a
5 certain set of futures, and I think we've all
6 been around long enough to know that anybody's
7 forecast -- we used to have forecasts up on
8 the wall that we laughed at two years down the
9 road because they were so far off, but at the
10 time this is what people thought, and the
11 energy world as we all know is a tough spot to
12 be in terms of what the future is going to
13 look like.

14 If we look at our electric resources,
15 we're actually in pretty good shape relative
16 even to other states in New England, other
17 utilities in New England where we have a
18 substantial amount of our resources committed
19 well into the future into 2020, and of course
20 the benefit here is that there's some price
21 certainty. There are certain attributes that
22 are associated with these resources that give
23 us certainty about attributes and other values
24 going forward, but the disadvantage is should
25 the environment change we may be caught on the

1 short end or good end of the stick in terms of
2 price competitiveness with the rest of the
3 region, but this is where we are.

4 There's a substantial amount of space to
5 fill in there and I think that represents
6 opportunities to do some of the things that
7 we're talking about, and if we go to -- and
8 certainly energy efficiency has a role in
9 terms of filling in that uncommitted area of
10 resources within our future power mix.

11 So I think once again if we look at
12 creating a thoughtful energy future, which
13 again is what we're trying to do here and
14 trying to -- given the tools and the vision
15 that we all possess together, try to look at
16 our energy future within the context of the
17 plan and get ideas and thoughts what other
18 people see as opportunities for the future.

19 So with that I'm going to switch to TJ's
20 energy efficiency presentation, and I'll just
21 say TJ -- many of you probably know TJ. He's
22 definitely the expert on energy efficiency. I
23 should know as much as he does, but I don't.
24 So that may become obvious as I talk through
25 his slides. And also since I didn't put the

1 slides together I'm not quite sure some of the
2 points he wanted to make but --

3 COMMISSIONER MILLER: You can disagree
4 with him.

5 MR. LAMONT: If anybody has any ideas,
6 if they see the slides -- so I was looking at
7 a publication and many of you are probably
8 aware of this, at least in the electric sector
9 Vermont was number one in terms of efficiency
10 spending per capita. So -- and I assume
11 savings per capita as well as a result of
12 that.

13 So we're doing quite well on a national
14 scale in terms of the effort that the state
15 has chosen through various policies to direct
16 towards energy efficiency.

17 AUDIENCE: Electric energy efficiency.

18 MR. LAMONT: Electric energy efficiency.
19 Thank you. Although the number may have
20 included everything. I'm not sure because I
21 don't think a lot of other places are doing
22 that too.

23 So anyway we're going to talk about
24 energy efficiency in the context of the
25 Comprehensive Energy Plan. The current

1 statutes, I'll breeze through those. The
2 potential -- we do potential studies to look
3 at what -- how much energy efficiency is out
4 there, what's the resource, how best can we
5 mine that resource, and what's the potential.
6 Our current programs and some other policy
7 choices at the end.

8 So energy efficiency, using less energy
9 to perform the same services. We want light
10 we don't necessarily want a light bulb, and it
11 encompasses all forms of energy use, both
12 utility fuels which is what we tend to think
13 about most often, but also heating and process
14 fuels, home heating, and also motor fuel as
15 well.

16 So when we think about energy efficiency
17 we think about not only are there the direct
18 cash benefits associated with saving energy
19 and how we evaluate those into these programs,
20 but there are also societal benefits, and as
21 we get to the statutes a little further on
22 we're mandated to use what's called a societal
23 test, which when we're weighing the costs and
24 benefits of doing an energy efficiency measure
25 or not, the calculation, the cost benefit

1 ratio includes some but not -- currently
2 includes some but possibly not all of these
3 things. It includes some measure of
4 externalities, emissions associated with
5 production of electricity. It includes some
6 of the potential to eliminate transmission and
7 distribution constraints. So to the extent
8 the load is less as a result of energy
9 efficiency you may not have to build a
10 transmission project. There's less risk which
11 is also included in our cost benefit test.

12 So if you were -- the risk associated
13 with building a power plant or engaging in
14 energy efficiency is much less, but there's
15 several barriers to energy efficiency. The
16 first and most obvious is the first cost
17 barrier. A lot of people don't want to or
18 can't afford or don't feel it's a good
19 investment to invest in the upfront capital of
20 energy efficiency so this is why we have the
21 programs. There's an awareness issue where
22 people don't know what to do. They want to do
23 something. They don't know what to do. So I
24 think our programs assist that. So as a whole
25 energy efficiency has a huge potential to meet

1 some of our Comprehensive Energy Plan
2 objectives which, as Liz pointed out, were
3 safe, assured, reliable, low environmental
4 impact supply, energy supply for the state.

5 So some of our legislative goals are to
6 reach 20 percent of the units by 2017 and 25
7 percent by 2020. Ambitious goals. Reduce
8 annual fuel bills in those houses that were
9 assisted by 25 percent and reduce total fuel
10 usage by those amounts in 2017 and by 2025.
11 So these are pretty lofty goals, and increase
12 weatherization services to low income
13 participants and either by a percentage or the
14 amount of services to the homes.

15 So the electric planning statutes
16 require us to do least cost integrated
17 planning which from -- which as I talked about
18 the terms of the cost effectiveness criteria
19 that's used to evaluate energy efficiency and
20 energy efficiency programs and the lowest
21 present value life cycle cost, taking those
22 other factors into account, which I'll broadly
23 call externalities, and this other section
24 requires us to do all -- chart a path to
25 achieve all reasonably cost effective energy

1 efficiency savings, and that's what we do, and
2 I'll talk a little bit about the potential
3 studies and what we're doing in that area as
4 well.

5 So if we look at the potential, there's
6 kind of three different levels of potential
7 for energy efficiency. The first is what's
8 called the technical potential, and that is
9 just if you were to replace every energy using
10 appliance in the state with the most efficient
11 energy using appliance, so every light bulb
12 was replaced with a LED light, every
13 refrigerator was replaced with the most
14 efficient refrigerator, this is the kind of
15 savings, those first three graphs in terms of
16 energy and kW, that one could achieve by doing
17 that.

18 So it's around 30 percent, 32 percent of
19 energy. So we can use 30 percent of
20 electricity, this is the electric sector only,
21 32 percent electricity by replacing all the
22 inefficient end uses with the most efficient
23 ones. However, there's an economic potential
24 which is the next level of potential which is
25 that that would pass the cost effectiveness

1 test. So certain of those would be in the
2 first column might be technologies that are
3 not cost effective. So there's some of that
4 potential is reduced a couple of percent in
5 terms of economic potential.

6 So most -- the interesting thing is most
7 of these measures are economically cost
8 effective given the screens that we use, and
9 then there's the achievable potential which
10 includes kind of the -- sometimes you can't
11 always replace a compact with a compact
12 fluorescent or LED light, and sometimes there
13 are people who just no matter what will not
14 adopt the energy efficiency technology, but if
15 you take all this into account, we still have
16 26 percent of savings -- of energy savings
17 that could be achieved in the electric sector,
18 which is about a quarter, as a matter of fact
19 a little more than a quarter, of our energy
20 use.

21 AUDIENCE: So if I read this right, the
22 difference between technical and economic
23 potential is only 2.4 percent?

24 MR. LAMONT: Correct. Well I assume
25 you've done the math right.

1 MR. BUCKLEY: Dave, is this from the
2 current work or from a few years ago?

3 MR. LAMONT: I'm assuming this is from
4 current work. TJ put these together so -- I'm
5 sorry. As a matter of fact I'm sure it is
6 because we were more down around 15 percent.

7 MR. BUCKLEY: 19 was the number.

8 COMMISSIONER MILLER: Do you know if
9 this is current versus -- just because TJ is
10 not here.

11 MR. LAMONT: I think this is the
12 current.

13 MR. BUCKLEY: The last one says 19 where
14 it says 26 if I'm not mistaken.

15 COMMISSIONER MILLER: We can all agree
16 it's a big number. There's a lot of savings
17 to be had from energy efficiency.

18 MR. LAMONT: I think that's exactly
19 right. If we look at the cost effectiveness,
20 achievable cost effective potential, so this
21 is counting technical potential and the
22 economic potential, but what's achievable
23 there's a fair amount of -- this is from 2007.
24 There's an equivalent amount or certainly a
25 significant amount of cost effective potential

1 to be achieved in the other fuels area as
2 well.

3 This doesn't include natural gas, and I
4 guess I would say two things. This was done
5 in 2007. So if you remember 2007 prices were
6 up, prices were expected to be higher so more
7 things might screen under a cost effectiveness
8 test for these other fuels, but we also use a
9 50 percent incentive level to determine the
10 achievable potential. In the electric sector
11 we use a hundred percent incentive level to
12 determine that. So that would tend to
13 increase the potential -- the fuel prices
14 going forward and increase the potential.

15 So, in any case, there's a significant
16 amount of, not surprising, significant
17 efficiency potential out there in the all
18 fuels sector as well. James.

19 MR. MOORE: Dave, can I just ask why
20 wood? Is that driven by inefficient outdoor
21 boilers being in the mix or -- just shocked
22 that's that much higher than some of the
23 others.

24 MR. LAMONT: I saw that myself and I
25 don't know. It might be just efficient --

1 more efficient systems. It would have to be.
2 I assume the insulation and things would be
3 probably less. I don't know. Sorry.

4 So in order to -- in the electric sector
5 or those programs that are administered under
6 regulated fuels, which would be natural gas
7 and electricity, there's specific screening
8 criterias that are used by the energy
9 efficiency utilities and by Vermont Gas to
10 determine cost effectiveness test, and
11 basically if a measure screens, in other
12 words, if it passes the cost benefit test
13 which includes these particular adjustments
14 through the strict cash avoided cost, then
15 it's an eligible measure and it's up to the
16 efficiency utility to determine a way to
17 achieve that measure being installed.

18 So in terms of incentives. So if -- I'm
19 sure you've all seen light bulbs, compact
20 fluorescent light bulbs that are 99 cents. I
21 don't know what those cost the suppliers, but
22 that's a subsidized price, and there's a
23 calculation in there somewhere that says they
24 could have been 50 cents, they could have been
25 \$2, but there's a calculation that says 99

1 cents is the price that will achieve the most
2 potential kind of at the lowest cost.

3 So in that particular measure once the
4 light bulb screens it's eligible, and then the
5 idea is to define an incentive that would get
6 people to install it.

7 So this cost benefit analysis includes
8 obviously the -- for the electric and gas
9 obviously the energy supply cost, that's a
10 principal component, but it also includes O&M
11 changes. If you install a compact fluorescent
12 bulb, you only have to replace it every 10
13 years instead of two years, avoided
14 externality amounts, and there is principally
15 emissions from the alternative resource, in
16 this case electric or that would be used to
17 supply the electricity or in the case of
18 natural gas your natural gas boiler or
19 whatever you use.

20 T&D adder, which is avoided transmission
21 and distribution, which would be another value
22 to consumers, and risk adjustment on the
23 electric side. I would think that would be on
24 the gas side as well, but I'm not a hundred
25 percent sure of that, but I know on the

1 electric side, again, it's less risky to
2 install a series of efficiency measures than
3 it is to build one power plant that may or may
4 not come online.

5 That's based on lifetime. So it's not
6 just a short term life. It's based on the
7 life of the measure. If over the life of this
8 measure on a discounted cash flow basis it
9 pays for itself or it passes based on these
10 screening measures, then it's eligible to be
11 included.

12 So there are a number, and again those
13 are only for the regulated. That screening
14 methodology only applies to the regulated
15 utilities. Others on this list are engaged
16 and energy efficiency utilities have their own
17 screening methodology which is similar but not
18 the same, but may not include all the factors
19 that I talked about before. It may include
20 other factors.

21 So I'm not going to go through all of
22 these, but there are a number of energy
23 efficiency programs currently available in the
24 state both through electric -- through
25 regulated utilities and through other agencies

1 that are able that offer these types of
2 services to their customers or their
3 clientele.

4 There are some heating and process fuels
5 which are essentially non-regulated fuel
6 services offered by electric utilities as a
7 part of their operations as well. The 2011
8 budgets are about 38 and a half million for
9 electric efficiency programs. That would be
10 the energy efficiency charge, and again this
11 is strictly focused on utility programs and
12 about 5.75 million dollars for heating and
13 process fuel programs that are also
14 administered by Efficiency Vermont. And these
15 are for revenues from both the forward
16 capacity market, which is an electric market
17 feature into which the efficiency savings in
18 the electric sector are bid into and receive
19 money in terms of value for that from the
20 ISO-New England power pool and also from RGGI,
21 which is the Regional Greenhouse Initiative,
22 which is essentially a permit system in which
23 Vermont receives some of the revenues of
24 permits sold to the electric sector to
25 essentially emit carbon.

1 Not quite sure what those examples are.
2 There's other methods. Building codes we
3 talked about that a little bit this morning.
4 We've just updated our building codes. They
5 are voluntary codes. We talked a little bit
6 this morning about green codes and other ways
7 to encourage energy efficient building and Act
8 250 which requires a maximum available
9 technology. I think there's some words there
10 that they require -- in other words, requires
11 you to build a building that is efficient.
12 The Public Service Department participates,
13 and the Commissioner is doing a great job of
14 doing energy efficiency in their permitting
15 process.

16 So those are more mandatory. There are
17 some other ideas. We talked about some of
18 these this morning. I said we'll talk about
19 some of these this afternoon. The property
20 assessed clean energy district the Legislature
21 is working on now and seems to have great
22 promise. We talked about -- our group this
23 morning talked about a utility kind of
24 property assessed clean energy district. Not
25 quite sure how that would work. Time of sale

1 disclosure where realtors would be responsible
2 for disclosing energy use to potential
3 customers of new homes, and some behavior
4 measures which may be enabled by the smart
5 meter which many of you may have heard about,
6 but the smart meter would, among the many
7 features that is touted as providing, would be
8 some sort of a real time indication of your
9 energy use and the price and which would allow
10 consumers to react in some way to the kind of
11 the current conditions in the electricity
12 market.

13 So there we go. Our next thing is I
14 guess -- where is Ed -- is to try to answer
15 some of these questions and to break into --
16 get your opinions about our -- the whole
17 reason for us is to try to get feedback from
18 you folks. So I guess we're ready for that
19 portion of the program. So thanks.

20 MR. DELHAGEN: Thank you, Dave. Good
21 switch hitter. Can we bring up the next set
22 of slides? We're going to break into small
23 groups and scatter out into the lower part of
24 the building over here, and as we did this
25 morning this would be an opportunity for each

1 of you to provide more depth in some of these
2 questions.

3 This morning we started off with a
4 fairly general set of questions and we're
5 going to do that as well, but we heard from
6 some folks during the break that there might
7 be some interest going a little bit deeper.
8 So we would encourage you as we go through
9 both the small group conversations and then we
10 come back for the large group to probe a
11 little bit deeper, and we are interested in
12 what your thoughts are.

13 The questions that we're going to
14 explore in our small group are right here.
15 Again, these -- for those of you from this
16 morning it's fairly similar, but we'll have
17 facilitators and recorders who will capture
18 your ideas.

19 The first question deals with -- it's an
20 overarching question primarily to help us get
21 started to look at the top concerns you have
22 or thoughts you have about energy efficiency
23 and what are some of the options that the
24 state's looking at to address some of those
25 concerns.

1 And the last question deals with
2 additional goals or targets, and we saw the
3 laundry list that already exists in statute.
4 Are there any additional ones? Are there
5 other targets that might be appropriate in the
6 context of energy efficiency?

7 So from that conversation there are many
8 pieces that start to draw down and you can go
9 as deep as your group would like to go. We're
10 going to spend about -- it's about 2:30 right
11 now. We're scheduled to get back together
12 here at 3 o'clock for our large group. I
13 think we're going to move that back to 3:15,
14 give each group plenty of time to have its
15 conversation. If you need to have a break in
16 between, do it during the travel time as we're
17 going back and forth.

18 A few other pieces before we break out.
19 One of them is that we do have some pieces of
20 paper around with the link to where you can
21 download the draft of the Comprehensive Energy
22 Plan. Some of these are on the front table.
23 So if you don't know where -- how to find it,
24 this is the place where you can go to get it,
25 and in your small groups we will also have a

1 set of blue sheets, this morning was yellow
2 this afternoon is blue, where you can capture
3 some additional thoughts and we're going to
4 have recorders trying to put stuff down, but
5 we found the conversation was also moving very
6 quickly.

7 This is your place where you could put
8 your own thoughts down on paper, and again you
9 can either fill it out and leave it here.
10 Place it in the box by the door on your way
11 out, and either way we very much want your
12 feedback on those.

13 Any questions? Okay. So we're now
14 going to break into small groups and this time
15 we're going to have fewer groups, hopefully a
16 couple more facilitators for each one to try
17 to improve the note taking. Okay. We're
18 going to do four groups and facilitators over
19 here by the door please so we don't get all
20 lost.

21 The first group is going to go with
22 Karin and we're going to do this. This is
23 going to be kind of rough. I'll ask you when
24 you get to your room if it looks like there's
25 more than about 15 people in your room maybe

1 try one of the other groups. We're not going
2 to be too picky about how to balance these.
3 We would like to try to have a relative
4 balance of about 12 or 13 people per group to
5 keep it relatively even, and there are a
6 number of rooms down there.

7 So the first group is going to be this
8 contingent right here in this quadrant and
9 they will be going with Karin. Karin, can you
10 raise your hand?

11 The second -- and George is also going
12 to be going with that group. The second
13 contingent is going to be going with Dave and
14 that's going to be this set right here. Okay.
15 So this quadrant will go with Dave. Then the
16 next will go with Kelly. Kelly, where are
17 you? Kelly is over here, and we'll have this
18 quadrant go with Kelly starting with this row
19 to the back; and then this front row and this
20 collection will be group number four and
21 you'll go with me. Okay. And everything is
22 downstairs. We'll meet back here at 3:15.

23 (Recess.)

24 MR. DELHAGEN: From what it looked like
25 we had a lot of good conversations with

1 engaged groups. As we mentioned before if you
2 had hard comments that you would like to put
3 on your blue sheets, small group forms, please
4 fill them out. There's a box on the
5 registration table by the exit and we would
6 very much like you to leave those behind.
7 Again, if you would like to leave your name on
8 them, that's welcome but not necessary.
9 Please give us those responses. Again there
10 are opportunities via web.

11 We're going to move into a large group
12 conversation right now. We provided a couple
13 of focal questions and the Department has
14 asked a couple people who have been deeply
15 involved in some of these aspects to provide
16 some comments at the front end to try and help
17 get us going.

18 The three questions that we're kind of
19 looking at for general conversation right now
20 are suggestions. There's a lot of other
21 places, especially what I heard potential
22 things that came up in the small group, a lot
23 of other places where we could go with this
24 conversation this afternoon. Again, we're
25 going to try to download deeper than we did

1 from this morning's session, but we have a
2 couple of overarching points. I want to go
3 through them very quickly.

4 When valuing energy efficiency
5 investments what should the state emphasize;
6 for example, carbon reduction, economic
7 development, energy independence,
8 affordability. Those are all possibilities
9 and questions we could look at.

10 The second one is given the existing
11 state goals and targets to reduce energy
12 demand for both electricity and heat or
13 process fuels how can Vermont best achieve
14 these goals? What is working now that needs
15 more support? What's not working and what new
16 initiatives are needed? And some of these
17 types of things have already come up in the
18 sessions, and if you would like to bring them
19 up in this session here that would be welcome,
20 and the last question is cost effectiveness.
21 If cost effectiveness is an important
22 criterion, what should be included by
23 identifying the costs and benefits? For
24 example, externalities like carbon, non-energy
25 benefits like comfort, are there others we

1 should think of as well and who should bear
2 these costs? Should they be ratepayers, tax
3 base or those individuals or businesses or
4 geographic areas that benefit.

5 So these are a couple of overarching
6 questions. They are a little more specific
7 and we would welcome your thoughts on these.
8 Again if you have other comments you would
9 like to share, we welcome those.

10 I would like to get started with George
11 Twigg from Efficiency Vermont. We've asked
12 him to share a couple minutes, keep it
13 relatively short and get us started. George.

14 MR. TWIGG: Thanks. George Twigg and
15 actually for clarification today wearing my
16 Vermont Energy Investment Corporation hat,
17 VEIC being a private non-profit, that as I've
18 been fortunate enough to run Efficiency
19 Vermont for the last ten years, but here
20 representing VEIC today, and I'll sort of
21 speak to these questions but just have a
22 couple points to make.

23 One is I think from our perspective, and
24 actually answer the first question, we really
25 focused on carbon as being kind of a centrally

1 organizing goal, and a lot of these other
2 pieces I think fall out from that because
3 there are energy independence implications and
4 economic development implications,
5 affordability implications for taking steps
6 that address our need for carbon reduction.

7 The organizing principle that we see,
8 and I do have this planning process seeing the
9 state rationalize and relook at sort of the
10 potpourri of different goals that we have in
11 the state right now. The 25 by '25 goal. We
12 have the state building and energy efficiency
13 goals which were mentioned earlier. There are
14 renewable goals. There are transportation
15 goals. Trying to rationalize those into an
16 integrated portfolio of where the state should
17 go is important.

18 I think developing deep level
19 partnership with state government and to look
20 at if there are structural changes that can be
21 made. For instance, Connecticut has either
22 proposed or actually has put into place now a
23 Department of Energy and Climate Change where
24 they have integrated those pieces because they
25 recognize how closely linked they are.

1 United Kingdom has a similar governance
2 structure, and so I think to look at what's
3 the role that DPS is playing, ANR is playing,
4 and some of the other partners, and trying to
5 see if there's a way that that can be
6 addressed in a coordinated way so that there
7 are, you know, the climate cabinet is one way
8 to look at it. The other way is here's
9 someone who has ownership of this issue and is
10 responsible.

11 I think there's also -- to one of the
12 questions that was asked in the small groups
13 looking at in terms of the current format of
14 the state plan as it is now look at some of
15 the great work that's been done in other
16 states. California comes to mind. They just
17 put in place a fantastic energy efficiency
18 plan. It has things that are very specific
19 like for each of the areas where it's new
20 construction, business, market transformation,
21 there are very specific goals that really
22 drill down year by year into this is what
23 we're going to accomplish short, medium, and
24 long term, and implementation strategies to
25 actually go out and do all of that. Very

1 detailed. Massachusetts similarly has a good
2 plan which they just adopted in December.

3 And then just briefly in terms of the,
4 you know, electric and non-electric efficiency
5 specifically, I think, you know, in the
6 non-electric side you really need to look at
7 what we can do to raise that level of
8 investment to something which is comparable to
9 electric efficiency.

10 Vermont's been very fortunate in our
11 ability to invest in efficiency on the
12 electric side of the state. We're actually
13 number one in the nation per capita on that
14 side, but we lag far behind on the
15 non-electric side, and for people who are
16 concerned with their heating bills for which
17 their costs are typically quite a bit higher
18 than their electric bills, the carbon
19 implications of that energy use we really need
20 to look at both some sort of public subsidies,
21 whether it's gross receipts tax or some other
22 mechanism, especially for those moderate
23 income families who are just above low income
24 weatherization eligibility, plus really
25 aggressive and easy to use financing because I

1 think we know with the level of investment
2 needed there will never be enough purely
3 public money. So how do we make financings as
4 easy as possible to access.

5 On the electric side then continued
6 investment and innovation in where Efficiency
7 Vermont has been one of the leading programs
8 in the nation, and really looking at --
9 especially if we're looking at our power
10 portfolio where we have to start planning for
11 our future which doesn't necessarily include
12 VY, looking at if we were investing in energy
13 efficiency at a steady two and a half, three
14 percent a year, how can that really form an
15 important part of a clean energy power
16 portfolio in the future for many years to
17 come.

18 And, finally, I'll just say I think we
19 need to look on the electric side at using
20 technology to innovate. Smart grid is one
21 example I think where especially on the
22 behavioral side there is a lot of savings in
23 terms of conservation in smart grid technology
24 could enable, if people are able to be given
25 feedback from their energy usage not on a

1 monthly basis on their bill but on more of a
2 real time basis, they can understand oh wow
3 that's my hot water heater that just popped up
4 to 4,000 watts, maybe you should be taking a
5 shorter shower or washing my clothes on cold.

6 There's all kinds of information that
7 can help to provide changed behavior. One of
8 the challenges we have is being able to
9 quantify what that behavior is resulting in.
10 You know, we know when we change a light bulb
11 we can do the engineering easily on going from
12 an incandescent to a compact fluorescent it's
13 going to save you a certain amount of energy.
14 Quantifying savings is much more difficult,
15 but it's important in order to be responsible.
16 If we're going to spend money to promote say
17 savings through smart grid, we have to be able
18 to show what the savings and what the benefit
19 to the state is.

20 So I think sort of push the envelope
21 more on the behavioral side will enable us to
22 open up new doors to keep Vermont in the
23 forefront. Thanks.

24 MR. DELHAGEN: Great. Thank you,
25 George, for those comments. Okay. We would

1 also like to get an energy efficiency
2 perspective from David Martin of Green
3 Mountain Power.

4 MR. MARTIN: David Martin, Green
5 Mountain Power. I didn't know I was going to
6 speak today so I'll probably keep my comments
7 kind of brief.

8 What we strive for at Green Mountain
9 Power is to get a balance between cost
10 effective energy efficiency and the capacity
11 of our ratepayers to pay for energy
12 efficiency. Right now it's at about five
13 percent, and as George mentioned we are
14 extremely interested in the transportation
15 industry and in the non-electric industry and
16 how to get that funded, and that also came up
17 in our small group and I imagine it may have
18 come up in all the small groups, and what we
19 also are struggling with with Efficiency
20 Vermont is the fact that the future, as Dave
21 Lamont mentioned, has expected energy costs of
22 being quite low, and in my opinion the
23 connection between oil prices and natural gas
24 prices has fundamentally been broken with the
25 map that David showed on the shale gas, and so

1 what we expect to see is we expect to see oil
2 increase and natural gas to remain pretty much
3 flat lined or go down in New England, and
4 which is what we're beholden to, the price of
5 marginal electricity is natural gas related
6 because that's the generation source.

7 So we're struggling with some of the
8 screening measures that I know Efficiency
9 Vermont has and what to do with that, and I
10 would be welcome and open to any questions
11 that anybody has after this, but that's all I
12 have for now.

13 MR. DELHAGEN: Okay.

14 MR. MARTIN: One more thing. I would
15 like, and thank you, Liz, for having this
16 forum. I would really love to see something
17 similar when it comes to smart metering and
18 specifically rates, and I would like to see a
19 lot of public input into that because
20 everything's conjecture right now and
21 everything is, you know, do you have real time
22 rates where you may have individual customers
23 saving a lot more energy, but not many people
24 participating because it's a confusing rate
25 design or a lot of time input into it, or

1 should you have a static time of use rate
2 where maybe each individual customer doesn't
3 save as much, but they can do something once
4 and forget about it and you get more people
5 participating.

6 So just for future, Liz. Thank you.

7 MR. DELHAGEN: Okay. Great. Dave,
8 thank you for those opening comments, and one
9 other thing. We would like to hear from Jeff
10 Wilcox who works with the weatherization
11 program for the State of Vermont.

12 MR. WILCOX: Hi. I'll be brief. I'm
13 surprised too. So I work for the Agency of
14 Human Services Department of Children and
15 Families in the Office of Economic
16 Opportunities. So basically we're a social
17 program and we provide energy savings -- we
18 provide -- basically we improve people's lives
19 through energy efficiency and save them fuel
20 and electricity which saves them money that
21 they can, you know, put food on their plate
22 and clothe their kids.

23 So we've been doing this for many years.
24 Things we've, you know, a lot of it applies to
25 what's going on here. We have limited

1 funding. In recent years we have had ARRA
2 funding so it jumped up a little bit. We
3 weatherized 1800 homes a year the last couple
4 years, but, like I said, we're limited
5 funding. So we use a cost benefit ratio where
6 we analyze every measure we do and get a cost
7 effectiveness and go after the big bang for
8 the buck. That doesn't mean we're skimping on
9 what we do. We insulate and air seal and we
10 never leave an uninsulated surface or a leaky
11 surface, but also importantly, and I think I
12 heard this much today, is health and safety.

13 We don't -- we leave a home safer.
14 Every home just about safer than it was when
15 we start doing this work. We got to think
16 about the health and safety. The type of
17 building affects a lot of people. So we
18 improve people's lives that way as well.

19 Another key thing we need to train
20 properly. You just can't expect people to go
21 out and do this work and do it properly. It's
22 new to most people unless you have been in
23 weatherization or worked with Efficiency
24 Vermont, and we can't just put people in a
25 two-week class on-the-job training.

1 The other important thing is quality
2 control. Our office we inspect 10 percent of
3 the jobs and I think you need to go to at
4 least to 10 percent. You need to be out there
5 monitoring, you know, not just once a year
6 thing. You got to be making sure things are
7 being done correctly because this type of work
8 once it's done it's done.

9 So, yeah, we're welcome to have more
10 money. Give us more funding. This era we
11 have had some growing pains, but we have a
12 training facility at VTC. We can ramp up
13 quickly and efficiently. Thanks.

14 MR. DELHAGEN: Okay. Thank you very
15 much. Okay. We're going to ask for general
16 comments and follow-ups. We have some
17 questions up here in front. I would ask you
18 to just stand up if you want to talk or raise
19 your hand. Kelly will bring the microphone to
20 you, and please say your name clearly, and if
21 you represent an organization, let us know
22 what that organization is so we can capture
23 that for the record. It's -- try to make sure
24 the microphone is up pretty close, not too
25 close, but close enough so everyone can hear

1 you.

2 MR. LIDDY: My name is Dennis Liddy. I
3 live in Westfield, Vermont, and one of the
4 things I was -- more a question I guess to
5 you, but someone brought it up. In talking
6 about all the agencies you have listed there
7 part of the groups working on this why isn't
8 there anybody from the Department of Health?
9 I mean you get into renovating, that's
10 asbestos abatement. Also developing these
11 wind turbine farms or the industrial wind
12 projects not knowing what the health impacts
13 are for the people that are living near those,
14 you know, and I know some of those guidelines
15 they are not set anywhere, but somebody needs
16 to be doing them and keeping up on the latest
17 research, and to not have somebody from the
18 Department of Health there when I saw that
19 this morning to me that was a glaring
20 omission.

21 COMMISSIONER MILLER: Good. I
22 appreciate that comment because actually the
23 Department of Health works closely with us on
24 several issues, and you're right. What we
25 should be thinking of them as a part of this

1 team as well, but, for example, we've worked
2 with the Department of Health on smart meter
3 issues. As people have brought concerns to us
4 they have looked at it for us and they will
5 continue to do that.

6 So it's a very good comment and it's not
7 the Department of Health isn't looped in
8 closely with us, and you're absolutely right
9 we should be thinking of the planning process
10 more broadly.

11 MR. LIDDY: Also I'm a member of the
12 Lowell Mountains Group. I should say that
13 too.

14 MR. DELHAGEN: Okay. Who is next?
15 Raise your hand. Okay.

16 MR. WUERTELE: Yes. Jim Wuertele,
17 Energy Committee of St. Johnsbury.

18 A couple of concerns. One is that on
19 the first item in valuing energy efficiency
20 investments what should the state emphasize, I
21 think what's not appropriate in all of the
22 little projects that I've seen where people
23 have made plans is they are planning for only
24 a little bit of an increase in the value of
25 the dollar or they are only planning for a

1 little bit of an increase in the value of
2 fuel.

3 Fuel has gone up 14 percent per year
4 since 1999 and the value of the dollar has
5 dropped much more than 5.3 percent that I see
6 in the VPIRG report. So we're really talking
7 about let's make some realistic estimates
8 here. It will be a lot more encouraging.

9 So I don't know how to make this
10 official, but it might be worth doing if you
11 have a couple of sample calculations in the
12 report or something like that, and I think
13 that I fear, since I see things not as a
14 professional as many of you are in this
15 business, I see this strictly as a consumer of
16 energy and representing people who are on the
17 consumption end, and when they look at my
18 house and it's now got 11 and a half inch
19 thick walls and all the other things that go
20 with it; the mechanical ventilation, special
21 air system for the furnace that had to go in,
22 all those things that had to convert that
23 1850's house to a modern house, many of the
24 people just feel that they have to say
25 something to me to give the reason why they

1 are not doing it.

2 So I think the guilt factor is there.
3 It's just the other steps that are not there.
4 They feel they have to give me an excuse that
5 I'll buy, and when I put in my solar hot water
6 system the fella said well it only, you know,
7 pays back in eight years, and I said well
8 actually it will probably pay back a lot
9 sooner than that, but I'll tell you what.
10 I'll take you out to dinner in eight years if
11 you're still my neighbor.

12 The thing is there's a lot of thinking
13 in my neighbors' minds and friends' mind and
14 people who know about my house and the systems
15 they just don't know that we're entering as a
16 nation a time of pretty bad stress on our own
17 dollar, and we're realizing now that taking
18 five times the normal amount of resources from
19 the earth is not going to be tolerated too
20 much longer by our other national neighbors.

21 So there's a lot of worry that I have
22 for too little too late, and so if we can make
23 this comprehensive energy policy short, sweet
24 and really, really strong, that's what I want.

25 MR. DELHAGEN: Okay. Thank you.

1 MR. GRANDA: Chris Granda of Richmond.
2 Addressing a second bullet with the existing
3 stakeholders, I guess the one I wanted to
4 specifically speak to was the one with
5 reaching 8,000 homes and saving 25 percent of
6 the energy used by those 80,000 homes. It's a
7 great goal. It's technically achievable, and
8 none of the programs that we have currently in
9 place in Vermont can do that.

10 We that's -- at the cost that the
11 current programs run it would be about 400
12 million dollars and that's a good investment,
13 but it's not a reasonable amount of money to
14 collect and put to the government. So I guess
15 the challenge that I have is the state
16 emphasizes where can the state take some risks
17 and innovate and look for the innovative
18 solutions that will create the demand for
19 these services in the private sector and
20 inspire private investment, cost effective
21 investment in residential energy retrofit.

22 COMMISSIONER MILLER: Do you have ideas?

23 MR. GRANDA: I do but --

24 COMMISSIONER MILLER: Give me your best.

25 MR. DELHAGEN: You had a couple of very

1 interesting ideas. Give us at least one of
2 them.

3 MR. GRANDA: Well I'll pull out the Gold
4 Star Home ideas, and we had a really
5 interesting conversation sort of focusing on
6 the real estate community that H.57 is a first
7 step in the right direction towards providing
8 information, this is a home performance
9 labeling bill, and that provides information
10 into the system, but that's what I would call
11 a necessary but not sufficient input.

12 You also need to educate people, drive
13 them in, have a high score be something that
14 is desirable. Sometimes just having the
15 information can have that impact. In Europe
16 the way they did their equivalent of Energy
17 Star where there's actually a grade on every
18 product that you buy had that impact. It took
19 20 years. If you want to accelerate that you
20 educate people about what this rating means,
21 where they can find it, and why they should
22 look at it in MLS when they buy a house or
23 list their own, but there's a lot we can do
24 with the professional communities as well.

25 I think if we look at the trades as

1 communities in and of themselves who can
2 compete; inside the plumbers, inside the
3 carpenters for qualifications to be high
4 quality providers of these services, we can
5 increase the overall level of service
6 provision and have that feed into a
7 recognition system like the Gold Star system
8 where you get a Gold Star contractor to do
9 your Gold Star home and then you can have a
10 high level of confidence about the performance
11 you're going to get at the end.

12 So these are structures that it is
13 practically possible for the state to play a
14 role in, but it's more of standing on the
15 bully pulpit and applying small amounts of
16 money in judicious ways, but organizing and
17 organizing the existing communities of
18 practice in the state.

19 MR. DELHAGEN: Okay. Very good. Thank
20 you. There's opportunity, if you feel like
21 commenting off of something that's been said
22 before, please feel free. Don't just -- it
23 doesn't necessarily have to be a clean stand
24 alone thought if you want to reflect on
25 someone else's idea.

1 MS. LAUNDER: I want everyone to know
2 it's a kids' exercise class, and again it's a
3 good thing. But sorry about the disruption.
4 We can join after this.

5 MR. UNGER MURPHY: John Unger Murphy
6 from St. Johnsbury. Picking up on what you
7 just talked about, an idea would be incentive
8 monies being changed into loan guarantee
9 monies where incentive monies to try and get
10 more private dollars or banking dollars,
11 normal business way of doing business into the
12 system.

13 Economic development and the effects of
14 efficiency, energy efficiency investments is
15 tremendous. Every dollar that we spend on oil
16 or on electricity that's manufactured by
17 burning oil or natural gas, what is it, 60
18 percent leaves our state, and/or more, and
19 then how much of that leaves the country?

20 And when you think in terms of doing the
21 energy efficiency work, if the loan guarantee
22 is done and that money is coming from the bank
23 which is in your community, it's being used to
24 pay for the work that's being done and the
25 products that are being purchased which are

1 quite often much more likely a higher
2 percentage of insulation is manufactured here
3 in the United States. So windows, and then
4 when that home is done and you've got a whole
5 town of maybe 50 percent of the homes are done
6 and they are using very little energy to heat,
7 every year that's more money within the
8 community to be spent on other things besides
9 oil or gas where those dollars now cycle out
10 way, way far away from the home.

11 So very, very quickly that economic
12 development the cycle of those dollars is
13 immediate right in the neighborhood year after
14 year circling around in the neighborhood in
15 the community, whereas, when you're buying oil
16 and whatever that percent was that someone
17 said actually leaves the country it's going to
18 be couple hundred years before it comes back
19 to your pocket.

20 So I think the impact on -- economic
21 development impact is just wonderfully
22 positive.

23 MR. DELHAGEN: Okay. Thank you. Try to
24 keep your comments short so we have
25 opportunity for lots of folks.

1 MR. FAESY: Richard Faesy with Energy
2 Futures Group. So just support what John
3 said. The policy priorities and the current
4 draft plan don't mention economic development,
5 and so I think that makes sense, and I want to
6 fill in a couple holes that haven't been
7 talked about and two other points.

8 One is that we have no current goals for
9 new construction, and this is a great
10 opportunity to put a stake in the ground and
11 say that we will build all new homes and
12 non-residential buildings to net zero energy
13 by 2030. We've got the 80,000 homes goals for
14 existing. There's nothing there that puts us
15 on a trajectory for codes and for new
16 construction. So that would be one item to
17 add for the second bullet there.

18 The last point in the last question has
19 to do with cost effectiveness test. Right now
20 we determine what's cost effective based on
21 the societal cost test which does not fully
22 capture all of the benefits. It captures all
23 the costs of what it takes to invest in
24 programs, but it does not capture the benefits
25 of health, comfort, durability, the list goes

1 on, and I think it's probably time -- there
2 are a number of other states that are
3 reexamining the test. That's really the
4 foundation of how we decide where to invest
5 our funds and efficiency. It's probably time
6 to look at that societal cost test and
7 question whether we might be wanting to look
8 at another test like what has traditionally
9 been called the utility cost test and some are
10 now calling the energy and water test, for
11 instance, but I think we should -- this is an
12 opportunity to look at that and since it is
13 the foundation for a lot of the decisions
14 here.

15 MR. DELHAGEN: Go ahead.

16 MR. BUCKLEY: I'm Tom Buckley with
17 Burlington Electric Department. We are the
18 state's other efficiency utility.

19 First of all, I wanted to lend support
20 for the comments that George Twigg made
21 earlier. I think that he did a good job of
22 summarizing the list of issues that efficiency
23 utilities are carrying forward, but I also
24 wanted to mention there was a lot of
25 discussion in our breakout group about this

1 time of sale concept, or I think necessary or
2 not sufficient was how Chris Granda described
3 it.

4 In Burlington we do actually have
5 another step and that's compliance in
6 multi-family with sort of basic energy
7 efficiency standard. So at least that concept
8 has been tried and it's one that I would
9 encourage the state to consider. It's one of
10 those difficult ones in the Legislature
11 sometimes.

12 I think I heard another idea and I want
13 to give credit to Norm that I had never heard
14 before. This idea of a time of lease
15 disclosure where I think what it would
16 essentially require property owners to give
17 prospective tenants information on the energy
18 performance of those apartments, and I think
19 that's just ingenuous, and I know there's a
20 lot of wrinkles in implementing something like
21 that, but I just wanted to encourage us all to
22 think more about that and put it out there for
23 discussion.

24 MR. DELHAGEN: Great. Thank you.

25 MR. COOK: Brad Cook, Building

1 Performance Services, home performance
2 contractor in Warren. I'm also the Chapter
3 Chair of Efficiency First in Vermont which is
4 a trade organization for home contractors, and
5 couple things that I would like to comment on.

6 One is the state and municipal
7 governments and energy efficiency. I
8 mentioned in our small group about the state
9 and the huge ice dams that I see coming off of
10 state buildings in Montpelier that a lot of
11 that can be cut down by a small investment.
12 There's some huge holes in some of those
13 buildings. I see lights that are left on all
14 day long. There's no reason for it.

15 I see towns -- I've been involved in
16 doing energy audits and working with several
17 towns in Central Vermont and a lot of them
18 don't want to spend their own money to improve
19 energy efficiency. They are looking for
20 handouts, state and federal handouts, and one
21 of the biggest handouts happens to be for
22 solar. So we've got local schools that have
23 put solar panels on the roof, but are not
24 improving their energy efficiency that really
25 should be setting an example.

1 A local elementary school I know of,
2 instead of fixing the problem of heat loss,
3 they have installed electric heating cables on
4 their roof to solve an ice problem. Wrong
5 solution poor example, and I think that's all
6 I'm going to say for right now.

7 MR. CERALDI: Ted Ceraldi. I think,
8 Commissioner, you should get the Health
9 Department involved in this.

10 MR. DELHAGEN: Louder.

11 MR. CERALDI: As we button up our homes
12 and our buildings in the State of Vermont the
13 downside is environmental quality. We're
14 talking right here in this room in CFMs per
15 person, we're not getting it, okay, and we're
16 entitled to a certain number of particulates
17 in the air, no more, and it goes on from
18 there, and the Health Department this is their
19 purview. You have children with asthma
20 because they are not outside enough or they
21 are indoors they don't have a good
22 environment. You have offgassing of
23 materials.

24 When we put in a geothermal system and
25 put in a radiant floor we went out and bought

1 a hundred percent wool rug for an area rug and
2 the guy wanted to sell us a backing for the
3 rug. I said no we can't have that. What do
4 you mean, the rug is going to wear out. I
5 said well with the heated floor and the
6 backing that throws an offgas, and I said I
7 just don't want to be in that situation.

8 So the Health Department must get
9 involved and that may be the way. Thank you.

10 MR. BULLIS: I'm Allan Bullis. Energy
11 auditor by day and South Burlington Energy
12 Committee by night, but in any case one of the
13 things we've tried to be an advocate for
14 energy, and one of the things is that you
15 cannot look at, you know, the carbon side.
16 There's so many carbon naysayers. I think
17 it's critical we deal with the carbon on the
18 left and the people on the right so we can
19 agree on economic development and energy
20 independence and affordability, but try to
21 keep carbon out of the picture.

22 One of the things as far as the goals, I
23 understand what Richard said about looking at
24 the additional benefits and doing
25 weatherization and energy reduction, but

1 appealing to this wide range of people their
2 common denominator is the dollar. So I think
3 really we ought to be just looking at dollars
4 out of pocket so that it's pure economics.

5 We all are talking to the choir here.
6 We all know there's tons of extra benefits.
7 That's part of reason why we're here, but for
8 the general public I believe we really got to
9 look at the dollars bottom line so -- and then
10 in doing that I think we're really -- it's
11 important to focus on what the return on
12 investment or in doing that we're not putting
13 solar panels and subsidizing solar panels.
14 We've got these egregious one year pay back or
15 less items that are all over the state of
16 ours.

17 I'm an auditor. There's tons of horror
18 stories, commercial more than residential.
19 What's above a dropped ceiling will make an
20 energy auditor puke sometimes, but in any case
21 -- so bottom line is, you know, let's invest
22 on where it makes sense.

23 Norm's got a great program. He gets
24 only one-third of his energy savings from the
25 schools comes under the purview of what

1 Efficiency Vermont has to offer as far as
2 incentives. Why? Because Efficiency Vermont
3 can't go after behavioral changes. Norm can
4 and that's where he's getting a lot of energy
5 savings.

6 So I think that we need to loosen the
7 reins up on reporting, and I know you got to
8 be accountable for every dollar spent to kWh
9 saved or BTU saved, but ease off on the people
10 crunching numbers and let's be more precisely
11 right than precisely wrong.

12 MR. GUYER: I'll come down to the
13 center. I have two things that I would just
14 would like to say. I'm Frank Guyer, hopefully
15 your energy coach for the State of Vermont.

16 I would also like to thank Commissioner
17 Miller for allowing me to change the lighting
18 in this room. As you notice we have lights
19 down the center. Other lights are shut off.
20 Now we didn't save a whole lot of money here
21 this morning, but if everybody did that in
22 every meeting place across the state today, it
23 would have been a lot of money and that's what
24 I want to tell you about is that when I go
25 into a school and try and teach people to shut

1 off energy, what am I looking at? I am
2 looking at the monitor that's got the little
3 green light on the right-hand corner. If that
4 monitor is off, the teacher is on the Guyer
5 energy team, she's saving energy.

6 What's a monitor? Geez. \$2.50 to have
7 that monitor on for the whole year. If you
8 shut it off every night, halftime during the
9 year, I save \$1.25. Big deal. Guess what?
10 South Burlington school has over a thousand of
11 those monitors. If they are all on using
12 energy, money down the electric faucet down
13 the drain.

14 What do I get? I have a savings of
15 \$1,500 a year just by that little green light
16 on your computer monitor. So every night when
17 you guys want to be on my team, if I come to
18 your office and see the lights off in the
19 room, that monitor off if it's not being used,
20 I know you're saving energy and that you're
21 serious about saving energy. Everybody can
22 tell me they want to save energy, but they
23 don't want to shut off the lights. Well guess
24 what? I'm an old man. I'm the old dad and
25 I'm going to come around to your offices and

1 I'm going to check to see whether you have too
2 many lights on or you're using just the proper
3 amount of lights.

4 So that's where I'm going to leave it at
5 the lighting thing, but I just would ask you
6 to go into the legislative dining room and
7 make sure that those legislators start
8 shutting off some of those lights on a sunny
9 day because that is money down the drain, and
10 they will tell you there's no money for poor
11 people, but they are wasting your money and
12 you guys are the leaders. You guys are the
13 people who everybody looks up to. If you
14 don't do it in your office, they are not going
15 to do it in their home.

16 The custodian will tell me why should I
17 do it, my boss never shuts off her or his
18 light. So that's what I'm asking. You get
19 off on Shap Smith. You get on the Governor.
20 When you walk in that office you can look
21 around and say oh I notice we've got the
22 energy faucet running. So that's the first
23 thing. The second thing --

24 MR. DELHAGEN: Okay. Let's keep it
25 short here.

1 MR. GUYER: The second thing will be
2 shorter. I've been a realtor for 40 years.
3 The energy audit is the best way to help
4 weatherize buildings. Why? Because at the
5 time of sale that's when there's money on the
6 table to do it, and you have 30 years of
7 financing to do that change; windows, weather
8 insulation, all those things that you might
9 only get for a five-year credit you can get
10 for 30 years.

11 Now I'm a realtor. They are going to
12 fight you tooth and nail because what? Money
13 out of their pocket or time like guess what?
14 Act 250 was the best thing that came down for
15 this state and they fought it all the way and
16 they complained about it, but it still has
17 helped them all out because what it did was
18 take out those deep ups and downs that
19 everybody else suffered throughout the country
20 and Vermont had little levels.

21 So that's the two things. Shut off the
22 lights because I'm going to be on your butt,
23 and the other thing is the energy tax credit.

24 MR. DELHAGEN: Okay. Thank you.

25 MR. GUYER: You're welcome. Sorry to be

1 so emotional about it.

2 MS. LAUNDER: You will be happy to know
3 Commissioner Miller is a fanatic shutter
4 offer, but if you want to check on her, she
5 stays very late.

6 MS. MILLER: Johanna Miller, Vermont
7 Natural Resources Council. I would say that
8 building off what Chris was saying some
9 specific implementation strategies right now
10 there is an effort afoot in the Legislature to
11 make some strategic fixes to property assessed
12 clean energy program.

13 I think financing is one of the biggest
14 obstacles to energy efficiency investments and
15 people are looking for handouts. Energy
16 efficiency is not particularly all that sexy
17 and people don't understand it well enough to
18 want to make those investments so they are
19 looking for incentives. Programs like the
20 PACE program will help homeowners, you know,
21 and a lot of homeowners want to do this. A
22 lot of homeowners are educated enough to
23 understand the benefits of efficiency want to
24 couple that with renewable investments on
25 their homes.

1 So there's a huge opportunity to have
2 the state put their shoulder behind the PACE
3 program now as it moves out of the
4 Legislature, and it hopefully will, and in its
5 ongoing implementation. I think you can look
6 at Boulder, Colorado where when they first
7 moved forward with the PACE program, you know,
8 a segment of the population signed up and then
9 another segment signed up and then another
10 segment, and it's because people there, the
11 early adopters and those that understand and
12 see what the benefits of those kinds of
13 programs do.

14 So I think the state and they can look
15 to partners like my organization, VEIC, VPIRG,
16 and others who are really eager to help
17 communities implement that kind of program,
18 and I think PACE will take some of the burden
19 off of the state and the Feds for folks that
20 are looking for handouts and help to make it
21 easier for homeowners to make those kinds of
22 investments. So that's one strategic
23 suggestion I would offer.

24 Communities are going to need some help
25 to implement that program, and I think the

1 state has an opportunity to help them.

2 MR. DELHAGEN: Okay. In the back.

3 MR. BELLIVEAU: Eric Belliveau, Optical
4 Energy. I just wanted to talk about two small
5 things that are subcomponents of financing;
6 One being that a lot of energy efficiency
7 opportunities happen when a piece of equipment
8 has failed. A lot of things we've talked
9 about today are when you have time to plan for
10 PACE financing and other things you have time
11 to plan. So looking at energy efficiency
12 opportunities to lend at that time of failure
13 so a good thing.

14 And then another one is to look at
15 financing in a much broader term potentially
16 statewide where you're backstopping fifty to a
17 hundred million dollars worth of loans and
18 then securitizing them into the market, having
19 that money come back to the state through the
20 entities that lent it to begin with. So those
21 are two options on the financing end.

22 MR. FORWARD: I'm Jeff Forward. I'm a
23 renewable energy and energy efficiency
24 consultant. I'm also Richmond Town Energy
25 Coordinator. I had a couple suggestions.

1 One is that efficiency generally pays
2 for itself, but where the challenge is that
3 people don't have -- necessarily have access
4 to credible third-party information, and I
5 think that's where the state can help a lot
6 is, you know, you'll never find a builder that
7 will say he doesn't build an energy efficient
8 home. They are all highly efficient, but, you
9 know, you ask anybody else who is in the field
10 and you'll find there are places where they
11 aren't quite what they say they are.

12 So I think that the third party place
13 where we have right now in the state is
14 Efficiency Vermont, but they don't have the
15 mandate to do fossil fuels like they do
16 electricity. So that would be one suggestion
17 is to increase Efficiency Vermont's mandate,
18 find a funding source for them so that they
19 can credibly and effectively do what they have
20 done for electrical efficiency through fossil
21 fuels.

22 COMMISSIONER MILLER: It's really a
23 funding issue. The mandate exists. It's
24 expanding --

25 MR. FORWARD: They don't have the

1 funding they can't put the resources towards.

2 COMMISSIONER MILLER: The earlier slide,
3 I can't quite remember the numbers, you guys
4 know them cold, but it's a fifth of the fund
5 approximately in all fuels compared to
6 electricity, even though electricity usage is
7 a third of the picture.

8 MR. FORWARD: Exactly. So tying their
9 resources to the particular fuel type by
10 getting some contribution from fossil fuels to
11 their implementation would be -- would make
12 logical sense to me.

13 As far as financing goes I agree with
14 everybody who talks about financing that's the
15 key, and so the time of sale is a good
16 opportunity and at the time of sale for
17 existing homes I think that's where you can
18 tie that in. The PACE program I think is, you
19 know, a way to finance long term efficiency
20 that goes with the building rather than with
21 the homeowner and that's a good opportunity.

22 For municipalities there's a mechanism
23 that hasn't been well understood or used very
24 well in Vermont and I think I'm having a fair
25 amount of success with schools now called

1 municipal leasing, and it's a lease purchase
2 arrangement. So it allows schools to buy
3 efficiency improvements by leasing them rather
4 than paying for them upfront as a capital
5 cost. So they don't have to bond for it.
6 It's acts as a loan, but it lives on the
7 operating side of the budget rather than the
8 debt service side of the budget.

9 So I think where you could think, you
10 know, a place for the policymakers to think is
11 where can I get good information to, you know,
12 to people so that they act in their own best
13 interest and so that they know how to do that,
14 and how can I -- how can the state support
15 that technical assistance in an effective way.

16 MR. DELHAGEN: Okay. We're going to
17 start paring it to closing, but we have a half
18 dozen people we'll try to get to.

19 AUDIENCE: This might be rather
20 embarrassing. I focused a lot on the
21 greenhouse gas emissions because having read
22 for years and years about the problem with the
23 increasing temperature of the climate I'm
24 really scared about that. We're talking about
25 survival of the earth's ecosystem in some form

1 and there's nothing more important. So I see
2 from time to time the word carbon reduction,
3 but there's something about equating and value
4 like the first thing carbon reduction,
5 economic development, energy independence,
6 affordability, et cetera, they are not equal.
7 So what could we do? I think we're kind of
8 helpless, but let's not forget that these are
9 not equal.

10 AUDIENCE: So I agree with my friend
11 here John. Yes, so energy efficiency is great
12 and -- but that's kind of separate from the
13 issue of carbon reduction because if you're,
14 you know, living in an efficient house but
15 you're still using an oil boiler, it's not
16 really solving the problem of the carbon. So
17 going in the wrong direction and you're going
18 50 miles an hour and then you slow down to 30
19 you're still going in the wrong direction.

20 So really the issue carbon neutral
21 carbon zero society is where we want to go I
22 think. I have been researching a little bit
23 on the smart grid and problems with the
24 wireless technology. So I think that's not as
25 clear-cut an issue as we might like to think.

1 So smart grid problems and that's it for me.
2 Thank you. It's been a great day.

3 MR. DELHAGEN: We have several up here
4 in the front too.

5 MR. FRANCIS: Great. Thank you. I'm
6 Clay Francis with the Vermont Public Interest
7 Research Group.

8 Just want to touch on a few of the
9 comments that were made about the linking
10 energy efficiency and to the carbon reduction.
11 I would argue that they are related, and I
12 think that I've crunched the numbers and I've
13 looked at what we have available in Vermont
14 talking about renewable heating technologies.
15 We can't get there unless we do efficiency.
16 So I think it has to be both.

17 I think that we can combine efficiency
18 and renewable heating technology in a way that
19 makes sense for Vermont, and again I made this
20 announcement this morning and I won't
21 apologize for making it again because I'm
22 really excited about the information that I
23 have in this report titled Clean Heat. I've
24 got copies at the front and I would hope that
25 we can use that as a starting point for moving

1 forward, finding a way to find that common
2 ground with renewable heating technologies and
3 energy efficiency. Thanks.

4 MR. COOK: Brad Cook again. Two things.
5 We keep talking about energy audit and energy
6 rating. The Legislature was confused about
7 these two. I just want to clarify.

8 An energy rating is you go with the
9 checklist, you look at -- count how many
10 lights you have, are they compact fluorescent,
11 are they incandescent, how many watts, what's
12 the efficiency and the size of your heating
13 system, how many square feet do you have of
14 different R-values and so forth, and you come
15 up with score. That's a rating.

16 An energy audit is where you go through
17 the house and you also assess how much
18 insulation do we have, how leaky is the house
19 by testing with the blower door, how efficient
20 is the heating system, and how can we improve
21 it. The audit comes up with recommendations
22 to improve the comfort and efficiency of the
23 home. Two completely separate issues.

24 And next I would also like to tell you
25 about my four rules that I come across these

1 everyday. One is look at the whole picture.
2 When we go in and do an energy audit on a
3 house and make recommendations, if we're going
4 to tighten up a house, we have to consider
5 things like moisture, are we going to now
6 cause mildew problems; radon, if you have
7 radon, it's going to increase the
8 concentrations. You could have a problem.
9 The boiler, if the boiler is oversized now and
10 we're going to make the house tighter, now we
11 have a really oversized boiler, what are you
12 going to do about it. So look at the whole
13 picture.

14 Number two, the more you look the more
15 you see. This hits me everyday and the first
16 corollary is if you don't look, you don't see.

17 Rule number three. You can never take
18 enough pictures, especially if you have kids,
19 but this goes to an energy audit, infrared
20 scan. If you don't take -- never take enough
21 pictures; and, number four, another biggie, if
22 you don't test you guess. So if you're
23 improving energy efficiency of your home and
24 you're not really testing it, how do you know
25 if you have improved it and how much you've

1 improved it.

2 MR. DELHAGEN: Okay. We have time for
3 two more questions and then I'm going to ask
4 both Dave and Liz to make some closing
5 comments. There will be more opportunities
6 for feedback following Dave.

7 MR. MOORE: Thanks. I'm James Moore,
8 Clean Energy Director of VPIRG, and I guess
9 what I would like to do is take a step back
10 and ask the Department to really focus on some
11 big picture goals for the state. I think that
12 the rising cost of heating fuels is
13 potentially one of the most severe economic
14 challenges we face, and that's for not just
15 low income Vermonters, but really impacts the
16 moderate and business community across the
17 board.

18 So I think we need to take a step back
19 and look at where do we actually need to get
20 to, and I think that's elimination of our
21 reliance on fossil fuels for heating over the
22 next 20, 25 years, and we start there we start
23 looking at very different solutions.

24 Most of this conversation is nibbling at
25 the edges. Good nibbles, but nibbling at the

1 edges. We need to be talking about serious
2 goals and programs that will actually allow us
3 to achieve those goals rather than what we've
4 seen so far in Vermont I think is a
5 conversation about efficiency that is overly
6 burdened with -- it's almost like religion and
7 virtue. You know it's religion for people,
8 and we need to move beyond that if we're
9 actually going to move the state to where we
10 need to go.

11 So I would like to see some strong codes
12 with strict enforcement, strategic use of
13 market development, state dollars to move the
14 market development for the private sector in
15 this area. I think the gentleman back there
16 talking about how do we actually talk with
17 middle income Vermonters, it's all about the
18 dollars and cents and that, you know, is
19 absolutely right.

20 There are also other values that will
21 drive Vermonters to act and our energy
22 security and the rising price of oil are right
23 up there at the top.

24 MR. DELHAGEN: Okay. Time for one more.

25 MR. BULLIS: Allan Bullis again. Make

1 it quick. I'm not going to be here for the
2 transportation meeting, but ever since I got
3 my license I put the car in neutral and coast
4 down the hill so my rpm's went down. Kind of
5 energy nazi from time to time. So I'm pretty
6 fanatic about it.

7 One of the things that kills me is these
8 stoplights, traffic lights that are installed
9 and they are needed like an hour or two in the
10 morning and an hour or two at night and the
11 rest of the time they can be flashing yellow
12 or red. It would reduce our -- the biggest
13 problem we have, we beat ourselves on energy
14 committees how do we attack the transportation
15 components. Well putting in some simple
16 counters on these lights, maybe make them
17 reduce the vehicle stops and reduce the amount
18 of time that people sit there. I mean next
19 time you're driving around, go out on a Sunday
20 morning and you're sitting at a light and
21 there's nobody for a quarter mile either way
22 you can safely go. You're sitting there
23 because the light it is programmed. It's not
24 conforming to the way we can do it, and I've
25 crunched the numbers and it would save

1 Vermonters millions of dollars in fuel and one
2 stop a day adds up.

3 COMMISSIONER MILLER: Good segue to the
4 next meeting.

5 MR. DELHAGEN: Well clearly there's a
6 lot more to be said on this topic. Again, it
7 just blows me away the depth and range of
8 ideas just from this small group.

9 Please take a moment to fill out the
10 small group questions. We're also going to
11 leave a similar looking sheet in the back with
12 the large group questions. If you want to
13 bring one of those home and fill it out and
14 send it back in or take a few minutes and
15 complete it here and drop it off in the box by
16 the door, we very much would like those ideas.

17 I would like in closing to turn it over
18 to both Dave and Liz and you guys can decide
19 based on your schedule, Commissioner, who goes
20 first.

21 COMMISSIONER MILLER: I have to be down
22 at the Legislature so I'm going to go just
23 real quickly here and thank you again all so
24 much for coming. I really appreciated this
25 afternoon getting a little bit more in the

1 weeds with some of the ideas and bringing a
2 bit more detail to the conversation. For me
3 that was really important and I appreciate it
4 very much. So thank you so much.

5 I hope many of you will come, if
6 possible, on April 7th to the transportation
7 and land use sessions, and please get the word
8 out to others who you know are expert or
9 interested in those fields as well. We would
10 love to have good attendance. We're going to
11 have it here just like today's meetings rather
12 than down at the Department. So that will be
13 fantastic, and as we go forward, as we said,
14 we'll have opportunity both for some web
15 interaction, e-mail comments, as well as
16 future meetings. Feel free to call me or
17 anybody on the team if you have further
18 thoughts or questions after today.

19 Thanks so much and I'll give it to Dave
20 while I pack up here.

21 MR. LAMONT: I don't know if I have much
22 more to add. We have had a long day and a lot
23 of ideas and I'm pretty full of ideas. So I
24 think we'll just leave it to what Liz said and
25 thank you all again for coming.

1 MR. DELHAGEN: Okay. Thank you
2 everybody and have a safe drive home.

3 (The meeting adjourned at 4:30 p.m.)
4

5
6 C E R T I F I C A T E
7

8 I, JoAnn Q. Carson, do hereby certify that
9 I recorded by stenographic means the meeting re:
10 Comprehensive Energy Plan at Noble Hall, College Street,
11 Montpelier, Vermont, on March 22, 2011, beginning at 9
12 a.m..

13 I further certify that the foregoing
14 testimony was taken by me stenographically and thereafter
15 reduced to typewriting, and the foregoing 191 pages are a
16 transcript of the stenograph notes taken by me of the
17 evidence and the proceedings, to the best of my ability.

18 I further certify that I am not related to
19 any of the parties thereto or their Counsel, and I am in
20 no way interested in the outcome of said cause.

21 Dated at Burlington, Vermont, this 25th day
22 of March, 2011.

23 _____
24 JoAnn Q. Carson

25 Registered Merit Reporter