

STATE OF VERMONT
PUBLIC SERVICE DEPARTMENT

DRAFT VERMONT ENERGY PLAN

October 3, 2011
7 p.m.

131 Laker Lane
Colchester, Vermont

Public Hearing held at Colchester High School,
131 Laker Lane, Colchester, Vermont, on October 3, 2011,
beginning at 7 p.m..

P R E S E N T

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Commissioner, Department of Public Service

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1 COMMISSIONER MILLER: Good evening
2 everybody. We're going to go ahead and get
3 started to reward all of you came out on time
4 on a Monday evening. I really appreciate it.

5 My name is Liz Miller and I'm the
6 Commissioner of the Department of Public
7 Service here in Vermont, and I really want to
8 thank all of you for participating in one of
9 our public hearings on the draft comprehensive
10 energy plan, and before we get started let me
11 just tell you a little bit about the format
12 I'm planning on tonight.

13 I have a presentation. I would call it
14 brief, but in actuality it runs about 30
15 minutes in total, and I'm going to go through
16 that to set the stage for you in terms of what
17 the plan contains and some of the facts we
18 took into account when drafting the plan, and
19 then after that I'm going to turn it over to
20 some of my fellow Agency and Department staff
21 folks who were nice enough to come tonight.

22 Chris Recchia, Deputy Secretary of our
23 Agency of Natural Resources is here. Thank
24 you, Chris. And Gina Campoli from VTrans, as
25 well as Costas --

1 MR. PAPPAS: Pappas.

2 COMMISSIONER MILLER: -- Pappas, thank
3 you, and Deb Baslow from Buildings and General
4 Services. Did I miss anybody? And then I
5 also want to just thank Kelly Luche from
6 Senator Sanders' office for coming tonight.
7 Thank you very much, and I have a few folks
8 from my Department; Asa Hopkins, our new
9 Energy Policy and Planning Director is in the
10 back there, and Kelly Launder, our assistant
11 director is near the door, and Kelly was one
12 of our instrumental folks on the plan draft.
13 So thank you very much, Kelly, for coming
14 tonight.

15 After my presentation and other folks
16 have had a chance just to speak for a few
17 minutes about their part in the plan, I would
18 like to give all of you a chance to speak and
19 that's really the main purpose of tonight, and
20 given the amount of folks who are here tonight
21 I think what we'll do is let people have a
22 chance to say what it is they would like to
23 comment on in the plan. If you have questions
24 I would be happy to take those, but I'll
25 probably hold them until everybody has had a

1 chance to at least go through and express
2 their opinions on the plan so we make sure
3 that gets done.

4 We have a court reporter here tonight
5 taking down everything that's being said to be
6 helpful to the Department, and of course I'll
7 be taking notes as well. So with that the
8 Comprehensive Energy Plan. We -- for those of
9 you in the back, if you feel you need to move
10 forward, please do feel free. I will post
11 this -- I think it's already posted on our web
12 site as well.

13 We do a Comprehensive Energy Plan in
14 Vermont because we need a way to look at all
15 sectors of energy usage in terms of the
16 supply, cost, environmental effects, and our
17 plan for the future, and the Comprehensive
18 Energy Plan importantly covers all sectors of
19 energy usage. I've gotten quite a few jokes
20 and ribbings about the size of the draft plan.
21 It does -- it is comprehensive.
22 Transportation, land use, electricity, as well
23 as heating all are covered in the plan in some
24 detail, and it's meant to form recommendations
25 for further action.

1 It is a planning document. It is by
2 definition a set of recommendations that then
3 will require further work, and when we started
4 this planning process back in February after
5 Governor Shumlin asked our Department to head
6 the effort, we said we view this, especially
7 given the time period in which we wished to
8 come up with the draft plan, as the beginning
9 of the process, and really once this draft
10 plan is finalized and out, the next steps will
11 be the critical steps for the state. That is
12 how are certain aspects of the plan to be
13 implemented by others, and it's not just the
14 Legislature, although certainly the
15 Legislature is an important part, and I want
16 to thank Representative Jerman for being here
17 tonight. Tim, thank you for being here. Tim
18 is on the Natural Resources Committee at the
19 House. So it's not just legislative action.
20 It's also private citizen action, business
21 action, utility action, and then of course
22 different parts of the Executive Branch of
23 state government.

24 The Legislature asks for the
25 Comprehensive Energy Plan to be created so

1 that we have a plan to meet our energy
2 services need in a manner that's adequate,
3 reliable, secure, sustainable, takes
4 affordability into account, the state's
5 economic vitality, and ensures that we use our
6 energy resources efficiently and in an
7 environmentally sound way. That's just a
8 snippet from the statute that the Legislature
9 gives us. It tells you the key things we look
10 at as we draft the Comprehensive Energy Plan.

11 So I mean I'll just go through a few
12 facts, what we took into account when we
13 drafted the plan, what our long range goal is,
14 why we think it's important to achieve the
15 goal, how we expect to achieve the goal, and
16 then just in very quick, frankly designed to
17 be dissatisfying given the length of the
18 document to do this in a short presentation, a
19 very quick highlight of the recommended
20 strategies by each energy sector.

21 So where are we now? Currently in
22 Vermont our energy usage is divided up into
23 transportation, residential, and then
24 commercial and industrial uses. Is this okay
25 with you if I move a little bit? You can

1 follow me, right? Great.

2 And we use about a third of our energy
3 in the transportation sector, a third in our
4 homes, and about a third -- a little over a
5 third in our businesses, and within each
6 sector there's different types of energy
7 usage. The orange is electricity. So you can
8 see in our homes we're about half electricity
9 and half heating. In our businesses we're a
10 little bit more heavily weighted towards
11 electricity, about two-thirds, and over in
12 transportation it's nearly all some form of
13 petroleum or diesel, you know, a fuel for our
14 energy needs.

15 This is a very hard chart to read the
16 bottom of, but essentially from 1970 to
17 present what you see in Vermont is a trend of
18 increasing energy usage, and each of these
19 bars represents a different end type of
20 energy. So, for example, transportation is
21 this orange bar, the second bar. Electricity
22 is the red bar beneath it, and what you see in
23 all sectors is a very large swing over the
24 years.

25 For greenhouse gas emissions, which are

1 tied to our energy usage and energy choices,
2 the story is a little bit different. This
3 chart goes from 1990 to present and then
4 projects beyond the present, and what you see
5 is that from 1990 until about 2003 we had a
6 rise in our greenhouse gas emissions in
7 Vermont, but since about 2003 we have seen a
8 dip. A trend downward. That's good news.

9 There's some bad news too. The
10 Legislature has set different goals for
11 greenhouse gas reduction, and the yellow line
12 here, which would end in 2012, we would have
13 to steeply, steeply drop our greenhouse gas
14 emissions to have a chance to reach that goal,
15 and frankly we're not going to reach it.

16 The other legislative goal is
17 represented by the orange line there, and
18 that's a 2028 goal, and you can envision that
19 if the recent slope, the 2003-to-date slope,
20 were to continue or perhaps bend a bit, we
21 would have a chance to reach that goal, but
22 it's going to take further intentional action.

23 So renewable energy usage. Generally
24 speaking renewable energy helps the greenhouse
25 gas emissions picture. By definition

1 renewable sources are those that stay
2 sustainable for future generations and most,
3 but not all, have a -- have a greenhouse gas
4 profile that is better than traditional fuel
5 sources.

6 So I like to tell people where we are
7 now on renewable energy. This is a picture of
8 our total energy usage. 39 percent of our
9 total energy is electricity. The other 61
10 percent is transportation and heating. Of the
11 electricity sector, we're about 48 percent
12 renewable right now, and that's including
13 Hydro-Quebec, large hydro, as well as projects
14 that are renewable in their source but are
15 presently having their renewable energy
16 credits sold out of state for those of you who
17 are familiar with the SPEED program. So
18 pretty good. Nearly half.

19 On the other side of our energy use,
20 transportation and heating, we're only five
21 percent renewable right now. So there's lots
22 of white space when it comes to transportation
23 and heating. Both of those are heavily
24 dependent on fossil fuels and there's been
25 very little renewable penetration. It's

1 pretty much in the biomass heating in our
2 schools that five percent represents. So in
3 total, if you due all of that math, we're
4 presently 23 percent renewable sources for our
5 total energy use in the state.

6 When it comes to costs this chart on the
7 left is the dollars that you actually took out
8 of your pocket and sent in to either a utility
9 or at the pump over the years from 1990
10 through 2009, and the top line is electricity.
11 So what this tells you is that electricity is
12 on a unit basis, BTU basis, the most expensive
13 energy source we have. The others are LPG and
14 traditional fossil fuels and the bottom line
15 is biomass.

16 On the right we've adjusted that for
17 inflation so that you can see what's happening
18 with our energy costs on an inflation adjusted
19 basis, and what you see is that although
20 electricity is the absolute highest priced
21 source, it has actually not quite kept pace
22 with inflation. So that in adjusted dollar
23 terms we're paying slightly less now for our
24 electricity than we used to. That's not true
25 of the other sources of energy, particularly

1 if you look at the green and red lines at the
2 LPG and gasoline. They are both rising higher
3 than the rate of inflation so it's costing us
4 more money now than it did in the past.

5 Okay. A few words about efficiency. As
6 a part of this draft plan we asked for an
7 economic impact study to be done of our
8 efficiency programs here in Vermont. It's not
9 something the Department had a chance to do
10 previously. We thought it was important to do
11 it because we're spending quite a bit of
12 public money, your money, on efficiency, and
13 we wanted to be able to prove the benefit that
14 that created. So we took a single -- there's
15 lots of ways you can do it, but what we did is
16 we took a single year of investment in our
17 efficiency programs and asked for an economic
18 impact study to be run.

19 On electric future so what we found in
20 terms of energy savings first is that we've
21 been saving an average of two percent per year
22 in the amount of energy we would otherwise be
23 using because of our efficiency programs. The
24 cost saved, in other words, if you were to try
25 to purchase that two percent of energy on the

1 market as it were, we're only spending about
2 four cents a kilowatthour on our efficiency
3 programs, and for those of you who are in the
4 energy field you know that's a very good price
5 compared to what sources on the market would
6 be for electricity.

7 We found in our economic impact study
8 that there are significant benefits for the
9 money that we're spending. For every dollar
10 of public spending, the state receives about
11 4.6 dollars in net present value over the life
12 time of that investment. There's also jobs
13 that are created, and those are detailed in
14 the draft plan, as well as regional charges on
15 our electric bill which are avoided.

16 That comes to, for those of you familiar
17 with the regional markets and the costs that
18 we have to pay because of it, we save about
19 two cents per kilowatthour because of our
20 efficiency meters; and I have to say since I'm
21 talking to Vermonters here, this is a benefit
22 to Vermont even though the rest of the New
23 England states don't get that benefit. So
24 we're -- because we're performing better on
25 efficiency than some of our New England states

1 we're saving money.

2 We also looked at the impact of thermal
3 efficiency. We spend far less of our public
4 dollars right now on thermal efficiency, but
5 we did find that the thermal efficiency
6 programs create jobs and leverages our
7 resources, and just in plain English terms the
8 reason why efficiency programs create jobs at
9 the most basic level is because contractors
10 are coming into your home, they are doing the
11 audit, they are then putting the insulation in
12 or the other efficiency measures. So local
13 jobs, local people are performing these
14 efforts and that's why we see the jobs.

15 Okay. And in terms of efficiency in
16 creating the draft plan, while we noted that
17 there's a mix of programs that are available
18 right now to help make our homes more
19 efficient both from an electric point of view
20 as well as a home heating point of view, many
21 people commented that they felt the current
22 programs don't provide an easy path for
23 Vermonters to access them. In other words,
24 it's just a way of saying they can be hard for
25 Vermonters to actually get involved in the

1 programs, get the efficiency measures in
2 place, and that includes the financing
3 aspects, getting the energy audit, figuring
4 out how to pay for it.

5 We also discovered, and folks had said
6 this so it was not a surprise, but we realized
7 it had not really been quantified, we're
8 behind on our goals. We're behind on our
9 goals for energy efficiency in homes. The
10 Legislature had asked that about I think it
11 was 80,000 homes by 2020 get improved 25
12 percent. That's the legislative goal. If we
13 were to actually hit that goal, we would need
14 to significantly ramp up our efficiency
15 efforts. We would need to weatherize about
16 8,200 homes a year between now and 2020.
17 That's far more than we're doing presently.
18 So it's going to take a lot more effort if
19 we're to hit that goal.

20 Transportation. I just want to thank,
21 again, VTrans. The transportation section of
22 the plan, I hate to say this -- well I was
23 going to say it. I guess it's on the record.

24 MR. RECCHIA: It's on the record.

25 COMMISSIONER MILLER: There's no way I

1 can get around it. The VTrans portion of the
2 plan is fantastic. So in terms of both its
3 organization and its very specific metrics,
4 and the VTrans staff worked very hard on that
5 section of the plan. So thank you.

6 Transportation. What we learned in the
7 course of this process is that although
8 nationally transportation takes about
9 one-fifth of a typical household expenses, in
10 Vermont it's more than that. In Vermont it
11 tends to be the second highest expense of any
12 household right after housing itself. That
13 means that most Vermonters -- many Vermonters
14 spend more on transportation than they do on
15 health care, education, food. It's a big
16 expense.

17 It's also, by the way, a big expense for
18 business, and we heard in this planning
19 process, as much as we had often heard in the
20 past as the Department business concerns about
21 electric charges, we in this process heard
22 business concerns about transportation costs
23 and what can we do long term to help
24 businesses in their transportation spending.
25 Driving is, as you noticed from the earlier

1 chart, also our biggest contributor to
2 greenhouse gases. So it's a sector of energy
3 that deserves some further attention.

4 Why is it that driving is both expensive
5 and environmentally has, you know, a big
6 environmental impact? It's because we're
7 driving a lot more. 1975 through 2009 you see
8 more than a doubling of our driving over that
9 couple of generation period of time. This
10 makes sense. We all know that Vermont is now
11 a place where people live farther from where
12 they work than they used to a few generations
13 ago, but the data shows it too, and we also
14 see from recent data that changes in the
15 economy can change what Vermonters decide to
16 do with their transportation. We saw a dip in
17 the amount of miles Vermonters were driving
18 when the cost of gas shot up and then the
19 economic recession took hold.

20 Transportation and land use. I
21 mentioned that one of the reasons we see
22 transportation costs rising is because we're
23 driving more. That is inextricably tied to
24 our land use choices, and so this data shows
25 what we all know in the room here, Vermont is

1 less dense in population than the rest of the
2 United States. That's not a surprise.

3 What is sort of surprising, or at least
4 was to me, about 30 percent of Vermonters live
5 in our 21 designated downtown districts. The
6 2010 census showed that those 21 districts are
7 growing at a slower pace than the rest of the
8 state. So what does that mean? It means our
9 population trends are indeed heading toward a
10 little bit more sprawl, a little bit more
11 spread out population, and that affects our
12 energy usage.

13 Because there's data it's probably not
14 surprising, but there is in fact academic data
15 supporting that people travel fewer miles when
16 they have services, their work, their
17 shopping, their doctor closer to where they
18 live. So, therefore, how we grow matters from
19 an energy point of view.

20 This profile is not just a community, a
21 downtown community where more connectedness
22 can happen between people. It's also a place
23 where energy usage can be less because people
24 live closer to their services and their work.
25 That's going to have a different energy

1 profile than this community or than a
2 community that's on the outskirts of a
3 downtown district. So we have to think about
4 that when we look at our energy policy.

5 Okay. Long range goal. Those of you
6 who have looked at the plan this won't be a
7 surprise. We want, by mid century, to set
8 Vermont on a path so that we can be nearly
9 fossil free by mid century. The goal
10 specifically is 90 percent renewable energy by
11 2050. Again, we're at 23 percent renewable
12 now. The goal is 90 percent by 2050. So just
13 graphically, that's the graph I showed -- the
14 chart I showed you before. The pie chart on
15 the right is what we would be shooting for by
16 2050.

17 Why should we strive for this goal? I
18 have had people say gee the goal seems like a
19 big stretch. How can we possibly get there?
20 I have had other folks say we can't get there
21 soon enough, and so for either of those sides
22 what I like to say is let's focus first on why
23 we're doing it at all, and there are four key
24 reasons. First, going for more renewable
25 energy will help our economic security and

1 independence. It will help the cost of our
2 fuel sources. It will also help our
3 independence to the extent that we can keep
4 that energy in state or closer located to
5 Vermont than we currently have.

6 We can safeguard our environment
7 because, as you saw earlier, the greenhouse
8 gas emissions are indeed tied to our energy
9 sources. To the extent we can rely upon
10 renewable energy with a lower, a far lower
11 emissions profile, we will help our
12 environment in future generations
13 particularly, I would like to point out, in
14 transportation and heating, which are so
15 heavily fossil fuel dependent right now.

16 We also believe that using more
17 renewable energy will in the long run help
18 drive innovation and jobs creation here in
19 Vermont, and of course efficiency is a part of
20 that, as well as the plan notes efficiency
21 should be the first strategy in any sector
22 including transportation, and all of those
23 things will help drive innovation and jobs
24 creation.

25 Finally, we believe that striving for

1 this goal will help increase community
2 involvement and investment because this is a
3 solution that has to be Vermont based and
4 Vermonters have to help us achieve it.

5 So how will the goal be achieved?
6 Again, I said some folks think it's too bold.
7 Others not bold enough. From my part I like
8 to explain it this way. This is -- the red
9 line here is what's known as an acceleration
10 curve, and I view it as a plan that's going to
11 require the acceleration curve rather than
12 what would be just a straight line mode of
13 progress. Why do I think that? Well there's
14 probably the biggest -- probably the best
15 example in the plan is transportation. In
16 order to achieve 90 percent renewable by mid
17 century we will have to see the transformation
18 in our transportation sector that is just now
19 beginning to take hold. Just now we have cars
20 in the showroom available for transportation
21 that in 10 years we're going to have -- how
22 many in ten years do you think we'll have?
23 Triple the number? Quadruple?

24 MR. PAPPAS: Probably more. Yeah.

25 COMMISSIONER MILLER: Probably more. So

1 in the next decade we're going to see real
2 transformation in the transportation sector.
3 We can't possibly in that sector expect linear
4 progress. We have to set the policies now,
5 the infrastructure now, the charging stations
6 now that will allow the progress over time,
7 and really that same story is true to some
8 extent in other sectors as well.

9 Solar, for example. You have seen an
10 amazing increase in the productivity of the
11 solar technology just in the last few years.
12 We will see that progress going forward, so we
13 believe Vermont should position itself to hit
14 this acceleration curve because what's the
15 important thing about an acceleration curve?
16 You get more progress in the long run.

17 Okay. And in order to make sure we
18 actually have a concerted effort to reach this
19 goal, we realized in the planning process that
20 any policy really needs four pieces behind it:
21 Outreach and education, finance and funding
22 strategies, innovation and expertise in the
23 private sector, and then in the public sector
24 regulatory policies and structures in support
25 of it. In other words, if, for example, you

1 wanted to encourage electric vehicle
2 infrastructure and all you did was address
3 regulatory policies and structure without
4 looking at the finance aspect, which for
5 transportation is a big one given how our
6 highways are presently funded with the gas
7 tax, you would not have a successful policy.

8 Similarly you need the innovation in the
9 cars, the batteries, to bring the cost down,
10 and you need to convince folks as to why that
11 switch is a good one. So you need to address
12 all four of these in any policy area to make
13 progress, and we looked at the plan through
14 the light of these four drivers. So as you
15 review the plan please, if you see a place
16 where you want us to address a driver in a
17 better way, let us know because that was the
18 lens we looked at the policies through.

19 Okay. So, again, dissatisfying by it's
20 brevity, but I do want to just highlight each
21 energy sector briefly. Efficiency,
22 transportation, thermal energy, electricity,
23 and land use.

24 First efficiency. Our highlighted
25 recommendations include that given the mix of

1 programs that currently exist and the often
2 heard comment that the programs lack the
3 accessibility to Vermonters that would help
4 them succeed, we ask that a whole building
5 road map for efficiency be created by the end
6 of 2012 focusing on consumer delivery, funding
7 and finance mechanisms, including PACE which
8 was just recently improved by the Legislature,
9 something known as on-utility-bill payment,
10 which I would be happy to discuss later if
11 anyone would like to, and then if there is a
12 gap, look at public financing tied to the fuel
13 source, but identify the gap first.

14 Also in efficiency we recommend that we
15 continue the steady progress that we've seen.
16 We actually would like to see that progress
17 improve towards three percent. You might
18 remember that we've been achieving two percent
19 efficiency in recent years. Some have said
20 why just three percent? Why not ten percent?
21 We need the efficiency. And the answer in
22 short is because our programs need to be able
23 to support it, and the public dollars that we
24 have in efficiency we do believe strongly
25 could yield this significant, you know,

1 one-third improvement, but we do not believe a
2 more robust path is appropriate given the
3 infrastructure we presently have.

4 And then, finally, in heating we have
5 some specific goals in heating that are
6 outlined in the plan. First we want to see
7 the percentage of Energy Star homes in Vermont
8 double by the year 2020. We're -- presently
9 30 percent of new homes are Energy Star rated.
10 We would like to see that figure double by
11 2020, and the reason we want to do that is
12 because we need to put Vermont on a path
13 toward net zero energy usage in new
14 constructed homes by 2030. That's a path we
15 believe is achievable 2030 net zero because we
16 already have some steps in place helping us
17 toward our goals. Residential building energy
18 standards are in place here in Vermont. We
19 have a program right now going on to achieve
20 compliance of those standards, and so over
21 time Vermont will be able to move toward these
22 goals in thermal.

23 Okay. Electricity. Highlights of
24 recommendations. I've already noted for
25 renewable electricity we do want to see not

1 just the existing progress, about 48 percent
2 right now, maintained, but we also want to see
3 more renewable sources in our electricity
4 sector, and the Public Service Board has just
5 issued today I believe its suggestions to the
6 Legislature for a renewable portfolio
7 standard.

8 The Department in the draft suggests
9 that Vermont can affordably and realistically
10 put a renewable portfolio standard in place
11 that at the end of the planning period sees
12 Vermont at about 75 percent electric renewable
13 rather than where we are right now, and so
14 that's a significant policy recommendation in
15 the plan.

16 We also want to see process improvements
17 in the Public Service Board siting arena. The
18 Department is retaining a renewable energy
19 project manager so that we can have a single
20 source work with state government agencies and
21 departments, as well as developers, towns,
22 property owners on renewable energy projects.

23 We also suggest that the Public Service
24 Board adopt a mediation process. Our civil
25 courts have had a mediation process for some

1 time and our family courts have, but our PSB
2 has not, and we believe in siting cases it
3 would be good to have a mandatory process,
4 developer funded, where folks come in and try
5 to work their differences out ahead of time.

6 And then, finally, we do think that it's
7 now time for us to look at recent siting
8 cases, particularly for the small scale
9 projects such as the recent solar projects, to
10 see whether any permitting simplifications
11 would be appropriate given that we've now seen
12 a few of those go through.

13 And then on finance and funding for
14 electricity, the Clean Energy Development Fund
15 Board was reconstituted this last July. They
16 are right now engaging in a strategic planning
17 process and plan to complete that within a
18 year, and as I mentioned before we recommend
19 in the plan in the interim working on utility
20 on-bill financing so that folks have another
21 avenue for putting efficiency measures and
22 renewable energy projects in place, a method
23 that they already engage in, which is paying
24 their utility company, and also leveraging the
25 utility company for that financing.

1 Okay. Thermal energy. Again, you saw
2 before we plan to put a program in place to
3 improve the efficiency programs that we
4 currently have to make sure they are easier to
5 use and more integrated than they are now. We
6 think a key -- a key thing for Vermont to do
7 to move ourselves toward 90 percent renewable
8 is to increase our use of biomass and biofuels
9 particularly for heating.

10 As I noted, we have, oh, about actually
11 12 percent of our schools right now are on
12 some form of biomass. It is about five
13 percent of our fuel overall in the heating
14 sector. That could be significantly increased
15 and we believe that it should be. That
16 includes, of course, combined heat and power
17 projects. We also believe that we need to
18 advocate for low sulfur and low carbon fuel
19 standards on the liquid fuel site.

20 And then, finally, increased natural gas
21 access, and folks have asked if you're going
22 to such a large renewable energy goal why are
23 you suggesting an increase in access to
24 natural gas, and my answer in short is
25 consumer choice. Right now we have a natural

1 gas infrastructure in Franklin County and
2 Chittenden County. That's it. Vermont has
3 less natural gas infrastructure than many
4 other states, including many of our
5 neighboring states, and as a result we have
6 many Vermonters who do not currently have that
7 choice for their home heating, and I should
8 say businesses as well.

9 We have also heard from the business
10 community a desire to have the choice of
11 natural gas. It's about five percent of our
12 current energy usage in natural gas, just to
13 give you a sense. So there is indeed room for
14 expansion there in terms of our long term
15 goal, and we believe that it's a good move for
16 Vermont both because of the positive cost
17 profile and from a burner tip point of view
18 the environmental profile, but we are aware of
19 the trade-offs.

20 We have heard from Vermonters the
21 concerns about the extraction of natural gas
22 and the environmental issues that can obtain
23 there. So we're very aware of those
24 trade-offs. We think it's important for
25 Vermont to advocate for proper extraction

1 techniques, but we do not believe that Vermont
2 should limit itself from this as a choice in
3 our thermal -- for our home heating.

4 And then, finally, as a part of all this
5 we can't strand our local fuel dealers in the
6 old economy as it were as we transition toward
7 more renewable sources. We need to allow our
8 programs to develop so that those fuel dealers
9 and suppliers can become energy service
10 providers in the coming generations. They can
11 deliver the biomass. They can go into the
12 house with the energy efficiency services, and
13 we need to put those programs in place to
14 allow it.

15 Transportation. Transportation, as I've
16 already said, is our largest cost. Actually I
17 may have not have said this. We spend about a
18 billion dollars a year on transportation which
19 is nearly half of our total energy cost. It's
20 also our greatest use of fossil fuels and our
21 highest contributor to greenhouse gases. So
22 key to setting this 90 percent renewable is
23 the ability to transition our transportation
24 to renewable electricity. That's key if we're
25 going to hit this goal. That's going to take

1 a lot of policy changes in the coming decades.
2 Financing, again because our highways are
3 presently gas tax funded, vehicle charging
4 infrastructure, the technology and cost needs
5 -- the technology needs to improve so the
6 costs come down for Vermonters over time.

7 The VTrans has set a metric for hitting
8 the eventual plan goal of achieving 25 percent
9 renewable in transportation by the end of 20
10 years. That's a big goal. It relies upon a
11 lot of factors outside of Vermont, but it also
12 will rely upon us setting the right policy
13 here to encourage it.

14 At the same time we have to continue to
15 push for better fuel standards, greater access
16 to commuter facilities, and other
17 transportation options so that we can have the
18 choice to reduce our single occupant trips,
19 trips where we just drive ourselves places,
20 and VTrans has a great goal here. They are
21 actually going to look at the Vermont
22 registered C -- what's the corporate average
23 -- what's the C?

24 MS. CAMPOLI: Corporate average fuel
25 economy.

1 COMMISSIONER MILLER: Corporate average
2 fuel economy. A partnership with ANR? Okay.
3 Very important, a partnership with ANR, but
4 VTrans and ANR are going to look at the fuel
5 economy of our current registered vehicle
6 fleet and then set a goal to either meet the
7 national fleet standard if it happens to be
8 lower, or beat our own goal by five percent by
9 2025. That's a tangible step that they can
10 measure to get us toward our goal.

11 We're also looking to triple the amount
12 of park and ride spaces within 20 years. All
13 of that will allow us to reduce single
14 occupant commute trips by 20 percent in that
15 same 20 years.

16 I just want to give a plug to Go
17 Vermont. Connectingcommuters.org is VTrans
18 site. It doesn't just have bus schedules. It
19 has everything related to commuting including
20 alternative forms of transportation, biking,
21 walking, et cetera. It's a great site. If
22 you haven't gone there, I really recommend it.

23 Finally, land use. As I mentioned
24 before when I showed you the pictures of
25 different communities, generally our land use

1 programs we think of as programs that we help
2 preserve our character, character of Vermont
3 and our landscape, and that's true. They do
4 conserve our natural and historic resources,
5 and support development in downtown districts.

6 They also, in all of those respects,
7 help our energy usage. So it's really
8 important to consider land use at the same
9 time as our policies. Agency of Commerce and
10 Community Development helped with this draft
11 plan. They plan to foster better coordination
12 with the regional planning commissions and
13 energy committees. They are also working
14 right now on state designation programs.
15 That's the programs about those 21 downtown
16 and outlying districts that I mentioned.

17 They are finishing recommendations right
18 now so they are ready for the Legislature in
19 January, and they are working across state
20 agencies to do that. They are planning to
21 measure their success by, in the next census,
22 seeing the density increase in those areas.
23 So another tangible goal that they have.

24 And then coordinating the state
25 incentives for those downtown districts so

1 that we don't have a waste water or a
2 transportation goal that's misaligned with our
3 growth goals, and they have a specific metric
4 for this year. They are going to have
5 training programs for both complete streets
6 and our transit oriented design programs.
7 They plan to hold three workshops this coming
8 year to kick this process off.

9 There are some other things highlighted
10 in the very large document. One is a total
11 energy standard. We talked a little bit about
12 renewable portfolio standards for electricity.
13 That only addresses electricity. If we really
14 want to see the bar move, progress be
15 obtained, we need to look at whether Vermont
16 should adopt what's known as a total energy
17 standard where we turn all of our energy
18 usage, which is represented in this pie chart,
19 into the same unit like a British thermal
20 unit, and then compare the energy intensity of
21 each type of source and develop a plan to move
22 sources toward renewable energy over time so
23 that 23 percent becomes 24 percent becomes 25
24 percent becomes 26 percent, et cetera.

25 We also have a number of strategies in

1 the draft plan centered around our farms so
2 that our farmers can participate both in
3 producing energy that they can use which helps
4 lower their costs, as well as producing energy
5 for the rest of us, giving them another source
6 of income.

7 And then, finally, there are examples in
8 the plan of the State of Vermont planning to
9 lead by example, especially post Irene. We've
10 been extremely focused on this, as you can
11 imagine, with the displaced state workers,
12 making sure that the State of Vermont uses its
13 energy dollars wisely is very important to us,
14 and there's a number of strategies laid out by
15 Deb and others in the plan to make that
16 happen.

17 So we're having a public hearing
18 tonight. We would love to receive written
19 comments next week. We plan to then give the
20 plan to Governor Shumlin for his review,
21 review any feedback he may have, and send it
22 out for final printing in November so it's
23 ready well ahead of the Legislature coming
24 back in, in January, and the Governor has made
25 clear that given the intersection of all types

1 of energy usage he wants to see the Climate
2 Cabinet charged with oversight of this plan
3 from an Executive Branch point of view. The
4 Department deals with electricity and certain
5 aspects of energy usage, but really it's the
6 Climate Cabinet that contains all of the
7 members of state government that touch the
8 plan.

9 Obviously presenting it to the
10 Legislature in January will be important.
11 We're developing a specific list of possible
12 legislative action for their consideration, so
13 that I'm considering it the cliff notes, Tim.
14 So we'll give you the legislative cliff notes
15 so you can review the possible actions to
16 take, and then we're going to roll it out to
17 the regional planning commissions and energy
18 committees and have forums around the state
19 for that purpose in the coming year.

20 Then review, revise, and repeat.
21 Governor Shumlin has been clear that he saw it
22 as a shortcoming of state government that no
23 comprehensive energy plan had been put in
24 place for more than a decade. We're committed
25 to not have that happen, and so we're

1 suggesting that there be annual reviews under
2 the Climate Cabinet with three-year revision
3 plans for our goals rather than the current
4 system which is a little bit longer time frame
5 than that.

6 So thank you very much for coming.
7 Thank you for sitting through that
8 presentation. I very much appreciate it.
9 I'll be happy to take comments later, but what
10 I want to do now is ask Deputy Secretary
11 Recchia if he would like to say a few words,
12 and then VTrans and BGS.

13 MR. RECCHIA: Thanks, Liz.

14 COMMISSIONER MILLER: Great. Thank you.

15 MR. RECCHIA: I'll be very quick. I
16 just wanted to acknowledge the great work of
17 the Department, but more importantly and more
18 exciting for me was the great work of all the
19 departments and the agencies together. I have
20 never seen a group of people work together to
21 bring their expertise to a challenge like
22 this, and I'm just really happy to be able to
23 do that.

24 And I think the other thing I wanted to
25 just mention is I think this plan is very

1 visionary. The 90 percent goal by 2050 is
2 more aggressive than any I have heard of in
3 the region or the country. That said, we live
4 in very challenging times, and I think that
5 that makes it even more important for our
6 energy security and costs that we succeed in
7 this, but it makes it harder to get there. We
8 have -- we're going to have to think very
9 creatively on how to leverage the billion, two
10 billion dollars that go out of this state each
11 year for energy, figure out how to leverage
12 those in-state and make them work for
13 Vermonters instead of just contributing to
14 outside economies.

15 So thank you very much for your
16 leadership, Liz.

17 MS. CAMPOLI: I too want to be very
18 brief. Commissioner Miller touched on all of
19 the most important things in the plan
20 regarding transportation, but I think one of
21 the most important factors is that
22 transportation is a huge part of our energy
23 demand, and when you usually talk about energy
24 in Vermont you usually go right to
25 electricity, but we're a big part of the

1 picture.

2 VTrans is committed to working to get
3 you there, which is probably read on the side
4 of our trucks, but we also know that if people
5 can't afford fuel in the future, we're going
6 to have a really serious problem on our hands
7 both getting people to work or getting goods
8 out of Vermont and getting tourists to
9 Vermont. So we recognize that we need to look
10 at an integrated transportation system beyond
11 roads and bridges as part of meeting energy
12 demand to look at options like ride share and
13 van carpool, buses and trains, and that's very
14 much part of the plan as you will see as you
15 delve into it.

16 The other part of the picture that goes
17 beyond VTrans, we have a role, but we have
18 very important partners is on the fuel side of
19 the equation and making sure that the fuel for
20 transportation is coming from renewable
21 sources.

22 So you'll see that as a key part, and
23 then the other part is the technology piece,
24 and the technology that powers our vehicles
25 and making sure that's as efficient as it

1 possibly can be. Again, partnership activity.
2 So I guess I'll hand it off to Deb and I look
3 forward to your questions and comments.

4 MS. BASLOW: As everybody else just
5 said, BGS is also very excited about this
6 plan. One of the things we're excited about
7 is we have the state agency energy plan which
8 is focused primarily on state government
9 buildings and transportation and purchasing,
10 and that's going to be a good complement to
11 the Comprehensive Energy Plan. You'll find
12 that it's been put in the back of it as an
13 attachment, and so we think that working
14 together with this plan we're going to see a
15 lot of good things moving forward with the
16 state government leading through example
17 through our design guidelines and through the
18 state agency energy plan.

19 MS. LAUNDER: Okay. So we're going to
20 start the public comment part of tonight and
21 I'll call everyone's name one by one. If you
22 could try to limit your comments to about
23 three minutes where people who have signed up,
24 that should give us enough time to maybe have
25 an additional comment period and maybe some

1 questions as well, and I apologize in advance
2 for any mispronunciation of anyone's name.

3 So first we have -- oh, and we'll have
4 to have you come up here because we don't have
5 unfortunately a floating mike. So first we
6 have Bill Dunnington.

7 MR. DUNNINGTON: First of all, kudos for
8 what I think is an extraordinary piece of
9 work. You mentioned early on that some of the
10 challenge is to take the plan and figure out
11 how to implement it. As it's written it needs
12 quite a lot of sharpening. You have to carve
13 off some goals, figure out what we're actually
14 going to do, your term, how we're going to pay
15 for things.

16 I think there's a very big challenge
17 getting all those pieces right given the
18 increased pressure on resources which raises
19 the stakes on getting those right, all of
20 which tees up the question about how you're
21 thinking about, and maybe you can take this
22 later, how you're thinking about the process
23 of getting this out of a document in the
24 conference room and into customers and
25 communities and actually happening. So that's

1 a comment and a question.

2 COMMISSIONER MILLER: I think, just to
3 make sure folks have a chance, we're going to
4 let folks comment and I write questions down
5 and when we have time at the end I can address
6 those.

7 MR. DUNNINGTON: Sure.

8 COMMISSIONER MILLER: Thanks.

9 MS. LAUNDER: Okay. Next is Patrick
10 Flood.

11 COMMISSIONER MILLER: Who I should have
12 introduced. I should have introduced you at
13 the beginning. I'm sorry.

14 MR. FLOOD: That's quite all right. I
15 wouldn't say I don't need any introduction,
16 but anyway I have several comments on the
17 plan.

18 First of all, I must say I'm sure that
19 it is the most progressive, the best energy
20 plan that any state has ever created. There's
21 just no doubt about that. We're out in front
22 and I want to thank everybody because I happen
23 to know a little bit about how hard you all
24 worked to produce this plan, and it really is
25 amazing.

1 However, I'm also going to say that it's
2 not enough and I think you're going to keep
3 hearing that, and it's not because we don't
4 appreciate what you're doing and it's not
5 because we don't recognize the challenges that
6 everybody faces, but we have such an
7 incredible challenge in front of us in terms
8 of reducing our carbon emissions and trying to
9 preserve this planet the way we know it, and
10 this summer and spring certainly taught us
11 that we are not immune to the problems of
12 global warming, and we have to really take it
13 far more seriously than we have, and I think
14 the State of Vermont can and should lead that
15 fight. I think we're poised to do it, and I
16 think with the leadership that we have both in
17 the Administration and in the Legislature we
18 can do that. We can set higher goals.

19 Having said that, there are a couple of
20 specific things I wanted to reference.
21 Actually I haven't finished reading the whole
22 plan so I'll see you Thursday in Danville and
23 give you a few more comments when I finish it,
24 but there are a couple things that I think are
25 really more achievable targets we should set,

1 and one is in the area of thermal efficiency.

2 As you know, some of you know, I had
3 some experience with the weatherization
4 program and that whole challenge, and if
5 there's one area where it's not controversial,
6 nobody fights about weatherization. It's not
7 like windmills. It's very achievable. We
8 know how to do it. It creates jobs in
9 Vermont. All that money stays in Vermont.

10 This is something that we could ramp up.
11 We could get big savings much faster and your
12 -- your curve there, Commissioner Miller,
13 could be much steeper on that one alone. I
14 think -- and I know there's not a lot of money
15 around to do this kind of thing, but I think
16 that investment gives an immediate pay back in
17 many ways and it's really worth pursuing.

18 The other thing I would like to
19 emphasize, and you mentioned it a couple of
20 times and I think it's extremely important, is
21 the outreach and education part of this plan.
22 I would encourage you to take it a step
23 further beyond just educating people about the
24 options and about how to implement them. I
25 think we need to have as part of this plan a

1 broader public education about what the
2 challenge really is out there and how we're
3 all going to have to pitch in to make a
4 difference and get it done. So when that's
5 not typically part of any energy plan, at
6 least not that I have heard of, I think that
7 should be one.

8 So, as I say, I'll see you in Danville
9 on Thursday night with some other thoughts,
10 but in closing I would like to say that, you
11 know, there were a thousand people on the
12 State House lawn last weekend to ask for more
13 progress faster on climate change and energy
14 issues, and those people -- some of them are
15 here tonight. They may or may not speak. We
16 carpooled down. These folks don't even own
17 cars and they are standing ready to ask loudly
18 for more sooner and to try to make your jobs
19 easier, to make it easier for you to go even
20 farther than you thought you could. Thanks.

21 MS. LAUNDER: Next is Natalie -- I'm not
22 going to try to say your last name, but would
23 you spell it for the court reporter?

24 MS. AGOSTOFILION: Sure. My name is
25 Natalie A-G-O-S-T-O-F-I-L-I-O-N. I wanted to

1 start by offering that sort of symbolic thank
2 you to the folks who worked on this plan and
3 we never got a chance to clap. So thank you.

4 (Applause.)

5 MS. AGOSTOFILION: I'm part of the
6 founding membership of the 350 Vermont group
7 of community organizers, and we're sort of
8 born out of the Bill McKibben contingent that
9 set a laughable target frankly, and it's what
10 we continue to do is say if we don't push for
11 the hardest that we can push for, we're not
12 going to get where we need to go in the time
13 frame we need to do it.

14 I also work with an organization that
15 does capacity building for sustainable
16 development. I work with practitioners and
17 local government, towns and cities and
18 counties across the US on practicing
19 sustainability in cities and counties and
20 municipalities, and so I have a bit of a
21 professional experience in terms of
22 understanding the challenges associated with
23 these things. So I come to you wearing the
24 hat of both an organizer and activist and
25 somebody who understands the challenges and

1 the amount of difficulties, the hurdles you
2 have to leap through.

3 I have a few thoughts about the plan
4 that -- I also haven't got a chance to finish
5 reading it, but I wanted to really applaud the
6 leverage points. In particular, I think that
7 the outreach and education component and the
8 emphasis on innovation and expertise are areas
9 where, as part of the 350 Vermont community
10 organizing that I do, it's very clear. In
11 2008 350 didn't exist as a target. Just a few
12 weeks ago we had over a thousand people in the
13 State House lawn. We're a growing movement
14 and we continue to grow in strength and in
15 numbers.

16 I also want to offer that there doesn't
17 seem to be a clear enough sort of
18 implementation matrix. Sort of what I would
19 love to see is in the back of the plan and
20 what something that folks that do climate
21 action planning in cities across the country,
22 literally a chart when short term, mid term,
23 long term, who is responsible for it and
24 regular updating of that information. So
25 that's directly tied back to that monitoring

1 and evaluation, picking indicators, picking
2 metrics that are really going to show progress
3 to your constituency.

4 I wanted to point out that, obviously
5 you know this, but the -- of the goals that
6 you have I think of, in particular the goal to
7 triple the park and ride spaces, and Lake
8 Richmond, as those of you who ride the bus
9 affectionately call it, just sort of making
10 sure the plan takes into account the expected
11 impacts of climate change in the state, in
12 particular, flooding, and I wanted to suggest
13 that climate justice and justice associated
14 with this be a continual part of the plan so
15 that as you consider, and maybe this should be
16 more directed to the Governor as an audience,
17 but the Climate Cabinet include the
18 representation of marginalized voices, the
19 very poor, the low educated, black and brown
20 people across the state. Some suggestions
21 that I have for that would be the Vermont
22 Worker Center, and alliance with that has been
23 growing between Vermont Sierra Club, which is
24 also partnering very closely with Abenakis and
25 350 Vermont.

1 I want to close by saying that please
2 don't be afraid to be bold. Literally
3 boldness is a factor of pride for us. Vermont
4 is a national leadership and I think that
5 people are really looking to us. We're needed
6 across the country. Our boldness is needed,
7 and we support you. Frankly, we are going to
8 keep pushing you and we're going to keep
9 holding you to your promises, but we're there
10 for you, and we want to see this work, and
11 you'll see that through the personal
12 commitments of the number of us who don't even
13 own vehicles, which makes it particularly
14 difficult to be involved in things like this.
15 But in any case just know there's a strong
16 contingent of people behind you and the
17 movement building continues. Thank you.

18 MS. LAUNDER: Okay. The next speaker is
19 Jennifer Chiodo C-H-I-O-D-O.

20 MS. CHIODO: So I have worked in energy
21 efficiency in Vermont since 1994. I own a
22 small engineering consulting firm based in
23 Burlington, and I was really happy to read
24 this plan. I think it's a perfect plan, and
25 am anxious to work with other people in the

1 state to try and make it happen.

2 Some observations that I had in reading
3 the plan is that while clearly the plan talks
4 about energy efficiency as a priority first
5 and then thermal efficiency savings following,
6 you know, we have had direct experience
7 working in commercial buildings, which is our
8 area of expertise, where we go in and they
9 have already done a conversion to biomass and
10 it's no longer cost effective to do a lot of
11 the building energy efficiency improvements
12 that we could have done.

13 So I can't emphasize hard enough that we
14 need to make sure that we prioritize the
15 energy -- the building energy efficiency first
16 before the conversions to biomass. It will
17 make those conversions more cost effective and
18 reduce the amount of biomass that we need.

19 And I'm -- one particular area that I'm
20 concerned about is as oil prices rise we're
21 going to see more and more pressure to move
22 towards biomass rapidly, and if we don't get
23 the efficiency first, we will have lost those
24 opportunities for probably 10 to 15 years.

25 And I think the concept of trying to

1 figure out this whole building road map is
2 really important. I worked on a couple of
3 those. Actually I used to work at Vermont
4 Energy Investment Corporation and we worked on
5 a project that before Efficiency Vermont
6 existed to bring weatherization and five of
7 the state's utilities together to try and be
8 comprehensive in low income multi-family
9 housing, and it is challenging. There's a lot
10 of barriers, particularly in the commercial
11 market. It's really hard for businesses that
12 are looking at, you know, am I going to be in
13 business a year from now to make the
14 investments in energy efficiency that are very
15 cost effective, but where are they going to
16 invest that dollar, is it going to be in their
17 building or is it going to be in their
18 product.

19 So I think trying to figure out how we
20 can help businesses to capitalize on the
21 energy efficiency opportunities that exist for
22 them without undermining their ability to
23 invest in their core business, which is making
24 a product or delivering a service, is really
25 important as we build that road map.

1 And then one area that I would like to
2 see is there is actually a national shortage
3 of engineers, and so running a small
4 engineering company it's really hard for me to
5 find qualified people. We have had a job
6 opening for two months. We have had -- and
7 we're advertising nationally. We have had
8 like 12 applicants.

9 So I think one area that we need to
10 invest in more is actually engineering
11 education and the skill sets that we need to
12 actually make this happen, particularly in the
13 commercial sector because the changes we need
14 to make in the built infrastructure are
15 actually quite significant and the investments
16 are quite large. To go from systems that were
17 conceptualized in the 1970's when energy was
18 pretty cheap to the kinds of systems that will
19 actually enable the buildings to use
20 significantly less energy it's completely
21 doable, but we don't actually have the skill
22 sets in the quantity we need them, and then we
23 have to come up with mechanisms that can allow
24 businesses to participate. So great plan.
25 Thank you.

1 MS. LAUNDER: If anyone else thought
2 that was a sign-in sheet, you can pass when I
3 call your name. So the next person is Chris
4 NEME N-E-M-E.

5 MR. NEME: Thanks, Kelly. I too thought
6 it was a sign-up sheet, but I'll take
7 advantage anyway. I am co-owner of a
8 consulting energy policy and program planning
9 consulting firm based in Hinesburg, Vermont.
10 So my partners and I and our staff are part of
11 the green energy economy, living proof that at
12 least it exists at some level.

13 I wanted to start by echoing Bill
14 Dunnington's words and those of others about
15 congratulating you and thanking you for what I
16 think is what really is a visionary plan. The
17 holistic approach you've taken to look at
18 everything from transportation to land use
19 planning to all the different forms of energy
20 is really laudable.

21 I think the goals you've laid out as
22 part of that vision, the long term goals are
23 spot on. I know that there are likely to be
24 some elements of our community that may
25 express some concerns about the cost of

1 getting there, but I think sometimes those
2 concerns may miss the costs of not going
3 there, number one; and, number two, I know
4 from -- we do -- we have clients in about 10
5 or 12 different states and provinces, as well
6 as a couple different countries in Europe, and
7 so I've seen some studies, one in Europe
8 called road map 2050, which looked at a very
9 similar kind of question from a -- purely from
10 a climate change perspective and tried to
11 analyze what the continent could do to, on the
12 least cost way, to meet the climate challenge
13 that they face, and did a very detailed
14 analysis and actually concluded that if you
15 did all the right things, including a -- to
16 echo Jen's point, a massive investment in
17 energy efficiency upfront, you can actually
18 get there at a lower cost than on a business
19 as usual scenario. The challenge is being
20 willing to take the political risk to raise
21 the money and make the investments that you
22 need to make in order to get to that least
23 cost path.

24 So, again, a terrific start. I think if
25 I had concern to express about what I have

1 seen in the plan thus far, and I haven't read
2 it cover to cover myself, it would be that
3 there's not enough concreteness to the
4 recommendations. There's too many
5 recommendations that start consider this,
6 investigate that, and while I appreciate that
7 some of that is probably necessary, I think we
8 could probably get bolder to use the term that
9 was used earlier; and just to pick on one
10 particular one as an example, on the thermal
11 efficiency of homes I don't think we have to
12 do a gap analysis to see whether additional
13 funding is necessary.

14 I think -- I spent about a year on a
15 project I finished several -- about six months
16 ago looking at the leading home retrofit
17 programs across the United States, Canada, and
18 Europe, and came to the definitive conclusion
19 that while we need and can benefit from more
20 attractive financing programs like PACE and
21 on-bill financing and whatever other
22 interesting mechanisms they have going on in
23 Germany and other places right now, the
24 evidence is absolutely compelling that that --
25 that by itself or even coupled with an

1 one-stop shop and various other things is not
2 going to be enough. We need some sort of
3 additional funding mechanism to complement the
4 financing. We don't need a gap analysis. I
5 think we've done the gap analysis. The
6 various leading states and jurisdictions
7 around the world have already done that.

8 So in that particular example, and
9 probably in several others where I would be
10 happy to talk with you about offline, I would
11 encourage being a little bit bolder or
12 actually encourage being a lot bolder in the
13 recommendations, but again a great start.
14 Thanks very much.

15 MS. LAUNDER: You thought it was a
16 sign-up list. Do you pass, Richard? The next
17 one is Will Raap R-A-A-P.

18 MR. RAAP: Sign-up list as well, but I
19 have some things I would like to offer.

20 First of all, I got here 31 years ago in
21 Vermont and we had a state planning office
22 then, and I always thought that was a smart
23 thing to do because it was really developing a
24 strategic point of view about our economic
25 future and thinking about that. So what you

1 really have here is the basis, thank God, of
2 an economic development plan that's going to
3 have us potentially be competitive long term.
4 So -- but related to that is I don't know that
5 you have a strong enough point of view about
6 this is really the underpinnings of a strong
7 new economy for Vermont, and implementing this
8 is going to give you competitive advantage
9 long term.

10 I spend part of the year in Costa Rica.
11 They have 94 percent of their electrical
12 generation coming from renewable sources, and
13 they have a goal of 2020 being carbon neutral
14 as an economy. You can do this kind of thing.
15 We can move forward in that arena.

16 I heard Chris say that we have two
17 billion dollars leaking out of our economy,
18 ish

19 MR. RECCHIA: Ish.

20 MR. RAAP: I heard Liz say we have 48
21 percent in renewable energy. My question is
22 how much of that renewable energy is in
23 Vermont? Do we know?

24 COMMISSIONER MILLER: Yeah, again, I
25 don't want to take all the questions now, but

1 the quick answer is there's about 12 percent
2 local hydro, there's about 6 percent local
3 biomass, in-state biomass. There is -- solar
4 is less than a percent right now, but with
5 permitted projects will grow substantially.
6 Wind is approximately two-tenths of a percent
7 now, but will be about 6 percent if everything
8 actually gets built that's currently
9 permitted. So if you add all that up, it's
10 20-ish percent.

11 MR. RAAP: So less than half of the
12 renewable is in Vermont.

13 COMMISSIONER MILLER: Of the renewable
14 electricity that's because -- the way I
15 probably should have done it, the Hydro-Quebec
16 contracts are about one-third.

17 MR. RAAP: Okay. So my thought about
18 that is we really must do an economic analysis
19 of the value of renewable energy produced in
20 Vermont cumulatively, even if it might be in
21 the short term more costly. I would venture
22 to say that the creation of security and
23 resilience in our energy system and the
24 creation of jobs in our economy has something
25 to look at that I don't know that we have

1 comprehensively looked at before. I would
2 love to see that look.

3 My final conversation or point would be
4 I'm glad the holstein was up there. I have
5 been involved over time in the evolution of
6 the food system in Vermont. We have a farm to
7 plate initiative which is statewide food
8 system planning. I don't see -- I don't see a
9 clear and obvious link to the energy system
10 planning, but guess what? If we can solve
11 food and energy leakage, we have got a much
12 stronger economy, and my proposal is that
13 there's opportunities we haven't fully
14 explored here to link the health of a working
15 landscape as it relates to the food system
16 with the health of the working landscape as it
17 relates to the energy system. Not only can
18 farms become generators in a variety of
19 methodologies of renewable energy, but I am
20 quite confident -- I mean 350.org is now
21 beginning to fully embrace the idea of carbon
22 sequestration as a strategy, not only
23 emissions reduction, but how do we take the
24 excess emissions in the atmosphere and put
25 them to productive use.

1 Vermont already is the leader in doing
2 that with forests, farms, organic farming.
3 This use of carbon to creating a more fertile
4 soil and a more healthy forest is a powerful
5 idea that I would like to see more embedded in
6 the greenhouse gas emissions climate change
7 part of this program, and so that economic --
8 the big economic system that we are trying to
9 understand how to move into the future in a
10 positive way, if we can take the energy
11 system, link it to the food system, we've got
12 two really strong building blocks there.
13 Thank you.

14 MS. LAUNDER: Okay. Paul B-O-I-V-I-N.

15 MR. P. BOIVIN: I would like to make a
16 case in point that you talk about biomass
17 energy. The only way -- place or where it's
18 going to come from is Vermont's farmers, and
19 if we engage Vermont's farms, we produce --
20 right now we actually furnish heat for
21 greenhouses, homes, and even pasteurized milk
22 using corn. Corn is considered by some people
23 you're taking it away from a food source.
24 Well such is not the case. One unit of energy
25 going towards growing corn yields seven units

1 out the other side.

2 If you compare that to the solar farm
3 that was put in down near our area in
4 Vergennes and you took that same acreage and
5 you used that to produce corn for heat for
6 homes, you could heat probably about 17 homes
7 with that same acreage of corn.

8 Now if we bring things back, as she had
9 pointed out, the other -- you had pointed out
10 earlier that we get a common energy unit for
11 all of our energy so we can make comparisons,
12 that would be a wise thing to do.

13 The other thing is that we have to take
14 and use our resources wisely as was mentioned
15 earlier. Whenever I go in and we do an energy
16 update for a client we actually -- one of the
17 things we stress is even though our product is
18 less money to heat let's not be wasteful about
19 it because even then we still may not have
20 enough to go around, but if we engage
21 Vermont's farmers, we would only have to
22 increase our corn acreage by 20 to 30 percent
23 to heat most of our homes in the State of
24 Vermont; and, besides, if you go to any
25 biofuel source for your diesel, then that is

1 going to mean corn as a crop rotation because
2 you need a C4 type plant to break the disease
3 cycle between beans or corn -- or I mean
4 between soy beans, canola, sunflowers, or any
5 other crop. So that's a necessary part of our
6 energy rotation.

7 So please be more engaging with your
8 Vermont farms. I think Vermont agriculture is
9 very much in tune and ready to roll. Thank
10 you.

11 COMMISSIONER MILLER: Thank you.

12 MS. LAUNDER: Okay. The next is Henry
13 and last name starts with a BBO -- I'm not
14 sure if it's a N or a U. No. Thought it was
15 a sign-up list too? Okay. Steven Crowley
16 C-R-O-W-L-E-Y.

17 MR. CROWLEY: I'll send something in
18 writing.

19 MS. LAUNDER: Okay. I'm flipping
20 through this and the last name is Joe Solomon.
21 Okay and -- all right. You just signed up so
22 I know you didn't think it was a sign-up list.
23 S-A-L-O-M-A-N.

24 MR. SOLOMON: It's all o's. One second.
25 So we've heard a lot of really good edits and

1 suggestions and ways to strengthen this thing.

2 One thing that I don't think needs an
3 edit or a strengthen but is absolutely missing
4 from this thing is a dedication. Something
5 this thick deserves a dedication, you know,
6 and who really is the elephant in this room?
7 And I've never seen a really good presentation
8 that runs this long that mentions greenhouse
9 gases this many times, but doesn't mention
10 climate change.

11 Who's the real elephant in this room?
12 Not just climate change, but it's real now.
13 It's the victims that we saw of Hurricane
14 Irene, right? That was the first face of
15 climate change in the State of Vermont. When
16 this was started to be drafted we didn't have
17 that as part of our culture and our history.
18 Now we do and that's changed things. We've
19 seen what's at stake in this work. We've seen
20 it's not just about cutting carbon or coming
21 up with neat economic systems as good as that
22 stuff is. We've seen that it's about the
23 survival of the people in this state, and
24 we've seen for sometime before that, that it's
25 about the survival of marginalized people and

1 everyday people across the planet. We've
2 known this.

3 You did great work. It's a shame that
4 that presentation doesn't acknowledge the
5 elephant in the room. That's why we're here.
6 That's why people care. That's why over a
7 thousand Vermonters came to the State House
8 just nine days ago with Governor Shumlin
9 leading the charge, with Senator Sanders
10 leading the charge. There's a movement that
11 has your back to not be afraid to mention that
12 elephant in the room and to give respect -- to
13 give respect to do justice to the people of
14 Vermont that are on the front lines of this,
15 and so what does it mean though?

16 What does it mean to make a dedication
17 now that you've done it. I saw a lot of heads
18 nod. I saw invisible applause. It seems like
19 something people want to do, right? What does
20 it mean to dedicate Vermont's energy future,
21 this plan here, to the people of Vermont, the
22 victims of Hurricane Irene, some of the first
23 victims of the climate change, and into the
24 future Vermonters?

25 How does the least carbon polluting

1 state in the nation take on climate change?
2 We're already number one. We're already
3 leading the country, right? How can we do it?
4 It can't just be with cutting carbon, right,
5 because with the carbon we create is less than
6 the smallest state. It's less than Rhode
7 Island. It can't just be with that
8 methodology. We got to send, you know --
9 cutting more carbon isn't going to quell the
10 rising storms. Is it going to damper the
11 rising temperatures? We got to send hope. We
12 got to shine the light. We got to be a beacon
13 that it's possible, and if we don't send that
14 hope out, if we don't send that light out,
15 right, we haven't done our justice to that
16 dedication. We haven't done justice to the
17 people of Vermont that are facing climate
18 change right now if we don't send out hope and
19 what is hope? A child understands hope. Hope
20 is 90 percent clean energy by mid century.

21 I can't pitch that to a kid, but I can
22 pitch this. I can pitch one hundred percent
23 clean energy. Just sustainable energy.
24 Natural gas is not sustainable. We should be
25 -- we should just acknowledge that. We should

1 act on that. You acknowledge it, but we need
2 action on that one hundred percent safe, just
3 clean renewable energy by all Vermonters, and
4 like Governor Shumlin said, as fast as we can.
5 Is that mid century? If Costa Rica can do it
6 in a few years, can we do it at least by
7 quarter century? 2025? 2050?

8 Most of the people leading the charge in
9 this room will be dead. You know. We can do
10 better. We can be alive to see us leaders and
11 we can be alive to do justice to that
12 dedication. And yikes.

13 So who is with us? Do we think this
14 thing should have a dedication to the victims
15 of Hurricane Irene and to the future of
16 Vermonters? If you don't clap, they don't
17 hear it. Thank you.

18 MR. RECCHIA: Thanks a lot.

19 MS. LAUNDER: Okay. I don't know who
20 wants to follow that up, but probably have a
21 few more minutes if there's anyone who really
22 wants to come up and speak.

23 MR. ROLLIS: Hello. I didn't sign up,
24 but my name is Ben Rose. I live in Williston
25 and I work as Northeast Regional Director for

1 the Wilderness Society, and let me offer the
2 standard caveats. I haven't read the whole
3 thing. Great job. I know a lot of people
4 have worked very hard and know a lot more
5 about everything on every page of this
6 document than I do. So with those caveats I
7 will offer a comment that fits inside three
8 minutes.

9 This has been a very amicable
10 constructive process from -- at least by all
11 appearances. There have been public hearings
12 without enmity. A lot of light and very
13 little, you know. It's been a very
14 constructive process, and it's clear that
15 there's a broad consensus in the state to move
16 forward on the central elements of this plan
17 around energy efficiency and conservation and
18 whole building envelopes and leading the
19 nation, all these things where all the heads
20 are nodding yes, and I guess I want to
21 challenge the framers of this plan to keep
22 that momentum going by first doing no harm.

23 There are elements of the plan which
24 have the potential to become wedge issues in
25 the state and take us back into a less

1 amicable place. Those are primarily around
2 siting issues, and when people have to weigh
3 their desire for new energy against their love
4 of a place or their love of an unfragmented
5 forest, and I believe looking at the plan that
6 this is not a plan about in-state generation
7 of electricity. That is not what the nation
8 needs is for Vermont to generate a lot of
9 electricity. There's lots of electricity out
10 there chasing customers in Hydro-Quebec, in
11 hydrofracking natural gas coming at us very
12 cheaply. There's going to be offshore wind
13 coming at us.

14 If we look at where we're going to get
15 wind energy from, there's a whole lot more of
16 it offshore than there is on our few precious
17 ridgelines, and looking down the road we have
18 the potential to do some silly things in the
19 interest of providing energy in Vermont. So
20 if we can do no harm, I believe we can get
21 further faster with the elements of this plan
22 that are going to do the most good.

23 Two -- I've touched on wind energy as
24 something which would be potentially a pitfall
25 for our focus. I think that the plan could

1 also be strengthened on biomass. Biomass is
2 clearly a resource that we have. It's
3 important and it's valuable in Vermont.
4 There's lots of wood being grown in the state.
5 We need to use it as efficiently as we can in
6 the interest of the goals of this plan. In
7 some places the plan is very good about using
8 -- at setting efficiency standards for how we
9 use biomass. In other places it says well
10 electricity is okay too.

11 Wood is a very smart way to heat space.
12 Vermonters have known that for a long time.
13 Vermont -- or wood is not a particularly
14 efficient way of making electricity. If you
15 can generate both at the same time, that's
16 efficient, but -- but if we allow plants to
17 just use wood to create electricity, I think
18 we're losing the efficiency of our wood
19 resource, and I think the plan should be more
20 clear and forceful on that point. That's my
21 comment.

22 Thank you for an excellent piece of
23 work, and I do -- one last thought which is
24 that this dates a lot of us in this room, but
25 we remember the solid waste planning of the

1 1980's. Vermont had a solid waste crisis and
2 the state developed a solid waste plan with a
3 hierarchy of priorities; reduce, reuse,
4 recycle, process, dispose, and where some of
5 the people working on that fell down is they
6 started with dispose and they got wrapped
7 around the axle of landfill siting, and in our
8 parts of the state the public entities charged
9 with implementing that hierarchy gave up on
10 landfill siting early, said okay we'll set
11 some standards and we'll get out of the
12 landfill business and we'll let the private
13 sector respond to clear government set market
14 signals for how disposal will be done in a
15 environmentally protected way.

16 We will focus on the demandside. We'll
17 focus on taxing the trash to do the recycling
18 and the composting and hazardous waste
19 disposal and the reduction education. I think
20 the opportunity is here to not get wrapped
21 around the axle of the controversial elements
22 and to focus on the things where all the heads
23 are nodding. Thank you for the opportunity to
24 comment. Thank you for the good work, and I
25 hope we can pull this off.

1 COMMISSIONER MILLER: Thank you.

2 MS. KNIGHT: My name is Joan Knight and
3 I just want to say one thing. I tend to make
4 short concise statements, and besides thank
5 you I'm going to say does the word geothermal
6 belong in your list of renewable technologies?
7 Thank you.

8 COMMISSIONER MILLER: Thank you.

9 MR. M. BOIVIN: My name is Mark Boivin.
10 I live in Addison. B-O-I-V-I-N. I just have
11 a couple points to make.

12 All these plans and goals are good, but
13 they are not going to work unless they are
14 economically viable and when we're talking
15 about energy that they follow the laws of
16 thermal dynamics.

17 What I see is for large part you're
18 following that -- those laws. My brother and
19 I started selling corn because we noticed --
20 corn for heating because we noticed that corn
21 was selling for two-thirds the cost of heating
22 oil per million btu's, and what I would like
23 to do is commend you on the idea of using one
24 set unit so people could compare, and the
25 Public Service Board has a site for fuel

1 comparisons per million btu which I feel is
2 excellent, and that should be continued, and
3 maybe you might want to consider putting an
4 energy calculator added to that.

5 And when it comes to heating the EPA web
6 site -- not the EPA -- the Energy Information
7 Agency web site has a heat calc spreadsheet.
8 Maybe you might want to consider adding a link
9 to that. There's a lot of bad information out
10 and I think that the Energy Information Agency
11 calculator is the best that I've seen. Thank
12 you.

13 COMMISSIONER MILLER: Thank you.

14 MS. LAUNDER: Okay. Last call.

15 MR. PORTEOUS: David Porteous
16 P-O-R-T-E-O-U-S. I'm a layperson. I haven't
17 read this report at all. I'm glad to hear
18 that it is well praised by a lot of people
19 here.

20 Just a couple of things that maybe in
21 the report were missed. I would like to see
22 consideration for greater use of mass transit,
23 GPS systems be used in mass transit to help
24 people use the bus systems.

25 COMMISSIONER MILLER: For pickup?

1 MR. PAPPAS: Yeah. You know when the
2 bus is coming. I don't use the system. I
3 would use the system if it was a GPS system
4 with it, especially in our climate. I think
5 it could be really helpful.

6 I didn't hear anything about expanding
7 recycling and composting. It's a way of
8 cutting down on the energy use. I believe in
9 the carpooling, that we need to increase that.

10 I don't know what we can do for even
11 events like this. It's like -- I came in my
12 car. How many people came in their own cars?
13 Carpool. I like the people who did carpool
14 here together. That was great.

15 I do think we should market ourselves as
16 a green state and really capitalize on that.
17 I think back in the 70's we had a great
18 reputation for that and somehow we lost our
19 way, but I think we can recapture that and we
20 should recapture that. I think you can really
21 benefit our state.

22 And also I didn't hear anything about
23 education of youth. I think you need to start
24 with the youth of Vermont and get them
25 engaged. I know when I was in sixth grade I

1 saw some program that had a movie and talked
2 about metal recycling and how aluminum was a
3 precious resource the United States didn't
4 have. Came from bauxite, and like you had to
5 strip mountains to get it out, and it took 11
6 times as much energy for mining than
7 recycling.

8 I don't know. It stuck with me, but I
9 think those things can make a difference to
10 people, and also I think the idea of in New
11 York City there's been great reduction in
12 crime. There was a police commissioner, I
13 think it was Bratton was his name, and his
14 thing was working on small details. Small
15 details can make the difference. They decided
16 graffiti has to go. We've got to stop
17 graffiti. Crime reduction starts at the small
18 point. If you allow it to happen at small
19 points saying we don't care, it just allows
20 people to keep going and going.

21 So we need to really start on a small
22 level as well as the big level. I think
23 that's it. Thank you.

24 COMMISSIONER MILLER: Thank you. There
25 must be others? No more comments?

1 MR. P. BOIVIN: I would like to make a
2 followup. The point that I would like to make
3 is that we talk about education, but the
4 problem that we have is we've got to do --
5 again as we said it before about coming back
6 to a standard unit of measure, we got to make
7 sure that the education we're doing is the
8 right education and is putting the right
9 information out to the right people at the
10 right time. I'm not saying filter it, but I
11 mean make sure that the education and
12 double-check the information is accurate and
13 correct before we disseminate it. Thank you.
14 Paul Boivin.

15 MS. APPLETON: Hi. I'm Kay Appleton.
16 I'm a student at UVM and I also am with the
17 350 group Vermont network. I -- actually I'm
18 terrible at public speaking and I wasn't going
19 to speak, but just biking here I think that
20 biking should be a priority.

21 I know that Local Motion in Burlington
22 has specific recommendations and they have
23 read the 300 page plan, which I haven't, and I
24 know one of those is the park and rides, if
25 they have bike links there so you can -- if

1 you don't have a car, you don't need to drive
2 there to take the bus. That would be great.
3 And I also just want to echo I think we should
4 go for a hundred percent renewable. Thank
5 you. Thank you too.

6 COMMISSIONER MILLER: Thank you. Thanks
7 to everybody who came. Do we have another
8 one?

9 MS. HARDY: Hi. My name is Betty Hardy.
10 I'll try to be brief and I just want to
11 reemphasize what some people have already
12 said.

13 I really think the education part is so
14 important and helping people who want to make
15 their houses more energy efficient and -- but
16 they just don't know where to go, and I'm
17 thinking about like those numbers that you
18 call 211 for this information or 411 for that,
19 might there be a number to dial for -- for
20 energy efficiency information, and I guess I
21 also want to say I think Vermont can produce a
22 lot of its own electricity without doing harm.

23 I'm thinking of Germany and how they
24 have one of the lowest solar potentials and
25 yet they are the world leader in getting their

1 energy from solar, and if they can do it, I
2 don't see why we can't do it. Well I do know
3 they get a little more support from the
4 federal level perhaps than we do, but I still
5 think with help we could put solar panels all
6 over all our buildings and maybe even along
7 our highways.

8 So those are a couple thoughts anyway,
9 and thank you very much for all your great
10 work.

11 COMMISSIONER MILLER: Well I'll say
12 something that will engender a comment
13 probably. Let me just address a couple of the
14 things that came up, and then I think Chris
15 probably and maybe Gina or Costas may have
16 some comments on the some of the other issues.
17 I'm taking them in no particular order.

18 Geothermal. Thank you for mentioning
19 that. We have had that comment at other
20 public meetings. There is a section in the
21 plan discussing geothermal.

22 The bottom line on geothermal when we've
23 investigated it is it's a scale and cost
24 issue, and we very much would love to see,
25 just like with other things on the

1 acceleration curve, we would love to see the
2 scale go up as the cost comes down because we
3 do think geothermal can play a role, and when
4 you're talking about using heat pumps, for
5 example, that's another reason why progress on
6 renewable electricity will help us in the
7 future because those pumps will require a
8 little electric load, right, and so it's just
9 another example as we look toward the future
10 of why we should be looking at renewable
11 electricity as well as renewable energy
12 sources for heating. So there is something in
13 the plan. I agree it's not as thoroughly
14 completed as other sectors, and it's a scale
15 and cost issue.

16 Let's see. Education. I couldn't agree
17 more that starting the education process in
18 our schools is important. The plan does
19 discuss some recommendations in that regard,
20 specifically that our work with the Vermont
21 Energy Education Partnership increase.

22 I also want to give a plug to the idea
23 that just came up about a number. We don't
24 have that specific recommendation or a plan
25 for that specific idea, but we do have

1 something in Vermont that the Vermont
2 Sustainable Jobs Fund has created that the
3 plan discusses and would like to see used
4 more, and that's the Vermont Renewable Energy
5 Atlas. For those of you who haven't seen it I
6 recommend it. It has a lot of great data
7 already and it has the ability to expand its
8 layers as they call it in web speak to create
9 even more data sets in the future.

10 They have plans to look at efficiency on
11 that site. Right now it will show you local
12 solar projects. It will even tell you the
13 contractors who did particular projects, as
14 well as other renewable energy metrics. So
15 Renewable Energy Atlas of Vermont I highly
16 recommend it, and I think it's one step in the
17 education process.

18 Implementation steps. Bill, I think,
19 started off the comments. Others echoed it.
20 I have certainly heard that comment. I
21 understand it. I agree with it. What we are
22 doing at the cabinet level right now is
23 putting the recommendation matrix together so
24 that with the final plan that can be
25 presented, and Chris's point I understand the

1 concern about -- what was it -- study and
2 consider, and --

3 MR. NEME: Investigate.

4 COMMISSIONER MILLER: -- investigate. I
5 have heard that comment too, and I certainly
6 do understand it.

7 There are places where I'm committed to
8 that actually being appropriate and I
9 understand your comment on efficiency and the
10 gap. We have heard many comments that it's
11 important to quantify that for Vermont before,
12 you know, don't let the dollars go first,
13 figure out what the gap is, and so I
14 understand there's a difference of opinion on
15 that.

16 In the final recommendations we will do
17 everything we can to make them concrete so
18 even if it says consider or investigate, that
19 it tells you who and when so that it's not
20 just left out in the ether, and the Climate
21 Cabinet actually will be receiving that
22 recommendation matrix and working with us on
23 finishing it because it's not just the
24 Department of Public Service. It's not even
25 just the other agencies and departments here

1 tonight. There are other aspects in the
2 Executive Branch who will be working on it
3 too. So that's for implementation steps.

4 And then crop and crop biomass and
5 programs for farmers. I just wanted to
6 acknowledge that Chuck Ross has been
7 instrumental in this process. He wasn't able
8 to come tonight, but many of the strategies in
9 the draft plan are directly from the Agency of
10 Agriculture. He very much agrees with you.
11 We agree with you that crop biomass has a
12 future in Vermont.

13 The plan discusses grasses which also
14 are not as well developed right now, but it's
15 another example of the technology curve
16 looking into the future, and so that is
17 addressed, and I wanted to ask Chris if you
18 wouldn't mind just saying a few words on the
19 climate change intersection and some of the
20 work ANR is doing.

21 MR. RECCHIA: Yes. Thanks very much.

22 COMMISSIONER MILLER: Great.

23 MR. RECCHIA: Thanks, Liz, and you guys
24 are just great and very inspirational. So
25 thank you for coming, and while you were

1 talking about the elephant in the room I think
2 a skunk came in the room over that side, but
3 we'll go with the skunk for now.

4 So climate. This is -- again I mention
5 the collaboration that's ongoing. Governor
6 Shumlin has asked my boss, Deb Markowitz,
7 Secretary of the Agency of Natural Resources
8 to head up the Climate Cabinet, which she is
9 doing and is very much looking forward to.

10 One component of that being the
11 implementation of the energy plan. We have a
12 couple of different challenges associated with
13 climate and meeting the goal that you have,
14 and one of them clearly because of the
15 position we've all put ourselves in and I
16 speak globally all, but mostly Texas I'm
17 talking about, that we are, you know, have to
18 do an adaptation plan. We have to figure out
19 adaptation right away because that's what we
20 experienced the need for both in May -- while
21 I appreciate the dedication, I think the May
22 flooding and this, there's a lot to dedicate
23 to.

24 MR. SOLOMON: Let's do it.

25 MR. RECCHIA: Okay. So the point is

1 that we've got the adaptation component and
2 we've got a whole forestry piece of that, that
3 I think serves as a nice link with the biomass
4 piece and the ag component, and that is our
5 forests need to be resilient as well.

6 We are expecting a bunch of invasive
7 types of things to change the character of our
8 forest much like unfortunately they did with
9 chestnut blight and dutch elm disease, we've
10 got invasives coming up from the south killing
11 hemlocks. We have ML ashbore coming in from
12 the west. Probably a bunch of others that I
13 don't even remember, but the other thing we
14 have is, for example, wood pellets that are
15 coming in from Alberta, Canada as a result of
16 bark beetle kills there. So we're chopping up
17 that wood, making pellets, and then bringing
18 it here cheaper than we can support our own
19 industries here.

20 So there's a bunch of different
21 complexities associated with this. What I
22 really want to say is that we recognize the
23 linkage between climate and the need to have
24 growing working forests. In Vermont 76
25 percent of lands are privately owned. We

1 better figure out a way to make those
2 economically viable for the owners to maintain
3 because ultimately we may have all different
4 definitions of what's sustainability is, but
5 we do know subdivision and development
6 ultimately and reduction of our forest land is
7 not sustainable. So we have to work toward
8 that as well.

9 So I think, you know, we're very excited
10 about the implementation of this. We're
11 taking the model from the Climate Action
12 Committee that did the climate -- the original
13 climate plan a few years ago with the matrix.
14 It was a beautiful thing. We're going to take
15 that and expand that for the energy.

16 So thanks very much everybody for coming
17 here. Just a tremendous enthusiasm. Very
18 much appreciate it.

19 COMMISSIONER MILLER: Any others like to
20 speak or say a few words? We still have time.
21 Will.

22 MR. RAAP: I wonder if we are prepared
23 -- I haven't read the plan fully. I'm
24 wondering what the standard offer -- the
25 experience of the standard offer has been and

1 what the plan is, if there is one going
2 forward, and is that going to be strategic so
3 that we really are trying to attract the right
4 kind of energy production or even energy
5 efficiency kind of investments. Any input on
6 that or thoughts on that?

7 COMMISSIONER MILLER: Sure. I can
8 address that. The standard offer, for those
9 who aren't familiar, is a program for
10 renewable electricity for projects here in
11 state.

12 The standard offer program that was
13 piloted by the Legislature a few years ago was
14 a 50 megawatt program overall, and each
15 individual project was capped at 2.2
16 megawatts. So they are relatively small
17 projects, as Will is aware, and they were
18 across different sectors, although once it was
19 subscribed it was clear that the majority, the
20 vast majority of the projects ended up being
21 solar.

22 The plan discusses the standard offer
23 pilot or project, if you want to call it that,
24 that has happened. It discusses that not many
25 of those projects are yet actually in the

1 ground and generating yet. So there's still
2 time to go to figure out how that first 50
3 worked for the state, but the plan does
4 suggest that we move to a next generation
5 program trying to learn the lessons of the
6 project that we have had so far, and
7 specifically the Department thinks that we
8 should be looking at how we can create market
9 based mechanisms for pricing, and there's
10 different ways to do that.

11 They -- most typically discussed is
12 what's known as a reverse auction which
13 California is experimenting with right now or
14 has just recently put in place for a slightly
15 larger size project than what we see here in
16 Vermont. It's not easy. In other words, it's
17 not something you just kind of wave a wand and
18 have a reverse auction. You have to do it
19 thoughtfully.

20 We believe a reverse auction program
21 here could be appropriate as long as we
22 recognize some of the Vermont scale involved.
23 In other words, our projects are smaller here.
24 Developers will have a difficult time
25 targeting their project at a level that will

1 actually allow them to develop. We'll have to
2 be sensitive to that.

3 We also think that when we do this we
4 should put other benefits in place like, for
5 example, locational benefits. If we know --
6 sorry if this is in the weeds for some of you
7 -- but just to Will's point, if we know a
8 particular area is transmission constrained
9 and that a project would help, then we should
10 give a bonus, if you want to call it that, in
11 the auction matrix for that type of project.

12 You can do that with technology type as
13 well. We haven't yet in the plan suggested
14 that as a possibility, but certainly in the
15 process of developing a market based mechanism
16 that would be possible. We have had a lot of
17 comments from the business community that it's
18 not so much -- you have heard probably
19 complaints that standard offer pricing
20 presently in place is too high. That's a
21 heard complaint.

22 What we've heard from the business
23 community is not so much it's too high.
24 Absolute terms is they want a process in place
25 to ensure the price is fair and correct for

1 the market. In other words, let's find out
2 what the right price is. Let's not just
3 presume we know it, set it, and then have a
4 run on the store to get the projects built.

5 So short answer to your question is we
6 do think it should be expanded. We think it
7 should be expanded in a way that allows for
8 market based mechanisms to come into play.

9 Other questions? I'm happy to take
10 questions. God help me. I've got 15 minutes
11 left or if others want to come up. Yes, Brad.

12 MR. FERLAND: One question.

13 COMMISSIONER MILLER: Brad Ferland.

14 MR. FERLAND: There's all the economic
15 benefits of electricity supply change that
16 you've talked about and the plan talks about,
17 but in terms of just consumer rates, you know,
18 does the plan -- is there a place in the plan
19 that identifies what the projected rates are
20 going to be for electricity moving forward?

21 COMMISSIONER MILLER: Yes. That's a
22 good question.

23 MS. LAUNDER: Liz, can you repeat the
24 question?

25 COMMISSIONER MILLER: Thank you. Brad

1 asked whether anywhere in the plan actual
2 consumer rates are projected into the future
3 essentially.

4 The answer is the plan has an appendix
5 that sets forth a variety of scenarios for
6 future electricity supply, and combined with
7 those scenarios are economic impact analyses,
8 both the negatives, that is the rate, as well
9 as the positives, which is possible job
10 creation and other economic benefits.

11 So that is in the plan, however, it's a
12 projection, and somebody said, maybe somebody
13 at the Department years ago, all models are
14 wrong some models are useful, and the truth is
15 when you look out into the future the way you
16 best know what the rates are is by looking at
17 what's actually committed in the shorter term.
18 So you can look in chunks of time, but if you
19 want a 20-year rate projection, you can look
20 at the plan scenarios and it will tell you
21 that x scenario would cause a four percent
22 increase, for example, but it's all based on
23 the assumptions in the scenario. I mean
24 that's the truth.

25 If you look at electricity prices

1 forecast out, most forecasts have electricity
2 prices remaining relatively low in the short
3 term, and the short term is not just the next
4 couple of years but five to seven years out.
5 Some are even longer out than that. That's
6 mostly driven by the natural gas resources
7 that have been discovered.

8 You know folks who raise environmental
9 concerns with fracking I completely
10 understand. One of the things that I hope
11 they understand is that it's driving energy
12 prices right now. So that's a reality we have
13 to deal with, yeah, and it's causing
14 electricity prices in the market to be lower
15 than they otherwise would be.

16 MR. SOLOMON: It's poisoning the
17 community unequivocally.

18 COMMISSIONER MILLER: I absolutely
19 understand the economic and environmental
20 interplay that's going on there.

21 The difficult part from a planning point
22 of view, and I'm just telling you the reality
23 we're dealing with, renewable energy prices
24 are presently, you know, depends on which
25 resource you choose, let's just say here, and

1 because of the way natural gas prices are
2 projected and the amount of natural gas
3 electricity generation on the market it's down
4 here, and so it creates a long term planning
5 conundrum, and so the plan does discuss it,
6 but probably not as specifically as you're
7 suggesting, Brad.

8 Also, the presentation that I gave in
9 the spring, and I think some of this is still
10 online, does show rates over time historically
11 in Vermont, which is an interesting thing for
12 folks to look at. What you would see
13 essentially is -- you've probably seen this
14 before. Hang on. The squiggly line is New
15 England, the rest of New England, and the flat
16 increasing line is Vermont, and what you would
17 see is the rest of the region has been much
18 more volatile over time than we've been
19 because we have had far more long term
20 contracts stably priced than our neighbors.

21 You would also see the gap decreasing in
22 the last few years, and one of the reasons for
23 that is exactly this issue. Natural gas
24 prices have gone down. The rest of the region
25 is far more dependent upon natural gas for

1 electricity supply than we, and so we've seen
2 a narrowing.

3 Other questions? Actually let me ask
4 Will first, since you haven't had a chance to
5 speak.

6 MR. RAAP: I don't know if it's a
7 question for you or Chris, but I was wondering
8 if you could explain the rationale for the
9 plan makes the suggestion in volume two that
10 ANR should consider rescinding the moratorium
11 on the siting of wind projects on public
12 lands, and I just would like you to --

13 COMMISSIONER MILLER: That's one of
14 those considers.

15 MR. RAAP: But it's under a
16 recommendation.

17 COMMISSIONER MILLER: Fair enough. It
18 is. I'll tell you the perspective that we
19 brought to that and then I'll let Chris either
20 disagree or get his red pen out.

21 We received a number of comments in this
22 process that the moratorium which presently
23 applies only to wind on state lands but not
24 to, for example, solar, there are solar
25 installations on state lands, AOT has some

1 actually on some of your garages, that the
2 moratorium was unfair. That really -- and
3 just like with towers for cell phone service
4 or wireless, that the issue should not be
5 whether or not it's a priori allowed, whether
6 it's ever allowed or not allowed, but it's
7 appropriate in a given circumstances and goes
8 through all the same review any other project
9 would, and so to folks in the Department
10 working on the plan that suggestion seemed
11 reasonable, and that's why the consider is in
12 there because cutting out just the wind, and
13 again it's not changing the actual review
14 process, it's allowing them to come to the
15 table, seemed reasonable to us, but that might
16 be one of those circumstances -- who was it
17 who said do no harm. That might be one of
18 those circumstances where, you know, obviously
19 folks are going to have very strong opinions
20 on whether they would ever want to see one of
21 those projects come to the table. Chris.

22 MR. RECCHIA: Thanks, Liz. All I would
23 say is that just like the Comprehensive Energy
24 Plan needs to take a comprehensive look at all
25 of our energy sources and uses, I think if I

1 were to take that lemon and make it into
2 lemonade, which is how I think I would say it,
3 let's look at where state resources can help
4 get us from where we are now to where we want
5 to be, and that would cover, you know, any
6 renewable energy resource. Not to say that it
7 would be approved because lord knows we have a
8 bunch of different other values that we have
9 our resources for, you know, wildlife, there's
10 air, there's water, there's recreation,
11 there's, you know, a bunch of different
12 purposes that we have our forest resources
13 for. For example, can renewable energy be
14 part of the discussion? I think in a broad
15 sense it should be, but I think it should be a
16 comprehensive look, not just -- maybe it was
17 like wind shouldn't have been singled out.
18 Well now it shouldn't be kind of singlely put
19 back in either, but we'll figure it out.

20 COMMISSIONER MILLER: We can make the
21 recommendation more broad.

22 MR. RECCHIA: That's what I think I'm
23 trying to say. Why didn't I say that? I wish
24 you didn't show them how we made all the
25 graphs.

1 COMMISSIONER MILLER: Yes.

2 MS. AGOSTOFILION: I have a question
3 about the composition of the Climate Cabinet
4 and whether or not there's any opportunity for
5 citizen engagement and for feedback to -- I'm
6 presuming it's all the implementers or
7 representatives from the different agencies.
8 Is there any opportunity for the business
9 community or whatever or activists?

10 COMMISSIONER MILLER: That's a good
11 point. I'll repeat the question. Sorry. The
12 question was the Climate Cabinet which
13 Governor Shumlin has formed, is there an
14 opportunity for public and citizen engagement
15 in the Climate Cabinet, and the short answer
16 is the Executive Order itself appoints members
17 of the Governor's Cabinet to the Climate
18 Cabinet, and so the actual Climate Cabinet are
19 folks like me and Deb Markowitz and Chris
20 comes and ANR, Agriculture, and BGS is there
21 and VTrans is there, et cetera.

22 The broader question I think you have is
23 how can folks actually engage with the Climate
24 Cabinet, and we've met three times since the
25 Executive Order came out, and it's one of the

1 discussions we're having. The climate
2 collaborative, which was a part of the
3 Governor's Commission on Climate Change, a few
4 years ago provided that forum, but some
5 considered the missing link was the
6 implementation, and so Governor Shumlin's
7 priority was to get folks who answered to him,
8 in other words, folks who would be
9 responsible, the buck would have to move on
10 and then stop and something would have to
11 actually get done. That was his priority. So
12 putting the Climate Cabinet in place was what
13 he did to do that.

14 I think the next question is how do we
15 more broadly engage, and we don't have an
16 answer yet, but we're certainly aware of the
17 request. Is that fair?

18 MR. RECCHIA: Yes.

19 COMMISSIONER MILLER: Yes.

20 MR. P. BOIVIN: Considering the
21 conundrum with natural gas and impact it has
22 on your electricity prices and fuel prices and
23 such as that, and it is a reasonably priced
24 resource, the question that I got is when you
25 take a look at the carbon footprint of natural

1 gas it's not as pretty and as rosy as some
2 people would be led to believe.

3 The case in point being, though, is that
4 if you have such a disparity in one fuel such
5 as another, may you not be able to use that by
6 way of a taxation or whatever, and I know I
7 hate to mention that, but the fact is to help
8 fund the energy reduction overall across --
9 you're going to use for consumption across the
10 other sectors of the proletariat or whatever.

11 COMMISSIONER MILLER: So your suggestion
12 is to tie the funding to the fuel source?
13 Basically is that what you're --

14 MR. P. BOIVIN: Well that's one of the
15 things you might want to consider.

16 COMMISSIONER MILLER: Okay.

17 MR. P. BOIVIN: I realize it's going to
18 impact impoverished people too and other
19 things, but when you take a look at it I would
20 much rather see something done in this nature
21 because in the short term the fact is that
22 let's go back to 1960's when we thought we had
23 unlimited amount of oil. Well we're almost at
24 that state where we think we've got x number
25 of almost unlimited natural gas, tend to think

1 in that fashion. Well such is not the case.
2 It's still a limited resource, and so that's
3 why I'm looking at it in that fashion.

4 COMMISSIONER MILLER: Okay. Thank you.

5 MS. CAMPOLI: I just wanted to make a
6 comment about the accountability part of the
7 plan. In the transportation section,
8 hopefully you'll get to it, it's way in the
9 back, we've got some objectives, performance
10 measures for those of you who like planning
11 speak, and in order to do that we've got to be
12 -- you've got to have good data. It's got to
13 be data driven. You have sources of
14 information, and sometimes you end up with
15 strategies that are kind of related to your
16 data because that's the way you measure it.

17 The VTrans would be very interested in
18 hearing back from folks on those performance
19 measures that we have in there and whether
20 we're headed in the right direction, and
21 particularly if you have technical expertise
22 in some of those data sources, that would be
23 terrific.

24 COMMISSIONER MILLER: Yes. Will.

25 MR. RAAP: Just how do you look at the

1 potential of, the reality of Smart Grid and
2 understanding what the future might look like?

3 COMMISSIONER MILLER: Well there's some
4 immediate benefits. First, let me just kind
5 of big picture it.

6 People talk about the Smart Grid and I
7 think frankly it's a term that gets sometimes
8 used without a good definition. The project
9 that's going on in Vermont has several
10 different components. The immediate benefit
11 of part of the component, which is improving
12 the transmission grid's communication, forget
13 about the meters for a second but just the
14 transmission grid, is that will be able to
15 balance loads better in the future than we can
16 now, and so that's a complicated way of saying
17 that part of the Smart Grid will allow better
18 integration of renewable resources which tend
19 to be more intermittent in nature. And so,
20 again, you know when we think about the Smart
21 Grid there's several different things to think
22 about. The transmission improvements to the
23 system will have a benefit in the near term
24 integrating more renewable resources into the
25 grid. That's a good thing. That should be a

1 thing that we see a benefit for in the short
2 term.

3 There's some other short term benefits
4 we'll see when you get down to the home and
5 utility interface. The utilities are rolling
6 out meters. They are called advanced meters
7 that will have a communication infrastructure.
8 So I kind of think about it like our
9 computers. Back in, well, even in the mid
10 90's, but certainly before then our computers
11 were not also communication tools primarily.
12 We might write a letter on it, but then we
13 still had to print the letter or send it or
14 fax it.

15 All of a sudden e-mail came into being
16 and our computers became communication tools,
17 and now Costas likes to hold up his phone --
18 when Costas talks about electric vehicles
19 sometimes he holds up his phone and he says
20 you know -- what's your phone, four years old
21 and it still doesn't do all the cool things my
22 phone does.

23 MR. PAPPAS: It just rings.

24 COMMISSIONER MILLER: Because four years
25 ago a smart phone was more innovative cutting

1 edge than certainly it is today when many,
2 many people have them.

3 Smart meters, advanced meters present a
4 similar possibility for the future. In the
5 immediate term the infrastructure that gets
6 put into place with the meters will allow
7 better communication between the customer and
8 the utility. What that really means is better
9 outage management. That's the short term real
10 benefit that we'll see, and Vermont Electric
11 Co-op has already seen that with the meters
12 that they have put in place which are kind of
13 first generation advanced meters.

14 In the future what we hope we will see
15 with advanced meters and what the technology
16 should allow is the same sort of application
17 interface, if the customer wants it, that you
18 have with a phone. If you want as a consumer
19 to be an energy consumer and really manage
20 your energy, you will be able to do that with
21 the meters that are going to be put in place
22 as applications are developed to monitor your
23 home usage, for appliances that may have
24 interface with your meter, but that's all in
25 the future. That's not going to be an

1 immediate benefit.

2 We still think it's important, though,
3 for Vermont to plan for that benefit, and so
4 the proceedings that we're having right now at
5 the Board are keeping those things in mind.
6 Rate design, what rates can we put into place
7 that people will be able to benefit from, what
8 consumer protections should go along with
9 that. We're also looking at consumers choice
10 for the meters themselves because we've heard
11 from many Vermonters who would prefer not to
12 have advanced meters in their homes. So we're
13 allowing opt out.

14 So a long answer to a question, but one
15 other thing I think again in the future we
16 should be looking toward is how the meters
17 will allow homeowners to integrate energy
18 systems better into the grid. So just like
19 the transmission system will have a benefit in
20 the near term when we put the communication
21 system in, once the meters can communicate
22 your battery of your car eventually may be
23 able to connect into the transmission grid and
24 supply energy back. Same with the solar
25 panels on your roof or the small windmill you

1 have out back.

2 So we think it brings real benefit to
3 the consumers both in the near term and in the
4 long term. Yes. Richard.

5 MR. FAESY: What do you envision --
6 Richard Faesy -- where do you envision the
7 plan going after this process? Is the
8 Legislature going to take it and chop it up
9 into little pieces? Where is it going to end
10 up?

11 COMMISSIONER MILLER: Tim. I'm sorry.
12 You guys show up and what am I going to do.

13 REP. JERMAN: I think we will certainly
14 use the plan as a template for legislation
15 that's coming down.

16 Liz mentioned early on there's already
17 groups fast at work taking pieces of the plan
18 trying to turn that into legislation to be
19 considered at this time, and I think the
20 renewable portfolio standard will probably be
21 the headline piece out of that first step.

22 COMMISSIONER MILLER: And the whole idea
23 when we sat around the table back in, I don't
24 know, February or March, Chris and I sat
25 around a table with Chuck Ross and Lawrence

1 Miller and some others, and we all said how
2 are we going to make this plan, which we're
3 going to spend a lot of effort on, and a lot
4 of you folks are going to spend a lot of
5 effort on giving us comments, how are we going
6 to make it actually do something, and that was
7 the genesis for the idea of putting somebody
8 besides the Department in charge of the
9 implementation because we have amazing folks
10 at the Department. We do great work, but we
11 touch this much of the total energy usage when
12 you look at transportation and the small
13 footprint we have in heating.

14 So the idea was to give a broader
15 oversight when putting it in the Climate
16 Cabinet. That is a step that will matter, and
17 I think having a recommendation matrix that
18 can be tracked at least annually so that folks
19 can say are we really doing anything on this,
20 that will also help. We have committed that
21 it's not going to just sit on a shelf, but
22 it's going to take a lot of effort.

23 The other thing I would say, I've only
24 mentioned it briefly here tonight and at other
25 meetings, I have had a chance to talk more

1 about it, the regional planning commissions
2 and town energy committees I believe are going
3 to be key. It's really the on-the-ground work
4 in the communities that helps get the progress
5 that gets us the acceleration that we need to
6 see.

7 I mean we have had amazing projects in
8 our towns and I think that piece of it will be
9 very important, which is why the Department's
10 going to specifically engage with the RPCs and
11 the town energy committees.

12 MR. SOLOMON: How can thousands of
13 Vermonters that really care and are really
14 passionate and bravely leading the way to a
15 full clean energy future for Vermont best
16 convince you to go for a one hundred percent
17 clean energy target?

18 COMMISSIONER MILLER: I'll give you two
19 answers. In the short term the comment period
20 is still open. We have gotten lots and lots
21 and lots of e-mails calling for exactly what
22 you're calling for. You can send them both to
23 the Department or the Governor directly.
24 That's the short term answer.

25 I'll give you just my personal kind of

1 practical long term answer. Help us. The
2 biggest challenge when we sat around the table
3 talking about the goal and whether the goal
4 was realistic, whether it should be bolder,
5 the biggest challenge was the sector or
6 actually sectors -- the biggest challenges
7 were the sectors of energy that are presently
8 not very renewable and are less in Vermont's
9 control than electricity, for example.

10 So on transportation what are the things
11 that we can do to move that forward faster
12 because when you look at the energy pie, even
13 if we go a hundred percent electricity, which
14 would be a challenge but is within the realm
15 of possibility to do, we still would not be
16 anywhere close to a 90 percent goal because
17 transportation is one-third of our energy use
18 and it's -- well it is a hundred percent right
19 now fossil fuel based, and heating is another
20 third of our energy usage and it's only five
21 percent renewable right now.

22 So the big challenge is not just stating
23 the goal. It's getting there, and so the help
24 I would ask is that you think about steps to
25 get us there, especially in those sectors that

1 are less renewable now. Are we good? Kelly
2 is telling me it's nine clock.

3 Thank you all so much for coming. I
4 really appreciate it.

5 (Whereupon, the proceeding was
6 adjourned at 9 p.m..)

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C E R T I F I C A T E

I, JoAnn Q. Carson, do hereby certify that I recorded by stenographic means the public hearing re: Draft Vermont Energy Plan at the Colchester High School, Colchester, Vermont, on October 3, 2011, beginning at 7 p.m..

I further certify that the foregoing testimony was taken by me stenographically and thereafter reduced to typewriting, and the foregoing 107 pages are a transcript of the stenograph notes taken by me of the evidence and the proceedings, to the best of my ability.

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

Dated at Burlington, Vermont, this 5th day of October, 2011.

JoAnn Q. Carson
Registered Merit Reporter
Certified Real Time Reporter