

STATE OF VERMONT
PUBLIC SERVICE DEPARTMENT

DRAFT VERMONT ENERGY PLAN

September 27, 2011
7 p.m.

Middlebury High School
Middlebury, Vermont

Public hearing held at the Middlebury High School, 73 Charles Avenue, Middlebury, Vermont, on September 27, 2011, beginning at 7 p.m.

P R E S E N T

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1 COMM. MILLER: Hi everyone. I'm going
2 to go ahead and reward those of you who came
3 out and came on time and get started here in
4 just a moment.

5 I'm Liz Miller, the Commissioner of the
6 Department of Public Service here in
7 Vermont. And also here tonight, Deputy
8 Secretary Chris Recchia from ANR, and Gina
9 Campoli from VTrans, one of the planning
10 gurus over at VTrans, and several members of
11 the DPS are here as well with me tonight,
12 and we have a court reporter recording
13 everything that I say and everything that
14 you say more importantly tonight.

15 And so when we turn it over for public
16 comment, we are going to have you come up a
17 little closer to the court reporter and
18 spell your name, if you can, so that she can
19 record it.

20 MR. RECCHIA: If you can't spell your
21 name --

22 COMM. MILLER: If you can't spell your
23 name, what are we going to do? Fair enough.
24 We can tell jokes because there are so few
25 of us here tonight.

1 MS. CAMPOLI: Is she going to record
2 that?

3 MR. RECCHIA: Sorry. First time.

4 COMM. MILLER: So I'm going to take it
5 down because I hate standing at a podium. I
6 guess I should use it, right? It helps you.

7 MR. RECCHIA: It does help.

8 COMM. MILLER: So what I thought I would
9 do before we turn it over to what you all
10 have to say about the draft plan, is a
11 presentation just setting some of the
12 highlights, and for those of you who
13 attended any meetings in the spring, I swear
14 this is a different presentation. So that's
15 good news. The bad news is you're the first
16 audience to see it, so bear with me, and I
17 would be happy to take any comments about it
18 afterwards too by the way.

19 I wanted to at least set the table
20 before we have the public comments so you
21 can have a sense of where the department and
22 the agencies and departments we worked with
23 were coming from when we drafted the plan.
24 So first of all, just very briefly, the
25 Comprehensive Energy Plan is intended by

1 statute to cover all areas of energy usage
2 in the state, not just electricity, but also
3 transportation, land use, home heating
4 generally. And by statute it has to include
5 a number of analyses and projections on
6 usage, supply, cost, the environmental
7 effect, and also then to recommend
8 implementation. And so the plan though
9 certainly long, don't get me wrong, is also
10 not the end of the story. It recommends
11 actions for further implementation.

12 So some of the things in the plan set
13 forth ideas and specifically say, hey, this
14 is an idea we need to develop. We recommend
15 that the legislature or interest groups work
16 with the legislature and other stakeholders
17 to develop these ideas. We create it in
18 order to help Vermont ensure adequate,
19 reliable, secure and sustainable energy
20 sources for our future needs. We have to do
21 that with affordability in mind, with the
22 state's economic vitality in mind, and we
23 want to do it in an efficient way using our
24 resources in an environmentally sound way.

25 We are also in this plan, for the first

1 time, also combining it with our state
2 electric plan, so that we don't have plans
3 at cross purposes but instead have a single
4 energy plan that combines our ideas and
5 thoughts and recommendations on electricity
6 with our ideas, thoughts and recommendations
7 in other energy sectors.

8 So just a real quick overview. I'm
9 going to show you some facts on where we are
10 now. Give you our long-range goal, why we
11 should achieve that goal, why we think we
12 can achieve that goal. And then highlight
13 some of the strategies by energy sector.
14 And I'm going to try to do that all in less
15 than a half an hour so we can turn it over
16 for a good discussion.

17 Okay. So where are we now? Total
18 energy usage by sector, just so you have an
19 overview, it's about a third, a third, and a
20 third. A third transportation, a third
21 residential including heating and
22 electricity, and a third commercial and
23 industrial. Again heating and electricity
24 being the two big parts. You can see within
25 each part of the pie the breakdown of the

1 type of energy within each sector. Not
2 surprisingly transportation zero to 100
3 percent petroleum based fossil fuels,
4 gasoline and diesel, whereas residential and
5 commercial are much more electric.

6 The story in Vermont is the same as
7 elsewhere in the United States. Energy
8 usage has increased somewhat dramatically in
9 the past several decades. This is a 40-year
10 picture of energy usage. And it's broken
11 down by type of energy, and what you see
12 consistently is an increase in our energy
13 usage. And particularly notable in
14 electricity and our transportation sectors
15 but really across the board we have been
16 using more energy over the years. Our
17 greenhouse gas emissions happily have shown
18 in recent years a different trend. And what
19 this shows is from 1990 and then projected
20 forward to 2028 what our greenhouse gas
21 emissions have done again by sector. The
22 big dark purple part in the middle is
23 transportation, just under that is
24 residential and commercial heating fuel.
25 And then below that is electric supply. And

1 you can see that we have had an upward trend
2 in emissions until just about 2003. And
3 then we start to see a downward trend. So
4 that's some good news. The bad news is that
5 the goals the state set for next year, 2012,
6 would be represented by the light yellow
7 steep line there, and we are not going to
8 meet that goal.

9 There is another goal set by the state
10 legislature for 2028. And there is a path,
11 as you can see if you can just kind of bend
12 the current emissions curve down just a bit,
13 we might be on a trajectory toward reaching
14 the 2028 goal, but we have more work to do.

15 Okay. So renewable energy is one way to
16 help with emissions. Not all renewable
17 energy is emissions free. But generally
18 speaking the definition of renewable is
19 something that has, you know, doesn't use
20 the fuel source into the future and keeps it
21 for future generations, and generally
22 speaking they are sources that are less
23 carbon intensive, less greenhouse gas
24 intensive.

25 Where are we with renewable energy? Our

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total energy type here, we use about 40 percent electricity and 61 percent, 60 percent other. Electricity is heavily renewable already which is good news, about 48 percent, and that includes Hydro-Quebec. It also includes projects where our renewable energy credits are sold out of state just to be very clear on what I'm saying. So I'm talking about renewable sources.

Our other energy sectors are not very renewable yet at all. About five percent, and that's mostly in biomass, mostly for heating. So heavily dependent on fossil fuels and transportation and thermal. If you add up all the math on this slide, which I have done, you would get this picture which is our total renewable energy currently is nearly one quarter. It's kind of a surprising stat for people. But it's dependent upon the progress we have made in electricity, but what we need to focus on in the plan sets forth this, we need to focus on in the future is how do we move the renewable picture in the other sectors too.

1 So then just really quickly with regard
2 to electricity. One of the things the plan
3 talks about is where we currently are in our
4 electric supply and where we are going to be
5 looking out in the future. And I wanted to
6 at least give you two years' snapshots, and
7 it varies year by year depending on the
8 commitments the utilities make. But on the
9 left here is the 2009 actual electric
10 supply. You can see just over a third
11 nuclear, just over -- well about a third
12 Hydro-Quebec, and then 11 percent in-state
13 hydro and it goes down from there. On the
14 right is the committed 2013 electric supply.
15 And as you can see nuclear drops
16 substantially with Vermont Yankee not being
17 contracted in state, Hydro-Quebec stays
18 about where it is now, in-state hydro the
19 same, system power on the region right now
20 is about a third of 2013's projection, but
21 renewables including new renewables and then
22 other renewables is a growing percentage.
23 And that's just one-year snapshot. If I did
24 2017 it would look different, although there
25 would be some what folks often refer to it

1 as white space, in other words, uncommitted
2 resources because the utilities haven't
3 fully committed all years out into the
4 future.

5 Energy costs. This is dollars going out
6 of our pocket on the left. This is
7 inflation adjusted dollars going out of our
8 pocket on the right, and what it shows you
9 is that electricity is the highest priced
10 energy source, but if you look at it on an
11 inflation adjusted basis it's actually flat
12 to slightly less than the way that inflation
13 has been rising. Whereas with the fossil
14 fuels, what you see is a rising costs both
15 in the dollars that went out of our pockets
16 as well as the inflation adjusted dollars
17 that went out of our pockets. It's going up
18 faster than the rate of inflation.

19 Electricity prices, folks like to know
20 where we are regionally. The orange line is
21 Vermont. Again cents per kilowatt out of
22 your pocket on the left. Inflation adjusted
23 to 1991 dollars on the right. What you can
24 see in Vermont is a relatively flat line
25 relatively, when you look at it on an

1 inflation adjusted basis. The region, New
2 England, is the green line, and it has been
3 more volatile, in other words, more change
4 over time. The downward trend on the green
5 line, you know, you can talk about why that
6 is. Mostly it's attributable to natural gas
7 prices falling at around 2008, 2009 because
8 other areas of New England are heavily
9 dependent on natural gas. Vermont has
10 traditionally been less so. Although even
11 the long-term contracts we have seen
12 recently have been tied to market prices.
13 So we may see a little bit more of the ups
14 and downs including the benefits of the
15 natural gas prices in our own rate going
16 forward.

17 Okay. So efficiency. Why -- you've
18 seen in the plan probably that we suggest
19 efficiency should be the first thing we
20 always look at. Why is that? We have seen
21 with electric efficiency some great moves
22 already. We have been able to save about
23 two percent a year of our electric load
24 through efficiency measures. And that has
25 equated to about a four cents per kilowatt

1 purchase, if you can think of it that way,
2 of that efficiency. In other words, you can
3 buy the efficiency that we have been
4 acquiring for around that 4 cents per
5 kilowatt number, which is lower than most
6 resources you can buy on the market for
7 electricity.

8 So the bottom line is it's a good deal
9 to do efficiency. There is also benefits
10 beyond just the kilowatthour. We, for the
11 plan, I think, for the first time in this
12 state, did an economic analysis, impact
13 analysis of the efficiency dollars that are
14 spent. We took one year, 2012, because it's
15 an approved budget, and we asked for an
16 impact study of that one year of spending.
17 And what the -- and it's in the plan, it's
18 one of the appendix to the plan. What we
19 found is you get about five dollars in value
20 for every one public dollar spent for
21 electric efficiency. There is also jobs
22 created, and we avoid about two cents per
23 kilowatt in regional charges. That's all
24 just a long way of saying there is benefits
25 besides just the energy we are saving.

1 There is monetary benefits to efficiency.

2 Thermal efficiency, which is heating
3 efficiency, is also effective. It also
4 creates jobs and leverages our resources.
5 Again we did a study in the plan that I
6 would love to hear comments on if anyone has
7 yet had a chance to read it, and the story
8 is very positive.

9 We have a mix of programs for efficiency
10 right now, but there is really from comments
11 we have received in developing the draft,
12 there is really no easy path currently.
13 Many Vermonters feel that efficiency is not
14 easy to implement for them. You know, they
15 may get an energy audit, but then what do
16 you do? They may realize they can do a
17 \$10,000 improvement in their house that
18 would have a good pay off over time, but how
19 are you going to finance it? So the
20 barriers that exist to getting efficiency
21 measures actually in place is a consistent
22 theme that we heard in developing the plan.

23 We also heard, and it's certainly true,
24 that we are not on pace to meet our
25 legislative goal of improving the efficiency

1 in 80,000 homes, 25 percent by 2020. In
2 fact, based upon the research that's been
3 done, in order to hit that 80,000 homes per
4 year, I'm sorry by 2020, we have to do about
5 8,200 homes a year between now and then.

6 It's a lot of numbers, I know, but the
7 bottom line is that's a lot of homes to do
8 per year. It's going to be hard to do that.

9 The good news I think is that the recent
10 study done by the RAP, Regulatory Assistance
11 Project and the High Meadows Foundation,
12 found that the cost per home to get that 25
13 percent savings is around \$7,500, which is
14 actually lower than some folks had thought
15 it might be. And so that's good information
16 to have and a lower figure than some had
17 thought it might be.

18 Transportation. Gina is here. Thank
19 you very much for all the work on the
20 transportation section of the plan. Just
21 some data on transportation to keep in mind.
22 It's usually about one fifth of the
23 household's expense in transportation
24 nationally. Most Vermonters spend more than
25 that. In Vermont it tends to be the second

1 highest expense in any household. And
2 that's all in, for fuel, insurance, vehicle
3 maintenance, et cetera. And so that means
4 that many Vermonters spend more on
5 transportation than on health care,
6 education or food. In other words, the
7 biggest expense is their home, their second
8 biggest expense tends to be transportation.
9 And it's also, as you might remember from
10 that chart a few minutes ago, one of our --
11 well it's the largest contributor to
12 greenhouse gases. It's one of our biggest
13 challenges in greenhouse gas emissions.
14 It's more than 40 percent of our total
15 emissions. Why is it that it's so costly to
16 both ourselves and our pocketbooks and our
17 environment? It's because in the last 30
18 plus years, we have driven a lot more than
19 we used to. This shows from 1975 through
20 2009 vehicle miles traveled, and the scale
21 is in millions by the way. And what you see
22 is just a dramatic increase in the travel
23 Vermonters are doing in their vehicles over
24 time. And then you see a bit of a dip, and
25 that is attributable to the rising costs in

1 fuel and then the economic recession. But
2 the trend over time has been dramatically
3 more travel.

4 And so what's the impact there? When
5 you look at land use, we all are not
6 surprised by this graph which simply says
7 that Vermont is less populated, it's less
8 densely populated per mile than the rest of
9 the United States. We know that. About 30
10 percent of Vermonters, however, live in our
11 designated downtown districts. So about 30
12 percent live in a town or a city, the other
13 70 percent live rural. What's interesting
14 is the 2010 census shows that those 21
15 communities have grown at a slower pace than
16 the rest of the state. So what does that
17 mean? It means that we are spreading out.
18 And that's not surprising if you look at the
19 trend in terms of travel. So the link is
20 pretty clear. There has been studies done,
21 it's probably not surprising to anyone here,
22 you will travel fewer miles in your car if
23 you have better accessibility to services
24 where you work, where you shop, where you go
25 to the doctor. So that's not a surprise.

1 And so therefore, what we need to think
2 about when it comes to energy use is how we
3 grow. There is a different energy profile
4 in this picture than in this picture than in
5 this picture. Not just because of the homes
6 but because of what the people in the home
7 have to do to get services and work.

8 Okay. So that was just setting the
9 table with some facts. So what are we going
10 to do in the future? What should we set as
11 our long-range goal? And for those of you
12 who have reviewed the draft plan, you will
13 see that we recommend that by mid century we
14 strive to be nearly free of fossil fuel
15 usage in all energy sectors. And
16 specifically what we are calling for is 90
17 percent renewable by 2050. It's a big goal,
18 but I'm going to explain a little bit about
19 why we think it's achievable.

20 So recall the slide before where I
21 showed you the pie of where we are right
22 now, about 23 percent renewable now. About
23 a quarter. We are suggesting go to 90
24 percent. Visually that goes like this. Not
25 a surprise, a lot more renewable. And again

1 knowing that electricity is already about 50
2 percent renewable you have to start thinking
3 how are we going to achieve that. How is
4 that possible. Even before that, why should
5 we achieve it.

6 There is really four key benefits. We
7 outlined this again in the draft plan.
8 Number one, going toward more renewable
9 energy will help us foster both economic
10 security and independence -- energy
11 independence for Vermont. It's clear we are
12 heavily dependent right now on sources
13 outside of the state. While that will
14 probably continue to some extent into the
15 future, we would like to be a regional
16 issue, not an overseas, dependent upon
17 other, more volatile areas. We would like
18 to keep dollars closer to home. And we
19 should be able to do that by moving toward
20 more renewable energy. It also helps our
21 environment.

22 Adaptation is obviously an issue we are
23 having to deal with right now. Many people
24 feel that the storms we have been seeing are
25 not just a coincidence. What we can be sure

1 of given the global warming that we have
2 already seen is that we are going to be
3 dealing with this for some time in the
4 future. And what we need to do, in our
5 view, is to safeguard our environment by
6 making choices that improve the situation
7 for future generations. And moving toward
8 renewable -- more renewable energy will do
9 that.

10 Third, driving innovation and jobs
11 creation. We have a number of small
12 business enterprises in the state already in
13 various renewable energy sectors. Biomass,
14 solar, Northern Power Wind, for example, and
15 by setting a goal and saying Vermont is in
16 for renewable energy, we can send a message
17 to the job creators and innovators that we
18 are open for business for renewable energy.

19 And finally, the benefit of moving
20 toward more renewable energy, of
21 implementing the land use suggestions we
22 have as well, is increasing a community
23 involvement investment. In other words, if
24 we are all thinking more holistically about
25 our energy usage and how that energy usage

1 affects not only ourselves but our
2 environment and our neighbors, then we are
3 going to help increase community
4 involvement.

5 Okay. So the how. I would like to use
6 this slide to explain the how. At least in
7 graphic terms. We are looking for an
8 acceleration curve here as we head toward
9 the future. We are not looking for straight
10 line progress. And there is a simple reason
11 for that. Straight line progress is not
12 going to get us as far as we need to get
13 because it's going to be more expensive now
14 than it will be in the future. And we also
15 need to set the table like for
16 transportation, for example. We couldn't
17 possibly move in a straight line on
18 transportation. Because we are just now
19 starting to see the electric vehicle
20 industry flourish. And we are just now
21 starting to see in biofuels, for example, I
22 don't know if any of you heard the report
23 yesterday about the military's fuel usage.
24 And for those of you who follow military
25 history what you will see is military does

1 have a history of leading in certain
2 sectors, including energy. And that's why
3 linear progress when you know that the
4 military is committed to using biofuels in
5 their jets, when you know that they are
6 moving towards solar and other forms of
7 renewable energy for their bases, we are
8 going to see the acceleration curve. We
9 need to keep that in mind, because we don't
10 want to be discouraged by a lack of linear
11 progress in the early years. We have to set
12 the goal in the long term and set the
13 policies that will get us there in the long
14 term.

15 So it's also important when you're doing
16 this, and this was, I think, a real theme of
17 the plan not to just focus on one piece of
18 policy and exclude others. You need to
19 really think about policy holistically, and
20 so we tried in the plan to address four
21 different things when we talk about any
22 policy. How we are going to reach people
23 with why you were doing this. For
24 efficiency for example. It's not enough
25 just to say, oh, save energy. You have to

1 tell people why. It helps not only your
2 pocketbook, it helps your comfort, it helps
3 your home and your environment. You have to
4 also help with finance and funding, so again
5 efficiency is the example. The PACE program
6 which was passed or helped last year by the
7 legislature, is an example of providing a
8 financing mechanism for people that would
9 help with efficiency.

10 Innovation and expertise. You have to
11 set the plan in place that will allow for
12 this curve to start. And if you don't
13 address innovation and expertise when you're
14 setting a plan, you won't get that progress.
15 And then finally you have to look at
16 regulatory policies and structures. You
17 can't just look at that however. You really
18 do need to look at all four if you're going
19 to make the type of progress we are talking
20 about. Because 90 percent renewable by the
21 mid century, I know that is a long way off,
22 but it's also a big goal. It's going to be
23 transformative. We have to see it that way,
24 and we have to start thinking all sectors.

25 Okay. So speaking of all sectors.

1 Really quickly because the plan is long, and
2 I really want to hear your comments and
3 somebody tell me what time it is.

4 MR. WARK: 7:30.

5 COMM. MILLER: Okay. On efficiency,
6 it's the first thing for every sector in the
7 plan. First thing we discussed is
8 efficiency. One big thing we recommend is
9 that in the next year, one year, we need to
10 sit down with all of the stakeholders and
11 the Agency of Human Services and look at all
12 of our efficiency programs together and say
13 okay, how do we make them more accessible.
14 And then how do we deal with the funding
15 mechanism? And the third thing is actually
16 measurement and tracking. When we started
17 looking for this planning process at how far
18 we have gotten towards the 80,000 home goal,
19 there wasn't a lot of data. So we are
20 specifically committing to measure and track
21 it. And we are suggesting that the state
22 put together a road map within one year for
23 rationalizing the programs that are
24 delivered. Before making the decision as to
25 whether and how to add more funding we need

1 to rationalize the programs.

2 We are also, on electricity efficiency
3 that is, calling for additional progress. I
4 think I said before we have had about two
5 percent growth in efficiency in the recent
6 years. We have advocated at the Public
7 Service Board for a better progress than
8 that, toward three percent annual savings.
9 And we are doing that because we do think
10 the economic case for efficiency is
11 compelling. Why three percent and why not
12 just go for 10 percent or something like
13 that? Because you actually need programs in
14 place that can support the progress that
15 you're making, and we think that increasing
16 to the number that we are suggesting is the
17 right way to go because it puts us on a path
18 to obtain more efficiency over time.

19 On thermal home heating, we suggest that
20 the state double the number, the percentage
21 of Energy Star homes, new Energy Star homes
22 in the state by 2020, and use that as a path
23 to encourage net-zero new construction for
24 homes and commercial buildings by 2030.
25 That's not an easy goal. That's going to

1 take a lot of work. But it's a time period
2 in which we can set the path to get it done,
3 and the Energy Star program is an interim
4 step that will help -- will help us do that.

5 We also have at the Department of Public
6 Service right now a project ongoing
7 supported by a federal grant to look at
8 enforcement and effectiveness of our
9 residential and commercial building energy
10 standards. And that will help in this
11 process.

12 Okay. Electricity. Again I've said
13 before, we are going to set policies to not
14 just increase new renewables but also
15 maintain existing progress. It's not just,
16 you know, 20 percent new renewables. It's
17 75 percent, 80 percent, moving toward the 90
18 percent total energy goal, and a lot of that
19 will be supported by the increases in the
20 electric sector. Specifically, I know this
21 is hard to read, by the way this will be on
22 line. The Public Service Board is doing a
23 draft study right now of what's known as a
24 Renewable Portfolio Standard. It will be
25 finished in October. The PSB draft suggests

1 a 75 percent total renewable standard. The
2 department knowing that that was a scenario
3 that the Board was looking at modeled the 75
4 percent renewables in our high efficiency
5 high renewable case that you'll see in the
6 energy plan. And we do believe that that's
7 achievable, and that the state can set a
8 path to achieve that in a way that's both
9 affordable and realistic.

10 You need to couple, in our view, any
11 renewable energy big standard with programs
12 that are designed to promote in-state
13 distributed generation. And it shouldn't
14 just be that you use the Renewable Portfolio
15 Standard to do that. You should have other
16 policies because you want to make sure that
17 the total electricity portfolio remains
18 affordable. And so in order to promote the
19 in-state distributed renewable generation,
20 we are suggesting that the legislature look
21 to build upon the standard offer program
22 that was put in place to do a next
23 generation, and we would like to see a
24 market-based mechanism for implementing that
25 standard offer.

1 We also suggest in the plan some process
2 improvements. I heard a lot of folks at our
3 meetings talk about the process for
4 renewable energy siting and wanting the
5 process to improve. And so there is three
6 specific things that we are suggesting. One
7 is we are going to, at the department, put
8 in place a renewable energy project manager,
9 somebody who can coordinate with the
10 stakeholders, the interested parties, the
11 developers, and the agencies in state
12 government to get renewable projects
13 completed in an appropriate manner.

14 We are also suggesting that the Board
15 move to a mediation process in all siting
16 cases. The Public Service Board has not
17 traditionally undertaken mediation, as you
18 know, you see in family court, in civil
19 court. And we think that siting would be a
20 good place for that to happen. And when I
21 say siting, I mean wind projects, solar
22 projects, transmission projects, anything
23 that's siting energy on the land at the
24 Public Service Board.

25 And we are also committed to reviewing

1 some of the recent experience especially
2 with the smaller-scale projects, to
3 determine whether we can simplify some of
4 the process. For example, on the solar
5 projects we have now had a number of around
6 two megawatt solar projects go through
7 permitting. Some of you may have driven by
8 the one in Ferrisburgh. I know you know of
9 several around the state. And I think we
10 now have a system in place where we can look
11 and say okay, that's been about a
12 seven-month process. Is there a way which
13 we can actually make that a little bit more
14 simple and a little bit smaller for that
15 size of project?

16 And then finally financing and funding
17 for electricity. We are going to -- there
18 is a state allocation for qualified energy
19 conservation bonds. We are committed to
20 getting that out the door. It's about six
21 and-a-half million dollars of bonds that
22 have been allocated to Vermont. The Clean
23 Energy Development Fund has a new board, and
24 the first thing they are doing, they started
25 in July. And they will finish by next July,

1 is creating a strategic plan for Clean
2 Energy Development Fund into the future.
3 Because its current funding source runs out
4 later in 2012.

5 And then we are also suggesting that we
6 work with our utilities to develop what's
7 often called on bill financing, so
8 Vermonters who want to can decide to finance
9 improvements in their home through their
10 utility bill. And then finally transmission
11 and regional markets, it's described in the
12 plan. We in Vermont are really reliant on
13 the regional market. And in our view, we
14 don't yet participate as robustly as we
15 should. That's the bottom line. So we
16 suggest some ways to focus our participation
17 in the regional market.

18 Thermal energy. Again, I said one of
19 the things we want to do is improve the
20 existing programs by getting everybody
21 around the table and saying okay, look, we
22 spent a lot of time and effort in Vermont
23 getting the electric efficiency program
24 right about a decade ago. Can we spend the
25 same sort of energy looking at our heating

1 efficiency programs and integrating them.
2 So that Vermonters, you know, as a homeowner
3 I don't care whether an efficiency measure
4 I'm putting in place will save me
5 electricity or save me heat. I just want it
6 to make my home more comfortable and help me
7 save money. So that's the purpose of trying
8 to get everyone around the table and make
9 these programs work together better for
10 Vermonters.

11 Also increasing access to natural gas.
12 For thermal it offers a choice for
13 Vermonters that only a part of the state
14 currently enjoys. Right now about five
15 percent of our energy profile is natural
16 gas. So when you think big picture, at our
17 90 percent goal, I like to point this out.
18 Obviously natural gas is a fossil fuel.
19 It's about five percent of our usage right
20 now. There is significant room even under
21 current usage scenarios for natural gas.
22 And natural gas does offer the possibility
23 of a heating choice for Vermonters, price
24 right now and projected into the future is
25 good. There certainly are trade-offs.

1 There is trade-offs with everything. We do
2 suggest that natural gas is something that
3 should be expanded for heating purposes in
4 particular. Also there is -- it's possible
5 for electric. There is nothing specifically
6 in the plans right now for that. But there
7 is room for that should something come up.

8 Increasing use of biomass though at the
9 same time and biofuels for heating. Again
10 looking at what we know now about biofuels
11 and what we might find in 10 years with
12 increased use, I think we are going to see a
13 lot more availability. And there is already
14 a nascent biomass industry here in Vermont.
15 We are one of the leaders in using wood for
16 heating our schools. We have some district
17 heating projects, as you know, in Middlebury
18 ongoing right now, in Burlington under
19 study. So biomass is an area where we can
20 really turn our thermal picture around with
21 increased usage over time. And that
22 includes combined heat and power projects
23 which are projects that use the heat put off
24 from electric generation to actually heat a
25 business or an industrial process. And if

1 we are going to do all of this, we have to
2 think about our current infrastructure and
3 how that will work with the future. And so
4 we in the plan suggest that we really need
5 to think about transitioning our local fuel
6 dealer industry toward energy service
7 providers into the future. In other words,
8 if you have somebody delivering oil to your
9 house right now, well there is no reason why
10 that same dealer cannot, as we transition
11 over time, deliver the chips or the pellets,
12 or provide you the efficiency services, or
13 the audit in the first place for the
14 efficiency. And that's -- we have to think
15 that way in order to make sure that we don't
16 strand Vermonters who are in the fossil fuel
17 industry now, in a place 20 years from now
18 that they shouldn't be.

19 Okay. Transportation. As I said
20 before, it's our biggest greenhouse gas
21 challenge, and it's not just one thing. You
22 have to think about the vehicles you're
23 driving, the types of vehicles you use,
24 vehicles -- miles traveled and how much
25 you're driving, whether we have transit

1 options, system operations options to help
2 with greenhouse gases, and I have VTrans'
3 symbol down there again. Thank you for the
4 slides. I didn't make the stool myself, so
5 I appreciate that.

6 MS. CAMPOLI: We didn't either.

7 COMM. MILLER: So the transportation
8 section of the plan is very well put
9 together and has a number of very specific
10 recommendations. So this is just a quick
11 overview. It represents our largest cost.
12 We spend about a billion dollars a year on
13 transportation. About 2.5 billion dollars
14 overall. So I know I'm giving you a lot of
15 facts, but the bottom line is transportation
16 is costly. It's also our greatest use of
17 fossil fuels, and therefore our highest
18 contributor to greenhouse gases. So the key
19 to setting this 90 percent goal is the
20 ability to transition transportation towards
21 renewable electricity, and it's going to
22 require a lot of policy changes over time.
23 Financing right now, not just we, but
24 nationwide, we finance our transportation
25 system with the gas tax. That's not going

1 to be just a Vermont challenge. That's
2 going to be a challenge for other states as
3 well and something we have to address.

4 Vehicle charging, both specifically at
5 the homes as well as the infrastructure for
6 it on our highways and businesses. And
7 then, of course, the technology and the
8 cost. You know, it's not going to help if
9 electric vehicles can't compete with
10 vehicles that Vermonters otherwise can
11 afford. So we have to again in part rely
12 upon the acceleration curve, and we aren't
13 one hundred percent in control of our
14 destiny when it comes to this, but that
15 doesn't mean that we shouldn't set policies
16 encouraging it and move toward it.

17 In the meantime, we have to continue to
18 push for better fuel standards, and we are
19 doing that; greater access to commuter
20 facilities, and a reduction in the vehicle
21 miles that we have to travel. And there are
22 -- again there is some specific things the
23 plan suggests. One is to figure out what
24 our combined average fuel economy; is that
25 right? For Vermont registered vehicles.

1 And then set a goal to meet the national
2 average if we are higher, or five percent
3 improvement on our own, whichever is greater
4 by 2025. That's something that we haven't
5 yet measured, so we don't yet have the data
6 to get us there. But VTrans has committed
7 to saying, you know what, this is something
8 we should do, and here's what we can do to
9 help in the interim while we are trying to
10 electrify transportation.

11 Triple park and ride spaces. We heard
12 many, many comments not enough park and
13 ride. VTrans has done a lot of work
14 surveying the park and ride situation both
15 in terms of the numbers currently available
16 and the usage, and we know that tripling the
17 number would help significantly. And by
18 doing that, you can help reduce single
19 occupant commute trips. VTrans projects
20 that we can move toward a 20 percent
21 reduction in 20 years if we set the right
22 policies in place.

23 I just want to give a pitch to Go
24 Vermont. If folks here haven't been to this
25 site, we all frankly should register. It's

1 a great site. It gives you not just
2 traditional transit information but also
3 information on ride shares and biking,
4 walking and alternative transportation. So
5 great site, and it's a real resource when
6 you talk about outreach and education could
7 be better promoted.

8 And then finally land use. You know,
9 again land use if we set -- we have programs
10 in place that are designed to preserve our
11 rural character, conserve our natural and
12 historic resources, support development in
13 the right places, and invest efficiently in
14 our public infrastructure, the
15 infrastructure that we all use. All of
16 those things which really make Vermont what
17 we think of as Vermont, also will benefit
18 our energy usage. Because again, if we keep
19 our growth more compact, in town centers, we
20 will help our energy usage. So for specific
21 ideas and again, Agency of Commerce and
22 Community Development was instrumental in
23 the energy plan in this area.

24 We want to see better coordination with
25 the regional planning commissions and the

1 town energy committees because that's where
2 the real on-the-ground work happens. And
3 ACCD has suggested that we commit to
4 actually review with the RPCs all of their
5 plans for conformance with the State Energy
6 Plan within the year. That will really
7 help, and it will also help bring it down to
8 the town energy committee level if we can do
9 that. ACCD is working right now on
10 improving our state designation programs and
11 what that means is the -- improving the
12 programs that we have to encourage
13 development in our town centers and
14 downtowns. And they are working on a plan
15 right now that they will finish by the end
16 of this year that will recommend steps for
17 implementation.

18 They are going to measure the success by
19 looking at the next census. You remember I
20 told you that this latest census showed that
21 we are not improving in our downtown areas
22 our population rate as much as we are
23 elsewhere. They want to see increased
24 density in the next census. And that's a
25 measure that will show that we made

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progress, and then make sure that our state incentives and programs actually align. If we have an incentive, for example, policy on waste water, is that consistent with our downtown programs. There is some transportation examples as well. If we have policies on intersections and road builds are they consistent with or not, our designation programs to support downtowns. And so coordinating those incentives will help.

And then finally, actually getting out on the outreach and education specific training programs for the recently passed Complete Streets legislation. Also the transit-oriented design program, in partnership with VTrans and others, and ACCD is committed to holding three workshops for that purpose in 2012.

Again these are just initial steps. But they are the steps that will help us accelerate the curve. Okay. And then finally there is a few other things in the plan that if anyone has yet had the chance to dive into, I would be happy to talk about

1 tonight. One is a suggestion that look,
2 it's fine to focus on each sector, and then
3 it's great to try to plan them all together.
4 But if you're going to do that, one thing
5 that has been suggested, and we think is
6 worthwhile to pursue, is looking at whether
7 the state can actually set up what's called
8 a total energy standard. Looking at total
9 renewables and setting a goal and then
10 measuring progress and setting incentives
11 for that progress. Hasn't been done in the
12 United States. Vermont would be a leader if
13 we got that done, but we should study it.
14 And we suggest that that's a way to go to
15 get the progress that we are looking at.

16 Farm energy programs. The plan sets
17 forth a number of ways that we can help our
18 farms produce energy for themselves and for
19 the rest of us, and help their pocketbooks,
20 their livelihood at the same time. And then
21 finally there is quite a bit in the plan,
22 and buildings and general services
23 department took the lead with this on the
24 State of Vermont leading by it's own energy
25 usage. The Governor set a goal of a five

1 percent energy reduction across agencies and
2 departments last spring with the Speaker of
3 the House. Buildings and general services
4 is setting a plan in place right now to
5 achieve that. It's going to roll it out to
6 the other agencies and departments so we can
7 get that done.

8 We have recently done a Request for
9 Proposal for energy projects on state
10 buildings. So that's another area of
11 progress. There is also ideas in the plan
12 with regard to our state vehicle fleet and
13 our building, and this has been on the minds
14 of everybody in state leadership
15 particularly post Irene as we look at the
16 displaced workers that we have and what we
17 can do moving forward to improve our state's
18 energy usage, you know, turning essentially
19 the silver lining in the cloud, working with
20 landlords, working with our own buildings.
21 So there is a lot in the plan about state
22 energy usage.

23 Okay. So we are doing public hearings
24 now. I would love to have public written
25 comments, if you have any, submitted by

1 October 10. So that we can revise the plan
2 as required and submit it to Governor
3 Shumlin by mid October when he wanted to see
4 it. We are then going to review the
5 feedback from the Governor's office and do
6 our final revisions.

7 Our plan is to have it buttoned up and
8 done in November. I mean that's the hope.
9 We really want to have this rolled out for
10 Vermonters and for the next legislative
11 season so we can start making the progress.
12 And to actually implement it, the Governor
13 has asked that the Climate Cabinet be
14 charged with the oversight. It's a great
15 spot for this because, of course, it is
16 across agencies and departments, and it's
17 mostly the agencies and departments that we
18 have talked about here tonight. ANR,
19 VTrans, Department of Public Service,
20 Agriculture, and so the Climate Cabinet will
21 oversee implementation.

22 We are going to present it to the
23 legislature this coming January. We are
24 going to provide in the final plan a list of
25 possible legislative actions so that the

1 large 400-page plan has a more manageable
2 list for the legislature. And then we are
3 going to work with the regional planning
4 commissions and town energy committees to
5 make sure that they have seen the plan, that
6 we work with them, as I said, on aligning
7 their own plans with ours.

8 And then we are also committed to making
9 sure that we review this more often than has
10 occurred in the past. Specifically the
11 legislation requires us to revise it every
12 five years. Although the Comprehensive
13 Energy Plan has not been revised since 1998
14 formally. We think that a three-year goal
15 would align better with other things the
16 state does, and so that's our suggestion,
17 and probably frankly a suggested legislative
18 change, make us do it every three years. So
19 again thank you for coming. I'm sorry that
20 was long.

21 Like I said, it was my first time, so
22 feel free to let me know afterwards what you
23 feel I can cut. Here is our web site.
24 Vermont Energy Plan, VTenergyplan.Vermont.
25 Gov. My name, E-mail and number. Feel free

1 to give me a call. Thanks especially to
2 Transportation and ACCD for some of the
3 slides here and ANR and all the other
4 departments for the hard work. Thanks very
5 much.

6 So what I would like to do if -- I don't
7 know if, Matt, if you have the list. But --

8 MS. LAUNDER: I have the list.

9 COMM. MILLER: What I would like to do
10 for those of you who signed up to speak
11 first, and then if anyone else who didn't
12 sign up wants to take a shot after that,
13 certainly given the number of folks who are
14 here we have time. I would like to just
15 invite you up and ask you to let us know
16 what you think about the plan. And given
17 how few of us there are here tonight, I'm
18 certainly happy to engage in a little bit of
19 conversation if that's appropriate. So
20 first Tom. Is it Tailer?

21 MR. TAILER: It is.

22 COMM. MILLER: Great.

23 MR. TAILER: I'm really impressed with
24 the scope of the plan. I attempted to read
25 it all and didn't give it the detail that I

1 should have, mostly on the bottom section.
2 I'm Tom Tailer. T-A-I-L-E-R. I'm on the
3 Essex Town Energy Committee. I am a local
4 physics teacher. I am a Board of Director
5 of Vermont Sustainable Heating Initiative.
6 I'm also Co-director of the Governor's
7 Institute of Engineering at the University
8 of Vermont and just returned from the fifth
9 annual International Earth Science Olympics
10 in Italy working with sustainability with
11 students from 25 countries.

12 Tonight I want to focus on the biomass
13 issue. Going to start with the economic
14 impact. There are currently several plans
15 being circulated around the State of Vermont
16 to use biomass in a variety of different
17 ways. The ones that bother me the most are
18 electric generation from biomass. The truth
19 is that this is a political entity or state.
20 We deal with the politics.

21 An old Vermont farmer a couple of years
22 ago up in the Northeast Kingdom looked at
23 windmills on his ridge lines and said;
24 what's this going to do for me? The
25 question with biomass is if we generate

1 electricity with the Vermont's biomass it's
2 not going to lower your electric rates.
3 It's not going to save you money. It will
4 create jobs, but it won't save you money.
5 If we do other things with the state's
6 biomass, it will save you money and create
7 jobs. So I'm going to talk in more detail
8 about that.

9 If we took all of the state's biomass
10 and generated electricity with it, it
11 wouldn't be a significant dent in our
12 electric demand. It's not going to replace
13 Vermont Yankee. However, if we took the
14 sustainable biomass harvest and turned it
15 into wood pellets, which is existing
16 technology, we could replace approximately
17 200 million dollars a year in fossil fuels
18 used for heating. That 200 million dollars
19 a year, that's real economic stimulus. It
20 would create jobs, and that means you get a
21 multiplier effect conservatively of around
22 3, which then turns 200 million into 600
23 million bucks a year. That's what Vermont
24 needs.

25 The question is who is going to own

1 that. I have done a variety of analyses
2 with my students. The other analysis that I
3 want to point out is this study which was
4 funded by the Chittenden County Regional
5 Planning Commission. I have been working on
6 this for about two years. BEREC just
7 published this last month, and I'll make
8 sure that you get access electronically to
9 this, that is blueprint on how to set up a
10 pellet industry in Chittenden County.

11 One of the things we addressed is using
12 woody biomass as well as grass energy as a
13 possibility. But the deeper question is how
14 do you set it up as a business model. If
15 you set it up as a business model as a
16 straight for-profit corporation, you run the
17 risk of in the long term not supporting
18 sustainability of the ecosystem. So to me
19 the way to have the largest economic impact
20 for Vermonters is to have the pellet
21 industry owned by local people as a
22 community resource, because it's the
23 community that will maintain the
24 sustainability of the forest resource.
25 You're closing the loop between using the

1 resource and harvesting the resource and
2 providing the jobs. And that really should
3 be a closed loop.

4 In the study, the State Energy Plan, it
5 uses the word sustainability, but
6 sustainable is a slippery thing to define.
7 The definition that was around 10, 20 years
8 ago is very different taught at the
9 University of Vermont today. I think we
10 need to have a clear definition and
11 recognize the change in the definition.
12 Sustainability in terms of environmental
13 systems implies evolution and ability to
14 adapt to changing conditions. I think we
15 need to reflect that.

16 The other issue that really scared the
17 daylight out of me when I researched it was
18 a BEREC study that said there is about 200
19 million green tons of biomass sustainably
20 harvested per year in Vermont. That's a lot
21 of mass. 200 million green tons. Visualize
22 a really big pile. However 1.1 million of
23 those tons are already allocated either to
24 McNeil, or to the forest industry, or for
25 other stuff, wood chips, wood pellets, et

1 cetera. That leaves about 900,000 green
2 tons. Still a big pile.

3 However, there is 600,000 Vermonters.
4 That is only one and-a-half green tons per
5 Vermonter. I talked to -- I used to have a
6 neighbor, Andy Potvin, he passed away a
7 couple years ago. But that number would
8 have scared him. Less than 3 quarters of a
9 dry ton per Vermonter per year. The
10 question is to all of you sitting here; what
11 do you want done with your 3 quarters of a
12 cord? There is not enough firewood out
13 there to heat Vermont. If we had to switch
14 over to heat Vermont right now, that would
15 scare the darelights out of the old-time
16 Vermonters that I know. What that means is
17 we need to use this resource really
18 carefully, now, not just in the future, but
19 now. And to me, again the idea of burning
20 it to generate electricity is not in the
21 best interest of Vermonters. I'm going to
22 say that a lot, and I'm going to say that in
23 Montpelier because it's a political
24 statement. What is going to be the best
25 interest of Vermonters.

1 What we need is research. We need
2 research and sustainability in terms of
3 forest resources, in terms of methane and
4 carbon cycles. How are we going to fund
5 that research? To me the way to fund it is
6 to set up a charter, non-profit pellet
7 industry in Chittenden County, owned by
8 Vermonters. The capital cost to set up a
9 pellet mill is about \$200 per ton capacity
10 at a 75,000 dry ton per year plant. So that
11 means that average typical Vermont house
12 might be three tons of pellets a year. They
13 buy the co-op, they own it at about 600
14 bucks for three-ton capacity, and that's
15 going to close the loop.

16 Vermonters are very environmentally
17 aware people. We don't want to trash our
18 forests.

19 Recommendations. Five percent of the
20 pellet production should go directly to low
21 income Vermonters. I've worked with Richard
22 Moffey (phoenetic) and the Vermont LIHEAP
23 program for a couple of years through the
24 Vermont Sustainable Heating Initiative. As
25 a pilot project we have installed 17 pellet

1 stoves in low-income Vermonters' homes to
2 transition them off of old, inefficient wood
3 stoves and fossil fuel stoves to more
4 efficient, cleaner burning pellet heat.
5 That program works. It works really well.
6 Most of the time everyone is very happy.
7 The problem is that right now Vermonters --
8 the poorest Vermonters are using the most
9 expensive fuels with the greatest
10 environmental cost. Desperate Vermonters,
11 long-term Vermonters to stay warm will burn
12 trash, trash wood, pressure-treated wood in
13 old, inefficient wood stoves. The good
14 thing with the pellet stove is they are 85
15 percent efficient. Pellets are really
16 clean. 99 percent combustion efficiency.

17 Another recommendation is that the
18 charter non-profit facility in Chittenden
19 County have a research requirement. And
20 that research means you work with UVM and
21 Middlebury and VTC on several things,
22 establishing new technology, monitoring to
23 really look at what is the sustainability of
24 the system. What are the most efficient
25 fuel delivery systems. You worked with the

1 Vermont Fuel Dealers Association with that.
2 Also look at the total energy return on
3 energy investment and the total system
4 efficiency. And that type of research needs
5 to be done before we do a whole lot of
6 investment in infrastructure. You start in
7 Chittenden County. Why? Because that's
8 where the demand is. If you have to make
9 pellets and ship them by truck more than
10 about 50 to 80 miles, the cost/benefit goes
11 way down.

12 So there are some pellet -- low-cost
13 pellet buyers that buy pellets from Green
14 Mountain Pellet Makers down in southern
15 Vermont, they ship them all the way to
16 Boston. They do that because they are like
17 designer coffee connoisseurs, pellet
18 connoisseurs. That's not cost effective.

19 The other thing is with Beaver Wood they
20 are looking at making some pellets, but they
21 are looking at probably putting a rail line,
22 and they are going to sell pellets to
23 whoever is going to pay the most money which
24 means again how is that going to benefit
25 Vermonters.

1 We need to evaluate not just biomass use
2 but all energy systems by total system
3 efficiency. That doesn't mean thermal
4 system, but looking at everything from
5 cutting down the tree, transporting the
6 biomass, processing it, drying it, and
7 finally the fuel allocation distribution.
8 All of that needs to be taken into account
9 in looking at really what is going to be in
10 the best use of Vermont.

11 Also energy return on energy investment.
12 You know, how much fossil fuels do you have
13 to invest to be able to offset fossil fuel
14 savings. One of the issues is that if we
15 take large biomass processing, we are going
16 to end up bringing biomass in from outside
17 the state and shipping it all over the
18 state. That is a real problem in terms of
19 invasive species in terms of insects and
20 spreading seeds.

21 My recommendation is that Vermont
22 establish six biomass exclusion zones and
23 establish six biomass processing districts
24 within those zones to be aware of the
25 invasive species and try to limit them as

1 soon as they are identified. You don't want
2 to establish -- make a million dollar
3 investment infrastructure that mandates that
4 importation of half a million green tons of
5 biomass from Massachusetts and New York into
6 Vermont. That's just a bad idea
7 environmentally.

8 Finally, we need to establish standards
9 for pellets. Right now there are industrial
10 standards. They are meaningless. I've
11 worked with long-term Vermonters who bought
12 premium quality pellets and they weren't.
13 It's a real environmental problem.

14 Again, if we are using the biomass in
15 our communities and producing it in our
16 communities, it's in the communities' best
17 interest to have a high standard, to
18 implement it, and Vermont can again become a
19 national leader in that.

20 Again the funding for this, my
21 recommendation is to establish one facility,
22 about 75,000 dry ton per year capacity,
23 mandate it as a research facility. Make
24 sure that it's a co-op, non-profit, locally
25 owned, has the links to the rest of the

1 state. Get that up and running for about
2 two years, and then use that as a model to
3 expand. Thank you very much.

4 COMM. MILLER: Thank you. Is it Fred
5 Dunnington; is that right?

6 MR. DUNNINGTON: Yes.

7 COMM. MILLER: Forgot to ask, did Tom
8 tell you his --

9 MR. RECCHIA: He did. He spelled it
10 correctly.

11 COMM. MILLER: He spelled it correctly.
12 That's great.

13 MS. LAUNDER: I checked everyone's
14 handwriting. Everyone did really well. So
15 they don't have to all spell their name.

16 COMM. MILLER: Thank you.

17 MR. DUNNINGTON: I'm Fred Dunnington
18 from Middlebury. I'm Town Planner in
19 Middlebury, and the chair of our town energy
20 committee involved with regional planning.
21 We have other people from our energy
22 committee here. There is some.

23 And I was very impressed with your
24 comments just now. I have nowhere near
25 anything as eloquent as that. I really came

1 to learn about this. It's quite an
2 overwhelming plan to try to -- I really was
3 interested in more asking, you know, what
4 does it mean for Middlebury. Last count.

5 I appreciate your offer to engage us in
6 conversation about that. I don't really
7 need to talk about our initiatives
8 particularly, but I was interested in would
9 there be resources that would come down to
10 the region and community level, or is this
11 mostly oriented toward state action? I have
12 looked in the plan for places where, you
13 know, it referred to communities and
14 regions, and I saw pieces of that in the
15 transportation section. But I was sort of
16 looking for that in other parts. And I need
17 to look more closely and think about that.

18 I would also say your presentation was
19 very good. And --

20 COMM. MILLER: I'm looking for
21 criticism.

22 MR. DUNNINGTON: No offense to
23 transcribing, but I think a video of that
24 that could be shown around would be much
25 more accessible. There is a lot more people

1 out there than just ones who could come
2 tonight.

3 MR. RECCHIA: We should have videotaped
4 it.

5 COMM. MILLER: I would have to tighten
6 it up.

7 MR. RECCHIA: It was a good idea.

8 MR. DUNNINGTON: Renewable site. That
9 was something I thought about. In the world
10 of reviewing local projects, and sometimes
11 think of as NIMBY management, I hate to
12 characterize it that because that's -- there
13 are genuinely bad projects that deserve to
14 be criticized, I suppose. But I often
15 wonder why we don't challenge regions to
16 site, you know, some number of things that
17 -- whether those be PV solar or other
18 projects and encourage everybody, challenge
19 everybody to do this rather than subjecting
20 them to it, and maybe the best of those
21 could be candidates and selected.

22 If you ask every town, I thought of this
23 years ago, back in, you know, sanitary
24 landfills, I thought every town ought to be
25 required to site a sanitary landfill and

1 deal with that. And better ones could be
2 selected or something. That's ancient time.

3 COMM. MILLER: It's not a full answer to
4 that, but I'm not going to find the page
5 cite quickly, but we do have a suggestion in
6 the plan to look at what -- I don't know
7 what you would call it -- maybe a community-
8 scale portfolio standard. And probably
9 communities who wanted to do it, to not just
10 have -- community scale portfolio standard
11 where communities who want to do what you're
12 talking about, not only could put the
13 projects in place, but then benefit from
14 them. Share in the cost and the benefit and
15 make the choices. So I do think that's a
16 great idea.

17 And it's not directly in the same way
18 you just mentioned it addressed in the plan,
19 but it is in there.

20 MR. DUNNINGTON: So let's see, another
21 comment I picked up on. Reviewing regional
22 plans for performance by next July. I just
23 think of how long it takes for a regional
24 planning commission to even prepare a plan,
25 to change something.

1 COMM. MILLER: Too quickly. Okay.

2 MR. DUNNINGTON: And then the notion of
3 conformance, what does conformance mean.
4 For a plan, some of the plans are at best
5 policy, and a lot of them just information.
6 And they are able to be what they are able
7 to be, but that's not very much I guess I
8 would say. Could be less charitable about
9 it.

10 MR. RECCHIA: Don't forget the court
11 reporter.

12 MR. DUNNINGTON: But you know, what does
13 conformance mean really? I mean I'm trying
14 to -- I suppose I could worry about that but
15 --

16 COMM. MILLER: I should look at the big
17 plan to see how it's put in the land use
18 section to make sure that my own Power Point
19 word isn't part of our problem.

20 MR. DUNNINGTON: Well I'm just
21 remembering a time back when it was thought
22 that it would be a great idea for us to have
23 statewide goals, and all town plans should
24 be, you know, in conformance with those, and
25 regional plans and town plans should be in

1 conformance. And this is like three-
2 dimensional chess. And I actually found
3 myself on an early board. It was charged
4 with doing this. And I was terrified that,
5 you know, trying to figure out how
6 everything could be in conformance with this
7 and consistent with the goals could work
8 out. And many of the plans quickly adapted
9 to policy plans which were sufficient enough
10 that you couldn't really tell. So while I'm
11 desperately eager from years of working as a
12 planner to try to see things that really are
13 clear bullets, what does it mean, what is a
14 town or region going to do? And conformance
15 is -- it's a well-intentioned concept, I'm
16 sure. But I really think we are looking to
17 this plan, what do you need as a county,
18 what do you need Middlebury to do?

19 COMM. MILLER: And the time line isn't
20 good either from your point of view.

21 MR. DUNNINGTON: Well I would just say
22 time to achieve the lofty goals you've set
23 --

24 COMM. MILLER: Well it's incremental
25 progress, so it's not as if we would have a

1 plan by July to -- but it is -- yeah.

2 MR. DUNNINGTON: Anyway, some of that's
3 off the top of my head.

4 COMM. MILLER: Do you have a suggestion
5 on timing that would be more appropriate
6 given all of your regional planning
7 experience? Just for --

8 MR. DUNNINGTON: No.

9 COMM. MILLER: -- just for the deadline?
10 Because that's at least something concrete.

11 MR. DUNNINGTON: I think engaging and
12 challenging them. This is a two-way
13 conversation. And some of it has to relate
14 to what can you afford -- what kind of
15 resources go with that.

16 COMM. MILLER: Right.

17 MR. DUNNINGTON: So I can't answer that
18 in the abstract.

19 MR. TAILER: My recommendation is to
20 engage in an ongoing discussion. I know you
21 talked about three-year revisit, but I think
22 the concept of sustainability and concept of
23 renewables need to be a continuously ongoing
24 discussion. So you may have goals for
25 planning within a very short time frame, but

1 then probably have a phase two one year out.

2 MR. DUNNINGTON: And I'll probably think
3 of -- I came to really listen. I may think
4 of more things to say.

5 MR. RECCHIA: Don't go away, Fred. This
6 is Chris Recchia. And I can spell that. R-
7 E-C-C-H-I-A. It took me awhile to learn how
8 to spell that, but I can do it. So thank
9 you for your comments.

10 Particularly what caught my ear was
11 what's it mean for communities in terms of,
12 you know, is this a state plan, are there
13 going to be what I'll interpret as
14 resources. And I just want to say that's
15 one of the most challenging aspects of this.
16 We have a very big vision for how to change
17 Vermont and our energy portfolio and how we
18 use it and how it benefits Vermonters. But
19 we are also doing this in a time when there
20 is no money. I mean the concept -- the
21 general concept is there is no money.

22 Now the reality is, as Tom pointed out,
23 we spend a lot of money already on energy.
24 And I really would be interested in what you
25 guys think about this and for ideas and

1 suggestions on how to leverage that
2 differently. You know, we spend 800 million
3 dollars a year on transportation and heating
4 oil. It goes out of this state. No benefit
5 really. Some benefit to dealers and
6 distributors, but not a lot. Is there
7 something that we can do to leverage some of
8 that money to help direct us in a different
9 way, or are there other sources of money
10 that can be used in terms of private
11 business development, or what is that it
12 takes to actually make this happen?

13 And it's been a real challenge for us.
14 And there is no magic bullet, but things
15 like, you know, the district energy projects
16 that you guys are working on. They are
17 great and exactly what we are looking for.
18 How do we pay for those? How do we help you
19 pay for those?

20 MR. DUNNINGTON: Not the property tax.

21 MR. RECCHIA: Okay. Thank you. So we
22 have --

23 MR. DUNNINGTON: I was just going to
24 start by saying I've long believed that
25 paying the true cost of driving when people

1 can see more directly the real cost of
2 something, it influences behavior. We have
3 many more miles of road in Vermont that are
4 maintained by towns than we do state miles.
5 And the gas tax is a state thing and some of
6 that comes through the towns.

7 But if you think of apart from schools,
8 local budgets are driven by, you know, what
9 we pay to build and maintain roads, and in
10 regional centers to police motor vehicles,
11 about half of our police budget is policing
12 motor vehicles. So you know, if you wanted
13 to achieve a measure of property tax reform
14 and could shift away from that, you know,
15 what happened when the price of gasoline
16 went up? It influenced behavior. Those
17 graphs are more I think a result of people
18 freaking out at four dollar a gallon gas.

19 Well I think if there could be, over a
20 longer period of time, some shift, I know
21 they are talking about using the gas tax to
22 fund Irene and all kinds, so it's -- maybe
23 this is totally off the wall, unrealistic.
24 But you know, we are subsidizing driving
25 through the property tax. And it's very

1 hard in terms of people's ability to pay,
2 stay in their homes. I would like to
3 transition away from that somehow if there
4 was an -- even if it took 10 or 15 years.
5 People knew gradually there is going to be a
6 shift in that. It would influence behavior.
7 It would influence the kinds of cars they
8 buy, where they live next. And that would
9 help.

10 MR. RECCHIA: Okay.

11 COMM. MILLER: Thanks.

12 MS. CAMPOLI: That wouldn't come at the
13 local level. What I'm interested in hearing
14 is how we can benefit -- Gina, G as in
15 George, I-N-A, Campoli, C-A-M-P-O-L-I. How
16 we can better flex the planning dollars we
17 have now via transportation through ACCD, to
18 start looking at the questions and issues
19 around energy which has traditionally not
20 been so much of a part of the focus.

21 I know in the transportation world it's
22 about congestion mitigation and getting
23 projects completed as opposed to thinking
24 about transportation much differently.

25 MR. DUNNINGTON: Well I have to say that

1 it's nearly excruciating to watch how
2 difficult it is for transportation dollars
3 to actually achieve projects. And we in
4 Middlebury had the chance recently, and this
5 is some out of desperation, after 50 years
6 or so of naming the project as a region
7 priority, a town priority, we found a way to
8 do this. And we would have done it all by
9 ourselves, but we took an opportunity to
10 partner with Middlebury College as well
11 which made it a much better project.

12 MS. CAMPOLI: I remember that project.

13 MR. DUNNINGTON: We built a bridge in
14 town that was about investing in downtown,
15 about access to the downtown making
16 walkways, opening up sites for downtown
17 development. And we were able to finance it
18 totally without a single state or federal
19 transportation dollar.

20 I have to tell you that this was done
21 through a one cent local option tax. And
22 the legislature was eager for us to do this
23 because they get 30 percent tribute when the
24 town has a local option. It couldn't be
25 additional revenue, that was good.

1 For Middlebury we are a regional center,
2 so having people come to the center of the
3 region to buy things, you know, through this
4 local option, sales tax, rooms and meals,
5 they were helping to pay for a regional
6 facility. That was a fairly easy sale.
7 Politically.

8 The one cent, you know, on rooms and
9 meals, 10 cents on a 10 dollar lunch didn't
10 really, you know, cause a lot of turbulence
11 out there. I don't think people realized --
12 recognized it.

13 The reality is that the base of the
14 sales tax is the sales tax on your electric
15 bill, and your cable TV bill, and your
16 telephone bill. We don't have a lot of
17 retail here. So we pay for this bridge,
18 half through electric sales tax. That isn't
19 a real clear, direct way to pay the true
20 cost of something. I probably shouldn't
21 tell you that. But that sales tax base you
22 know is -- anyway, there is -- we had to do
23 what we had to do. We were able to do this
24 very efficiently, to get back to your point
25 about the Agency of Transportation, I wish

1 could utilize, design a bill, I wish it
2 could mobilize local people and in a way
3 that we were able to, and compress the time
4 frame of projects and do them as
5 efficiently. Because it's just excruciating
6 to see how many years and how much the costs
7 go up, and I don't know what you're going to
8 do with the transportation challenges of
9 Irene. I can't even imagine. But that has
10 --

11 COMM. MILLER: Another conversation.

12 MR. DUNNINGTON: A whole conversation to
13 itself. And I don't know how to answer your
14 question about transportation planning for
15 efficiency. We are so -- Irene's going to
16 suck the air out of the room on
17 transportation for awhile to come, I'm
18 afraid.

19 MR. RECCHIA: Thanks Fred.

20 COMM. MILLER: Thank you. So there is
21 four other individuals who signed up. I
22 know there is more than that here. So time
23 being what it is, let's see if we can move
24 through some of those. Bob -- is it Bob?
25 Is it McNary?

1 MR. McNARY: I'll pass for now.

2 COMM. MILLER: Thanks Bob. Laura
3 Asermily.

4 AUDIENCE MEMBER: She left.

5 COMM. MILLER: Okay. Well this is going
6 to be a lot easier. We have Shelly McNeal.

7 MS. McNEAL: I'm here.

8 MR. RECCHIA: Did we scare you?

9 COMM. MILLER: No.

10 MS. McNEAL: Excuse me?

11 MR. RECCHIA: I thought maybe we scared
12 everybody off from talking.

13 MS. McNEAL: I don't scare easy.

14 COMM. MILLER: Can you for the court
15 reporter just spell your name?

16 MS. McNEAL: Shelly McNeal. M-C-N-E-A
17 -L. Shelly with just a Y.

18 Hi. I serve with Fred on the Middlebury
19 Energy Committee. I'm a novice. I just
20 joined this year. I'm from Connecticut. I
21 moved here four years ago, and I was very
22 active in my community with energy. I work
23 for General Electric, and so I have a broad
24 technology background, and so I just have a
25 bunch of questions.

1 I guess my first question is I was
2 struck by the goal being out to 2050. I'm
3 just wondering why so far out. It's 40
4 years from now. And you know, especially
5 when you talk about the exponential curve of
6 technology, and where we all know how
7 quickly things go up the curve, you know,
8 with telephones, Internet and cell phones.
9 It's really a short window. So I guess my
10 question is, you know, why 40 years? What
11 is the inertia factor there?

12 And then also then I have another part
13 to that question as to, you know, when
14 technology does change, how do we dispose of
15 the older technology in a safe and efficient
16 manner?

17 COMM. MILLER: The second part is an
18 interesting question that we should get some
19 guidance on from your background probably.
20 And you probably have good ideas on that.

21 MS. McNEAL: We're looking at that now
22 actually.

23 COMM. MILLER: For the 40-year goal
24 there was, as you can imagine, a lot of
25 commentary we received in the planning

1 process about what sort of goals should be
2 in the plan, on what time frame, for what
3 purpose. And there is a tension, frankly,
4 between setting a goal in a shorter time
5 frame and figuring out what the achievable
6 short time frame is for that goal versus
7 saying, wait a second, generationally we
8 have got to change things. And so how do we
9 tell Vermonters that's what we plan to do,
10 and set the big goal out further in the
11 future where we do expect acceleration to
12 allow us to achieve it.

13 Frankly, we had a lot of Vermonters ask
14 for a goal of 80 percent all renewable by
15 2030. You may have seen some press on that.
16 And there was a big discussion among the
17 agencies and departments about whether that
18 was a goal that should be part of the State
19 Energy Plan. And there was significant
20 concern in -- among certain folks working on
21 the plan that it was going to be very
22 difficult to achieve the goal. And one
23 reason for a longer term bigger goal is to
24 allow the time for the progress and the
25 incremental changes to take hold, and to say

1 what we need is the big picture vision, this
2 is where we want to go. So whether it's 17
3 percent five years from now, 25 percent five
4 years later, or instead three percent to 30
5 percent because technology takes off, what
6 we want is the long-term goal.

7 So that was the thinking behind the, you
8 know, looking out a couple generations and
9 saying this is what we want for our kids and
10 grandkids, rather than setting a shorter
11 term goal of X percent by, you know, 2020 or
12 2030. In certain sectors in the plan it --
13 specifically electric -- you will see
14 different goals, numbers goals. 75 percent
15 renewable is a model that we ran for the
16 plan for electricity in 20 years.

17 MS. McNEAL: Okay.

18 COMM. MILLER: And you know, when you
19 look at things like transportation and try
20 to predict the future, it seemed again
21 looking at across agencies and departments
22 that it was difficult to do unless you said,
23 you know what, we can't know everything
24 that's going to happen, but what we know is
25 what we want to achieve.

1 MR. RECCHIA: Can I just add to that
2 quickly?

3 COMM. MILLER: Yeah.

4 MR. RECCHIA: Real quickly I just want
5 to add, you know, that the longer term goal
6 for the reasons that Commissioner Miller
7 just mentioned is really visionary. But we
8 are looking for, and as also was mentioned,
9 we need benchmarks, and we need, you know,
10 we need interim goals that are achievable
11 that require us to work, so we are not
12 waiting until 2049; right?

13 So we could use help in terms of if
14 those are not strong enough, the interim
15 goals within the next year to three years,
16 those are really critical to get us on the
17 path. But we definitely wanted to establish
18 the vision that was, you know, we are going
19 to change the dynamic of how we deal with
20 energy.

21 MS. CAMPOLI: I just want to say I don't
22 know how much you paid attention to the
23 transportation side of the house, but the --
24 so much -- we are so beholden to other
25 forces outside the state both in terms of it

1 being a regional transportation network and
2 the fuel side of the equation, and the
3 technology side especially. And we can't do
4 it without the technology changing.

5 And we have some objectives, some
6 interim objectives, which is 25 percent
7 renewable for transportation sector by 2030
8 to give us that place to go to. But that's
9 incumbent -- dependent on the cars being
10 available to us, electric cars being
11 available to us; the grid being renewable.
12 And then the cars, the technology being
13 available. And that means being able to buy
14 them, being able to afford to buy them,
15 having the fueling infrastructure in place.
16 So there is some pretty big hurdles, and
17 transportation is 30 percent of the problem.
18 So we really have to be realistic in that
19 regard.

20 MS. McNEAL: Yeah. I mean I'm all for
21 long-term goals. I think people tend to
22 want things too quickly. I mean our whole
23 economy and everybody's expectations that
24 everything is just going to turn around
25 instantly and not giving policies a chance

1 to work, you know, I'm all for long-term
2 goals. But I also think that it's important
3 to come up with a good marketing strategy,
4 if you will, to talk about while, you know,
5 okay 90 percent, we are at 25, I think you
6 said?

7 COMM. MILLER: Nearly.

8 MS. McNEAL: So 30, 60, 90 what are the
9 milestones? And easy things for people to
10 grab on to and say oh, we are heading here.
11 You know, just, you know, just a thought
12 with marketing. And getting people behind
13 it, because it is hard to wrap your head
14 around 40 years, especially if you're in
15 your 40s or 50s.

16 MS. CAMPOLI: We are big on metrics in
17 VTrans and measuring progress to data. And
18 some of our strategies are centered, maybe
19 too much, on data. But if you could look
20 at, you know, some of those metrics that
21 were set out, and see if they make sense,
22 that would be really helpful, because that's
23 how you show progress, and that's how you
24 tell the story to the public.

25 But in order to get to those metrics

1 you've got to hit the data, you've got to
2 have the ability to collect the data.

3 MS. McNEAL: That's a great segue to my
4 next question. Fred and I have been on the
5 committee together. And one of the things
6 I'm very interested in is the metrics. We
7 had a very aggressive energy plan to reduce
8 our greenhouse gases by X percent in a
9 certain amount of years. And we had a very
10 good plan for that, similar to what you
11 showed up here. And then when it came time
12 to measure it, we were like how do we do it.

13 COMM. MILLER: Right.

14 MS. McNEAL: And so I was curious, you
15 know, with all the metrics that you did put
16 up, are those sustainability metrics, how
17 you gather that data, are those tools in
18 place where they can actually -- you're
19 nodding so --

20 MR. RECCHIA: I am. Go ahead.

21 COMM. MILLER: Yeah. From the
22 department's -- from the electric side point
23 of view, from the electric side point of
24 view the metrics are largely in place and
25 already being used. I mean we know the

1 progress that we have made in electricity.
2 We know how to measure it going forward.
3 That's a fully regulated industry, and
4 that's good news for purposes of having
5 metrics and measurements.

6 In transportation Gina mentioned what
7 they have done there. And one thing we have
8 talked about, and I'll turn it over to Chris
9 probably for this, is coordinating better
10 the metric, the measurement, frankly of the
11 carbon side with the electric and
12 transportation side. Because I think what's
13 happened recently is we have had some good
14 measurement done on greenhouse gas
15 reductions, but it's occurred sort of in a
16 vacuum, not with the other agencies and
17 departments at the same time looking at
18 policies and trying to align where we are
19 going.

20 MS. McNEAL: And looking at the same
21 units of measure.

22 COMM. MILLER: That's the total energy
23 standard idea as well.

24 MR. RECCHIA: Yeah. And I think that
25 that is the weak point of the measures. We

1 are used to measuring vehicle miles
2 traveled, we are used to measuring the
3 number of gallons of fuel oil we use.
4 Harder will be what's the real carbon.
5 What's the true carbon cost of a given
6 thing, just like true life-cycle cost of any
7 of the fuels are a little bit harder to
8 measure.

9 And then also Tom pointed out this point
10 too, particularly natural resources and
11 forest resources, measuring biomass
12 sustainability is going to be an interesting
13 exercise. We are going to have to get our
14 hands around how to -- what's going to be
15 the metric for that, and how are we going to
16 measure success or failure on that.

17 COMM. MILLER: The total energy standard
18 idea that's set forth in the plan would, if
19 implemented, convert all energy usage to a
20 particular unit, for example, BTU. You
21 could do kilowatthours, but BTU is a more
22 obvious one. And then have a standard
23 measure, you know, 23 percent renewable now.
24 So can we shoot for 27 percent X years from
25 now? If so, where will that progress come?

1 What percentage of that progress will be in
2 transportation versus home heating?

3 So that's the idea of trying to create a
4 standard with a common unit. So thank you.

5 MS. McNEAL: That's good news to us.
6 Let's see. Yeah, and then you know, I guess
7 the point I brought up earlier about
8 disposal, asset disposal, and that is --
9 is that in the plan? How we plan to
10 disposing of our older technology?

11 COMM. MILLER: The only places it's
12 addressed in the electricity sector,
13 decommissioning plans are required by the
14 Public Service Board for renewable projects;
15 solar, wind. And so we certainly advocate
16 for that to continue.

17 The other place where it's addressed
18 peripherally is the Department of Health has
19 asked to be more involved in energy going
20 forward and looking at public health impact
21 assessments which would include some of the
22 issues that you raised. It would, you know,
23 how are we going to actually dispose of the
24 environmental hazards, and what are the
25 health effects that could result if we

1 didn't. Honestly it's not addressed in the
2 way that you're looking for, and it's a good
3 comment for us to hear.

4 MS. McNEAL: Thank you. Because I would
5 like to be involved in that in some way when
6 it does.

7 MR. RECCHIA: Cool.

8 MS. McNEAL: That's part of what I'm
9 developing services like that now for my
10 company.

11 MR. RECCHIA: Great.

12 COMM. MILLER: Thank you.

13 MR. RECCHIA: Maybe on that I'll just
14 add, recently Vermont just added an E-waste
15 program, electronic waste recycling program.
16 There is an example of how we take a
17 complicated new product that we weren't --
18 20 years ago none of us expected to be
19 throwing out that we need to figure out a
20 home for.

21 A couple of other places where this
22 comes to mind is if we do programs like wood
23 stove changeouts, you know, where you pay
24 somebody a rebate or something like that to
25 buy a new wood stove to -- more efficient to

1 replace their old inefficient one -- what
2 you don't want them doing is taking the old
3 inefficient one and giving it to their
4 neighbor to hook up. Because then you
5 haven't accomplished your goal.

6 MS. McNEAL: Re-marketing not done well.

7 MR. RECCHIA: It reminds me a little bit
8 of the Cash for Clunkers. All they really
9 cared about was to drill a hole in the head
10 gasket or something. I'm not sure how they
11 disabled the vehicle. But we need to do a
12 whole holistic recycling of those things and
13 figure out a way to change out older systems
14 to go faster.

15 MS. McNEAL: Well thank you for the
16 floor. Appreciate it.

17 COMM. MILLER: Thank you.

18 MR. RECCHIA: Thanks for your time.

19 MS. McNEAL: You guys are doing a great
20 job.

21 COMM. MILLER: Mark, is it Boivin or
22 Boivin?

23 MR. BOIVIN: Yes. I'm Mark Boivin. My
24 brother and I farm in Addison. My last name
25 is spelled B-O-I-V-I-N. I came here too

1 late to hear the presentation, so if I'm off
2 track, please accept my apology. And now
3 that I see we are being transcribed, did I
4 miss the swear in?

5 MR. RECCHIA: No.

6 COMM. MILLER: You can say whatever you
7 want.

8 MR. RECCHIA: The beauty of this one is
9 you don't have to tell the truth.

10 COMM. MILLER: Just your opinion.

11 MR. BOIVIN: We used to milk cows up
12 until 2008. We started burning our corn
13 back in 2003, because we were noticing that
14 the price of corn was selling at 60 percent
15 of the price of fuel oil per million BTUs.
16 So I go to these discussions, and I hear
17 everything about wood pellets. And I have
18 to comment, the gentleman that -- whose
19 presentation I came in on, his was the first
20 time I heard talking about a radius that you
21 can -- an effective radius that these things
22 can be done in.

23 We are selling corn for people to heat
24 their houses and businesses with, and there
25 is a radius for that. There is a radius for

1 bricks, there is a radius for cement. But
2 there seems to be no radius for fuel oil.
3 It's trucked in. You talking about roads;
4 there is a lot of deterioration of our roads
5 for this hauling. And when you go to this
6 alternative fuels, you're going to hear some
7 people talking about all these trucks
8 degrading the roads but ignoring the
9 degradation that's happening with the fuel
10 trucks.

11 The other point was that I agree with,
12 again with the same gentleman, was that
13 using wood to produce electricity is
14 probably a poor use. Did I understand that
15 correctly?

16 MR. TAILER: Yes.

17 MR. BOIVIN: The reason is if you look
18 at the energy information, agency numbers,
19 most of the fuel used in Vermont is for
20 transportation and home heating. You use
21 wood to create electricity, you have a lot
22 of waste heat. And that's really what we
23 need. So if you were to have that, there is
24 some cogeneration that's being done, work
25 done by Pratt & Whitney and GE which is a

1 technology that might be around, but that's
2 off in the future. Right now I just hope
3 that people look at corn as an alternative
4 to pellet, because that eliminates the
5 having to grind, to cut, haul, grind and
6 pelletize. From an acre of corn we get four
7 tons of a pelletized fuel that is -- that
8 burns clean, it's safe, it doesn't
9 spontaneous combust. If it's put in a
10 corner somewhere and forgotten it rots, it
11 doesn't create a fire. And appliances that
12 burn that at 95 percent efficiency.

13 Now in my discussions with promoting
14 this technology one of the problems that I
15 encounter is people have the funding
16 problem. They know that they could benefit
17 from a change to new fuel source, but they
18 can't get the bank loan, they can't get the
19 financing. And I think if you're going to
20 go for that, you have to address those
21 issues.

22 In line with this, is you were talking
23 about metrics. I have a mixed feeling about
24 metrics. I like keeping track of the
25 numbers. I don't like it when they are used

1 for goals, because then people will take and
2 tweak the numbers to get the goal, but not
3 necessarily be truthful about it.

4 MR. RECCHIA: Could you tell us how to
5 do that? Because we are not going to meet
6 the 2012 goals.

7 MR. BOIVIN: No. You tell -- if I knew
8 that, I would do it with IRS, but I don't
9 dare to. You know there is certain things.

10 But one of the problems you're going to
11 have when you do this metric is the energy
12 efficiency metric. How do you measure?
13 You're saying our goal is this. And when
14 you save people energy, does that come into
15 that spreadsheet, into that metric? Does
16 that come in as part of that? And how you
17 get the numbers for that? Because I have
18 had people wanting to buy an appliance and
19 stoves from me, and furnaces, and we tell
20 them, you know, your best dollar is to go
21 get your house insulated. You won't be
22 happy buying fuel from me if you can't
23 afford what you're paying now anyways.

24 COMM. MILLER: Right.

25 MR. BOIVIN: And so you have that -- I

1 consider it two parts of the same problem.
2 How do you pay for it, energy efficiency.

3 Now back to the number parts that I do
4 like. Is none of this -- none of these
5 plans are going to work if A, they are not
6 economically feasible, and B, they don't
7 follow the laws of thermal dynamics which
8 comes back to this promotion for electric
9 cars. They are very efficient at the user
10 end. But if you get fuel that's produced,
11 electricity that's produced, and then you
12 have your transmission losses, your heat
13 losses, and everything else from -- whether
14 it's from a wood-fired plant or coal-fired
15 plant in the midwest, it doesn't make any
16 sense.

17 The best use of our energy is to produce
18 it regionally in this state, in local areas
19 for, you know, each area be somewhat self
20 dependent. That reduces the burden on the
21 roads, that reduces the cost of the
22 infrastructure, and it's energy efficient.
23 And every time I've looked at all these
24 different ways, I still come back that corn
25 is the most efficient. It is the most

1 efficient energy collector, one of the most
2 efficient energy -- solar energy collectors
3 in the world. Right in with sugar cane and
4 all those others.

5 It's a C-4 plant, and it collects twice
6 the biomass per acre as an acre of temperate
7 forest. So you're saying that with the wood
8 products not being sufficient, we really
9 have to look, I think, at corn and the
10 production of corn and the use of corn as a
11 fuel source and use that to provide the
12 heat, save the liquid fuels for
13 transportation.

14 And unless anybody else has any
15 questions --

16 MR. TAILER: I read a bunch of articles
17 recently worldwide talking about the
18 tradeoff between using farm land for
19 biofuels or using farm land for food. And
20 it hasn't really become controversial here,
21 but in a lot of other countries it's a hot
22 topic. How would you respond to --

23 MR. BOIVIN: I don't see a conflict
24 between food and fuel. For one thing we are
25 producing probably 80 percent of the corn

1 acreage in this state. I don't have all my
2 charts and figures. But I might be off.
3 But we are definitely producing fewer acres
4 of corn than what we did 50 years ago in
5 this state.

6 200 years ago all of our energy was bio
7 power, which was -- most of the crops that
8 were harvested 200 years ago were used for
9 energy to feed the horses and so on. We go
10 to other parts of the world and they are
11 still using animals, they are still using
12 water buffalo and so on.

13 So I look at it as a question of
14 efficiency. And the other point is that
15 when you look at food and fuel, we take one
16 to one and-a-half million acres of crop land
17 out of production per year for suburban
18 sprawl. If you can take and use that to
19 produce a fuel right now and keep that land
20 in production and keep it from going to
21 urban sprawl, I don't see how we are taking
22 food out of somebody -- out of the thing.

23 In fact, if you look at the supply
24 demand curves for corn or other crops like
25 that, and fuel, corn is -- well let's start

1 with fuel. Petroleum is inelastic supply
2 and elastic demand. When the price goes up,
3 people cut back but the price stays. When
4 demand goes back, price drops, but supply
5 stays pretty fixed over a short term. Crops
6 like corn have the opposite. You have an
7 inelastic demand. People want so much every
8 year for food. More than that makes the
9 price plummet, so therefore you have a very
10 elastic price structure.

11 When you compare the two together, they
12 will help stabilize the two of them. So
13 when you have a situation where somebody can
14 burn corn and oil, one will go to whichever
15 is cheaper. And it will help balance the
16 two markets against each other. In the long
17 term I think we are all -- everything we buy
18 is going to be priced on the basis of the
19 energy content. And it's the same way as
20 what fuel oil, propane, natural gas is, in
21 generating electricity. The power companies
22 go to whichever is the cheapest source at
23 that time.

24 And what I'm suggesting is that we set
25 up a system where homeowners and small

1 businesses can do the same.

2 MR. STEIN: Andrew Stein, S-T-E-I-N.

3 I'm not sure if you know off the top of your
4 head, but what is the BTU content of corn?

5 MR. BOIVIN: There is a lot of different
6 numbers on there, and they are all pretty
7 much wrong. Okay. There is two different
8 BTU numbers. It's what they call the high
9 heat value, and the low heat value.

10 What you see is a lot of times people
11 will compare one fuel with the high heat
12 value with the low heat value of another
13 fuel. The high heat value of corn and wood
14 pellets is somewhere between 8,000 and 8,500
15 BTUs. There is some difference between the
16 species. Some places they say species is
17 not dependent, it's by the pound. But you
18 look at other sites and they have -- species
19 per pound.

20 MR. TAILER: BTUs per pound.

21 MR. BOIVIN: BTUs per pound. It's not
22 always equal, but it's close enough. It's
23 like ball park figures. Corn has got about
24 the same number. Has about 8,350 is the
25 figure that I have been using for the high

1 heat value. The low heat value takes in
2 account for the amount of water that's
3 produced and the cost of heating the air.
4 So that you're running about 67, 6,800 BTUs
5 for those.

6 So it depends where you want to measure
7 and when you measure efficiencies, some
8 companies will take the high heat value,
9 some companies take the low heat value. And
10 there is no standards as to how people are
11 supposed to do that. It's the same as the
12 wood pellets.

13 I found out the other day that you can
14 have 20 percent plastic in wood pellets and
15 still be called premium.

16 MR. RECCHIA: Yes. That's a problem.

17 MR. BOIVIN: I dealt with another
18 customer that bought some 100 percent
19 recycled wood fiber pellets from Canada a
20 few years back and had some plastic in it.
21 And what that was was all pressed paper. So
22 that's one of the reasons I like corn is
23 because when it comes off the cob it's the
24 same. It's lightweight, or heavy weight,
25 but the energy content is still the same.

1 Any other questions?

2 MR. WARK: Steve Wark is my name. Real
3 quickly have you explored the idea of
4 transfer development rights for growth in
5 your zone? So you could give otherwise
6 density bonuses to projects that might
7 qualify, and then you know, you could create
8 a sub market.

9 MR. BOIVIN: Why would I want to sell
10 half my farm?

11 MR. WARK: You wouldn't. What you would
12 do is you could actually sell the
13 development rights to your farm.

14 MR. BOIVIN: That's half my farm.

15 MR. WARK: You could sell that to a
16 developer. You could still maintain
17 ownership of the property and use it however
18 you want, but they could pay you money and
19 use those development rights for greater
20 density farther.

21 MR. BOIVIN: I would rather get in a
22 situation where I'm selling carbon credits,
23 because 40 percent of the corn is in the
24 kernel, and the other 60 percent goes back
25 in the ground. I would rather go into a

1 situation where I'm selling carbon credits.

2 MR. WARK: Interesting.

3 MR. STEIN: What about prairie grasses
4 and --

5 MR. BOIVIN: Some of the prairie grasses
6 you've got to look at the photosynthesis,
7 look up on E-Bay C-3 and C-4 photosynthesis.
8 Some of the grasses proposed are spring and
9 fall grasses and they don't make maximum
10 use. The ones that are in the C-4, what
11 they call, creates a four-chain hydro
12 carbon, are the ones that are heat loving
13 and love intense sunlight which are the ones
14 that grow in the summer. Unfortunately
15 things like crab grass fall in that
16 category. But it may be prolific, but they
17 don't put out a lot of biomass.

18 Of those that I've looked I really think
19 miscanthus has more potential than switch
20 grass. The problem is is you have -- you
21 grow it in the summer. You have to dry it,
22 you have to take it off, you have to handle
23 it, which is bulky; you have to pelletize
24 it. And in this climate where we are
25 harvesting a grass late fall or heaven help

1 you, early spring, is not a fun thing to do.

2 As far as that goes, that also requires
3 an entire new infrastructure. We have the
4 infrastructure already for corn. Farmers in
5 this state have been growing corn for 200
6 years.

7 MR. STEIN: You can bale prairie
8 grasses. Just like you would with hay.

9 MR. BOIVIN: Right.

10 MR. STEIN: And there is plenty of
11 infrastructure available for hay.

12 MR. BOIVIN: Right. Then how do you
13 pelletize it and burn it?

14 COMM. MILLER: There is though, in
15 fairness there are some companies who are
16 working on it, and from a planning point of
17 view we do suggest in the plan that we keep
18 an open mind on developing grasses. Because
19 it is an area -- and crops generally
20 speaking. Including corn.

21 MR. BOIVIN: I would like to add --

22 COMM. MILLER: So it's not just woody
23 biomass.

24 MR. BOIVIN: I'm not opposed to it.
25 There is certain land that was not suitable

1 for corn but would be suitable for that.
2 And I'm definitely in favor of, in any plan,
3 keeping an open door for those technologies
4 as they develop.

5 COMM. MILLER: It's also a potential
6 help on things like water quality if you
7 have buffer grasses and things like that.

8 MR. BOIVIN: If you have a floodplain
9 you're better off to go with something like
10 that.

11 COMM. MILLER: Thank you very much.

12 MR. RECCHIA: Thank you very much.

13 COMM. MILLER: Steve Wark. Having just
14 spoken, you have the floor.

15 MR. WARK: Thanks. Thank you. Steve
16 Wark. I'm the Director of Communications
17 for Vermont Gas, and I'll be really, really
18 brief. First kudos to the state, to the
19 department, for getting the Energy Plan
20 done. It's a very forward looking document,
21 I think, and you've got to do that. People
22 will always question the choices and
23 technology. But you've got to take a stand
24 at some point and make some decisions, and
25 as time evolves, so it's good to see that.

1 Secondly, really, really pleased to see
2 such an emphasis on renewables. I think
3 moving forward, and it may sound weird
4 coming from a guy that works for a gas
5 company, but seeing renewables is part of
6 our portfolio. It's going to be critical.

7 The third piece that I would like to add
8 real quickly is efficiency. We have an
9 efficiency program at our company.
10 Efficiency Vermont does a great job. We
11 collaborate very closely with them as well.
12 But as the Commissioner pointed out before,
13 efficiency is perhaps one of the most
14 affordable ways to save money. You know,
15 it's easier to buy efficiency than it is
16 electricity, or a lot of other types of
17 energy that are out there.

18 So what we would love to see is
19 basically any sort of fuel provider or
20 energy provider participate in that sort of
21 program. That way it essentially brings
22 efficiency programs that are otherwise not
23 electric to areas so that people can benefit
24 from those and save money.

25 And the final thing that I would just

1 put a plug in for, I notice there was a
2 thing on regulation up there. I think
3 regulation is key. It can be what makes or
4 breaks a project. And you know, Vermont has
5 a very robust system in terms of ensuring
6 that our landscape is protected and it's a
7 working landscape. But you've got to have
8 people working. And so to get jobs and
9 projects going cutting through regulation,
10 red tape, I think is key. And I think you
11 can do that frankly without having to
12 minimize standards.

13 So overall I guess the headline would be
14 great job with the energy program, with the
15 Energy Plan. And we wish you luck with it.

16 COMM. MILLER: Thank you.

17 MR. TAILER: A couple years ago I saw a
18 program you did, I think with Champlain
19 College, where you had a combined heat and
20 electric generation system on a micro scale.

21 MR. WARK: Yes.

22 MR. TAILER: Which was really exciting
23 in terms of a much better use of the natural
24 gas resource. How has that developed, and
25 is there potential to create state

1 incentives for micro cogeneration from
2 natural gas?

3 MR. WARK: So that's a three-watt
4 generation program I think they call it.
5 Because it's a co-gen system, and as I
6 recall it using a Honda combustion engine.
7 And while it is very unique and interesting,
8 it's really not cost effective in the short
9 term. We like it obviously because it
10 starts to put a stake in the ground for
11 other types of co-gen.

12 But you know, really when you look at it
13 it's like transportation. I drove down here
14 in a natural-gas powered vehicle, and it's a
15 cool Honda Civic, and you look at it and it
16 looks just like a regular car. But the
17 incremental costs are so high, where the
18 sweet spot is I think is the scale.

19 So when you look at transportation we
20 say it makes more sense for trucks and
21 fleets that are in a fixed region to do it.
22 And I think the same thing with these
23 co-gen. There is also other technologies
24 like the bloom box, I don't know if you've
25 seen that, where it's direct methane to fuel

1 cell technology. And it's, you know, it's
2 -- it works. Is it as cost effective as it
3 could be? Probably not. It's probably more
4 cost effective than solar panels.

5 But in the long-term you've got to kind
6 of balance where you're going, and it's
7 still a fossil fuel. So if our goal by 2050
8 is to be, you know, 90 percent renewables,
9 you may look at it and say solar is probably
10 a better way to go.

11 MR. TAILER: In relation to potential
12 generation of electricity from natural gas
13 in the State of Vermont, what are the
14 current smallest scale natural gas
15 generation systems that are cost effective?

16 MR. WARK: It depends on where you place
17 them.

18 MR. TAILER: I assume you'd place them
19 near the load.

20 MR. WARK: You would want to place them
21 near load. And ideally what you would want
22 to have, I think, is to capture the lost
23 heat, so again you have a sort of co-gen
24 situation. Probably 50 megawatts is what
25 would be the most cost effective.

1 COMM. MILLER: Smallest.

2 MR. WARK: Smallest, yeah. Sorry, that
3 would be, you know, the least that you could
4 get in the door with. The bigger the
5 better. But then you start moving in the
6 direction where you're investing so heavily
7 in gas which, you know, from a company
8 perspective is not a bad idea. But from a
9 state perspective, if we are moving toward
10 renewables, it depends on where you place it
11 and how you partner it. So there are some
12 other partnering technologies.

13 MR. TAILER: Well if you're doing a --

14 MR. WARK: There is one with solar where
15 essentially gas becomes a backup to the
16 solar.

17 COMM. MILLER: What's the possibility
18 with biogas? And putting it actually in the
19 distribution system?

20 MR. WARK: It has to be kind of
21 industrial grade.

22 COMM. MILLER: I know Middlebury College
23 has worked on that.

24 MR. WARK: And we have been, you know,
25 partnering with them and helping to the

1 extent that we can. So --

2 MR. TAILER: The biogas has a high
3 moisture content. Also has other
4 impurities, and you can remove them, but it
5 costs money. So the question is if you can
6 use it without removing them, it's a lower
7 quality fuel, but may be more cost effective
8 to use it in other applications without
9 meeting the industry standards that you
10 have.

11 MR. WARK: Right.

12 COMM. MILLER: Thanks.

13 MR. WARK: Thank you. Nice job.

14 MR. RECCHIA: Steve, one quick question
15 if I can.

16 MR. WARK: Sure.

17 MR. RECCHIA: So you mentioned on the
18 efficiency thing, you mentioned the idea of
19 kind of replicating what Efficiency Vermont
20 has done with the other sectors. So one of
21 the challenges we have is where to get funds
22 for those sort of things. And Efficiency
23 Vermont does that by adding a few cents on
24 to the electric bill.

25 Are you saying you guys are amenable to

1 doing that on gas? If we do it on oil and
2 you know --

3 MR. WARK: We already do it on gas. We
4 put in \$2 million a year. And just a quick
5 stat. In the 19 years we have had our
6 program going, we have about 45,000
7 customers. We have already served 22,000
8 homes in our footprint. And right now just
9 very briefly, we have Franklin and
10 Chittenden County with a hopeful plan to
11 expand to Addison County. But we have hit
12 about half the houses, and you know, we are
13 not slowing down any time soon.

14 MR. RECCHIA: That's very helpful.
15 Thank you.

16 COMM. MILLER: That's interesting.

17 MR. TAILER: Could you answer a question
18 about where natural gas in Vermont comes
19 from?

20 MR. WARK: Ours comes from Alberta. And
21 it's an oil field that's up there. A
22 traditional sort of --

23 MR. TAILER: Not fracked?

24 MR. WARK: I can't say a hundred
25 percent. The way the hubs are set up these

1 days there are fracked gas that comes from
2 many different locations. I can't say it's
3 certified frack-free gas. It's not like
4 fair trade coffee, for example. But on the
5 other hand, ours from contracts, it comes
6 from Alberta.

7 MR. TAILER: Thank you.

8 COMM. MILLER: Let's see, was it Bob who
9 had passed before? Do you want a chance to
10 speak or anybody else?

11 MR. McNARY: Well I guess I'll make just
12 one small comment to the fellow in the
13 front. Mr. Recchia?

14 MR. RECCHIA: Great.

15 MR. McNARY: Has skittered around it all
16 night.

17 MR. RECCHIA: Excellent. It's one of my
18 best --

19 MR. McNARY: What it comes down to is
20 this. In Europe, renewables work quite well
21 because of three words, feed-in tariffs.
22 Until the United States gets on that program
23 I think we have got a real tough row to hoe.
24 It's going to take feed-in tariffs for this
25 to be successful on a large scale basis.

1 There is just no question about it.

2 MR. RECCHIA: Thank you.

3 COMM. MILLER: Anybody else wanting to
4 -- before we come back to Tom, is there
5 anybody who hasn't spoken who wants a
6 chance?

7 MR. GROSS: Okay.

8 COMM. MILLER: Is it McNary?

9 MR. McNARY: M-C-N-A-R-Y.

10 MR. GROSS: Hi. My name is George
11 Gross, and I'm a chairperson of the Shoreham
12 Energy Committee.

13 COMM. MILLER: Can you spell your name
14 for us? Sorry.

15 MR. GROSS: Gross. G-R-O-S-S. George.
16 On a personal note, my wife and I designed a
17 net-zero energy home. We built and
18 completed just last year, started work
19 around 2007. So part of what I have to
20 offer to comments tonight are based on that
21 experience, making a zero energy home for
22 the last few years. And discovering a lot
23 about the technologies along the way that
24 are what the respective costs are and
25 whether -- what it actually looks like to

1 have and operate a house like this.

2 One of my comments has to do with the
3 transportation aspect. Our household hasn't
4 moved to an electric car. We have a plan to
5 go there on the proviso that in the
6 long-term, probably around 2015, we would be
7 in the market for a car like that, provided
8 it had four-wheel drive. And you know,
9 right now I don't see it as a likely outcome
10 because the market is so immature. That
11 might add -- culturally Vermont really does
12 look at four-wheel drive as sort of stable
13 stakes for a vehicle. And so you're kind of
14 dependent on that.

15 And I might also say looking around that
16 the typical car, if you were to walk say
17 Route 7, and see how many SUVs and trucks
18 roll by, the odds of moving them to electric
19 are pretty dicey. The cultural perspective
20 is this is the kind of car I need for this
21 climate. And you know, electric vehicles
22 typically work their best because they are
23 very light. The batteries don't have a lot
24 of power per pound and consequence is to get
25 the range that people expect, you need a

1 small, lightweight vehicle. And that
2 doesn't play well with the expectations most
3 people have for vehicles they drive.

4 So part of your plan is fairly
5 vulnerable to that. And I don't know that
6 you have a way to remedy that short of
7 waiting for the market to mature.

8 COMM. MILLER: We do recognize that.
9 There are things, not to be too Polly Anna
10 about it, but there are things happening in
11 the electric vehicle industry that give us
12 some reason to be hopeful. There are
13 projects for heavier vehicles, heavier-duty
14 vehicles on electric motors that have
15 actually been successful. It's a question
16 of scale and cost. And it's not going to
17 happen by 2015.

18 MR. GROSS: Right.

19 COMM. MILLER: I completely agree with
20 that.

21 MR. GROSS: One of the things I did in
22 design phase of this house was take a survey
23 of all the technologies, and I tried to keep
24 fairly current about each of them, with
25 regards to all of the different facets of

1 running a household; space heating, electric
2 generation, and so on. Each of them has
3 their strengths. For example, the electric
4 PV array, we just expanded it. We have just
5 added an air source heat pump which is
6 capable of heating the house in the winter
7 or cooling it in the summertime.

8 The issue with the wintertime, and
9 you'll see this with any of the renewable
10 resources that are solar dependent, is there
11 is frankly less solar in Vermont. And so
12 any plan that presumes to take solar as the
13 key component in your mix has to find a way
14 to counterbalance that. I currently net
15 meter in. I know in the wintertime, this
16 coming winter, I'll take about a thousand
17 kilowatts out that I generated this summer.

18 Obviously I'm using the grid as a
19 battery. Until we have electric storage
20 technology that is capable of running across
21 seasons, you're going to have find a way to
22 run the grid to do a counter balance for
23 that shortfall during those parts of the
24 year. I don't know if your plan actually
25 speaks to that, and actually a planning

1 exercise for it in terms of capacity on the
2 grid or where that would come from. You
3 could think of a number of different ways to
4 do that. But I think you would probably
5 find some of them are going to be fossil
6 fuel based electric generation which would
7 be ironic.

8 So that's one important piece of
9 feedback for that component. The technology
10 is also very dependent on a variety of
11 exotic elements some of which are imported
12 from places like China that are not
13 necessarily reliable to have in your -- as a
14 dependency in the long-term. If we were to
15 look out over the next two or three decades
16 being -- I think you're going to see
17 increasingly much more scarce set of
18 opportunities for extracting minerals and
19 elements that are essential to these
20 technologies.

21 As some people have already heard --
22 probably heard about rare earth, for
23 example, China has over 95 percent of the
24 world's market for that and using wind
25 turbine magnets, lithium for car batteries,

1 solar array, selenium, cadmium, a whole
2 bunch of other smaller trace elements that
3 are used. So one of the things you may need
4 to develop is contingency planning for the
5 fact that there is going to be on
6 international markets a lot of competition
7 for relatively scarce commodities, and you
8 may not necessarily be the one who comes out
9 ahead.

10 Economic strength not an assured thing
11 for 20 years from now. We certainly don't
12 want to be in Afghanistan getting our
13 minerals from there. Okay.

14 COMM. MILLER: Can I ask a question
15 since you're in a net zero home? We had
16 many folks ask for a strong statement in the
17 plan for net zero construction by a
18 relatively early date, 2020 was the most
19 often suggested. And we looked at that, and
20 frankly the plan is not as aggressive as
21 some people -- the draft plan is not as
22 aggressive as some people had asked because
23 there was some concern about the ability to
24 implement, getting to the point made
25 earlier.

1 MR. GROSS: It's a good question.

2 COMM. MILLER: So given that you're in a
3 home, I'm just interested in what you think
4 about the ability to move new, especially
5 residential construction, toward net zero
6 within a time frame. 20 years, 10 years.
7 What do you think?

8 MR. GROSS: The building trade is very
9 -- how do I describe it kindly?

10 MR. TAILER: Currently billable
11 technology narrowly avoiding prosecution.

12 MR. GROSS: Very set in their ways when
13 you work something through hard experience,
14 and you work with your hands like that every
15 day, the goal is to get from one job to the
16 next, doing what you do and get paid for it
17 and get to the next job.

18 With respect to net zero energy homes
19 about 90 percent of your solution occurs in
20 the first 20 hours of the design of the
21 house. And frankly for every house that
22 I've built or one like mine, there are
23 probably a hundred built that had no design
24 whatsoever thought about for energy. It was
25 about lowest cost. And so when I look at

1 this problem, all the parties who have a
2 stake in the game are looking at how do I
3 get my cost per square foot to move into
4 this house as low as possible.

5 Right now the cost is probably a running
6 about 150 to \$200 per foot, depending on the
7 house. Our house is at the high end of the
8 range. If you count some of the things we
9 did with thermal energy.

10 MR. RECCHIA: The irony, if I could add,
11 is people that can least afford it then are
12 looking for the low per square foot cost and
13 as a result then have the operational costs
14 to bear --

15 MR. GROSS: Exactly.

16 MR. RECCHIA: -- that they can't afford.

17 MR. GROSS: Once they go off to
18 somewhere else and leave, they sell the
19 house to someone else, and they make the
20 profit, and then the next person. So your
21 actual turnover in your stock is probably 1
22 or 2 percent houses get built each year
23 compared to the total 220,000 households in
24 the state.

25 So net zero is wonderful if you have a

1 clean slate and you design from inception
2 like we did. We picked the passive solar
3 design. We super insulated. Air sealed,
4 several hundred hours of wandering around
5 with a spray gun and caulking. Most people
6 just don't do that. They even -- if they
7 knew how, they wouldn't be willing to do it
8 because there is so much extra effort to get
9 there.

10 The technology is -- I mean there are
11 probably other ways, 20/20 hindsight, I
12 could probably do it better the second time;
13 do it less effort, less cost. But the
14 training curve for all these people who are
15 stuck in their own ways is substantial.

16 And I might add, most of your problem is
17 the hard nut of getting people to ante up.
18 I don't think 75 hundred dollars could
19 actually get you a true home energy
20 retrofit. Maybe. I mean I would have to
21 look.

22 COMM. MILLER: 25 percent. It's not a
23 deep retrofit. I agree.

24 MR. GROSS: Right. It's not a deep
25 retrofit. Is that good enough? I don't

1 know. You know. I mean the ideal world
2 everybody would have access to a PACE loan,
3 and they would get, you know, 20 or \$30,000
4 or whatever it is, it takes to get that deep
5 retrofit. And then you start seeing
6 substantial benefits.

7 Right now energy is not on people's
8 radar. If I was to go to knock on doors in
9 my town, I would wager less than one in a
10 hundred is thinking about doing something to
11 their house to improve their energy cost, if
12 that. So that's where the problem is.

13 COMM. MILLER: Thank you.

14 MR. RECCHIA: Thanks a lot.

15 COMM. MILLER: So we have now gone past
16 9 o'clock. And I do want to make sure
17 people can leave more or less on time since
18 we tried to start more or less on time.

19 And by the way Deb Baslow from BGS,
20 Buildings and General Services, came in a
21 little late. She is our State Energy Plan
22 guru.

23 MR. RECCHIA: And realtor.

24 COMM. MILLER: And lately realtor. Post
25 Irene. Are there other folks who haven't

1 had a chance to speak and would like to
2 before we break?

3 MS. ASERMILY: Maybe it's been addressed
4 because I had to leave a meeting, but did
5 you address natural gas? Then I won't cover
6 it again.

7 COMM. MILLER: Do you want to give your
8 name and just a general comment? That's
9 fine if you do.

10 MS. ASERMILY: Laura Asermily.
11 A-S-E-R-M-I-L-Y. And I just want to express
12 concern about the regulation of safe natural
13 gas extraction. And if you're looking at a
14 6 billion dollar investment in something
15 that will peak also as a resource
16 eventually, is that really where we want to
17 be spending our money?

18 COMM. MILLER: I appreciate it. Did you
19 see -- were you here for the presentation
20 itself? Because I definitely recognize
21 personally and the plan recognizes the
22 trade-offs. And you know, fossil fuels are
23 fossil fuels, but they are not all equal in
24 all respects. And one of the ideas behind
25 giving more Vermonters the choice of natural

1 gas is in order to bring the infrastructure
2 further and have something besides home
3 heating oils and other fossil based fuels to
4 use while we develop and grow renewable
5 sources of energy.

6 So I definitely understand the tradeoff
7 and appreciate the comment as well as the
8 comment to make sure that we keep the eye on
9 the environmental ball. I know ANR feels
10 the same.

11 MS. ASERMILY: I'm concerned more about
12 what it eventually hooks in with the south
13 of us and what happens there.

14 COMM. MILLER: Right.

15 MR. RECCHIA: Right.

16 COMM. MILLER: Thank you. Others who
17 are here who haven't had a chance to speak
18 and would like to? Yeah.

19 MR. LEHMAN: Hi. My name is Kevin
20 Lehman. I'm an energy planner for the
21 Addison County Regional Planning Commission.
22 L-E-H-M-A-N. Kevin.

23 I just had a question about in the plan
24 how are you hoping to address the issue of
25 -- it alluded to the gentleman from Shoreham

1 as far as getting the word out to folks
2 around the state and raising the awareness
3 around energy, not just awareness, but
4 motivating folks to take action, and what
5 sorts of resources will be available from
6 the state to work on that initiative. So
7 that's one piece.

8 The second piece is I'm hopeful about
9 the PACE program. So I think financing is a
10 hurdle for a lot of people. But the recent
11 study that was commissioned by the High
12 Meadows fund, I assume you're familiar with
13 that? That talked a lot about lack of
14 demand. So how are we going to deal with
15 demand, especially around efficiency.

16 COMM. MILLER: Both of those questions
17 have to do with outreach education
18 essentially. It was in the High Meadows
19 report recognized that funding is only part
20 of the issue. Many people aren't taking
21 advantage of efficiency programs because
22 they don't know about them or don't
23 understand how to take advantage of them
24 because they are more complicated, and it's
25 not just -- I mean, you know, there are very

1 smart people in Vermont who just don't have
2 the time, the extra time that it takes to
3 then look into the efficiency programs that
4 they might have for their homes because they
5 are complicated. I mean, you know, I fall
6 victim to that. I'm sure others of us in
7 this room have as well.

8 So figuring out the outreach and
9 educating is important. And we recognize
10 that. In terms of how to integrate it with
11 the RPCs and the town energy committees, I
12 am open and will remain open to all ideas.
13 We at the cabinet level in state government
14 have talked about rolling out this energy
15 plan as it becomes finalized this fall and
16 bringing it to Vermonters.

17 I think the idea earlier of the video is
18 a great one. Having the Governor do PSAs is
19 another idea, but that's not going to answer
20 the question. It has to be also addressed
21 in our schools. We have to create an easier
22 way for schools to bring energy programs to
23 the kids, through VEEP, for example, which
24 already does some of that work. The climate
25 cabinet and the bully pulpit that it can use

1 across the agencies and departments is
2 another part of the answer. But we
3 recognize an outreach in education has to be
4 a part of this or else we are not going to
5 get the traction that we want. And I think
6 Gina has a comment.

7 MS. CAMPOLI: Like so much of this,
8 there is no silver bullet with education.
9 There is the whole kind of kid in public
10 school aspect to it, and then there is
11 something as simple as getting people to
12 understand there is a bus that runs between
13 here and Burlington and you should try it
14 sometime. So it's the full range of getting
15 people better informed as to what their
16 choices are to save energy particularly, and
17 also renewable fronts.

18 COMM. MILLER: One thing the plan
19 discusses is better use of the Renewable
20 Energy Atlas, which hopefully those in the
21 room you're familiar with them because many
22 of you sound as if you're deep into energy
23 issues, but if you're not, check it out. I
24 think that bringing that to a more
25 accessible place for Vermonters if you've

1 looked at that recently, it has a lot of
2 data. But it could have even more frankly.
3 And it could be more widely used, and I
4 think that that's something that we should
5 promote. And we have talked with the
6 Vermont Sustainable Jobs Fund about that and
7 ways to accomplish that. So --

8 MR. GROSS: Just wanted to indicate I
9 think with regards to inciting people to
10 actually show up and get involved in energy
11 efficiency, the only way you're going to do
12 that is if you award them through the
13 property taxes. Because every year they
14 will be looking at a property tax rate that
15 was higher if they didn't get their house
16 more efficient. That's how to crack that
17 nut. That might actually get people's
18 attention. Education has got a motive they
19 get a reward for.

20 MR. RECCHIA: There are two aspects of
21 that I think we are paying attention to. If
22 it costs more to do this, the transfer tax,
23 that's a percent -- it's based on
24 construction costs. We have to subtract
25 out, you know, the energy components of

1 that, the energy efficiency investments
2 somehow, so that you're not getting
3 penalized. Somebody who builds, you know,
4 at the low end of the numbers that you were
5 talking about because they are trying to get
6 the low square footage and not be rewarded
7 at the lower tax or the person who invests
8 in, you know, same square footage house but
9 one that has good insulation, good design,
10 and that cost more. That cost should be
11 credited somehow. We have got to figure out
12 how to do that.

13 COMM. MILLER: I know there are probably
14 some of you here who want to get home. But
15 yeah.

16 MR. BOIVIN: I just want to address the
17 use of the property tax. First off, it's
18 complicated enough. And to layer that in on
19 top of your education is going to be a lot
20 of confusion and a lot of stuff.

21 The other thing is that's going to be a
22 cost shift from those people that can afford
23 it to those that can't. You're going to be
24 punishing those that already can't pay.
25 Those people are probably capped by their

1 income level. So that means the state is
2 going to be paying that tax on the back,
3 which means other property owners around the
4 state are going to be paying that. That's
5 going to be a transfer.

6 So you're making a very complicated
7 thing that's going to shift the burden on to
8 those that are least able to pay it. I
9 would very strongly advise against use of a
10 property tax for that purpose.

11 COMM. MILLER: Thank you all very much.
12 If there is any other additional comments,
13 Tom or anybody else, I can stay afterwards,
14 but I very much appreciate you all coming
15 and spending this much time with us and
16 giving us your comments. Thank you.

17 (Whereupon, the proceeding was
18 adjourned at 9:13 p.m.)
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C E R T I F I C A T E

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2
3 I, Kim U. Sears, do hereby certify that I
4 recorded by stenographic means the public hearing re:
5 Draft Vermont Energy Plan, at the Middlebury High School,
6 73 Charles Avenue, Middlebury, Vermont, on September 27,
7 2011, beginning at 7 p.m.

8 I further certify that the foregoing
9 testimony was taken by me stenographically and thereafter
10 reduced to typewriting and the foregoing 121 pages are a
11 transcript of the stenograph notes taken by me of the
12 evidence and the proceedings to the best of my ability.

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

16 Dated at Williston, Vermont, this 2d day of
17 October, 2011.

18 _____
19 Kim U. Sears, RPR
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