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

PRESENT

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SPEAKERS

Bill Dunnington 40
Patrick Flood 42
Natalie Agostofilion 45
Jennifer Chiodo 49
Chris Neme 53
Will Rapp 56
Paul Boivin 60
Steve Crowley 62
Joe Solomon 62
Ben Ross 66
Joan Knight 71
Mark Boivin 71
David Porteous 72
Kay Appleton 75
Betty Hardy 76
Brad Ferland 88
Richard Faesy 103
COMMISSIONER MILLER: Good evening everybody. We're going to go ahead and get started to reward all of you came out on time on a Monday evening. I really appreciate it.

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

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

Chris Recchia, Deputy Secretary of our Agency of Natural Resources is here. Thank you, Chris. And Gina Campoli from VTrans, as well as Costas --
MR. PAPPAS: Pappas.

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

After my presentation and other folks have had a chance just to speak for a few minutes about their part in the plan, I would like to give all of you a chance to speak and that's really the main purpose of tonight, and given the amount of folks who are here tonight I think what we'll do is let people have a chance to say what it is they would like to comment on in the plan. If you have questions I would be happy to take those, but I'll probably hold them until everybody has had a
chance to at least go through and express their opinions on the plan so we make sure that gets done.

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

We do a Comprehensive Energy Plan in Vermont because we need a way to look at all sectors of energy usage in terms of the supply, cost, environmental effects, and our plan for the future, and the Comprehensive Energy Plan importantly covers all sectors of energy usage. I've gotten quite a few jokes and ribbings about the size of the draft plan. It does -- it is comprehensive. Transportation, land use, electricity, as well as heating all are covered in the plan in some detail, and it's meant to form recommendations for further action.
It is a planning document. It is by definition a set of recommendations that then will require further work, and when we started this planning process back in February after Governor Shumlin asked our Department to head the effort, we said we view this, especially given the time period in which we wished to come up with the draft plan, as the beginning of the process, and really once this draft plan is finalized and out, the next steps will be the critical steps for the state. That is how are certain aspects of the plan to be implemented by others, and it's not just the Legislature, although certainly the Legislature is an important part, and I want to thank Representative Jerman for being here tonight. Tim, thank you for being here. Tim is on the Natural Resources Committee at the House. So it's not just legislative action. It's also private citizen action, business action, utility action, and then of course different parts of the Executive Branch of state government.

The Legislature asks for the Comprehensive Energy Plan to be created so
that we have a plan to meet our energy services need in a manner that's adequate, reliable, secure, sustainable, takes affordability into account, the state's economic vitality, and ensures that we use our energy resources efficiently and in an environmentally sound way. That's just a snippet from the statute that the Legislature gives us. It tells you the key things we look at as we draft the Comprehensive Energy Plan.

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

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

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

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

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

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

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

So renewable energy usage. Generally speaking renewable energy helps the greenhouse gas emissions picture. By definition
renewable sources are those that stay sustainable for future generations and most, but not all, have a greenhouse gas profile that is better than traditional fuel sources.

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

On the other side of our energy use, transportation and heating, we're only five percent renewable right now. So there's lots of white space when it comes to transportation and heating. Both of those are heavily dependent on fossil fuels and there's been very little renewable penetration. It's
pretty much in the biomass heating in our schools that five percent represents. So in total, if you due all of that math, we're presently 23 percent renewable sources for our total energy use in the state.

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

On the right we've adjusted that for inflation so that you can see what's happening with our energy costs on an inflation adjusted basis, and what you see is that although electricity is the absolute highest priced source, it has actually not quite kept pace with inflation. So that in adjusted dollar terms we're paying slightly less now for our electricity than we used to. That's not true of the other sources of energy, particularly
if you look at the green and red lines at the LPG and gasoline. They are both rising higher than the rate of inflation so it's costing us more money now than it did in the past.

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

On electric future so what we found in terms of energy savings first is that we've been saving an average of two percent per year in the amount of energy we would otherwise be using because of our efficiency programs. The cost saved, in other words, if you were to try to purchase that two percent of energy on the
market as it were, we're only spending about four cents a kilowatthour on our efficiency programs, and for those of you who are in the energy field you know that's a very good price compared to what sources on the market would be for electricity.

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

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

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

Okay. And in terms of efficiency in creating the draft plan, while we noted that there's a mix of programs that are available right now to help make our homes more efficient both from an electric point of view as well as a home heating point of view, many people commented that they felt the current programs don't provide an easy path for Vermonters to access them. In other words, it's just a way of saying they can be hard for Vermonters to actually get involved in the
programs, get the efficiency measures in place, and that includes the financing aspects, getting the energy audit, figuring out how to pay for it.

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

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

MR. RECCHIA: It's on the record.

COMMISSIONER MILLER: There's no way I
can get around it. The VTrans portion of the plan is fantastic. So in terms of both its organization and its very specific metrics, and the VTrans staff worked very hard on that section of the plan. So thank you.

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

It's also, by the way, a big expense for business, and we heard in this planning process, as much as we had often heard in the past as the Department business concerns about electric charges, we in this process heard business concerns about transportation costs and what can we do long term to help businesses in their transportation spending. Driving is, as you noticed from the earlier
chart, also our biggest contributor to greenhouse gases. So it's a sector of energy that deserves some further attention.

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

Transportation and land use. I mentioned that one of the reasons we see transportation costs rising is because we're driving more. That is inextricably tied to our land use choices, and so this data shows what we all know in the room here, Vermont is
less dense in population than the rest of the
United States. That's not a surprise.

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

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

This profile is not just a community, a
downtown community where more connectedness
can happen between people. It's also a place
where energy usage can be less because people
live closer to their services and their work.
That's going to have a different energy
profile than this community or than a community that's on the outskirts of a downtown district. So we have to think about that when we look at our energy policy.

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

Why should we strive for this goal? I have had people say gee the goal seems like a big stretch. How can we possibly get there? I have had other folks say we can't get there soon enough, and so for either of those sides what I like to say is let's focus first on why we're doing it at all, and there are four key reasons. First, going for more renewable energy will help our economic security and
independence. It will help the cost of our fuel sources. It will also help our independence to the extent that we can keep that energy in state or closer located to Vermont than we currently have.

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

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

Finally, we believe that striving for
this goal will help increase community involvement and investment because this is a solution that has to be Vermont based and Vermonters have to help us achieve it.

So how will the goal be achieved?

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

MR. PAPPAS: Probably more. Yeah.

COMMISSIONER MILLER: Probably more. So
in the next decade we're going to see real transformation in the transportation sector. We can't possibly in that sector expect linear progress. We have to set the policies now, the infrastructure now, the charging stations now that will allow the progress over time, and really that same story is true to some extent in other sectors as well.

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

Okay. And in order to make sure we actually have a concerted effort to reach this goal, we realized in the planning process that any policy really needs four pieces behind it: Outreach and education, finance and funding strategies, innovation and expertise in the private sector, and then in the public sector regulatory policies and structures in support of it. In other words, if, for example, you
wanted to encourage electric vehicle infrastructure and all you did was address regulatory policies and structure without looking at the finance aspect, which for transportation is a big one given how our highways are presently funded with the gas tax, you would not have a successful policy.

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

Okay. So, again, dissatisfying by its brevity, but I do want to just highlight each energy sector briefly. Efficiency, transportation, thermal energy, electricity, and land use.

First efficiency. Our highlighted recommendations include that given the mix of
programs that currently exist and the often
heard comment that the programs lack the
accessibility to Vermonters that would help them succeed, we ask that a whole building road map for efficiency be created by the end of 2012 focusing on consumer delivery, funding and finance mechanisms, including PACE which was just recently improved by the Legislature, something known as on-utility-bill payment, which I would be happy to discuss later if anyone would like to, and then if there is a gap, look at public financing tied to the fuel source, but identify the gap first.

Also in efficiency we recommend that we continue the steady progress that we've seen. We actually would like to see that progress improve towards three percent. You might remember that we've been achieving two percent efficiency in recent years. Some have said why just three percent? Why not ten percent? We need the efficiency. And the answer in short is because our programs need to be able to support it, and the public dollars that we have in efficiency we do believe strongly could yield this significant, you know,
one-third improvement, but we do not believe a
more robust path is appropriate given the
infrastructure we presently have.

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

Okay. Electricity. Highlights of
recommendations. I've already noted for
renewable electricity we do want to see not
just the existing progress, about 48 percent right now, maintained, but we also want to see more renewable sources in our electricity sector, and the Public Service Board has just issued today I believe its suggestions to the Legislature for a renewable portfolio standard.

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

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

We also suggest that the Public Service Board adopt a mediation process. Our civil courts have had a mediation process for some
time and our family courts have, but our PSB has not, and we believe in siting cases it would be good to have a mandatory process, developer funded, where folks come in and try to work their differences out ahead of time.

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

And then on finance and funding for electricity, the Clean Energy Development Fund Board was reconstituted this last July. They are right now engaging in a strategic planning process and plan to complete that within a year, and as I mentioned before we recommend in the plan in the interim working on utility on-bill financing so that folks have another avenue for putting efficiency measures and renewable energy projects in place, a method that they already engage in, which is paying their utility company, and also leveraging the utility company for that financing.
Okay. Thermal energy. Again, you saw before we plan to put a program in place to improve the efficiency programs that we currently have to make sure they are easier to use and more integrated than they are now. We think a key -- a key thing for Vermont to do to move ourselves toward 90 percent renewable is to increase our use of biomass and biofuels particularly for heating.

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

And then, finally, increased natural gas access, and folks have asked if you're going to such a large renewable energy goal why are you suggesting an increase in access to natural gas, and my answer in short is consumer choice. Right now we have a natural
gas infrastructure in Franklin County and Chittenden County. That's it. Vermont has less natural gas infrastructure than many other states, including many of our neighboring states, and as a result we have many Vermonters who do not currently have that choice for their home heating, and I should say businesses as well.

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

We have heard from Vermonters the concerns about the extraction of natural gas and the environmental issues that can obtain there. So we're very aware of those trade-offs. We think it's important for Vermont to advocate for proper extraction
techniques, but we do not believe that Vermont should limit itself from this as a choice in our thermal -- for our home heating.

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

Transportation. Transportation, as I've already said, is our largest cost. Actually I may have not have said this. We spend about a billion dollars a year on transportation which is nearly half of our total energy cost. It's also our greatest use of fossil fuels and our highest contributor to greenhouse gases. So key to setting this 90 percent renewable is the ability to transition our transportation to renewable electricity. That's key if we're going to hit this goal. That's going to take
a lot of policy changes in the coming decades. Financing, again because our highways are presently gas tax funded, vehicle charging infrastructure, the technology and cost needs -- the technology needs to improve so the costs come down for Vermon ters over time.

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

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

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

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

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

Finally, land use. As I mentioned before when I showed you the pictures of different communities, generally our land use
programs we think of as programs that we help preserve our character, character of Vermont and our landscape, and that's true. They do conserve our natural and historic resources, and support development in downtown districts.

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

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

And then coordinating the state incentives for those downtown districts so
that we don't have a waste water or a transportation goal that's misaligned with our growth goals, and they have a specific metric for this year. They are going to have training programs for both complete streets and our transit oriented design programs. They plan to hold three workshops this coming year to kick this process off.

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

We also have a number of strategies in
the draft plan centered around our farms so that our farmers can participate both in producing energy that they can use which helps lower their costs, as well as producing energy for the rest of us, giving them another source of income.

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

So we're having a public hearing tonight. We would love to receive written comments next week. We plan to then give the plan to Governor Shumlin for his review, review any feedback he may have, and send it out for final printing in November so it's ready well ahead of the Legislature coming back in, in January, and the Governor has made clear that given the intersection of all types
of energy usage he wants to see the Climate
Cabinet charged with oversight of this plan
from an Executive Branch point of view. The
Department deals with electricity and certain
aspects of energy usage, but really it's the
Climate Cabinet that contains all of the
members of state government that touch the
plan.

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

Then review, revise, and repeat.
Governor Shumlin has been clear that he saw it
as a shortcoming of state government that no
comprehensive energy plan had been put in
place for more than a decade. We're committed
to not have that happen, and so we're
suggesting that there be annual reviews under the Climate Cabinet with three-year revision plans for our goals rather than the current system which is a little bit longer time frame than that.

So thank you very much for coming.

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

MR. RECCHIA: Thanks, Liz.

COMMISSIONER MILLER: Great. Thank you.

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

And I think the other thing I wanted to just mention is I think this plan is very
visionary. The 90 percent goal by 2050 is more aggressive than any I have heard of in the region or the country. That said, we live in very challenging times, and I think that that makes it even more important for our energy security and costs that we succeed in this, but it makes it harder to get there. We have -- we're going to have to think very creatively on how to leverage the billion, two billion dollars that go out of this state each year for energy, figure out how to leverage those in-state and make them work for Vermonters instead of just contributing to outside economies.

So thank you very much for your leadership, Liz.

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

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

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

So you'll see that as a key part, and then the other part is the technology piece, and the technology that powers our vehicles and making sure that's as efficient as it
possibly can be. Again, partnership activity. So I guess I'll hand it off to Deb and I look forward to your questions and comments.

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

MS. LAUNDER: Okay. So we're going to start the public comment part of tonight and I'll call everyone's name one by one. If you could try to limit your comments to about three minutes where people who have signed up, that should give us enough time to maybe have an additional comment period and maybe some
questions as well, and I apologize in advance for any mispronunciation of anyone's name.

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

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

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

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

    MR. DUNNINGTON: Sure.

    COMMISSIONER MILLER: Thanks.

    MS. LAUNDER: Okay. Next is Patrick Flood.

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

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

    First of all, I must say I'm sure that
it is the most progressive, the best energy
plan that any state has ever created. There's
just no doubt about that. We're out in front
and I want to thank everybody because I happen
to know a little bit about how hard you all
worked to produce this plan, and it really is
amazing.
However, I'm also going to say that it's not enough and I think you're going to keep hearing that, and it's not because we don't appreciate what you're doing and it's not because we don't recognize the challenges that everybody faces, but we have such an incredible challenge in front of us in terms of reducing our carbon emissions and trying to preserve this planet the way we know it, and this summer and spring certainly taught us that we are not immune to the problems of global warming, and we have to really take it far more seriously than we have, and I think the State of Vermont can and should lead that fight. I think we're poised to do it, and I think with the leadership that we have both in the Administration and in the Legislature we can do that. We can set higher goals.

Having said that, there are a couple of specific things I wanted to reference. Actually I haven't finished reading the whole plan so I'll see you Thursday in Danville and give you a few more comments when I finish it, but there are a couple things that I think are really more achievable targets we should set,
and one is in the area of thermal efficiency. As you know, some of you know, I had some experience with the weatherization program and that whole challenge, and if there's one area where it's not controversial, nobody fights about weatherization. It's not like windmills. It's very achievable. We know how to do it. It creates jobs in Vermont. All that money stays in Vermont.

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

The other thing I would like to emphasize, and you mentioned it a couple of times and I think it's extremely important, is the outreach and education part of this plan. I would encourage you to take it a step further beyond just educating people about the options and about how to implement them. I think we need to have as part of this plan a
broaden public education about what the
challenge really is out there and how we're
all going to have to pitch in to make a
difference and get it done. So when that's
not typically part of any energy plan, at
least not that I have heard of, I think that
should be one.

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

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

MS. AGOSTOFILION: Sure. My name is
Natalie A-G-O-S-T-O-F-I-L-I-O-N. I wanted to
start by offering that sort of symbolic thank
you to the folks who worked on this plan and
we never got a chance to clap. So thank you.
(Applause.)

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

I also work with an organization that
does capacity building for sustainable
development. I work with practitioners and
local government, towns and cities and
counties across the US on practicing
sustainability in cities and counties and
municipalities, and so I have a bit of a
professional experience in terms of
understanding the challenges associated with
these things. So I come to you wearing the
hat of both an organizer and activist and
somebody who understands the challenges and
the amount of difficulties, the hurdles you have to leap through.

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

I also want to offer that there doesn't seem to be a clear enough sort of implementation matrix. Sort of what I would love to see is in the back of the plan and what something that folks that do climate action planning in cities across the country, literally a chart when short term, mid term, long term, who is responsible for it and regular updating of that information. So that's directly tied back to that monitoring
and evaluation, picking indicators, picking metrics that are really going to show progress to your constituency.

I wanted to point out that, obviously you know this, but the -- of the goals that you have I think of, in particular the goal to triple the park and ride spaces, and Lake Richmond, as those of you who ride the bus affectionately call it, just sort of making sure the plan takes into account the expected impacts of climate change in the state, in particular, flooding, and I wanted to suggest that climate justice and justice associated with this be a continual part of the plan so that as you consider, and maybe this should be more directed to the Governor as an audience, but the Climate Cabinet include the representation of marginalized voices, the very poor, the low educated, black and brown people across the state. Some suggestions that I have for that would be the Vermont Worker Center, and alliance with that has been growing between Vermont Sierra Club, which is also partnering very closely with Abenakis and 350 Vermont.
I want to close by saying that please don't be afraid to be bold. Literally boldness is a factor of pride for us. Vermont is a national leadership and I think that people are really looking to us. We're needed across the country. Our boldness is needed, and we support you. Frankly, we are going to keep pushing you and we're going to keep holding you to your promises, but we're there for you, and we want to see this work, and you'll see that through the personal commitments of the number of us who don't even own vehicles, which makes it particularly difficult to be involved in things like this. But in any case just know there's a strong contingent of people behind you and the movement building continues. Thank you.

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

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

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

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

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

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

So I think trying to figure out how we can help businesses to capitalize on the energy efficiency opportunities that exist for them without undermining their ability to invest in their core business, which is making a product or delivering a service, is really important as we build that road map.
And then one area that I would like to see is there is actually a national shortage of engineers, and so running a small engineering company it's really hard for me to find qualified people. We have had a job opening for two months. We have had -- and we're advertising nationally. We have had like 12 applicants.

So I think one area that we need to invest in more is actually engineering education and the skill sets that we need to actually make this happen, particularly in the commercial sector because the changes we need to make in the built infrastructure are actually quite significant and the investments are quite large. To go from systems that were conceptualized in the 1970's when energy was pretty cheap to the kinds of systems that will actually enable the buildings to use significantly less energy it's completely doable, but we don't actually have the skill sets in the quantity we need them, and then we have to come up with mechanisms that can allow businesses to participate. So great plan. Thank you.
MS. LAUNDER: If anyone else thought that was a sign-in sheet, you can pass when I call your name. So the next person is Chris NEME N-E-M-E.

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

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

I think the goals you've laid out as part of that vision, the long term goals are spot on. I know that there are likely to be some elements of our community that may express some concerns about the cost of
getting there, but I think sometimes those
concerns may miss the costs of not going
there, number one; and, number two, I know
from -- we do -- we have clients in about 10
or 12 different states and provinces, as well
as a couple different countries in Europe, and
so I've seen some studies, one in Europe
called road map 2050, which looked at a very
similar kind of question from a -- purely from
a climate change perspective and tried to
analyze what the continent could do to, on the
least cost way, to meet the climate challenge
that they face, and did a very detailed
analysis and actually concluded that if you
did all the right things, including a -- to
echo Jen's point, a massive investment in
energy efficiency upfront, you can actually
get there at a lower cost than on a business
as usual scenario. The challenge is being
willing to take the political risk to raise
the money and make the investments that you
need to make in order to get to that least
cost path.

So, again, a terrific start. I think if
I had concern to express about what I have
seen in the plan thus far, and I haven't read it cover to cover myself, it would be that there's not enough concreteness to the recommendations. There's too many recommendations that start consider this, investigate that, and while I appreciate that some of that is probably necessary, I think we could probably get bolder to use the term that was used earlier; and just to pick on one particular one as an example, on the thermal efficiency of homes I don't think we have to do a gap analysis to see whether additional funding is necessary.

I think -- I spent about a year on a project I finished several -- about six months ago looking at the leading home retrofit programs across the United States, Canada, and Europe, and came to the definitive conclusion that while we need and can benefit from more attractive financing programs like PACE and on-bill financing and whatever other interesting mechanisms they have going on in Germany and other places right now, the evidence is absolutely compelling that that -- that by itself or even coupled with an
one-stop shop and various other things is not going to be enough. We need some sort of additional funding mechanism to complement the financing. We don't need a gap analysis. I think we've done the gap analysis. The various leading states and jurisdictions around the world have already done that.

So in that particular example, and probably in several others where I would be happy to talk with you about offline, I would encourage being a little bit bolder or actually encourage being a lot bolder in the recommendations, but again a great start.

Thanks very much.

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

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

First of all, I got here 31 years ago in Vermont and we had a state planning office then, and I always thought that was a smart thing to do because it was really developing a strategic point of view about our economic future and thinking about that. So what you
really have here is the basis, thank God, of an economic development plan that's going to have us potentially be competitive long term. So -- but related to that is I don't know that you have a strong enough point of view about this is really the underpinnings of a strong new economy for Vermont, and implementing this is going to give you competitive advantage long term.

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

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

MR. RECCHIA: Ish.

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

COMMISSIONER MILLER: Yeah, again, I don't want to take all the questions now, but
the quick answer is there's about 12 percent
local hydro, there's about 6 percent local
biomass, in-state biomass. There is -- solar
is less than a percent right now, but with
permitted projects will grow substantially.
Wind is approximately two-tenths of a percent
now, but will be about 6 percent if everything
actually gets built that's currently
permitted. So if you add all that up, it's
20-ish percent.

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

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

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

My final conversation or point would be I'm glad the holstein was up there. I have been involved over time in the evolution of the food system in Vermont. We have a farm to plate initiative which is statewide food system planning. I don't see -- I don't see a clear and obvious link to the energy system planning, but guess what? If we can solve food and energy leakage, we have got a much stronger economy, and my proposal is that there's opportunities we haven't fully explored here to link the health of a working landscape as it relates to the food system with the health of the working landscape as it relates to the energy system. Not only can farms become generators in a variety of methodologies of renewable energy, but I am quite confident -- I mean 350.org is now beginning to fully embrace the idea of carbon sequestration as a strategy, not only emissions reduction, but how do we take the excess emissions in the atmosphere and put them to productive use.
Vermont already is the leader in doing that with forests, farms, organic farming. This use of carbon to creating a more fertile soil and a more healthy forest is a powerful idea that I would like to see more embedded in the greenhouse gas emissions climate change part of this program, and so that economic -- the big economic system that we are trying to understand how to move into the future in a positive way, if we can take the energy system, link it to the food system, we've got two really strong building blocks there. Thank you.

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

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

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

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

The other thing is that we have to take and use our resources wisely as was mentioned earlier. Whenever I go in and we do an energy update for a client we actually -- one of the things we stress is even though our product is less money to heat let's not be wasteful about it because even then we still may not have enough to go around, but if we engage Vermont's farmers, we would only have to increase our corn acreage by 20 to 30 percent to heat most of our homes in the State of Vermont; and, besides, if you go to any biofuel source for your diesel, then that is
going to mean corn as a crop rotation because you need a C4 type plant to break the disease cycle between beans or corn -- or I mean between soy beans, canola, sunflowers, or any other crop. So that's a necessary part of our energy rotation.

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

COMMISSIONER MILLER: Thank you.

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

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

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

MR. SOLOMON: It's all o's. One second.

So we've heard a lot of really good edits and
suggestions and ways to strengthen this thing.

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

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

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

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

How does the least carbon polluting
state in the nation take on climate change?
We're already number one. We're already
leading the country, right? How can we do it?
It can't just be with cutting carbon, right,
because with the carbon we create is less than
the smallest state. It's less than Rhode
Island. It can't just be with that
methodology. We got to send, you know --
cutting more carbon isn't going to quell the
rising storms. Is it going to damper the
rising temperatures? We got to send hope. We
got to shine the light. We got to be a beacon
that it's possible, and if we don't send that
hope out, if we don't send that light out,
right, we haven't done our justice to that
dedication. We haven't done justice to the
people of Vermont that are facing climate
change right now if we don't send out hope and
what is hope? A child understands hope. Hope
is 90 percent clean energy by mid century.

I can't pitch that to a kid, but I can
pitch this. I can pitch one hundred percent
clean energy. Just sustainable energy.
Natural gas is not sustainable. We should be
-- we should just acknowledge that. We should
act on that. You acknowledge it, but we need action on that one hundred percent safe, just clean renewable energy by all Vermonters, and like Governor Shumlin said, as fast as we can. Is that mid century? If Costa Rica can do it in a few years, can we do it at least by quarter century? 2025? 2050?

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

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

MR. RECCHIA: Thanks a lot.

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

MR. ROLLIS: Hello. I didn't sign up, but my name is Ben Rose. I live in Williston and I work as Northeast Regional Director for
the Wilderness Society, and let me offer the
standard caveats. I haven't read the whole
thing. Great job. I know a lot of people
have worked very hard and know a lot more
about everything on every page of this
document than I do. So with those caveats I
will offer a comment that fits inside three
minutes.

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

There are elements of the plan which
have the potential to become wedge issues in
the state and take us back into a less
amicable place. Those are primarily around siting issues, and when people have to weigh their desire for new energy against their love of a place or their love of an unfragmented forest, and I believe looking at the plan that this is not a plan about in-state generation of electricity. That is not what the nation needs is for Vermont to generate a lot of electricity. There's lots of electricity out there chasing customers in Hydro-Quebec, in hydrofracking natural gas coming at us very cheaply. There's going to be offshore wind coming at us.

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

Two -- I've touched on wind energy as something which would be potentially a pitfall for our focus. I think that the plan could
also be strengthened on biomass. Biomass is clearly a resource that we have. It's important and it's valuable in Vermont. There's lots of wood being grown in the state. We need to use it as efficiently as we can in the interest of the goals of this plan. In some places the plan is very good about using -- at setting efficiency standards for how we use biomass. In other places it says well electricity is okay too.

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

Thank you for an excellent piece of work, and I do -- one last thought which is that this dates a lot of us in this room, but we remember the solid waste planning of the
1980's. Vermont had a solid waste crisis and the state developed a solid waste plan with a hierarchy of priorities; reduce, reuse, recycle, process, dispose, and where some of the people working on that fell down is they started with dispose and they got wrapped around the axle of landfill siting, and in our parts of the state the public entities charged with implementing that hierarchy gave up on landfill siting early, said okay we'll set some standards and we'll get out of the landfill business and we'll let the private sector respond to clear government set market signals for how disposal will be done in a environmentally protected way.

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

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

COMMISSIONER MILLER: Thank you.

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

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

What I see is for large part you're following that -- those laws. My brother and I started selling corn because we noticed -- corn for heating because we noticed that corn was selling for two-thirds the cost of heating oil per million btu's, and what I would like to do is commend you on the idea of using one set unit so people could compare, and the Public Service Board has a site for fuel
comparisons per million btu which I feel is excellent, and that should be continued, and maybe you might want to consider putting an energy calculator added to that.

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

COMMISSIONER MILLER: Thank you.

MS. LAUNDER: Okay. Last call.

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

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

COMMISSIONER MILLER: For pickup?
MR. PAPPAS: Yeah. You know when the bus is coming. I don't use the system. I would use the system if it was a GPS system with it, especially in our climate. I think it could be really helpful.

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

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

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

And also I didn't hear anything about education of youth. I think you need to start with the youth of Vermont and get them engaged. I know when I was in sixth grade I
saw some program that had a movie and talked about metal recycling and how aluminum was a precious resource the United States didn't have. Came from bauxite, and like you had to strip mountains to get it out, and it took 11 times as much energy for mining than recycling.

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

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

COMMISSIONER MILLER: Thank you. There must be others? No more comments?
MR. P. BOIVIN: I would like to make a follow-up. The point that I would like to make is that we talk about education, but the problem that we have is we've got to do -- again as we said it before about coming back to a standard unit of measure, we got to make sure that the education we're doing is the right education and is putting the right information out to the right people at the right time. I'm not saying filter it, but I mean make sure that the education and double-check the information is accurate and correct before we disseminate it. Thank you. Paul Boivin.

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

I know that Local Motion in Burlington has specific recommendations and they have read the 300 page plan, which I haven't, and I know one of those is the park and rides, if they have bike links there so you can -- if
you don't have a car, you don't need to drive there to take the bus. That would be great. And I also just want to echo I think we should go for a hundred percent renewable. Thank you. Thank you too.

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

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

I really think the education part is so important and helping people who want to make their houses more energy efficient and -- but they just don't know where to go, and I'm thinking about like those numbers that you call 211 for this information or 411 for that, might there be a number to dial for -- for energy efficiency information, and I guess I also want to say I think Vermont can produce a lot of its own electricity without doing harm. I'm thinking of Germany and how they have one of the lowest solar potentials and yet they are the world leader in getting their...
energy from solar, and if they can do it, I don't see why we can't do it. Well I do know they get a little more support from the federal level perhaps than we do, but I still think with help we could put solar panels all over all our buildings and maybe even along our highways.

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

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

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

The bottom line on geothermal when we've investigated it is it's a scale and cost issue, and we very much would love to see, just like with other things on the
acceleration curve, we would love to see the scale go up as the cost comes down because we do think geothermal can play a role, and when you're talking about using heat pumps, for example, that's another reason why progress on renewable electricity will help us in the future because those pumps will require a little electric load, right, and so it's just another example as we look toward the future of why we should be looking at renewable electricity as well as renewable energy sources for heating. So there is something in the plan. I agree it's not as thoroughly completed as other sectors, and it's a scale and cost issue.

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

I also want to give a plug to the idea that just came up about a number. We don't have that specific recommendation or a plan for that specific idea, but we do have
something in Vermont that the Vermont Sustainable Jobs Fund has created that the plan discusses and would like to see used more, and that's the Vermont Renewable Energy Atlas. For those of you who haven't seen it I recommend it. It has a lot of great data already and it has the ability to expand its layers as they call it in web speak to create even more data sets in the future.

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

Implementation steps. Bill, I think, started off the comments. Others echoed it. I have certainly heard that comment. I understand it. I agree with it. What we are doing at the cabinet level right now is putting the recommendation matrix together so that with the final plan that can be presented, and Chris's point I understand the
concern about -- what was it -- study and
consider, and --

    MR. NEME: Investigate.

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

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

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

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

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

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

MR. RECCHIA: Yes. Thanks very much.

COMMISSIONER MILLER: Great.

MR. RECCHIA: Thanks, Liz, and you guys are just great and very inspirational. So thank you for coming, and while you were
talking about the elephant in the room I think a skunk came in the room over that side, but we'll go with the skunk for now.

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

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

MR. SOLOMON: Let's do it.

MR. RECCHIA: Okay. So the point is
that we've got the adaptation component and
we've got a whole forestry piece of that, that
I think serves as a nice link with the biomass
piece and the ag component, and that is our
forests need to be resilient as well.

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

So there's a bunch of different
complexities associated with this. What I
really want to say is that we recognize the
linkage between climate and the need to have
growing working forests. In Vermont 76
percent of lands are privately owned. We
better figure out a way to make those economically viable for the owners to maintain because ultimately we may have all different definitions of what's sustainability is, but we do know subdivision and development ultimately and reduction of our forest land is not sustainable. So we have to work toward that as well.

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

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

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

MR. RAAP: I wonder if we are prepared -- I haven't read the plan fully. I'm wondering what the standard offer -- the experience of the standard offer has been and
what the plan is, if there is one going forward, and is that going to be strategic so that we really are trying to attract the right kind of energy production or even energy efficiency kind of investments. Any input on that or thoughts on that?

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

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

The plan discusses the standard offer pilot or project, if you want to call it that, that has happened. It discusses that not many of those projects are yet actually in the
ground and generating yet. So there's still
time to go to figure out how that first 50
worked for the state, but the plan does
suggest that we move to a next generation
program trying to learn the lessons of the
project that we have had so far, and
specifically the Department thinks that we
should be looking at how we can create market
based mechanisms for pricing, and there's
different ways to do that.

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

We believe a reverse auction program
here could be appropriate as long as we
recognize some of the Vermont scale involved.
In other words, our projects are smaller here.
Developers will have a difficult time
targeting their project at a level that will
actually allow them to develop. We'll have to be sensitive to that.

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

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

What we've heard from the business community is not so much it's too high. Absolute terms is they want a process in place to ensure the price is fair and correct for
the market. In other words, let's find out what the right price is. Let's not just presume we know it, set it, and then have a run on the store to get the projects built.

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

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

MR. FERLAND: One question.

COMMISSIONER MILLER: Brad Ferland.

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

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

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

COMMISSIONER MILLER: Thank you. Brad
asked whether anywhere in the plan actual consumer rates are projected into the future essentially.

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

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

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

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

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

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

The difficult part from a planning point of view, and I'm just telling you the reality we're dealing with, renewable energy prices are presently, you know, depends on which resource you choose, let's just say here, and
because of the way natural gas prices are projected and the amount of natural gas electricity generation on the market it's down here, and so it creates a long term planning conundrum, and so the plan does discuss it, but probably not as specifically as you're suggesting, Brad.

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

You would also see the gap decreasing in the last few years, and one of the reasons for that is exactly this issue. Natural gas prices have gone down. The rest of the region is far more dependent upon natural gas for
electricity supply than we, and so we've seen a narrowing.

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

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

COMMISSIONER MILLER: That's one of those considers.

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

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

We received a number of comments in this process that the moratorium which presently applies only to wind on state lands but not to, for example, solar, there are solar installations on state lands, AOT has some
actually on some of your garages, that the moratorium was unfair. That really -- and just like with towers for cell phone service or wireless, that the issue should not be whether or not it's a priori allowed, whether it's ever allowed or not allowed, but it's appropriate in a given circumstances and goes through all the same review any other project would, and so to folks in the Department working on the plan that suggestion seemed reasonable, and that's why the consider is in there because cutting out just the wind, and again it's not changing the actual review process, it's allowing them to come to the table, seemed reasonable to us, but that might be one of those circumstances -- who was it who said do no harm. That might be one of those circumstances where, you know, obviously folks are going to have very strong opinions on whether they would ever want to see one of those projects come to the table. Chris.

MR. RECCHIA: Thanks, Liz. All I would say is that just like the Comprehensive Energy Plan needs to take a comprehensive look at all of our energy sources and uses, I think if I
were to take that lemon and make it into lemonade, which is how I think I would say it, let's look at where state resources can help get us from where we are now to where we want to be, and that would cover, you know, any renewable energy resource. Not to say that it would be approved because lord knows we have a bunch of different other values that we have our resources for, you know, wildlife, there's air, there's water, there's recreation, there's, you know, a bunch of different purposes that we have our forest resources for. For example, can renewable energy be part of the discussion? I think in a broad sense it should be, but I think it should be a comprehensive look, not just -- maybe it was like wind shouldn't have been singled out. Well now it shouldn't be kind of singlely put back in either, but we'll figure it out.

COMMISSIONER MILLER: We can make the recommendation more broad.

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

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

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

The broader question I think you have is how can folks actually engage with the Climate Cabinet, and we've met three times since the Executive Order came out, and it's one of the
discussions we're having. The climate
collaborative, which was a part of the
Governor's Commission on Climate Change, a few
years ago provided that forum, but some
considered the missing link was the
implementation, and so Governor Shumlin's
priority was to get folks who answered to him,
in other words, folks who would be
responsible, the buck would have to move on
and then stop and something would have to
actually get done. That was his priority. So
putting the Climate Cabinet in place was what
he did to do that.

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

MR. RECCHIA: Yes.

COMMISSIONER MILLER: Yes.

MR. P. BOIVIN: Considering the
conundrum with natural gas and impact it has
on your electricity prices and fuel prices and
such as that, and it is a reasonably priced
resource, the question that I got is when you
take a look at the carbon footprint of natural
gas it's not as pretty and as rosy as some people would be led to believe.

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

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

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

COMMISSIONER MILLER: Okay.

MR. P. BOIVIN: I realize it's going to impact impoverished people too and other things, but when you take a look at it I would much rather see something done in this nature because in the short term the fact is that let's go back to 1960's when we thought we had unlimited amount of oil. Well we're almost at that state where we think we've got x number of almost unlimited natural gas, tend to think
in that fashion. Well such is not the case. It's still a limited resource, and so that's why I'm looking at it in that fashion.  

COMMISSIONER MILLER: Okay. Thank you.  

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

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

COMMISSIONER MILLER: Yes. Will.  

MR. RAAP: Just how do you look at the
potential of, the reality of Smart Grid and understanding what the future might look like?

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

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

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

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

MR. PAPPAS: It just rings.

COMMISSIONER MILLER: Because four years ago a smart phone was more innovative cutting
edge than certainly it is today when many, many people have them.

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

In the future what we hope we will see with advanced meters and what the technology should allow is the same sort of application interface, if the customer wants it, that you have with a phone. If you want as a consumer to be an energy consumer and really manage your energy, you will be able to do that with the meters that are going to be put in place as applications are developed to monitor your home usage, for appliances that may have interface with your meter, but that's all in the future. That's not going to be an
We still think it's important, though, for Vermont to plan for that benefit, and so the proceedings that we're having right now at the Board are keeping those things in mind.

Rate design, what rates can we put into place that people will be able to benefit from, what consumer protections should go along with that. We're also looking at consumers choice for the meters themselves because we've heard from many Vermonters who would prefer not to have advanced meters in their homes. So we're allowing opt out.

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

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

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

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

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

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

COMMISSIONER MILLER: And the whole idea when we sat around the table back in, I don't know, February or March, Chris and I sat around a table with Chuck Ross and Lawrence
Miller and some others, and we all said how are we going to make this plan, which we're going to spend a lot of effort on, and a lot of you folks are going to spend a lot of effort on giving us comments, how are we going to make it actually do something, and that was the genesis for the idea of putting somebody besides the Department in charge of the implementation because we have amazing folks at the Department. We do great work, but we touch this much of the total energy usage when you look at transportation and the small footprint we have in heating.

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

The other thing I would say, I've only mentioned it briefly here tonight and at other meetings, I have had a chance to talk more
about it, the regional planning commissions and town energy committees I believe are going to be key. It's really the on-the-ground work in the communities that helps get the progress that gets us the acceleration that we need to see.

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

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

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

I'll give you just my personal kind of
practical long term answer. Help us. The biggest challenge when we sat around the table talking about the goal and whether the goal was realistic, whether it should be bolder, the biggest challenge was the sector or actually sectors -- the biggest challenges were the sectors of energy that are presently not very renewable and are less in Vermont's control than electricity, for example.

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

So the big challenge is not just stating the goal. It's getting there, and so the help I would ask is that you think about steps to get us there, especially in those sectors that
are less renewable now. Are we good? Kelly is telling me it's nine clock.

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

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

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

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

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

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

__________________________
JoAnn Q. Carson
Registered Merit Reporter
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