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PUBLIC SERVICE DEPARTMENT

DRAFT VERMONT ENERGY PLAN

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P R E S E N T

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S P E A K E R S

COMM. MILLER: Okay, folks. I'm going to go ahead and get started. And I'm going to apologize that we don't have an actual microphone system tonight, a PA system. We do have a number of microphones for press and for public access, but I'm going to have to speak up. So if you can't hear me, please do come forward. The tables move. They roll. We can do a little rearranging, if necessary.

I'm Elizabeth Miller, the Commissioner of the Department of Public Service. Not standing in front of the screen either. And this is the fifth public hearing we have had on the draft Comprehensive Energy Plan.

I really appreciate folks turning out tonight to discuss the plan. What we are going to do tonight is first I'll give an overview of the facts that we took into account in creating the draft and some sort of high level overview of the draft itself. Then I'm going to turn it over for public comment, which is what we are really here for, of course, tonight.

We have a court reporter taking down

everything said tonight for the record. So when you speak, if you could, and I'll try to remind you, but if you could let her know your first and last name and home town, that would be great. And we ask you to spell it, if necessary.

And given the amount of people here, I'm not exactly sure how many signed up to speak. But what we will do is we will go through the list of those who actually signed up. I'll ask you to be respectfully of length -- you know -- respectful length given the number of people we have here. I'm not going to actually time anything or anything like that. And if we get through everybody who wants to speak, then we can at the end have more of a conversation. I'll answer questions and that sort of thing.

But first I want to make sure that we at least have time for everybody to say what they would like to say about the draft. Okay. So that's just in terms of presentation.

First me, then all of you, and then hopefully, if we have time, a little bit

more of a conversation at the end of the evening. And before I get started on the presentation, I want to thank Gina Campoli for being here tonight. Gina is from VTrans, and was instrumental in drafting the transportation energy sections of the plan. Others from the state tonight? Chris Recchia, the Deputy Secretary of ANR E-mailed me on the way here saying he was sorry he got delayed and couldn't be here tonight. He hoped to come and has attended other hearings. ANR was also very instrumental in helping out with the plan as were other agencies and departments, so thank you again, Gina, for being here.

Okay. So let me give you a little overview. First of all, can you hear me okay in the back? Okay, great. Okay.

So this presentation is on our Web site. If you want to find it later it's at vtenergyplan.Vermont.Gov. But I'm going to just go ahead and give you a quick overview of the slides tonight.

We create a Comprehensive Energy Plan in the state because by statute the department

is charged with overseeing a process that looks at all usage, cost, supply and environmental effects for all areas of energy use, not just electricity, which is most usually associated with the Department of Public Service, but also transportation, energy, heating, land use which affects energy usage and, of course, efficiency which crosses over all areas of energy usage.

We are supposed to make the plan in order to give recommendations for other actions. In other words, it's a plan. And it requires implementation by others. The legislature, the private sector, the business community, our utilities, the planning document is just a starting point.

Next slide. The statute created by the legislature asks that the energy plan keep in mind reliability, security, the sustainability of our energy supply, that it's adequate, that it's affordable, and contributes to the economic vitality of our state. And that we use energy resources efficiently in order to ensure that we have

sufficient energy resources for our future.

So quickly I'm going to go through some facts we considered, then summary of our long range goal, why we believe the goal is important, how we believe it can be achieved, and then highlight by each energy sector some of the strategies.

One of the most often received comments is that it's a long document. I understand that. There are a number of things that by statute we are required to look at, and it's hard to discuss energy comprehensively without also being thorough in the document. So I understand that tonight will just be -- the presentation will just be a brief overview, and hopefully we can get into some more details as you comment.

So where are we now? Just to set the table for our discussion, we have about one third of our energy usage in transportation statewide, one third in our homes, and just over one third in our businesses. And depending upon where you're using the energy it's a different source. For example, in transportation, it's basically one hundred

percent fossil fuel, either gas or diesel, whereas in our homes we are using about 50 percent electricity. And about 50 percent heating fuel, whatever sort of heating fuel you're using in your home. And then in your businesses it's more like 2/3 electricity, one third heating fuel and process fuel. So that's just an overview of where we are.

Next slide. In terms of our usage over time this chart goes from 1970 through 2005. And it shows Vermont's energy usage by sector. And really I know the details are hard to see, especially in the back. What it tells you is that Vermonters have over time substantially and significantly increased our energy usage. And that really goes across sectors. The orange, for example, is transportation, the third bar down, the red is electricity. But really as you look you can see that most of the bars have gone up over time. And we are using much more energy now as a state than we did a couple generations ago.

Greenhouse gas emissions is considered in the plan. We are supposed to look at

environmentally sound and sustainable practices, and so we took into account greenhouse gas emission goals. Here's a picture of Vermont from 1990 to 2010 for total greenhouse gas emissions by sector, and what you'll see is that over time until about 2003, Vermont was using -- I'm sorry -- was emitting more greenhouse gases over time, and then in about 2003, 2004, we start to see a bit of a decline on this slope. And we have projected out, this is actually courtesy of ANR, this slide, we have projected out to 2028. And we have done that because there are two different legislative goals to keep in mind. One is for the -- for 2012 this coming year. And that would be represented by the yellow line and the steep drop that would be required to reach the 2012 goal.

The short version is we are not going to reach the legislated 2012 goal for greenhouse gas emission reductions. The other line, the orange line, is a slope toward the 2028 greenhouse gas emission reduction goals set by the legislature. And

as you can see, we are not quite on that slope in recent years, but we are also not terribly far off. We at least have, you know, you can project or you can see a path where we could get to that particular legislative goal by 2028. Just a snapshot of renewable energy.

This middle chart shows our total energy type in Vermont. We are 39 percent electricity usage, and 61 percent all other energy sources essentially transportation and heating fuel. On the electricity side, at the moment we are 48 percent renewable energy and that does include large hydro from Hydro-Quebec, as well as renewable energy projects by source where renewable energy credits are sold out of state. So that's about 48 percent.

On the transportation and heating sides it's a different story. We are 95 percent non renewable, 5 percent renewable, and that's mostly in the biofuels, biomass in our schools and institutions for heating. So thermal and transportation heavily dependent upon fossil fuel by comparison.

If you add up all the math shown on that slide what you would see is that in total our total state energy usage is right now 23 percent renewable source. 77 percent not.

Energy costs, again as mentioned, one of the things we need to look at is cost, and costs are addressed in the plan. This is a snapshot of the dollars that actually went out of pocket from 1990 through 2009 by fuel type. Electricity is the top line and is the most expensive source by unit type. The others are below, LPG, gasoline, et cetera. This is actual dollars out of pocket. This is inflation adjusted on the right side of the chart as you're looking at it. And what you can see when you look at it in inflation adjusted terms, is that electricity, while the highest per unit cost, has actually not quite kept pace with inflation, it's actually a little bit lower than inflation over time, whereas the other energy sources have gone up greater than the rate of inflation.

Just a few words about efficiency. We found in doing the study and looking at the

last several years that we have been saving -- go ahead and click through -- about two percent of our load growth per year due to our efficiency efforts. And that's good news. It means we are using less energy because of the efficiency efforts we have put into place on the electric side, but what we hadn't done as a state was measure the economic impact of those investments. So we did as a part of this draft plan go out and ask for an economic impact assessment of our efficiency programs.

There is many ways you could do it. What we did is we took a single year of investment approved by the PSB, you know, a known budget year, and projected what the economic impact would be of that investment. And what we found is that the average annual cost per kilowatthour saved is roughly four cents, which is just a big way of saying that if we went out and purchased that efficiency as an equivalent electricity resource it would cost us about 4 cents a kilowatthour. Which for those of you who follow electricity will know is a trivial

low cost compared to other resources.

On the economic impact side we found that one dollar of public spending creates about $4.6 of net present value to the state over the life of the efficiency measure. It also creates jobs and it reduces our regional charge on the electric bill. And again, for those of you who follow the details of electric bills, we have transmission charges associated with the regional market. The economic impact study found that we save about two cents a kilowatthour actually compared to our neighbors on our electric bill because of our efficiency measures in Vermont.

Thermal efficiency we spend far less public dollars than we do on the electric side, but we also measured the economic impact there and found additional job creation and additional leveraging of the dollars spent. It's not as great as on the electric side, the dollars aren't as great. So that's just a picture of the economic impact of efficiency.

In terms of what we heard in the

drafting process, there are as many of you know, a mix of programs for electric efficiency, for heating efficiency, you know, weatherization, et cetera. What we heard from Vermonters is that there is really not now an easy path to access all the programs to understand what to do to get the financing, after you get the energy audit, then what do you do. So we often heard that comment. And we also heard and then investigated and agree that we are behind on our goals.

The legislature has a goal of 80,000 homes improved 25 percent in their energy savings by 2020. And we are far behind that goal. We would have to significantly increase our pace if we were to hit that legislative goal by 2020. Transportation, and again Gina is here. Thank you very much.

I'm just going to go through a few facts, and Gina will be here to answer any questions we have on transportation tonight. 21 percent of national household expenses are transportation related, but in Vermont

it's greater than that. On average in Vermont it's the second largest expense of most Vermont households, meaning that in most Vermont households first you've got your housing costs, and next you have your transportation costs. Yeah, so many Vermonters spend more on transportation in total than they do on things like health care, education and food.

Driving is also, as you saw on the chart before, our single largest contributor to greenhouse gas emissions, and that makes sense because it's essentially one hundred percent petroleum based right now. Why is transportation such a high cost for Vermonters and also for our environment? This helps tell the story. In 1975 this shows the average vehicle miles traveled in a year for Vermonters as a whole. In 2009 you can see the slope. So over a couple of generations we have essentially doubled the amount of driving Vermonters do.

And you can also see that economic conditions do appear to change what Vermonters do with their driving. In 2005,

2006, you start to see a bit of a decline, and that does correspond with the rise in gas prices followed by the economic recession. So although there is a more recent trend to kind of drop and flatten that line over time, we are driving a lot more. Why does that matter? Well it intersects with land use. How we actually live and build our buildings in Vermont.

This is a chart that shows what's not going to surprise anybody here probably, and that is Vermont is less dense on a population basis than the rest of the United States. That's not a surprise. What's interesting I thought was that 30 percent of Vermonters live in one of our designated district -- downtown districts or growth centers, you know, located near our downtowns. So about a third of us live in a smaller, more clustered setting.

In the last census 2010, it shows that those 21 communities which house about a third of our people are growing slower than the rest of Vermont. So that's just a data point showing that Vermont is from a land

use point of view at risk of sprawl. Our outlying areas are growing faster than our downtowns, and that matters for our energy usage.

MR. ECKER-RACZ: What are you calling growth?

COMM. MILLER: Growth centers.

MR. ECKER-RACZ: You said growth.

COMM. MILLER: Population.

MR. ECKER-RACZ: Nicholas Ecker-Racz. I'll spell it for you later.

COMM. MILLER: I'm going to most -- I'm just going to try to get through this and take questions when we have time at the end. But thank you for the clarification.

Okay. So the reason why that matters is because there is data, this probably seems intuitive to many of you, but people do travel fewer miles, therefore use fewer transportation dollars and less energy, when they have greater accessibility to services, work, et cetera, from where they live. So density matters.

And the energy pattern for a downtown will be different than the energy pattern

for a suburb or an outlying growth area. So we address that in the plan by addressing both transportation and land use energy, not just thermal and electric.

Okay. So if you've previewed the plan, you know that our long-range goal is by mid century we can be nearly fossil fuel free in Vermont in all energy sectors. Specifically we are calling for 90 percent renewable energy by 2050. You might recall that right now we are at 23 percent renewable sources. By 2050 we are calling for 90 percent, so just from a graphic point of view, this was the pie I showed you before, it looks like that. In 2050 far more renewable energy.

And why do we think it's important to achieve this goal? The plan outlines four key benefits; economic security and independence; safeguarding our environment; that is helping the greenhouse gas emissions trend downward even further; driving innovation and jobs creation, keeping more of our energy choices local; and all of that in our view, helps increase community involvement and investment here in Vermont.

So the plan outlines those benefits.

How will the goal be achieved? This is the best graphic representation I could come up with, this is -- I take full responsibility for this chart. This is what's -- the red line is what's known as an acceleration curve, and I like to explain what we are looking for is the acceleration curve over time. We are not expecting or calling for in the plan this sort of linear straight line progress from now to 2050. And why is that? Some folks have said, you know, why 2050? That's so far out. We have also received the opposite comment frankly, how can you possibly get there by then. And to all, I say what this plan looks for is progress increasing over time. And that's particularly true when you look back at that pie chart where we are now on renewable sources and transportation and heating. This is not an overnight phenomenon. It's not even a straight line progression from here to 2050. In areas such as transportation right now we have three or four car manufacturers currently offering

passenger vehicles that are plug-in electric. They are expensive, they are not available here. It's going to take time for that sector of the market to grow, to penetrate Vermont, and to start to help us use renewable electricity sources, for example, to help power our vehicles.

So what do we need to do. We need to set goals and policies now to achieve this progress. We can't just assume it will happen. We have to help it happen by looking ahead and having a plan. So in the Comprehensive Energy Plan we look at policies through four different perspectives; outreach and education, finance and funding, innovation and expertise, and finally regulatory policies and structures.

And the reason I point this out is you can't just do one of these things and hope to make progress over time. If you simply changed a regulatory policy, and nobody knew about it, had access to financing for it, and the jobs and private sector didn't support it, it wouldn't go anywhere. So you

need to look at all four of these things in creating any policy so that you achieve the progress you're looking for over time.

Okay. Strategies by energy sector; efficiency transportation, thermal electricity and land use. First efficiency. The -- overall the plan asks that efficiency be the first thing to look at in any energy sector. For electric and thermal that is electricity in our home heating, we ask that we create by the end of 2012 what I've called a whole building road map. In other words, taking that comment that we have many programs, but they are hard to access, we need to look at that holistically and address consumer delivery, funding and finance mechanisms, including things like PACE which was just helped by the legislature last term.

We are also calling for investigation of what's known as on-bill utility financing so that folks have other ways to access financing for energy improvements in their home. And for electricity specifically, the department is asking for continued steady

but robust progress. You'll remember that we are at about two percent savings over the last several years. We are asking to increase that to three percent. It's not a huge increase, but it is an important increase. And we believe that's an appropriate increase given the programs that we presently have in place and the funding that we presently have. And because the economic case is so strong for electricity we recommend that continue.

On the thermal side we have some specific goals for -- to help our efficiency in our home heating. First, by 2020 we have a goal that new construction in Vermont for residential will be 60 percent Energy Star compared to what it is now which is 30 percent. So in other words, double our Energy Star rated homes by 2020. That helps encourage, helps get us toward -- a path toward what's known as net zero in our homes, between the renewable energy sources they have, the efficiency that they can have by 2030. And several folks and organizations in our planning process asked

us for an even more accelerated path to net zero. But in looking at where we are now, the programs we have in place, and how we can achieve it, we -- in our draft we suggest it's appropriate to put Vermont on a path toward that goal by 2030 with these interim steps built in. And we are going through the process right now.

You may have seen recently in the news a new version of the residential building energy standard has recently come out in Vermont. The commercial building energy standard is coming out soon. We are going through a compliance planning process right now. So we have specific things that are happening on this front that make us think we can achieve this goal.

Okay. Electricity. I've given you the big highlight which is on electricity, make sure to set policies that not just maintain the progress we currently have but also increase it over time. The Public Service Board has recently come out with a study mandated by the legislature for what's known as a Renewable Portfolio Standard looking at

a Renewable Portfolio Standard compared to our present SPEED program in Vermont. The Board has made some recommendations. The draft plan discusses the Board's process and suggests that there is an achievable and affordable path for Vermont to attain 75 percent total renewable electricity sources within the planning period by 2032.

We also suggest process improvements. We are, at the department, putting in place a renewable energy project manager that can work with stakeholders, with agencies and departments across state government as well as with developers so that there is someone who can answer questions of all those entities as a project moves forward.

We also suggest that the PSB adopt mediation so that communities and stakeholders have a process which does not presently exist in the PSB for sitting down around a table with a neutral and trying to resolve issues and siting cases. And then finally, we do think that especially with regard to the small projects, like the two megawatt solar projects that we have seen or

the wind turbine that's gone in at the ski resort just recently, that we should be able to look at the permitting that's occurred there and determine whether there is any further simplifications that should be done. We have now gone through a number of them. And so we have that experience to look back at.

On the finance and funding side, the Clean Energy Development Fund, a new board was put in place just this last July. And they are within the first year of being board members, creating a strategic plan for the CEDF to address how it will be funded in the long term. And as I mentioned before, we are investigating on-utility bill financing as another mechanism for Vermonters to access money for financing of energy projects at their home.

Okay. On the thermal side. First efficiency. We talked about that already looking at whole building efficiency. Second, increasing the use over time of biomass and biofuels. That was an often received comment that one way to move from

about five percent renewable in the transportation and heating sector towards a greater penetration is to make sure that we are using more biomass and biofuels in our homes for heating, that includes combined heat and power projects.

We also need to at the same time advocate for low sulphur and low carbon fuel standards, and we will continue to do that. And then finally increase access to natural gas. I often get the comment why increase access to natural gas if you're looking to head Vermont toward a much more renewable energy future. And so first a couple of facts. Natural gas right now is available only in Chittenden and Franklin County, you probably know that. It's about five percent of our total energy usage right now. So there is room to grow there as it were. And there are plans to bring natural gas infrastructure further south. Why do I think that's appropriate? I think it's appropriate because it provides Vermonters choice that many Vermonters don't currently have. We, as a state, are much more heavily

dependent on heating oil and propane than other states because we don't have the infrastructure that allows the choice of natural gas.

Trade-offs absolutely exist. Folks have brought up many times the environmental issues associated with extraction and concerns regarding the stability of supply. The natural gas right now is driving energy prices. It's driving them lower. And the truth is Vermonters, many Vermonters don't have access to that as a choice. So despite the trade-offs, we recommend that Vermont look strategically to increase its natural gas access for thermal, for heating specifically. And at the same time we can't just ignore the current economy and the current work force. Our local fuel dealers need to transition over the decades that we are talking about to become energy service providers so that they can deliver the biomass or do the energy efficiency improvements in your home, so that they have choices besides delivering heating oil which will become a lesser source in Vermont as we

go forward.

Okay. Finally, transportation and land use. On the transportation side I've already noted it's the largest cost. As a state we spend a billion dollars a year on transportation nearly all of which flows out of state, about 700 million of which flows out of state.

MS. CAMPOLI: That's just for gas -- that's just for fuel. That's a whole lot of other costs.

COMM. MILLER: Thank you. It's just for the fuel. It's the greatest use of fossil fuels and our highest contributor to greenhouse gases.

For transportation VTrans helped set some very specific goals. It's important to recognize that we won't get to a 90 percent renewable mid century unless transportation transforms. And there is many things that have to happen for that to occur. We have to address financing, and it's not just Vermont, it's all the states. Presently transportation is funded by the gas tax. So as you move away from fossil fuels, you have

to address that funding issue.

You have to address vehicle charging and infrastructure. We are already working on that regionally, but we need to start addressing in Vermont how we are going to set that up so that when Vermonters make the choice to change toward electric vehicles the infrastructure is here to support it.

And finally technology and costs, as I already mentioned, we have to see the curve. One of the folks at VTrans who helped Gina with the plan likes to show his phone which is four years old and looks from his point of view like a dinosaur. It doesn't E-mail, it doesn't access services that many of our phones now do. And that was just four years ago that he bought that one. So he likes to say vehicles will be like that in the coming decades, and the plan is based upon that.

The metric VTrans has used to think about the 90 percent renewable mid century goal is to set a goal of achieving 25 percent renewable in transportation by the end of the 20-year planning period. That's an ambitious lense for planning, but for

those of you who have listened to VPR in the last couple of weeks, you've heard stories just recently about choices the military is making for its transportation and for its base energy. And the choices the military is making is renewable. They have goals for their aviation and for their vehicle fleet to move toward renewable energy, and it's that sort of transformation that will allow the transformation to occur in Vermont and elsewhere also, but we can't just do that.

We have to also push for better fuel standards, greater access to commuter facilities and transportation options, and to try to reduce the vehicle miles Vermonters are traveling to help us reduce our energy costs and usage. VTrans has a great plan to, for the first time, measure our vehicle fleet fuel economy statewide, figure out what that is, because we don't know what that is; what that is, and to set a goal to either meet the national standard if it happens to be better than Vermont right now, or improve our own five percent, whichever is better by 2025. That's a very

specific goal. It will help us achieve the sort of progress we are talking about.

VTrans also has plans to triple park and ride spaces, and all of that is laid out in the plan, will help reduce single occupant commute trips by 20 percent in 20 years. That's a significant reduction in our energy usage and will help towards the goal that we have set.

Just want to give a quick plug to connectingcommuters.org, which is the Go Vermont site that VTrans has put up. It's a fantastic site. I recommend if you haven't gone to that site and checked it out, you should. It's not just bus schedules, it's walking, biking, car pooling, van pooling, et cetera. It's a great site.

Okay. Land use. So we usually think of our land use programs essentially the words on the page, just essentially say we usually think of land use as helping Vermont stay like Vermont. Keeping our downtowns strong, keeping our village cores, keeping the character of Vermont's built environment the way we think of it. But all of those things

also help our energy use. So the land use section of the plan which has been greatly helped by the Agency of Commerce and Community Development which took the lead, has plans to foster better coordination with regional planning commission and town energy committees. They right now are working to improve the designation programs for those 21 downtown and growth areas I talked about to make sure that the legislature can in the next census, so that we all actually get in the next census, can see increased density in those areas rather than lower density. And they are doing that by making sure that the state incentives and programs all align.

There are times when a transportation goal will be at odds with the downtown building goal or a waste water goal will not be in line with building more density in our downtowns. So they are looking at that right now so we can start aligning our planning better. They have specific plans as set forth in the draft to hold workshops on Complete Streets and transit-oriented design in 2012.

And so other highlighted actions in the plan, and again I'm interested in your comments primarily, but just to highlight them quickly. If we are really going to move toward 90 percent renewable by mid century, it can't just be about progress in the electricity sector. As I have said, we have to move in all areas. And one way we suggest doing that is to develop what's sometimes called a total energy standard so that you start measuring fuel and energy sources by the same metric, for example, a British thermal unit; figure out how much in Vermont we use, this is a representation taken from Energy Information Administration Data, and then set benchmarks so that 23 percent total renewable can go to 24, 25, 26, et cetera, over time, so that we have a way to measure that.

We also have a number of strategies in the draft centered on our farms, because farm energy programs will help not only produce energy on farms and therefore reduce our farmers' costs, but farms are also working landscapes and can contribute to

energy production for the rest of us as you've already seen with Cow Power. And finally there are strategies in the plan for State of Vermont energy leadership. I can tell you, especially post Irene, there has been very much on state government's mind as we relocate workers and look at our built environment, and so there are strategies in the plan for that.

We have also appended to the plan to make sure it's accessible to more Vermonters the State Agency Energy Plan which is done by our Department of Buildings and General Services. So where are we now? Obviously we are in the middle of our -- now fifth, we are at the end of our public hearing process. We do have written comment submission deadline of next week. We have been asked about extending that. I just today received a letter -- I actually have barely had a chance to review it and pass it on -- but certainly that should that be extended, we will make sure to get it out to the press immediately. And I certainly appreciate the comment.

Once we are finished with public comments, we will present the revised plan to Governor Shumlin, receive any feedback, and make sure that we have it out the door with final revisions and copy edited ready for the legislature in January. We are shooting for November 2011, but I'm committed to making sure it's available for the legislature when they come back because that's what they have asked.

Okay. Implementing the plan. The Governor has recognized what many of you probably also realize the department only has limited oversight of the areas the Comprehensive Energy Plan deals with. So the Governor has asked that rather than simply the department overseeing implementation from the administration's point of view, that the Climate Cabinet, which is an inter-agency and department body, take over oversight of the plan going forward and do that purposefully.

We are creating a recommendations matrix so that we can track the recommendations that are in the draft as it's finalized, and

then look at them periodically to see the progress over time. As I said, presenting it to the legislature in January 2011. As a part of that recommendations matrix, we will note possible legislative action for them so that they can consider it.

We are also as the department going to make sure we get out to the regional planning commissions and the town energy committees to discuss the final Comprehensive Energy Plan and how it can best be reviewed for local action. And then we are going to review, revise and repeat.

The last time we had a finalized Comprehensive Energy Plan in Vermont was 1998. We would like very much for that sort of gap in time not to occur again. We have asked that annual reviews take place under the Climate Cabinet, and we have suggested that the legislature increase the requirement for revisions to every three years rather than what it is now which is every five years and that has not actually occurred. We think that more frequent planning will be better for Vermont as a

whole. It will allow for more input and progress and nimbleness over time as the world changes. Because even in this planning process things have changed. You know, things move quickly in this area, and we need to be able to respond.

So thank you for coming. Thank you for listening to that presentation. I do now want to just for a few minutes ask, Gina, would you like to say anything?

MS. CAMPOLI: I think with all these people here, you covered it well. We should go right into comments.

COMM. MILLER: Great. We will go ahead and get the list for comments. We will run through those first, and then once we are through that, I'll ask if anyone else has comments. Because we don't have a formal mic here, and I apologize again for that, if you wouldn't mind, for the cameras' sake, coming forward, that would be appreciated, I think. So that we can all hear you and all be speaking up here.

MS. LAUNDER: Okay. The first person is Jim Ashley.

MR. ASHLEY: Welcome to Danville, everybody. I happen to live here. My primary interest is geothermal heating. And so therefore I have been going through the thermal section of the plan. It's a huge document. But let me touch on a number of things, and I'm not quite as thoroughly organized as I would like to be on those, but let me touch on a few of those.

On the plan itself, on page 177 you show a selected end use petroleum fuel consumption and forecast, and this continues off at a relatively flat, not a sharp level. I think it should be sharper than that, the reduction of the petroleum products, for a lot of reasons. I know the Governor has spoken to the desire to reduce petroleum products, and I believe that line ought to have a sharper decrease. I think geothermal can be a component of helping that happen, at least on the home heating side.

On your -- again your residential consumption chart, Exhibit 4-5 on page 178, similarly, I would decrease that more rapidly.

Looking ahead in your area, page 181, you talk about improvements in thermal efficiency. That's critical. But I think you also should be talking about fuel switching. A lot of people have oil, a petroleum product either as fuel oil or as propane. And there is huge opportunities with biomass and frankly with geo to do fuel switching. A lot of people are doing it already.

Improvements in thermal efficiency is critical and important, and in fact, even in my own industry, it's critical and important. Local resident is interested in going geothermal, it was clear that they needed more insulation in their basement, that that was one accessible area that was easy to do. By insulating the basement we can change the heating requirement from 81,000 BTU to 68,000 BTU which puts us into a whole different size piece of equipment, depth of well that we need, because that's an indirect geo system involving using a water well.

And so therefore, the investment cost

and the operating costs are reduced by doing that -- improvements in thermal efficiency, so we strongly approve of that.

Page 186 you talk about reduced fossil fuel consumption across all buildings, five percent per year, I mean half a percent per year, and then increase to 6 percent annually. I think it should be faster. And I think there are a number of ways that we can do that. Some of the funds that are available, some of the other opportunities, particularly with PACE. PACE is a huge opportunity to cut into that rapidly starting town meeting and next year. In the Property Assess Clean Energy district, PACE, I think it's very important that geo be listed, geothermal, be listed as one of the acceptable items. It hasn't been in the past. We are working with Efficiency Vermont people to make sure that that is on the list. It's on as heat pumps, but that would be normally circulation of heat within a building rather than obtaining heat from the ground or other source.

Now particularly down on page 226 you

actually list geothermal, a short section. Unfortunately a lot of it is inaccurate. And in one paragraph near the bottom the most efficient use of this technology is for air conditioning but also can be used for heating. Well if you're going to be doing a net zero house, for most of those net zero houses geothermal is the heating system. And some use others, but very frequently it's a geothermal system which can accelerate the effect of the solar panels that most of these people put on. Because for every one unit of energy from one of those solar panels fed in through, maybe given out to the grid and taken back through the grid through net metering, taken back by geothermal, you've got four units of heating energy. So you're multiplying the effect of this, and therefore, the value of that solar energy that you're gaining.

There are a number of other things that I wanted to touch on very quickly. One is I've taken a -- made a quick chart, if I can find it very quickly. First of all, is a paper that I would like to submit.

COMM. MILLER: We will give it to the court reporter, but let me take a quick look at it.

MR. ASHLEY: About reducing fossil fuel use in Maine, which is very comparable to us. It has a high fossil fuel use. And they talk about the economic impact, the number of jobs created, all the other things by reducing that.

And then another thing that I did very quickly was to -- is a chart that shows, I'll hold it up, this is a summary of Department of Public Service fuel price reports from 2003 to July of this year. And what it points out in the top line is your fluctuations in electrical, which you show -- which you pointed out earlier cost wise is actually decreased.

Now this is a chart of a million BTUs. So this is the fuel this is the heating chart piece. The reddish or pinkish one is propane, and you can see it spiked. The greenish one is oil, fuel oil. And again, you can see how it followed the same -- they are together, of course. Down here I've

added -- included pellets because that certainly is going to be one of the biomass, common biomass fuels that's going to be used. I happen to use cord wood, but most people are using -- that are getting into biomass are getting into pellets. And then the bottom two lines are geothermal which is obviously a parallel to the electrical, but because of the efficiency we are using geothermal efficiently, that that has a much, much lower cost, and therefore, a low cost impact on a homeowner and on the community. And obviously no loss to the -- lost my train of thought.

COMM. MILLER: That's okay.

MR. ASHLEY: Anyway very quickly I'll try and be quicker, we have a very low CO2 emission, and particularly if it's used solar or hydro as the source, it can approach zero. And Dr. Luce of Lyndon State college has corrected some figures and that's been agreed to by Efficiency Vermont that geo has some of the lowest CO2 figures, so we are having a tremendous impact on reducing our carbon emissions.

We don't have a resource limit. We are not talking about how many miles of forest are we going to be consuming in this renewable area. It's unlimited. It's the property under you and you've got all the resource that you should need.

I concur with the two recommendations you had in that section about good training, I think it was, and yes, rebates for renewable systems and create installation standards. And those rebates should be tied to qualified people which is what Vermont Technical College is now in the process of setting up programs to do.

A couple final quick things. There needs to be a central point for tax credit information that is accurate and you can go to all sources. I've talked to Lawrence Miller, head of Commerce and Community Affairs, that could be a potential site because of his green job program, but I think it needs to be done. And I think it's a critical area. Any place that you've emphasized biomass I think you should couple geo with that directly, and I will try to

provide some corrected language for that section.

COMM. MILLER: Thank you.

MR. ASHLEY: Thank you.

MS. LAUNDER: Next speaker is Ben Luce. L-U-C-E.

COMM. MILLER: Kelly, how many are on the list?

MS. LAUNDER: There is 14 total.

MR. LUCE: Good evening. My name is Ben Luce. I'm a physicist and a professor at Lyndon State College. I'm also a long-time renewable energy advocate. I have been advocating renewables since the mid '90s professionally and successfully. I've advocated in the past for utility-scale wind, photovoltaics, solar hot water, efficiency, and related measures. Do you need an address or phone?

COMM. MILLER: No. We can find you.

MR. LUCE: I'm easy to find. All right. So I believe the state does need a Comprehensive Energy Plan. And there is some good things in this plan. We do need a lot more efficiency, for example, but

overall, I find as an analyst this plan is grossly deficient of a careful examination of regional and not just local energy resources and loads and how these fit into the context of leading the United States towards a significant reduction in greenhouse gas emissions.

The plan is also very deficient of a careful examination of renewable energy cost trends and incorporation of those cost trends into the reasoning and conclusions in the plan. It also lacks a clear and honest evaluation of environmental trade-offs, the emerging possibilities with some of the newer technologies and problems with some of the existing technologies that have significant-- have emerged and create significant environmental and social problems. For example, the cost trends shown in the draft cover too short a time interval, and they lack technical context.

The total lack of a really regional resource consideration betrays a kind of an overly inward looking viewpoint which is common in Vermont and may be appropriate for

some types of issues in Vermont, but is not appropriate at all for the very large task of reducing U.S. greenhouse gas emissions.

This is not just a local issue. This is a regional and national issue. What we do here must integrate -- must integrate well with measures that are truly going to make a difference in the eastern United States as a whole, and not just locally.

So I have two groups of comments to make. I'll probably skip the second for now and submit the second set by E-mail. Those are more detailed comments on specific phraseology. So I'll stick with the general comments right now. First of all, Vermont should not adopt an RPS for electricity generation per se, but rather a comprehensive greenhouse gas reduction program based on cutting emissions as quickly as possible, using the most cost effective means on a dollar per pound of carbon basis. This will result in much greater emission reductions with much less economic and environmental harm to Vermont. Mandating particular large and near-term

renewable electricity goals does not properly take into account the fact that technologies and costs of renewable electricity are at this time changing extremely rapidly and are impossible to predict precisely.

Moreover, such an approach does not take into account the very high costs of transmission lines, and the environmental costs of those that are estimated to be needed for a significant build out of certain sources such as wind power that a strong and near-term RPS in Vermont would likely trigger. Specifically, an aggressive near-term target for renewable electricity will likely result in large amounts of highly destructive wind generation and large-scale biomass to be built during the next decade in Vermont, while renewable energy cost trends actually suggest that achieving the same or greater amount of solar power generation will be possible after five to 10 years from now at a fraction of the cost and with much less environmental and secondary economic impact

to Vermont.

RPS standards in particular which I've advocated for successfully in another state in the past, have been very useful to get electricity generation -- to get renewable electricity generation off the ground, but they are not an appropriate mechanism to drive renewable energy generation to much higher levels for many reasons. The greater task of reducing greenhouse gas emissions overall will proceed much more rationally and effectively and should proceed only within the context of a comprehensive greenhouse gas reduction plan.

A well-designed emission reduction plan would automatically focus initial funding on the most cost effective efficiency, transportation, and weatherization improvements in the near term, and then later, on cost effective and massive expansion of renewable electricity generation when that really becomes possible, and possible in an environmental, responsible way.

Some may argue that wind energy, for

example, is already cost effective today, but surprisingly the actual data on wind energy costs shows that wind power has actually been increasing in cost since about the year 2000. And I have specific studies and data to show that the best wind power study in the country by the Natural Resources Defense Council covering hundreds of wind farms shows this trend clearly. The reason is because large scale wind is intrinsically dependent on huge amounts of steel, cement, copper, other materials, all of which have gone up, and the industry has already achieved its economies of scale.

And so it turns out that utility-scale wind especially in this region where the installation costs are also very high, and the transmission costs are very high, is not very cost effective today either with hydro power today or the expected cost of solar power within a decade. The statements of wind proponents to the contrary are misleading at best. Moreover, the estimated cost of transmission upgrades needed for a significant expansion of wind power in the

northeast are roughly 10 billion dollars according to the ISO. This basically completely spoils the cost picture and the arguments for utility-scale wind in Vermont at this time.

Given these facts and given that solar has not fully realized its cost reduction potential and is expected to soon, and because Vermont could reduce emissions much more cost effectively with other measures such as efficiency, weatherization, efficient transportation, solar hot water, et cetera, it does not make sense for Vermont to adopt an aggressive RPS at this time. The current RPS proposal is and should be viewed as little more than a veiled attempt to enable a great deal more wind power development and biomass development in Vermont in the near term.

Next, to the extent that Vermont does support renewable electricity development now, and I believe that some fairly strong support is appropriate, the SPEED program in particular should not be expanded requiring utilities to pay a price set by the PSB for

smaller-scale renewable energy projects proposed by various developers is not cost effective or helpful as a means to promote renewable energy generation in Vermont. It is much more cost effective to simply require utilities to purchase renewable energy credits for renewable energy systems installed by homeowners and businesses at a price that effectively levelizes the cost of the projects to at least a break even level or a little better based on current electricity prices and renewable energy system prices. This approach basically would save about 60 to 70 percent of the cost, because it much more effectively leverages federal incentives such as the federal solar and geothermal tax credits. It leverages direct public interest and invests money in such projects. It leverages Vermont culture of self sufficiency, and it also cuts out the distorting influence of developers and other interested parties for setting the feed-in tariffs -- tariff prices too high.

A properly designed RECs buy back

program produces far greater renewable energy and public development in that program than Vermont's current SPEED program. After I advocated for such an approach at the legislature last spring, legislation was adopted that contains a step in this direction, but the current program is much too weak, is not structured properly. And in any case, it's this kind of approach that should become the primary vehicle for driving renewable energy development forward, not mandatory requirements on large corporations to provide the power willy-nilly in ways that don't necessarily benefit either the public, the environment, or the culture of Vermont.

Next, the Section 248 process which governs large-scale energy development in the state, should not be simplified as the plan proposes, but in fact the Section 248 process in Vermont should be entirely scrapped. And it should be replaced with a full Act 250 protection of Vermont's environmental assets with respect to energy development. Section 248 was not designed

to handle the severe environmental impacts of ridgeline wind development, but is being used as a loophole in Vermont's environmental protection to basically destroy potentially hundreds of miles of ridgeline. And I'm not kidding by that hundreds of miles of ridgeline development. We now have wind power advocates, wind industry advocates in the state, advocating more than -- using more than 200 miles of ridgeline.

Nothing else but this kind of change can or will suffice to protect Vermont's environment or her community or her ecotourism based economy. As evidence of this, I cite the fact that the Public Service Board and the Agency of Natural Resources have recently exhibited a blatant disregard for the weak environmental considerations required in the Section 248 wind power permitting process. For example, the PSB recently approved a major wind project on a mountain ridge, pristine mountain ridge, based on a purely theoretical idea about the benefits of

having more electricity generation on the regional grid after the Board had also found that strongly adverse impacts to bear habitat would occur. Basically the cutting down of a whole critical section of bear-scarred beech trees and other assets. Similar decisions have been made in the Sheffield and Lowell cases.

Secondly, with regarding the state's ecotourism-based economy, the state tourism's department own study of the Vermont brand in 2010, found that the unspoiled nature of Vermont is essentially the most highly prized feature of this state to those who vacation here. It follows from this that extensive and highly visible energy development such as statewide transmission lines or large biomass plants and cutting or extensive wind power development present extreme threats to Vermont's ecotourism and economy, and in fact, the entire environmental valuing cultural framework that underlies Vermont's strong environmental protections.

These types of impacts, however, are not

being properly acknowledged at all in the Section 248 process. And therein lies its crucial flaws. In fact, the entire pro wind movement in Vermont is simply in denial about the probable impacts to the environment and to the ecotourism economy, but those impacts are very real and are likely already being felt as visitors to Vermont have to contend with a Sheffield wind project which can be seen from enumerable places within a 400-square mile area. That project will provide less than two percent of Vermont's electricity. Yet it is now the most visible monument in the northeast part of this -- of Vermont and really this whole region.

MEMBER OF THE PUBLIC: Excuse me, but a lot of us want to speak too.

MR. LUCE: Please don't interrupt me. I would like to finish my remarks. Next.

MS. LAUNDER: If you have remarks we could put into the record --

MR. LUCE: I would like to just finish them. I'm almost done. Thirdly, the state should not be in the business of trying to

identify what are essentially wind power sacrifice zones for Vermont. Instead, utility-scale wind power should be entirely eliminated from Vermont's energy plan for several reasons. Wind power does not have a promising long-term cost outlook compared with other renewable energy alternatives, and I have the data to support that.

Secondly, it's extremely devastating to Vermont's mountain top ecosystems. This is evident to anyone who visits the Sheffield wind project. The entire ridgeline must be bulldozed and blasted with hundreds of thousands of pounds of explosives. This destroys the wetlands, the cultural assets, the environmental assets, everything about these areas. These mountains are the heart and soul of our ecosystems here. They are a crucial source of clean water and habitat for myriad species. Wind power development in Vermont is extremely divisive and harmful to Vermont's communities. I suggest, if you don't believe it, just visit the towns of Craftsbury and Albany and talk to the folks there who live in the shadow of the Lowell

Mountains or closer to the Lowell Mountains than the residents of Lowell.

As I've explained it's devastating -- potentially devastating to the ecotourism economy. There are also new, very real, scientifically-documented serious problems with very large levels of low frequency noise from utility-scale wind turbines. There is peer reviewed literature in the health literature now establishing that. While it's true that Vermont may impact -- potentially supply a large fraction of its power from wind power, it also turns out crucially that the eastern United States has very little wind power resource. The only place it exists is basically in some open areas in New York State, off shore, and on ridgelines. We have a big offshore wind resource, but we do not have a big onshore wind resource. The onshore wind resource according to the Department of Energy could only supply about four, if fully developed, could only supply about four percent of the eastern United States' electricity load. This kind of regional perspective is

entirely missing from the Comprehensive Energy Plan and needs to be factored in. What that means is that if we go whole scale with wind here, we will devastate our ridges, but we will not make a significant improvement to reducing greenhouse gas emissions, and we will not launch an energy source that will be able to make a significant reduction in greenhouse gas emissions in this area.

The only resources that have any chance of making a significant contribution are solar power, offshore wind, geothermal, and that's about it. So if -- those are the sources we really should be focusing on.

MEMBER OF THE PUBLIC: Okay.

MR. LUCE: I'm going to conclude. It follows from these facts, scientific facts, about these resources and cost trends by aggressively promoting wind development in Vermont, we will not be leading the region towards a meaningful renewable energy future, but rather we will be diverting support away from a truly meaningful path, ruining our ecosystems, dividing our

communities, and spoiling our ecotourism-based economy in the process. For that reason, it may seem radical to some, but I believe that we really have to take a hard look at this, and we have to eliminate the source from the plan before we lose what is most precious to us here in the state. Thank you.

MR. WALKER: Ma'am, before you go on, next time you have one of these meetings can you set a time frame?

COMM. MILLER: Yeah.

MR. WALKER: I didn't bring my pajamas.

COMM. MILLER: Fair enough.

MR. LUCE: I find it a very disrespectful remark.

COMM. MILLER: Will you submit your comments so we can include them with the record?

MR. LUCE: I would like to submit them by E-mail.

COMM. MILLER: So I haven't at other meetings set time limits because I don't want to artificially limit the folks who are here by saying you only have three minutes.

I haven't frankly needed to. At every other meeting we have gotten through everybody who wanted to speak and then some and had conversation at the end. So I will ask -- and I'm sorry to do this -- that if you're going to speak, you keep in mind the clock.

We have a 9 o'clock end time. I'm sure many of you hope that we meet that. So next speaker -- I don't want to take more time.

MS. LAUNDER: And if people have stuff written down, we can put it on the record. And that will be on our Web site the entire --

COMM. MILLER: We will put it on.

MS. LAUNDER: So it will be captured. The next speaker is Bob Atchinson. A-T-C-H-I-N-S-O-N.

MR. ATCHINSON: I really think Vermont is a civil state, and when you come to a meeting and you've got an hour and-a-half and you've got 14 people, it's not hard to do the math and share the time with everybody else.

I would just like to speak to transportation briefly. I don't know how

many of you carpooled tonight. I'm not going to ask for a show of hands, but I think it starts under the roof of your household, under the roof of your garage and how you get around. It's all about sizing transportation to your needs. If you have to take your briefcase to work, you can walk or ride a bike. If you have to take a ton of wood to work, then maybe you need a pickup truck. But as you start to think about energy in the state and how we have to play fair, and how we have to share, it's all about how you can best put things together on a personal basis, extend to your neighbors, and guess what, you're going to be the fashionable person in the neighborhood. Thanks.

COMM. MILLER: Thank you.

MS. LAUNDER: Next person is Dan Costin.

MR. COSTIN: Thank you. So --

COMM. MILLER: Would you mind again just letting the court reporter know how to spell your last name.

MR. COSTIN: C-O-S-T-I-N. Thank you. My name is Dan Costin. I'm from Montpelier,

and I'm a member of Transition Town Montpelier, and I'm on a committee called the Energy Dissent Action Plan Committee, which is very concerned with how our community prepares for higher oil prices and tries to deal with problems in our environment such as climate change and reducing carbon emissions.

We are studying the plan. I would agree that it would be nice to have more time. We haven't had a chance to go through the entire document too thoroughly, but we do have some comments. The first comment out of our committee is that we strongly believe that cultural changes are very critical. Things like setting the thermostat, for example, this room is too hot. I don't know why it's this hot. I don't understand --

MEMBER OF THE PUBLIC: Too bright.

MR. COSTIN: I don't understand why teenagers are going to high school in flip flops in the winter. It seems to me that's not really right or fair when their parents are at home trying to stay warm in a wool sweater. We all have to share in the

responsibility to use less energy.

Carpooling is another matter that really needs to be promoted, and you know, we have got these plans to change things 10 years from now, but tomorrow, you know, a lot of people could carpool and start saving a lot of energy right away. And we would really like to see that emphasized.

Another aspect that's a little bit technical and wonkish is micro grids. A lot of people in my organization are very concerned, not just about energy prices, but collapse of society and some kind of disaster or something like an oil shock that happened, in you know, 1973, where the grid may come down and want the community to be resilient in that kind of emergency. And so working on that on a number of levels is important to this group. And one of the ideas is to develop these micro grids where small areas can stay powered to provide assistance to the community in the event of an emergency, you know, such as a school area or perhaps an industrial park.

I used to work -- well I've worked in

the energy industry for -- since 2001. And I worked in Waitsfield where we had a micro grid set up. So whenever, you know, Washington Electric went down for some reason, you know, it was sort of a long line on the grid with lots of trees, and you know, whenever it went down we could fire up the diesel generator and come back on line and have no interruption in our operations. Something like that would be very good in a disaster.

The third issue that we would like to bring up is related to some bankruptcies that have happened very recently in the solar industry, Solyndra, Spectra Watt, and a third company, can't think of the name, be with --

MEMBER OF THE PUBLIC: Evergreen.

MR. COSTIN: Evergreen Solar. Thank you. Went bankrupt just in the last month mainly due to very intense competition from the Chinese who have been producing lots of solar panels at below cost. So I think that the legislation that's passed should have buy America clauses in it similar to the

American Recovery and Reinvestment Act where that law states that unless there is a specific reason for a waiver, that the components purchased which would be renewable energy components, or energy efficiency components, would be sourced within the United States.

And in addition, there should be ways to encourage Vermont companies to provide those products and services to get a better economic benefit provided to the taxpayers who are actually funding those investments. So it's a good plan. We had higher goals set when we looked at what we wanted to do, but overall we are very happy with the direction that the state is going.

COMM. MILLER: Thank you.

MS. LAUNDER: Next speaker is Bob Walker.

MEMBER OF THE PUBLIC: Don't stand too tall, Bob.

MR. WALKER: I'll make you one promise, right off. I'm not going to talk as long as the first two guys. First of all, congratulations. You've got a beautiful

presentation here.

COMM. MILLER: Thank you.

MR. WALKER: A lot of work has gone into it. I'm just a tree farmer, Bob Walker, from Brownington. I was in the legislature for four years and kind of outspoken. Let me get right to the point so I can sit down.

First of all, I'm a little concerned when the Public Service Board and people go before our judicial system and for some reason the Public Service Board seems to overrule before the judicial part gets underway and construction can start without -- I always thought we respected our judges. And when there is something pending in the court system, you can just go ahead and do it. I don't think that's the Vermont way of doing. Whether you're -- I'm a friend of anybody on the ridges or any other place, but I am concerned.

Also I'm 74 years old, so if you take 40 years from now, I don't think I'm going to be around to see your plan implemented all the way.

Just the very few small things. One of

the things I've heard on television, radio and so forth, is that maybe we are not going to have any more dams on any of our rivers. The people in Missisquoi River are a little concerned that we build more dams. Well I always thought we built some dams for flood control, so please give a little more consideration to that.

We are selling our ratepayers to out of state investors. We all know these guys haven't come in here, and gals, buying up Central Vermont or Green Mountain Power without trying to make a buck out of the deal. So when you have your stockholders selling out to these large corporations who are going to control the Public Service Board and our rates here in the State of Vermont, I don't think it's the smartest way that we could probably go.

The same thing with the towns that have been selling the rights for the wind towers, it's a money situation. We have got lots of neighbors that hate each other now all over the wind towers. And it's a situation where Sheffield or Lowell gets a big chunk of

money every year just like the environmental agency gets 2 and-a-half million from Casella for the landfill. So it's like the fox watching the chicken coop, but we certainly don't have total democracy when that happens.

I think Canada electricity is the greatest way to go. I have been up there caribou hunting, moose hunting, the rivers are unharnessed up there. We are getting 50 percent of our electrical energy out of Canada today at six cents a kilowatt. I understand solar is 30 cents. Wind and water is 20 cents. Now I ain't the smartest tree farmer that's ever come down from Brownington, but I can figure out mathematically it's about four or five times the added cost going down that route. So please give it some more consideration that Canada is still our best friend. Okay. It's our neighbor. We have had problems on the border, but basically there is an awful lot of power up there.

In conclusion, I guess probably I better shut up. That's really what I have to say.

Thanks for listening.

COMM. MILLER: Thank you.

MS. LAUNDER: Adrian Owens.

MR. OWENS: My name is Adrian Owens. I'm from Craftsbury, Vermont. I'm a member of the town energy committee in Craftsbury, and also I teach at Sterling College, but these comments are just my own and can't really be -- I'm not a spokesperson at this event right now.

I have some general comments, and I want to talk a little bit specifically about some ideas for wind power planning. As far as -- I like the emphasis that the plan has on the conservation and efficiency first, especially some of the combined heat and power ideas. I think that ties in well with the land use. I think in Montpelier you've done some -- have a new combined heat and power project, so that fits in if you can use waste heat from a power plant into heating water and space heating for homes and businesses. We can improve our efficiency quite a bit that way.

I think as far as some of the quick fix

ideas, I know you wanted kind of slow acceleration. I think some of you talked about the need to shift away from fuel taxes. But I think it's a good way to start. A few of my examples today will be my experience in Europe, and there is no countries there that have, you know, gasoline cost less than about 8 dollars a gallon. That would change use around here pretty quickly. You might have to come up with another source for your transportation funding. But I think that would -- that has allowed them to put a huge amount of money into public transportation and other projects that I think are worthwhile, which could be building insulation, passive solar aspects of getting some -- harness or even active solar for thermal uses.

I think similar to Ben, I would have liked to see the plan has a goal rather than just jobs and energy independence, looking at a goal of preserving our environment, which I think is a lot of, you know, you have the big greenhouse gas goal, that's what a lot of that's about. And I think

that needs a little bit of emphasis rather than sacrificing our environment for energy just to make it renewable in the short term.

One of the things some of your charts were showing the residential energy sector. I don't know the page number right now, but it was showing kind of a general upward trend for total residential, but downward when you divide it by the number of households, which is showing that we have a kind of increasing number of households and increase in population. So I think in the broader term I don't know if the state -- it's an funny place to put in an energy plan, but needs to address at some point population as an overall driver for our kind of global impact on things.

I respect Mr. Walker. From what I know with solar costs right now, the marginal cost of putting on a new photovoltaic panel is cheaper than getting electricity from Hardwick Electric for us in Craftsbury right now. We are looking at something like 15 cents a kilowatthour. That beats the commercial -- the rate that we would be

paying, the retail rate for electricity from Hardwick Electric right now. That's what I have been able to add on to my house. I have had friends put that in cheaper than you can be hooking up to the electric company right now.

So final thoughts about wind energy planning. One of the things, there are some references in the renewable energy section to looking at siting and mapping and critical habitat areas. And I think there is acknowledgment that the Lowell wind project is going in in some critical habitat areas and possibly other projects have too, in that they are trading kind of remediation trades of other land for those places.

I think if you're looking at one project at a time, you're going to have these, oh, we can make this project okay by getting some more land over here that has some good habitat. But I think what you need to be doing rather as a statewide or at least multi-county planning, I hope it's not a here's what we sacrifice for energy, but here's a global plan within our state of

here's the area that has some wind resources but are already impacted, are not pristine environments. You're looking at it as a general area. I know the power companies have done this when they have been targeting these areas, but it's going to put an -- if you're using your GIS to plot these out, you put a higher weighting on the natural habitats, and all of a sudden that area goes away as good wind power development.

So if you're looking at those general areas in setting the criteria statewide for what makes an acceptable site, you know, it may be elevation closest to transmission, but also the -- outside the critical habitat areas, and you also have to have distance from people to keep that, the low frequency noise, from being a problem.

And then you're looking at a system where you're not just compensating the landowners whose land the tower sprouts out of, but everyone in the impact area. So it might be that money is spread around not just to that one landowner but everyone who sees those towers. And I think that will

kind of mellow out some of those disagreements between the neighbors that have been happening.

And I think that would be, I think, a much more reasonable, instead of a kind of a site-by-site evaluation, is this okay, or is it not. You look at the total picture, and then have a little less incentive for any single landowner to rape and pillage their land that way. Thank you.

MS. LAUNDER: Next speaker is Pat O'Neill.

MS. O'NEILL: I'm going to pass.

MS. LAUNDER: Okay. Ann Igerson.

MS. INGERSON: Ingerson. I have a lot of detailed comments that I will E-mail. I just wanted to make a general point. I'm trained as an economist which people might know is called the dismal science, sort of slogan, is there is no such thing as a free lunch. So one of the things I found missing from the plan was some of the negative impacts of different renewable alternatives. I really liked the emphasis on conservation and efficiency in the plan and I really

liked what someone said earlier about cultural change.

I think in Vermont there is great potential for people to change their behavior to reduce energy use, but in order to do that, it's not going to cost money, it will actually save us money, but it means changing our habits. And one good way to change our habits is for us to understand the full impacts of renewable energy development, and that includes, I think, the ones in the plan that I think are not fully fleshed out are, I have to say Hydro-Quebec. I also spent a lot of time up in Quebec, and I think the impacts are tremendous of those developments and the transmission lines. We have a transmission line proposed through New Hampshire to bring that power to New England. So there are impacts with Hydro-Quebec.

Shale gas has tremendous impacts. Industrial wind we have heard a lot about already. Biomass at a certain scale could have tremendous impacts on our forests, and I think that the energy plan is an

opportunity to educate Vermonters about what those impacts will be, not to discourage us from transitioning to renewable energy, but to really get us to pay attention to conservation and changing our behavior, and carpooling, and turning down the thermostats, and all those things that could really have a huge impact on our energy requirements really quickly.

COMM. MILLER: Life cycle costs not just market forecasts.

MS. INGERSON: Right. Thank you.

COMM. MILLER: Thank you.

MS. LAUNDER: Next is George, and I can't quite read your last name. Is it Clair?

MR. CLAIN: George Clain. I was going to bring the whole document up here and start going through it page by page, but being this is such an unruly crowd, I think I'll just go with the extension of the comment period.

A couple things. One of the things I can't find in the plan that I'm really looking for is what do I put in my household

budget. What is the cost -- what is going to be my cost for the implementation of what you're asking for. Any other time I think the department, being the consumer advocate, would have that and be advocating for that for the consumer. I believe that it's -- the authors of the plan had it in mind. They talk about regionally competitive, affordable, I don't know what that means. I know what it may mean to my neighbor. But I don't know as anybody can determine what's affordable to me except for myself. So I like to know exactly what it costs.

I would like to talk about -- change now and talk about jobs. I talked to Mike Morelli, steel workers union. He had to pull teeth in order to get five local people on the wind project in Vermont. All the other ones were all out of state hands. I think it ought to be local jobs, really be mandated for that. The gentleman from Montpelier mentioned some about U.S. We have got to bring this all the way down to the local level to bring the economics of this thing to a full benefit. Thank you.

COMM. MILLER: Thank you.

MS. LAUNDER: Steve Wright.

MR. WRIGHT: My name is Steve Wright. I'm from Craftsbury.

MS. LAUNDER: Thank you.

MR. WRIGHT: Can we start there? Great. First of all, thank you so much to the folks who are here tonight. Those of us from Craftsbury appreciate your interest in energy, and especially being here to comment on what could be some big changes, a prescription for some big changes in Vermont.

I wish to make basically one, I hope, relatively clear statement about one narrow aspect but an important aspect of the plan. And it has to do with wind. As I mentioned, Craftsbury, you can imagine where I'm coming from on that. My statement today -- tonight is strictly my opinion. I represent no one but myself. Possibly my young hunting dog, but over whom I have very little control, so that's about it in terms of the people I claim to represent tonight. One person, one dog.

Coming to Danville has always been kind of a fun thing for me, but I never thought I would come to Danville for an important meeting such as this and there would be a traffic jam that I would have to deal with. Never had a traffic jam in Danville in my life, and I have been coming here for 40 years. So the evening started off with something special. Thank you, Kelly, if you scheduled that. I appreciate that.

MS. LAUNDER: No, I will not take credit.

MR. WRIGHT: Okay. I want to point out something that is missing from the draft Comprehensive Energy Plan. What is missing is no assessment of the value of a natural landscape. There is no assessment of the environmental value, the economic value, the cultural value, or the societal value of a functional working landscape. Until we get some assessment of what these green hills are worth, then the decisions that are called for in this draft plan will be meaningless.

The citizens of Vermont have a huge

responsibility here. Not just to change their habits, but to determine what a functioning landscape is worth, what brought us here. What brought all of you in this room tonight? We need to make those decisions. Ravaging mountains in the name of effective climate change should be a statutory crime. It is, I believe, a moral crime, and an environmental crime, and a societal crime. It should be viewed in a much more serious context. Because the services that these ridgelines and mountains and rivers and farm land provide us allow us to be here in this particular part of the world and live the kind of lives that we want to in a society that is tolerant and accepted.

We must decide what our landscape is worth. And this plan is a place to start. Thank you.

MS. LAUNDER: Next is Marie, I think it's Hurley.

MS. HURLEY: I'm speaking for the very small person. I applaud the start of the do it yourself program that the Efficiency

Vermont started as there are many Vermonters who are capable of doing lots of things themselves. And there are many other low cost ways to do it yourself could be used to save energy.

In three hours one day last summer I helped fix a 130 dollar, 400-foot coil of water tubing to two secondhand pieces of plywood that by after lunch, by the time lunch rolled around, was producing excellent hot water. Wonderful hot water. The owner says this is productive six months of the year to feed into his other.

The same tubing coil in a mound of shredded wood chips will heat the water through the winter and continue for three years, after which the chips can be used to enrich the soil and garden, and such things can easily tie into radiant floor heating systems.

I think many small upgrades and installations can add up to big savings. I would like to see upgrades in wood stoves, receive the same kind of incentives. Notably the central masonry Russian stove

that can heat a whole house well with just one hot stick fire in the morning, and cook, and also provide the hot water. Its effects are even greater, of course, with great insulation.

Net zero is achievable with good planning. Given that sunlight is Vermonters more abundant renewable resource, stated in the plan, and the sun could generate a hundred percent of Vermont's current electric use, I think the plan could have more aggressively backed it. You say solar thermal energy used for heating is an important energy source than merely say that it warrants increased focus. I would like to see the focus translate into more aggressive measures for solar, seeing that Vermont is in the top 10 states for PV, per capita, along with sunny western states, and that the price is getting lower, that this type of energy production is reliable, non polluting, all but maintenance free, safe and pleasantly quiet.

It does seem to warrant more action. I hope the independence that goes with it

isn't unwelcome to some. The plan states solar air heating has no storage, and recommends it only for supplemental heating, suggesting that the south side of a building where it is necessarily placed is often quote: There is often a greater desire for windows, as if there were no other glazing options or that most would want an entirely glass south wall, a negative slant, something that could take more investigating.

Overall, I think energy replacement need not be so expensive which does retard action. Property Assessed Clean Energy, PACE, may pick up where Clean Energy -- may help pick up where Clean Energy Development Fund leaves off. I agree establishing solar thermal, ready building standards, can go a long way towards cutting dependence on hazardous, harmful energy generation, and should be mandated and well thought out for new construction. And that the public, young and old, must know by ongoing campaigns about the need for replacing the old energy sources and how to reap the

benefits of harmless, fail safe, small energy generation and conservation alternatives.

And my hope is that you will step up the pace, set stricter standards than we have had in the past, set schedules with deadlines like this public comment period has a deadline, hasty, and progress to ambitious goals. Thank you.

COMM. MILLER: Thank you.

MS. LAUNDER: Nicholas Ecker-Racz.

MR. ECKER-RACZ: E-C-K-E-R, hyphen, capital, R-A-C-Z. Good Irish name. This is a little bit of a hodgepodge because I started with a couple of comments and some things that people have said have triggered some ideas. It is an extremely lengthy document. I apologize. I have only -- I only had part two and I made -- I read about 150 pages, 200 to go. So I may have missed some things that are actually in there.

The Vermont League of Cities and Towns, which I was a member, does an annual review, legislative review, which is a very long document. And they also produce a little

pamphlet which is basically about six sides of an 8 and-a-half by 11. And in that they list the major goals for the legislation. I think you would do well to produce something like that because people are intimidated by a 20-page document much less a 500-page document. If you're going to have impacts, the kind of thing you could pick up at a Town Clerk's Office. People might read that. They aren't going to even touch a 500-page document.

Speaking briefly about small hydro, which I unfortunately have only read part of that section, but I went to the stakeholder meetings the Water Resources Board put on here about maybe 18 months ago. I went to seven of them. There was a lot of wrangling about how to improve small hydro. One of the big holdups is that the Federal Energy Regulatory Commission process allows for an exemption, but the exemptions take forever, and they might cost as much as $200,000 for a small hydro project which very, very few stakeholders could afford.

Lori Barge, who you may know, points out

that in Colorado very recently they were able to get a project approved in two months by FERC, and the reason is that the state of Colorado has created a Memorandum of Understanding with Federal Energy Regulatory Commission which encompasses all small hydro projects. And the State of Vermont needs to create that same Memorandum of Understanding process. It would mean that there are literally dozens and dozens of projects that have been proposed, that have been studied by municipalities, by people who have dams, bypass systems, all kinds of things, in the State of Vermont, and they are all at a standstill because the State of Vermont -- frankly constantly point to FERC -- didn't really take a very aggressive effort to get small hydro. I think they are past that now. And I think the agencies would like to do things, but it would go a lot faster if we had that Memorandum of Understanding.

With regard to -- briefly with regard to the idea of the commuter share rides, 25 years or 30 years ago a man by the name of Fred Jagles, who was a resident of Cabot at

the time, was the planner for Washington County, and he proposed a system. The major problem is you see someone standing beside the road, is that a chain saw massacre guy like me? I've got three chain saws in my car. Or is it a gentle soul who just wants a ride? So he created -- what you need to create is an identity system where you have a card that, you know, or a placard or something that you hold up. You're registered with the State of Vermont, you're a known rider, and so on and so forth. And similarly you tag cars so that this is someone who is willing to pick up somebody who has the ride identity. That will facilitate the process a lot.

And obviously you need spots in various towns as well as the ride share. You need a little shelter so when it's 20 below zero, you're waiting out there as you would for a bus or whatnot, that you have a place to stand. I don't know if you have anything in there in the way of goals for municipalities. I haven't read that part of the section, but there should be goals for

municipalities because every municipality has a variety of structures. And you know, we have all got town garages, we have all got libraries, schools, historical society buildings and Town Clerk's offices. And I think that should be part of the plan.

And to the extent that the State of Vermont can purchase materials in large quantities instead of making the individual municipalities or individuals go out and get them by themselves, you buy a hundred thousand solar panels, I'm sure the price is coming way down. Why not do that as part of your energy efficiency program.

Cooperative Department of Motor Vehicle standards for all New England states and Quebec would be very helpful in reducing energy costs for the truckers. If you're a trucker and you are hauling logs in the State of Vermont, the standards in New Hampshire are different, standards in Maine are yet again different, New York different again, and totally different in Quebec. So it's very expensive for a trucker if they want to go to all of those areas. And that

also affects energy costs.

I think we under-utilize the interstate corridors. I don't know why we don't have a rail line running down the middle of the interstate. Why aren't the power lines going down the middle of the interstate. They are all going to the big population centers. That's why we had the interstate highway system in the first place. We really ought to do that.

As far as the hydro is concerned there are, Lori points out, that I've never heard anybody in any of these meetings talk about pump storage projects. Pump storage project is a hydro project where during the day when you pump up water up on -- essentially up a hill, and at night you let it run down and use that power generation. And you can use water ramps which some of you may remember if you're old enough, Bob probably remembers them, they used to be these little things. You find them out in the woods sometimes with a bulb on top and the water falls down into the water ramp, compresses the spring, and pushes the water back up the hill.

Obviously won't push a hundred percent of the water up the hill, but say pushes up 30 percent. Well those things last indefinitely. They don't require any external power. So you could use those in conjunction with your pump storage and however much electricity you needed to pump the water up, and you could make them a lot more efficient.

Let's see here. Can't read my own writing. There is a statement you made earlier and it's also in the plan that to the extent that Vermont becomes more efficient, it raises the prices for our neighbors. I don't agree with that. I think if we become more efficient we use less power. It doesn't necessarily -- it's not as if you had a tennis ball and we had to stick with the same size tennis ball of energy. If we reduce our efficiency it doesn't necessarily mean they are going to pay more unless you're going to put the other states on a demand rate schedule which I think is one of the very unfair ways, things that happens with energy now.

I once owned a house, and we rented to someone, and they put in a hot tub outside. And so we had to pay -- for a year we had to pay as if we had a hot tub operating all the time. That's part -- it's suggested in the plan that there should be a demand rate strategy for more than just electricity, and I think that's a fallacious argument. I like the efficiency -- concentration on efficiency a lot more.

Somebody mentioned about -- the gentleman mentioned about the loss of our landscape and what it's worth. I think that's really a very valid point. But imagine if we were sheep farmers 150 years ago, and we felt that we had the right to have pasture, and that's why it was okay to cut 85 percent of the forest because we want sheep and we want pasture. It would have been a tough argument to make 150 years ago that, nope, we have got to leave these trees up here. The heck with the sheep. It gets very -- quite tricky when you start talking about protecting the landscape because what seems so obvious to us today, may not be

obvious 25 years from now.

I'm a forester and a logger, and I very much believe in protecting the landscape. And one of the problems with the biomass emphasis is that over 50 percent of the state -- private land held in the state now I believe is in the current use program. And an element of that is you have to have a forester, I am a forester, but if you are a gentleman with a large pulp contract, what you do is you get a forester from the pulp company. And that's okay with the State of Vermont. So he comes out and he marks everything down to the see line, and doesn't have this goal of protecting the landscape. And he's just interested in creating biomass. So you have to be very, very careful with this biomass that you use foresters who represent the landowner, not the purchaser of the biomass. All foresters are not the same.

I think I probably have taken up enough of your time. Oh, yes. An argument that I've made -- I've made in these discussions before is that as Vermonters, as someone

pointed out earlier, we tend to think of ourselves individually. And so I went to a big hearing in Sheffield about the wind towers and people were raging on both sides of it. And when things got done I stood up and said I don't think any of you are going to like what I say, but this speaks to the efficiency emphasis. There are people here who are opposed to these winds towers. Only thing is on the way over here you picked up a pack of 6s and left the pickup running while you're inside the store. If I go back to your house now I guarantee your TV is running. You've got a great big light outside because you're afraid of the boogeyman, and you don't have these charge cords like this here which you can shut off, so the little trickle charge that goes through your computer, it's got the little light on there, the LED, and goes to your TV. And all these appliances are drawing power even when you think you've got them shut off. Most Vermonters don't know that, if we could eliminate all that it would be very helpful.

To the lady who has a Russian furnace, I have a Russian furnace, and I have been off the grid with solar for 25 years.

MS. LAUNDER: Barry Bernstein.

MEMBER OF THE PUBLIC: How many more are there?

MS. LAUNDER: There is one after this.

MR. BERNSTEIN: I'm going to sit. Thanks to the Governor and the Commissioner and all that were involved in addressing the 20-year energy plan. My first comment is I think it does need to be more time. I know that the commissioner is under pressure to get this done, but for those of us who are involved in energy, it's still -- you have to find the time to read 500 pages. It's a lot. I was only able to get through part of the first two sections.

Just a comment, thermal heat you put it together with transportation, but it seems from your numbers it's about 25 percent of Vermont's energy usage for heat. I think it should be spelled out.

COMM. MILLER: Are you talking about the presentation?

MEMBER OF THE PUBLIC: Can't hear you.

MR. BERNSTEIN: You can't hear me? Well I'm trying to speak for the record, but I'm happy to speak -- I said that the thermal heat portion of the energy seems to calculate to 25 percent. Just think it should be spelled out.

You have a section in -- a small section in the introduction which talks about restructuring. Vermont didn't take restructuring. I think if you're going to make that comment, you maybe ought to add that the investor-owned utilities and many in the state were very supportive of restructuring and deregulation, and if it had gone through, we would have already been screwed. We got a benefit because a few people stood up in the legislature and blocked it.

You mentioned VELCO. Governor Aiken in the early '50s tried to have VELCO as a public-owned transmission company. With the proposed merger of Green Mountain Power and CVPS that's 72 percent of the distribution system's going to be owned by one company.

The gas company's owned by the same company. I think that VELCO, which is now a billion dollars in assets and one and-a-half billion dollars with the expansion they are talking about, larger than the new utility, I think that ownership question needs to be addressed and not just taken for granted as status quo benefiting Vermonters.

While I support natural gas because it is the best fossil fuel in terms of carbon footprint, I just found it a little bit interesting that Vermont Gas was the only company that was actually mentioned in the parts that I read. I mean, you know, it's, you know, I don't know if that's just a fait accompli that they would end up supplying gas to the whole state or if there is somebody who wants to come from the south. But we shouldn't just automatically assume it.

And in terms of the thermal section on biomass, Vermont has a -- said 43 schools, I think there is a few more now with either being heated with chips or pellets, including this school. That program has

been on hold for two years, there has been no movement. The only biomass systems for schools that's taken place is in New Hampshire, Maine, Connecticut, Rhode Island. It's a little bit unfortunate that since Vermont started and was a leader in that, that there is not really more emphasis of that in the report. There is very little mention of thermal heat for natural -- for industrial commercial.

National Life which is the largest commercial office building in Vermont just converted its 550,000 square feet, displacing 200,000 gallons of oil with burning wood chips. I think there is maybe a few lines there. Just for clearness, the Montpelier system is not a co-gen, it's going to be distributed thermal heat only.

The biomass generation I will just say as someone who is on the board of an electric co-op, and sells biomass systems, I think it's an area that has to be very seriously looked at. I think over the last few years people that are in the forest area and biomass area are very concerned about

biomass being used for generation. Your report points out there is approximately 900,000 tons of sustainable future forest in Vermont. I've heard numbers of 700,000, to 1.4 million. That one plant would take 500,000 tons or more at an efficiency rate of somewhere between 15 to 20 percent. They claim 30 percent. It would be really pushing it. It's not necessarily the best use of a sustainable, renewable, limited product resource. And when -- if you used all of the identified thermal biomass that's been identified, you still would only meet 50 percent of the thermal load that's in Vermont. Pretty critical, because you get 80 percent efficiency for thermal versus 15, 20 or 30 percent for generation.

Your utility on-bill payment idea I just think it's important if you decide to try to institute that as part of a state plan, that you make some kind of provision to ensure that at least the public utilities are protected when default takes place.

COMM. MILLER: Absolutely right.

MR. BERNSTEIN: I think it's a great

opportunity with as -- after the floods from Irene, that if we are going to rebuild the state office building we could really use it as a showcase to show how to renovate with the highest efficiency building, flood proof standards to really set a goal for the rest of the state. It's critically needed. I think there should be something in the plan that at least addresses that.

So I think there needs to be, as I think somebody else mentioned, a few people mentioned, I think there needs to be more time tables fleshed out in the plan. It's not enough to just have all the right rhetoric. It really needs to establish some time lines. I think I've said this to you before, Commissioner, but I think there needs to be some short, medium and long-term goals.

People have talked about the community, goals for local communities. And I think if you had those kinds of goals for short, medium and long term, you might have a little bit more buy-in from local communities to try to meet some of those.

Thank you for your time.

COMM. MILLER: Thank you.

MS. LAUNDER: Okay. David Frank.

MR. FRANK: Good evening, Commissioner Miller, folks. First I want to start off by thanking the department for knocking out such a massive document in such a short amount of time. I just happen to have a little bit of an inside to the amount of work that it's taken, and I hope you get some sleep when it's all over.

I'm going to try to make mine short. I just abbreviated it back there. I've got a sheet here that I'll just submit for the record, it's regarding jobs. This was produced by an academic in Maine. His name is Dr. William Strauss. This is -- I'm from Sunwood Biomass. So I'm a biomass thermal heating company in Waitsfield, Vermont. We have 138 installations throughout Vermont including one at Craftsbury Academy, hopefully some day at Sterling.

Anyhow, when fuel oil for residential homes goes from -- this is just one statistic I'll pull off from here and then

I'll pass it in -- goes from three dollars a gallon which we are past that now, to 4.50. The number of dollars that leave the state is 78 percent of those total dollars which currently would equal -- from the three dollar mark to the 4.50 would equal 152 million dollars. And that's that 78 percent number. So that can be equivalent into job numbers which is very serious.

So bringing on biomass to offset our fossil fuel use has a value beyond just the carbon footprint, that economics could translate into jobs and money that stays in the state. So anyhow, I'm going to go ahead and pass this in for the record, so I won't go through any of those statistics.

I want to make a comment on the efficiency measures. The efficiency measures that we are finding that the biggest efficiency experts out there now, including our own in state here, Andy Shapiro, has determined nationally at the highest ranking efficiency experts, is that the integration of a renewable early on in the project sized to the post-efficiency

measures is the most compatible way to introduce any of the renewables. So there has always been this struggle between do we do efficiency first or the renewables. And this has been basically the experts' compromise, because it reduces our dependency on oil at the same time creating those efficiency measures. So basically you do the lowest hanging fruit efficiency measures and size your equipment.

So what I'm getting at, this requires programs that then provide incentives or motivate both efficiency and oil. Just this year we were able to institute through the help of the Department of Public Service an incentive for pellets and that turned out to be by sort of accident a great program in that there is a rebate for the renewable itself, like many renewables, an incentive rebate. But beyond that if you make efficiency measures, you get an additional rebate. So that two-step program with the carrot being the additional improvement seems to be a very helpful method of doing that.

And the other -- I'll just make a couple other comments here. The economic development, this next little section I'm going to mention here is on inter-department interaction. And I believe that the Department of Public Service has too much on their shoulders to carry this themself. And that we recently accidentally discovered that with the help of the department and the Commerce Department we were able to lure a biomass manufacturing company to Vermont. And so what I came to the conclusion was the high level of inter-department interaction to move this plan forward so that we can have rapid deployment of renewables I think is very, very critical.

One of those examples is we are trying to get the Department of Insurance to help us because in Waterbury many people wanted to put in pellet boilers to replace their oil boilers, but when they called their insurance agent, they said no, it won't be -- you can't be insured because of it even though actually you could be. But the amount of time it would take to work through

the red tape to get past that, they just made choices to put in oil boilers. So this is a new emerging business or industry in the United States. So we have some hurdles to get over.

And I guess the last thing I want to say, and it's really to this group back here, are all you guys from Sterling College? So this is possibly the most important part. And that is, you know, this plan goes to 2050, and quite honestly this plan is more for you guys, not us. Most of us won't be around -- we will be more of a burden to society than actually be able to help out -- is that we need to execute programs that are more permanent for energy education in schools. And how do we do that? It's easy to say that. And what I've discovered, as a matter of fact, at Craftsbury Academy, we as a company privately fund in part of a renewable energy education program through Craftsbury Academy. And it was very successful. We put in a system there. And it just sort of happened.

And what we are doing is we believe that those that are excited in schools now, you know, identifying those folks, and enlisting them, is the fastest way to do it. If you just -- if you require schools to do it, it becomes just another requirement like no child left behind, and it won't really take off.

Along with that, I believe that all public installations should require an element by the contractor to integrate education into it. We do that with all of our installations. It wasn't an accident, Craftsbury Academy. As a matter of fact, we are putting installation on a rest stop on I-91, and they won't let us institute an education program because it's not part of the contract, it's not part of the program.

So I want to leave that with you. We would like to do it, it does burden us as a company. It takes time, but we believe that it's the real balance that we need if we really believe in what we are doing, and we are not just selling the equipment. Thank you.

COMM. MILLER: Thank you.

MS. LAUNDER: All right. So that's the end of the public comment period. Just in the nick of time. So Liz, I'm going to time you. You have one minute to give your closing comments.

COMM. MILLER: Well there may be others who wish to comment. And --

MR. LUCE: That's what I was going to say. Are there others that didn't sign the sheet that wanted to comment?

MR. MARTORANA: Dave M-A-R-T-O-R-A-N-A. I just think that the biggest difficulty and blockade is transportation. And I went to school up in upstate New York, in Hancock, New York.

In my opinion, my personal single belief, natural gas is 100 percent destructive. You go to somebody's house that can turn their sink on and light the water on fire and tell me that's safe and renewable. There is no way.

And I also think that the electric car's a huge fallible industry. You have this great electric thing, we all think is great

renewable, then it goes to a lithium landfill and decays for something like a thousand years or whatever, and you've all this radiation. So I don't understand that as renewable. But I also don't have the solution.

Those are just some comments I thought. That was a relevant, intensive, great presentation.

COMM. MILLER: Thank you.

MS. LAUNDER: You have zero minutes.

COMM. MILLER: I will certainly be here for a few more minutes as we wrap up. And I have heard the call for additional time. I have passed on the comments I received before today to the Governor's office. And certainly will get out any extension that we can do there.

But let me also just say even beyond that, this really is in my view, the beginning. I said for those of you who attended things in the spring, that there was no expectation on my part that the plan would in the fall be buttoned up, done, and no further action after that. Instead what

I said was that the plan would set the vision and the framework for the goals. What we need is further action.

And we are doing a recommendations matrix to Barry and others' tonight point, so regardless of when the final plan hits the publisher, there will be further need for action. And it won't just be from the department. In fact, it largely won't be from the department. It will be from folks like you; from the town energy committees, and from the legislature, and from the private sector.

So please stay with us and continue your activism and your passion on these issues. And thank you for coming tonight.

(Whereupon, the proceeding was adjourned at 9:02 p.m.)

C E R T I F I C A T E

I, Kim U. Sears, do hereby certify that I recorded by stenographic means the public hearing re: Vermont Energy Plan, at the Danville School, 148 Peacham Road, Peacham, Vermont, on October 6, 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 109 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 Williston, Vermont, this 12th day of October, 2011.

_____

Kim U. Sears, RPR