

STATE OF VERMONT
DEPARTMENT OF PUBLIC SERVICE

VERMONT COMPREHENSIVE ENERGY PLAN

October 26, 2015
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Bellows Falls High School
Bellows Falls, Vermont

Public Hearing held before the Vermont
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Union High School Auditorium, Bellows Falls, Vermont,
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P R E S E N T

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1 DR. HOPKINS: Mr. Whitman?

2 MR. WHITMAN: Hi. I'm John Whitman. I'm a
3 Commissioner from the Town of Readsboro to the Windham
4 Regional Commission. I sit on the Energy Committee
5 there, but I'm speaking as an individual. I'm not
6 representing a position of any of those people.

7 DR. HOPKINS: Get closer to the mic so that
8 --

9 MR. WHITMAN: Is that better? Oh, I can hear
10 it's better now. Since, oh, I was going to just
11 congratulate Asa, because I think it's a good document,
12 but, unfortunately, I also have two criticisms that
13 I've chosen to talk about tonight. So sorry, Asa, but
14 I do have two things, and these are the two things that
15 I like least about the plan, and I forgot to spell my
16 name. It's W-H-I-T-M-A-N.

17 Okay. Now, you've all heard the statutory -- oh,
18 there's the boss again. Good. You've heard the
19 statutory requirements. Asa presented them, and you
20 know the words. I'll just give you the words. The
21 words are, "Adequate, reliable, secure, sustainable,
22 assuring affordability, encouraging the State's
23 economic vitality, efficient use of energy resources,
24 cost effective demand-side management, and
25 environmental soundness". Those have been part of the

1 statute that guides the energy system in Vermont and
2 guides the Department of Public Service for many years.

3 There's a pair of newer goals that were
4 established, and those are the ones that can be
5 paraphrased as, 90 percent renewable by 2050 and a
6 reduced, substantially reduced emission of greenhouse
7 gases. Those are newer rules or goals that have been
8 imposed, but I want to make the point, and I think it's
9 important, that they don't replace or obsolete the
10 other goals. The other goals or statutory
11 requirements, I should say, remain in place.

12 And one of my concerns is I don't think that the
13 current draft of the Energy Plan gives sufficient
14 attention to some of those prior goals. Because
15 there's a whole lot of attention now on the
16 renewability and greenhouse gas emission goals,
17 understandably so. They've caught the eye of the
18 legislature, and they've caught the eye of the public,
19 and they're important, but, nonetheless, there are
20 other things that are still important, and so I'd like
21 to speak to those.

22 Before I jump into that, and I, basically, it's an
23 issue of balance that I want to point out. I think
24 we've lost balance. Let me read a part of the, the
25 statutory requirements that Asa didn't write, didn't

1 present, though they are present in the plan itself.

2 "To give effect to the policies of Section 202(a) of
3 this title, to provide reliable and affordable energy,
4 and to assure the State's economic vitality, it is
5 critical to retain and recruit manufacturing and other
6 businesses and to consider the impact on manufacturing
7 and other businesses when issuing orders, adopting
8 rules, and making other decisions affecting the cost
9 and reliability of electricity and other fuels."

10 "Implementation of the State's energy policy
11 should, number one, encourage recruitment and retention
12 of employers providing high-quality jobs and related
13 economic investment, support the State's economic
14 welfare, and, number two, appropriately balance the
15 objectives of this section with the other policy goals
16 and criteria established in the title", the title being
17 Title 30 of the State statutes.

18 So, basically, as I said, the new goals on
19 renewability and greenhouse gas reduction don't
20 obsolete any of the old ones, and I particularly feel
21 that the attributes of adequacy, reliability, security,
22 and affordability are not given appropriate attention
23 in the current draft, and I'll give a couple of
24 examples as to why I say that, and I'm going to start
25 with the adequacy and affordability part.

1 Reduced total energy consumption per capita by 15
2 percent by 25 and more than a third by 2050 is one of
3 the goals established in the plan. Where did that
4 basis for that goal is given by the work done by the
5 total energy study revealed that total primary energy
6 consumption will have to decrease by one-third more by
7 2050 in order to bring the 90 percent renewable goal
8 into reach.

9 In other words, it's there because of the
10 renewable goal being there, but imagine that there's a
11 -- litigate the rates and compare us with New
12 Hampshire, and we've held very well, but if you compare
13 us with the US, that same chart you showed showed that
14 our electric rates are 40 percent higher than the rest
15 of the US. There's a reason for that as he pointed
16 out, but, nonetheless, we're competing with businesses
17 in the rest of the US and in the rest of the world.
18 Our energy costs are very high, and that's a problem
19 for the State. I don't think that's addressed
20 sufficiently in the plan. My ten-second card just went
21 up, so I'm going to have to stop. If we run out of
22 people, I'll come back again. Thank you.

23 DR. HOPKINS: If you have, if you have
24 something written --

25 MR. WHITMAN: I do. I'll live with it.

1 DR. HOPKINS: -- we can get that into the
2 rest of the record as though you had continued to
3 speak. So next is Michael Bosworth and then Walter
4 Gustafson.

5 MR. BOSWORTH: Yeah, Michael Bosworth from
6 Brattleboro. I am on the Brattleboro Energy Committee,
7 but I'm just speaking from my own thoughts right now,
8 and this sort of continues something I brought up, at
9 -- there was a climate change forum only a few weeks
10 ago in Brattleboro. It has to do with customer
11 barriers for thermal energy efficiency, and I noticed
12 in reading back both in the 2011 plan and the current
13 draft, that the wording was almost exactly the same.

14 It's basically, despite significant cost-effective
15 energy efficiency opportunities, consumers regularly
16 underinvest or don't invest at all in energy
17 efficiency, and this is a big issue today, because we
18 have so many homes that could be tightened that aren't
19 being weatherized, you know, effectively yet, and it's
20 a big market as well. It can be a real economic
21 driver. If we had a lot more homes being brought up to
22 a much higher level of weatherization tightness and
23 energy efficiency, we'd be create -- there would be a
24 lot of work that would go into doing that, so it would
25 be very much of an energy driver.

1 But, over the last four years, we haven't solved
2 that issue yet. We haven't solved the issue of how to
3 get people to do it, and it is partly a financing
4 challenge. There are now some more financing tools
5 than there used to be. I think the PACE system, for
6 example, is one of them. We brought up earlier that we
7 talked, we were talking about the Heat Saver Loans. So
8 that addresses part of the gap, but I think part of the
9 gap really is getting people to, for you to understand
10 that they can do it. I think people just feel
11 overwhelmed.

12 Some people, a lot of homeowners feel just
13 overwhelmed by thinking, All right, this is going to be
14 far too expensive for me. There's too much. I just
15 can't understand everything involved, which also gets
16 back to the, the whole building approach. It's not
17 just energy efficiency, but can you use some renewables
18 while you're doing this? So there's so many pieces
19 that it gets to be sort of overwhelming for somebody to
20 think about doing it for their own home.

21 So how to make progress on this? I think that, in
22 small instances, there is some progress being made. I
23 think the Green Mountain Power in Rutland and the, over
24 the last year or two, has worked with about fifteen
25 homeowners. Maybe it's more now. I don't know. And

1 these are homeowners without a lot of means, but they
2 found these homeowners, they worked with them, and they
3 greatly improved the energy efficiency of their homes
4 and, at the same time, included renewables in that mix,
5 but I do bet that Green Mountain Power spent a lot of
6 money and their own resources to make that happen.

7 So I think it is a resource-intensive thing that
8 we need to take on in the sense of people being energy
9 advocates is what we have a business, small business
10 here that does some of that themselves or just some
11 other ways of hand-holding is another way to view it,
12 but just, just some way to, to find a means to do that
13 is really an important part of the whole challenge.

14 I am personally a supporter of a tax on carbon
15 pollution. I don't know that that's the only solution
16 to this. There could be other sources of money. I
17 think there are other benefits to that taxed approach
18 on carbon pollution, but one of the uses for the money
19 that would come from that would be to put it towards
20 programs like this, but whatever. It doesn't have to
21 be that in my mind. We just have, we have to find
22 somewhere for these resources if we hope to make any
23 substantial improvement, unlike the almost virtual, or
24 we made only a little bit of improvement over the last
25 four years, and the next time we take an accounting of

1 this, hopefully, that, we've made a lot more progress
2 and, in doing that, increased this section of our
3 economy at the same time, so --

4 DR. HOPKINS: Walter Gustafson, and then Tad
5 Montgomery.

6 MR. GUSTAFSON: Hello. My name is Walter
7 Gustafson, G-U-S-T-A-F-S-O-N. I also work for an
8 advocacy group, but I'm speaking just as a citizen here
9 tonight on my own behalf. I know that there has been
10 some views expressed at these hearings about siting. I
11 grew up in Lincoln, Vermont, directly under one of our
12 great Green Mountains, Mount Abraham, and would just
13 happily put a large, massive windmill on top of that
14 mountain in order to take responsibility for my energy
15 needs.

16 You know, my generation has really taken the issue
17 of climate change on their shoulders, and to see that
18 the fact is right now one of our biggest obstacles is,
19 you know, people's visual aesthetics is really
20 disheartening to me to have that be something that is
21 stopping us from tackling climate change. You know, I
22 don't -- what if we took this into consideration when
23 we were planning for how to get our food or where to
24 get our education? If we took into visual aesthetics,
25 we just wouldn't be moving very, very quickly on any of

1 this.

2 I think that energy is a public good and should be
3 treated so. I also don't necessarily feel that siting
4 of land use falls into the statutes that we're on the
5 side of the beginning of this. In terms of how we get
6 to 90 percent renewable energy by 2050, I don't think
7 where that energy is siting, sited has to do with us
8 getting there. That's another conversation. I think
9 it's a valuable conversation, but I don't think it's
10 necessarily one for this recommendation.

11 Secondly, I just, when I look at this plan and I
12 look at other economists or business leaders or energy
13 planners around the country and around the world, the
14 number-one thing that they have in their plan is
15 putting a price on carbon pollution. It's not the only
16 thing. It's not a silver bullet, but it is the first
17 thing that they will put in their plan. So it
18 definitely concerns me a little bit that this plan
19 doesn't focus as much on that, especially when compared
20 to other plans of similar reference. Thank you.

21 DR. HOPKINS: Tad Montgomery and then Tori
22 Parker.

23 MR. MONTGOMERY: T-A-D M-O-N-T-G-O-M-E-R-Y.
24 Tad with one D. I have a number of different points.
25 I'll try to rattle them off all quickly within my

1 five-minute allotted time. I haven't read through the
2 whole CEP yet, but I hope that there is substantial
3 attention paid to, in the biomass section, the health
4 of our forests and, in particular, the health of our
5 soils, and I hope that, as this moves ahead and we get
6 more and more of our heating energy needs from forests,
7 that that is taken into account as some statutory
8 program put in place to ensure that our soils are, if
9 not staying as healthy, to improve the soil health in
10 our forests.

11 Second, we have a residential PACE program at
12 present. I would strongly urge that the Public Service
13 Department and the legislature work to implement a
14 commercial PACE program. This, I think, would be much
15 more successful much quicker than the residential
16 program for a bunch of different reasons that I will
17 outline in written testimony.

18 Third, with regard to wind power, large-scale wind
19 power, I would recommend that a commission be
20 established to research the mechanisms for allowing
21 communities greater ownership of these wind projects.
22 So a group consisting of, for example, Vermont Agency
23 of Commerce and Community Development as well as the
24 PSD trade groups like Renewable Energy Vermont,
25 Division of Financial Regulation, Vermont Economic

1 Development Authority, and the Vermont Treasurer's
2 Office all come together and think through what the
3 obstacles are, how to overcome them to allow towns and
4 neighbors ownership stakes in wind projects.

5 I, one of my roles as a home energy improvement
6 advisor, and I'd like to point out a problem that I see
7 consistently which is the lack of consistency in the
8 incentives that are offered to homeowners for
9 undertaking substantial energy improvements. It seems
10 often the case that people now assume that there will
11 be incentives and, when the incentives disappear, lose
12 interest in undertaking major energy improvements. I
13 don't have a solution to that, but I see it as a
14 consistent problem.

15 I have worked in the field of biofuels for 15
16 years now, actually, almost 20 years, and I am somewhat
17 shocked to see ethanol considered a renewable fuel. My
18 understanding is that it takes almost as much petroleum
19 to create ethanol as the energy you get out of it, a
20 term called the energy return on energy investment, and
21 that doesn't even take into account the devastation
22 that happens as we increase corn agriculture in the
23 Midwestern US and the destruction to our waterways and
24 our soil in those agricultural communities. So I would
25 strongly question that assumption that ethanol-based

1 fuel is renewable.

2 Lastly, two quick points. I have heard a lot of
3 opposition to what's termed industrial wind and solar,
4 and the people that I talked to, especially young
5 generation Vermonters, see it as progress. I
6 understand that there are aesthetic concerns among some
7 people, but what I hear is this, moving away from
8 fossil fuels and towards these big renewables is, it's
9 progress, and, for myself, I would say I am proud to
10 live in a state that has set goals of 90 percent
11 renewable energy in the foreseeable future. Thank you.

12 DR. HOPKINS: Tori Parker and then Sam
13 Cowles.

14 MR. COWLES: We're going to go together.

15 MS. PARKER: I'm Tori Parker, and I'm 17,
16 P-A-R-K-E-R.

17 MR. COWLES: I'm Sam Cowles, and I'm 15,
18 C-O-W-L-E-S, and Tori and I both go to Burr and
19 Burton's Mountain Campus, which is a separate campus
20 from BBA, that focuses on environmental and sustainable
21 living, and we just entered into a unit of sustainable
22 energy and, like, all about the different energy
23 sources that we have to use like solar, wind, hydro,
24 etc.

25 MS. PARKER: Throughout our time at Mountain

1 Campus, we've been grappling with how we, as students
2 and as a community, can strive to become truly
3 sustainable. Recently, we visited a handful of
4 businesses and organizations that have inspired us to
5 make efforts and changes in our own lives. As students
6 growing up facing the issues of whether or not being
7 sustainable is in reach, this plan seems like quite a
8 task. In order to fulfill the goals set forth,
9 participation from all is going to be necessary.

10 MR. COWLES: For example, as teens, Tori and
11 I are really interested in electric cars, especially
12 what benefits will be provided for us if we decide to
13 make the switch. So we're wondering what the benefits
14 will be and also, How are you guys going to make the,
15 make the, have people make the switch from
16 gasoline-powered cars to electric cars, and will people
17 that decide not to make the switch put a damper on the
18 renewable energy goal? And, also, do you have plans to
19 get people involved in making the switch?

20 MS. PARKER: Along with plans to introduce
21 the benefits of electric cars, do you have plans to
22 extend education of topics such as these to schools and
23 students like us? And, if so, how do you plan on
24 involving schools in the process of working towards
25 becoming a sustainable state? Thank you.

1 DR. HOPKINS: Because they went together,
2 there's no -- I didn't get to as far as saying that
3 George Harvey is next and then Kathleen Hacker.

4 MR. HARVEY: I'm George Harvey. I come from
5 Brattleboro, H-A-R-V-E-Y, and I'm on the Brattleboro
6 Energy Committee. I'm not speaking as a member of the
7 committee. I keep a blog. I go through probably three
8 or four hundred news articles every day. I get up --
9 this is dairyman's hours. I take, you know, I'm up at
10 3:30 in the morning looking at the news, and when I'm,
11 when I find an article that I think is interesting, I
12 get a synopsis of it, about 50 words, and put it up on
13 my blog with a link, and I put up 10 or 15 of these
14 every day. The blog is geoharvey.wordpress.com, and I
15 also write for "The Green Energy Times", and my life is
16 all about energy and climate change.

17 And I think I have a very short message here, and
18 that is that there's one thing that I'd like to see
19 done in Vermont and, actually, everywhere, but in
20 Vermont the mechanism would be in the town, in the town
21 meetings. I think that it would be good if the State
22 required every town at every town meeting to pass an
23 item on the agenda that was, expressed some, expressed
24 what their posture would be on resilience and
25 sustainability, and that item could simply be to report

1 to the State, We're not doing anything, but it would
2 mean that everybody in every town meeting would be
3 engaged in the debate, and it's something that wouldn't
4 cost anything particularly, and it would give some
5 towns the ability to move in ways that they otherwise
6 would not.

7 DR. HOPKINS: Kathleen Hacker and then Morgan
8 Casella.

9 MS. HACKER: Kathleen Hacker, H-A-C-K-E-R.
10 My name is Kathleen Hacker. I live in Bellows Falls,
11 and, as a very concerned mother, grandmother, and human
12 being, I think we need to be doing an awful lot about
13 climate change and that this particular plan would be
14 enhanced by including a carbon pollution tax, which I
15 think is an important part of an overall effort to make
16 our societies reduce their uses of fossil fuel. Thank
17 you.

18 DR. HOPKINS: Morgan Casella and then Jill
19 and Joyce.

20 MR. CASELLA: Morgan Casella, Putney,
21 Vermont, C-A-S-E-L-L-A. I think you guys did a great
22 job with this. I like being from a state that says
23 former things, the obvious things. In relation to what
24 I said earlier in the question section, I just think
25 that, in the January publication you put out, you might

1 think about having specific funding language towards
2 piloting for some of these Tier 3 measures, because the
3 ambiguity of what that evaluation looks like, I mean,
4 immediately there between 2018 and creating those
5 markets is going to need some sort of additional
6 impetus to kind of help out there.

7 So towards any of those, Tier 3 in general, I
8 think it's a great -- it's always good to kick the can
9 forward to figure out how to get there as well as needs
10 to be done, but to figure out how to get load shifting
11 permanently on and demand response and these other
12 measures, I think you guys could clearly define a
13 little bit further what funding might be available for
14 pilot projects. Thank you.

15 DR. HOPKINS: Jill and Joyce, and that's the
16 end of the folks who had said yes. There was at least
17 one gentleman who wanted to add on, and you'll be next
18 and then we'll --

19 MS. JOYCE: So I'm Jillian Joyce, J-O-Y-C-E.

20 DR. HOPKINS: Oh, I'm sorry.

21 MS. JOYCE: That's okay. So I teach at the
22 Mountain Campus and have, for the last four years,
23 committed my professional life and, you know, many
24 years before that to educating students for
25 sustainability, and in our program it has really helped

1 us realize what it is that students want to learn and
2 want to know and want to see in the future, and so
3 we're really lucky to be able to continue to tailor
4 that education towards what they're demanding, and so,
5 in that respect, the Comprehensive Energy Plan has been
6 part of our curriculum for a few years now, which has
7 been great, and we've actually found that some of our
8 senators and representatives have much less of an
9 understanding of it than our students do. So,
10 hopefully, they'll be along the line in coming to help
11 work with you soon.

12 In terms of the realities, I mean, our students
13 and myself and a lot of people in our community realize
14 that there has to be some major shift in energy policy,
15 and they welcome and recognize that but that there's a
16 major disconnect between what our ambition might be and
17 then what the population is willing to accept. So
18 we've seen, you know, statistics that 1 percent of
19 solar power in Vermont, and yet there are lawsuits and
20 multiple concerns about siting, you know, and you look
21 at the terawatts of energy that need to be produced by
22 solar to meet these goals.

23 And, you know, my concern, and I'd love to see the
24 plan in the commission, is, How do you address that
25 disconnect between what citizens want and then the

1 reality of putting it on the ground? Seeing solar
2 that's something that's beautiful and taking
3 responsibility, seeing it as just one more piece of
4 meeting the future needs of our state and our citizens
5 and our students, that, really, that's a concern, that
6 there are so many opportunities to be able to do that.
7 So, you know, as our students ask, How do you start to
8 educate students? How do you start to educate
9 communities, make towns make those individual efforts,
10 instead of resisting that change, to really see that as
11 something to embrace? So changing our definitions of
12 what is aesthetically pleasing and what it means to be
13 a responsible citizen in Vermont can go a long way.

14 Thank you.

15 DR. HOPKINS: Is there anyone else who had
16 previously -- Guy? Well, no, you're next. And then
17 we'll do Guy. Was there anybody else who had not said
18 yes on the sheet but wants to make any comments here?
19 Otherwise, we'll end with those two. All right.

20 Thanks.

21 MR. THURRELL: Hi. I'm Pete Thurrell,
22 T-H-U-R-R-E-L-L. I own and run Soveren Solar, which is
23 the leading community solar provider in Southern
24 Vermont, so I'm speaking both for myself and my company
25 and my employees. There are a lot of things that I'd

1 like to say. One of them is that, if we're going to be
2 here on a habitable planet in 2050, we have to reduce.
3 It's not like a good idea to become sustainable. It's
4 like our lives depend on it, and the lives of lots of
5 other creatures depend on it too. So plans are a great
6 idea, but, as our last speaker mentioned, there are
7 lots of things that get in the way of the plan, and I
8 would like to see the plan address that more directly
9 and to see our culture address it more directly.

10 Germany leads the world in per capita solar and
11 wind installation. Germany has 30 percent less
12 sunlight than Vermont. Why does it work in Germany?
13 Because it works economically. The government set up
14 economic policies that make it possible for people to
15 invest in solar.

16 Two years ago, year-and-a-half ago, the Vermont
17 legislature raised the cap on net metering from 4
18 percent of each utility's total load to 15 percent of
19 that total load. No one, at that time, imagined that
20 that cap would get met before the end of 2016, which is
21 when that cap was meant to be reviewed, and now nearly
22 every major utility in Vermont is pushing up against
23 that cap. This is a horrible consequence for us and
24 for you who want to see solar installed.

25 The reason that solar has jumped from 4 percent to

1 15 percent in a year-and-a-half is largely because of a
2 federal tax credit of 30 percent that exists on solar
3 products. That tax credit is going to expire at the
4 end of 2016, but, as things stand now, net metering is
5 going to run out in Vermont early in 2015, and the last
6 year of the federal tax credit is going to go to waste
7 because we haven't pushed enough legislative agenda to
8 get net metering raised and carried forward until the
9 end of the tax credit. This is just a horrible thing
10 to have happen if we want to try to meet any kind of
11 the goals we have here.

12 Another thing, this last year the Agency of
13 Natural Resources independent administrative group
14 decided that no solar project could be sited in any
15 river valley in Vermont. No legislature stepped behind
16 it. No public opinion was ever sought on this
17 decision. They just allowed the agency to say, No, if
18 there's a river corridor and a river might ever go
19 there, you can't put solar there. So we've got a state
20 that, on the one hand, is making a lot of plans for
21 growth and, on the other hand, has policy being
22 established by state agencies that completely get in
23 the way of that growth.

24 We have policies to cut the subsidies for solar,
25 policies to lower the bonus factor for solar, policies

1 to eliminate net metering, and policies that, from our
2 point of view, are even maybe more devastating.
3 They're ones that will establish an economic reality in
4 Vermont where only large-scale projects will get built.
5 The projects we build are all 150 kilowatts or below,
6 and they're owned by citizens in Vermont. They're not
7 owned by out-of-state wealthy investors. The benefits
8 go to the citizens. The tax credits go to the
9 citizens.

10 The way we're moving, we're moving towards
11 large-scale projects, and the only people who are going
12 to be building them are going to be the SunEdisons and
13 the SolarCities who are bringing in out-of-state
14 corporations who come in with wealthy investors to
15 build these large projects. I would really like to see
16 the Comprehensive Plan also try to build the employment
17 base in Vermont by facilitating structures that allow
18 small Vermont companies to compete in a marketplace
19 with these large companies.

20 One of the things that did that over this last
21 period of time was a 500-kilowatt cap on net metered
22 projects. Turned out the 500 kilowatts was small
23 enough that the big companies didn't want to come into
24 Vermont and compete, but now we're down with the end of
25 net metering, and they're talking about doing all this

1 solar on this large scale. I can promise you that the
2 companies that are going to be building those large
3 scales won't be from Vermont.

4 So my major comment is, Look at the road blocks in
5 developing it, and the one thing I'd really like to
6 see, I think we're going to meet 90 percent renewable
7 way before 2050. Let's try for 2035. I mean, isn't
8 the Pope Catholic? Thanks.

9 DR. HOPKINS: Guy? Last comment.

10 MR. PAYNE: My name is Guy Payne. I live in
11 Saxtons River. I'm also the director of the
12 Sustainable Energy Outreach Network, but, like many of
13 us who have spoken before, I'm speaking for my own
14 self. I was surprised in looking at -- well, let me
15 back up and say, You did a great job. So my comments
16 are more, How do we take it forward, and not where the
17 deficits are. I was surprised to look at the state
18 government and notice that the Department of Education
19 is not part of it, and what worries me as one of the
20 challenges as we move forward is, Where's the work
21 force going to come from to handle all of this?

22 Some of the examples that highlight this is, in
23 your building trades and the tech centers, they are
24 hampered to move forward with advanced,
25 high-performance builders, because there's a state

1 curriculum that keeps things minimal. So all the
2 effort that is needed in terms of understanding what
3 building science is is not even in the same curriculum.
4 So that's how air, heat, and moisture move through a
5 building.

6 So here we are talking about energy efficiency,
7 and at the lower level, you know, the younger level of
8 our education, we don't even have the curriculum that
9 can bring people along, and these are what
10 high-performance builders are looking for. They are
11 looking for people who, at least at very minimum, have
12 an understanding of building science, maybe not the
13 ability to do it, but an awareness of it.

14 And, as we go forward with the buildings in terms
15 of your enclosures, buildings now are becoming much
16 more technology driven. It's the integration of
17 efficiency and the renewables, and what worries me is
18 that we don't have the work force ready to handle that
19 level of technology, whether it's controls, whether
20 it's the heat recovery systems, whether it is the
21 monitoring systems that, if you look around, I think
22 Green Mountain Tech Center up in Hyde Park is the only
23 one that has an HVAC program.

24 So, from a work-force-development perspective, I
25 think we're really missing the opportunity to bring

1 younger groups along. If we look at the adult
2 population, there are very few opportunities for adults
3 to learn some of the technologies and the trades that
4 are needed. We need to engage Vermont HITEC, who is
5 involved with manufacturing.

6 I just came back from Linz, Austria, as part of a
7 biomass seminar, and they have an incredible adult
8 education program with a hotel that's connected to it
9 so that people can come from various parts of upper
10 Austria and take advantage of the training that is
11 there. So here we have -- and I'm not just talking
12 training. I'm talking about learning experiences where
13 people can ongoing develop and learn and apply and be
14 coached and be mentored as they continue on. So I
15 think, from an adult perspective, we do need to have
16 registered apprenticeship programs, whether it's in the
17 building science or whether it's in any of the
18 technologies that are being required. That's from the
19 work-force-development perspective.

20 From the Vermont Energy Code, the building code,
21 there's the carrot, there's the stick, and there's the
22 tambourine. We have two of three. We don't have the
23 stick. You know, so we have these codes -- got it. We
24 have the codes, but, for example, a year ago in
25 Rockingham, there was not one Certificate of Compliance

1 that was listed with the Town Clerk's office, because
2 there's no enforcement, and I realize that's money. I
3 also realize that, from a contractor's point of view,
4 they don't want to be hampered, the creative ones, by
5 too much regulation. They need that time to
6 experiment. So we need to have the conversation,
7 because we need to have the enforcement, as far as I'm
8 concerned and as far as many of the contractors are
9 concerned, to uphold the standards that we've leaned
10 in. Thank you.

11 DR. HOPKINS: Thank you all very much for a
12 slew of great comments. One of the impressive things
13 about taking this road show around the state is the
14 impressive depth and breadth of the comments that we
15 hear everywhere we go, and this place is no exception.
16 So I thank you very much, and go forth and do good
17 work.

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19 (Whereupon the proceeding was adjourned at 7:55 p.m.)
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