Climate Action Commission Listening Tour
Brattleboro Meeting, October 5, 2017

Commission members in attendance: Deputy Secretary Peter Walke, Paul Costello, Johanna Miller, and Bob Stevens. Attendance per signup sheet: 47 people.

Ely Zamore-Cohen – I'm glad the state is helping to slow down climate change. I'm concerned that winters are getting warmer and the devastation from hurricanes. If we can get more people on bikes and living more local, but if more people in other states join in that would help. VT could be an example that could spread to other states. Thank you. See comments entitled "Ely Zamore-Cohen CAC Comments."

David Cohen – Brattleboro. I am the founder of V-bike and a therapist. V-bike is about re-booting the bike in VT, to be for transportation, not just recreation. The bike culture has not been fully developed in VT like in Vancouver. The automobile has colonized our landscape and our bodies. We are introducing designs that engage our bodies, minds and emotions. We are in favor of a tax on pollution and carbon. In our energy plan there is no mention of human power and we want to bring that back in. The consequences of not using our bodies impacts both mental and physical health. See comments entitled "Dave Cohen CAC Comments."

George Harvey– Brattleboro. I have a blog GeoHarvey.com about energy and climate change. I have a TV show and write for Green Energy Times. I agree with Governor Scott that VTers are taxed too much. We should reduce a tax that no body discussed, which is the tax that is put on us from the fossil fuel industry and the damage they do. You'll find we spend $1,000 per person per year from health effects of fossil fuels. I hope the Governor and Legislature will put a price on it and put a tax pricing carbon and the damage it does. Scientists like at Audubon and WWF…we have lost 60% of our wildlife to fossil fuels in last 40 years. 70% of seabird population and trees in VT and upland habitats are being lost. Our coldest night of the winter that blocks the pests like Lyme disease have gone up 10% F in last 10 years. This is caused by fossil fuels. Anything we can do to help people will use less fossil fuels. I hope Governor and Legislature will do what has to be done and put a price on carbon.

Caitlin Adair – Westminster. I've lived in VT since 1973. I'm founder of Living Earth Action group that meets weekly in response to threats to our planet. To stop warming our planet, we need to burn less fossil fuels and one solution is a tax on fossil fuels. But there is also the issue of healthy topsoil loss. When this happens, carbon is released into the atmosphere. Chemical agriculture and plowing does this and also makes the soil difficult to hold water. This results in P loading to the sea and polluted waterways. Let VT be the first state to support VT farmers in creating topsoil. Banning Glyphosate -Roundup, since it creates P loading. Advocate a global cooling initiative with yes, a tax on carbon and education for farmers to regenerative agriculture and carbon farming. Sequestering carbon in soil, eliminates toxins in our food supply and promotes healthy food, people, and animals. See comments entitled "Caitlin Adair CAC Comments."

Justin Lindholm – Mendon. I've been trying to do responsible energy siting and I was clobbered recently by a commenter in the news about a deer yard near a solar site. We are too polarized.

We need to look at what is the playing field in this state for renewables. David Blittersdorf has said what we need to do to get to 90%. We either have to bring in renewable energy from Canada or give up all airplane travel and move into very tiny apartments. So let's find out through some research, scientist, mathematicians, economists to find out what getting to 90% really looks like so we don't turn into one of the worst places to be. We really need to find out what it means to be 90% renewable.

Doug Grandt – Putney. I started my carrier at Exxon and ended it at California EPA. My hat is a Citizens Climate Lobby hat and buttons are against pipelines. Pipeline and lobbying is not going to get us there. We need to do this here. A carbon fee will not work according to my chart here. Airplanes, cars, and ships need a tax of $9,000 per ton of carbon to have an impact. Whereas coal plants need 30-40 cents per ton and they are already closing without the fee. We need to focus on the cars, airplanes, ships, and industrial sectors. We need to have a "multi-tiered carbon tax". We need to sequester 100 gigatons of CO2. Please talk to some experts about a carbon tax and how to get there. Thank you. See comments entitled "Doug Grandt CAC Comments."

Daniel Quipp – Brattleboro. I'm a teacher in Putney. I'm advocating for a price on carbon. I'm especially interested in programs that can help lower income VTers with weatherization and energy efficiency. Middlebury College published a report entitled "Leveraging Energy Equity Programs to Support Lower Income Vermonters. It highlights the structural barriers to energy equity such as lack of capital to fund energy efficiency projects. I experienced this problem earlier this year with a Heat Squad audit that was completed at my apartment, but my landlord doesn't have the money or incentive to take action on the weatherization. I would love VT to fund solutions like these by pricing carbon. Another system is a housing rating system so that you can see how much up front it will cost to heat and run a home or apartment before you buy or rent. So that will give VTers and idea of the true cost. See comments entitled "Daniel Quipp Comments."

Kelly Coleman – Brattleboro. I am in favor of pricing pollution to fund solutions. I'm looking for VT to lead the way on energy efficiency, weatherization, transportation, agriculture and clean energy solutions.

Kit Whallen – Brattleboro. First: State of VT buildings could lead by example; LED lights, weatherization, use green cleaning products. Second: Encourage, through tax incentives, citizen solar for households and the opportunity to buy into solar farms through credit on their electric bills and publicize this. Third: VT state should disengage from petroleum funds in big banks and pipelines and I've heard that we do not need to be connected to big banks. Fourth: Put a moratorium on fracking. Fifth: Tax carbon. Sixth: Use methane for ag. use and greenhouses. Seventh: Eating locally grown food and reward people to who eat local food. Eighth: Provide heating assistance to VTers for solar and low carbon heating sources similar to programs for oil heating fuel assistance. See comments entitled "Kit Whallen CAC Comments."

Ann Zimmerman – First: Address inadequate public transportation systems both rurally and in towns. This would benefit all VTers. Make the technologies to lower fossil fuel use available to low income VTers. A price on carbon could be partly dedicated to this purpose. This would be a

boon to VT's economy. Price carbon and make it work for low income VTers and fix the transportation system. See comments entitled "Ann Zimmerman CAC Comments."

Marlene Everengham – Brattleboro. CO2 is terrible in the atmosphere, but it is wonderful in the soil. It is easy to do this, we are told by NRDC that each 1% increase in soil carbon could draw down 1.2 gigatons of CO2; about 2/3rds of US emissions. 20K gallons of water per acre is retained. So, we can start at home. There is a committee SB103 working on regenerative soils. See comments entitled "Marlene Everengham CAC Comments."

Linda Bailey – Brattleboro. We are paying a lot for impacts of climate change: health costs, construction on our roads from storms that are more frequent. We should proactively invest in our infrastructure for carpooling, walking, ridesharing. We need to invest in small scale distributed energy for resilience. VT is a small-scale place and we need to support small things. We need to invest in energy efficiency. That's things we will not have to pay for and it should be available for low income VTers and renters. Be proactive. See comments entitled "Linda Bailey CAC Comments."

Guy Payne – Director of Sustainable Energy Outreach Network. We are a training and work force development organization. We need to revise the VT training program to allow small companies to participate. ~$2M funding goes to this and it is overly restrictive to the small businesses that want to participate. The Green Building industry is a vital economic sector identified through the Comprehensive Economic Development Strategy (CEDS). The second carrier in need behind nurses are carpenters. In the trades we call these skills "building science", which is more than just how to build a shed, but things like how moisture moves through a house. Workers now need to have a better understanding of building science. We need support of VT training program. Smaller companies can't access this money and these are the folks we will rely on for the energy renovations. This has died in committee far too often. See comments entitled "Guy Payne CAC Comments."

Alex Wilson – 1. VT should commit to carbon pricing preferably carbon tax when 2 other states commit do the same. 2. VT should work to speed transition to plug in electric vehicles through reduced registration fees until the vehicles hit 40% of the market and the revenue loss could be made up by increasing registration costs slightly for gas and diesel vehicles. 3. Building energy efficiency. 4. Establish a target for reducing Vehicle Mileage Traveled in VT and public education campaign for carpooling and biking, with a reward campaign with a focus on schools, tourists and residents. 5. Resilience hubs throughout the state, where people can recharge cell phones and laptops, access fresh water and even shelter and WIFI. These could be at churches schools, etc. and there should be incentives to help create these hubs. See comments entitled "Alex Wilson CAC Comments."

Tom Finnell – Brattleboro. Privatize the profits and socialize the costs. This is unfair. The system should be set up such that the cost of whatever you are doing or making should also cover the cost to dispose of it whatever it is you are doing. Carbon tax is what should be done and will be a return to fairness.

Marilyn Chiarello – Brattleboro. Healthy soils benefit us and the water cycles. We must manage our storm water to keep it in and on the land and not in water bodies and out to ocean. It will require low tech solutions. Michael Cratchet has done this in Slovakia. He restored waterways by employing many people and the waterways became new ecosystems. Keeping the water on the land will balance local water cycles. And below the ground. Next on the agricultural side, we need regenerating the soils. The regenerative bill at Legislature deserves a serious look and farmers will benefit in many ways and is less costly for farmers. They won't have to buy all the inputs because microbes will help. Healthy soils help with resiliency from flooding as well. My proposal is to incentivize farmers to adopt regenerative practices and have municipalities work together at the watershed level.

Ellen Schwartz – Brattleboro. General point: We need to be transitioning towards locally based regenerative economies that don't leave anyone behind. How, short term list: 1. Solar that provide livable jobs 2. Energy cooperatives that give communities control and can invest in solar farms. 3. Create structures for local control for energy decisions. 4. Invest in public transportation to reduce the use of cars. 5. Invest in weatherization. Long term list: 1. Avoid false solutions like nuclear, natural gas, biofuels, and fracked gas. In long term, I'd like to see VT join with other states like the rural electrification in 1930s, but with renewable electrification. It is the responsibility of government to give us access to renewables. See comments entitled "Ellen Schwartz CAC Comments."

Nancy Braus – Putney. Focus on transportation. We need creative mass transportation that can serve an area of low population density. The old model doesn't work. We need a study to creatively do mass transportation. Like free Uber-type vans that respond to people's needs. We need to educate new drivers on things like idling and what it means if you have a truck or take a trip to the store six times a day versus once. This will help them understand that they have a role to play. A carbon conscious driver's education program. Lastly complete sidewalks are critical.

Maeve McBride – South Burlington. Director of 350 VT. Ditto a lot of what's been said. 1. The overarching goals of the public utility commission was to reach every part of VT with electricity. They are still living under that modus, for example that we need to have fracked gas in every part of VT. But they should switch to localized systems. Efficiency VT was started to reduce electricity use, but now we need to give them new marching orders to electrify to reduce carbon pollution. We need to have a carbon tax to be used for weatherization and transit. How are we going to deal with climate refuges when they come to VT. We need a state bank to keep our VT money here in VT. Not investing in Wall Street or fossil fuels. We need to address polarization in this state. A lot of these ideas can work like carpools, but we are not reaching people because of polarization. So, we need to depolarize.

Tad Montgomery – Brattleboro. I'm on the Brattleboro energy committee and Windham Regional Commission. The cheapest new source of renewable energy is wind, but the Governor taken it off the table. The most effective way to deal with cost of climate change is a carbon tax. Without it, it's like sending an army into battle without guns. We have solutions. We know the solutions. What we need is the will-power to implement them.

Abby Mnookin – Brattleboro. I work with 350 VT and VT Wilderness School, but I'm here also as a mother of two kids. We have the solutions, what we are lacking is action. We're nowhere close to 90% renewable. People want climate action. We need to put a price on carbon, transition to renewable energy, public transit, bike infrastructure, regenerative agriculture, and weatherization. We need to do all of them. No nuclear, no clean diesel, no fracked gas, and we need to take our money out of banks like TD that support pipelines. We need to take bold action now.

Nancy Anderson – West Brattleboro. The prices VTers are paying now are high enough for our fuel especially for low and middle income. I can't do solar because I don't pay taxes so I can't take a tax cut for solar. I would like to have a program where someone would put solar on my house and I would have a great reduction in price. We need to charge someone else for a carbon tax. I don't know where the money's needs to come from. In VT we are more educated than most states. We don't have enough money to go to alternative energy.

Michael Bosworth – Brattleboro. I support taxing carbon pollution. The most efficient way to address climate change is a tax on carbon pollution. There were four different ideas from the Legislature about a carbon tax that are worth exploring. While it would cost more at the pump or for heating oil there would be other benefits for you. In 2003 Brattleboro created a climate action plan. We made some strides in energy efficiency, but 80% of the goals were in this area and there is still much to be done for energy efficiency. We need to find the capital and create jobs in this sector. We have the downtown Brattleboro building program that could use capital to help it move forward.

Zack Berger – Burlington. Most common suggestion has been for VT to put a price on carbon pollution. It is the most important action and will be the catalyst for the change we need. It is a win for VT. We are the tail end of the fossil fuel lines in VT. We spend 80% of our money on this. Here's a quote from President Calvin Coolidge "I love Vermont because of her hills and valleys, her scenery and invigorating climate, but most of all because of her indomitable people. They are a race of pioneers who have almost beggared themselves to serve others. If the spirit of liberty should vanish in other parts of the Union, and support of our institutions should languish, it could all be replenished from the generous store held by the people of this brave little state of Vermont." Actions we take in VT have never been more important.

Oscar Psychas – Student at Middlebury. From N. Florida. Climate change will likely increase temperatures by 6 degrees. How will our state cope when 10% of our state will be covered by water? Last month my parents had to canoe to work because of hurricane Irma. VT faces 4 times more summer heat events. We need to price carbon. It spurs investments in new jobs and dividends and can lift up families.

Bennett Pienkowski – Middlebury student. We need to price carbon. Lots of great proposals, but there is only one proposal that will reduce climate change and bolster the climate economy. They've done it in British Columbia and VT can benefit too.

Thomas Polich – I have 36 years in energy industry. 1981 I fracked in the U.S. and Wales etc. Shifted to renewables. I'm special council to Drift. We are a load serving entity and a utility

approved to provide baseload energy. We do this through CDG subscriber acquisition, a beta subscriber program and through software redistributes energy to "pro-sumers" in our network. We are funding projects through crowd sourcing funding. So, this is investor free, peer-to-peer energy systems. Here is a report, the "Conservative Case for Carbon Dividends." This is a transfer of dividends not a tax. It's a redistribution of money. We also need micro-gridding and micro-hydro with storage in household units and moving to CDG that can be done without the need to invest with solar on a roof and that can democratize renewables. See comments entitled "Thomas Polich CAC Comments."

Becky Jones – I'm a physician and a part of 350 VT. A budget is a moral document. I'm here to advocate for a price on carbon pollution. The savings from biking and walking in terms of health greatly outweigh other costs.

Lawrence O'Neil – Putney. What are we taxing with the carbon tax. Are we taxing biomass also? The VT energy plan calls for doubling the amount of wood fuel. Wood releases double the amount of carbon than coal. So when we talk about taxing carbon would we be taxing fossil fuels and shift to using biomass? The carbon tax I think will hit the poor the hardest. They drive older vehicles and less efficient houses and they will be paying the price on this. I firmly believe we need to reduce all carbon emissions. I'm not against the carbon tax, it just needs to be executed correctly. We need a push on solar, wind and hydro and wind in particular. See comments entitled "Lawrence O'Neil CAC Comments."

Ralph Meima – I represent Green Lantern; a renewable energy company mostly solar, with more than 60 projects. Now we are at over 27 megawatts. If you look at VT's history with energy efficiency and renewables there have been a lot of missed opportunities. Solar has had good progress. 5 years ago there was discussion of retrofitting 80,000 housing units in the state. There hasn't been much action on this lately. The thermo-efficiency task force got hung up on how to fund it. These are just two examples of a lot of energy and time without much outcome. In a year or two we may look back and solar growth may have fallen off and the Legislature may look at how to reinvigorate our goals. So, 21 members is a huge commission, with lots of experience. I urge you to not let the work of this commission be a diversion or as cover for the Governor. If he is not willing to cross the line to a carbon tax, we can't afford any more missed opportunities or dropped balls. Be courageous to make sure the Commission achieves something lasting.

Mike Bald – Royalton. I'm not here to talk about carbon tax or more research and education. I'm not looking for regulations. You can't squeeze a nickel out of people these days. We talk about things we want tonight, but they cost money. We need to fund goals and creative solutions. We have two things wrong…climate change and water quality is not our problem. It is our mindset…holding on to our old ways. Water quality. We don't have a water quality problem…we have a soil issue. When the Hartland Dam had an issue, they paid people to bring them top soil. Our water quality issue is tied to our soil issues. Generating energy, wind is great, but transmission is a problem too. Especially for gas pipelines. Who pays for cleanup of hazardous materials response clean ups? How about we don't bring oil into our state. Help people afford to work the land. I can't afford to pay workman's comp and liability. I can't afford to pay people. Give me the prisoners watching cartoons in Pennsylvania and I'll get work

done. We have VTers burning piles of vegetation all the time. Burn invasive species like buckthorn for heat.

Jessie Haas – We need regenerative agriculture. Nothing holds carbon better than a plant. I like that we have a healthy soils pilot program. I think if people understood that a grass fed dairy product helps pull down carbon and helps the lake, they would support it. If there was a label for that, like "Lake Friendly" "Carbon Clean," the market could be really helpful in this instance if people knew about it. VW is giving some money, I don't know what best thing to do with it is, but it would be good to use it for something good. Maybe VPIRG's electric school buses.

Michael Daley – I've been thinking the state is pretty soon going to tell me I can't put my banana peels in the trash anymore and maybe it's time we said that fossil fuel companies can't put their pollution our air anymore. I love my electric car and I hope the state continues to promote the adoption of these vehicles. It's been a great experiment. Electric cars are set to take off like Solar has. We shouldn't do things that will prevent this future.

Tom Simon – Putney. My wife and I own Hempfully Green. We propose direct action through adding biochar to farmlands, free range pasturing, and building with hemp lime or hempcrete. These sequester carbon. Hempcrete has been used in Canada. And Hempcrete creates a building envelope with 75% higher insulation. It's fireproof and stands for centuries. Reduces mold issues and pests. Good for people with health issues. There is a housing shortage and this carbon hungry material should be used. See comments entitled "Tom Simon and Emily Peyton CAC Comments."

Tatiana Schreiber – Westminster. I support regenerative agriculture. We need to keep our trees to sequester carbon. We take our trees for granted. We are starting to see more forest fragmentation. I want support for re-forestation and agroforestry. Crops like mushrooms and medicinal plants can grow within agroforestry. I want support for agroforestry. I want a label for farmers that steward the environment and sequester carbon.

Representative Michael Mrowicki – We could combine tax reform and climate action. There are a lot people out there not from Brattleboro or Burlington and we need to highlight the economic incentives that climate action can be a part of. We need to make sure that lower income people are not adversely affected. This is the work we have to do together.

Vermont Climate Action Commission – Public Meeting – Brattleboro – 10/5/17

NAME	TOWN	Do you wish to speak? Yes	No
George Harvey	Brattleboro	☒	☐
Caitlin Adair	Westminster	☒	☐
Justin Lindholm	Meadon	☒	☐
Doug Grandt	Putney	☒	☐
Daniel Quiff	Brattleboro	☑	☐
Kelly Coleman	Brattleboro	☑	☐
Kit Whallen	Brattleboro	☑	☐
Ann Zimmerman	Guilford	☑	☐
Patsy Cushing	Bratt	☐	☑
Madelle Cavenaugh	Bratt	☑	☐
Kate O'Connor	Brattleboro	☐	☑
Linda Bailey	Brattleboro	☑	☐
Guy Boyce	Saxtons River	☑	☐
Alex Wilson	Dummerston	☑	☐
Tom Finnell	Brattleboro	☑	☐
Carol Levin	Brattleboro	☐	☐
Marilyn Chiarello	"	☑	☐
Bill Pearson	"	☐	☐
Ellen Schwartz	Brattleboro	☒	☐
		☐	☐

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Vermont Climate Action Commission – Public Meeting – Brattleboro – 10/5/17

NAME	TOWN	Do you wish to speak? Yes	No
Russ Powell	Gill, MA	☐	☒
Nancy Braus	Putney, VT	☒	☐
Maeve McBride	So. Burlington, VT	☒	☐
Sawyer Olson	Guilford, VT	☐	☒
TAD Montgomery	BRATTLEBORO	☑	☐
Philip Coolbeth	Brat	☐	☐
Not there Kim Chamberlin	Dummerston VT	☑	☐
Abby Mnookin	Brattleboro VT	☑	☐
David Cohen	Brattleboro, VT	☑	☐
Ely Zamore-cohen	Brattleboro	☑	☐
Nancy Anderson	Brattleboro VT	☑	☐
Michael Bosworth	Brattleboro, VT	☑	☐
Greg Howe	Brattleboro VT	☐	☒ WANT TO LEAVE
Zach Berger	Burlington, VT	☒	☐
Oscar Psychas	Middlebury, VT	☒	☐
Bennett Pienkowski	Middlebury, VT	☒	☐
Thomas Polich	Manchester, VT	☒	☐
Becky Jones	Brattleboro VT	☒	☒
Barbara Edwardson	brattleboro, VT	☐	☒
Wallace O'Neill	PUTNEY, VT	☒	☐

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Vermont Climate Action Commission – Public Meeting – Brattleboro – 10/5/17

NAME	TOWN	Do you wish to speak? Yes	No
Mike Speeth	Putney	☐	☐ Not Here
Jonathan Marge	Marlboro	☑	☐
Ralph Meima	Brattleboro	☑	☐
TATIANA SCHREIBER	WESTMINSTER	☑	☑
MIKE BALD		☒	☐
Jessie Hass	Westminster	☒	☐
Michael Dacey	Westminster	☒	☐
Tim Simon	PUTNEY	☒	☐
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We need to make a just transition away from dependence on fossil fuels. Just transition means that as we move away from the extractive economy, we are transitioning toward locally based, regenerative economies. – "Doesn't leave anyone behind."

Specifically, I would like to see Vermont prioritize the following:

In the near term:
—invest in renewable energy such as solar; creating meaningful jobs that provide a good standard of living
—support—financially and structurally—energy cooperatives or community-owned renewables that give our communities democratic decision-making power over how our energy is produced and make renewable options affordable to homeowners like myself who would like to rely on renewables but are priced out of the market
— create structures for local control over decisions about energy
—invest in public transportation, to reduce the use of cars and increase mobility for people who don't have a car or can't drive
—invest in weatherization to reduce fuel consumption and fuel bills for people struggling to make ends meet
—avoid false solutions claiming to be "clean" energy, such as nuclear, ~~fracking, natural~~ (via pipelines, gas, and biofuels
—avoid carbon trading schemes that allow corporations to continue polluting so long as they plant trees somewhere else (often on indigenous lands)

In the long term:
I'd like to see Vermont join with other states in something akin to the Rural Electrification Administration that brought electricity to rural areas in the 1930s. We need a Renewable Energy program that brings affordable renewables to people around the state and beyond. If private enterprise can't do this affordably, then it's the duty of government to do so, so all of us can access renewable sources of energy – including low-income folks.

Ellen Schwartz
135 S. Main St. #2
Brattleboro 05301

My name is Tom Simon. My partner, Emily Peyton, and I have started a company called Hempfully Green. We propose direct action to mitigate climate change through carbon sequestration techniques such as the addition of biochar to farmlands, free range pasturing of large meat animals, and building with hemp lime, known as Hempcrete. Hemplime building materials produce homes and buildings that sequester carbon, where most current construction materials add to our carbon problem. Hempcrete has wide support in Canada, England, New Zealand and many other countries in Europe. WE can build with this material here to directly help slow and reverse climate change. Hempcrete also delivers a building envelope of 75-85% higher efficiency reducing heating and cooling costs. This building material also provides 5 other bonuses: It is virtually fireproof, will stand for centuries sparing more carbon by longevity, and is averse to mold issues of which Vermont has a history of buildings with health issues. It repels pests of any kind and it is the best housing material for chemically sensitive persons. It is superior to other alternative building materials such as haybale and cob.

Most people are aware of the housing shortage in Vermont. We at Hempfully Green want the Climate Action Commission to focus on direct carbon sequestration activities by supporting the use of this healthy and efficient carbon hungry material.

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Caitlin Adair's remarks at the Governor's Commission on Climate

October 5, 2017
Brattleboro, Vermont

How to Effect Global Cooling

We are at a pivotal moment in human history.

The Earth is warming fast, and our scientists are trying to figure out why and what to do about it.

One remedy is to burn less fossil fuels. This is good, and I support a tax on carbon if it does not lean too heavily on lower income Vermonters.

But a tax on carbon is not enough.

Microbiologists, hydrologists and soil scientists are now pointing out another huge cause of carbon imbalance and global warming: the loss of healthy topsoil.

We've all heard about topsoil loss, for decades, but did you realize that when topsoil is 'lost', carbon is released into the atmosphere?

That when topsoil is 'lost' and compromised by plowing and chemical agriculture, it is rendered unable to hold much water?

When rain falls on eroded and compromised topsoil, it runs down to streams and rivers and ultimately to the sea, it carries nitrogen and phosphorus and precious topsoil with it, polluting our waterways.

Let Vermont be the first state to support our farmers in creating topsoil, not destroying it.

Let us be the first state to clean up our waterways by banning glyphosate (Round-Up herbicide), since glyphosate use causes massive release of phosphorus into our lakes and streams.

I advocate the creation of a **Global Cooling Initiative** that includes:

1) education for our farmers in regenerative agriculture
2) investment in the transition to Pro-Life Farming (Carbon Farming) that
   - sequesters carbon in living soil
   - creates new topsoil
   - eliminates toxins from our food supply
   - promotes healthy food, plants, animals and humans.

Vermont can lead the way to Global Cooling.

Resources:

1. Please see the Soil4Climate-authored article **"Agriculture of Hope: Climate Farmers in North America"** that in appears in Permaculture Magazine North America. Bill McKibben referred to it as "fascinating and hopeful." As you may know, this article brings particular attention to the leadership work of Vermont activists and practitioners.
The article:
https://permaculturemag.org/2017/09/agriculture-of-hope/

Bill McKibben's tweet about it:
https://twitter.com/billmckibben/status/915381460588253184

2. **Cat Buxton and Henry Swayze** of the Vermont Healthy Soils Coalition:
Connecting communities to affect positive food system change from the ground up.
Grow More, Waste Less | Food Systems Consulting, LLC Sharon VT 802.359.3330
www.growmorewasteless.com
Vermont Master Composter • Garden & Compost Manager at Thetford Elementary School • Coordinator for Upper Valley Apple Corps • Project Manager for the Hartford Riverwalk Trail • Vermont Healthy Soils Coalition • Soil4Climate-VT

3. **Didi Pershouse** from Thetford, VT, of www.soilcarboncoaltion.org
Here is what I received from her a few days ago:

Hello All!
I'm thrilled this is such an active discussion list.
I feel it is far more useful to teach principles--the principles by which nature continually regenerates functional landscapes, and which we can use to guide our practices--rather than spend a lot of time advocating for or debating specific best practices. Principles allow us to be far more creative and context specific in our land management.

I have chosen to focus my energy on education through hands on engagement in fun experiments and group discussions about how we can mimic natural systems in our land management, and all the co-benefits of doing that.
Writing educational materials has been time consuming, but the last two years of effort are paying off big time, with a lot of educational, agricultural, and environmental organizations and agencies downloading my new *Understanding Soil Health and Watershed Function* facilitator's manual. Some very large projects are planning to adopt it as a training manual (such as a 5 state project that is working on cleaning up the Mississippi River). You can download the latest version (which just came out a few days ago) here: http://soilcarboncoalition.org/learn

I purposefully chose to use language focused on water-- flooding, drought, erosion, etc.--rather than climate change, because it is being distributed to all the FFA teachers in Oklahoma and other states, many of whom will feel alienated from a climate based discussion. Everyone can agree that the water cycle is broken. And everyone can see how nature does things if they are allowed to look.

I plan to keep writing. I also am bringing more teachers to the area for intensive courses. Blain Hjertaas, one of our top soil-carbon-challenge farmers from Saskatchewan, will be teaching a class in holistic land management and holistic decision making for all sorts of projects. The first 3 day session will be right before the Vermont Grass Farmers Association conference, The second 3 day session will liikely be sometime later in January or February. He and I will both be speaking at the Living Soils Symposium in Montreal in a couple of weeks: https://www.livingsoilssymposium.ca/

BTW, I do think it is interesting to think about how to adapt things like the johnson-su method to our region. Context is so important and I'm glad we know enough to ask how we might have to adapt it, rather than assuming it will work here. That is a key understanding--to consider context in all of this.

My version of the soil health principles is below.

- Much of soil life is fed by liquid carbon produced by photosynthesis, exuded through living plant roots. **Keep living roots in the ground as long as possible.**
- Soil life needs protection from heat, pounding rain, and wind. **Keep soil covered year-round.**
- A diverse system is more resilient than a monoculture. **Use plant diversity to increase diversity in soil microorganisms, beneficial insects, and other species.**
- Soil life is hard at work building underground structures we depend on for water, carbon, and nutrient cycling, and for structural stability for our own infrastructure. **Try not to disturb those underground structures with tillage.**
- Like any other living system, soil ecology will succumb to overwhelming stresses. **Minimize chemical, physical, and biological stresses.**
- A healthy landscape stores and filters water, cools the surrounding atmosphere, creates mist and clouds, and prevents flooding and drought. Complex systems involving all kingdoms of life are responsible for the water cycle on land. **Plan with the whole water cycle in mind.**
- Nature never farms without animals. Animals move nutrients, create small and large pores in soil, manage flows of water, pollinate crops, balance predator/ prey relationships, and replenish soil microbes. **Plan to integrate and welcome a diversity of animals, birds, and insects into the system.**
- Every place has unique strengths and vulnerabilities. **Get to know the context of the land**

Warmly,
Didi

From: Caitlin Adair <caitlin@sanctuaryvermont.com>
Sent: Friday, October 6, 2017 2:59 PM
To: Kelly, Josh
Cc: Cat Buxton; Didi Pershouse; Henry Swayze
Subject: my remarks last night in Brattleboro
Attachments: Caitlin Adair's remarks at the Governor's Commission on Climate.docx

Hello Josh.

Thanks for coming last night and for taking notes! I really enjoyed being there and contributing. You asked me to send you my notes, so here they are, along with some resources to connect you with Vermonters who make this their life's work, Cat Buxton, Henry Swayze and Didi Pershouse. Also, please read the article on "Agriculture of Hope: Climate Farmers in North America". It made quite an impression on Bill McKibben, who called it 'fascinating and hopeful'. I hope everyone on the Commission reads this article: https://permaculturemag.org/2017/09/agriculture-of-hope/

After the meeting I spoke with Johanna, who asked me to send her a link to the article, through you. Perhaps you could forward this whole email to her, please.

In case anyone is interested, our group Living Earth Action Group, meets weekly on Fridays in Westminster. I write a weekly newsletter that people seem to like, in case anyone on the commission would like to see it, I'll be happy to make them a subscriber.

with gratitude that someone is listening,

Caitlin Adair
Westminster West, VT
802-387-5779

_____
The Universe is a communion of subjects, not a collection of objects. - Thomas Berry

This Sept → North American Permaculture Mag

Soil Carbon Coalition

Natural Resources Defense Council

Each 1% increase in soil carbon in North American Ag. lands (grazing + crop.)

Could draw down 1.2 gigaton of CO_2 or about 2/3 of U.S. emissions

1% – also retention of additional 2000 gallons of water per acre

Vermont – regen soils program in committee (SB 43)

certified land managers → demo multiyear improvement in soil health

Marlene Everengham

Marlene Everengham CAC Comments

Kit Whallen CAC Comments

1. State of VT bldgs / switch to LED lights
renewables - set an example / LEAD

2. Encourage w/ tax incentives - citizen
solar for households AND
more solar farms that citizens can buy into
for credit on their own electric - PUBLICIZE THIS

3. State of VT - disengage from Big banks that
support big notorious pipelines like Keystone XL
and Dakota Access
How? Have VT business be transacted
by a state bank that is not linked to Big Banks

4. Moratorium on plans to and run fracked gas
pipelines through VT

5. Tax on everything that emits carbon

6. Capture methane from their farms + make it available
to VT agriculture

Encourage dairies via tax breaks to

7. Encourage via tax breaks eating locally grown food
producers + Consumers

8. ~~Heating~~ Provide heating assistance to lower income
Vermonters ~~by~~ in the form of solar installations

Why

All concerned + have been about climate
change + role of carbon. Hurricanes /
example - Another example - our beautiful
VT forests + by extension VT economy hurt by
wet summer, resulting in a fungus that is affecting
~~our~~ the maples.

Climate Action Commission Statewide 'Listening Tour'

Thursday, October 5 – Marlboro College Graduate School, Room 1-E, 28 Vernon Street, Brattleboro, VT

Carbon Tax:

What are we taxing? Fossil fuels only? What about "biomass"?

The Advanced Wood Heat market can be expected to grow in the years ahead. The 2016 Vermont Comprehensive Energy Plan calls for doubling the use of wood fuel for heating buildings by 2035.

In a letter sent to Senate leaders on 24 February and released earlier this week by the Massachusetts-based Woods Hole Research Center, 65 scientists warned that "this well-intentioned legislation, which claims to address climate change, would in fact promote deforestation in the U.S. and elsewhere and make climate change much worse."

The letter notes that burning wood releases more carbon dioxide than coal for each unit of power produced. And there's no assurance all that carbon will wind up back in trees and the ground, the scientists caution. Logged land could be put to other uses, new forests might be managed differently than the ones they replaced, and insect infestations or droughts could make it hard to reestablish trees.

John Gunn of the Maine based nonprofit research lab, Natural Assets Laboratory, co-authored a 2010 study that concluded the amount of carbon released per unit of energy is actually greater for forest biomass than it is for fossil fuels. That's because wood isn't a very energy-dense material, which means you have to burn a lot more tons of it to match the energy output of gas or coal.

The life-cycle carbon emissions from generating electricity at a utility-scale biomass facility are about three times greater per MWh than emissions from a similar-sized natural gas electric power plant and 50 percent greater than a coal-fired electricity plant, according to Gunn's research.

Who are we taxing?

A Carbon Tax is a REGRESSIVE TAX

The working poor will be hardest hit – low income earners live in the poorest of the housing stock and do not drive the newer most advanced vehicles. They use the most fuel to heat their homes and to power their vehicles. They will be forced to pay a disproportionate amount of their income in tax. Despite the well intentioned idea of a revenue neutral tax, it will remain a burden, even **if** it is executed properly.

It is my belief that we need to reduce all carbon emissions. And make a serious investment in renewable and alternative methods of energy generation, solar, hydro, and wind.

Lawrence O'Neill, Putney Vermont

Thomas Polich CAC Comments

FYI – Thomas Polich

Background: I have 36 years in the energy industry. I started in oil and gas in 1981 as a lease records analyst and while a paralegal in a natural resources and construction law-firm, went to law school at night, My JD is from the University of Denver, emphasis in natural resources and business transactions, I am licensed in Colorado.

I am Special Counsel to Drift Marketplace, Inc. funded by the VC's of Uber, AirBnb and Warby-Parker, Drift is FERC LSE, NY ESCO and Utility approved to provide both base-load and renewable energy through standard and shared CDG projects.

Drift's SaaS provides CDG subscriber acquisition, invoicing and DER data management, thus off-take and guaranty of offtake for standard and CDG projects. Beta subscriber program in ConEd operational. Drift is acquiring projects to support their client base and clients to support their projects and plan to use Orange Button for complete transparency for projects in which our subscribers wish to participate. Drift creates a peer-to-peer energy trading platform (bi-lateral) and crowd-sourced funding programs to provide for project construction, sourcing, guarantee, acquire and manage offtake. We plan to require that all developers use Orange Button.

This background is simply to speak to you with some knowledge of the electricity markets, the carbon tax and more importantly the future of the utility markets that may ameliorate the need for government intervention and "taxation".

First – this is not a Democrat / Republican thing: the Climate Leadership Council, whose members include James Baker, Hank Paulson, George Schultz, Rob Walton and Ted Hallstead among others and all the conservative Republicans, Stated in their publication the conservative case for carbon dividends, advanced **four pillars of the carbon dividend plan**:

a gradual increase in a carbon tax from source producers (the top four energy companies in 2016 earned a combined total revenue of $21.5 trillion)

a transfer of the carbon dividends from the "tax" for All-Americans

a border carbon adjustments

regulatory rollbacks.

First - It is important to review this matter, not from the "tax" perspective, but from the "dividend" perspective. First a small sensible carbon tax makes sense to everyone.. $40/ton increasing over time.

Second - the proceeds returned to the American people on an equal and montly basis via a dividend check.

Third – the gradual elimination of other types of taxes such as property and income taxes.

Fourth – border adjustment form carbon content and tariff or rebate adjustments for products leaving the US that are carbon sensitive priced (an adjustment for compliance).

Second,

I have just completed a close examination of the electricity market, production, transmission and distribution and there are upcoming issues that you may want to consider.

Participation despite the Paris Agreement, Trade & Tariff issues, federal programs, state updates and a look ahead at the various development strategies timings and issues such as soft costs. Current and near-term incentives such as the ITC/ PTC, and the implications to solar development zero emissions programs and the fossil fuel industry. Net energy metering (NEM) in various states with a focus on New York and Massachusetts and the shift away from NEM to DER, and value stack additions through ancillary services. We will look at the issue of storage, finance, rebates and other performance-based incentives, such as renewable energy credits.

Peer-to-Peer Energy Trading
Reverse Demand Response = NO Curtailment - AZ PSC
Crypto-Currencies and Blockchain

Develop: Micro-grid
Micro-hydro
storage - residential
community Solar

Mounting evidence of climate change is growing too strong to ignore while the extent to which climate changes due to man-made causes can be questions the risks associated with future warming are too big and should be hedged. There are a number of actions that can be taken based on sound economic analysis that embodies the principles of free-market and limited government while strengthening our economy benefiting working class Americans reducing regulations and protecting our national heritage.

These benefits accrued regardless of one's view on climate science.

I would urge the Commission to implement and take the lead in creating a comprehensive approach, that includes a carbon tax and dividend mechanism.

Thank you.

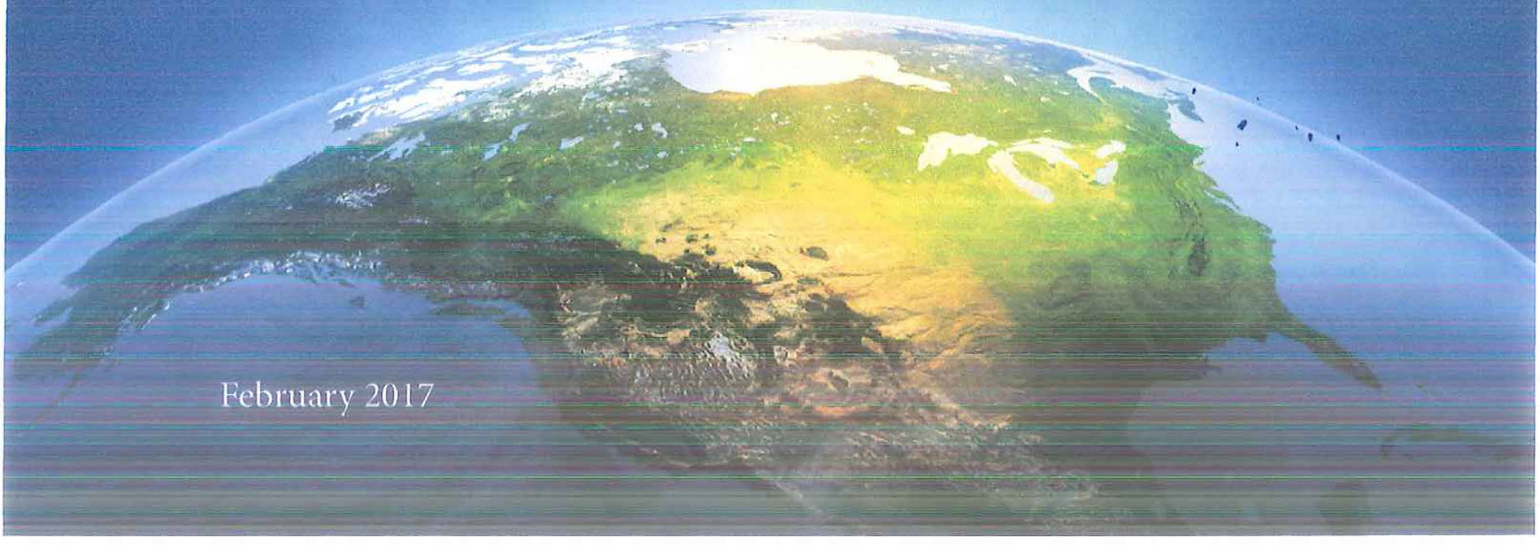
Read: Jeremy Rifkin
The Third Industrial Revolution
2013

CLIMATE LEADERSHIP COUNCIL

THE CONSERVATIVE CASE FOR CARBON DIVIDENDS

How a new climate strategy can strengthen our economy, reduce regulation, help working-class Americans, shrink government & promote national security

James A. Baker, III
Martin Feldstein
Ted Halstead
N. Gregory Mankiw
Henry M. Paulson, Jr.
George P. Shultz
Thomas Stephenson
Rob Walton



February 2017

ABOUT THE AUTHORS

JAMES A. BAKER, III, served as Secretary of State under President George H.W. Bush, Secretary of the Treasury under President Reagan and White House chief of staff under both. He is a senior partner in the law firm of Baker Botts.

MARTIN FELDSTEIN served as Chairman of the President's Council of Economic Advisers from 1982 to 1984 under President Reagan. He is the George F. Baker Professor of Economics at Harvard University and President Emeritus of the NBER.

TED HALSTEAD is the founder, President & CEO of the Climate Leadership Council. Previously, he founded New America, a leading public policy think tank. He is co-author of *The Radical Center: The Future Of American Politics.*

N. GREGORY MANKIW served as Chairman of the President's Council of Economic Advisers from 2003 to 2005 under President George W. Bush. He is the Robert M. Beren Professor of Economics at Harvard University.

HENRY M. PAULSON, JR., served as Secretary of the Treasury under President George W. Bush. Previously, he served as chairman and chief executive officer at Goldman Sachs. He is the founder and chairman of the Paulson Institute.

GEORGE P. SHULTZ served as Secretary of State under President Ronald Reagan, and as Secretary of Treasury and Labor under President Nixon. He is the Thomas W. and Susan B. Ford Distinguished Fellow at the Hoover Institution.

THOMAS STEPHENSON is a partner at Sequoia Capital, a venture capital firm based in Silicon Valley. Stephenson previously served as the United States Ambassador to Portugal from 2007 to 2009 under President George W. Bush.

ROB WALTON served as chairman of the board of Walmart, the world's largest retailer and employer, from 1992 to 2015. He is currently Chairman of the Executive Committee of Conservation International.

ABOUT THE CLIMATE LEADERSHIP COUNCIL

The Climate Leadership Council is an international research and advocacy organization whose mission is to mobilize global opinion leaders around the most effective, popular and equitable climate solutions. As a central part of this mission, the Council develops and promotes new policy frameworks based on carbon dividends for each of the largest greenhouse gas emitting regions. Currently active in Washington and London, the Council will expand to Berlin, Beijing and New Delhi next. Find out more at www.clcouncil.org.

THE NEED FOR A CONSERVATIVE CLIMATE SOLUTION

Mounting evidence of climate change is growing too strong to ignore. While the extent to which climate change is due to man-made causes can be questioned, the risks associated with future warming are too big and should be hedged. At least we need an insurance policy. For too long, many Republicans have looked the other way, forfeiting the policy initiative to those who favor growth-inhibiting command-and-control regulations, and fostering a needless climate divide between the GOP and the scientific, business, military, religious, civic and international mainstream.

Now that the Republican Party controls the White House and Congress, it has the opportunity and responsibility to promote a climate plan that showcases the full power of enduring conservative convictions. Any climate solution should be based on sound economic analysis and embody the principles of free markets and limited government. As this paper argues, such a plan could strengthen our economy, benefit working-class Americans, reduce regulations, protect our natural heritage and consolidate a new era of Republican leadership. These benefits accrue regardless of one's views on climate science.

THE FOUR PILLARS OF A CARBON DIVIDENDS PLAN

1. A GRADUALLY INCREASING CARBON TAX

The first pillar of a carbon dividends plan is a gradually increasing tax on carbon dioxide emissions, to be implemented at the refinery or the first point where fossil fuels enter the economy, meaning the mine, well or port. Economists are nearly unanimous in their belief that a carbon tax is the most efficient and effective way to reduce carbon emissions. A sensible carbon tax might begin at $40 a ton and increase steadily over time, sending a powerful signal to businesses and consumers, while generating revenue to reward Americans for decreasing their collective carbon footprint.

2. CARBON DIVIDENDS FOR ALL AMERICANS

All the proceeds from this carbon tax would be returned to the American people on an equal and monthly basis via dividend checks, direct deposits or contributions to their individual retirement accounts. In the example above, a family of four would receive approximately $2,000 in carbon dividend payments in the first year. This amount would grow over time as the carbon tax rate increases, creating a positive feedback loop: the more the climate is protected, the greater the individual dividend payments to all Americans. The Social Security Administration should administer this program, with eligibility for dividends based on a valid social security number.

3. BORDER CARBON ADJUSTMENTS

Border adjustments for the carbon content of both imports and exports would protect American competitiveness and punish free-riding by other nations, encouraging them to adopt carbon pricing of their own. Exports to countries without comparable carbon pricing systems would receive rebates for carbon taxes paid, while imports from such countries would face fees on the carbon content of their products. Proceeds from such fees would benefit the American people in the form of larger carbon dividends. Other trade remedies could also be used to encourage our trading partners to adopt comparable carbon pricing.

4. SIGNIFICANT REGULATORY ROLLBACK

The final pillar is the elimination of regulations that are no longer necessary upon the enactment of a rising carbon tax whose longevity is secured by the popularity of dividends. Much of the EPA's regulatory authority over carbon dioxide emissions would be phased out, including an outright repeal of the Clean Power Plan. Robust carbon taxes would also make possible an end to federal and state tort liability for emitters. To build and sustain a bipartisan consensus for a regulatory rollback of this magnitude, the initial carbon tax rate should be set to exceed the emissions reductions of current regulations.

HELPING WORKING-CLASS AMERICANS

President Donald J. Trump's electoral victory stems in large part from his ability to speak to the increasing frustration and economic insecurity that many voters feel the political establishment has failed to address. This frustration has found expression in a growing populist sentiment and yearning for fundamental change. A carbon dividends plan responds to these powerful trends.

Relieving Economic Anxiety

Today's economic insecurity is driven by both technological progress and globalization. As such, it does not lend itself to easy answers. A carbon dividends program provides a rare exception: a simple idea that strengthens the economy and elevates the economic prospects of the nation's disaffected. The Department of Treasury estimates that the bottom 70% of Americans would come out ahead under such a program. Carbon dividends would increase the disposable income of the majority of Americans while disproportionately helping those struggling to make ends meet. Yet these dividends are not giveaways; they would be earned based on the good behavior of minimizing our carbon footprints.

Redirecting Populism

Increasingly, voters feel that the American political and economic system is rigged against their interests. Populism threatens the current policy consensus in favor of liberalized trade and investment. The best remedy is to redirect this populist energy in a socially beneficial direction. Carbon dividends can do just that based on a populist rationale: We the People deserve to be compensated when others impose climate risks and emit heat-trapping gases into our shared atmosphere. The new ground rules make intuitive sense: the more one pollutes, the more one pays; the less one pollutes, the more one comes out ahead. This, for once, would tip the economic scales towards the interests of the little guy.

> *Carbon dividends would increase the disposable income of the majority of Americans while disproportionately helping those struggling to make ends meet*

STRENGTHENING OUR ECONOMY

Incentivizing Growth & Innovation

An ideal climate strategy would simultaneously reduce carbon emissions and steer America towards a path of more durable economic growth. A carbon dividends plan can do exactly that. A carbon tax would send a powerful market signal that encourages technological innovation and large-scale substitution of existing energy and transportation infrastructures, thereby stimulating new investment. Second, the plan would offer companies, especially those in the energy sector, the predictability they now lack, thus removing one of the most serious impediments to longer-term capital investment. Third, because many regulations would become unnecessary, the plan would give companies the flexibility to reduce emissions in the most efficient way.

> *This plan would steer America towards more durable economic growth by encouraging technological innovation and stimulating new investment*

The Immediate Impact of Future Policy

A well-designed carbon dividends plan would further contribute to economic growth through its dynamic effects on consumption and investment. Just as central banks rely on forward guidance to influence future market expectations, if investors know that a carbon tax will increase steadily over time, the stimulatory effect of the final tax rate would be felt almost immediately for infrastructure and utility projects, especially ones that have long-term paybacks. In addition, forward-looking households would have an incentive to borrow to make durable purchases that would reduce their carbon footprint. Congress might even consider allowing individuals to borrow against their future dividend income for certain clearly defined purposes, such as higher education or the purchase of an electric vehicle.

POLICY FINE PRINT

A carbon tax should increase steadily and predictably over time so that companies and consumers can plan accordingly, and the previously mentioned economic stimulatory effects can be harnessed. At the completion of a five year period, a Blue Ribbon Panel could recommend whether the tax rate should increase further, based on the best climate science available at the time. Provisions must be established for the unbanked to receive their monthly dividend checks, possibly through commercial services such as PayPal or Western Union. The dividend income should be tax-free. Exports by companies in sectors with greater than 5% energy cost in final value should have any carbon taxes rebated on leaving the United States. Finally, non-emissive fossil fuel products (e.g. asphalt for road use) should be exempt, with a refund for any tax previously paid.

> *With the privilege of controlling all branches of government comes a responsibility to exercise wise leadership on climate policy and promote a solution that showcases the full power of enduring conservative convictions*

THE IMPERATIVE TO LEAD

With the privilege of controlling all branches of the government comes a responsibility to exercise wise leadership on the defining challenges of our era, including global climate change. It is incumbent upon the GOP to lead the way rather than look the other way. Republicans now have a rare opportunity to set the terms of a lasting market-based climate solution that warrants bipartisan, industry and public support. No less important, this is an opportunity to demonstrate the power of the conservative canon by offering a more effective, equitable and popular climate policy based on free markets, smaller government and dividends for all Americans.

Guy Payne

Climate Action Request

I'm being very targeted with what I have to say. We need to revise the Vermont Training Program to allow smaller companies to participate. This is a $1.2 million dollar fund to assist companies with their training needs. The problem with this fund is that it is overly restrictive in terms of the criteria that must be met in order for companies to participate

Granted,I'm speaking today in support of the training needs of the green building industry; an industry identified as a vital economic sector in the State CEDS Analysis and a sector whose carpentry hiring needs are second only to nurses looking forward to the next 10 years – as identified by the 2017 McClure Foundation's work. 1350 job openings.

It is also an industry in which the current reality of the technical knowledge and skills levels of the workers is not at a level to build according to the needs to lower our carbon emission footprint and meet our State's Energy Goal of 90% Fossil Free by 2050. This incumbent workforce as a whole does not have the understanding of Building Science. Ask any respected builder and they will tell you that 90% of what they see workers doing is not applying the necessary knowledge and skills of Building Science. This is no longer a profession that equates building a shed with building a house. Beyond the math and building science requirements, builders now must think in terms of systems, and access and digest research findings, charts and reports. Not only do we need to train incoming workers, but also our incumbent workforce

I'm speaking to the need to revise the Vermont Training Program, a $1.2 million dollar fund to assist companies with their training needs. The problem with this fund is that it is overly restrictive for small companies to participate. The criteria requires:

1. **Full time permanent employees making a minimum of $13.00 per hour upon completion of training**

2. **The funds being requested do not duplicate other state and/or federal training funds (i.e. WIA, WETF, VSAC, Reach-Up, VocRehab, etc.)**

3. **The participating companies will be offering a minimum of three of the benefits below (check all that apply)**

Health Insurance (with 50% or more of premium paid by employer)	Dental Insurance Assistance
Paid Vacation	Paid Holidays
Child Care	Retirement Benefits
Other Paid Time off excluding Sick Time	Other Extraordinary Employee Benefits (List Below)

We're trying to change an industry, but we are making it difficult for the ones with the greatest need to do so.

Alex Wilson CAC Comments

RESILIENT DESIGN INSTITUTE

Alex Wilson

5 October 2017
Vermont Climate Action Council
Testimony of Alex Wilson, President, Resilient Design Institute

Vermont should look at options for slowing the advance of climate change and preparing for a changing climate that can be accomplished with minimum negative impact on the Vermont economy. I suggest these actions:

1. Vermont should commit to instituting carbon pricing (preferably a carbon tax) when two out of three adjoining states commit to the same. Provisions should be included in such a measure to mitigate the impact on border communities, perhaps through a reduced tax on fuel products within a certain distance from the border of a state that has not instituted such a tax.

2. Vermont should work to speed the transition to plug-in electric and plug-in hybrid-electric vehicles by instituting reduced registration fees for these vehicles until such vehicles represent a significant fraction of new-vehicle sales (e.g., 40%). The lost revenue from such a measure could be made up for by modestly boosting the registration fees on gasoline- and diesel-powered vehicles. The loss in highway fuel taxes (because plug-in electric and plug-in hybrid-electric vehicles use less fuel) could be made up for by a slight increase in the highway fuel tax (separate from a carbon tax).

3. Establish a target of having a significant percentage of all new homes in Vermont (e.g., 50%) built to net-zero-energy standards by 2025, and develop a public education campaign as well as incentives or regulatory actions to achieve that goal. Such homes would be highly insulated and also incorporate solar arrays (either on the house, on ground-mounted racks on the property, or through participation in a community solar array).

4. Establish a target of significantly reducing vehicle miles traveled in Vermont (e.g., 20% reduction) by 2025. Implement public education campaigns promoting carpooling, public transit use, and bicycling. Also investigate incentives for achieving this goal—perhaps even sponsoring a competition seeking ideas for achieving such a goal. The focus of such efforts should be on schools, employers, tourists, and residents.

5. Encourage the creation of "resilience hubs" in communities throughout the state. These would be sites where residents could charge cell phones and laptop computers, obtain safe potable water, communicate with loved ones (i.e., wireless signal) during times of emergency when the power grid is down, and in some cases, provide emergency shelter locations. Such resilience hubs could be at schools, town offices, churches, private companies, and residences. Establish incentives or provide funding for creating such hubs.

Respectfully submitted,

Alex Wilson

122 Birge Street, Suite 35 · Brattleboro, VT 05301
802-257-7300 ext. 106 · www.resilientdesign.org · alex@resilientdesign.org

Linda Bailey, Brattleboro

Linda Bailey CAC Comments

Thank you for being here + listening.

We are already paying a lot for our inaction on climate change, + our dependence on the fossil fuel infrastructure.

We're already paying a carbon tax, but it's not a line item on a product's price usually.

- We're paying with increased health care costs because of pollution + associated illnesses. We're paying for the costs of health issues caused by poor food choices spurred by subsidies for industrial agricultural 'products' (that are not food).
- We're paying in re-active infrastructure repairs that are needed because of the increasing number + severity of storms.
- If we were instead to pro-actively invest in our infrastructure to support public transportation, + walking + biking options, + carpooling + rideshare vans so that people who cannot drive still have an option for getting places — that would be paying for things we believe in, + have a positive impact.
- We need to invest in small scale, distributed alternative energy sources so that people + communities can be more resilient when the unexpected happens.
- We need to invest in energy efficiency — and make that available + affordable for lower income residents, + renters in particular.

We are already spending money — let's rearrange our priorities and pay for things that push us to a positive future + not stay stuck in the status quo that has become so disastrous.

Ely Ely Zamore-Cohen CAC Comments

add on to Elyzamore-cohen, Brattleboro VT:

I Its no fun without a good cold, snowy winter

Ann Zimmerman CAC Comments

my name is Ann Zimmerman and I'm from Guilford, Vermont. Thank you for the opportunity to address the commission in your goals to ~~[illegible]~~ implement solutions to our carbon crisis to preserve the Vermont we all know & love

My particular concerns coming from the perspective of being a low-income Vermonter are two:

* 1st we absolutely need to address our really inadequate public transportation system including bus & train transportation, both between different towns in Vermont & also within the different population centers We need to make it possible for people living & working in a rural state to get around w/out using so much fossil fuels & believe this would be an economic benefit to low-income Vermonters & actually all Vermonters

* ~~[illegible]~~ Secondly I am also concerned that we make the technologies that are now available to lower our fossil fuel use available to Vermonters of varying income levels & not just those who have the funds to invest a lot up front

similar to Daniel

I am a renter living in an old farmhouse. My landlord is a struggling farmer who doesn't have the cash to invest in improvements

I'm most hopeful that some of the ideas being put forward for putting a price on carbon pollution that include carefully crafted offsets for low-income people could address this issue of accessibity to carbon-reducing technology. Funds raised through putting a price on carbon pollution could be partly dedicated to this purpose, as long as we take into consideration the burden on those who already struggle in our economy

This could be a great boon to Vermont's economy as well, by spending those funds in Vermont as opposed to money being spent on fossil fuels which are generally sent out of Vermont.

I know their are many pieces to solving this puzzle, but improving access to transportation alternatives & creative incentives to use less by pricing carbon pollution should be part of the solution.

"Daniel Quipp Comments"

Daniel Quipp CAC Comments

My name is Daniel Quipp from Brattleboro. Thank you for coming to Windham County tonight. I am here tonight to advocate for funding climate solutions by pricing pollution (carbon).

In particular I would like to see the state fund programs that enable lower and middle income Vermonters to access energy efficiency and weatherization services. ~~As explained~~ Earlier this year Middlebury College published a report entitled "Leveraging Energy Equity Programs to Support Lower Income Vermonters". The report highlighted the structural barriers to energy equity such as a lack of capital to fund energy efficiency projects, VT's older housing stock and for renter households the problem of split incentives. This is where a homeowner will decline to make energy efficiency upgrades because they will not reap the benefits and tenants lack the incentive, and permission, to make efficiency upgrades on a property they do not own.

I experienced this problem earlier this year when, after having an energy audit, my landlord declined to take any action leaving my wife and I to choose between affording groceries this winter or paying the heating bill.

I hope that the commission will decide to fund solutions such as energy efficiency and weatherization by putting a price on carbon pollution.

Thank you for coming and thanks for your time.

Dave Cohen CAC Comments

From: Walke, Peter
Sent: Friday, October 6, 2017 1:26 PM
To: Kelly, Josh
Subject: FW: Climate Change Actions Committee Recommendations Regarding New Bike Technologies & Design

Another

From: Dave Cohen [mailto:dave@vbikesolutions.org]
Sent: Friday, October 6, 2017 10:24 AM
To: ANR - VCAC <ANR.VCAC@vermont.gov>
Subject: Climate Change Actions Committee Recommendations Regarding New Bike Technologies & Design

Dear Climate Change Action Commission,

Thank you for this opportunity to provide comments towards your important work in guiding and advising the state around Vermont's response to climate change.

My main recommendations here to the committee focus on my work as the director of VBike (www.vbikesolutions.org). For the past three years VBike has been busy introducing Vermont to new bike technologies and designs that make bicycle transportation far more viable, practical and enjoyable. We've made significant strides in updating Vermont's outdated vision of the bike, but so much more can be accomplished with the help of the state.

During the past decade and especially over the past 5 years, there has been a creative explosion in electric-assist bikes, e-assist conversion kits (that can turn any bike into an e-bike), cargo bikes, and a variety of designs and innovations that are revolutionizing the idea of what a bike can do and how it can transport us. Like traditional bikes, these vehicles harness the energy of a human being, but may also include a substantial and expanded hauling capacity and combine this with the supplementary power of an electric-assist system so that a person can use a bike to transport passengers (children & adults), move loads, or just perform the daily local errands with profoundly greater ease. These exciting innovations are readily available and on the market. And just as important as this, they are now being sold at an increasing number of bike shops throughout the nation. This is radically transforming the nature of bike transport and having a major impact on cities and towns throughout the United States and abroad.

We encourage the state to get fully behind these new bike innovations to authentically address climate change. In fact, the promotion of these new bike designs and technologies in Vermont might very well have a greater impact on reducing carbon emissions than the promotion and proliferation of electric cars. Electric cars will continue to require much of the same infrastructure, still demand massive energy inputs, continue to drive unsustainable development and wasteful land use, further promote sedentary lifestyles, and continue the marginalization of other more environmentally sensible and community friendly transportation options. Conversely, electric bicycles can help transform our towns and cities into bike and pedestrian friendly environments, reduce automobile dependence, promote local living, inspire far more sensible community planning, make our streets safer, have tremendous physical and mental health benefits, and dramatically lower the energy requirement for personal and household transportation.

Incidentally, with the help of VBike, Brattleboro has emerged as a leader in these bike innovations. Not only are there more e-bike and e-cargo bike riders here than in any other part of the state, but the bike shops in town have become a model for shops around Vermont for their expertise in installing e-assist conversion kits, stocking high quality and affordable e-bikes, e-cargobikes and e-trikes, providing e-bike customization services, and developing skills to maintain and repair e-assist systems. For this level of know-how to grow and to have a much greater availability of bicycle innovations to take root around the state much more needs to be done.

Here are some of VBike's recommendations for the Vermont Climate Change Action Committee to bring to Governor Scott and the state legislature:

1) Offer significant subsidies for the purchase of electric bikes and conversion kits with an emphasis on making these bikes affordable for lower income households
2) Sales tax relief for the purchase of e-assist bikes for a period of time to help jumpstart the adoption of e-bikes
3) Help fund training programs for bikes shops to help them to retool and reskill their businesses to become full service

centers for electric-assist technologies & new bike designs
4) Help fund the establishment of demo fleets statewide of e-bikes, e-cargo bikes, e-trikes and other hybrid human-electric car-like vehicles such as the PEBL and ELF
5) Support a carbon tax to fund these programs.

Again, thank you for this opportunity to make these comments and recommendations. If you have any questions please don't hesitate to contact me.

Sincerely

Dave Cohen
VBike Director

www.vbikesolutions.org
info@vbikesolutions.org
& visit us on Facebook

Vermont Climate Action Commission

Marlboro College Graduate School, Brattleboro
Doug Grandt, Putney, VT

…

SUMMARY OF MY THREE RECOMMENDATIONS (Chart #1)

Declining cap on carbon-based fuels
    Limit imports into VT & sales in VT
Multi-level revenue-neutral carbon price
    by fuel type: diesel, gasoline, gas, coal
    by sector: freight, passenger, industry
Carbon drawdown aka CDR & DAC
    DCR — Carbon Dioxide Removal
    DAC — Direct Air Capture

MY CAREER AND WAKE-UP CALL

I am and industrial engineer and a petroleum engineer by training (UC Berkeley, 1970)

My first job at Humble Oil (Exxon) was computer simulations of Alaska's Prudhoe Bay oil field

My career was mostly industrial engineering and corporate planning at Fortune 500 companies

Unemployed at age 57, I had a wake up call and decided to begin a new career at California EPA - Air Resources Board implementing California's Global Warming Solutions Act of 2006

WHY I WEAR THIS HAT & T-SHIRT: FOCUS ON RENEWABLES VS. PIPELINES AND D.C.

My hat signifies my 8-9 year involvement with Citizens' Climate Lobby (CCL) and commitment to pricing carbon emissions, having lobbied in D.C.—meeting with over 60 Congressional staff.

The buttons and pins on my hat are my many non-violent direct actions fighting dilbit, oil and gas pipelines in Texas, Nebraska, South Dakota, North Dakota, Wisconsin and Minnesota.

My shirt is from the Renewable Energy Vermont 2017 conference earlier this week, and it indicates my conclusion that **expanding renewable energy infrastructure locally in Vermont** is necessary because fighting pipelines and lobbying Congress in D.C. are futile.

WHY "A PRICE ON CARBON" IS NOT SUFFICIENT (Chart #2)

This chart is logarithm, starting at $1 with equal spacing up to $10, $100, $1,000 and $10,000

Displaying the information on regular graph paper would stretch 2 miles high. This is just 1 foot.

I have not found any study on the effectiveness of carbon price other than this one. We cannot use the British Columbia carbon tax as proof of success. Objective assessments show it failed.

This shows that the price to reduce emissions from passenger and freight vehicles, aircraft, boats and ships is up in the top range from about $900/ton CO2 to $10,000/ton CO2.

Congress and CCL proposals are $25-$50/ton, increasing moderately each successive year. That level of price on carbon impacts only gas- and coal-fired power plants, which are already being replaced by cheaper wind and solar installations even without a price on carbon in place.

We need to tailor a suite of prices on carbon for the industrial and transportation sectors.

CO2 EMISSIONS IMPLICATIONS FOR ACHIEVING 2°C, 1.5°C AND 300PPM (Chart #3)

What level of carbon tax will actually effect CO2 reductions? Nobody knows for sure.

The target has changed from 2°C to 1.5°C and now there is talk about restoring to 300ppm

To assure success within the urgently short time frame, we must abandon carbon-based fuels

Most refineries must go out of existence in short order, but Vermont has no refineries. We can **control the amount of fossil fuels that come into the state and reduce sales to zero.**

In addition to reducing CO2 emissions to zero, we must drawdown CO2 from the air.

Declining cap on carbon-based fuels

Limit imports into VT & sales in VT

Multi-level revenue-neutral carbon price

by fuel type: diesel, gasoline, gas, coal

by sector: freight, passenger, industry

Carbon drawdown aka CDR & DAC

DCR — Carbon Dioxide Removal

DAC — Direct Air Capture

Assessing carbon lock-in

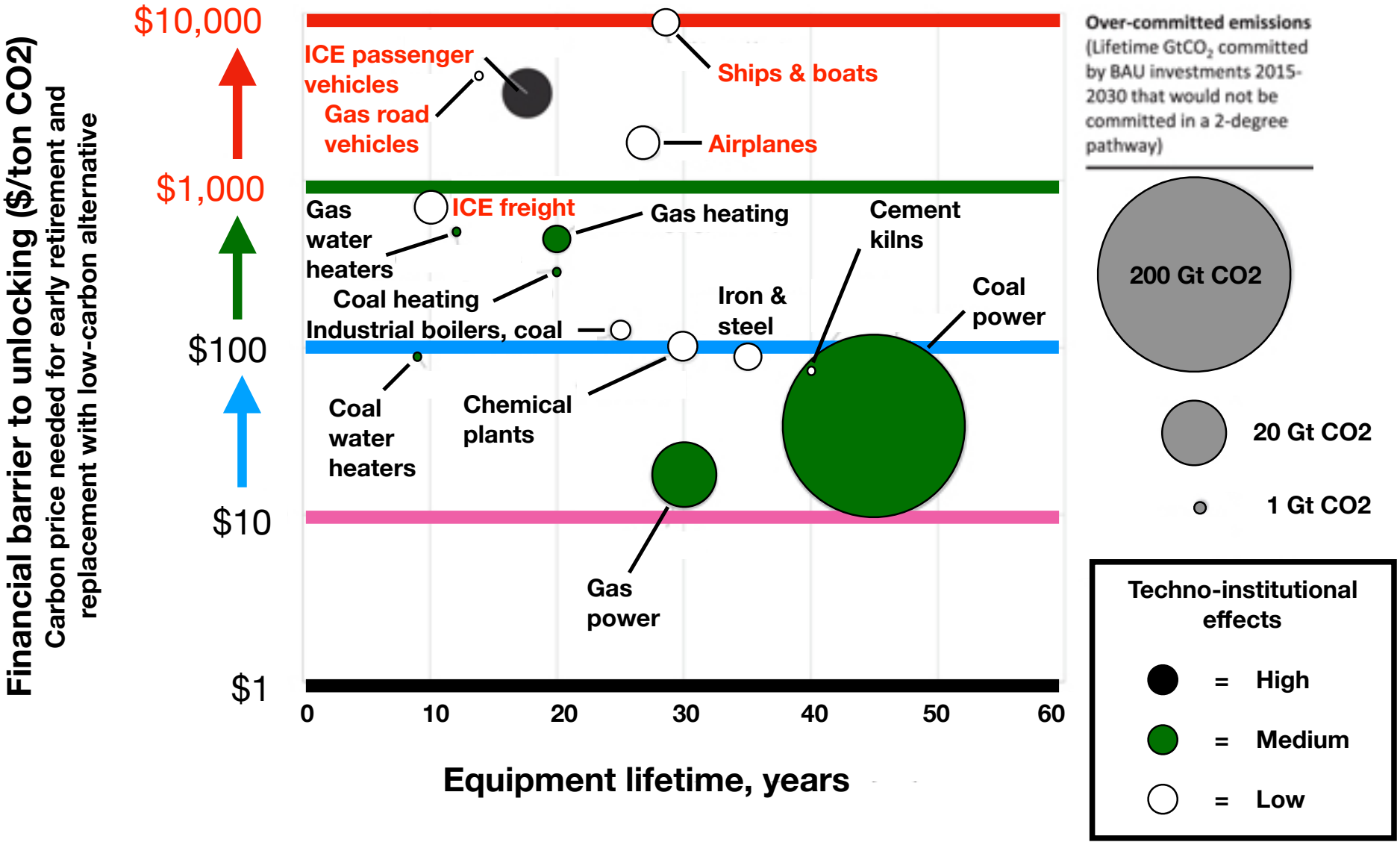


Figure 1. Global assessment of carbon lock-in risks by fuel and sector.

Peter Erickson, Sivan Kartha,
Michael Lazarus, Kevin Tempest

Bit.ly/IOP25Aug15

Published 25 August 2015

Solving the Climate Dilemma: The Budget Approach*

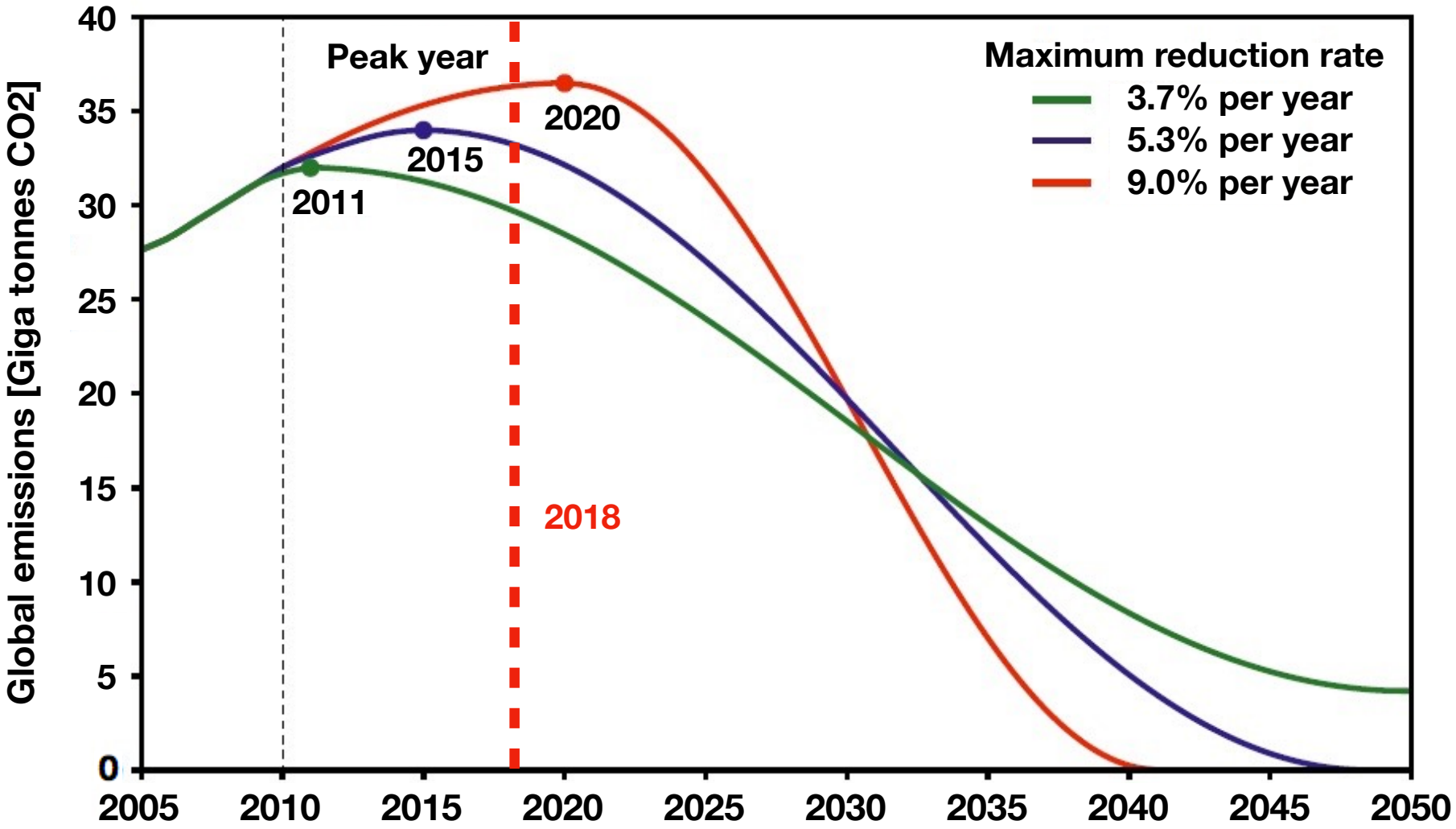


Figure 3.2-1 Examples of global emissions pathways — emissions capped at 750 Gt. At this level there is a 67% probability of achieving compliance with the 2°C guard rail.

German Advisory Council
on Global Change (WBGU)

Bit.ly/WBGU-2009

* Special Report 2009
WBGU, Berlin, 2009

Vermont Climate Action Commission
Marlboro College Graduate School, Brattleboro
Doug Grandt, Putney, VT

SUMMARY

A declining limit on fossil fuel imports and sales will reduce CO2 emissions absolutely.

German Advisory Council on Global Change (2009)

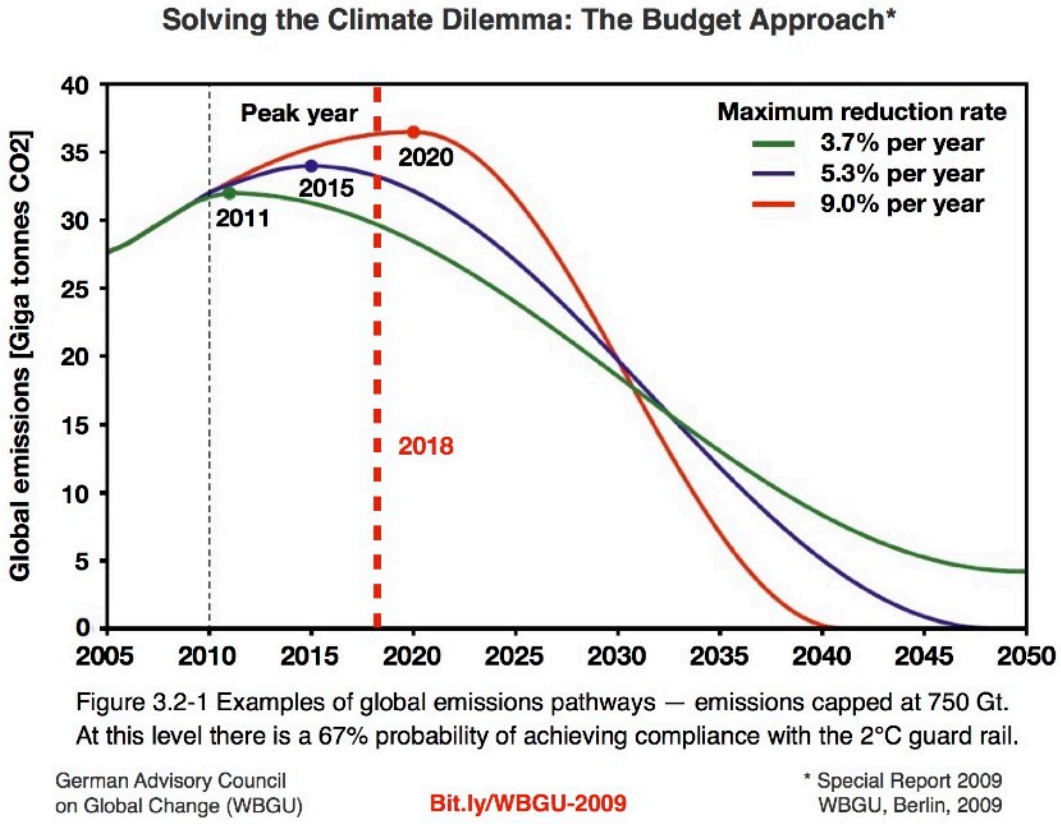


Figure 3.2-1 Examples of global emissions pathways — emissions capped at 750 Gt. At this level there is a 67% probability of achieving compliance with the 2°C guard rail.

1) German Advisory Council on Global Change - examples of global emissions pathways.
2) **Global emissions 750 Gt cap** gives a 67% probability of achieving **2°C** over pre-industrial.
3) If we begin reducing global emissions by 2020, we must **abandon carbon fuels by 2040.**
4) James Hansen - Climate Science, Awareness and Solutions Program, Columbia University

- *Assessing "Dangerous Climate Change": Required Reduction of Carbon Emissions to Protect Young People, Future Generations and Nature* (Dec. 3, 2013) **Bit.ly/HansenPLOS**
- "A cumulative industrial-era **limit of ~500 GtC fossil fuel emissions and 100GtC storage** in the biosphere and soil would keep climate close to the Holocene range."
- "Cumulative emissions of ~1000 GtC sometimes associated with **2°C** global warming, would spur "slow" feedbacks and eventually warming of 3—4°C with **disastrous consequences**."
- "Emissions reduction of 6%/year and 100 CtC storage in the biosphere and soils are needed to get CO2 back to 350 ppm, the approximate requirement for achieving the planet's energy balance and stabilizing climate this century. Such a pathway is exceedingly difficult to achieve, given the current widespread absence of policies to drive rapid movement to carbon-free energies and the lifetime of energy infrastructure in place."

IOP Science - Assessing Carbon Lock-in (2014)

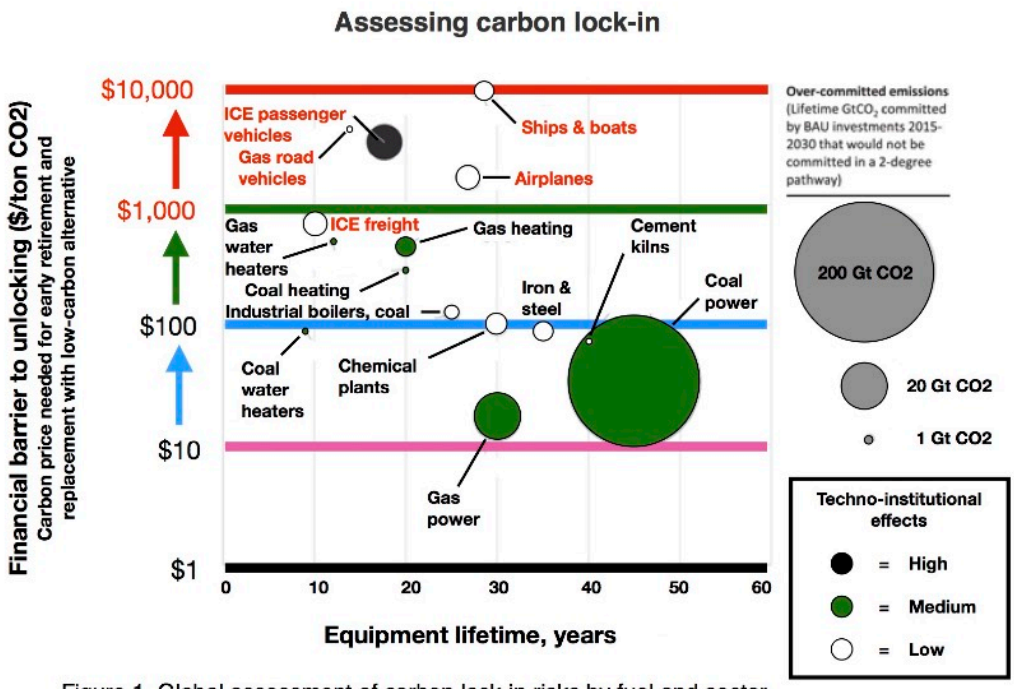


Figure 1. Global assessment of carbon lock-in risks by fuel and sector.

Peter Erickson, Sivan Kartha, Michael Lazarus, Kevin Tempest

Bit.ly/IOP25Aug15

Published 25 August 2015
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1) IOP Science - "Assessing carbon lock-in" by Peter Erickson, Sivan Kartha, Michael Lazarus and Kevin Tempest, Published 25 August 2015 (Bit.ly/IOP25Aug15)
2) "The term 'carbon lock-in' refers to the tendency for certain carbon intensive technological systems to persist over time, 'locking-out' lower carbon alternatives, and owing to a combination of inked technical, economic and institutional factors. These technologies may be costly to build, but relatively inexpensive to operate and, over time, they reinforce political, market, and social factors that make it difficult to move away from, or 'unlock' them."
3) "Carbon lock-in is greatest, globally, for **coal power plants, gas power plants, and oil-based vehicles**. The approach can be readily applied at the national or regional scale.…"
4) Financial barriers to unlocking ICE passenger vehicles, gas road vehicles, ships, boats and airplanes is in the range from $900 to $10,000/ton CO2 ($11 - $120/gal gasoline equivalent)
5) Financial barriers to unlocking ICE freight (trucks and rail), gas heating, gas and coal water heaters, coal heating, industrial boilers, chemical plants, cement kilns, iron & steel is in the range from $90 to $700/ton CO2 (about $1 - $8.40/gal gasoline equivalent)
6) Financial barriers to unlocking gas- and coal-fired power plants is in the range from $20 to $30/ton CO2 (about 24¢ - 36¢/gal gasoline equivalent, or 1.2¢ - 1.8¢ per kWh of electricity)

VERMONT CAN EFFECT ONLY WHAT WE CAN CONTROL

Limit imports of methane, gasoline, diesel, kerosene, propane and heating oil entering VT.

Put "multi-level" prices on carbon tailored to effectively impact each fuel type and sector.

Reduced imports will result in reduced sales and combustion, hence CO2 emissions.