

# Vermont Climate Economy Summit IDEAS TO ACTION

February 22, 2016 | VTC, Randolph

## Summit Report



The Summit was produced by:  
The Vermont Council on Rural Development

[www.vtrural.org/programs/climate-economy](http://www.vtrural.org/programs/climate-economy)

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## ▶ About the Vermont Council on Rural Development

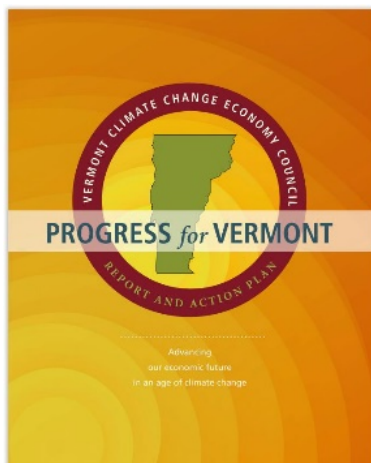
The Vermont Council on Rural Development (VCRD) is a non-profit organization charged by the federal farm bill to act as a neutral convener at both the local and policy level supporting the progress of Vermont communities. VCRD has helped over 40 communities throughout Vermont expand public engagement, set priorities for the future, and implement community and economic development action plans. Past VCRD policy efforts have supported progress in issues ranging from wood products to downtown revitalization, rural energy development, the digital economy, and Vermont’s working landscape.



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## ► Introduction



Over 420 participants came together on February 22, 2016 for VCRD's 2<sup>nd</sup> Climate Economy Summit: Ideas to Action. Participants reviewed **PROGRESS FOR VERMONT**, the report and action plan of the Vermont Climate Change Economy Council and worked to identify strategies to make Vermont a national leader in achieving climate economy business development, innovation, and job creation for the future. Read the full report at [www.vtrural.org/reports](http://www.vtrural.org/reports).

The Summit was also the founding point of the **Vermont Climate Economy Partnership** devoted to collective effort to advancing Vermont's Climate Economy. To find out more about the Initiative

and to keep in touch, join the Climate Economy Partnership at:

[www.vtrural.org/programs/climate-economy](http://www.vtrural.org/programs/climate-economy).

## ► Breakout Session Notes

The following pages capture the notes from morning and afternoon breakout sessions. Morning sessions heard from a panel of leaders and experts within 8 different work arenas; and in afternoon, participants met in groups within the 9 focus topics based on recommendations from **PROGRESS FOR VERMONT**. Each group discussed what is happening now in each area of work and action steps to advance Vermont as a center of climate change solutions, innovation, and economic development.

### Morning Breakout Session: [Arenas for Action](#)

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#### SESSION A: CITY AND TOWN LEADERS

**MODERATOR:** Mark Johnson, *VT Digger*

**SCRIBE:** Kate Whelley McCabe

##### Summary of Panelist Presentations

**John Hollar, Montpelier Mayor:** In a small community, it is hard to get a lot done with limited resources. There are great volunteers that are eager to be involved, but lack of staff and funding to expand efficiency work beyond electricity is a challenge. Montpelier did take on a challenge 4 years ago and adopted a policy of net zero by 2030. This is ambitious and challenging, but has helped to focus the work and create urgency. This has led to a biomass facility that heats downtown with renewable wood pellets, a solar program, a car share program, and putting 5% of parking revenue into renewable transportation infrastructure including a bike and pedestrian pathway that is currently under construction.

One idea could be to create a funding stream to have 4 or 5 positions that municipalities could share statewide. This work is a challenge to do on volunteer efforts alone.

**Chris Louras, Rutland Mayor:** Rutland began work on this issue in 2005 following the Rutland Creative Economy forum through VCRD when the city prioritized energy sustainability. In 2007, Rutland saw its first FEMA event and have had 4 since then. This has been a wakeup call that we need to focus on climate change adaptation and mitigation. Rutland, through a partnership with Green Mountain Power, has made a commitment to focus efforts on becoming a laboratory for mitigation and adaptation to climate change and to set an example for Vermont just as

Vermont is poised to be an example for the country. Examples include relocating the Red Cross shelter from the flood plain and adding electricity generation capacity through a solar installation on the abutting landfill. This is the first in the nation DOE large scale battery storage facility. Additionally, Rutland is working with GMP and Casella to use their waste water treatment plant as a co-gen facility. Rutland is working with GMP to generate jobs, establish a 95% occupancy rate in their downtown, and be a laboratory for Vermont and the country.

**Thom Lauzon, Barre Mayor:** Barre hopes to set an example with conservation and innovation – questioning what we do as a municipality and implementing best practices. Some examples of what Barre has done include; eliminating streetlights and replacing others with efficient bulbs, thinking about mass transit, questioning why police need SUVs instead of a Ford Focus, and supporting downtown because when people live close they reduce their carbon footprint. Barre has partnerships with EV, GMP, and Capstone to support this work.

**Peter Elwell, Brattleboro Town Manager:** This is an exciting opportunity because as Vermonters, we take risks – it is a part of our culture and history. We have a willingness to get things done. We can't solve this alone, but we can lead by example. In Brattleboro, the public sector is working hard to support the private sector and partner in the tri-state area to invest in the green economy. The town has limited streetlights and converted them to LED, put in electric car power stations, made historical downtown more pedestrian friendly, and reused downtown and factory buildings instead of tearing them down. We are proud of our curbside compost collection program to divert organics from the waste stream. To work with the private sector, we have workforce development for young people so that they can be a part of this green economy; we have diverted funding tied to the closure of Vermont Yankee to the Windham Wood Heating Initiative and the Sustainable Timber Investment Exchange. We have also collaborated with VTrans and others to do a corridor study to try and extend and area conducive to biking and walking to support working farms and tourism.

## Group Discussion Key Take Aways

- Due to Act 148, composting programs are on the horizon, but each town and city face unique challenges in implementing a successful program.
- Funding is needed for wastewater and storm-water management. Upgrades are necessary due to weather events and both funding and technical advice are critically needed.
- More opportunities for collaboration across municipalities, supported at the state level, would be helpful to meet challenges with new regulations and climate change.
- Breaking down silos at the community and state levels will be important in advancing the green economy. For example, in Rutland Project Vision has broken silos to ensure that crime, addiction, and building great neighborhoods are all a part of the conversation. Those that can most afford to take advantage of efficiency programs are those that need it least. Housing providers should be involved in the work on the green economy.
- Views on carbon taxation in each community vary – several panelists felt that passing a policy like that would be difficult, but you have to weigh the cost of taking action against the cost of not taking any action. Other panelists felt that it may not be doable on the local level and could have unintended consequences on businesses and the economy.
- Partnerships are important to help measure carbon footprint locally. Barre partnered with Norwich University to measure their footprint and reduction.
- The communities represented varied on their view for the future of their city or town with 90% renewable by 2050. In Rutland, the focus will likely be around solar as well as a focus on efficiency, weatherization, and conservation rather than building out infrastructure. They are looking at new technologies for rooftops to continue solar development. In Brattleboro, focus has been primarily around walkable and livable downtowns while in Montpelier, focus has been around supporting personal changes such as improving public transportation. However, in the long term, there is a need for national policies and markets to drive demand for transportation transitions.

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## SESSION B: YOUTH

**MODERATOR:** Patricia Coates, *Vermont State Colleges*

**SCRIBE:** Katie Williamson

### Summary of Panelist Presentations

**Morgan Easton, VT Technical College:** Morgan's goals are around increasing viability and feasibility of energy efficiency products and buildings in the community as well as bringing organizations' efforts together.

**Carl Deithelm, Green Mountain College:** Carl is working at Green Mountain College towards waste diversion especially around recycling and composting, focusing on consumer behavior and program procedures. Goals include repurposing food from dining halls to serve children and families in need using EPA food waste hierarchy to improve food recovery efforts.

**Margaret Gish, University of Vermont:** Margaret studies early education and environmental science. Environmental education is critical for our youngest children. Margaret's goals center around increasing enthusiasm for environmental literacy and action through schools and school-based programs.

**Gina Fiorile, University of Vermont:** Gina helped to organize the Vermont Youth Climate Summit which has gained national attention. Her goals are centered around making climate change relevant to each person, especially promoting the youth voice by creating connections between all interests (for example music, art, education) and climate action.

### Group Discussion Key Take Aways

- Education plays a key role on a path to climate action, however there are some challenges. Vermont colleges help create direct engagement to facilitate interest and working with professors who are practicing in this field is inspiring and encouraging. However, sustainability of projects in schools is a challenge due to turnover of students and faculty.
- Getting students involved directly with hands-on projects in the trade industries and on changing consumer behavior is key to connecting the business community with students and the education community. Vermont is a place where innovation inspires young people to stay and work. It is exciting to go elsewhere and have opportunities to learn in other places, but then to come back.
- It is challenging for Vermont to attract and keep young people who are drawn by cities or not as interested in an environmental focus.
- Vermont students are exposed to innovation in several ways in Vermont, in particular through college clubs that help students engage on small projects that can create real change. One student was skeptical of higher education but decided to study once they discovered there could be a practical, experiential way of learning. Technical colleges offer an opportunity to learn the newest technologies and give hands-on experience while liberal arts can be connected to natural resources and environmental responsibility.
- Messaging to young people is critical around advancing the climate economy, but students felt the message needed to shift from "the next best thing" to repurposing old things to keep them functional, and also towards fostering an appreciation of nature to create instincts for climate action and an interest in environmental literacy. Social media can be a key tool – photos help spread the visual messaging of VT's work. However, while you can reach a certain population of people, social media isn't everything.
- The panel named several barriers to learning about sustainability in middle and high school including lack of teachers who are willing to teach students about climate action, but also recognized the importance of integrating social justice in this type of education as well as including systems thinking as an educational tool. Several things panelists would change about the K-12 experience to increase environmental literacy included: talking about climate change earlier in school, getting kids outside more often, talking about thinking in systems, using kids as positive change makers to transmit messages in to the home and broader community.
- Panelists expressed a desire to better connect policy makers and students and offering more spaces to talk about politics and ways to involve students and young people on community board to increase involvement in policy.
- There is a great power in education to transform lives and tackle problems.

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## SESSION C: STATE ADMINISTRATION

**MODERATOR:** Deb Markowitz, *Secretary, Agency of Natural Resources*

**SCRIBE:** Ruth Wallman

### Summary of Panelist Presentations

**Chris Cole, Agency of Transportation:** There are 5 key areas we need to focus on: downtowns, sustainability, coordination, policy, and renewables. We can leverage downtowns for the climate economy. This is important for emissions reductions but also to draw millennials who want to live in towns. We can put public money together with private funds to assist towns. We need to make targeted investments in sustainability including car share for mobility, reducing the need to own private vehicles, and investing in rail. We also need to boost biking infrastructure and invest in public transit that is subsidized to be affordable. In terms of policy, carbon pricing, in collaboration with other states in the region, is critical. VTTrans is also focused on renewables – all state garages will be renewable with solar trackers. Vermont has an opportunity to lead, we are small and innovative, but we have to work together as a team.

**Chris Recchia, Department of Public Service:** Leadership and cooperation among state agencies is strong around climate change. Vermont has released a comprehensive energy plan with the goal of 90% renewable by 2050. Act 56 has set renewable energy standards. Being rural presents a challenge, home heating and transportation are carbon generators, so the focus can't just be on electricity. These efforts should be linked. Utilities are already working on home weatherization. At the local level, city and town leaders have worked with RPCs accomplishing a great deal with solar exceeding the amount of power we ever got from VT Yankee. Utilities and the private sector have been creative – we have over 16,000 jobs in our clean energy sector. We have many assets in place – working lands leaders working on these issues, financial institutions leading on loan programs, and

legislators who are on board with advancing climate change goals.

**Noelle McKay, Dept of Housing and Community Development:** Leaders in State Government need to work together. After Irene, collaboration has improved and a lot has been learned about emergency management and preparation. We have helped communities prepare through the VT Economic Resiliency Initiative to protect our economic assets making investments in culverts, flood plains, flood proofing to protect water quality and attract and maintain businesses. We need to focus around land use goals – compact centers surrounded by working lands. We can't reduce transit efficiency without bike lanes, car share, etc. We also need to prioritize around how we spend dollars and recognize the connection between economic justice and environmental justice – we have low income people in Vermont that spend 30-60% of their income on housing. Weatherization will help and upgrading aging housing stock, but there is an upfront cost. We need to work with partners and balance our goals and invest money in ways that meet multiple goals.

**Chuck Ross, Agency of Agriculture, Food & Markets:** The Agency focused on several relevant actions towards advancing the climate economy including; biofuel with grass and diesel, biodigesters on farms, building soil health, farm to plate and food systems, farm to school to teach informed consumers, farm to institution, efficiency measures on farms, agricultural literacy, looking for new markets for products. Some areas to explore as we move in this direction in the future include working with carbon sequestration and creating markets. Vermont has the opportunity to lead in ag literacy and innovation but we must work together and balance the tradeoffs.

### Group Discussion Key Take Aways

- Vermont exceptionalism is actually true. We are awesome in Vermont and we recognize the importance of this issue because we have a land-based economy.
- Vermont wants a growth in renewables, but one developer expressed concern that state regulations are working against development and turning down projects. Panelists responded that they are working hard to find a balance – limiting growth on prime ag soils and wetlands by helping developers map out projects beforehand.
- Conservation is critical and must come first, but it is hard to sell – not a sexy subject. In the energy plan the state recognizes the need for conservation and local energy committees are taking the lead.
- Many utilities are working to support conservation. Efficiency VT is working with 6 downtowns to promote conservation in an easy way.
- People want choices. Not all young people want to be in towns, some want to be on farms with efficient housing.

Some Vermonters want the oil pipeline while others don't want to invest in fracked gas.

- Chris Recchia agreed that the pipeline has been controversial and frustrating and appreciates that some people don't want the pipeline. However, without VT Gas willing to invest, all those people who would get the gas will use fracked oil rather than gas...VT Gas is offering renewable gas from methane digesters too and Commissioner Recchia is optimistic that will increase. It is not a stranded investment.
- One participant asked about whether a carbon tax could fund efficiency efforts. Noelle McKay answered that the Governor supports a regional approach, but not the state going it alone. Currently, there is a lot of money available through Efficiency VT. Perhaps some of

it could be better invested in low income weatherization – we need to look at how we spend the money.

- Deb Markowiz added that Vermont is already a part of the Regional Greenhouse Gas Initiative with millions of dollars going towards thermal efficiency. The market is small so it works better to work with our neighbors.
- Right of way on highways for solar is being investigated. MA is working on it where a Utility Accommodation Plan is being developed.
- State agencies are working hard to move forward and collaborate, but can't be expected to solve the problem. Non-profit and private sector folks are a key part of the answer and need to push agencies to continue to work together.

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## SESSION D: CLEAN ENERGY UTILITY LEADERS

**MODERATOR:** Steve Zind, *Vermont Public Radio*

**SCRIBE:** Amy Alton

### Summary of Panelist Presentations

**Patty Richards, Washington Electric Coop:** Washington Electric coop (WEC) is a small member-owned utility providing 16 MW with a 100% residential customer base, so there is no cost-shifting between rate structures. WEC considers itself an aggregator in how it operates. WEC is 1 of 2 utilities in Vermont that is 100% renewable utilizing wind from Sheffield Wind Farm, local hydro, gas from the Coventry landfill and other sources. They plan to do their part in working towards the state's heating and transportation goals. WEC suggests having a centralized distribution lead while we're in this transformation space – possible Efficiency VT could play this role.

**Mary Powell, Green Mountain Power:** Green Mountain Power (GMP) is a "customer obsessed" utility, keenly focused on providing low carbon, low cost, reliable power to Vermonters operating 32 hydroelectric facilities and 2 wind farms. They are the first utility to become a B Corp. GMP serves 78% of customers in VT; who all want to be 100% renewable, BUT who also care about cost. GMP's business model is being changed for us by our customers. GMP looks to completely transform homes with energy efficiency retrofitting and approaching customers individually. GMP views the future of energy to be much more personal and community based - a more independent system, and a series of local micro-grids. Storage is big part of the future. With this in mind, GMP announced the offering of the Tesla home battery that can be paired with solar, and worked with Rutland to become the Solar City of New England.

**Kerrick Johnson, VELCO:** Vermont Electric Power Company (VELCO)/VT Transco is the Statewide transmission only company, owned by Vermont's 17 electric distribution utilities, and manages over \$1 billion in assets, since 2012. VELCO runs the statewide smart-grid project and has developed the VT Weather Analytic center, developed through IBM as a wind and solar forecasting tool. If you know weather, you know load and with this tool you'll know at a statewide level, as a transmission company this creates great efficiency. VELCO views fiber as the future. There is a great need for high speed, highly reliable fiber optics for all. Also there needs to be a data repository that can be worked with and tapped into to holistically manage the grid. With regard to climate change economy, people want a universal grid that can work with solar, wind, the current grid, etc.

**Christine Hallquist, Vermont Electric Cooperative:** The Vermont Electric Coop (VEC) is a consumer owned utility serving rural communities and was the first to put all assets on GPS which allows members to see usage, meaning cyber security is crucial. VEC is working with Oakridge Laboratory to get minute by minute data to assess grid load. Solar and wind are intermittent and therefore there's a need to integrate more renewables. Additionally, economic justice issues are very important and during this shift to a climate change economy that leadership training is critical and we need to showcase that there are great jobs in a great environment. Storage is also a critical piece of the climate economy future.

### **Scott Johnstone, VT Energy Investment Corporation:**

Vermont Energy Investment Corporation (VEIC) manages Efficiency VT which is designed to provide state-wide energy information and create markets – what’s the next big thing? VEIC works beyond the state and has helped remove 4 million tons of carbon. VEIC suggests running an “Add a Zero” campaign. For example, we want to increase residential retrofits by adding a zero; for finance: add zero to the amount of outside funding obtained from non rate-payers; add a zero to the green jobs in state and that will

help add a zero to VT's GDP. To shift to a climate change economy, there needs to be a price on carbon. This will add revenue for weatherization and move forward on job creation. We also need to look at buildings as a common good and need to go fix a street, not just a building here and there. Simplicity as opposed to complexity is the answer! Additionally, we need a lot more tolerance for codes and standards, and need to revisit the premise from 15 years ago that we can't just focus on electricity – need to deal with transportation which is 46% of carbon.

### Group Discussion Key Take Aways

- There is an advantage to starting a company in Vermont vs. New York in terms of utilities’ business models – in VT there is accessibility, and workforce. We have the most solar jobs per capita. Additionally, Vermont’s legislation has fostered innovation in real-time, helping create new models and removing barriers to encourage innovation.
- The panel discussed the “tiered structure” and “Tier 3” from Act 56 legislation. This relates to establishing a renewable energy standard and energy transformation program. The tiers intend to change the choices utilities and people make regarding heating and transportation. Tier 3 pertains to weatherization and tightening up buildings.
- There is a critical need to shift away from just selling KW hours towards being solution-based in this new climate economy. We can’t rely on the old protect, preserve, prevent business model; utilities need to move to stay in business. If the old business models remain, affluent and middle class will go off grid while low income will stay on it.
- The Act 56 and Tiered approach allows utilities to earn their way into a value-based system, meeting the new needs and demands in a way that lowers costs. There ARE ways to innovate.
- Becoming a BCorp has allowed GMP to focus on their customers, articulate their values, and adjust how they look at the future.
- Question for WEC: Is there a utility war on solar for early adopters? WEC answer: There is a new rule for net-metering being drafted by the Public Service Board (PSB) to address Act 99. Looking at older design tariffs to be floated over, possibly looking to not grandfather aging infrastructure. The initial draft was just released. Whatever comes from the PSB, WEC must do. However it is WEC's approach that if design was under specs at the time, WEC will fight to honor that.
- Distributed production is here and distributed storage is almost here – is anyone doing anything to develop a brain trust/intellectual infrastructure for distributed grid storage management? Answer from panel: Yes, GMP is doing it. They are launching a micro-grid with batteries, creating micro-grid controls, and generating energy as close to home as possible. VELCO added that there will be a challenge with grid-level storage as the transformation occurs toward smaller level storage. There is a need for grid-level storage that works as well.

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## SESSION E: VERMONT BUSINESS LEADER FISHBOWL

**MODERATOR:** Ross Sneyd, *National Life Group*

**SCRIBE:** Laura Koloski

### Summary of Panelist Presentations

**Chad Farrell, *Encore Renewable Energy*:** One of the key components of advancing the climate economy would be to continue to have strong legislation and regulatory engagement. The industry will therefore adapt and do projects in accordance with public’s desire. Siting of solar projects is an important topic and should be in the public debate. This will drive investors’ financial interest in this regard. Education is critical so young people can handle participation in this segment of the economy. VTC makes

renewable energy a core focus. We need these young people to participate across the spectrum.

**Joe Fusco, *Casella Waste Systems*:** The garbage business model has had to evolve from “consumption, consumption, consumption” to a more sustainable business model. The new model is one based on conservation, contribution, and renewal. The worst thing a business can do is lose touch with the external environment. There are opportunities to start or change



businesses around climate change and the resource limit problem. We have to confront the idea that we are faced with environmental limits. Businesses have an obligation to marry the ideas of environmental sustainability and economical sustainability.

**Judy Geer, Concept 2/Craftsbury Outdoor Center:** The cross country ski industry requires immediate nimble and far-sighted changes. This take a balance between industry needs and how to make conscious business decisions. Winter recreation is shifting in that businesses are now having to create winter, rather than taking advantage of winter conditions. We can't change the weather so we have to be able to change the systems in how we approach

winter industries. Concept 2 is also updating infrastructure within the new climate economy.

**Mark Foley, Foley Services:** Foley services tries to show cutting edge materials and produce textile goods more efficiently. Vermont is ahead of the curve in an awareness perspective. Changes in the industry have to be economically viable, but it takes a long time because changes to industry resources takes time to become cost effective. Building retrofits are integral, to continue to create vibrant downtown communities. We need to invest in communities. How do we help communities leverage their assets? We need more people to live and work in VT, particularly in Southern Vermont.

## Group Discussion Key Take Aways

- Panelists discussed several of the key changes we can make in Vermont. Including implementing in-state tax credits for weatherization; greater effort to look to the soil for carbon sequestration; and better administrative guidelines and very clear regulatory processes so businesses can get through the bureaucracy to get projects done.
- There are things that we have to be patient about and simply can't make immediate changes because they aren't economically viable.
- Panelists were asked to comment on the feasibility of a carbon tax in Vermont.
  - Joe Fusco responded that a carbon tax is not impressive and not creative enough. Instead, we need to develop better incentives to live lower carbon lifestyles. It needs to be more attractive, right now it is too punitive. For example, would like to see goods and services taxed differently if they are transported via alternative renewable methods.
  - Judy Geer disagrees that it is too punitive. Rather, taxation is a reflection of the true cost of carbon.
  - Mark Foley responded that Vermont taxation doesn't make sense from a big picture perspective. Why would we want to disincentivize businesses from coming to Vermont?
  - Chad Farrell suggested that we can take leadership in Vermont, but will it affect large scale change? Probably not.
- A lot of small businesses don't have the infrastructure to understand how their businesses will change over the next 20 years. Don't have the ability to adapt. Without that ability to adapt, we won't have the kind of communities we want.
- Lifestyles in Vermont are very carbon intensive. We need new models on how to move around the state. How would businesses like to see this change? Responses from the panel included; free events, except for parking in order to reduce the number of cars used; increasing use of public transportation; telecommuting is more common now, which reduces the need to drive; reinvention of the downtown model, looking at ways to integrate business and residential so transportation needs decrease through the next generation. Craftsbury is an out-of-the-way business, so it is difficult as a destination based business to reduce transportation needs.
- Businesses have a role to work together to offer incentives. We should look beyond government and legislatures.
- There needs to be a partnership between regulation and business to understand that there is a spectrum on how to balance these impacts on small and large businesses. There are a lot of consequence differences between small and large businesses, so it is important to understand what these differences are in order to move forward.
- In Vermont, we have a branding power. Saying that your business is from Vermont is definitely a selling point, especially when you do businesses in other states.
- How do we cite development changes in our energy infrastructure so that people are more willing to accept these changes? There is a role to maintain aesthetics so that people are more accepting. However, businesses dedicated to maintain aesthetics are often at a disadvantage because lowest-cost development often wins out. Are we okay having slightly higher costs in order to have more aesthetic, lower environmental impact siting?

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## SESSION F: INVESTORS

**MODERATOR:** Jolinda LaClair, *VT Agency of Agriculture, Food & Markets*

**SCRIBE:** Ben Doyle

### Summary of Panelist Presentations

**Beth Pearce, Vermont State Treasurer:** On a national level the Treasurer's office is involved in sustainability issues. Local investment is a key to success in this area so we developed a working group to see how we could facilitate more local investment. This resulted in legislation that created a ten million dollar line of credit to VEDA. We are also funding 6 million dollars in efficiency work. We've done energy retrofitting for affordable housing and have worked with partners like EAN and VEIC. Another notable program is our energy retrofits for State Buildings where we hope to put savings back into program. Finally, we've just issued green bonds for the first time which is a new market for us.

**Tom Porter, VEDA:** VEDA has been involved in the climate economy for years through financing bio digesters. They were recently tasked by the legislature to do more in energy efficiency. Now they are one of the premier energy lenders. Most investments are in solar, but they have dams as well including new revitalized one in Bennington. One of our goals is to help banks become comfortable with financing these types of projects. We do that through partnering. We also gather data on how the projects actually do compared to their projections. 44% exceeded expectations. 87% met projections. This makes for a predictable market place for people to invest in.

**Chuck Karparis, VSECU:** VSECU is a state wide credit union with 675 million in total assets. It's done energy work for about ten years. The board adopted an environmental mission. For the past decade our mantra has been we want to develop financial tools to support the green economy. We can't get enough of these loans. Most of our work is on the efficiency side which has been very successful for us. We have developed a suite of products that any vendor can take and have developed relationships with the state and various loan programs to buy down interest rates. VSECU also has a relationship with VEIC

through the business energy loan program. We find that to be successful, everyone needs to focus on what they do best. There is a lot of interest in a comprehensive energy program, but there is also a lot of duplication. People should leverage relationships rather than invest in duplicative efforts.

**Will Belongia, VT Community Loan Fund:** The Community Loan Fund is a nonprofit mission driven lender. It looks to create opportunities for low-income, low-wealth Vermonters. Works in areas like early childhood, housing, etc. Over its history, it has loaned 90 million dollars in Vermont. We are a mechanism for Vermonters to invest in Vermont. We are focused on issues of economic justice and are investing in working lands enterprises. We lend to farms for ag tourism, power projects, community solar, and just about all of the compost companies in Vermont. All of that was designed to create healthy communities— with social and economic justice. To achieve those goals we are meeting some many of the goals around the climate economy. A social driven mission is very compatible with the climate economy.

**Kyle Clark, DesignBook:** Energy is a key sector that would impact businesses ability to thrive. The challenge is to demonstrate the need of the project but when that's done it's easier. We believe that there is a real market in investing locally. Local investment cuts out the middleman. There's gross inefficiency in the investment system and dilution of impact when investment isn't local. Regulations had challenged our ability to investment locally. Now through regulatory changes local investors can invest and identify opportunities—not just problems. Vermont should complement local investing with 401k's and retirement funds. State and federal money should focus on local investors who know the project and the communities. Innovation, leadership, leveraging.

### Group Discussion Key Take Aways

- The public sector can support private sector by being additive and not taking away. For example, VEDA partners with banks and other lenders. It is all about how more can be done together.
- Financing isn't the issue – it's really about marketing and education.
- Vertical integration of the financing process is key - NeighborWorks has done this successfully.
- To bring entrepreneurs to Vermont, you need to find the easiest way for entrepreneurs to capitalize their business.
- The panelists were asked about divestment from fossil fuels. The treasurer's office is looking at a collaborative

approach to look at divestment, but are also looking for ways to invest and trying to find ways to be innovative and collaborative with other states.

- There are some companies that allow people to direct their funds to funds of their choice, including a specific company or green funds. Portfolios need to be further developed that invest more in innovative products. Money managers are unwilling to take the kinds of risk they need to.
- In terms of accounting for the cost of green building and retrofits in appraised value, the green appraisal industry is in its infancy. There needs to be more education because

lenders can't really influence changes on specific projects. There can be a green addendum to an appraisal, but there needs to be work done in that area. There are only 9 green appraisers in Vermont – it's not enough.

- There are challenges with PACE programs in towns. Part of the work that needs to be done is about demonstrating the success for energy programs for people including low income folks. Getting an appraisal on an actual energy project is almost impossible.
- There is movement towards supporting local investments – for example through VSECU's Milk Money program.

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## SESSION G: LEGISLATORS

**MODERATOR:** Lisa Gosselin, *VT Ski and Ride/VT Sports/Addison Independent*

**PANELISTS:** Christopher Bray, *Chair, Senate Natural Resources* | Mary Hooper, *Co-Chair, Climate Change Caucus* | Tony Klein, *Chair, House Natural Resources and Energy* | Chris Pearson, *Co-Chair Climate Change Caucus*

**SCRIBE:** Emily Donaldson

### Summary of Panel Discussion

#### What has made a difference in the past, and what should we be working on in the future?

- We should consider our energy future as an opportunity as opposed to a challenge; especially since the old paradigm of fossil fuels is archaic. Two hundred thousand early deaths occur in the U.S each year because of breathing in fossil fuels.
- We should create energy opportunities locally, although it is an engineering challenge and political challenge.
- Recently we have seen huge amounts of transformation in the traditional grid.
- VT used to be an energy exporter but has transitioned into an importer.
- 90% Renewable goal by 2050 is a good course heading to set us on this trajectory.
- We need a comprehensive energy plan for steady, thoughtful development that anticipates, compliments and harmonizes with existing state goals and values.
- We need to engage people in order to develop the right solutions. Legislators are the architects for this type of development.
- Vermont is about civility and working with each other – it is for the good of all of us that we are engaging in these issues.

#### What is a piece of legislation that has impacted climate change and what are you currently working on?

- Establishing Efficiency Vermont as an efficiency utility has had the largest impact. For every dollar we put in we save at least two. We are saving money and reducing carbon emissions.
- We need a different energy mindset and more support for weatherization.
- We need land use proposals that allow us to keep our forests intact and open lands.
- Moving forward we should work towards a Carbon pollution tax.
- The Net-Metering program has raised awareness among Vermonters regarding home grown energy, in accordance with Vermonter's independence.
- We are working on a forestry bill that will have a great impact on improving and keeping environmental health.
- In the transportation sector we are creating a plan to address this issue and our willingness to finance and support public transit in such a rural state.
- In the appropriations committee, the language around climate change is changing as different departments think about how they will address the symptoms of climate change.
- The focus of the Climate Caucus is around weatherization, carbon tax, divestment and transportation. Caucus is working to change what is possible and ask questions across the board.
- We need a long term vision and an understanding of what motivates people.
- We are working on divestment of pension funds from fossil fuels.

## Group Discussion Key Take Aways

- The fastest growing jobs have come from policy driven build out. Energy that is produced here keeps money in the state.
- Legislators are working for Vermonters, and to be effective as a legislator, you have to be willing to be unpopular and irritating with colleagues to create tension and make change.
- On Carbon Tax: We need to focus on the concept as opposed to the mechanics. If the answer is a revenue neutral tax, we need to focus on what those other taxes are to reduce and how they harm individuals and businesses, then we can fund innovation. The conversation around carbon tax is needed to bring more Vermonters and our colleagues on board and make tangible change.
- On hydro power: We have challenges with water quality already that are challenging existing dams. Most of the hydro has been developed in the state of Vermont already. A large part of GMP's portfolio is hydro. There are natural resource questions to be considered in developing hydro in accordance with the Clean Water Act. Another question is what people can do on the individual level as our technology changes to allow people to put more on their own property to change the way energy is developed.
- Some people think that solar panels are similar to billboards – there are many locations that would be more agreeable to more Vermonters.
- One panelists shared that all of our fossil fuels come from out of state. If we tax it, people use less of it and we keep more money in the state. The Carbon Tax could be the most fruitful way to build money. The Working Lands initiative was so successful – we can do the same thing around climate economy by creating a fund.

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## SESSION H: WORKING LANDS LEADERS

**MODERATOR:** Sarah Waring, *Center for an Agricultural Economy*

**SCRIBE:** Ginny Cooke

### Summary of Panelist Presentations

**Ellen Kahler, VT Sustainable Jobs Fund:** Ellen started out by providing some context around why there is no specific action item on working lands explaining that in the 7 action recommendations, working lands is embedded. The Council's October session focused around working lands and soils. Members talked about the importance of forestry and forest products affecting climate, helping with water quality, and soil erosion. Moving forward, networks are what we need to be building – how can farm to plate, forest products, water network, and energy action be woven together for intentional climate economy development? Around carbon pricing – if we created a pool of funds, it could be used to support better agricultural practices and forestry. Perhaps it could support carbon sequestration? Businesses putting in energy efficiency projects, solar panels, digesters, renewable energy generation, wood chips, opportunities around model community actions. Additionally, farms need financing for on farm energy – solar, wind, digesters – and efficiency. Creative new forms of capital are needed in these areas.

**Allison Hooper, Vermont Creamery:** In manufacturing, we need to have a cultural shift with our staff. VT Creamery offered a company wide challenge to incentivize energy savings. Once a week, everyone stops everything to learn about water, electric, trash, and soon, compost.

Individuals report on these metrics, share savings, and at end of year, reduced water and electric use. Efficiency VT comes to present to employees for home energy savings, and one employee is getting a solar panel. Incorporating the management team into changes is important as well as auditing often for governance policies and environmental impact. An on-site solar array provides all power for the farm and some for the creamery. A new office this year was a net zero retrofit with awards from the state. Future outlook – if you want to grow business, you have to earn the right to grow and be responsible.

**Josh Faulkner, UVM Extension:** This conference is not about water quality, but 90% of mitigation for climate will affect water quality – this is one way to market solutions. There are three ways to look at agriculture: as the victim, a contributor, and the solution to climate change. As victim – some of the best soils are in the flood plain where they are most vulnerable. Ag is also a contributor- energy use on farms but also a lot of greenhouse gas comes from the soil. How can farmers turn that around? Build carbon in soils and reduce emissions. One idea to do this is a climate smart label – climate smart milk, apples, etc. Farmers could be paid to do the right thing. Right behind gas emissions from soil is manure – a lot on farms and in manure pits. We need to capture methane, perhaps with some digesters but that doesn't work at every scale. Ag is

also the solution. We should get agriculture involved and create incentives for no till and to sink carbon in soils. This isn't just for small farms, but big farms are important. Those farmers need to play in carbon market as well.

**Chris Brooks, VT Pellet Company:** No one thinks of loggers as green energy workers. It is up to us to announce what we do and how we do it. VT Pellet Company is a VT community scale mill with all products in a 30 mile recharge area. This limits fossil fuels as we're close to the source and mitigates travel cost. 2<sup>nd</sup> mill is a repurposed old paper mill, now generating hydro – also a 30 mile recharge area, wood chips for heat, waste heat produces electricity. We need to think different about how we do it and get there. We can go out looking for people, but we have to provide incentive, money – an economic garden. Assistance with business planning from sustainable jobs fund to support start ups and improve access to capital, business incubators and incentives for entrepreneurs.

**David Marvin, Butternut Mountain Farm:** Hoped to find a way to use land in a way that was non consumptive – to leave it in better condition. He wasn't thinking about sequestration then, but now know that keeping trees in sugar production sequesters 250lbs of carbon per gallon of syrup providing a negative carbon footprint. Now, I want processing to become net zero and evaporate sap with solar energy. There is room for more production of maple syrup – the 1.4 million gallons produced last year in VT is only a tiny fraction of forest used. There are models for using traditional forestry. A lot of forestry is extractive, but it doesn't have to be that way – the highest value can be removed and still be gentle on the land. We need to do what we are doing with a land ethic, think about communities we live with, human and biological. There is no conflict – good conservation and good economy can work together.

### Group Discussion Key Take Aways

- Panelists were asked their advice on folks in food business who are getting started whose costs seem too big and climate mitigation isn't a priority?
  - David Marvin – we are lucky to be in Vermont. We didn't have a lot of money to start, but we had time to get involved in the community and connect with support networks.
  - Allison Hooper – The customer wants you to do these things. If you are not paying attention to the brand, you will be overlooked. People are buying with care.
  - Chris Brooks – people undersell themselves. It is important to charge enough for your product in order to be sustainable.
- How do we translate this work to the smaller scale and connect to communities? Panelists responded that this speaks to the point of marketing VT as a national climate economy leader. We don't do good enough capturing innovative approaches and putting it in a format for shared learning. Additionally, panelists expressed a need for more extension agents to help connect farmers with what they need.
- Participants expressed a desire for farmers to have access to a market to get credits and incentives for carbon sequestration to facilitate mitigation.
- Participants expressed a desire for more representation in final climate change economy report. It should be an action item to put on paper that working lands is a commitment and we need to prioritize research and programs to create jobs, innovate, and improve food security.
- Carbon pricing is relatively doable – it is easy to directly measure and can have confidence in reduction. Once businesses start paying for carbon, then they will start to account for it in their bottom line.
- Wilderness is also working lands. It would be a disservice to all species and ourselves if we don't recognize that.

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# Afternoon Breakout Sessions: Action

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## SESSION I: SUPPORTING COMMUNITY-DRIVEN CLIMATE ECONOMY SOLUTIONS

**FACILITATOR:** Jenna Whitson, *VT Council on Rural Development*

**SCRIBE:** Katie Williamson

### **What is currently happening in this arena?**

- Economic vitality as a combined community effort.
- Transportation and affordable housing are a huge problem for the Mad River Valley in drawing families and entrepreneurs.
- In Brattleboro, focus is around workforce development and retrofitting existing buildings in towns.
- There is a net zero initiative in Montpelier, but it has no fiscal support at the state or local level.
- Housing is also a challenge in Montpelier with less than 1% available.
- It is challenging to create parking lots that can provide for the workforce due to land resources and laws.
- The Resilient VT network is a resource for communities and is working to identifying steps for economic resilience. The network is helping organizations and non-profits connect to community success stories and organizing teams across disciplines to work on resilience at the local level.
- In Hartford/White River Jct. they are struggling to get attention at the local level for clean energy projects. People keep saying there is not enough money for clean energy projects but it is just not allocated appropriately.
- So many organizations are working on the same things. It is hard to know who the big players are.
- Transition Town efforts.
- How do we create solutions for and connect with people who aren't already a part of the climate discussions?
- Efficiency VT is helping local governments improve energy efficiency, street lights, building efficiency, community engagement and education.
- Sustainable Woodstock is looking for solutions for long-term volunteer engagement. Weatherization is a tough job and takes a lot of work to get it done.
- Covered bridge to LEDs in Dummerston.
- In Dummerston, a survey of town energy use focused on resilience proved valuable at select board level.
- SunCommon offers community and education outreach around renewable energy and has a residential solar program and community solar program. They can be a resource for central VT and beyond.
- Central VT waste has a goal for zero-waste and using everything, recycling and composting.
- VECAN at VNRC sees more opportunities at the local level to mobilize people and offers a framework for organizations to work better together.
- Vermod buildings are an interesting development in efficient, Affordable housing.
- There are a lot of reductions we can make in agriculture, reducing plowing, sequestering carbon, taking care of the soil, a lot of energy concerns starting with farms.
- There are opportunities for local colleges and high schools to work on hands-on community projects.
- Community Energy Committee in Randolph worked with Solarize VT to develop home a energy plan.
- Donella Meadows Institute is offering educational modules/workshops on systems thinking to schools and (hopefully) organizations and are looking into writing workshops for community members on systems writing techniques in the style of Dana Meadows' columns. They are also helping with New Economies week and Climate and Energy Upper Valley initiative.

### **What potential action steps can advance Vermont as a center of climate change solutions, innovation, and economic development?**

- We should put a price on carbon and funnel that money into energy programs, specifically agriculture and weatherization to increase affordability of efficiency and energy developments.
- Increase community engagement in public policy.
- Tackle affordability of summer programs and camps for students.
- Fund programs to help agriculture and oil/gas to transition to alternatives (use carbon tax).
- Promote low-impact managed forests and wilderness: create tax credits for organizations that responsibly manage forests/sequester carbon and tax penalties for organizations that emit excessive carbon.

- Create value-added market for forests and forest products in local economies.
- Focus on consumer waste reduction first then on recycling and composting.
- Conduct an inventory analysis and engagement catalog on who is doing what and where to allow community members to get involved in a focused way. Connect community better to state-wide resources and organizations.
- Create a vehicle to share success stories and results to connect with others and spread strategies.
- Make a “Vermont energy leadership academy” to train and strengthen leaders in renewable energy.
- Get more college students involved in hands-on projects in the community.
- Create a job bank for farmers to increase visibility of opportunities.
- Create a mentorship program for young entrepreneurs interested in climate action business plans.
- Focus on niche production rather than commodities in businesses.
- Encourage low-energy demanding businesses to come to our area.
- Consider more public works projects for the job market.
- Create public-private partnerships to create a difference in economic development.
- Look outside of the US for ideas that have worked, especially in the EU.
- Encourage solarize program model that focuses on evaluation process of services that can benefit local businesses by promoting best practices.
- Advocate and help farms to build infrastructure that provide environmental services, providing incentives for farms to better manage resources.
- Get regional level staff in planning commissions focused on energy resilience.
- Host community led planning sessions that accurately represent community needs of the majority, not just minority interests.
- Tap into the design and art community and use design models, visuals of plans, using artists and landscape designers to help concretize abstract plans to show community members what projects will look like when complete.
- Create places and resources for finding affordable and accessible energy literacy information.
- Write a common vision for educators, businesses, and non-profits.
- Think of VT as a large city and orient around a central, statewide vision.
- Focus on low-income and fixed income population. For example, build an efficient energy mobile home park.
- Attract young people to the trades through public and private support such as landscape design, architecture, plumbing, electricians, and energy retrofitting.
- Increase the percentage of teachers who can teach food growing and making that accessible to everyone outside of formal education.
- Create a DIY solutions guide for individuals around projects like weatherization.
- Promote systems thinking classes, trainings, and workshops in schools, businesses, and non-profits as a way to combine related efforts in resiliency and climate action.

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## SESSION J: DEVELOPING COMPREHENSIVE TRANSPORTATION EFFICIENCIES AND SYSTEMS CHANGE

**FACILITATOR:** Karen Glitman, *VT Energy Investment Corporation*

**SCRIBE:** Kate Whelley McCabe

### What is currently happening in this arena?

- The change point is when we start to look at designing communities so that they are walk-able and bike-able both for youth and people wanting to age in place and everyone in between. We miss an opportunity to educate kids about sustainable transportation after kids are little and before driving lessons. We need to talk outside of our silos. I am trying to be a healthy living advocate as well as walk-bike advocate.
- In Middlebury, we work with Local Motion and the elementary school to do a Safe Routes Team, on which we have representation from police, public works, school administration, the state health office. We are planning walk and bike to school days on the first Wednesday of every month. While you have those people at the table, you can talk sidewalks, crosswalks, and rotaries. We are also discussing an airport project and a train project.
- The Vermont Comprehensive Energy Plan calls for quadrupling inner city ridership; we need new trains, and an extension of the Ethan Allen. That’s done. The state is looking to extend The Vermonter to Montreal. This will attract long distance riders. The Vermonter will start carrying bikes this spring. We’ve been thinking

about commuter rails—how to make that happen—and exciting things will bear fruit soon.

- A participant from Tunbridge uses vegetable oil to power automobiles. It's not a long term solution, but in the short term automobiles can be powered by biodiesel. The state should be looking at it from the short-term perspective. It also uses nasty oil waste that would have gone to the landfill.
- We are fortunate to have VEIC here focused on transportation efficiency and thinking about integrating electric vehicles (EV). EV adoption is still slow, and now that gas is cheap, demand is down. But still, it is probably cheaper to drive EV even with cheap gas. Vermont has a group preparing to make Vermont EV friendly. Another group is looking to integrate EV to the grid. There is lots going on across the country, like in New York City, where people are looking at regulatory issues.
- Companies across the country are thinking about advances such as autonomous cars and other technology solutions. Some are skeptical about the vision of business people, but others embrace the change saying that the Google Car hasn't crashed into anything; rather, it is crashed into. One of the reasons people decide not to walk or ride is that they are concerned for safety. Autonomous vehicles are safe for others on the road; this may invite people to make short trips by other modes.
- There has been a lot of increase in van pooling especially with rural employers having a hard time hiring with the low unemployment rate, and at resorts, because of low pay. Bridj is one pilot project the state is looking at for a rural application. Ridesharing is big with Go Vermont and you get a guaranteed ride home. This helps people to feel secure. There is a Way to Go Commuter Challenge in partnership with VEIC and others. This is an opportunity to take an alternative to a single occupancy vehicle. This

year it is the last week of September/first week of October. This year, there is a heavier push for K-12 schools; we are looking at the congestion around getting to schools. The idea is to engage the school community in a deeper, sustainable way.

- One participant lives in St. Albans, and is amazed that nobody seems to carpool. There is an attitude that busses are “for poor people” among youth in St. Albans. Nobody goes to Montreal for the day. But if there was a push to get people on the trains, maybe for free, go to Montreal, and come home. Vermonters are independent. Some of it is education and opportunity. People are busy. We need to get them on the train so they can see.
- The Transportation Committee in the Vermont Legislature is looking at the need for a culture change. There is a concept about each person and their individual vehicles. Idling is prohibited, but how do we enforce it? The Shumlin Administration has been good about promoting transportation options. Now our priorities are rail, biking, and foot transportation. But we have to keep up our roads and bridges too. It is a challenge to come up with funding.
- Talk about culture change: people will drive around the block in my town! I am known as “the one who walks.” What is a way to wake people up to the fact that they can walk?
- There are things like the national bike challenge; we're not doing it in Vermont. We tried a Vermont walk/bike challenge last year and giving people gift certificates to places they actually wanted to go (like IHOP). We need to make sure that we aren't just talking to the people in our own communities. We do an everyday biking workshop instead of “biking commuter.” We had 500 adults in Vermont last year because we phrased it in a way that talked to people where they are.

### **What potential action steps can advance Vermont as a center of climate change solutions, innovation, and economic development?**

- We need top-down incentives. When gas was \$4.50 per gallon, the sale of hybrid vehicles was huge. So, people do respond when prices reflect the true social cost of carbon. We aren't going to see things change until there's a carbon tax.
- We need to meet people where they are. It is really hard to live in Vermont without a car. Even the extremely motivated can't physically do it. We need to ask people what is getting in their way. There has to be a reason that people behave the way they do—we need to find out why.
- Middlebury talked to parents about why they weren't carpooling or having kids use the bus. The two biggest

obstacles were time and security. They cherish the car time with their kids because that is the only time they have a captive audience. Also, there is not enough time in the day, parents are not wanting their kids on long rides on the bus. Also, there is safety. Kids on busses can't manage themselves. We are looking at combining routes to cut ride time. We need adult monitors on bus. National Life is a good model on how to incentivize people to car pool (financial incentives, and premier parking incentives).

- Ludlow put a successful model in place by looking at empty seats and changing the bus so it is not a “school bus” anymore. We should do a study on transportation and



synthesizing where people are travelling as if we were going to put out an RFP to Uber and Lyft and have options that are going improve efficiency and address carbon.

- The Stagecoach operates vans. Some local employers reimburse employees for using it. We drive a lot in Vermont. We can use what transit we already have and try to change it. Also, personal interaction works. It can be uncomfortable. But you should talk to people. Explain why you don't fly. Talk about the positive experiences that you have when taking alternative transportation. Being a public advocate for your choices gives people a little push in the right direction.
- I thought it would be great to have centralized taxi hubs for satellite shuttling to transportation networks. Montpelier has saved 200 parking places by giving half-price bus tickets to state workers.
- If you look at the market share of alternatives to car, it is biking that outperforms public transportation. If you look elsewhere, you have places that have set ambitious goals regarding biking (Portland, Oregon and New York City). We could set a 25% goal for Burlington and its surrounds. Then we say, with that goal, what do we need to do? We probably need to focus on infrastructure.
- People run on fear; the principal who is afraid of liability won't promote walking to school. Moms could charge a

dollar to drop off a vanload. We need people to be not so afraid.

- One thing that would help is to honor or celebrate good things that are happening. Towns don't know about what each other are doing. Maybe people in this room can be transportation advocates. 60% of downtowns are in surface parking. What's happening in Middlebury could happen in St. Albans.
- Energy legislation passed last year means that utility companies will be looking for ways to reduce carbon. This community has to come up with where the leverage points are and to tell the utilities what we need.
- The critical mass is what is important; when people see others biking . . . the education piece is a big part in that when you are in middle school it's cool to bike and then you forget. Educating people on the road is important too. If the infrastructure is not there, people aren't going to armor up to get out there and bike. People need to feel safe and a part of a larger system.
- The bike is the future of transportation. It is single-occupancy, cheap, and efficient. It is not supported with infrastructure.
- Middlebury just rewrote our bike ordinance to be "bicycle and ride-able devices." These devices have futures and are electric and will overcome the barriers of hills, weather, etc.

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## SESSION K: ADVANCING COMPREHENSIVE HOME EFFICIENCIES: WEATHERIZATION, ENERGY RETROFITS, AND NEXT STAGE EFFICIENCIES

**FACILITATOR:** Scott Johnstone, *VT Energy Investment Corporation*

**SCRIBE:** Morgan Easton

### What is currently happening in this arena?

- One challenge is apartment buildings – trying to make comprehensive solutions to retrofits in affordable housing.
- Vermont Home Energy challenge was a huge success in one town. A lot of folks wanted to share what they had already done, but there is still plenty of room for home weatherization.
- The Windham Housing Trust worked with 3E Thermal and are now looking at how, through the Clean Energy Development Fund, working on net metering for housing as a next step. It is more complicated than it should be for nonprofits to do net metering.
- Green Mountain College students have developed a comprehensive plan for net zero energy at the school, but are having a problem with the historic value of the buildings and making buildings less leaky, but looking for

ways to make the retrofits work within historic buildings codes so renewables aren't wasted.

- Funds for lead paint renewal is a challenge.
- There are no financial packages to present to customers with lower interest rates. These solutions are moving beyond heat pumps and solar into broadening projects further.
- For low-income weatherization, the process starts with coaching to look at the big plan and looking at comprehensive solutions – making it a process that works for the customer.
- In the geothermal sector, work is going on to try to set up financing and federal tax credits for long term geothermal, including weatherization which is critical.
- Senator Sanders has proposed legislation that would make tax credits refundable.

## What potential action steps can advance Vermont as a center of climate change solutions, innovation, and economic development?

- We need a dedicated source of funding, such as carbon pricing, to support weatherization programs.
- The state could easily fix the affordability challenge and the weatherization challenge with a carbon tax, or through carbon charges on utilities, loan programs, etc. We are a small state and these things are manageable. Those without the ability to repay we need to find the sources and allocate them to the buildings that need work.
- Marlboro College has done a lot of improving energy efficiency, but it is invisible unless you pay the bills. When we think about building new buildings, how can we have some other recognition that doesn't cost as much as LEED certification?
- LEED is a matter of choosing the right materials and the rights steps – it doesn't have to cost more.
- Efficiency VT is taking the lead in making the home energy score happen and addressing the cost of efficiency recognition.
- We need labeling on all buildings.
- VYCC is connecting this with statistics of the number of jobs in this sector, but also looking at where the education is coming from. We need adequate workforce development.
- We need more public information for people to understand where their house needs improvement and how to do it.
- Many of these problems come down to smart growth. Historic buildings present a challenge. We need to remove some barriers to reach efficiency goals and make these buildings more affordable. We need to convene with historic preservation to bring renewables into the picture.
- We need to make the market for efficiency and home retrofit a cohesive language that will allow this to advance faster. A clearinghouse of information where people can identify programs that fit with their situations.
- Consumers need an independent advisor helping them through the process – an energy coach to advise them, and not just try to sell them products.
- We need job training for energy coaches to have a deeper knowledge of what is available.
- We need direct funding for weatherization in low income housing and it needs to be available to everyone – not just “energy geeks.”
- We should create a smart incentive structure and work on the policy and regulatory side to look at the standard of energy that a building must be at to be supported to take the next step.
- Should the Public Service Board be directing utilities to somehow do more energy audits? Should we make it so that anyone can pick up the phone and call the utilities to provide energy audits?
- The thing that motivates most people is comfort and prestige. How can we frame the issue to make it more appealing? We need a more refined marketing strategy.
- Systems for EV and PV should go together. When sizing a panel, it should take into consideration an EV.
- We also need to include transportation in the conversation to be thinking about this in a comprehensive way. Look at ride sharing, Uber, public transportation, EVs. Make public transportation sexy!
- Should we hop in the lead on storage, or wait 5 years until it is better developed?
- There is a deep need for financial counseling.

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## SESSION L: GROWING CLIMATE ECONOMY ENTREPRENEURS

**FACILITATOR:** Ellen Kahler, *VT Sustainable Jobs Fund*

**SCRIBE:** Emily Donaldson

### What is currently happening in this arena?

- Land development regulations.
- The VT Sustainable Jobs Fund.
- Mentorship programs
- The enabling institutions and promoting the Vermont Brand. Asset management from a systems point of view.
- Research and development tax credits for VT.
- Weatherization programs.
- Public transportation.
- Partnering and enterprise development with Vermont's universities.
- Incredible richness with marketing opportunities and branding programs.
- Local food system and farm and food economy is an interesting nexus.
- The Vermont Center for Emerging Technologies (VCET) would be even better if entrepreneurs could build networks.
- Entrepreneurs need to be connected and not beaten down.
- A lot of people want to work and if we create opportunities we can strengthen the Vermont Climate Economy.

## What potential action steps can advance Vermont as a center of climate change solutions, innovation, and economic development?

- We could build an incubator space to support climate economy businesses.
- Map our assets to build the network of entrepreneurs.
- Hold a series of round tables or summits to talk about specific subjects and share ideas and information to help others get started or encourage partnerships.
- Change the regulations for small producers vs. large corporate farms.
- Build physical spaces for entrepreneurs to work in, and foster accelerators to bring businesses to scale faster.
- Clear administrative timelines, criteria, and regulatory frameworks to help foster growth.
- Peek pitch – Give elevator pitches to potential investors. Put a pitch event together specifically for energy purposes and the Climate Economy.
- Deal with regulatory issues.
- Develop hubs where people have access to the land.
- Focus on affordable housing and energy systems.
- Provide more business and entrepreneurial education in high school to encourage kids to think about their future at a young age.
- Build a network of libraries and colleges as an incubator space.
- Develop accounting collectives to help entrepreneurs.
- How we can add value to the Vermont food brand?
- We need to create networks of people, organizations, and businesses.
- We should help entrepreneurs help each other by connecting them to collaborate on larger scale projects.

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## SESSION M: PROMOTING EFFICIENCIES AND ENERGY DEVELOPMENT THROUGH CLEAN ENERGY FINANCE COLLABORATION

**FACILITATOR:** Andi Colnes, *Energy Action Network*

**SCRIBE:** Amy Alton

### What is currently happening in this arena?

- There are Green Economy efforts underway in Southern Vermont. The Green Economy Information Hub/Cluster Project, encompasses a 4 county region including Bennington and Windham Counties in Vermont. It is designed to engage and include community, business, and nonprofit leaders from the region that are involved or have expertise in green economy to help figure out how to make capital accessible in the region. They are looking at new tools in the area of appraisal and finance and are also looking at tools outside of energy, for example, in securitization, how high cost capital has been financed.
- We need to break down barriers and limitations to financing. There's too much rigidity in some of the current funding mechanisms. For example, through Efficiency VT and others, procedures to get funding are very onerous and sometimes too specific.
- VSECU offers several funding options with a lot of flexibility. They offer the V Green suite with both secured and unsecured loans. Additionally, they offer the V Heat Program which has heat-saving loans. Some of those have strict guidelines and qualified contractors as recognized under the Energy Efficiency Network (EEN).
- USDA funding is available for rural utilities service (RUS). This new program has not been implemented yet but has an estimated \$46 million available.
- Vermont Economic Development Authority (VEDA) offers flexible commercial loans. VEDA got new legislation passed that allows for many tools to be used, such as the RUSs.
- The issue is loan vs. grant. People don't want to borrow money; they're debt averse. Its fear and uncertainty that stop people from moving on this. We need to boil it down to showcase and share/sell the benefits.
- With regard to the uncertainty issue and shrinking of funds moving forward, there's a huge increase in demand, while cost of solar projects decreasing. However, there's currently strong incentive programs – 30% on fed side. For financing purposes, we need to know what incentives will be in the future, which will help determine long term certainty.
- Overly prescriptive measures for loans credit challenges are current barriers. There's a lot of out-of-state capital, looking for places to deploy, and there's lots of takers who don't meet the credit requirements (e.g. missing matching back capital). Can we use the collective need of the state to go after out of state dollars which we currently can't get due to small size of efforts?
- Regarding financing for energy efficiency, there's extremely small default rates (tenth of a %), this makes it easy to get money. Pilots are underway to determine loan viability when you take away the need for collateral. The challenge is that there's a cap of \$35K and 5yrs, and super low interest rates. We need to be doing this collaboratively.

- We need to determine people's capacity to do this; not everyone has the tax appetite. For example, people got into a same as cash loan thru their solar company. Everything was fine until they didn't get a return and then got hit with a high interest rate loan on the amount. For people of modest means, how can the loans be effectively structured?
- Some companies offer 3 options: lease, lease-to-buy, buy. We need to mix and match to meet people's needs.
- We are missing the equivalent of the power-purchase agreement. There's no mechanism for a long-dated contract for geothermal. Solar business model to geothermal funding? For energy efficiency, Efficiency VT monetizes savings where half goes to consumer, half goes to financing sources.
- How do we shift policy to be more customer oriented? How can consumers generate revenue to pay these loans? Ultimately, we are turning consumers into producers of some sort.
- There are community solar loans. For example, the Windham Solar loan which offers credit home enhancement.

### **What potential action steps can advance Vermont as a center of climate change solutions, innovation, and economic development?**

- Establishing a carbon tax would help provide revenue for investments.
- We need efforts to keep solar credits in the state.
- We should use aggregation of VT as a function of the collaboration. VT projects are typically too small individually to get necessary funds.
- Use the Energy Committees. VT is unique that we have energy committees. Can we use those to aggregate projects/efforts? There's community energy dashboards under development. What mechanisms exists to work through committees? We could have them create relationships with Energy Service Companies (ESCOs). And have them make the case for benefits, alleviate fears of borrowing. Have committees step in to help build demand.
- Look into community ownership of renewables - not just buying energy from the array but buying shares of the land. Therefore, people have a stake in the land, project, or array.
- Look into the viability of Energy Savings Performance Contracting (ESPC) in the state. Creating or using community Energy Service Companies (ESCOs).
- Help determine the real challenges and barriers for getting dollars for energy efficiency as compared to renewable projects.
- We need a door-to-door approach to improve demand to show people the range of opportunities that work best for them. Credit problems will work themselves out – we need to demonstrate demand.

## **SESSION N: PROMOTING STANDARDS, REGULATIONS, & INCENTIVES FOR CLEAN ENERGY EFFICIENCIES**

**FACILITATOR:** Kathy Beyer, *Housing Vermont*

**SCRIBE:** Ginny Cooke

### **What is currently happening in this arena?**

- Vermont is a leader in development housing and businesses in village centers.
- There are a lot of old, leaky buildings in downtowns which could be low hanging fruit for gains in thermal efficiency.
- Developing in village centers is expensive. Unless you're in Burlington, there is not market. Incentives are important and Act 250 exemptions.
- Efficiency VT has been involved in intensive efforts to bring incentive awareness to businesses holding day long workshops to educate downtown areas and looking to report savings to keep track of performance, help not spread themselves too thin.
- Regulations create disincentives and are a burden.
- Private developers don't mind rules as long as they are clear; if they know about exemptions, they will jump on it.
- Act 250 will stay in our development structure, but it was written long ago and is not serving our needs as well as it could.
- Mitigation is the focus at the Summit but adaptation is critical because future generations are affected. Irene put Vermont on climate adaptation and hazard mitigation. For every \$1 spent on Irene 14 cents went to create mitigation projects for the future. It is not sufficient to just have incentives, we need to have regulations to ensure proper planning and hazard mitigation.
- Currently, new construction needs to sign a certificate. 70-80% of buildings comply with code after certification. Before sheet rock is put in, there is a chance to see if energy code is met.
- There is more inspection in other states than in Vermont. There is more pushback from inspectors than

from home owners. To go from no inspection to full on may be difficult.

- We need to be realistic about cost, enforcement, and the education of inspectors in Vermont.
- Green Mountain Power has used to the meter financing. If you make energy improvements, financing of energy improvements stay with home.

- Tried to get PACE in Putney but it was disappointing and was hard to make sense of it.
- There are 4 projects in Vermont that have used PACE and 30 towns have had something to do with it. The rates are too high, there is a lot of paperwork, and in current low interest rate environment it doesn't stand out.

### **What potential action steps can advance Vermont as a center of climate change solutions, innovation, and economic development?**

- Zoning and land use regulations need to pay attention to climate at the local level.
- We should elevate towns to just above flood plain.
- We need to educate town officials that when natural disasters occur, we can start from a blank slate.
- Energy code for houses to allow any building to be evaluated. It should be a disclosure that goes along with

lead and asbestos. It is important to have a label and get mortgage banks and insurance companies involved.

- Is a home label better as market driven or as a law? It needs to be standardized like cars.
- The Public Service Board has put out a rule around no cap on net metering of utilities. Act 99 draft rule is an ongoing process.

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## **SESSION O: PRICING CARBON**

**FACILITATOR:** Paul Costello, *VT Council on Rural Development*

**SCRIBE:** Gina Fiorile

### **What is currently happening in this arena?**

- More creative solutions are needed in the report. The report is a catch-all "all of the above", taxing, incentives, capping.
- The principals of energy independent VT are looking at ways to create jobs and grow the economy and finding ways to prioritize low income workers and family so that it benefits them through an Energy Independence Fund, those who need it the most will get the most help from this campaign. Revenue would go 10% towards investment, 90% towards tax cuts to reduce tax on work, employment, and sales. Rebates would be available based on the number of full time employees working at a business.
- There some tax misinformation. In the state house there is still fear of the "t" word (tax), we must get over that.
- There are currently two different bills introduced to approach carbon taxation at the Statehouse.
- If we look 10 years down the line the decrease in price of gasoline might pose some problems.
- By making significant investments in home retrofits we can save money even if gas prices go up because we'll still be using less.
- Both the bills and REMI analysis are not looking to change the cost of electricity. As we're using less and less fossil fuels the tax will increase more and more.
- Auto sales over the past 10 years show the impact of prices. Ten years ago it was all about SUVs, the price of gas caused a shift in the market toward smaller cars, when people have the possibility of looking in the future and seeing what's happening they'd be making choices.

At some point in the next 10 years people will be buying new cars; the beauty of this is that the economy will be more focused on responsible decision-making by consumers.

- To those who say we can't have a tax, it is important to note that we're already being taxed, it's just a shift in who is being taxed.
- It is unusual for a community to come together and demand an extra tax.
- We must weatherize homes.
- Act 56 includes a lot about moving in a strategic way toward electrification and reducing electric rates, the Energy Independence Fund would parallel the work between Act 56 and other sectors. As a part of Energy Independent VT, there are many businesses and organizations coming together to think about this.
- The work should focus on the folks that are going to be very sensitive to any perception of a tax. Messaging is very critical to portray the fact that VT is aiming to have this unprecedented tax so that it is less jarring to those who may be opposed to the tax. It must be rolled out with the story of why it is good.
- The largest sources of emissions come from what we consume, so how do we incorporate the content of carbon materials to what we consume?
- The reason for a drop in cost of electricity has been because of marketing. We have to market it right.
- The low price of fossil fuels is not the only barrier to pricing carbon. We can use the revenue to invest in new

- technologies and once that is done we could then reduce the carbon tax once technologies are established.
- We may not have the infrastructure to achieve our weatherization goals. It is also extremely difficult to weatherize businesses and homes.

- Seventh Generation has implemented their own internal carbon tax because they haven't seen the initiative from local government to do so.

### **What potential action steps can advance Vermont as a center of climate change solutions, innovation, and economic development?**

- Incentivize carbon rather than tax it. Put a negative into a positive.
- The only way to implement tax is to find a way to measure it. We have to develop a system to measure it.
- Tax new installations.
- Model our efforts after what's been done in British Columbia.
- Change our tax structure so that it makes sense for Vermont not fossil fuel companies.
- The report includes a "one stop shop" for weatherization that should be followed.
- Focus on disparity between different people with different socioeconomic statuses.
- Discuss impact on farms more because farmers are so important in Vermont.
- It is important to recognize that politics shouldn't divide this issue.
- Bernie Sanders is really the only one who has proposed a federal carbon tax. We could be a future federal leader in carbon taxing is implemented in Vermont.

## **SESSION P: MARKETING VERMONT AS A NATIONAL CLIMATE ECONOMY LEADER**

**FACILITATOR:** Dennise Casey, *Casey, Inc.*

**SCRIBE:** Ruth Wallman

### **What is currently happening in this arena?**

- In Middlebury a group promotes telecommuting for young people who may be employed in cities but wish to live in VT.
- ACCD is working with tourism to develop a statewide economic development campaign. They have hired a NYC marketing agency and Spike to position VT to appeal to tourists. Farm to Plate marketing could also link to climate economy efforts.
- VT known as a green state. Efficiency VT and VEIC have national recognition. We have other energy leaders that promote renewables that could help with discussion about carbon tax. Our entrepreneurial spirit is also getting notice.
- How do we attract tech jobs? We have a green environment - businesses could locate downtown and put VT on map for a place to bring green jobs. VT Technology Alliance is working to attract young people for jobs and are doing some of this marketing now.
- There is a labor workforce and training fund. Our higher education institutions have academic programs in sustainable ag, internships and job shadowing, all of which lead young people to these jobs.
- The VT Higher Ed Food Systems Consortium markets Vermont's ag programs across the US. There is opportunity with VT institutions to market together to young people. It could be a way to get beyond the competition, to get these young people to stay here and create jobs.
- We need to attract people who want to stay here, not just come here. Not just the young folks coming to ski, but who also want to be here.
- Attracting people who have a connection here already, for example through college or family, would be a good tactic.
- We are experimenting with food sustainability at Green Mountain College which should attract young people.
- We have Bernie, who made climate change a top issue. It should help bring in young people, also Bill McKibben, 350.org, all of which market VT in other ways. This offers unconscious marketing.

### **What potential action steps can advance Vermont as a center of climate change solutions, innovation, and economic development?**

- Are we saying we want to attract only youth? How about mid-level people who can afford to live here, who will respond to a different marketing strategy? VT is expensive.

- Can we keep and retain young people already here?
- We should connect the dots in PR and marketing.
- The ACCD campaign will focus on the mid-level folks, not just the young people working remotely. We need to be collaborative and not be in silos.
- VT may be expensive but taxes pay for really good schools.
- There is no ethnic diversity in this room. Demographic problem transcends others. There are people in the US who we aren't attracting yet, and we need them.
- We have huge brands here like 7th Generation and Ben & Jerrys who bring notoriety to VT. We could piggy back on their marketing.
- We need multiple goals with multiple strategies and to coordinate and work together.
- Good ideas are fine, but we also need to think about audience. How do you get businesses to move that don't want to? We can't give them money to move.
- We need to define what it means to be a national climate economy leader.
- It costs less to live here than in FL, even though taxes are higher. People moving here will have had a more expensive lifestyle elsewhere.
- It is more expensive here, but we have community, local politics, local school, and more involvement in their community. You gain a way of life when you move here. We should sell that package. Climate economy businesses will be interested to come here if they see how people value living here.
- Diversity is a problem. We need to tackle that.
- Retaining and investing what you have is less expensive than trying to attract new businesses. So invest in what you have first. You have to show that there is a market in which to make money in this rural state.
- Food is a key issue. We have a regionally sustainable food system. Food is a niche, an attractor. People move where there is good food.
- CEDS mentioned an alternative to GDP. We can measure success using the Genuine Progress Indicator, which penalizes environmental degradation. VT is one of 18 states that measures GPI. This could be used in a marketing campaign.
- We have authenticity. Bernie, and VT, are authentic. We need to walk the walk on climate solutions. If we can reduce fossil fuel burning, kids would have less asthma. British Columbia saw a tech boom by putting a tax on what we don't want and eliminated business tax.
- We should attract goods and services we can get digitally.
- We need to communicate our success as a climate leader. What is the message?
- How do we mimic ecological design in video? Common distribution of content from VT would leverage the collective voice.
- Carbon footprint is consumption of goods from far away – food, clothes. Can we grow the economy and make it sustainable in itself?
- Career fairs are attracting diverse people. Schools should expose students to more diverse experiences, not just cows and tourism.
- We need to reconfigure our value system and move away from oil. Carbon tax is a signal that we are not going back to oil, fossil fuels, etc.
- We need to define why are we marketing and what is the measurable outcome. Is the target growth? More young people?
- We should amplify our voice and leverage all the things we are doing well in one place to maximize other opportunities.

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## SESSION Q: BUILDING A NATIONAL CLIMATE ECONOMY SUMMIT IN VERMONT

**FACILITATOR:** Nate Hausman, *Clean Energy Group*

**SCRIBE:** Ben Doyle

### What is currently happening in this arena?

- Some plans are already underway. VCRD is considering a two-day summit where people take turns showing off Vermont and also hear from national perspectives.
- Vermont has an amazing group of utilities and is a leader nationally. They have relationships with Tesla and other companies who have the ability to test new technology. Those and other resources could be called upon for a national summit.
- There are innovative examples available in Green Mountain Power, VTC's bio-digester, VELCO, Washington Electric, etc.
- There are summits in Vermont that could serve as models, for example, Shelburne Farms' slow money event where there are "pitching sessions" to promote projects in Vermont.
- Vermont is really good about having conversations at a high level, so a summit should highlight these kinds of

conversations (solar sighting issues, utilities). We excel when we ask people to solve problems.

- The person who is running the youth climate change summit is a huge asset. VEEP program can provide leadership.
- Al Gore spoke to a participant's company about the possibilities in the green economy and was very inspiring/motivational. He's the kind of person who is one degree of separation from being a summit like this.
- Institute for Sustainable Communities is an important resource that should be engaged in this effort. They are a respected worldwide leader on sustainability.
- Vermont is a leader in the post-Irene world. People look to us for guidance around issues of resiliency and disaster recovery.

- Vermont models democracy well. Our congressional contingent is accessible. This could be something that a summit highlights.
- Organizations in Vermont have a number of tools for success that could be shared. For example, how to leverage federal assistance or develop collective impact networks.
- Waterbury Vermont should host this: it's the home of Sun Common and the Waterbury State Office is the greenest in the country.
- There is a tension between cutting-edge innovation and a humanistic approach to development that can be negotiated and branded in Vermont.
- Lots of Vermonters are engaged in a conversation about economic justice and should participate in this conversation as well.

### **What potential action steps can advance Vermont as a center of climate change solutions, innovation, and economic development?**

- We need to identify who the leaders in this area are both on the state and national level.
- This is a branding opportunity for the state around economic development. That's why it should happen. But we need to identify the audience. Is the audience young people or industry?
- There could be a component for people to look for jobs.
- The agenda needs to be very broad and very forward thinking.
- We should answer this question: Is the goal of the summit to show off what we are doing or to bring in the leaders from other states and learn from them?
- Before deciding who to bring the table, we need to understand what the goal is.
- What about youth leadership? What are the goals there? Still isn't a lot of clarity. It's exciting when you get youth to talk about climate change; youth voices are valued.
- There is a powerful relationship between innovative technology and storytelling. A summit should focus on sharing that story.
- Having Vermont as the location of this conversation doesn't mean that it has to be all about Vermont. We might learn from other states—particularly around strands like transportation. We should try to find people who can model. Get leaders who have already crafted a path forward.
- Get the big names and just let it happen in Vermont—that will be enough.
- This shouldn't be a one-time deal. Let's do this every year! If so, where is it? In VT annually?
- This whole conference should be a think tank.
- Policy and industry and leaders need to join with social justice at any kind of summit like this.
- Identify an appropriate venue. Could this really happen in Randolph? There isn't a major hotel.
- This needs to happen, but planning should start now. UVM should be at the table and we should recognize that Burlington might be the appropriate venue (national thought leaders will expect certain amenities).



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- The Sustainable Futures Fund of the Vermont Community Foundation
- The Vermont Country Store

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