Brighter Vermont ComunityEnergyDashboard BVILDING A BETTER ENERGY FUTURE. TODAY.

VECAN 2016

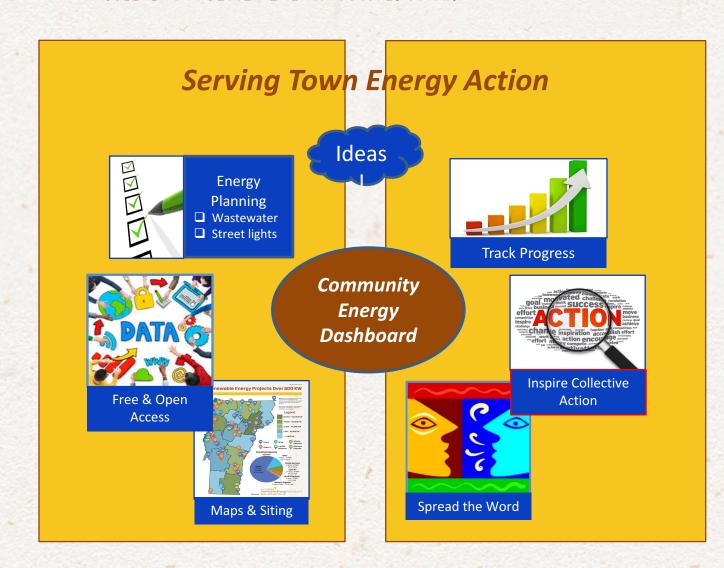
Linda McGinnis, Program Director, Energy Action Network (and South Burlington EC)

Diane Munroe, Coordinator for Community-Based Environmental Studies, Middlebury College (and Middlebury EC)

Dec. 3, 2016

Visit us at: vtenergydashboard.org

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A Collaborative Project of the



Energy Action Network



und Hermont Energy Investment Corporation

Vermont Energy & Climate Action Network

....and many other partners

With funding support from











Common Goal: A Sustainable Energy Future

90% by 2050

Collective Action = Impact

COMMUNITY

<u>Businesses</u>

Schools

Farms

Municipality

Households

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How do we translate statewide <u>90 by 2050</u> goals to local action?

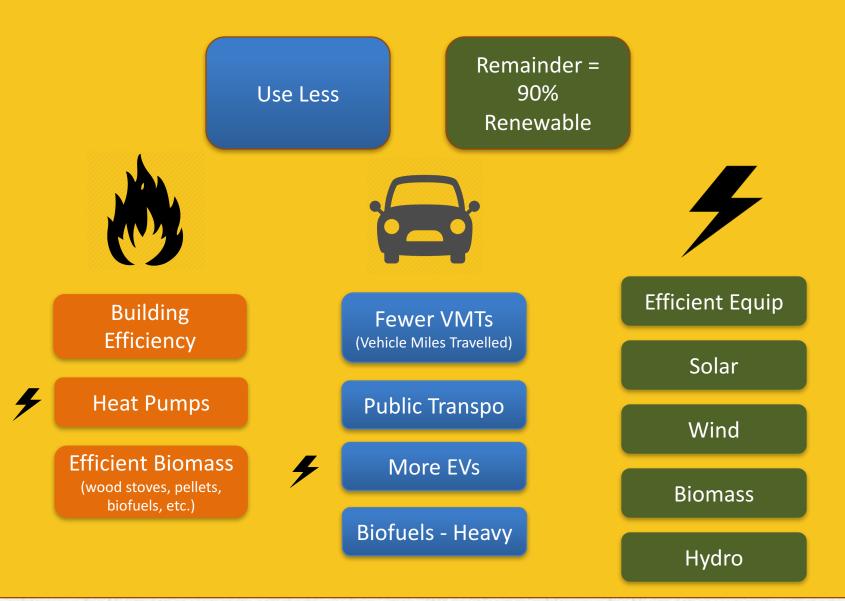
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How can we make energy accessible to all Vermonters?

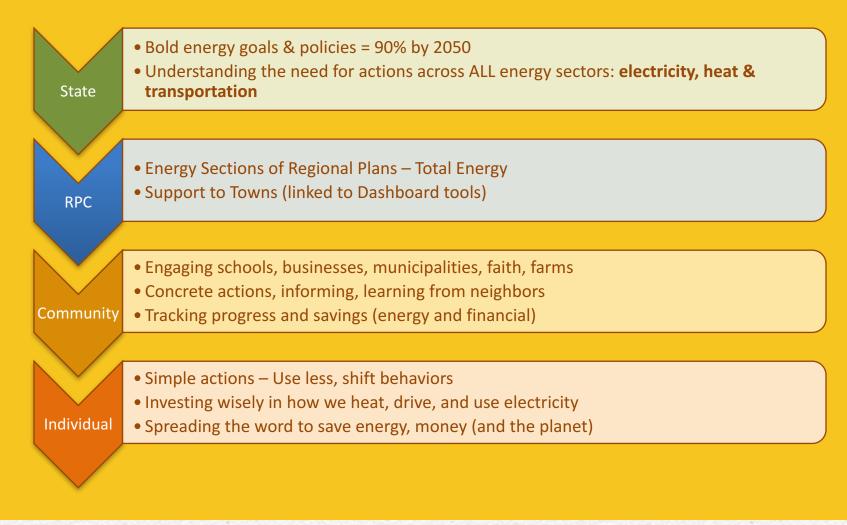
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How do we get communities engaged in their energy future?

Translating 90% by 2050 to local action



Vermont's energy future depends on:



90% RENEWABLE BY 2050 Vermont's **Comprehensive Energy Plan** establishes a bold goal: *to meet* 90% of Vermont's energy needs from increased efficiency and renewable sources by 2050, in order to:

✓ Save money
 ✓ Keep energy rates predictable and low
 ✓ Keep energy dollars local
 ✓ Create jobs
 ✓ Build our energy independence
 ✓ Reduce air and water pollution
 ✓ Reduce our carbon footprint



Collective Impact - Each of our actions count



How Do We Get People to Act?

How do behaviors change?



Learning by Doing?

ALL of the above....



Stories?



Dashboard Tools: Seven ways to

tineine

MANNA

Actions

Stories

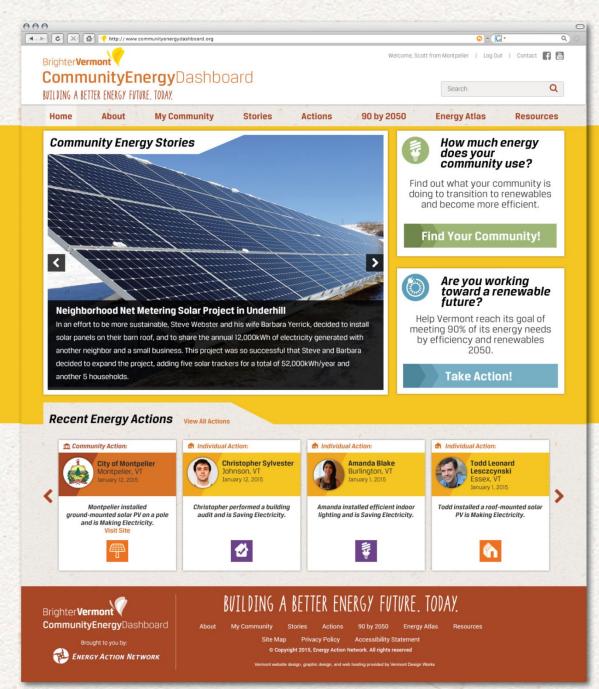
Mapping

Analysis

Resources

> Make energy visible

- > Support clean energy choices
- > Build communityscale awareness + change behaviors



What is the Community Energy Dashboard?

A powerful website to help your community understand and analyze energy at the local level:

Where you are now
 Where you need to go
 How you can get there

TAKE ACTION ON BEHALF OF YOUR COMMUNITY — MOTIVATE, INSPIRE!



2015 Progress

How much progress has your community made to help Vermont reach its goal of meeting 90% of our energy needs through efficiency and renewables by 2050? These graphics illustrate your community's progress across three key energy sectors: thermal, electrical, and transportation.

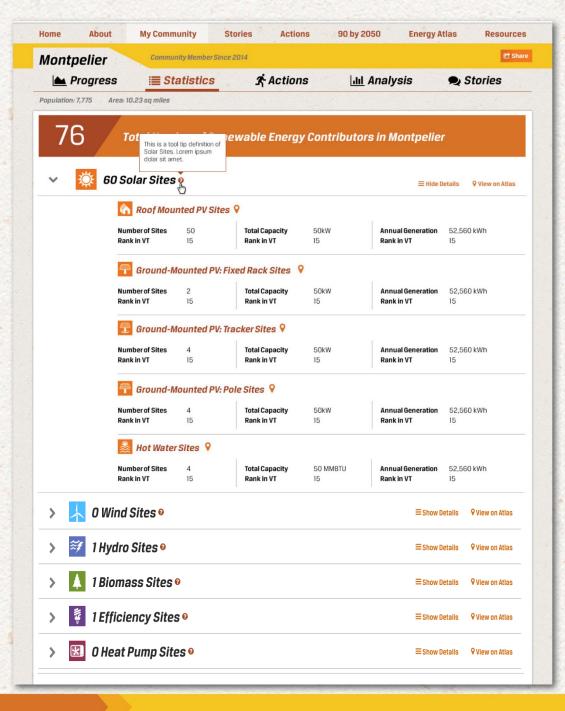
Heat Total MMBTUS Used: 803,437 •				Electric Total MMBTUs Used: 287,173 •				Transportation Total MMBTUs Used: 704,412 •			TOTAL Total MMBTUs Used: 1,795,502				
Pro	Progress Against the Goal: Renewable Energy Energy Total Energy Energy		Progress Against the Goal: Renewable Energy Energy Total Energy Energy		Progress Against the Goal: Renewable Energy Total Energy Total			Progress Against the Goal: Renewable Energy Energy Total							
Goal	400,000	1,200,000	1,750,000	Goal	400,000	1,200,000	1,750,000	Goal	400,000	1,200,000	1,750,000	Goal	400.000	1,200,000	1,750,000
Actual	475,000	1,300,000	1,850,000	Actual	475,000	1,300,000	1,850,000	Actual	475,000	1,300,000	1,850,000	Actual	475,000	1.300.000	1,850,000
Diff.	+10%	-10%	-5%	Diff.	+10%	-10%	-5%	Diff.	+10%	-10%	-5%	Diff.	+10%	-10%	-5%
Did you know? • 1 gal fuel of = 138,200 BTUs • 1 Herm = 1 CCF natural gas = 100,000 BTUs • 1 Cord wood = 22 MMBTUs • An average (1500 sq.ft) well-insulated home uses 75 MMBTU/year for hest. This equals: 540 galons of fuel of 3.5 Cords wood, or 750 CCPs natural gas				Did you know? • IkWh = 3.412 BTIS • An average VT bouchold uses 7200 kWhytear (24.0 MMBTUs) • Through conservation and efficiency measures, you can ave from 20-40% of these costs per year.			Did you know? • 1 gal gas = 120.52.4 Btu • Average car = 15,000 miles per year • Average car (25 MPG) = 600 gal/yr = 72 MMBtu • Ametage hybrid (50 MPG) = 300 gal/yr = 38 MMBtu • Average CY (23 NWh/100 miles) = 4350 kWh ta 8 MMBtu				Did you know? • Over 75% of energy consumed in VT Is from fosal fuels, used primarily for heating and transportation with oblans flowing out of state • The biggest opportunities to reach 90% by 2050 are: energy efficient tuiklings, reducing vehiche miles travelet, and switching to renewably powered heating, transportation and electricity				

Progress Timeline

A key feature of the Dashboard is an interactive **Timeline** that shows progress toward local renewable energy and efficiency goals.

Communities can utilize pre-loaded data or customize their Dashboard to track local progress toward reaching 90 by 2050

TRACK: ANALYZE PROGRESS OVER TIME TO PREPARE YOUR TOWN ENERGY PLAN AND DEMONSTRATE IMPACT



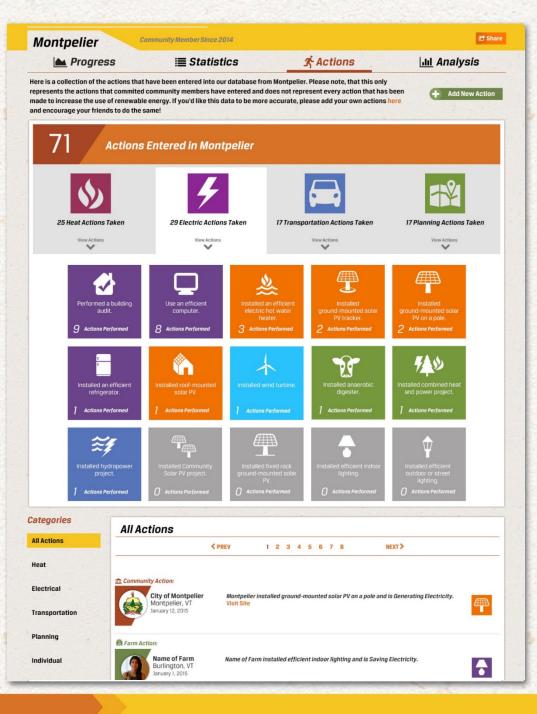
Statistics

Communities can easily access information on all local renewable energy generation, and add their own data on efficiency.

How many sites?

- How much energy is generated?
- How does our town compare with others?

<u>INFORM</u>: STATISTICS AND ACTIONS TAKEN BY YOUR COMMUNITY PROVIDE ADDITIONAL CONTENT FOR DECISION-MAKING



Actions

Action Tiles provide easy & fun way to track progress.

- Check off specific energy actions related to Heat, Electricity, Transportation or Planning.
- Include actions from town, businesses, schools, farms, residences

<u>ENGAGE</u>: ADD UP THE RESULTS AND VISUALIZE YOUR COLLECTIVE IMPACT!

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Our Electric Car is More Fun to Drive

<View All Stories



Source: Nathaniel Blackford, Middlebury College

G - G.

Welcome, Scott from Montpelier | Log Out | Contact 📑 🔚

Search

Q 10

Q

Submit a story

Relevant Categories

Electricity

Residence

Middlebury

Nov 2015

Action Date

Transportation

Communities

Pieter Broucke has been working at Middlebury College, where he is a Professor of the History of Art and Architecture, since 1995. He lives with his wife and kids in a small 1500ft² house. A few years ago, when their roof needed replacing, they put on a metal roof and covered the south side with solar panels. The solar system was oversized for their needs, but rather than put all that extra energy back into the grid, they decided to try out an EV (electric vehicle).

Pieter Broucke next to his Nissan Leaf, powered by his rooftop solar

Photo credit: Nat Blackford

Excess rooftop solar electricity? Go EV!

They chose the Nissan Leaf, but decided to lease instead of buying because of how quickly electric cars have been improving. That was two years ago and now Pieter describes that owning the car is like "owning a vacuum cleaner." There is very little

maintenance: no gassing up, no oil changes and overall, there is just less that can go wrong. This means less worrying, but also lower upkeep costs. While some talk about the negative environmental impact of batteries in EV's, Pieter says they have a fraction of the environmental impact of gas and diesel cars. Pieter described how he had a hard time convincing his wife to lease the Leaf, but then they went for a test drive. She loved it, and so did their kids, who now prefer to drive the Leaf. Pieter said that "It's so zippy and peppy."

Range anxiety? Ranges and charging stations are increasing every year

The biggest thing to worry about is how far you can drive before you need to charge up again. Pieter said that his Leaf has a range of 80 to 90 miles depending on the temperature, but that newer versions may have a range of 120 to 200 miles. The range hasn't been a problem for him, since it can easily get him to and from work. There are also charging stations going up all over Vermont, which make driving an EV more feasible.



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ENERGY ACTION NETWORK

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My Community Stories Actions 90 by 2050 Energy Atlas Site Map Privacy Policy Accessibility Statement © Copyright 2015, Energy Action Network. All rights reserved

* Vermont website design, graphic design, and web hosting provided by Vermont Design Work

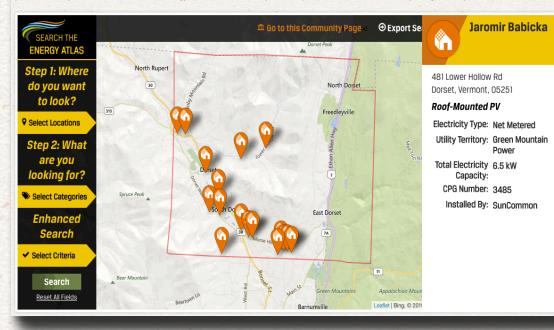
Stories

Stories are a way to highlight the energy action happening in *your* community with *your* neighbors

- Help others understand how easy it is to save money and energy
- Celebrate local energy heroes
- Link stories to social media and spread the word

Home	About	My Community	Stories	Actions	90 by 2050	Energy Atlas		Resources
Energy	y Atlas						Ð	Add New Site
and the second second	ne Energy	Atlas		a di pas	S			2. Y

The Energy Atlas. helps you identify, analyze, map and visualize existing and promising locations for renewable energy and energy efficiency projects. Select your community or area of interest and an energy option –solar, wind, hydro, heat pumps, biomass, and efficiency – to generate your map.



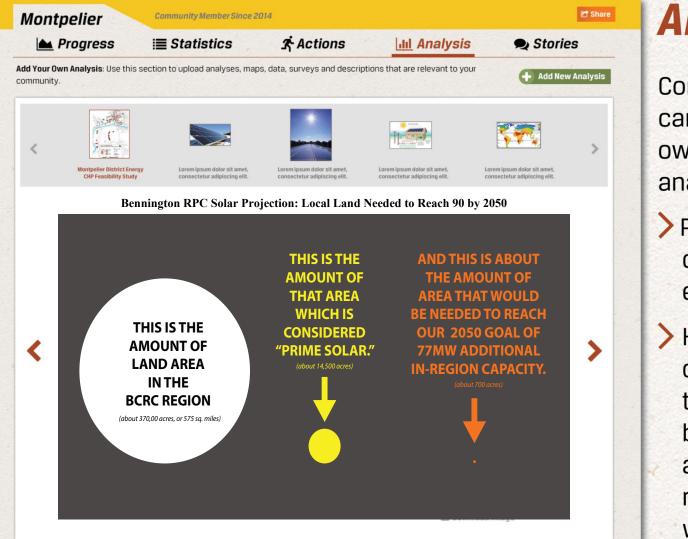
Where does the data come from?

Atlas data comes from the Vermont Public Service Department, Vermont Center for Geographic Information, Renewable Energy Vermont, and you!

Mapping

The Energy Atlas makes it possible to:

- Map every renewable energy site in your community
- Add new energy and efficiency sites Use tools to determine
- potential sites based on environmental, utility, and other key data
- Create community maps by technology, town, utility, site type, system size.



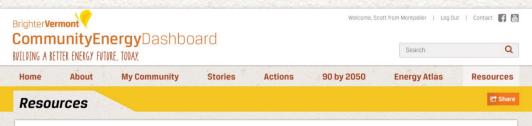
The Bennington Regional Planning Commission carried out a mapping exercise to determine which land in the region could be considered "Prime Solar" taking into consideration both the solar resources and the environmental constraints to siting solar in the region. The results are illustrated in this infograph.

Analysis

Communities can upload their own local energy analyses.

Provide local context to energy decisions

Help other communities to learn from best practices, and avoid reinventing the wheel



The Energy Action Network created a one-stop shop called **Brighter Vermont** to make it easier for you to access information about energy so you can make the wisest choices and investments for your community, business or home. The links below will take you to the specific information, organizations and businesses that fit your needs.

у 🛛 Heat

Learn how to lower your heating costs and increase your comfort.

Resources for your home

Resources for your business

Resources for you school

Electric

Simple steps to be more efficient and lower your electric bills.

Resources for your home

Resources for your business

Resources for you school

Transportation

Options for reducing your dependence on fossil fuels.

Resources for your home

Resources for your business

Resources for you school

💲 | Financing Options

Money is the most common reason cited by Vermonters who have not yet invested in renewables or efficiency. But it doesn't have to be! Learn about a host of rebates, incentives and low interest loan programs that make investing in renewables and efficeny more affordable than ever.

Resources for loans, rebates, incentives, and financing

👋 Planning

Lorem ipsum dolor sit amet, consectetur adipiscing elit. Suspendisse vitae porttitor ipsum.

Resources for understanding energy

Resources for energy planning

Resources

Link to important resources and partners:

- > Heat
- > Electricity
- > Transportation
- Financing Options
- Local Energy Planning

For your home, school, business, farm, community

What it is

- Free!
- Available to every town in Vermont
- First-ever toolkit for community data, maps and stories in ONE place
- A place to learn from your neighbors
- A place to learn what other towns are doing
- Officially-sourced data, updated regularly
- Information on potential renewable energy sites
- A means to help you reach your EC goals

Community Energy Dashboard

What it isn't

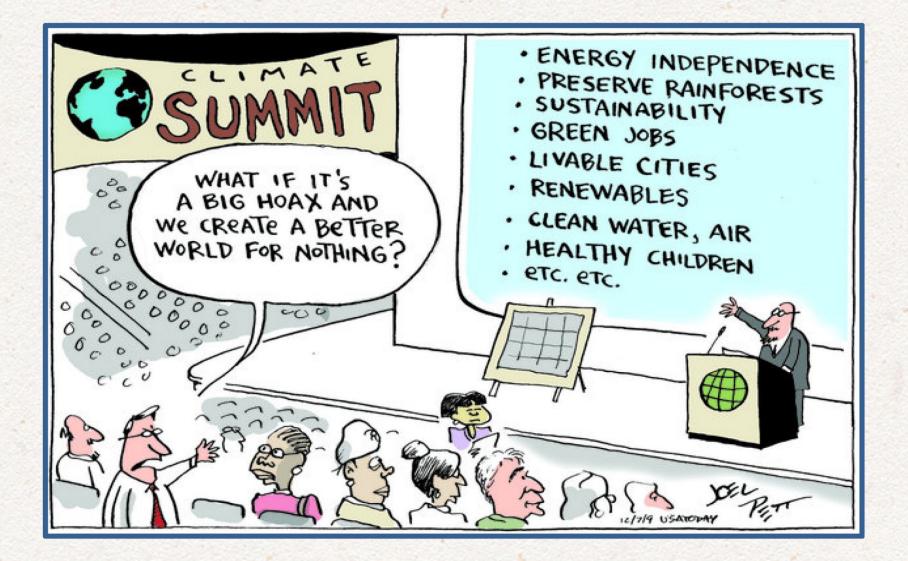
- Not perfect! It's a start
- Not trying to sell you something
- Not real-time updates (data is updated annually)
- Not a source of exact town data across all sectors (Electricity is quite accurate; heat and transport less so)
- Not a definitive indicator of potential renewable energy sites
- Not a blueprint for your community's path to 90 by 2050....that's up to you.

Soft Launch Towns – Fall 2016

	RPC	Town (County)
1	Addison	Middlebury
2		Weybridge
3		Panton
4	Bennington	Dorset
5	Chittenden	South Burlington
6		Burlington
7	Central	Waterbury/Duxbury
8		Montpelier
9	Northeastern	Craftsbury (Orleans)
10	Two Rivers	Hartford (Windsor)
12		Thetford (Orange)
13		Randolph (Orange)
14	Southern Windsor	Woodstock
		(Windsor)
15		Barnard
16		Hartland
17		Pomfret
18		Reading
19		Norwich

Is your town interested in being part of the next round?

10-15 new towns will be selected for Jan-June 2017



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THANKS!

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