



900%

RENEWABLE BY

2050



ENERGY ACTION NETWORK

ANNUAL REPORT 2016

We can do this.

Photo: Fresh Energy



EAN brings a
NETWORK
approach to creating a
clean, affordable and secure
energy future through
EFFICIENCY
and **RENEWABLES.**

From EAN's Executive Director and Board Chair

2016 was a pivotal year for Vermont and the nation. The year opened with dynamic initiatives on energy policy and planning in Vermont and decisive action internationally in the context of the Paris Climate Agreement. 2016 closes with a turn to new opportunities under Governor Scott and his Administration in Vermont, and a sharp turn in national energy policy and direction. These changing times highlight the role and value of EAN in seeking broadly held priorities and approaches to shape a clean, affordable and secure energy future for all residents of our "brave little state."

As we look towards 2017, EAN is also facing an internal transition as our founding Executive Director steps down to take up new work on global clean energy finance to expand markets and drive clean energy investment. Building on our strong and committed foundation, EAN is shaping a dynamic program for the next chapter of our collective effort to advance Vermont's goal of 90% renewable energy by 2050.

The past year has been a productive one for EAN's on-the-ground implementation work in support of our goal of transforming Vermont's energy system to one based on efficiency and renewables. The Network has engaged in a broad range of activities across our four leverage points to advance our mission to create a clean, affordable, and secure energy system for Vermont. It is again with great pleasure, that we offer this Annual Report as a summary of EAN's work to date and priorities for the year ahead.

SOME HIGHLIGHTS OF EAN'S 2016 PROGRAMS AND ACCOMPLISHMENTS INCLUDE:

- Launched EAN's new **Community Energy Dashboard** to support local energy action.
- Creation of a new **Clean Energy Finance Collaborative** to expand markets and demand.
- Implemented EAN's **communications efforts** to "move the middle" to understand that clean energy is critical to Vermont's economy, environment and values.
- Partnered with **Button Up Vermont** to help towns develop local projects and take action.
- Convened a state-wide "**Solar Pollinator**" discussion on "pollinator-friendly" solar installations.
- Launched a new **win-win-win policy dialogue to integrate solar energy siting on recovering wetlands** to benefit water quality, renewable energy and farmers.
- Supported **Regional Energy Planning** as led by the Public Service Department and Vermont's Regional Planning Commissions.
- Provided strategic input on the **2016 Comprehensive Energy Plan (CEP)**.
- Continued to support the **Net Zero Montpelier** project as now led by the Montpelier Energy Advisory Committee.

We remain deeply grateful to our foundation supporters and highly committed Network members who have made all this progress and good work possible.


ANDREA L. COLNES
Executive Director


LEIGH SEDDON
Board Chair

Members

Addison County Regional Planning Commission:
Adam Lougee

Associated Industries of Vermont:
William Sayre

Bennington County Regional Commission:
James Sullivan

Biomass Energy Resource Center (BERC):
Adam Sherman

Bourne's Energy:
Peter Bourne

Burlington District Energy Service:
Jan Schultz

Burlington Electric Department:
Chris Burns, Jennifer Green, Mike Kanarick,
Neale Lunderville

Butternet Mountain Farm:
David Marvin, Ira Marvin

Capstone Community Action:
Paul Zabriske

Casella Waste Systems:
Joseph Fusco

Catalyst Financial:
Marianne Barton, Robert Barton

Catamount Solar:
Dan Kinney, Kevin McCollister

Champlain Valley of Economic Opportunity (CVOEO):
Jennifer Wood

Chittenden County Regional Planning Commission:
Charlie Baker, Melanie Needle

City of Montpelier:
John Hollar

Diamond & Robinson, P.C.:
Ronald Shems

Donella Meadows Institute:
Marta Ceroni

Efficiency Vermont:
Liz Gamache, Barry Hulce, Paul Markowitz

Encore Renewable Energy:
Chad Farrell, Phillip Foy, Derek Moretz

Energy Co-op of Vermont:
John Quinney

Energy Futures Group:
Richard Faesy, Chris Kramer, Gabrielle Stebbins

Environmental Consultant:
Elizabeth Courtney

Forward Thinking:
Jeff Forward

Fresh Tracks Capital:
Lee Boyeau, Cairn Cross

Gardener's Supply:
William Rapp

Goddard College:
Robert Kenny, Catherine Lowther

Google:
Matthew Dunne

Green Lantern Group:
Sam Carlson, Ralph Meima, Bill Miller, Luke
Shullenberger

Green Mountain Power:
Robert Dostis, Brian Otley, Mary Powell

Hardwick Electric Department:
Mary Westervelt

High Meadows Fund:
Gaye Symington

Interfaith Power and Light:
Richard Hibbert

L.W. Seddon, LLC.:
Leigh Seddon

Lake Champlain Regional Chamber of Commerce:
Catherine Davis, Tom Torti

Legislator:
Mary Sullivan

Lintilhac Foundation:
Crea Lintilhac

Middlebury College:
Diane Munroe

Montpelier Energy Committee:
Kate Stephenson

National Life Group:
Tim Shea

NeighborWorks of Western Vermont:
Ludy Biddle

New England Clean Energy Council:
Janet Besser

**New England Grass Roots Environmental
Fund (NEGEF):**
Leigh Cameron, Julia Dundorf

Pace Law School Energy and Climate Center:
Sam Swanson

Pomerleau Real Estate:
Ernie Pomerleau

Regulatory Assistance Project:
Rick Weston

Renewable Energy Vermont (REV):
Ansley Bloomer, Olivia Campbell Andersen

Shelburne Farms:
Megan Camp

SunCommon:
Jim Merriam, James Moore, Duane Peterson

Two Rivers-Ottawaquechee Regional Commission:
Peter Gregory

Union Mutual Insurance:
Michael Nobels

University of Vermont:
Amy Seidl, Jennie Stephens, Richard Watts

University of Vermont - Gund Institute:
Jon Erickson, Taylor Ricketts, Eric Zencey

University of Vermont Medical Center:
Dawn LeBaron

Veris Wealth Partners:
Anders Ferguson

Vermont Businesses for Social Responsibility (VBSR):
Daniel Barlow

Vermont Center for Emerging Technologies:
David Bradbury

Vermont Council on Rural Development (VCRD):
Paul Costello, Jenna Koloski

Vermont Economic Development Authority (VEDA):
Jo Bradley

Vermont Electric Cooperative:
Andrea Cohen, Christine Hallquest

Vermont Electric Power Company (VELCO):
Tom Dunn, Deena Frankel, Kerrick Johnson

Vermont Energy Education Program (VEEP):
Cara Robechek

Vermont Energy Investment Corporation (VEIC):
Peter Adamczyk, Christine Donovan, Karen Glitman,
David Hill, Scott Johnstone, Jennifer Wallace-Brodeur,
Abby White

Vermont Fuel Dealers Association:
Matthew Cota

Vermont Law School:
David Mears

Vermont League of Cities and Towns:
Abby Friedman, Karen Horn

Vermont Natural Resources Council (VNRC):
Johanna Miller, Brian Shupe

Vermont Public Interest Research Group (VPIRG):
Paul Burns, Ben Walsh

Vermont State Employee Credit Union (VSECU):
Laurie Fielder, Rob Miller

Vermont Sustainable Jobs Fund (VSJF):
Ellen Kahler, Scott Sawyer, Janice St. Onge

Vermont Technical College:
Dan Smith, Pat Moulton

Vital Communities:
Sarah Brock, Bob Walker

VPPSA:
Melissa Bailey, Ken Nolan

Washington Electric Cooperative:
Patty Richards

Waterbury LEAP:
Jamie Ervin

2016 STATE PARTNERS:

Agency of Agriculture:
Chuck Ross, Secretary

Agency of Health and Human Services:
Hal Cohen, Secretary

Agency of Natural Resources:
Deb Markowitz, Secretary

Clean Energy Development Fund:
Andrew Perchlik

Department of Financial Regulation:
Michael Pieciak

USDA - State Director VT/NH Rural Development:
Ted Brady

Department of Vermont Forests, Parks and Recreation:
Michael Snyder, Commissioner

Vermont Housing and Conservation Board:
Gus Seelig

Vermont State Treasurer:
Elizabeth Pearce

Agency of Transportation:
Chris Cole, Secretary

Agency of Commerce and Community Development:
Pat Moulton (Jun 2014-Aug 2016), Lucy Luriche

Public Service Department:
Chris Recchia, Commissioner

WHO WE ARE

Energy Action Network is a diverse group of leading non-profits, businesses, public agencies and other high-level stakeholders seeking to advance Vermont's transition to a sustainable energy future and meet 90% of our 2050 energy needs through efficiency and renewables.

FINANCE | BUSINESSES | NON-PROFITS | UTILITIES | POLICY MAKERS | EDUCATION

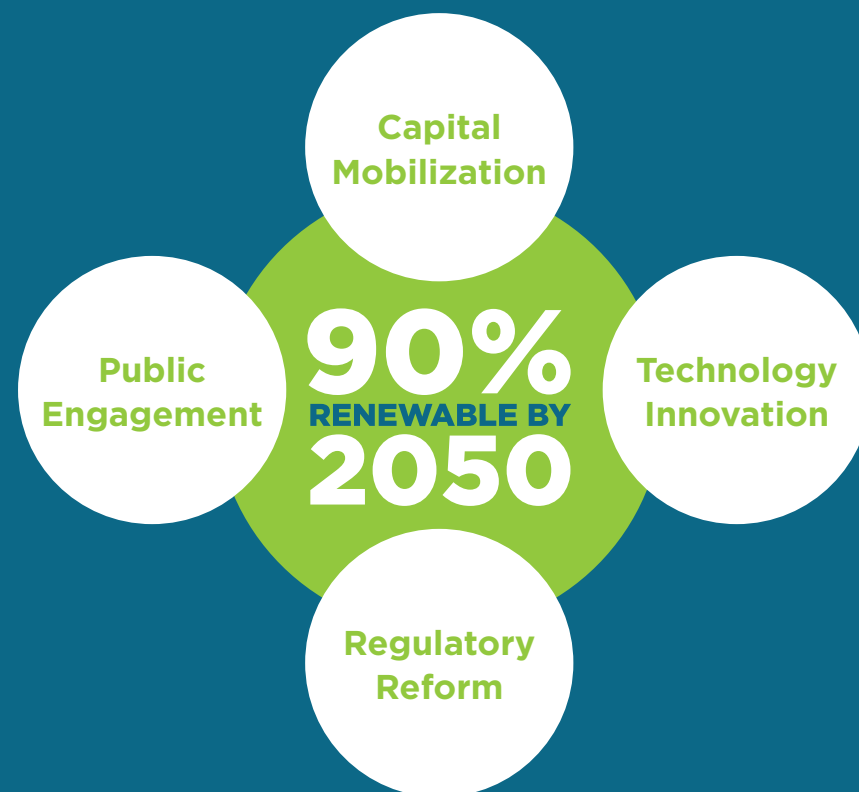
EAN recognizes that achieving our goals will require more than the capacity of individual organizations. Changing large complex systems requires a network approach to harness the power of individual efforts into a leveraged whole.

MISSION

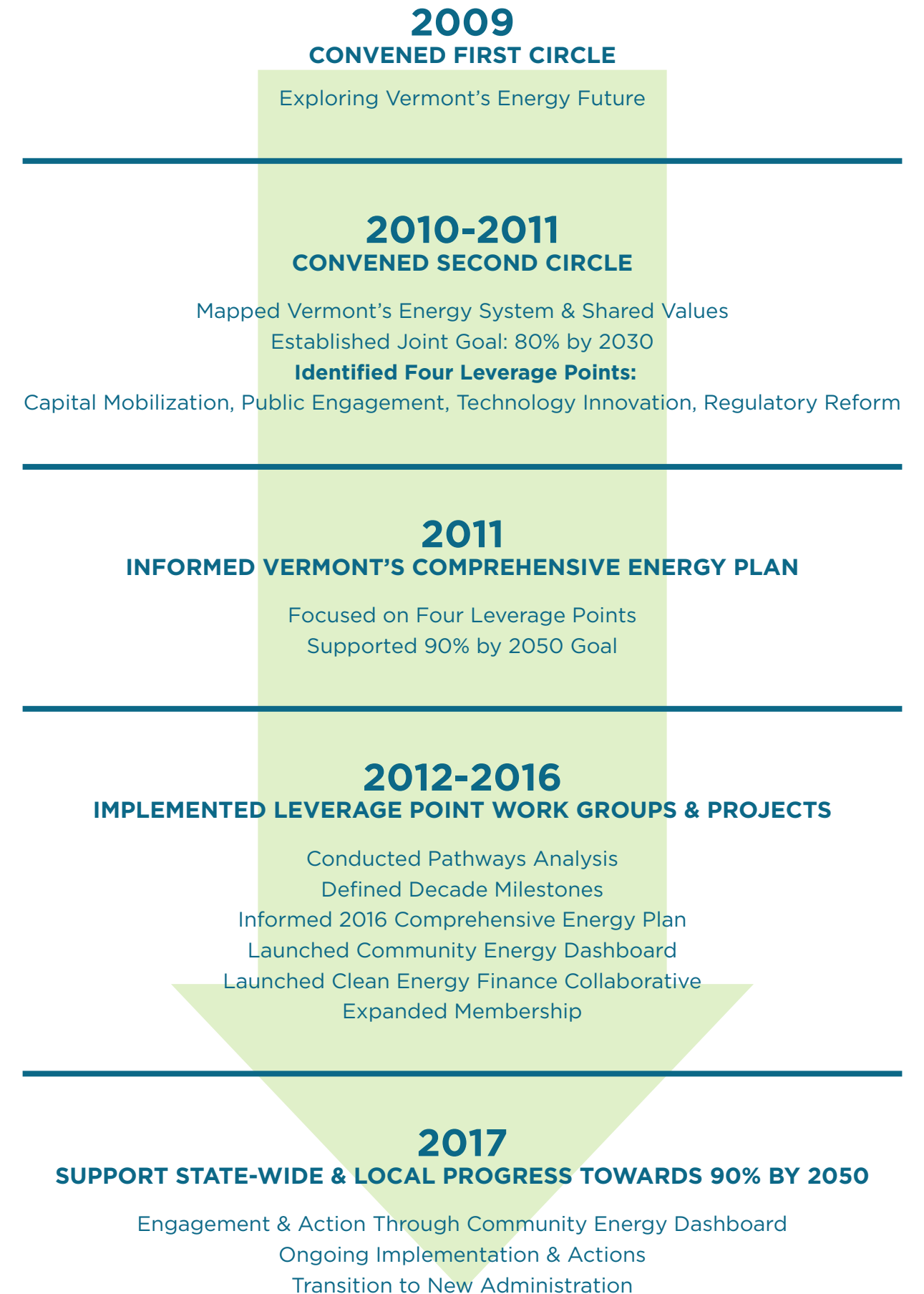
EAN's mission is to end Vermont's reliance on fossil fuels and to create clean, affordable and secure electric, heating, and transportation systems for the 21st Century.

APPROACH

EAN's work is based on four core leverage points to catalyze a shift to an energy system based on efficiency and renewables.



WE CAN DO THIS... TOGETHER!



90% by 2050 = Affordable Energy for ALL

Reaching 90% by 2050 can make energy more affordable for everyone, especially the most vulnerable.



Vermonters use a lot of energy – we live in a cold climate and, as a rural state, often drive long distances to work, schools, for services, and to see family and friends. These energy costs create a significant financial burden for all Vermonters, and particularly for households and families who can least afford it.

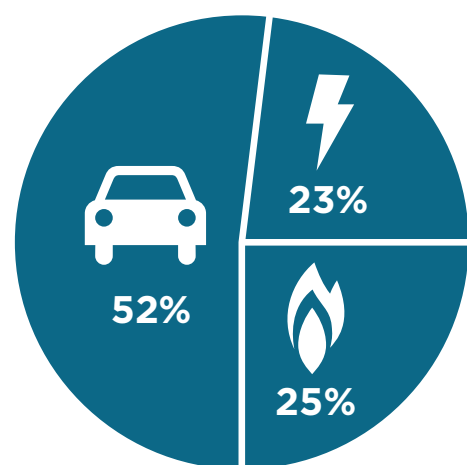
ENERGY AFFORDABILITY

How does 90% by 2050 make energy more affordable? Through efficiency and affordable renewables.

Emphasizing efficiency means reducing costs by using energy more efficiently to heat and power our homes - or to get to where we need to go. This generates savings year in and year out.

Powering our homes, businesses and cars with affordable renewables ensures low and stable prices or decades to come.

VERMONT HOUSEHOLD AVERAGE ENERGY SPENDING¹



| ENERGY TYPE | AVERAGE ANNUAL HOUSEHOLD EXPENDITURE | RANGE | AS A PERCENT OF TOTAL ENERGY COST |
|-------------------|--------------------------------------|-----------------|-----------------------------------|
| ELECTRICITY | \$1,105 +/- 163 | \$524-\$1,686 | 23% |
| THERMAL | \$1,198 +/- 250 | \$381-\$1,849 | 25% |
| TRANSPORTATION | \$2,443 +/- 341 | \$1,361-\$3,012 | 52% |
| TOTAL ENERGY COST | \$4,745 +/- 596 | \$2,681-\$5,968 | |

WE CAN REDUCE THIS BURDEN, TOGETHER

1. SOURCE: VEIC White Paper (July 2016). Mapping Total Energy Burden in Vermont

EAN members are leading the way to generate energy savings for all Vermonters.

EFFICIENCY INCENTIVES

Incentives reduce cost of energy efficiency investments that help lower energy bills and achieve long-term savings.

Action: Vermont's energy efficiency utilities (Efficiency Vermont, Burlington Electric Department and Vermont Gas) and the Clean Energy Development Fund provide a range of incentives for weatherization, home energy retrofits, heat pumps, modern wood heat, electric or plug-in hybrid cars and more.

WEATHERIZATION

Low-income households who spend up to 27% of their household income on electricity and heating.

Action: Capstone Community Action, Central Vermont Office of Economic Opportunity, NeighborWorks of Western Vermont, and Efficiency Vermont have helped thousands of Vermonters achieve significant savings, with additional assistance for low-income households who spend up to 27% of their household income on energy.

LOWER COST RENEWABLE TECHNOLOGIES

New energy technologies, and rapidly dropping costs, provide an opportunity to help all Vermonters access new ways to lower their energy bills.

Action: Many solar companies now offer solar to homeowners with no upfront capital investment (REV provides a list of solar companies). Plug-in vehicles cost less than half to operate than gas powered vehicles and can be purchased or leased at competitive rates. Switching to Cold Climate Heat Pumps or modern wood heat can generate significant savings.

AFFORDABLE FINANCING

Flexible, fast, low-interest/longer-term loans make energy improvements more affordable, especially when combined with other federal and state incentives.

Action: Examples include VSECU's Heat Saver and VGreen Loan programs and NeighborWorks of Western Vermont's Energy Loan (for low income Vermonters).

CUSTOMER SERVICE

Navigating the complexities of home energy efficiency and renewables decisions can be a daunting barrier to achieving energy savings. Wraparound assistance is a critical piece of the puzzle.

Action: The Heat Squad program of NeighborWorks of Western Vermont and Capstone Community Action are integrated customer service programs to guide homeowners through this process. GMP is piloting full building retrofits through their eHome program and emerging eVolve Panton initiative in partnership with Efficiency Vermont provides helpline assistance. Vital Communities is launching a Weatherize campaign to help residents identify efficiency priorities.

LOWER BILLS AND LOWER RATES

The combined efforts of our efficiency utilities to help lower energy bills and our electric utilities to help lower rates makes for higher savings for ALL Vermonters.

Action: 90% of Vermonters have participated in energy efficiency programs and every \$1 invested in efficiency is yielding \$2 in savings. Vermont is also the only state in New England to see a drop in residential electric rates since 2012 - we now pay 12% less than we did five years ago.

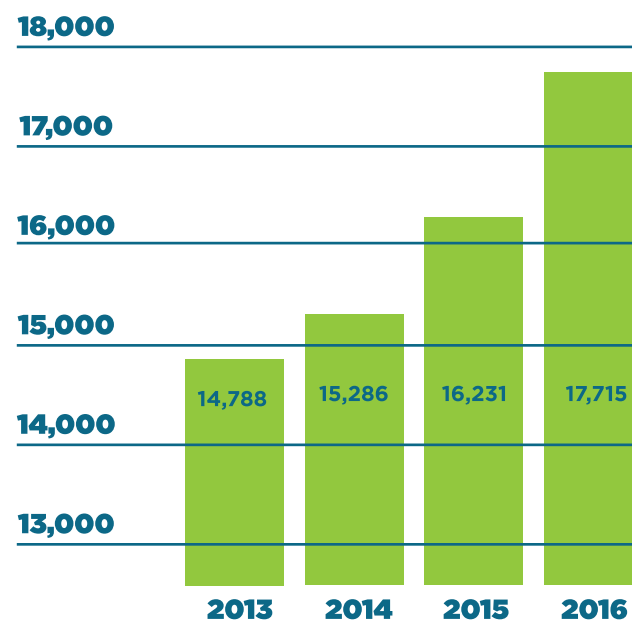
90% by 2050 = Good for Business

The path to 90% by 2050 means new jobs, lower business costs and keeping dollars local.

How do we keep Vermont businesses competitive in our region? Low and stable energy costs are a vital factor. Vermont has shown that this can be done by leading the nation with investments and support for new clean energy and efficiency innovations. A more efficient and renewable energy future provides lower costs, creates jobs and attracts new business and investment in our state.

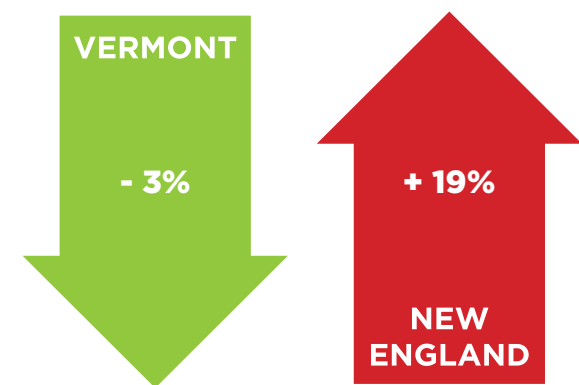
VERMONT CLEAN ENERGY JOBS¹

Up 20% since 2013



VERMONT vs NEW ENGLAND²

Electricity Rates (2012-2016)



King Arthur Flour has saved \$27,000 and 114,000 kWh per year after partnering with Efficiency Vermont. They are benefiting from rate side electricity reductions.

Photo Credit: Efficiency Vermont/King Arthur Flour

EAN members are a driving force for growing Vermont's economy and lowering the cost of doing business.

✓ LOWER RATES

Vermont's electricity rates are the second lowest in New England (down from the highest in 2012). This helps keep our businesses competitive.

Action: Green Mountain Power reduced rates for all customers in 3 of the last 4 years. By comparison, since 2011, rates in New England rose 12.3%, with many utilities charging double digit increases in a single year.

✓ REDUCED COSTS

Energy efficiency improvements helped hundreds of Vermont businesses dramatically reduce their operating expenditures, to the tune of \$50 million per year since 2010. That's money that can be reinvested in making our businesses grow.

Action: Efficiency Vermont and Burlington Electric Department provided incentives and technical assistance for Vermont businesses to make efficiency investments and reduce operating costs.

✓ PREDICTABILITY

Switching to renewably-sourced energy brought more predictability and affordability to energy costs, compared to more volatile fossil fuel prices. Price stability helps businesses plan for the future with less risk.

Action: Encore Renewable Energy, SunCommon, Green Lantern Group, and Catamount Solar are some of the many solar companies helping Vermont businesses and municipalities save hundreds of thousands of dollars in electricity expenditures with predictable low rates through long-term solar contracts.

✓ AVOIDED COSTS

Largely because of Vermont's success in expanding efficiency and locally-generated clean energy, hundreds of millions of dollars in planned transmission have been avoided.

Action: VELCO avoided building over \$400 million in planned transmission projects, saving Vermont ratepayers approximately \$72 million over 30 years.

✓ JOBS

The clean energy sector is the fastest growing jobs sector in the state, reaching an all-time high in 2016 - over 17,700 Vermonters - representing 6% of the State's workforce. More clean energy jobs mean more customers for other Vermont businesses.

Action: Many EAN members are a core part of this job creation, leading to Vermont having the third lowest unemployment rate in the US. These jobs range from local contractors doing weatherization to solar installers to modern wood heat dealers, jobs that help keep a rural economy going.

✓ KEEPING \$ IN VERMONT

In Vermont, we like to keep things local. Vermont currently sends more than \$1 billion out of state for fossil fuels each year, whereas 80 cents on every dollar spent on weatherization stays in Vermont's economy contributing to local businesses and jobs.

Action: VSECU, Vermont Energy Investment Corporation, VEDA and Fresh Tracks Capital are among those providing low-cost financing and venture capital to invest in new clean energy businesses around the state.

1. Vermont's 2016 Clean Energy Industry Report (Clean Energy Development Fund)

2. US Energy Information Administration Electric Power Monthly Table 5.6.A

In 2016, EAN launched its flagship project – The Community Energy Dashboard. What is it?

- ✓ **LOCAL:** A user-friendly website to help communities understand energy at the local level and to take action
- ✓ **HELPFUL:** It provides powerful tools to help set goals, identify actions, track progress, map energy, share stories
- ✓ **FREE:** Available to all 251 towns in Vermont
- ✓ **EASY:** Anyone can use the simple tools – municipalities, businesses, individuals, regions, schools

Join Today and help translate 90% by 2050 into local action!...
www.vtenergydashboard.org

- ✓ **IDEAS:** Get new ideas for local actions in heat, transportation, electricity and efficiency
- ✓ **OFFICIALLY SOURCED:** Get easy access to official data, statistics, analyses and maps and is updated regularly
- ✓ **ENGAGEMENT:** It allows for anyone to get engaged in take and track actions at whatever level makes sense
- ✓ **BEHAVIOR CHANGE:** Understanding what their neighbors and other communities are doing

HELPING VERMONT COMMUNITIES

LEARN FROM NEIGHBORS

Behaviors change when people learn from trusted sources. The Dashboard provides a platform to share Energy Success stories locally.



TRACK PROGRESS

Each town has an interactive timeline that shows what it will take to meet 90% of local energy needs through efficiency and renewables by 2050. It also provides official statistics on each town's current renewable generation and energy use for electricity, heat and transportation.



GUIDE ENERGY SITING ATLAS

The Dashboard's Energy Atlas helps communities understand where their local renewable energy is being generated and helps identify new potential sites based on environmental resources and constraints.

SHAPE THEIR ENERGY FUTURE

KNOW THE FACTS

How much renewable energy is your community generating? What share of local energy is used in transportation as compared to heat or electricity? The Dashboard provides easy access to official data on energy generation and use as well as an crowdsourced information on efficiency and transportation.



GET IDEAS AND SHOW COLLECTIVE IMPACT

What role can you play? The Dashboard provides an easy way for municipalities, businesses and individuals to get ideas and checklists for energy actions, ranging from no-cost to high impact. By adding actions to the Dashboard, you can watch the collective impact of your community grow.

LEARN FROM OTHER COMMUNITIES

What are other towns doing to move towards a sustainable energy future? How are they helping residents, businesses and municipal budgets to save energy dollars?



DASHBOARD PARTNERS

The Dashboard was created by EAN in collaboration with the Vermont Sustainable Jobs Fund (developers of the Renewable Energy Atlas), the Vermont Energy Investment Corporation, Efficiency Vermont, Green Mountain Power, the Vermont Energy and Climate Action Network, Regional Planning Commissions and many other EAN members.

DAS

The Dashboard development was funded by the US Department of Energy, VLITE, the Public Service Department and other EAN Funders. Ongoing data maintenance is funded by Efficiency Vermont and VLITE.

Capital Mobilization Work Group

Goal: To apply capital on a transformative scale to investments across all energy sectors in Vermont through innovative public/private partnerships.

The focus of EAN's Capital Mobilization work group has been our "Clean Energy Finance Initiative" (CEFI). In close partnership with the Coalition for Green Capital and State agencies, EAN convened CEFI to conduct a market assessment and develop specific finance strategies to build markets and drive Vermont's energy transformation. The CEFI Steering Committee includes the Public Service Department (PSD), Agency of Commerce and Community Development, the State Treasurer, Clean Energy Development Fund, Vermont Economic Development Authority (VEDA), VT/NH USDA, Efficiency Vermont, Department of Financial Regulation, and the High Meadows Fund.

CLEAN ENERGY FINANCE COLLABORATIVE

The centerpiece outcome of EAN's CEFI is the successful formation of a new Vermont Clean Energy Finance Collaborative, led by the PSD in partnership with existing Vermont institutions. The purpose of the Collaborative is to expand clean energy markets through public/private financing partnerships.

CLEAN ENERGY FINANCE INITIATIVE

New Institutional Capacity: To make clean energy accessible and affordable for Vermonters

GOAL & CHALLENGE



WHAT'S MISSING



KEY SOLUTIONS



Vermont's energy transition creates a significant economic development opportunity to grow local businesses, create jobs, and build needed infrastructure. This transition will leverage over \$30 billion in new private investment into Vermont's economy, driving economic growth and strengthening our communities.



EAN NETWORK MEMBERS INITIATED A RANGE OF SIGNIFICANT CLEAN ENERGY FINANCE INITIATIVES INCLUDING THE FOLLOWING HIGHLIGHTS:



VSECU'S HEAT SAVER LOAN PROGRAM

Vermont State Employee Credit Union (VSECU) partnered with the Clean Energy Development Fund and Efficiency Vermont's "Efficiency Excellence Network" to provide easy, affordable financing for energy efficiency retrofits and new renewable technologies.



INSURANCE/WEATHERIZATION PARTNERSHIP

Union Mutual of Vermont and Efficiency Vermont are exploring a new insurance/financing partnership to utilize underwriting savings from home weatherization as an incentive for homeowners to invest in thermal efficiency.



QUALIFIED ENERGY CONSERVATION BONDS

Like many states across the country, Vermont has not yet been able to utilize any of its \$6.4 million Qualified Energy Conservation Bonds (QECB) allocation due to program constraints. EAN has partnered with the Energy Programs Consortium, the State Treasurer and local partners such as NeighborWorks of Western Vermont to identify strategies for accessing these funds. This work is still in process.



EFFICIENCY VERMONT RURAL UTILITY SERVICE LOAN PROGRAM

A new federally financed loan program providing \$46 million in low interest financing to expand access to clean energy improvements for all Vermonters.

MEMBERS:

- Peter Adamczyk**, Vermont Energy Investment Corporation (VEIC)
- Robert Barton**, Catalyst Financial, co-chair
- Marianne Barton**, Catalyst Financial, co-chair
- Ludy Biddle**, NeighborWorks of Western Vermont
- Lee Bouyea**, Fresh Tracks Capital
- Sam Buckley**, Vermont Community Loan Fund
- Marta Ceroni**, Donella Meadows Institute
- Richard Faesy**, Energy Futures Group

- Chad Farrell**, Encore Redevelopment
- Laurie Fielder**, Vermont State Employee Credit Union (VSECU)
- Abby Friedman**, Vermont League of Cities and Towns
- Steve Greenfield**, Vermont Economic Development Authority (VEDA)
- Karen Horn**, Vermont League of Cities and Towns
- Mark Kelley**, Vermont Energy Investment Corporation (VEIC)
- Chris Kramer**, Energy Futures Group
- Ralph Meima**, Green Lantern Group

- Bill Miller**, Green Lantern Group
- Rob Miller**, Vermont State Employee Credit Union (VSECU)
- James Moore**, SunCommon
- Duane Peterson**, SunCommon
- William Raap**, Gardener's Supply
- Luke Shullenberger**, Green Lantern Group
- Christa Shute**, Vermont Energy Investment Corporation (VEIC)
- Janice St. Onge**, Vermont Sustainable Jobs Fund (VSJF)
- Sam Swanson**, Pace Law School and Climate Center
- Gaye Symington**, High Meadows Fund

STATE PARTNERS:

- Jon Copans**, Public Service Department
- Ed Delhagen**, Public Service Department
- Jared Duval**, Agency of Commerce and Community Development (ACCD)
- Pat Moulton**, Agency of Commerce and Community Development (ACCD)
- Beth Pearce**, State Treasurer
- Andrew Perchlik**, State of Vermont Clean Energy Development Fund

Public Engagement Work Group

Goal: To “move the middle” so Vermonters understand that clean energy is necessary, achievable and critical to Vermont’s economy, environment and values.

EAN “SOLAR WORKS!” CAMPAIGN



EAN launched a coordinated, communications effort among EAN members tagged “Solar Works!” to support solar energy in Vermont through shared message development and delivery strategies. Elements of this effort included: creating a Media Primer; building a library of more than 100 stories from Vermont businesses, farmers, communities, individuals, and homeowners. These materials are available as open-source material to EAN members and partners.

OPEN SOURCE COMMUNICATIONS MATERIALS

EAN added to our series of “Energy Champion Videos” that highlight trusted Vermont messengers and real stories about how solar energy has helped their business and communities. These videos are open source materials available for EAN members to use in any way that is useful.

THE SERIES INCLUDES:

- ✓ **SMALL BUSINESS INVESTING IN SOLAR:** Highlighting the use of solar at Vermont Smoke & Cure.
- ✓ **COMMUNITY OWNED SOLAR:** Featuring the Town of Randolph’s 150kW community-owned solar farm.
- ✓ **COLD CLIMATE HEAT PUMPS:** Showing Vermonters how to be more comfortable and how to save money while shifting off fossil fuels.
- ✓ **ELECTRIC VEHICLES:** Demonstrating how EV’s can work well for Vermonters by saving money and reducing the use of fossil fuels.
- ✓ **eHOME TOTAL ENERGY RETROFIT:** Featuring the innovative whole-home retrofit approach piloted by GMP and NeighborWorks of Western Vermont.
- ✓ **VERMONT ENERGY WORKERS:** Featuring how the solar industry is an important source of jobs for Vermonters (in production).

DASHBOARD STORIES

EAN’s new Community Energy Dashboard provides a powerful source of stories on energy action from Vermonter to Vermonter. More than 100 stories from neighbors, farmers businesses, municipalities and others are now available on the Dashboard for use by members and the public to support progress on renewables and energy efficiency.

RENEWABLE ENERGY ART PROJECT (RE-ART)

EAN launched a new Renewable Energy Art Competition to present solar technology from a positive and engaging perspective through functional public art installations. Through a state-wide competition, this effort will present solar technology as an integral part of our daily lives and Vermont’s working landscape.

MEMBERS:

Ansley Bloomer, Renewable Energy Vermont (REV)
Megan Camp, Shelburne Farms
Olivia Campbell Andersen, Renewable Energy Vermont (REV)
Ben Cilvetti, Vermont Natural Resources Council (VNRC)
Robert Dostis, Green Mountain Power
Julia Dundorf, New England Grassroots Environment Fund (NEGEF)
Deena Frankel, Vermont Electric Power Company (VELCO)

Peter Gregory, Two Rivers-Ottawaquechee Regional Commission
Richard Hibbert, Interfaith Power & Light
Karen Horn, Vermont League of Cities and Towns
Paul Markowitz, Vermont Energy Investment Corporation (VEIC)
Johanna Miller, Vermont Natural Resources Council (VNRC)
James Moore, SunCommon
John Quinney, Energy Co-op of Vermont
Cara Robeck, Vermont Energy Education Program (VEEP)

Dotty Schnure, Green Mountain Power
Sarah Brock, Vital Communities
Mary Sullivan, Legislator
Gaye Symington, High Meadows Fund
Ben Walsh, Vermont Public Interest Research Group (VPIRG)
Richard Watts, University of Vermont
Eric Zencey, University of Vermont - Gund Institute

STATE PARTNERS:

Jon Copans, Public Service Department
Alex DePillis, Agency of Agriculture
Sarah McKernan, Agency for Natural Resources

Technology Innovation Work Group

Goal: To utilize new technologies to drive on-the-ground transformation of Vermont's energy infrastructure to a system based on efficiency and renewables.

COMMUNITY ENERGY DASHBOARD

The centerpiece of EAN's work over the past year has been the launch of our "Community Energy Dashboard"— a first-in-its-class online suite of tools designed to help Vermont's communities understand energy at the local level and take on-the-ground action across all energy sectors towards reaching our 90% by 2050 goal (see p. 12-13). The Dashboard is now available to all 251 towns in Vermont. EAN is providing hands-on training and support to 30 + towns in collaboration with VECAN and Vital Communities.

THE DASHBOARD PROVIDES 7 EASY-TO-USE TOOLS:

- TIMELINE:** Track your community's progress towards a sustainable energy future.
- ACTIONS:** Add energy actions for individuals, businesses, municipalities. Generate collective impact.
- STORIES:** Learn from your neighbors and inspire others to action.
- ENERGY ATLAS:** Map your town's renewable energy sites, identify new potential sites based on environmental resources and constraints.
- STATISTICS:** Track local renewable energy and efficiency. See how you rank against other towns.
- ANALYSIS:** Share best practices and analyses. Help other towns avoid reinventing the wheel.
- RESOURCES:** Links to important partners and incentives.

The Montpelier Energy Advisory Committee (MEAC) has made the Net Zero Montpelier (NZM) a defining feature of Montpelier's future - to become the first state capital in the nation to produce or offset all its energy needs from renewable energy sources by 2030. This fast-paced effort, originally launched by MEAC, EAN and the City of Montpelier, covers a range of bold initiatives across the electric, thermal and transportation sectors.



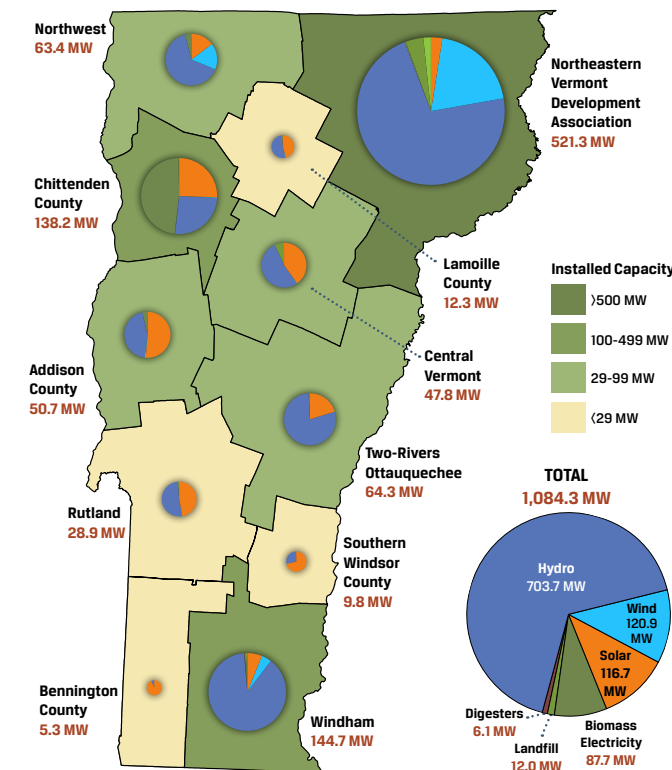
- **Grow Our Local Economy:** Investing in renewables and efficiency helps keep our dollars in our local community.
- **Reduce Wasted Energy:** Efficiency improvements and practicing energy conservation reduces energy needs and saves money.
- **Minimize pollution:** Transitioning off fossil fuels reduces the amount of carbon pollution we produce, minimizing our contribution to global warming.
- **Increase Energy Security:** A combination of renewable energy, energy efficiency and conservation provides more local control over cost, quality, and reliability.

REGIONAL ENERGY PLANNING

Vermont's new Energy Development Improvement Act (Act 174) is intended to help regions and municipalities strengthen their energy planning to ensure integration with statewide energy and climate goals. It calls for a set of energy planning standards, which if met, allow those plans to carry greater weight in the state's energy generation siting process.

Following the release of these standards by the Public Service Department (PSD), EAN is working closely with Regional Planning Commissions and the PSD to make high-quality mapping tools, energy data, analyses and stories available to regions and towns through the Community Energy Dashboard to assist this effort.

Installed Electricity Capacity by Regional Planning Commission



www.vtenergydashboard.org

MEMBERS:

- Karen Glitman**, Vermont Energy Investment Corporation (VEIC)
- Jim Sullivan**, Bennington Regional Planning Commission
- Chris Burns**, Burlington Electric Department
- Jennifer Green**, Burlington Electric Department
- Ken Nolan**, Burlington Electric Department
- Ira Marvin**, Butternut Mountain Farm
- Paul Zabriskie**, Capstone Community Action
- Dan Kinney**, Catamount Solar
- Kevin McCollister**, Catamount Solar
- John Holla**, City of Montpelier
- Liz Gamache**, Efficiency Vermont
- Chad Farrell**, Encore Renewable Energy
- John Quinney**, Energy Coop of Vermont

- Matt Dunne**, Google
- Ralph Meima**, Green Lantern Group
- Brian Otley**, Green Mountain Power
- Mary Sullivan**, Legislator
- Diane Munroe**, Middlebury College
- Dan Jones**, Montpelier Energy Advisory Committee
- Kate Stephenson**, Montpelier Energy Advisory Committee
- Tim Shea**, National Life Group
- Melanie Paskevich**, Neighborhood Works of Western Vermont - Heat Squad
- Ludy Biddle**, Neighborworks of Western Vermont
- Olivia Campbell Anderson**, Renewable Energy Vermont (REV)
- Jeff Forward**, Renewable Energy Vermont (REV)
- James Moore**, SunCommon

- Jennie Stephens**, University of Vermont
- Dawn LeBarron**, University of Vermont Medical Center
- Kerrick Johnson**, Vermont Electric Power Company
- Alison Donovan**, Vermont Energy Investment Corporation (VEIC)
- David Hill**, Vermont Energy Investment Corporation (VEIC)
- Damon Lane**, Vermont Energy Investment Corporation (VEIC)
- Jennifer Wallace-Brodeur**, Vermont Energy Investment Corporation (VEIC)
- Johanna Miller**, Vermont Natural Resources Council (VNRC)
- Rob Miller**, Vermont State Employment Credit Union (VSECU)
- Laurie Fielder**, Vermont State Employment Credit Union (VSECU)
- Scott Sawyer**, Vermont Sustainable Jobs Fund (VSJF)
- Dan Smith**, Vermont Technical College

- Sarah Brock**, Vital Communities
- Melissa Bailey**, VPPSA
- David Mullet**, VPPSA
- Ken Nolan**, VPPSA
- Jamie Ervin**, Waterbury Leap
- Patty Richards**, WEC

STATE PARTNERS:

- Gina Campoli**, VTRANS
- Alex DePillis**, Agency of Agriculture
- Jared Duval**, Agency of Commerce and Community Development
- Ken Jones**, Agency of Commerce and Community Development
- Anne Margolis**, Public Service Department

Regulatory Reform Work Group

Goal: To provide support, analysis and feedback towards a policy framework that supports the State's energy goals across all energy sectors to reaching 90% by 2050.

2016 KEY AREAS OF FOCUS

TRACKING PROGRESS: EAN developed several means to track Vermont's progress towards meeting its 90 by 2050 goals.

LOCAL RENEWABLE GENERATION

Using the energy atlas tools on the Community Energy Dashboard, EAN tracked the growth of local renewable energy generation (solar, wind, biomass, hydro) by town, county and RPC. This information is updated quarterly, and is available to the public on vtenergydashboard.org.

STATUTORY TARGETS

EAN identified core statutes across all energy sectors and tracked progress towards the targets in partnership with the Public Service Department (See p. 26).

TECHNOLOGY DRIVERS

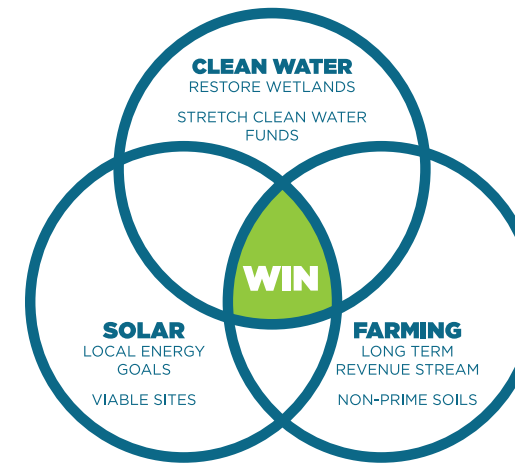
EAN identified key technology drivers in the transport, thermal and electric sectors needed to reach 90 by 2050. It also tracked Vermont's progress towards meeting decade milestones for each of these drivers (See p. 24-25).

INPUT ON 2016 COMPREHENSIVE ENERGY PLAN (CEP)

EAN provided strategic input into Vermont's 2016 CEP, with particular emphasis on clean energy finance priorities and the use of decade milestones and metrics towards reaching the state's goal of 90% renewables by 2050.

WIN-WIN-WINS

EAN convened cross-sectoral discussions to explore potential ways to use clean energy generation sites to meet broader Vermont objectives in other sectors. **Examples included:**



CLEAN WATER - SUSTAINABLE FARMING - CLEAN ENERGY

New clean water legislation will need certain farms to transition land out of agricultural production to reduce phosphorus load. Clean Water Funds are insufficient to provide farmers with enough revenue. EAN convened a cross-sectoral initiative to explore the potential win-win-win of identifying ag lands that provide high-value water quality benefits and consider leasing them for solar. The result could be to move more rapidly towards wetland restoration, stretch scarce Clean Water Funds, and provide a guaranteed revenue stream for farmers.

SOCIETAL BENEFITS OF THE ENERGY TRANSFORMATION

EAN convened Network discussions on the non-energy costs and benefits of a transition to greater energy efficiency and renewables. The goal is to capture the broader benefits of Vermont's energy transition, including health improvements, economic development, job creation, environmental benefits and additional benefits for low income populations and communities.

POLLINATORS - SOLAR - AGRICULTURE

What if the land under and around solar arrays could be used to plant pollinator-friendly vegetation to address the precipitous pollinator decline and support local agricultural soil, water and crops? EAN is working with UVM's Gund Institute, Ag Extension and other private, public and utility partners to develop guidelines, information and pilots to explore this potential win-win-win. Leaders in the piloting this effort include Green Mountain Power, Encore Renewables, GroSolar, Mont Vert and VELCO.



MEMBERS:

Janet Besser, New England Clean Energy Council
Ansley Bloomer, Renewable Energy Vermont (REV)
Paul Burns, Vermont Public Interest Research Group (VPIRG)
Olivia Campbell Anderson, Renewable Energy Vermont (REV)
Sam Carlson, Green Lantern Group
Josh Castanguay, Green Mountain Power
Paul Costello, Vermont Council on Rural Development (VCRD)
Robert Dostis, Green Mountain Power
Jon Erikson, University of Vermont - Rubenstein School
Chad Farrell, Encore Redevelopment
Jeff Forward, Renewable Energy Vermont (REV)

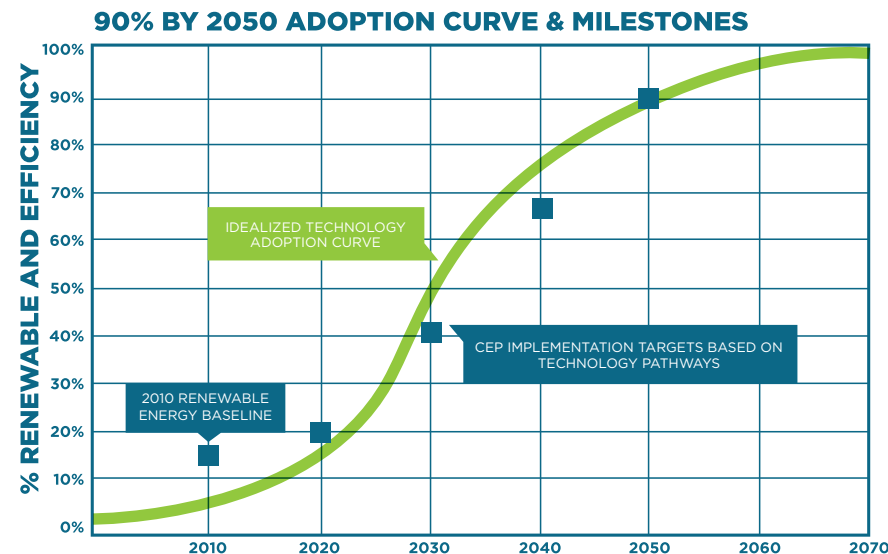
Heather Furman, The Nature Conservancy
Karen Glitman, Vermont Energy Investment Corporation (VEIC)
Karen Horn, Vermont League of Cities and Towns
Crea Lintilhac, Lintilhac Foundation
Neale Lunderville, Burlington Electric Department
Kerrick Johnson, Vermont Electric Power Company (VELCO)
Ingrid Malmgren, Vermont Energy Investment Corporation (VEIC)
Ralph Meima, Green Lantern Group
Jim Merriam, SunCommon
Johanna Miller, Vermont Natural Resources Council (VNRC)
James Moore, SunCommon
Patty Richards, WEC

Leigh Seddon, L.W. Seddon, LLC
Ronald Shems, Diamond & Robinson, P.C.
Luke Shullenberger, Green Lantern Group
Brian Shupe, Vermont Natural Resources Council (VNRC)
Jim Sullivan, Vermont Association of Planning & Development Agencies (VAPDA)
Sam Swanson, Pace Law School Energy and Climate Center
Ben Walsh, Vermont Public Interest Research Group (VPIRG)
Richard Watts, University of Vermont
Rick Weston, Regulatory Assistance Project

STATE PARTNERS:

Ted Brady, USDA
Chris Bray, Legislator
Gina Campoli, VTRANS
Jon Copans, Public Service Department
Billy Coster, Agency of Natural Resources
Alex DePillis, Agency of Agriculture
Rebecca Ellis, Agency of Natural Resources
Nancy Everhart, VHCB
Asa Hopkins, Public Service Department
Pete La Flamme, Agency of Natural Resources
Chuck Ross, Agency of Agriculture

HOW DO WE GET THERE?



Vermont's Comprehensive Energy Plan (CEP) establishes a bold goal: to meet 90% of Vermont's 2050 energy needs from renewable sources and increased efficiency. EAN developed a "Pathways to Clean Energy" analysis to illustrate what Vermont's energy transition might look like in concrete terms.

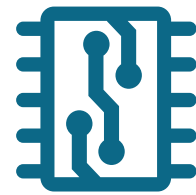
A technology adoption curve was used to help identify decade milestones across three energy sectors: heat, electricity and transportation (see p. 24-25).

THREE KEY FACTORS DRIVE THIS TRANSITION



EFFICIENCY

Thanks to our efficiency utilities, we are well on our way, with Vermonters having already saved over \$60 million through efficiency improvements.



NEW TECHNOLOGIES

Allow us to simultaneously reduce energy use and shift to renewables. Current drivers include: electric & hybrid vehicles, cold climate heat pumps, modern wood heating, electricity storage, and biofuels.



RENEWABLE SOURCES

A mix of hydroelectric, solar, wind, biomass & biofuels replacing imported fossil fuels keep energy dollars and jobs in Vermont.

INCREASE EFFICIENCY AND RENEWABLES



SOLAR



HYDRO



BIOMASS

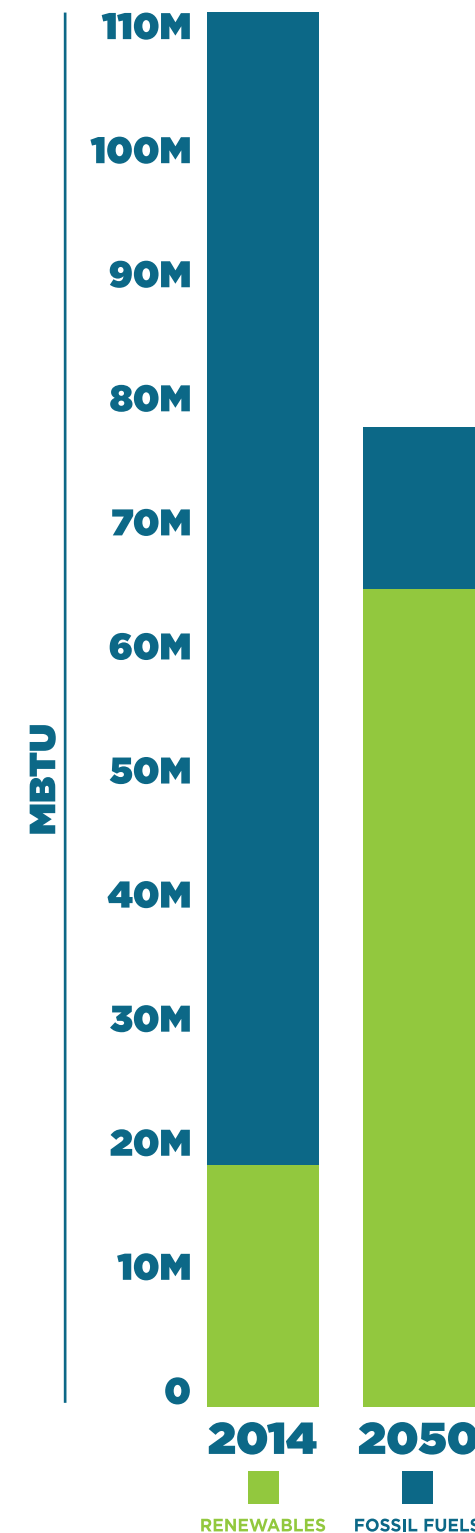


BIOFUEL



WIND

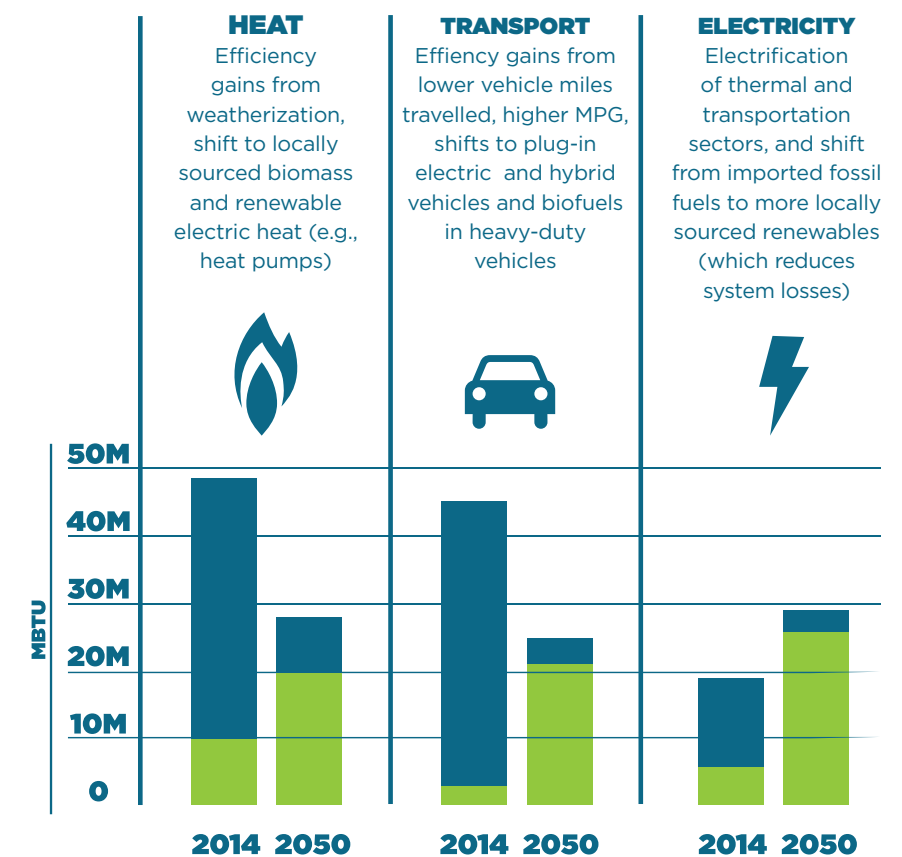
VERMONT'S TOTAL ENERGY USE



WHERE DOES IT GET US?

- ✓ Decrease in total energy use through efficiency saves \$\$
- ✓ Increase in renewably sourced energy brings jobs and stable energy prices
- ✓ Reduction in imported fossil fuels keeps energy dollars local

ENERGY SECTORS - KEY DRIVERS



EAN's analysis is not meant to be a "roadmap," but rather a demonstration of what it would take to reach 90% by 2050 using known technology pathways while supporting the targets of the 2016 CEP. This helps us understand orders of magnitude and generate discussion around needed policies, investments and actions.



SOURCE: Long Range Energy Alternatives Planning (LEAP) Model results. LEAP is a widely-used software tool that allows policy analysts to evaluate different scenarios for reaching energy goals based on local energy requirements, costs and societal benefits. Developed at the Stockholm Environment Institute, it is used by thousands of organizations in more than 190 countries worldwide. EAN is collaborating with the VEIC, Efficiency Vermont, Regional Planning Commissions, and the Public Service Department on a state-wide energy scenarios that are consistent with the state's 90% by 2050 goals. This model also underpins EAN's Community Energy Dashboard progress timelines for all 251 towns in Vermont.



| SECTOR | UNIT | 2010 BASELINE | 2016 ACHIEVED* | 2020 MILESTONE | 2030 MILESTONE | 2040 MILESTONE | 2050 MILESTONE | EAN TARGET DESCRIPTION |
|--|---------------------------|---------------|----------------|----------------|----------------|----------------|----------------|---|
| TRANSPORT | | | | | | | | |
| | | | | | | | | |
| Electric Vehicles & Plug-In Hybrids | # of Vehicles | 100 | 1,396 | 17,160 | 114,400 | 228,800 | 400,400 | % of light vehicle fleet (LVF) |
| | | | 0.24% | 3% | 20% | 40% | 70% | |
| Light Vehicle Fleet Efficiency (combustion engine only) | Fleet MPG | 20.3 | 21.7 | 22.3 | 25.9 | 30.2 | 32.4 | % Fuel efficiency increase of LVF combustion engine fuel (over 2010) |
| | | 0% | 7% | 10% | 20% | 40% | 50% | |
| Commercial-Industrial Fleet Efficiency | Fleet MPG | 6 | N/A | 6.6 | 7.2 | 8.4 | 9 | % Fuel efficiency increase for commercial/industrial fleet (over 2010) |
| | | 0% | N/A | 10% | 20% | 40% | 50% | |
| Biofuels** | Million Gallons | 1.2 | N/A | 12.5 | 68 | 122 | 211 | % of total fuel use for combustion engine fleet (LVF, commercial, industrial) |
| | | | N/A | 3% | 20% | 50% | 100% | |
| | | | N/A | | | | | |
| | | | N/A | | | | | |
| THERMAL | | | | | | | | |
| Building Efficiency | Trillion BTU (TBTU) | 38 | 37.2 | 36.1 | 32.3 | 28.5 | 26.6 | Residential & Commercial (R + C) Heating Load |
| | | 0% | -2% | -5% | -15% | -25% | -30% | % of reduction in R + C building heat energy (over 2010) |
| Biomass | Trillion BTU (TBTU) | 4.9 | 5.4 | 6.6 | 7.4 | 8.2 | 8.2 | % of R + C heating demand met by biomass |
| | | 13% | 15% | 18% | 23% | 29% | 31% | |
| Biofuels | Trillion BTU (TBTU) | 0 | N/A | 0.3 | 3.3 | 5.0 | 8.3 | % R + C heating demand met by liquid biofuels |
| | | 0% | N/A | 1% | 10% | 17% | 31% | |
| Heat Pumps | Cumulative # of retrofits | 0 | 13,550 | 20,000 | 80,000 | 160,000 | 200,000 | % of VT R + C heating demand met by heat pumps |
| | | | 0.1% | 3% | 15% | 34% | 38% | |
| ELECTRIC | | | | | | | | |
| Wind | Megawatts | 7.4 | 211 | 300 | 350 | 550 | 650 | Cumulative MW capacity from in-state and regional wind plants |
| | | 0.3% | 11% | 14% | 18% | 21% | 21% | % of total electric power generation |
| Solar | Megawatts | 11 | 250*** | 300 | 600 | 1,000 | 1,500 | Cumulative MW capacity from solar |
| | | 0.2% | 5.5% | 7% | 14% | 18% | 24% | % of total electric power generation |
| Hydro (VT small) | Megawatts | 190 | 200 | 205 | 215 | 225 | 225 | Cumulative MW capacity from small-scale hydro |
| | | 10% | 12% | 12% | 13% | 11% | 9% | % of total electric power generation |
| HydroQuebec (Import) | Megawatts | 400 | 218 | 218 | 400 | 550 | 550 | Existing HQ contract (2012) remains unchanged until 2030 |
| | | 31% | 22% | 22% | 40% | 42% | 37% | % of total electric power generation |
| Methane (Farm and Landfill Methane) | Megawatts | 15.1 | 17.2 | 20 | 30 | 40 | 45 | Cumulative MW capacity from farm and landfill digesters |
| | | 0.7% | | 2% | 3% | 3% | 4% | % of total electric power generation |
| Total Renewable Electric Generation | Megawatts | 624 | 646 | 1043 | 1595 | 2365 | 2970 | Cumulative MW renewable capacity |
| Total Electric Demand | Gigawatt Hours | 5,555 | 5,517 | 5,793 | 6,345 | 6,896 | 7,338 | Cumulative MW electric demand |
| Renewable Share | % | 51% | 56% | 70% | 90% | 95% | 99% | Cumulative renewable % of electric demand |

Note: All data are drawn from State Reports and EIA data. Projections are those of EAN, building upon Vermont's 2016 Comprehensive Energy Plan. The analysis is not meant to be a "roadmap" but rather a means to identify known technology pathways, key policy drivers and important questions for policymakers to consider.

Source Energy: EAN's analysis measures source energy which includes all the energy inputs required to deliver the energy we consume in all sectors. This includes energy associated with extracting, processing, and delivering primary fuels. For electricity, source energy also includes conversion inefficiencies at power plants as well as transmission and distribution losses

*2016 data is most recent public information: Transportation data from The Vermont Transportation Energy Profile (VTRANS, Oct 2015) and Drive Electric Vermont (Oct 2016); Thermal data from Efficiency Vermont (Oct 2015), The Heat Pump Report (PSD, Dec 2016) and the 2016 Comprehensive Energy Plan (PSD, Jan 2016); Electric data from the 2016 Comprehensive Energy Plan (PSD, Jan 2016) and Certificates of Public Good (PSB Nov 2016). Electric generation includes Net Metering, Standard Offer, and SPEED Projects reported through November 2016. NA indicates incomplete data.

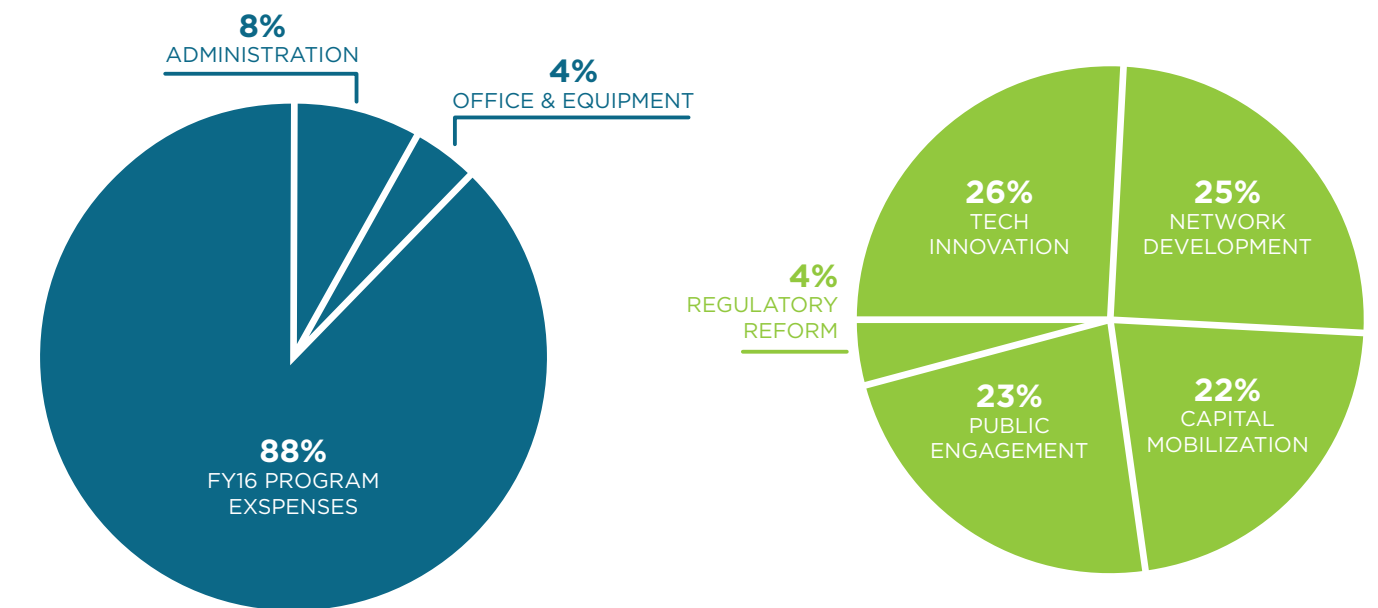
** includes Light Vehicle Fleet (LVF) and Commercial-Industrial Fleet (CIF). Excludes aviation and corn ethanol.
 *** Permitted as of Nov 2016

| | STATUTORY ENERGY TARGETS (2016) | TARGET | TARGET DATE | 2016 STATUS | GOAL OR STATUTE |
|---|---|--------------------------|-----------------------------|------------------------------------|------------------------------------|
| TOTALS | CEP: Meet 90% of the state's energy needs through renewables – including thermal, transportation and electric (Note: energy sourced in-state and out of state) | 90% | 2050 | 16% | CEP Goal (2016) |
| | 25 by 25: Produce 25% of all energy consumed within the state through the use of renewable energy sources, particularly from forests and farms (in-state) | 25% | 2025 | 15% | 10 V.S.A. 580(a) (2007) |
| ELECTRICITY | Electric Sales: Obtain X% of annual electric sales from renewables for each retail electricity provider in Vermont by (in-state and out-of-state) | 55% | 2017 | 50% | 30 V.S.A. 8002 RES-tier 1 (2015) |
| | | 75% | 2032 | | |
| | Distributed Generation: Require X% of annual electric sales to come from distributed generation. Projects starting in mid-2015 are eligible. New NM and SO project count if RECs retired | 1% | 2017 | N/A | 30 V.S.A. 8002 RES – Tier 2 (2015) |
| | | 10% | 2032 | | |
| | SPEED: Generate 20% of total statewide electric retail sales by Sustainably Priced Energy Development (SPEED) resources that came online (or were updated) after Dec. 1, 2004 (in-state) | 20% | 2017 | 16% | 30 V.S.A. 8005 (d)(2) (2005) |
| Standard Offer: Issue S.O. contracts to new plants to reach cumulative capacity of 127.5 MW (new plants < 2.2MW commissioned after Sept 30, 2009) (in-state) | 127.5 MW | 2022 | 72.8 MW (contracts awarded) | 30 V.S.A. 8005(a)(c) (2011) | |
| EFFICIENCY | Housing: Improve the energy fitness of at least X% of VTs housing stock (total 2007 = 300,000 units) | 60,000 80,000 | 2017 2022 | 18,292 (6.1% total) | |
| | Housing: Reduce the annual fuel needs and fuel bills by an average of 25% in housing units served | 6% | 2017 | N/A | 10 V.S.A. 581 (2007) |
| | Buildings: Reduce total fossil fuel consumption across all buildings by an additional 0.5%/year for a total of 6% annually by 2017 and 10% annually by 2025 | 10% | 2025 | N/A | |
| | Energy Innovation Projects: Require X% of utility sales to reduce fossil fuel consumption. Projects must be "additional" and in service in 2015 or later. | 1% 10% | 2017 2032 | N/A | 30 V.S.A. 8002 RES – Tier 3 (2015) |
| TRANSPORTATION | Hold VMT Growth: Keep annual Vehicle Miles Traveled growth rate to 1.5% (half national average) for portion controlled by the state | <1.5% | | -0.18% (ave/yr 2011-13) | |
| | Hold Per Capita VMT: to 2011 base year value of 11,402 | 11,402 | | 11,356 (2014) | |
| | Reduce SOV Commuter Trips: Reduce by 20% commuter trips taken in a single occupancy vehicle from 2011 baseline of 79.2% | 63.3% | | 82.6% (2014) | |
| | Increase Bike/Ped: Double the bicycle and pedestrian share of commuter trips from 2011 baseline of 7.6% | 15.6% | | 6.5% (2014) | |
| | Increase Carpooling Commutes: Double the share from 2011 baseline of 10.6% | 21.4% | 2030 | 9.5% (2014) | |
| | Increase State Park & Ride: Triple the number spaces from 2011 baseline of 1,142 (or 120/year). | 3,426 | | 1,320 (2014) (60/yr) | CEP Transportation Goals (2011) |
| | Increase Transit Trips: Increase public transit ridership by 110% from 2011 baseline of 4.58 million rides | 8.7 m (238k/yr) | | 4.84m (2014) (90k/yr) | |
| | Increase Passenger Rail Trips: Quadruple from 2011 baseline of 91,842 boardings and alightments | 400,000 (6,000/yr) | | 107,688 (2014) (5,200/yr) | |
| | Increase Rail-Based Freight: Double the amount of rail freight tonnage in the state from 2011 levels of 6.6 million tons | 13.2 | | N/A | |
| | Improve Fleet Fuel Economy: Meet national average fuel economy (CAFÉ standards in MPG) of VT vehicle fleet, or improve by 5% from 2011 baseline of 20.3 MPG, whichever is greater | 54.5 mpg (2.4 mpg/yr) | 2025 | 25.6 mpg (2015) (1.3 mpg/yr) | |
| | Increase Renewably Powered Vehicles: to 25% of all vehicles registered in VT from 2011 baseline of 0% | 25% (1.3%/yr) | 2030 | 0.2% (2015) (0.05%/yr) | |
| | Increase Biodiesel and CNG: in medium and heavy-duty vehicles by up to 10% | 10% | | N/A | |
| | GREENHOUSE GAS EMISSIONS | | | | |
| Reduce GHGs within the state and from outside the state's boundaries caused by the use of energy within the state by X%. | 50% 75% | 2028 2050 | 102% of 1990 levels | 10 V.S.A. 578(a) (2005) | |

Funding, Expenses & Financial Sustainability

In the past year of operation, EAN has maintained and strengthened ties with our existing funders and engaged several new supporters as well. Our next steps toward long-term financial stability will continue to focus on diversifying EAN's business model to extend beyond foundation support.

The charts below show the broad components of EAN's operating budget for Fiscal Year 2015. Overall, 88% of EAN's budget supported direct program work across our four leverage points and development of the capacity of our network. Administrative costs continue to be small and highly leveraged in support of active, value-added programs.



TOTAL EXPENSE





| | |
|--------------------------------|------------------|
| ADMINISTRATION | \$35,541 |
| OFFICE & EQUIPMENT | \$18,491 |
| FY16 PROGRAM EXPENSES | \$412,575 |
| TOTAL EXPENSES (FIG. 1) | \$466,608 |





TOTAL REVENUE

| | |
|---------------------------------|------------------|
| MAVERICK LLOYD FOUNDATION | \$215,000 |
| CANADAY FAMILY CHARITABLE FUND | \$50,000 |
| JOHN MERCK FUND | \$50,000 |
| SUSTAINABLE FUTURES FUND | \$25,000 |
| HIGH MEADOWS FUND | \$15,000 |
| LINTILHAC FOUNDATION | \$5,000 |
| BLOCK FOUNDATION | \$5,000 |
| INTEREST & OTHER | \$5,083 |
| FY16 GRANT REVENUE | \$370,083 |
| FY15 GRANT CARRY FORWARD | \$96,525 |
| TOTAL FUNDS | \$466,608 |





SOURCE: Vermont Statutes; Public Service Dept; VTrans - VT Transportation Energy Profile (2015); Agency of Natural Resources; Energy Information Administration. Compiled by the Energy Action Network.

BOARD

| | | | |
|---|---|---|--|
|  |  |  |  |
| LEIGH SEDDON EAN Board Chair L.W. Seddon Consulting, President | BOB BARTON Catalyst Financial Group, Founder & CEO | MEGAN CAMP Shelburne Farms, Vice President and Program Director | CHRISTINE DONOVAN Vermont Energy Investment Corporation, Director, Business Strategy and Innovation |

| | | | |
|---|--|---|---|
|  |  |  |  |
| KAREN GLITMAN Vermont Energy Investment Corporation, Director of Policy and Public Affairs | ELLEN KAHLER Vermont Sustainable Jobs Fund, Executive Director | ROB MILLER Vermont State Employees Credit Union, President and Chief Executive Officer | JIM MERRIAM SunCommon, Vice President of Operation |

STAFF

| | | | |
|--|---|---|--|
|  |  |  |  |
| JIM SULLIVAN Bennington County Regional Commission, Executive Director and Planning Program Coordinator | ANDREA COLNES Executive Director, Energy Action Network (2012-2016) | LINDA MCGINNIS Network Program Director, Energy Action Network | ALISE CERTA Communications Manager, Energy Action Network |

2017 BOARD CHANGES

Addition: Darren Springer - Burlington Electric Department, Chief Operating Officer

Retirement: Ron Shems, Diamond and Robinson, Attorney (stepped down in 2016)





ENERGY ACTION NETWORK

17 State Street, Suite 205, Montpelier, Vermont 05602

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TO:

