

Advancing the Clean Energy Future

EnergyVision 2030

A Plan for Changes to Our Energy System

NESEA BuildingEnergy 2018

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#EnVision2030

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Boston, MA • Hartford, CT • New York, NY • Providence, RI • Rockport, ME



What is EnergyVision?





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EnergyVision 2030: Pathways in 4 Key Areas





Questions We Addressed



EnergyVision 2030: Overview

- Findings for specific scenarios and policy recommendations
- Market levels to achieve 45% GHG reduction from 1990 levels
- Quantitative goals for states



Rapidly Advancing Clean Technologies Offer States an Unprecedented Opportunity





States' efforts are paying off and lay the foundation for redoubled efforts

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Emissions Reduction Success



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With enhanced efforts now, New York & New England can:

- Build from this foundation
- Spur development of clean energy markets
- Keep consumer energy dollars invested in-state
- Close the gap on climate pollution
- Show national leadership



EnergyVision 2030: Enhanced Clean Energy

	Current Market Levels (2015)	2030 Baseline Under Current Trends	EnergyVision 2030 Primary Scenario	EnergyVision 2030 Accelerated Scenario
Electric Vehicles (% of fleet)	<1%	5%	17%	23%
Heat Pumps (% of residential heat)	<1%	3%	13%	16%
Electric Generation (% renewable)	19%	44%	57%	66%
Wind and Solar	3%	24%	35%	45%
Hydro	13%	18%	20%	19%
Other	4%	3%	2%	2%
Electric Efficiency (average % annual savings)	1.4%	1%	2.5%	2.7%
Emissions Reduction from 1990 Levels	18%	30%	45%	50%



EnergyVision 2030: Enhanced Clean Energy

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Emissions Reduction from 1990 Levels	18%	30%	45%	50%



A next generation of clean energy policies is needed.



Selected Policy Recommendations









Expand Rooftop & Community Solar

Expand Use of Heat Pumps Modernize Energy Grid Develop & Protect Efficiency Programs



EnergyVision 2030:

A clean energy future is in our reach and will benefit us all.









2030.acadiacenter.org



Communicating EnergyVision

Why?

- It is achievable.
- It is ambitious.
- It is possible now.
- Your audience is primed.





Community|EnergyVision

Goals





Categories of Action





Community|EnergyVision Action Guide

A Guide to Enacting Clean Energy at the Local Level

A Guide for Taking Action

Our energy system is changing in historic ways. Advances in energy texhnology and increasingly competitive costs are offering unprecedented opportunities for communities to adopt clean, affordable, and focal energy. New and improved ways of generating clean energy revealution every energy use, and managing how energy in used have expendent the door to locally hased projects that provide a braad mage of community and energy system benefits:

These trends continue an evolution that dates back to start of electrification when municipal electric districts were formed and dominated the creation of our electricity system. Over time, many "munies" were purchased, merged into electric utilities, and given a state legal monopoly on power sales and distribution of electricity. State, and in some cases federal, laws still control a rdinated energy system and regional electricity grids. Energy policies and practices are established and inter-sect at various levels—from federal tax incentives for renewable energy to state-wide energy efficiency programs, to local land-use decisions. As modern energy technologies, sited at the local level, become increasingly preferred tools to generate, distribute, and use power in a cleaner, more consumer friendly way, Community Energy is becoming the place where our energy future should increasingly be focused.

Acada Center's Community/Energy/Vaica Actino Guide is interediet to high these interested in pursuing clean energy at the local level explore, talk shout, and, uhimathy, act upon a hume-grown desire for clean energy leadership. This Guide provides an overview of the types. of clean energy projector a policita that tealeant, neighbothcode, and municipalities can pursue. Because the projects vary valued by it starts. Ab Actin Guide provides a checktat of what is possible across the seven Northeast states coversid and detailed, state specific considerations:

Our goal is to illuminate the steps communities can take now, show how outdated rules act as barriers, and inspire local advocates to seek policy changes that give roommunities the choice to capture the benefits of a clean energy future.

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Community Action Matters

Our communities are on the front lines of creating a suitabile, loos-criten reconnic and environmental future. Rooted in their immediate surroundings and championed by respected neighbors, local initiatives have great capacity to change behavior, establish new norma, and advance Commanity Henry The fixed scope of local projects often translates into lower hurdles to implementation and a more straighforward evaluation process. Community-based action that successfully demonstrates innovations in energy efficiency, generation, and management can be scubed up to the strate level and provide a cruical backtop to federal nollbacks.

Advancing Local Energy: Four Categories of Community Action

Local leaders and advocates — both inside and outside of official government roles—can drive Commanity. Energy projects in many ways. The Action Guide explores four categories of community action to expand energy option, reduce communitor, and track changes over time Measures to address public transportation systems, water transment, and sold wates are crucial meeting environmential goals, but are currently beyond the scope of this Action Guide.

BUILDINGS

Whether a small town or a large metropolitan rate, our homes and businesses represent a large portion of the total energy consumption in every municipality in the Northeast. Building are also reservoirs of opportunity for clean energy ingrevenents. Load governments and critzens are in a position to shape how buildings—both municipality and priorately owned—to edisgnab, built renovated, and maintained for maximum clean energy performance.

 Building Codes: Generally, energy codes are part of state-level building codes that determine how buildings must be constructed. Although building code policy occurs primarily at the state level, municipalities have critical roles in

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A Comparison of Community Actions by State

The laws, ordinances, and regulations that pertain to community clean energy policies vary across the region. This comparison of the seem Northeast attacts by policy action hould help you identify which community actions are permitted, limited, or prohibited in which states, and inspire you to work toward expanding policy opportunities in your state. Definitions and considerations for each action are included in the state specific section of the Action Outide.

ACTION KEY

THERE ARE NO STRUCTURAL BARRIERS TO ACTION. GO FOR IT! This action is legislatively authorized or enabled and/or there is clear precedent for this action in your state. However, this does not mean that a particular policy has

been adopted in your community.

THIS ACTION IM WY BE POSSIBLE OF PRECEDENTS SOTTING. LEARNIN MORE. There may be limitations or considerations and/or no clear precedent may be mecasary at the state level may and/or the state. Damges and/or the state level may prohibited and/or it is an option. Charge at the state level may be down may in the state level may be down may in the state level may and/or brown state.

BUILDINGS

		СТ	ME	MA	NH	NY	RI	VT
Building Codes	Enforce State Building Energy Code					۲		
	Adopt Municipal "Lead by Example" Energy Initiatives							
	Adopt a Stretch Code							
	Require New Construction be "EV-Ready"							
	Require New Construction be "Solar-Ready"							0
	Adopt Mandatory Solar Requirement for New Homes				٠			
Building Siting & Permitting	Preserve Solar Access in New Developments							
	Establish a Sustainable Building Expedited Permit Program							
Benchmarking	Adopt an EnergyPerformance Ordinance							0
	Mandate Building Energy Labeling							
	Mandate the Disclosure of Building Energy Performance							
	Establish a Minimum Energy Code for Rentals							
	Require Energy Usage Disclosure for Rentals							
Municipal Facilities	Establish Energy Efficiency Operations & Maintenance Standards for Municipal Facilities	•	•	•	•	•	•	•
Acadia Community En	argyVision							

Community Actions in New York

Clease energy policies can help communities and evidents save energy, save money and combat climate change by reducing carbon emissions. Find out below which policy actions are available to you based on obstacles or opportunities in New York states from The information provided here should help you take advantage of actions that are already straighter forward to accomplish and motivate you to work towards the changes needed in state-level policies. The Action Guide is a tool for seizing your class energy for the case is to be need by user idy or towards the towards of the forward to accomplish and motivate voir to work towards the changes needed in state-level policies. The Action Guide is a tool for seizing your class energy for the case is to be need by user idy or towards.

A list of acronyms used and resources for additional information is provided at the end of this document.



BUILDING CODES

Enforce State Building Energy Code What this means: Ensure that new buildings or those undergoin significant envestories means a minimum level of energy efficiency as preactible in the state building energy code.
What you should now Local inspectors either at the main ispace or county level—with the option to use third-party inspectors—must enforce the state building energy code.

Adopt Municipal "Lead by Example" Energy Initiatives What this means: Adopt a local requirement that

virial time membershows in our requirement that municipal buildings be a set amount more efficient than the base state building energy code. What you should know NYXAE we Chiles program, Buffale, Albany, Rochester, Syracuse, Yonkers have established energy plans that prioritize energy conservation and clean energy investment. In addition, New York Crys (EBD Law requires LEED certification of municipal buildings.

Adopt a Stretch Code

What this means: Adopt more stringent energy conservation provisions than those required by the base state building energy code. What you should know Municipalities can adopt more restrictive local standards for its energy conservation code. As of May 2017, MYSERDA was developing a voluntary pretich code framework.

Require New Construction be "EV-Ready" What this means: Modify building codes to ensure that EV charging equipment can be more easily

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and efficiently added to new construction. Changes might include an updated electric code with wiring requirements.

What you should know: Municipalities can require EV-readiness in new construction because this is more stringent than the state building energy code. New York City building code requires certain new parking facilities to be EV-ready.

Require New Construction be "Solar-Ready"

What this means: Modify building codes to ensure that solar FV systems can be more easily added to new construction. Changes might include an updated electric code with wiring, chase, and circuit breaker requirements.

What yes should lower Municipalities can require 19⁴-reading and the set as the should be associated is more stringent than the sate building energy code. IVISERIA offers a set of guidelines for municipalities. New York City building code requires certain new residential buildings to reserve sections of the code for solar PV or state thermal systems, and mandates reserved space on the electrical service gand.¹

Adopt Mandatory Solar Requirement for New Homes

What this means: Adopt requirements that solar PV be installed on all new residential construction, depending on zone and lot type. What you should know: Thus is not specifically prohibited and building code adjustments are available. However, it may be difficult to establish and implement, and systems would be limited according to energy facility siting regulations (see Clean Energy Zoning & Sting).

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How this guide helps you take action:





ACTION KEY



THERE ARE NO STRUCTURAL BARRIERS TO ACTION. GO FOR IT!

THIS ACTION MAY BE POSSIBLE OR PRECEDENT-SETTING. LEARN MORE.



THIS ACTION IS NOT POSSIBLE. STATE-LEVEL ADVOCACY NEEDED.

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ACTION KEY																		
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Clean Energy Supply	Enroll in a Green Tariff Program							
	Participate in Community Choice Aggregation					۲		
Delivery Infrastructure	Establish a Municipal Utility (Municipalization)			0				
	Develop a Municipal Microgrid							0
	Develop a Municipal District Energy System							(
	Purchase Utility-Owned Street Lights							
	Upgrade Street Lights with Energy Efficient Technology							
Vehicles & Equipment	Develop or Follow a Green Fleet Policy							1
	Establish a Public EV Charging Station Policy							
	Develop or Follow an Energy Efficiency Purchasing Policy							

CLEAN ENERGY: ZONING AND SITING

Renewable Energy Siting	Adopt Energy Facility Siting Ordinances			•		
Zoning & Clean Energy	Adjust Zoning Requirements for Renewables			٠		
Districts	Honor State-Required Zoning Exemptions for Renewable Energy Developments		۲			
	Establish a Clean Energy District or Regional Clean Energy Commission					
	Require EV Access in New Developments					
Permitting Process	Establish a Streamlined Process for Renewable Energy Permitting	۲	۲	٠		

FINANCIAL INCENTIVES

Tax Policy	Establish Municipal Property Tax Exemptions for Clean Energy Systems		٠					
	Establish Tax Increment Financing (TIF) Districts for Clean Energy Improvements							
Grant Opportunities	Participate in Energy Efficiency Grants for Municipalities						۲	
	Participate in DG, CHP and/or Microgrids Grants for Municipalities	۲	۲	۲	۲	۲	۲	۲
Financing	Enable PACE Financing for Residential Projects						۲	۲
	Enable PACE Financing for Commercial Projects				۲			
	Participate in Financing for Municipal Projects		-				-	

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		СТ	ME	MA	NH	NY	RI	VT
Building Codes	Enforce State Building Energy Code							
	Adopt Municipal "Lead by Example" Energy Initiatives							
	Adopt a Stretch Code							
	Require New Construction be "EV-Ready"							
,	Require New Construction be "Solar-Ready"							
	Adopt Mandatory Solar Requirement for New Homes							
Building Siting & Permitting	Preserve Solar Access in New Developments							
	Establish a Sustainable Building Expedited Permit Program							
Benchmarking	Adopt an EnergyPerformance Ordinance							
	Mandate Building Energy Labeling							
	Mandate the Disclosure of Building Energy Performance							
	Establish a Minimum Energy Code for Rentals							
	Require Energy Usage Disclosure for Rentals							
Municipal Facilities	Establish Energy Efficiency Operations & Maintenance Standards for Municipal Facilities							



What this means: Modify building codes to ensure that EV charging equipment can be more easily and efficiently added to new construction. Changes might include an updated electric code with wiring requirements.

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CONNECTICUT

Require New Construction be "EV-Ready"

What this means: Modify building codes to ensure that EV charging equipment can be more easily and efficiently added to new construction. Changes might include an updated electric code with wiring requirements.

What you should know: The current CT state energy code does not require this. Recent changes in state law require the next version of the statewide energy code to include provisions to make new residential garages EV ready. Until those changes are made, municipalities cannot adopt more stringent requirements.



NEW HAMPSHIRE

Require New Construction be "EV-Ready"

What this means: Modify building codes to ensure that EV charging equipment can be more easily and efficiently added to new construction. Changes might include an updated electric code with wiring requirements.

What you should know: Municipalities may add regulations to the energy code, provided that such regulations are not less stringent than the requirements of the state code. However, no precedent was found for requiring EV-ready construction in NH.

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NEW YORK

Require New Construction be "EV-Ready"

What this means: Modify building codes to ensure that EV charging equipment can be more easily and efficiently added to new construction. Changes might include an updated electric code with wiring requirements.

What you should know: Municipalities can require EV-readiness in new construction because this is more stringent than the state building energy code. New York City building <u>code</u> requires certain new parking facilities to be EV-ready.

VERMONT

Require New Construction be "EV-Ready"

What this means: Modify building codes to ensure that EV charging equipment can be more easily and efficiently added to new construction. Changes might include an updated electric code with wiring requirements.

What you should know: Vermont's stretch code includes a provision that certain multifamily and commercial developments must have a certain number of parking spaces equipped with electric vehicle charging equipment.¹ Municipalities are not permitted to vary local requirements from the stretch code.

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ACTION KEY								
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Building Codes Building Siting & Permit	Enforce State Building Ene Adopt Municipal "Lead by Adopt a Stretch Code Require New Construction Adopt Mandatory Selar Ree ng Preserve Solar Access in N Establish a Sastalanable Buil Adopt an EnergyPerforman Mandate Building Energy Lu	Example" Energy Initiatives be "EV-Ready" be "Solar-Ready" guirement for New Homes ev Developments bling Expedide Permit Program ce Ordinance abeling	ст • • • • • • • • • • • • • • • • • • •			NY 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	RI	
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CLEAN ENERGY: LOCAL GENERATION, LOCAL DELIVERY AND PURCHASING

Clean Energy Supply	Enroll in a Green Tariff Program					
	Participate in Community Choice Aggregation			۲		
Delivery Infrastructure	Establish a Municipal Utility (Municipalization)		0			
	Develop a Municipal Microgrid					
	Develop a Municipal District Energy System			۲	۲	
	Purchase Utility-Owned Street Lights					
	Upgrade Street Lights with Energy Efficient Technology					
Vehicles & Equipment	Develop or Follow a Green Fleet Policy					
	Establish a Public EV Charging Station Policy					
	Develop or Follow an Energy Efficiency Purchasing Policy					

CLEAN ENERGY: ZONING AND SITING

		CT	ME	MA	NH	NY	RI	VT
Renewable Energy Siting	Adopt Energy Facility Siting Ordinances			۲	•			
Zoning & Clean Energy	Adjust Zoning Requirements for Renewables			۲	۲		۲	
Districts	Honor State-Required Zoning Exemptions for Renewable Energy Developments		۲		۲			
	Establish a Clean Energy District or Regional Clean Energy Commission							
	Require EV Access in New Developments							
Permitting Process	Establish a Streamlined Process for Renewable Energy Permitting							

S FINANCIAL INCENTIVES

Establish Municipal Property Tax Exemptions for Clean Energy Systems		_					
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Establish Tax Increment Financing (TIF) Districts for Clean Energy Improvements						0	
Participate in Energy Efficiency Grants for Municipalities							
Participate in DG, CHP and/or Microgrids Grants for Municipalities	۲		۲	۲			
Enable PACE Financing for Residential Projects			۲				۲
Enable PACE Financing for Commercial Projects							
Participate in Financing for Municipal Projects							
	Participate in Energy Efficiency Grants for Municipalities Participate in DG, CHP and/or Microgrids Grants for Municipalities Enable PACE Financing for Residential Projects Enable PACE Financing for Commercial Projects	Participate in Energy Efficiency Grants for Municipalities Participate in DG, CHP and/or Microgrids Grants for Municipalities Enable PACE Financing for Residential Projects Enable PACE Financing for Commercial Projects	Participate In Energy Efficiency Grants for Municipalities Participate In DG, CHP and/or Microgrids Grants for Municipalities Enable PACE Financing for Residential Projects Enable PACE Financing for Commercial Projects	Participate In Energy Efficiency Grants for Municipalities Participate In DG, CHP and/or Microgrids Grants for Municipalities Enable PACE Financing for Residential Projects Enable PACE Financing for Commercial Projects	Participate in Energy Efficiency Grants for Municipalities Participate in DG, CHP and/or Microgrids Grants for Municipalities Enable PACE Financing for Residential Projects Enable PACE Financing for Commercial Projects	Participate in Energy Efficiency Grants for Municipalities Participate in DG, CHP and/or Microgrids Grants for Municipalities Enable PACE Financing for Residential Projects Enable PACE Financing for Commercial Projects	Participate in Energy Efficiency Grants for Municipalities Participate in DG, CHP and or Microgrids Grants for Municipalities Enable PACE Financing for Residential Projects Enable PACE Financing for Commercial Projects





- Different channels
- Exercise: Which work for you? Which don't? What else might work?











Advancing the Clean Energy Future







commercial canner energy future that meets agant to escare climate polition rat lead 50% them 1990 test by 2000. Recting climate patition 30% by 2000 in redict to leady Macromoteria in rate Macromoter eduction from 1990 looks required by 2000 under the Orbital Warming Softwore Act, Using a data driven apstant, Cargolistic 2000 less technology aspective applies in Gar key climate energy matterial-gait moderations from generations. Under a strange that the strategies of the climate strategies and the climate agant.

Messichowith is softing the standards for field practices in the presents such as servery efficiency in stiffers, at income processing states tables and practice that practice out of some the free time regular mores presented in (pregryton) 2020; They show Massichauth' current livered that practice problems are betromogeness in each of the floar key areas, compand to the tool practice level meaned to meet emission taggets.

While some states like Massachusetts are clear leaders in individual areas, a more uniform and consistent poroch is needed across all Northead states. Energy/Isian 2000 shows that a goal to reduce greenhouse gas mussions by 45% can be achieved it all states adopt the best practices of isster leading state.

6 Electric Generation

Schar and wind power are immerging as cost effective athernations to isotificianal toxic-basical generation spaces. Across the Darlad States, scalar prices taxes adopted damatically and installed organizity large one operationally. New Trivit an New Talgend have visit utilized base with an off-tables and resources. Horizonegative traves, to across persistence is contract to eventing the 2000 omesians target. Adopted based to base

Fricy.	Best Practice Status	Massachusetts Current Status	2030 Recommendations
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Distributed Solar Annual Instalation Rate	Vernore 116 eest per regite (2026) Minacture De S6 wats-per (alua (2016)	Dé witz ser capit-12004	-th with per conta Recipy ALIO

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Action Guide Identifies Barriers to Community Energy — Resilient Microgrids Could Have Helped Maine Bounce Back from Storm Damage

CATEGORY: BLOG

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- Of the many economic, energy, and environmental benefits of a clean,
- modernized community energy system, one might stand out for electric
- 2017 customers across the Northeast right now: resiliency.

More than 1.5 million homes lost power when hurricane-force winds and torrential rain battered New England in late October. In Maine, toppled trees blocked roads, damaged homes and cars, and pulled down power lines, contributing to outages that left nearly two-thirds of the state without power. The emergency response was hardly a picture of resilience: despite the efforts of more than 3,000 state agency and utility workers from 14 states and three Canadian provinces, it took more than a week to restore service statewide.

Neighbors rallied to keep each other warm and fed, but updating the way we plan, manage, and invest in our electric grid would give communities the freedom to do even more. Acadia Center's Community/EnergyVision Action Guide highlights how communities can create more resilient energy systems by leveraging available technologies to generate, distribute, and use power in a cleaner, more consumer-friendly way. The Action Guide also reveals where current state rules limit—and even prohibit—community action.

New England's recent and historic wind storm is a stark reminder that obstacles to community energy leave residents vulnerable. Power outages are inconvenient, dangerous, and expensive—and so are the workarounds many





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Resisting Raids on Energy Efficiency



As their legislative sessions ended, budgets were proposed in both Connecticut and Rhode Island that attempted to raid funds earmarked for energy efficiency programs and transfer them to general funds. Acadia Center has been fighting these flawed proposals, and so far has been successful in keeping Connecticut from sweeping funds essential to reducing carbon emissions, lowering energy costs for households and businesses, and creating new jobs for many residents.

Read more: Op-eds for the CT Mirror, "How clean energy can help save Connecticut's budget" and "Why raiding Connecticut's Energy Efficiency Fund is a bad idea", coverage by Rhode Island Public Radio and the <u>Providence Journal</u>; an op-ed in the <u>New Haven Register</u>, and coverage of the Connecticut raid on <u>ThinkProgress</u>.

RGGI Program Review Nearing Conclusion



Last fall, the Regional Greenhouse Gas Initiative entered a period of review. In the coming weeks, the review is expected to end and the states will announce the future of the program past 2020. Throughout this process, Acadia Center has advocated for the program to be strengthened and improved.



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Your Thoughts & Ideas

Exercise: Which work for you? Which don't? What else might work?





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