

Avon Community Energy Plan 2024~2026

A Strategic Framework to Guide
Community Action



Developed by the Avon Clean Energy Commission
Adopted by the Town Council on April 4, 2024

Acknowledgements



This Plan was assembled with the expertise, support, knowledge and resources of the following individuals and groups:

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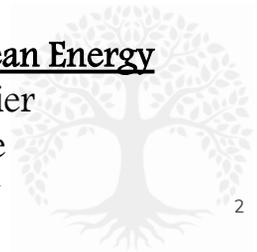
Avon Clean Energy Commission

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Introduction



Energy is essential to daily life in Avon. It heats and cools our homes and businesses; it runs our appliances and allows us to travel to work and play. Yet, most of our energy still comes from the burning of fossil fuels, by far the largest contributor to greenhouse gas (GHG) emissions and global climate change.

Energy use comes with an intrinsic responsibility to consume and produce it sustainably. Recognizing and acting on this responsibility today is necessary to ensure that Avon continues to thrive and prosper. It also offers opportunities to shape what that future looks like for all members of our community.

As a community, we have the power to effect change. The Avon Clean Energy Commission has prepared this Energy Plan (2024-2026) to build on the work of its 2012 Comprehensive Energy Management Plan, and its 2016 update, and to guide the Town toward greater energy efficiency and use of clean energy. Implementing this plan will yield many benefits to town residents and businesses, including:

- **Economic & Financial.** Saving energy (using less energy through efficiency) saves money; money that can be spent for other basic needs or to support our local economy.
- **Environmental, Public Health & Comfort.** Saving energy and reducing the use of fossil fuels will lower emissions, improve air quality, and improve health, especially for vulnerable populations like children, seniors, and environmental justice communities. By making our homes and businesses more energy efficient, they will also be more comfortable.
- **Equity & Inclusion.** Focusing on inclusive solutions to save energy and provide assistance, we will make a difference in the lives of all our residents, especially those that bear the largest energy burdens.
- **Security & Resiliency.** By reducing overall energy needs, modernizing our grid and increasing local generation, we will make our energy supply more secure and be in a better position to weather storms, outages, economic fluctuations and other natural or human made disasters.



Solar PV Array – Department of Public Works

The State of Connecticut is committed to reducing its greenhouse gas emissions by 45% from 2001 levels by 2030. Governor Lamont’s Executive Order No. 3 commits Connecticut to 100% carbon neutral electricity by 2040. **This Plan provides all sectors of the Avon community with a framework to do our part to help achieve the State’s goals by reducing our overall energy use and increasing the production of clean energy to fulfill our energy needs.**

We aim to do this by fostering a culture of conservation throughout our community. By making the right choices, Avon can address energy and climate change challenges in a meaningful way. With the adoption of this Plan, we will move the community forward into an efficient, clean, inclusive and sustainable future.

*Avon Clean Energy Commission
April 4, 2024*

Scope of Energy Plan



This plan was developed by the Town of Avon's Clean Energy Commission (ACEC) and Town staff. We welcome opportunities to include the content of this Energy Plan into broader Town planning efforts.

What this Plan IS	What this Plan IS NOT
<ul style="list-style-type: none">• A successor to the Town's 2012 Comprehensive Energy Management Plan and 2016 Analysis• An update on efforts undertaken since the initial Energy Plan was implemented• A framework to guide future efforts of the ACEC, Town staff and the Avon Community and a descriptions of actions that should be undertaken to make progress• Focused on the entire Avon community• Focused on the topic of energy efficiency and clean energy	<ul style="list-style-type: none">• A comprehensive Sustainability, Climate Action, Environmental Justice or Resiliency Plan• A technical reference document• An inventory of the Town's greenhouse gas emissions• Focused on waste management, recycling, food sustainability, open space management, forest management, bicycle or pedestrian infrastructure or safety, water, etc.

Energy can be Renewable, Sustainable or Clean, but what does that actually mean?

Clean Energy – The generation of energy for consumption that causes zero emissions of greenhouse gases. Clean energy is energy generation without the use of fossil fuels.

Renewable Energy – Comes from sources that naturally renew themselves at a rate that allows us to meet our energy needs including biomass, geothermal, hydropower, solar and wind. Not all renewable energy is also sustainable but improving the sustainability of renewables and fossil fuels can have environmental benefits.

Sustainable Energy – Comes from sources that can fulfill our current energy needs without compromising future generations. Also involves the collection and distribution; the energy must be efficiently acquired and distributed in order to be sustainable. Includes geothermal, hydropower, solar and wind.

Energy by the Numbers



The Avon Clean Energy Commission (ACEC) worked with Connecticut-based, nonprofit PACE (People's Action for Clean Energy) to compile data from local utilities, municipal utility invoices, and the Town's grand list to estimate total community energy use. This use includes four sectors: Residential, Commercial, Municipal and Transportation. Details on these estimates can be found on the next page. In this analysis, all types of fuel are converted to electricity (GWh) equivalent.

We estimate that in 2022, Avon's residents, businesses and municipal operations:

- Spent \$82 million on energy (electricity, heating and transportation), or an average of \$11,733 per household (\$4,471 per person).
- Generated 167,023 metric tons of greenhouse gases (GHG) or 23.94 tons per household (9.1 tons per person).

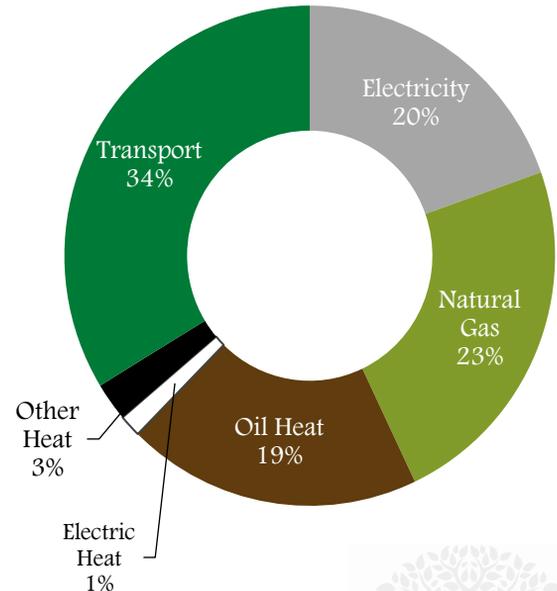
Considering energy use across all sectors this is the equivalent of 688,000 megawatt-hours or 98.76 MWH per household (38 MWH per person). For reference, a megawatt-hour of electricity could drive an electric vehicle for 3,600 miles, power two 60-watt lightbulbs non-stop for a year or toast 89,000 slices of bread.*

As shown in the figure at the right, 34% of Avon's energy use is due to Transportation, the balance of 66% can be attributed to Residential & Commercial electricity use and space heating. Municipal operations account for about 2.3% of the total.

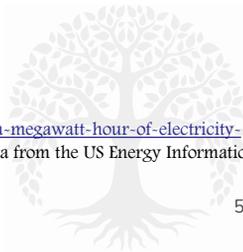
Direct fossil fuel use, which is the largest contributor of greenhouse gas emissions and climate change, accounts for over 80% of Avon's total energy use. Residential, Commercial and Municipal buildings largely rely on natural gas and fuel oil for heating. Our Transportation is almost exclusively comprised of gasoline and diesel vehicles.

Electricity represents 20% of total energy use. Today, in Connecticut, most of our electricity still comes from natural gas (a fossil fuel) and nuclear generation. However, there is increasing activity aimed at reducing emissions and transitioning to clean energy sources in this sector.

2022 Community Wide Energy Usage



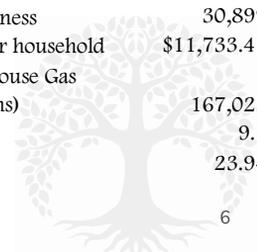
* Source: www.freeingenergy.com/what-is-a-megawatt-hour-of-electricity-and-what-can-you-do-with-it/ based on data from the US Energy Information Administration.



2022 Energy Benchmark



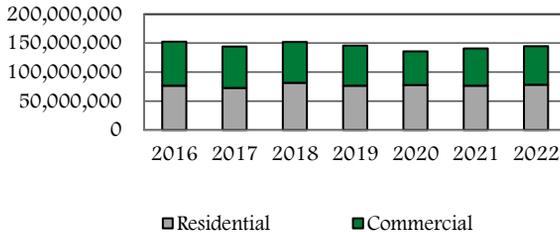
		Unit	Commercial	Municipal	Residential	Total	Rate	Energy Expenditure (\$Millions)	
Current Energy Used	Electricity	kWh	60,970,906	5,204,676	68,669,279	134,844,860	0.21 \$	28,317,421	
	Gas	CCF	2,189,388	274,489	3,025,058	5,488,935	2.02 \$	11,087,649	
	Oil Heat	Gallons	126,712	4,821	3,162,085	3,293,618	3.65 \$	12,021,706	
	Electric Heat	kWh	564,493	-	9,388,240	9,952,733	0.21 \$	2,090,074	
	Other Heat	Gallons	2,592	-	421,105	423,697	3.65 \$	1,546,494	
	Transport	Gallons	1,604,871	69,415	5,338,384	7,012,670	3.86 \$	27,068,905	
								\$ 82,132,248	
Current Energy in Gigawatt-Hours	Electricity	GWh	61	5	69	135			
	Gas	GWh	64	8	89	161			
	Oil Heat	GWh	5	0.20	128	134			
	Electric Heat	GWh	1	-	9	10			
	Other Heat	GWh	0	-	17	17			
	Transport	GWh	54	2	178	234			
Total	GWh	185	16	490	691				
								Average Values	
								Average Energy Values	
								Total KWH per Person	37,597
								Residential kWh Per Person	26,785
								Commercial kWh Per Business	238,261
								Per KWH per household	98,679
Current Greenhouse Gas Emissions	Electricity	GHG - tons	16,157	1,379	18,197	35,732			
	Gas	GHG - tons	11,629	1,458	16,068	29,155			
	Oil Heat	GHG - tons	1,287	49	32,128	33,465			
	Electric Heat	GHG - tons	150	-	2,488	2,637			
	Other Heat	GHG - tons	26	-	4,279	4,305			
	Transport	GHG - tons	14,268	658	47,460	62,387			
Total	GHG - tons	43,516	3,545	120,620	167,681				
								Total Annual Energy Expenditure	\$81,864,306
								Total Expenditure per Person	\$4,470.53
								Total Expenditure per Household	\$11,733.45
								Residential per Person	3,068
								Commercial per Business	30,899
								Total Expenditure per household	\$11,733.45
								Total Annual Greenhouse Gas (GHG) Emissions (tons)	167,023
								Per Person	9.1
								Per Household	23.94



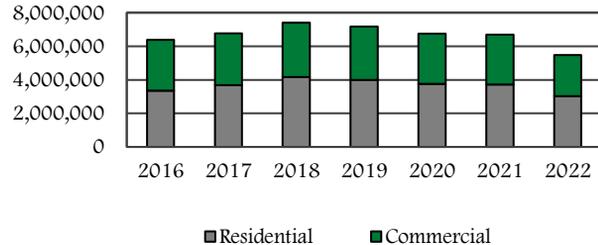
Energy Trends



Aggregate Annual Electricity Usage (kWh)



Aggregate Annual Natural Gas Usage (CCF)



Between 2016 and 2022 Avon experienced a 5% reduction in electricity from the grid. This is most likely due to the implementation of energy efficiency measures and solar energy, generated and consumed on site, or behind the meter. During the same period natural gas consumption declined 14%, with the bulk of this decrease due to a mild winter in 2022. Removing 2022 from the analysis, between 2016 and 2021, natural gas consumption increased by 4.6%, likely the result of heating conversion projects (oil to gas).

Another notable trend over the last decade is the increase in solar photovoltaic (PV) installations. Over 165 Avon homes have installed solar with a total generation capacity of 1.54 MW. Since 2014, Avon has added an average of eighteen residential installations a year, this includes 53 units in 2015 as part of the Solarize Avon campaign. Three municipal buildings, including two schools, also have solar. These installations have a total generation capacity of 0.5 MW or about 529,000 kWh annually. As of this writing, two additional school solar projects, with a total generation capacity of 0.535 MW or over 575,000 kWh annually are in the construction phase and expected to come online in fall 2023. In addition, the Avon Free Public Library has been heated and cooled by a geothermal HVAC system since an addition and renovation project was completed in 2012. The Town is also in the process of converting three facilities to air source heat pumps. Heat pumps are powered by electricity, making them an important tool in reducing energy use and fossil fuel dependence, particularly as the grid begins to move away from natural gas and coal power.

Reduce & Produce

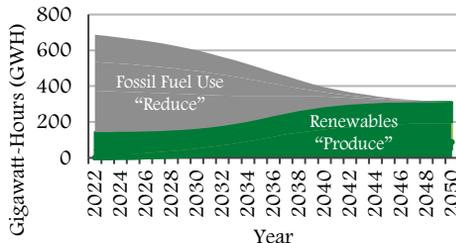


Avon aspires for our entire community to dramatically **REDUCE** our overall energy consumption while increasing the amount of energy that is **PRODUCED** by clean sources.

Reducing energy use must be a priority. There are many ways to reduce energy use:

- implementing behaviors or practices that use less or no energy (i.e., turning off lights, walking or biking in lieu of driving)
- installing proven energy efficiency measures (i.e., home weatherization, LED lights)
- investing in new technologies (i.e., electric vehicles, heat pumps, intelligent building control systems).

Many experts believe that if we are to achieve both significant reductions in energy use and end reliance on fossil fuels, we must strategically electrify our energy demands for building, heating and cooling and transportation. As we electrify the building and transportation sectors, our electricity use is expected to increase. However, GHG emissions will decrease because we are relying less on fossil fuels, and electric vehicles and HVAC systems are more efficient than their fossil fuel counterparts. It will require integrated policy and planning to ensure that reliable infrastructure, capacity, and storage are available to support these changes.



As we strive to Reduce, we must also Produce. Producing, or satisfying, all our energy needs with clean energy will not happen overnight. It will involve a range of near-term solutions to replace the use of fossil fuels and long-term solutions to expand and improve the reliability and cost-effectiveness of renewable energy generation and distribution. Our path to reduction and production will be a dynamic one; evolving with developments in technology, state and federal legislation and utility led programs. Some key elements of this Energy Plan are:

1. Reduce energy use by improving the efficiency of all types of buildings, both new and existing.
2. Transition heating and cooling in buildings to more efficient technologies with reduced reliance on fossil fuels.
3. Utilize a “Zero-Over-Time” approach to municipal operations by right timing deep energy efficiency, renewable energy and energy storage projects with life cycle events as triggers for investment.
4. Reduce energy use and emissions from transportation by supporting alternative mobility methods (i.e., bike, walk, public transit) and transition to biodiesel or electric vehicles, including planning for infrastructure and charging.
5. Promote the responsible development of renewable energy such as rooftop solar, community shared solar, solar carports, solar thermal, and geothermal.
6. Explore and advocate for responsible clean energy options both locally and regionally. Collaborate with utilities to transition to a cleaner generation mix and modernize our electric grid to enable higher levels of renewables and reliability.
7. Promote the planting of trees and other vegetation around large paved areas and structures to reduce the urban heat island effect and promote carbon sequestration.
8. Ensure that our solutions are inclusive and equitable, serving and protecting the interests of all our residents.
9. Operate in partnership with other boards and commissions, town departments and local organizations and special interest groups as necessary to further our collective goals.

Our Approach



The **cheapest, cleanest energy is the energy you don't use**. Efficiency offers the possibility of saving money and reducing energy consumption before turning to the more complex, often more expensive, question of energy generation.

We seek to **“reduce”** or drive down energy use in the **Residential, Commercial, Transportation** and **Municipal** sectors and to **“produce”** or increase the supply of **Clean Energy** using five strategies that are within the Town and the Commission's power to accomplish. These strategies are as follows.

1. Use data to prioritize and allocate our resources and efforts.
2. Seek community input and multiple perspectives throughout planning to ensure equitable solutions.
3. Provide education and outreach opportunities to foster a culture of conservation and encourage the community to make responsible energy choices.
4. Facilitate and support participation in energy programs and services and the adoption of energy efficient behaviors, practices, technologies and capital improvements.
5. Develop and support policy and planning to ensure a sustainable clean energy future and infrastructure to support it.

Our approach centers on giving residents, staff and elected leaders, the knowledge, tools and support to make responsible energy choices for themselves. The Town also endeavors to continue to **Lead by Example** by making responsible energy choices for municipal operations both in its short-term operations and its long-term capital planning.

We have also selected a handful of indicators for each sector that we believe will provide insight into our progress. While not perfect or comprehensive, these metrics are readily available. Additional metrics may be developed or substituted in the future.

5 Key Sectors

Residential	
Commercial	
Transportation	
Municipal	
Clean Energy	

5 Key Strategies

Data Driven	
Input & Equity	
Education & Outreach	
Participation & Adoption	
Policy & Planning	



Residential



Residential Overview



Avon's population has grown steadily since the 1960s, transitioning Avon from a rural community to a low-density suburban community. In the last decade, the population has grown approximately 5% and another 5-10% growth is expected over the next decade based on development that has been proposed or is in progress as of this writing. Over 70% of existing housing units were constructed within the last fifty years. Approximately 70% of the current housing stock consists of single-family homes on individual lots, while the remaining 30% is comprised of condominiums, rental apartments, active adult communities, elderly housing developments and assisted living facilities.

Approximately 68% of Avon's energy use is Residential (excluding transportation). This includes single family homes, multi-family homes, condominiums and apartments. About 78% of a household's non-transportation related annual energy use is for space heating. In Avon, most homes heat with fossil fuels – natural gas (36%) or fuel oil (60%). The remaining 4% are primarily heated with electric heat.

Our state has some of the highest electric rates in the country. Some members of our community struggle to pay their utility bills. More now than ever before as the global economy continues to experience a period of significant inflation that has had a broad impact on all sectors including energy, food and other essentials. In January 2023, Eversource Energy announced a 50% increase to its supply rates, resulting in an increase of about \$85 per month for an average residential customer. The stated reason for the supply rate increase is the global impact of Russia's invasion of Ukraine, which has caused higher prices for oil and natural gas globally.

Often, people can save energy and money at home by implementing simple no-cost or low-cost practices, such as turning down the thermostat, taking shorter showers, replacing pool pumps and heaters with high efficiency models, or using LED lightbulbs. However, significant reductions in a home's energy use require more long-term planning and work. Efficiency projects, like adding insulation to walls or attics, installing new windows, or replacing an old furnace or air conditioner can have an immediate impact by reducing energy bills and delivering savings year after year which can be invested or used to pay expenses. Many improvements have additional benefits of making a home more comfortable or increasing property value.

A wide range of programs, incentives, and financing options exist for residents to make their homes more efficient or to purchase energy-efficient equipment. Additional assistance is available for residents who meet income eligibility criteria and for new residential construction. However, the mere existence of programs does not always mean that people are able to use or benefit from them. Programs can be complicated or slow. Barriers, such as education (both formal and topical), language, and environmental health or safety issues (i.e., the presence of asbestos or mold, hoarding situations, old electrical wiring) can also prevent access to services. In Avon, approximately 15% of housing units are rentals, which depend on landlords for significant energy upgrades. Renters are more likely to be people of color, minorities or elderly.

By addressing specific needs and inequities, we can be more effective in helping all residents take control of their own energy use and transition to a clean energy future.

Residential Approach



1. **Data Driven.** Use available data to prioritize programming and use of resources to systematically achieve the community's vision. Identify and obtain additional data as necessary. Work with partners like Energize CT, People's Action for Clean Energy, Avon Assessor's Office, Avon Building Department, Avon Engineering Department, CT Green Bank, utilities and others.



2. **Input & Equity.** Leverage connections with community partners to ensure that the needs and priorities of all community members are heard and considered. Work with partners like Department of Social Services, Avon Senior Center, Avon Free Public Library, Avon Public Schools, houses of worship, neighborhood groups, EnergizeCT, CT Green Bank, Efficiency for All, utilities, contractors, non-profits, etc. Collaborate with other towns and the state.



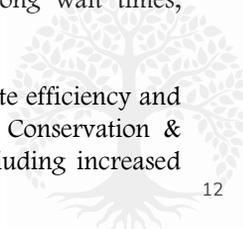
3. **Education & Outreach.** Increase behavioral and energy efficiency awareness via multi-touch, multi-channel methods. Use website, social media, email, video, events, networking, door-to-door, partnerships with local businesses, i.e., grocery stores, etc. Leverage partner publications, events and communication channels. The ACEC's Communication's Plan has been attached as Appendix V.



4. **Participation & Adoption.** Promote Home Energy Solutions, Home Energy Solutions Income-Eligible and other energy programs in a way that prioritizes individuals and properties with highest opportunity or need. Host giveaways or sign-up events. Educate about energy efficiency, options and technologies. Showcase positive examples and stories. Focus on specific groups such as multi-family properties, landlords, senior citizens, low-to-moderate income residents, oil-heated homes, older construction homes, new homeowners, etc. Identify and address program deficiencies and health and safety barriers (i.e., long wait times, asbestos, mold, etc.).



5. **Policy & Planning.** Investigate use of municipal zoning, building and tax codes to accelerate efficiency and equity. Support implementation of energy/sustainability related aspects of the Plan of Conservation & Development (POCD). Build political power to support and advocate for legislation, including increased funding, wise and equitable use of Connecticut Energy Efficiency Funds.



Residential Progress & Goals



Progress to Date:

- 33% of all households participate in EnergizeCT energy efficiency programs.
- 10% of residents receive rebates for performing energy retrofits.
- Occasional community presentations at Avon Free Public Library.
- Department of Social Services provides energy assistance to residents.
- ACEC monitors utility, state and federal offices for incentives, benefits and programs for residential properties.
- Implement a Home Energy Solutions marketing campaign.
- Town Zoning Regulations are being holistically updated and modified. Recommendations to be made to optimize utilization of clean energy sources and streamline permitting.

Short Term Goals

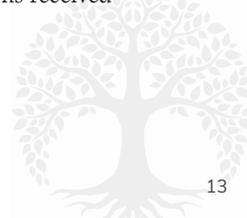
(2024-2026)

- 50% of all households participate in EnergizeCT energy efficiency programs.
- 20% of residents receive rebates/incentives for performing energy retrofits.
- 5% decrease in residential energy use over 2022 levels.
- Quarterly community presentations at Avon Free Public Library, Avon Senior Center or other public venue.
- Identify and implement an effective marketing/communications plan.
- Identify low/moderate income housing units and encourage HES-Income Eligible (IE) audits.
- Use grand list data to prioritize properties for targeted outreach based off age of home, fuel type, etc.
- Implement a Heat Pump Education campaign/education program.
- Develop programming around initiatives and incentives included in the Infrastructure & Jobs Act and the Inflation Reduction Act.
- Promote clean energy options for electricity via the Energize CT Rate Board

Long Term Goals

(2026 -2040)

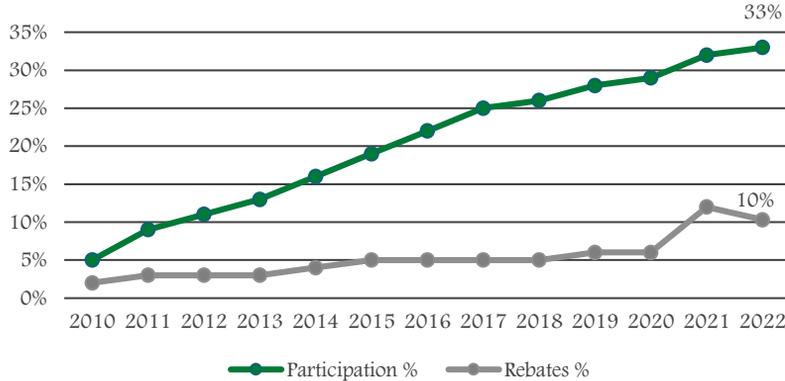
- Research and identify how Connecticut municipalities are setting goals to reach the State's greenhouse gas emissions reduction goal and carbon neutrality goals. Work with neighboring towns to set goals on a regional basis. Set long term goals that are consistent with those of the State of Connecticut.
- Widespread culture of conservation.
- Eliminate barriers to participation.
- Drastically reduce households with need for energy assistance.
- Monitor progress on biennial basis.
- Conduct an address-based analysis to focus efforts on biggest energy users with greatest opportunity to save/reduce
- Decrease in energy assistance applications received



Residential Indicators



Residential Participation & Rebates



1. **Residential Participation** is the % of Avon households that have participated in EnergizeCT energy efficiency programs like Home Energy Solutions, Home Energy Solutions-Income Eligible, and Residential New Construction. Source: EnergizeCT.

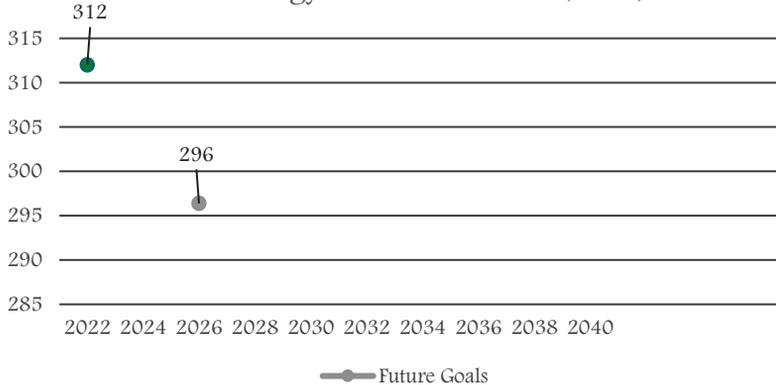
2. **Residential Rebates** is the % of Avon households that have received an energy rebate for installing a qualifying project or equipment. This % is lower than Residential Participation, meaning that not all households that participate in an initial home assessment do follow-on energy efficiency projects such as insulation. Source: EnergizeCT .



Residential Indicators

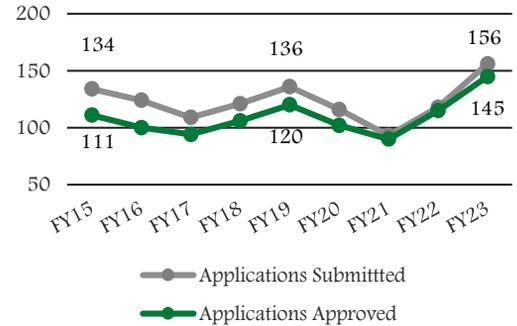


Actual Energy Use & Future Goals (GWH)



3. Actual Energy Use & Future Goals (GWH) is the actual energy (electric and heating fuel) that was used by Avon residences in 2022 (green point on graph). The grey point illustrates the community's short-term goal to reduce residential energy use by 5% by 2026. Source: EnergizeCT.

Energy Assistance Applications



4. Energy Assistance is the number of applications received from Avon residents and the number of those applications received that are approved for energy assistance. Source: Town of Avon Department of Social Services.



Commercial



Commercial Overview



Avon is very fortunate to have a well-balanced, diverse mix of business and industrial uses. For a town of Avon's population and size, Avon has a substantial amount of retail, office and industrial development. There are currently six business zoning districts and two industrial districts which comprise a total of 1,051 acres or 7% of the Town.

Commercial (excluding transportation) uses account for 18.95% of Avon's energy use. This includes schools, institutions, houses of worship, shops, healthcare, restaurants, lodging, manufacturing, industrial, and municipal operations. The Commercial sector differs from Residential as there are fewer, often larger, properties and fewer owners. Building energy systems may be centralized and have high demand at certain times of the day. Space heating is typically natural gas and represents about 26% of commercial energy use. Leases or other contractual arrangements can make it complicated to align the energy and capital improvement interests of owners and tenants.

Like Residential, there are a wide range of energy incentives and financing programs available to Commercial property owners. Available programs target existing buildings and new construction, as well as private businesses, non-profits, institutional and municipal customers. Some projects can reduce energy use by over 50% and pay for themselves quickly, yielding a high return on investment. These shorter payback measures can be packaged with more expensive capital items for comprehensive energy upgrades. If large scale upgrades are not in the cards immediately, property owners may opt to plan to implement deep energy efficiency, renewable energy and energy storage programs to coincide with life cycle events of existing systems and technologies.

As of the 2016 Plan of Conservation and Development (POCD), there were approximately 104 acres of vacant land zoned for business and industrial use in Town. The growth and development of our community has a substantial impact on our natural environment. While the development potential and economic benefits that these parcels stand to offer private development and the Town is substantial, we also know that it is imperative for new commercial construction and commercial adaptive reuse projects to include clean energy technology and implement sustainable practices wherever feasible in order to conserve resources, reduce operating costs, enhance occupant health and comfort, minimize strain on local utility infrastructure and improve the community's overall quality of life.

Today's economic environment brings challenges for local businesses. Energy efficiency, when done correctly can improve the bottom line for everyone.



Commercial Approach



1. **Data Driven.** Use available data to prioritize programming and use of resources to systematically achieve the community's vision. Identify and obtain additional data as necessary. Work with partners like Energize CT, People's Action for Clean Energy, Avon Assessor's Office, Avon Engineering Department, CT Green Bank, utilities and others.



2. **Input & Equity.** Seek out multiple perspectives and public participation to ensure all community members have a voice. Work with partners like Avon-Canton Chamber of Commerce, Rotary Club, CT Green Bank, Department of Planning & Community Development; design professionals, contractors, utilities, building occupants, etc. Collaborate with other towns and the state.



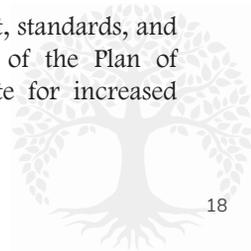
3. **Education & Outreach.** Increase behavioral strategies, programs and benefits. Share results. Use word of mouth and business-to-business networks. Leverage partner publications, events and communication channels. The ACEC's Communication's Plan has been attached as Appendix V.



4. **Participation & Adoption.** Promote Small Business Energy Advantage, C-PACE, LEED, Energy Star and other commercial energy efficiency, demand reduction or certification programs. Encourage the formation of green teams in buildings and tracking of energy use. Meet with individual property owners and companies. Identify and address barriers to be overcome. Lead by Example - have the Town and local businesses share their success stories, projects and experience.



5. **Policy & Planning.** Investigate use of municipal zoning, building, tax codes, procurement, standards, and recognition programs to accelerate efficiency. Support update and implementation of the Plan of Conservation & Development (POCD). Build political power to support and advocate for increased funding for energy efficiency, applicable legislation and oversight.



Commercial Progress & Goals



Progress to Date:

- 26% of all businesses participate in EnergizeCT energy efficiency programs.
- Town participates in C-PACE.
- ACEC monitors utility, state and federal offices for incentives, benefits and programs for commercial properties.
- Town Zoning Regulations are being holistically updated and modified. Recommendations to be made to optimize utilization of clean energy sources and streamline permitting.

Short Term Goals

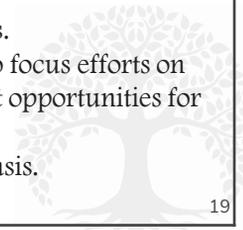
(2024-2026)

- 30% of all businesses participate in EnergizeCT energy efficiency programs.
- 5% decrease in commercial energy use against on 2022 baseline
- 1 new C-PACE project.
- Implement a commercial education program.
- Develop programming around initiatives and incentive included in the Infrastructure & Jobs Act and the Inflation Reduction Act.
- Promote clean energy options for electricity
- Use grand list data to prioritize properties for targeted outreach based on use, age, fuel source, etc.
- Identify and implement an effective marketing/communications plan.

Long Term Goals

(2026 -2040)

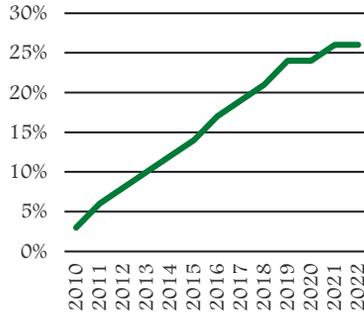
- Research and identify how Connecticut municipalities are setting goals to reach the State's greenhouse gas emissions reduction goal and carbon neutrality goals. Work with neighboring towns to set goals on a regional basis. Set long term goals that are consistent with those of the State of Connecticut.
- Widespread culture of conservation.
- Eliminate barriers to participation.
- Multiple C-PACE projects.
- Green, high performing buildings.
- Conduct address based analysis to focus efforts on biggest energy users with greatest opportunities for savings.
- Monitor progress on a biennial basis.



Commercial Indicators

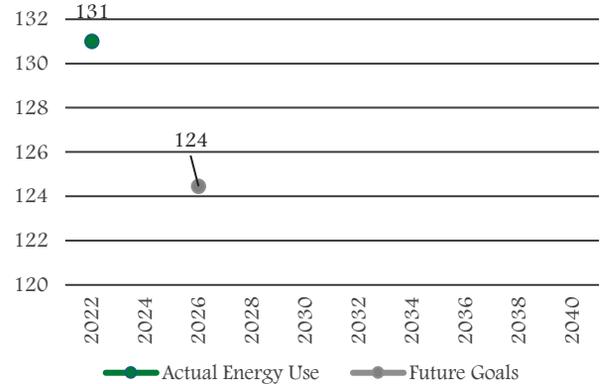


Commercial Participation



1. **Commercial Participation** is the % of Avon businesses (including municipal) that have participated in any energy efficiency programs. Source: EnergizeCT.

Actual Energy Use & Future Goals (GWH)



2. **Actual Energy Use & Future Goals (GWH)** is the actual energy (electric and heating fuel) that was used by Avon businesses in 2022 (green point on graph). The grey line illustrates the community short-term goal to reduce commercial energy use by 5% by 2026. Source: EnergizeCT.



Transportation



Transportation Overview



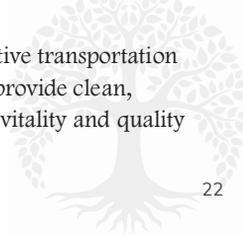
Avon's transportation sector accounts for about 34% of the community's energy use. It relies almost entirely on fossil fuels. There are about 14,321 registered vehicles in Avon. Only about 3.2% (326) are electric vehicles (EVs).

According to the US EPA, in the last two decades, the emissions coming from transportation has grown more than any other greenhouse gas source and is now the largest source of greenhouse gas emissions in the United States. The State of Connecticut's EV Roadmap cites the widespread deployment of EVs in the state as "a key tool in the state's effort to improve air quality for residents while also addressing the climate crisis." The cost to purchase an EV is coming closer to the cost to purchase a traditional vehicle and there are federal and state incentives available for the purchase of both new and used EVs. In addition, studies show that the total cost of ownership, including fuel and maintenance costs is lower.

It is clear that the deployment of EVs and charging infrastructure will take time and money. We will continue to use internal combustion engine vehicles for some years to come. Alternative fuels such as biodiesel and emissions reducing policy strategies, like fuel economy standards, route mapping and anti-idling should be considered for immediate emissions reductions.

EVs are not the whole answer. We must look beyond vehicles to design transportation systems around people; providing a variety of accessible, affordable, and safe mobility options such as walking, biking, public transit and ride share services. As of this writing, the Town has engaged a consultant to conduct a Bicycle and Pedestrian Master Plan aimed at improving mobility, connectivity with existing trails, public health, and recreational opportunities, and to enhance sustainability by encouraging non-motorized or public transportation as an alternative to motor vehicle travel. In June 2023, the Town Council approved a resolution in support of the Complete Streets approach to the design and construction of transportation facilities to support all modes of transportation. We also work closely with Bike Walk Avon CT, a community group with similar goals. In May 2023, the Town was designated a Bronze-level Bicycle Friendly Community by the League of American Bicyclists. Avon is the 11th BFC in Connecticut and the 7th in our immediate region alongside West Hartford, Simsbury, Canton, Farmington, Hartford and New Britain. The Town was previously awarded an Honorable Mention for its 2021 application.

Decreasing transportation related energy use and emissions can have immediate positive effect. Supporting active transportation can improve air quality, health, noise and traffic congestion. Over the long term, transitioning this sector will provide clean, integrated, balanced transportation networks, which directly contribute to the equity, health, safety, economic vitality and quality of life of all members of the community.



Transportation Approach



1. **Data Driven.** Use available data to prioritize programming and use of resources to systematically achieve the community's vision. Identify and obtain additional data as necessary. Work with partners like Energize CT, People's Action for Clean Energy, Avon Assessor's Office, Avon Engineering Department, CT Green Bank, utilities and others.



2. **Input & Equity.** Seek out multiple perspectives and public participation to ensure all community members have a voice. Work with partners like BikeWalk Avon CT, Farmington Valley Trails Council, East Coast Greenway, Recreation & Parks Committee, Planning & Zoning Commission, Avon Police Department, Department of Public Works, CT Rides, Dial-A-Ride, CT Transit, Avon Public Schools, car dealerships, local bicycle shops, neighboring communities, etc. Collaborate with other towns and the state.



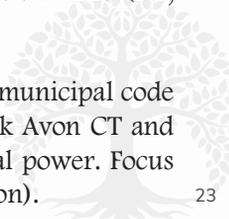
3. **Education & Outreach.** Increase awareness via multi-touch, multi-channel messaging. Use website, social media, email, videos, events, networking, etc. Provide information on benefits such as health and cost of ownership. Leverage partner publications, events and communication channels. The ACEC's Communication's Plan has been attached as Appendix V.



4. **Participation & Adoption.** Promote energy-free transportation alternatives. Promote programs and financial incentives (i.e., CHEAPR, federal tax credits). Leverage grant funds or collective buying opportunities. Host EV demo days and Q&A with owners. Target specific groups like commuters, employers, people looking to replace vehicles, Board of Education. Identify and address barriers (i.e., access, technology, fear, cost, charging infrastructure).



5. **Policy & Planning.** Investigate use of workplace policies (i.e., bus pass, telecommuting) or municipal code to support sustainable mobility options and accelerate adoption of EVs. Support BikeWalk Avon CT and active transportation. Identify infrastructure needs (i.e., EV chargers). Build local political power. Focus on short-term (i.e., anti-idling, biofuels) and long-term strategies (i.e., vehicle electrification).



Transportation Progress & Goals

Progress to Date:

- EV Car Show held at the Farmington Valley Green Festival – May 2022.
- Project in progress to install two public EV charging ports at the Library; state funding approved.
- 326 vehicles (3.2% of registered vehicles) are EVs.
- Bronze-level Bicycle Friendly Community Designation & Development of Bike/Ped Master Plan
- ACEC monitors utility, state and federal offices for incentives, benefits and programs for transportation.

Short Term Goals

(2024-2026)

- Complete EV charging station project at AFPL
- With the expected nationwide growth in EV sales and expansion of EV infrastructure, we would expect 5% of registered vehicles are EVs.
- Implement short-term recommendations of Bicycle & Pedestrian Master Plan.
- Conduct anti-idling campaign
- Develop programming around initiatives and incentives including in the Infrastructure & Jobs Act and the Inflation Reduction Act.

Long Term Goals

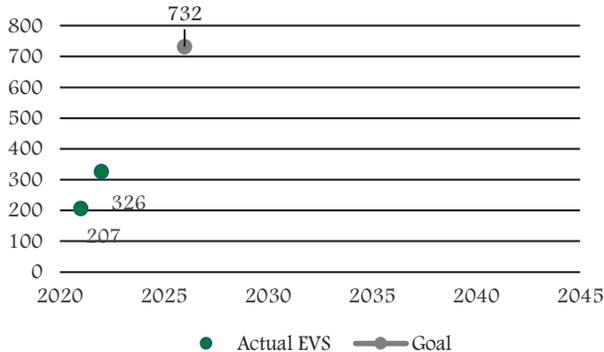
(2026 -2040)

- Research and identify how Connecticut municipalities are setting goals to reach the State’s greenhouse gas emissions reduction goal and carbon neutrality goals. Work with neighboring towns to set goals on a regional basis. Set long term goals that are consistent with those of the State of Connecticut.
- Expand EV charging network (public and private). Identify the volume of public chargers needed to accommodate EV growth recognizing that most Avon residents will charge at home.
- Develop an integrated and accessible people-centric, multi-modal transportation system.
- Implement longer-term recommendations of Bicycle & Pedestrian Master Plan

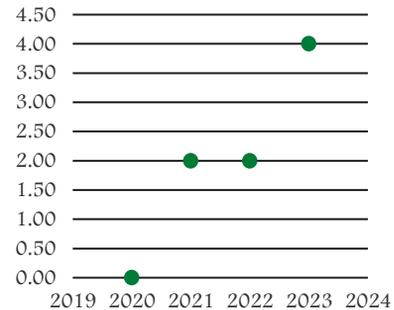
Transportation Indicators



Electric Vehicles Actual & Future Goals (#)



Public EV Chargers (#)



1. **Electric Vehicles Actual & Future Goals** is the total number of electric vehicles in Avon including battery electric vehicles (BEV), plug-in hybrid vehicles (PHEV) as reported by VIN on the Avon Grand List (green dots). The grey dot represents the community's short-term goal to increase the number of electric vehicles to 5% by 2026. Source: Assessor's Office

2. **Public EV Chargers** is the total number of public electric vehicle charging stations in Avon (cumulative). Source: Department of Planning & Community Development



Municipal



Municipal Overview



Energy use (including transportation) by the Town and Board of Education accounts for 2.3% of Avon's total energy use. While municipal energy use represents a small percentage overall, the Town and the Board of Education's activities are our best opportunity to directly effectuate progress and change. Accordingly, the Town of Avon has endeavored to **Lead by Example** with regard to the implementation of energy reduction strategies and clean energy technologies when appropriate for municipal operations for over a decade.

In 2008, the Town Council established the Avon Clean Energy Commission (ACEC) and charged the Commission with investigating opportunities for implementing energy efficiency in all aspects of Avon's public works, researching and facilitating the use of clean renewable energy within the Town and educating residents about the clean energy options available to them.

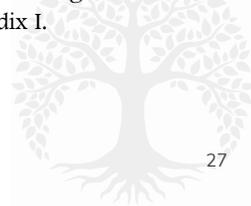
In 2012, the Commission worked with Peregrine Energy to develop a [Comprehensive Energy Management Plan](#) for the Town and the Board of Education. Among other things, the Plan recommended two major energy goals for the Town and Board of Education facilities and motor vehicles:

1. Reduce Town and Board of Education energy used in operations by 15% of total British Thermal Units (Btu) per Square Foot by 2015 against a 2008 baseline.
2. Reduce the Town's carbon footprint by 20% by 2020 through an integrated strategy of efficiency improvement and substituting clean alternatives for fossil fuels and fossil fuel generated activity.

The remaining goals are outlined in Appendix I of this document. To meet these goals the Town and the Board of Education employed three strategies:

1. The implementation of capital projects intended to improve the energy efficiency of its facilities (i.e. lighting upgrades, installation of high efficiency HVAC equipment, etc.).
2. The implementation of procedures and programs to improve performance and track energy and fuel use (i.e. installation of a Fuel Management System, Fleet Management System and Energy Tracking System in the Town's Department of Public Works).
3. The deployment of clean energy technology to offset reliance on the grid when feasible and practical (i.e. Solar PV and geothermal systems).

In 2016, the Town engaged Titan Energy to work with the ACEC to review and [report](#) on the status of the goals identified in the 2012 Plan. Summary charts of the two major goals are included later on in this section. Note that the same data has been presented in the units used in the 2012 Plan as well as the units used throughout this Plan. We have also presented FY 2022 data to aid in our goal setting moving forward. The status of the additional goals outlined in the 2012 Plan are included in Appendix I.



Municipal Overview



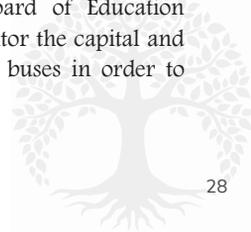
Since 2015, the Town and the Board of Education have continued to implement capital projects, deploy clean energy technology, and introduce procedures and programs aimed at reducing its energy use and carbon footprint. For example, the Town has begun to install split system air conditioning units and air source heat pump technology when suited to the application. In 2020, Eversource converted the Town's streetlights to LED. The Board of Education continues to work towards the goal of tracking energy use data in a consistent manner to help identify trends and streamline the process of generating reports to keep track of our progress. The Town has one hybrid vehicle being used by the Police Department, but no electric vehicles in its fleet at this time. As of this writing, the Town has been awarded a state grant to offset the cost of the purchase and installation of an electric vehicle charging station at the library. Additionally, three municipal buildings have solar PV systems, and two more systems are expected to come online in fall 2023.

Looking ahead to 2030, the Town aims to continue to reduce its energy use and carbon footprint over our FY 2008 baseline using the implementation strategies outlined on the previous page.

In addition, when designing any new Town or Board of Education facilities, the Town intends to work with its design professionals to implement energy use reduction strategies and clean energy technology when practical and in consideration of any design, operational, or budgetary constraints. When making updates to existing facilities, the Town intends to continue to follow the Zero-Over-Time method which rights times deep energy efficiency, renewable energy and energy storage projects with life cycle events as triggers for investment.

With regard to its vehicle fleet, the Town aims to be as environmentally conscious and efficient as possible with its functions, purchasing recommendations and maintenance. When planning a vehicle purchase, specifications are created in a way that maximizes the fuel and emission efficiency of the vehicle being purchased as appropriate for its class size. Whenever possible, alternative fuel vehicles are reviewed and considered for possible purchase. As technology improves, we anticipate that alternative fuel vehicles will be a practical option for an increasing number of vehicle replacements.

As of this writing, Connecticut law requires all school buses in the state to be electric by 2040. The Board of Education continues to work with its contractor to monitor the capital and operating costs of moving to electric school buses in order to transition the fleet in advance of this deadline.



Municipal Approach



1. **Data Driven.** Use available data to prioritize programming and use of resources to systematically achieve the community's vision. Identify and obtain additional data as necessary. Work with partners like Energize CT, People's Action for Clean Energy, Avon Assessor's Office, Avon Engineering Department, Avon Department of Public Works, Avon Public Schools, CT Green Bank, utilities and others.



2. **Input & Equity.** Seek out multiple perspectives and public participation to ensure all community members have a voice. Work with partners like Town departments, Avon Public Schools, elected and appointed boards, commissions and committees, CT Rides, Dial-A-Ride, CT Transit, Avon Public Schools, car dealerships, local bicycle shops, neighboring communities, etc. Collaborate with other towns and the state.



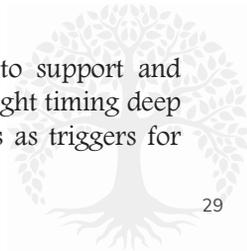
3. **Education & Outreach.** Lead by Example and publicize successes and lessons learned. Increase awareness via multi-touch, multi-channel messaging. Use website, social media, email, videos, events, networking, etc. Leverage partner publications, events and communication channels. The ACEC's Communication's Plan has been attached as Appendix V.



4. **Participation & Adoption.** Lead by Example. Promote programs, policies and new technology by implementing them first and sharing successes and lessons learned with residents. Apply for available grants to expedite the implementation of capital improvements. Include energy efficiency and clean energy technology in renovations and construction of municipal buildings.



5. **Policy & Planning.** Investigate use of municipal policies, procedures and programs to support and accelerate efficiency. Utilize a "Zero-Over-Time" approach to municipal operations by right timing deep energy efficiency, renewable energy and energy storage projects with life cycle events as triggers for investment.



Municipal Progress & Goals



Progress to Date:

- 17..59% drop in municipal energy use since FY08
- 27.91% decrease in the Town’s carbon footprint since FY 08
- Energy efficiency projects implemented at municipal facilities and public schools
- 25% drop in municipal fuel use since FY08
- Installation of a Fuel Management System to monitor fuel utilization and a Fleet Management system to track repairs and preventative maintenance costs.
- Use of 100% synthetic oil products for municipal vehicle maintenance.
- DPW instituted a no idle policy for employees
- 3 municipal solar projects and two in the queue.
- 1 municipal geothermal project.
- 2 municipal air source heat pump projects in progress and one in the queue.
- Eversource converted Town’s streetlights to LED in 2020.

Short Term Goals (2024-2026)

- 25% drop in municipal energy use against an FY08 baseline.
- 30% drop in municipal fuel use against an FY08 baseline.
- 30% decrease in the Town’s carbon footprint against an FY08 baseline.
- Continue to identify opportunities to integrate EVs into municipal fleet.
- Integrate EVs and battery powered equipment (i.e. lawn mowers) into the municipal fleet where appropriate as technology changes.
- Include clean energy technology in municipal and school building projects whenever feasible and practical.
- Work with the Capitol Region Council of Governments (CRCOG) on its development of a regional climate action plan

Long Term Goals (2026 -2040)

- 5% decrease in municipal energy use against an FY08 baseline every two years.
- 5% decrease in municipal fuel use against an FY08 baseline every two years.
- High performing green buildings.
- Convert school bus fleet to electric within timeframe outlined by state law.
- Integrate EVs into the municipal fleet where appropriate as technology changes.
- Additional solar projects on municipal buildings
- Additional air source heat pump applications on municipal buildings where appropriate.
- Include clean energy technology in municipal and school building projects whenever feasible and practical.
- Consider reducing number of streetlights in areas of town.
- Work with CRCOG to implement the Regional Climate Action Plan’s projects that are identified for Avon.

Municipal Indicators

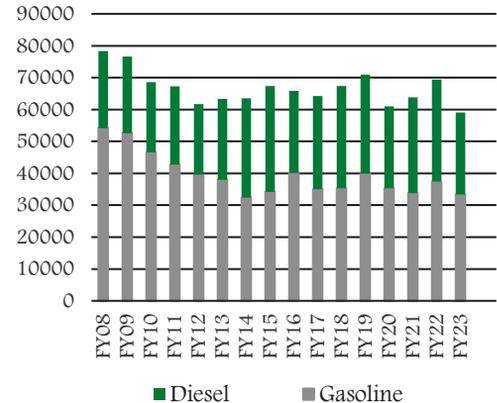


Goals Identified in 2012 Comprehensive Energy Management Plan & Progress to Date

	Reduce Town and Board of Education Energy Used in Operations by 15%.		Reduce the Town's carbon footprint by 20% by 2020.
	Total mmBtu (2012 Plan)	Total GWH (this Plan)	Total Metric Tons of Carbon Co2 equivalent (GHG)
FY 2008 (Baseline)	67,737.29	19.85	4,918
FY 2015	55,217.06	16.18	3,975
% Change		-18.48%	-19.16%*
FY 2022	55,825	16	3,545
% Change (Baseline)		-17.59%	-27.91%
FY 2026 (Goal)			
% Change (Baseline)		-25%	-30%

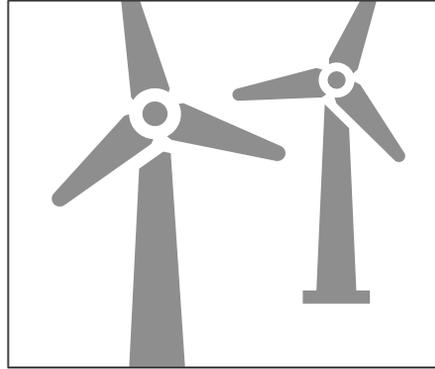
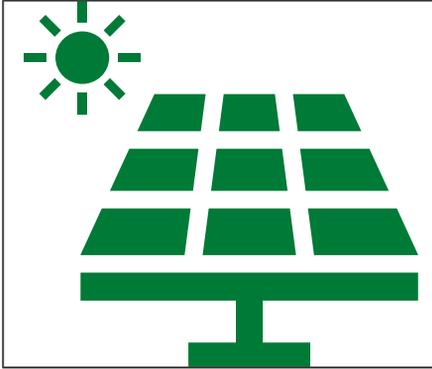
Notes: at the time of data collection for the 2016 status report, the solar panel installations at DPW, AHS and AMS were not online. It was understood that the implementation of these systems would push the Town over our 20% goal. Since 2015, Town and BOE energy use has remained relatively constant. Looking ahead, the Town and BOE will more actively monitor energy use on an annual basis to observe trends and the immediate and long-term impacts of efficiency improvements.

Municipal Fuel Use (Gallons)



Municipal Fuel Use is the fuel (gas and diesel) used in the municipal fleet, including all municipal and public safety vehicles from the municipal pumps located at Public Works. This is the primary method that the Town uses to fuel vehicles. This does not include fuel for school buses which are under a third-party contract. Since FY08, fuel use is down 25%. It is the Town's goal to decrease fuel use by 30% against an FY08 baseline. Source: Town of Avon Department of Public Works.

Clean Energy



Clean Energy Overview



Producing, or satisfying, all our energy needs with clean energy will not happen overnight, but the transition has begun. Over 165 Avon homes have installed solar PV. As the price continues to decline, solar, along with efficiency measures, is an affordable option for many households and businesses to stabilize or reduce energy costs and go green.

Google's Project Sunroof (Appendix III) estimates that Avon could support 72 MW of solar, producing 80.3 million kWh per year, nearly 60% of the community's electric use in 2022. Solar carports and ground-mounted systems should be considered in addition to rooftop solar. Shared solar, virtual net metering or on-bill green power may be available as alternatives to on-site generation. The Town recently engaged an architect to perform an evaluation of the roof conditions on Town and Board of Education buildings. This evaluation included a preliminary assessment of the buildings' suitability for solar. A summary of the findings is included as Appendix IV.

While the focus is certainly on solar PV, we cannot forget other strategies and technologies such as geothermal and solar thermal. Passive building design uses climate-based solutions such as solar orientation and thermal mass to maintain building temperature, comfort and air quality; this approach minimizes the need for mechanical heating and cooling before turning to renewables.

Net-zero buildings, which produce all the energy that they consume, are becoming increasingly popular and cost effective. In the last year, Connecticut's first net-zero schools opened in Manchester and Mansfield.

Immediate steps to use cleaner energy alternatives, like fuel cells or biodiesel, in existing equipment and vehicles should also be considered. A life-cycle cost approach should be employed to evaluate different technologies.

This industry continues to evolve. Changes in technology, pricing, market conditions, political and public support all contribute to how and when we will reach 100% clean energy. We must build local political power to accelerate the use of clean energy in ways that support local economic development goals, create jobs, and enhance equity, environmental justice and resiliency in our community. At the state level, legislation regarding net metering, distributed generation, community choice aggregation, building codes, offshore wind, renewable energy credits, and renewable portfolio standards are some of the key policy decisions that will shape our path.

An important building block of the future will be microgrids, consisting of smaller subsets of distributed power sources and storage, users, wires and controls. Microgrids are capable of operating while connected to the wider grid, or they can "island" to operate separately in the event of an outage. An example of a microgrid could be several key town facilities, a solar array, battery storage and a backup generator. In 2017, the Town investigated the feasibility of installing a microgrid to serve the Town Office Complex. At the time, the economics were not favorable however, the Town should continue to investigate opportunities for microgrid installations to service critical public facilities in times of emergency.

Clean Energy Approach



1. **Data Driven.** Use available data to prioritize programming and use of resources to systematically achieve the community's vision. Identify and obtain additional data as necessary. Work with partners like Energize CT, People's Action for Clean Energy, Avon Assessor's Office, Avon Engineering Department, CT Green Bank, utilities and others.



2. **Input & Equity.** Seek out multiple perspectives and public participation to ensure all community members have a voice. Work with partners like Planning & Zoning Commission, CT Green Bank, Clean Water Action, CT Energy Network, the Sierra Club, contractors and neighborhood groups. Collaborate with other towns and the state.



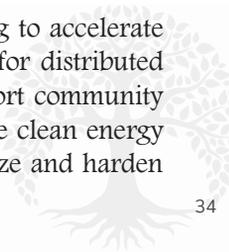
3. **Education & Outreach.** Increase awareness via multi-touch, multi-channel messaging. Use website, social media, email, videos, events, networking, etc. Leverage partner publications, events and communication channels. The ACEC's Communication's Plan has been attached as Appendix V.



4. **Participation & Adoption.** Promote solar and C-PACE programs. Educate about financing options and technology, including life cycle costs. Showcase positive examples and stories, both residents and businesses. Focus on specific groups, such as properties with good exposure and/or electric HVAC systems. Identify and address barriers such as income, perception, safety and zoning. Increase use of electricity or biofuels in municipal fleet and equipment.



5. **Policy & Planning.** Monitor use of municipal code and options for streamlined permitting to accelerate adoption of clean energy as technology changes/improves. Analyze local opportunities for distributed generation and microgrids. Build requirements into RFPs and purchasing policies. Support community choice aggregation and expansion of responsible residential, commercial and utility-scale clean energy generation and storage. Support efforts to assess and mitigate natural gas leaks, modernize and harden the local and regional electric grid and move away from fossil fuels.



Clean Energy Progress & Goals



Progress to Date:

- Solarize Avon Campaign in 2015.
- 165 Avon homes with solar.
- ACEC monitors utility, state and federal offices for incentives, benefits and programs for transportation.
- Assessment of remaining municipal sites for rooftop solar.
- Town Zoning Regulations are being holistically updated and modified. Recommendations to be made to optimize utilization of clean energy sources and streamline permitting.

Short Term Goals

(2024-2026)

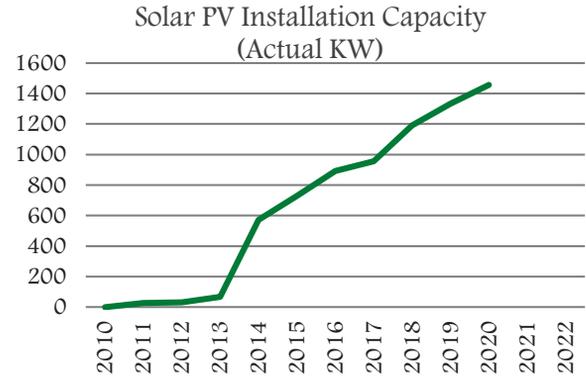
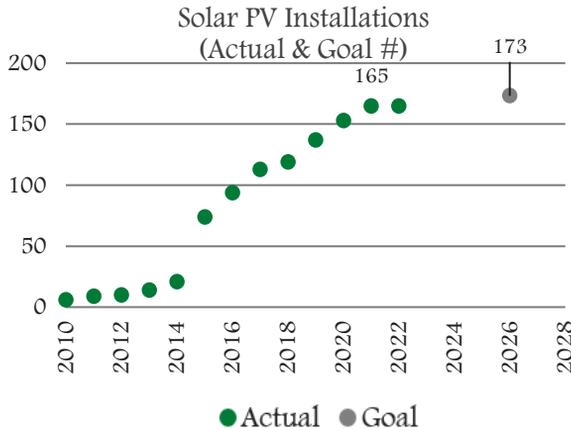
- 5% increase in homes with solar.
- Develop and implement educational programming for residential and commercial audiences focused on clean energy technologies and their applicability.
- Advocate for policy and legislation to encourage clean, distributed local generation.
- Develop programming around initiatives and incentives including in the Infrastructure & Jobs Act and the Inflation Reduction Act.
- Encourage installation of heat pumps.
- Evaluate opportunities for microgrids.

Long Term Goals

(2026 -2040)

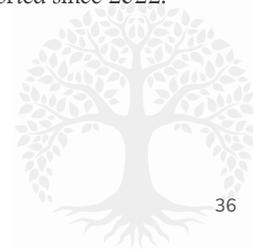
- Research and identify how Connecticut municipalities are setting goals to reach the State's greenhouse gas emissions reduction goal and carbon neutrality goals. Work with neighboring towns to set goals on a regional basis. Set long term goals that are consistent with those of the State of Connecticut.
- Well-developed clean, distributed local generation that is in step with advances made in state law and clean energy technology.
- Support statewide initiatives to increase the amount of non-residential solar allowed in CT
- Identify opportunities for the installation of solar carports where economically and logistically feasible.
- Microgrids in Town at key locations (public or private)

Clean Energy Indicators



1. **Solar PV Installations** is the cumulative number of solar photovoltaic installations based on utility interconnection agreements (KWAC), both residential and commercial, reported since 2022 (green dots). Grey point represents the community's short-term goal to increase solar installations by 5% by 2026 Source: Energize CT.

2. **Solar PV Installations** is the production capacity based of existing solar installations on utility interconnection agreements (KWAC), both residential and commercial, reported since 2022. Source: Energize CT.



Resources to Get Started



Residential

- [Energize CT \(Home\)](#)
- [CT Green Bank \(Homeowners\)](#)
- [Energy Saving Tips for your Home \(Eversource\)](#)
- [CT Energy Assistance Program \(CEAP\)](#)
- [Housing Data Profiles \(Partnership for Strong Communities\)](#)
- [Energy Star](#)

Commercial

- [Energize CT \(Business\)](#)
- [CT Green Bank](#)
- [Commercial Property Assessed Clean Energy \(C-PACE\)](#)
- [Energy Saving Tips for your Business \(Eversource\)](#)

Transportation

- [Alternative Fuels Data Center \(US DOE, tools, publications, etc.\)](#)
- [Climate Change & Transportation \(CT DEEP\)](#)
- [EV Connecticut](#)
- [EV Roadmap for Connecticut](#)
- [Capitol Clean Cities of CT](#)
- [Electric School Bus Toolkit \(Live Green\)](#)
- [Drive Electric](#)
- [Plugin America](#)
- [CT Rides](#)

Clean Energy/Renewables

- [GoSolarCT](#)
- [Residential Solar Investment Program](#)
- [Project Sunroof \(Google\)](#)
- [National Renewable Energy Laboratory](#)
- [SolSmart](#)

State of Connecticut

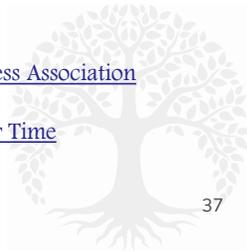
- [Executive Order No. 3](#)
- [Connecticut's Comprehensive Energy Strategy \(CTDEEP\)](#)
- [Governor's Council on Climate Change](#)

Town of Avon

- [Clean Energy Commission](#)
- [Energy Assistance \(Social Services\)](#)
- [Plan of Conservation & Development](#)
- [Bicycle & Pedestrian Master Plan \(TBD\)](#)

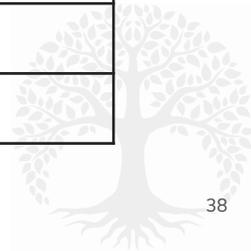
Other

- [American Council for an Energy Efficient Economy \(ACEEE\)](#)
- [US DOE Office of Energy Efficiency & Renewables](#)
- [US Energy Information Administration](#)
- [People's Action for Clean Energy \(PACE\)](#)
- [Sustainable CT](#)
- [Clean Energy States Alliance](#)
- [Rewiring America](#)
- [Urban Land Institute](#)
- [Enterprise Green Communities](#)
- [CT Green Building Council](#)
- [Northeast Sustainable Energy Association](#)
- [Bedford 2030](#)
- [Cambridge Energy Alliance](#)
- [Renewable Energy & Efficiency Business Association](#)
- [Association for Energy Affordability](#)
- [Rocky Mountain Institute – Zero Over Time](#)



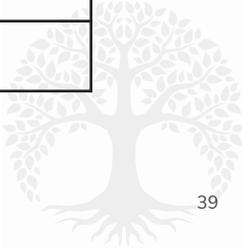
Appendix I – Progress on Goals Identified in 2012 Comprehensive Energy Management Plan & 2016 Update

Key Action		Comments
Establish data tracking system for Town and BOE		50% Complete. Town utilizes Asset Essentials. BOE in process of entering historical data into EPA Energy Star program.
Reduce Town-wide energy use by 15% by 2015 against FY08 baseline		Complete.
Improve energy efficiency of Town buildings		Ongoing.
Increase vehicle fuel efficiency		Ongoing
Reduce streetlight energy use		Ongoing, Eversource converted Town's streetlights to LED in 2020. Could consider reducing number of streetlights in areas of town.
20% Town-wide carbon reduction by 2020		Complete
Engage with community to advance goals set forth in the plan		Ongoing



Appendix II – Town of Avon Solar Projects

Year	Site	Size (KW DC)
2015	Avon High School	234.6
2015	Avon Middle School	163.2
2015	Department of Public Works	87.75
2023	Avon High School (under construction)	354
2023	Roaring Brook School (under construction)	181.44



Appendix III – Avon’s Project Sunroof Report

ESTIMATED SOLAR INSTALLATION POTENTIAL

[SHARE LINK](#)

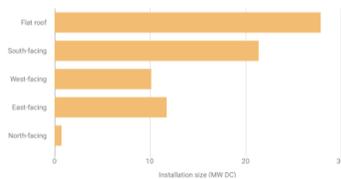


Overall

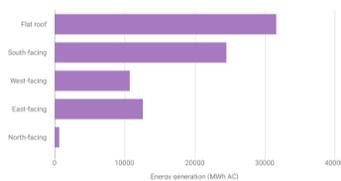
Total estimated size and solar electricity production of viable roofs for Avon, CT

Roofs	Roofs	Roof space	Capacity	Electricity
58%	4K	5.1M sq ft	72 MW DC	80.3K MWh AC per yr

Total installation size (MW DC)



Total yearly energy generation potential (MWh AC)

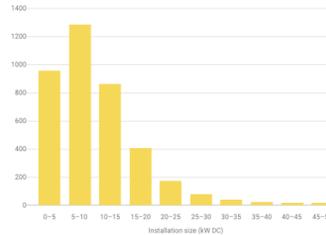


Per roof

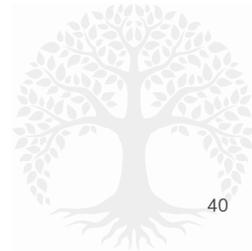
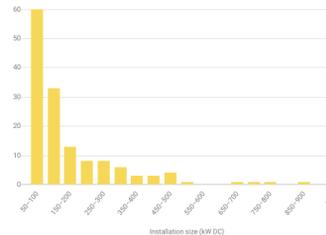
Median estimated system size and solar electricity production per viable roof for Avon, CT

Roof space	Capacity	Electricity
617 sq ft	8.8 kW DC	9.5K kWh AC per yr

Rooftop solar capacity distribution (number of roofs, < 50kW)



Rooftop solar capacity distribution (number of roofs, > 50kW)



Appendix IV – Town of Avon Roof Inspections

TOWN OF AVON: 2023 ROOF INSPECTIONS

Section Name	Roofs	System Type	Age	SF	Leakage	Rating	Recommend	Cost Estimate	Solar Viability
Avon FD Company 1	Low Slope	PVC	15 years +/-		No	Good	Inspection		Potential candidate (requires further structural analysis)
Avon FD Company 2	Pitched	Shingles	10 years +/-		No	Good	Inspection		Not an ideal candidate due to limited roof area
Avon FD Company 3	Pitched	Shingles	10-15 years		No	Good	Inspection		Not an ideal candidate due to limited roof area
Avon FD Company 4	Pitched	Shingles	10 years +/-		No	Good	Inspection		Not an ideal candidate due to limited roof area
Transfer Station office	Low Slope	PVC	10 years +/-		No	Good	Inspection		Not an ideal candidate due to limited roof area
TS Vehicle Storage	Pitched	Metal SS	5 years +/-		No	Very Good	Inspection		Not an ideal candidate due to limited roof area
TS Storage Shed	Pitched	Metal SS	5 years +/-		No	Very Good	Inspection		Not an ideal candidate due to limited roof area
TS Exchange Building	Pitched	Shingles	10 years +/-		No	Good	Inspection		Not an ideal candidate due to limited roof area
Avon Senior Center	Pitched	Shingles	10 years +/-		Yes	Good	Inspection		Not an ideal candidate due to geometry of the roof (steep pitched) and limited area
Pool House	Pitched	Shingles	10 years +/-		No	Good	Inspection		Not an ideal candidate due to limited roof area
Country Side Park	Pitched	Shingles	New		No	Excellent	Inspection		Not an ideal candidate due to limited roof area
Avon Public Library	Pitched/Low sloped	Shingles/PVC	15 years +/-		No	Very Good	Inspection		Potential candidate (requires further structural analysis). Solar consideration only for flat roof area
Public Works Building	Low Slope	PVC	15 years +/-		No	Good	Inspection		Existing solar above main building and garage. The southernmost garage bay and separate Bldgs. & Grounds Garage are not good candidates for solar (PEMBs).

Appendix IV – Town of Avon Roof Inspections (cont.)

Avon BOE	Pitched/Low Slopec	Shingles/PVC	10 years +/-	No	Good	Inspection	Not an ideal candidate due to geometry of the roof (steep pitched) and limited area
Avon Dog Pound	Pitched	Shingles	10 years +/-	No	Good	Inspection	Not a good candidate due to limited roof area
Avon High School	Low Slope	PVC	10 years +/-	No	Very Good	Inspection	Existing solar
Avon High School	Low Slope	EPDM	30 years +/-	No	Poor	Replace	Potential candidate (requires further structural analysis). No solar consideration until roof is replaced
Avon Middle School	Low Slope	PVC	15 years +/-	No	Good	Inspection	Existing solar. No plans for future addition of solar
Pine Grove School	Low Slope	PVC	12-15 years	No	Good	Inspection	Potential candidate (requires further structural analysis)
Pine Grove School	Pitched Metal	Batton Seam	25 +	No	Fair	Inspection	Potential candidate (requires further structural analysis)
Roaring Brook School	Low Slope	PVC	10 years +/-	No	Good	Inspection	Potential candidate (requires further structural analysis)
Thompson Brook MS	Low Slope	SBS	30 years +/-	No	Poor	Replace	Potential candidate (requires further structural analysis). No solar consideration until roof is replaced
Thompson Brook MS	Pitched/Metal	Metal SS	10 years +/-	No	Very Good	Inspection	Potential candidate (requires further structural analysis)
Avon Town Offices	Building 1- 5- 6- 8	Metal	30 years +/-	No	Poor	Replace	Bldgs. 1, 3, 5-7 have potential for solar after roof replacement (requires further structural analysis). Bldgs. 2, 4, 8 are not ideal candidates due to limited roof area.
Avon Town Offices	Building 2&7	Metal SS	5 years +/-	No	Excellent	Inspection	

Appendix V – ACEC Communications Plan



Green Up Avon 2023-24 Strategy & Comms Plan

Below is a draft strategy plan for achieving our goals for Green Up Avon!

Executive Summary

Green Up Avon is an initiative spearheaded by the Avon Clean Energy Commission as a way to help create a more energy-aware community. This will be an ongoing initiative that consists of community events and works toward a goal to reduce energy consumption and create a better, cleaner, greener town to live in.

Situation Analysis

Avon currently has some small ways in which it's working toward a cleaner energy future (upcoming installation of solar panels, EV charging stations in some public parking lots) but the real impact can and will be made at the homeowner level. There is currently not enough education or intention among Avon residents on how they can make small adjustments toward a more greener, cleaner town.

2023 Goals

1. Get **50 households** to sign-up and complete a home energy audit. **COMPLETE**
2. Host **8 to 10 events** during the year discussing different aspects of being environmentally conscious. **COMPLETE**
3. Appear in media outlets **5 to 7 times**. **COMPLETE**
4. Chart a **2030 plan**. **IN PROGRESS (adjusted to 2024-2026)**

2024 Goals

5. Get **50 households** to sign-up and complete a home energy audit.
6. Host **8 to 10 events** during the year discussing different aspects of being environmentally conscious.
7. Appear in media outlets **5 to 7 times**.
8. Approve and implement a **2024 - 2026 plan**.

Objectives

- Create consistent messaging for communications activities
- Engage proper stakeholders to help drive the initiative
- Have people feel inspired to support the initiative and moreover, their community

Target Audience and Channels

Audience: All Avon residents, specifically homeowners

Channels: We'll utilize grassroots marketing which includes Facebook, Flyers, Word of Mouth, and Newsletters

Updated: Feb 21, 2024

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Strategies, Tactics, and Activities

We will leverage a series of events below to identify key moments when we were able to amplify our efforts through precise communication.

Schedule of Activities

Ongoing list of activities on next page

Responsibilities (Who Does What)

- Post to Facebook: Grace
- Send Press Release: Grace/Mike/Carrie
- Act as Spokesperson: Carrie

Key Messages

- Avon is working toward building a greener, cleaner future. **Green Up Avon** is intended to help achieve our goals of reducing carbon emissions and creating a more eco-friendly community.
- **Green Up Avon** is a series of community-focused events where people can learn about different ways they can make small changes in their daily life to make a big difference.
- We want everyone involved in **Green Up Avon**. This is not an initiative for the people who are eco-enthusiasts or have the biggest home. This is for everyone. Impact and inspiration can come from anywhere and we need every one of the 18,000 involved for us to be successful.

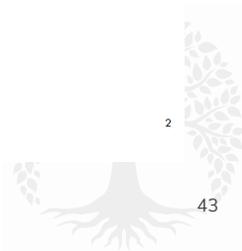
Evaluation and Measurement

Success will involve two things:

1. Achieving the quantitative goals set forth.
2. Creating a growing sentiment in Avon that people want to develop a cleaner, greener community.

Updated: Feb 21, 2024

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Appendix V – ACEC Communications Plan



Activity Tracker

Activity	Description	Start Date
Green Living Festival	Farmington Valley Green Living	May 14, 2022
Energize CT Seminar @ Library	Discussion on HES Program	September 2022
Pumpkin Recycling Program	Partner Effort with Sub-Edge Farm	November 2022
Invasive Species Screening	Uninvited: Spread of Invasive Species	March 1, 2023
Sustainable Investing	Sustainable Investing w/Bernie	May 18, 2023
Home Energy Assessments	HES Partnership with Aiello	May - July 2023
Alien Plant Species Walk	"Invasive Species Identification Walk" Saturday morning	Aug. 26, 2023
Re-Wild Hike (closed event)	Hike with Eleni at home in West Hartland	Sept. 2, 2023
Creating a Happy Habitat	Virtual lecture with Nancy DuBrule-Clemente	Sept. 26, 2023
Fall Hike #2	Avon Recreation fall hiking series #2	Oct. 7, 2023
Homegrown National Park	Virtual lecture with Doug Tallamy	Oct. 24, 2023
Pumpkin Composting	Partner with Sub-Edge Farm	Nov. 2023
Fall Hike #3	Avon Recreation fall hike	Nov. 4, 2023
Make Avon Green	Dinner at Senior Center to promote initiatives and Clean Energy solutions	Nov. 7, 2023
Virtual Book Discussion	Nature's Best Hope	Nov. 14, 2023
Invasive Plant Removal Day	Clip, Clip, Hooray with Avon Land Trust	Nov. 18, 2023
Pollinator Bingo	Pollinator Trivia with teens and families	Nov. 16, 2023

Updated: Feb 21, 2024

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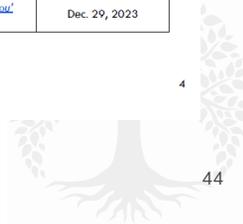
New Year, New Yard	Event with library	Jan. 20, 2024
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Results

Publication	Description	Date
CT Examiner	Avon Clean Energy Choir Questions Stance of Maquett	Oct. 2, 2022
Courant	Pumpkin Recycling	Nov. 1, 2022
Avon Patch	Avon Program to take a look at Invasive Species	Feb. 24, 2023
Avon Patch	Avon Forum To Look Into Investing And The Environment	May 10, 2023
Valley Press / Press Release	Sustainable Investing	June 2, 2023
Avon Patch	Home Inspections For Energy Efficiency Stated in Avon	Aug. 8, 2023
Avon Patch	Alien Plant Species Walk	Aug. 22, 2023
Avon Patch	Join The Avon Clean Energy Commission Today	Sep. 8, 2023
FOX 61	What to do with rotting pumpkins after Halloween	Oct. 31, 2023
Avon Patch	Pumpkin Dumping Program To Start At Farmington Farm	Nov. 3, 2023
Avon Patch	Want To Make Avon More Green? Let Local Group Know	Nov. 2, 2023
WFSB CH. 3 / Press Release	Recycling your leftover Pumpkins	Nov. 8, 2023
Avon Patch	Volunteers Sought To Rid Avon Park Of Invasive Plants	Nov. 14, 2023
Avon Patch	Avon Library: 'New Year, New You' Programs To Start 2024	Dec. 29, 2023

Updated: Feb 21, 2024

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Appendix V – ACEC Communications Plan



Valley Press / Press Release	ACEC Hosts Community Conversation On Sustainable Landscaping	Feb. 16, 2024

