



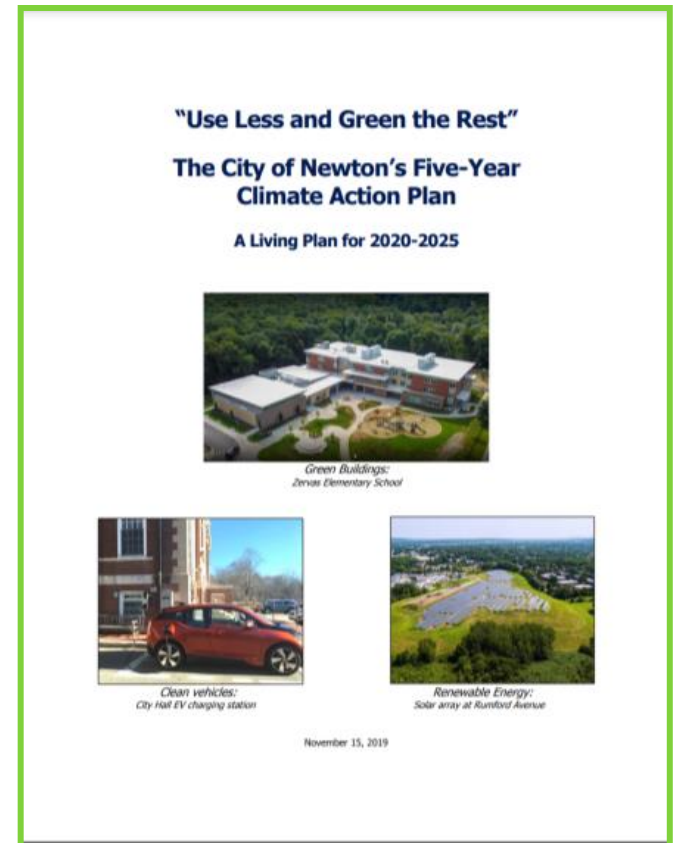
City of Newton's Climate Action Plan Annual Status Report

February 2021

Background

The City's 5-Year **Climate Action Plan (CAP)** outlines the steps the City will take from 2020-2025 to significantly reduce greenhouse gas emissions across the community and meet our goal of a carbon-neutral Newton by 2050.

- **Adopted December 2019**
- **Sets strategies, milestones, and metrics**
- **Has 60+ actions** over the following areas
 - A. Administration
 - B. Clean/Renewable Energy
 - C. Green Transportation
 - D. New Construction
 - E. Existing Buildings
 - F. Consumption & Disposal
- **Actions and metrics are added as we learn**



Top 10 Strategies

2020 was a year of laying foundations ... and dealing with COVID-related challenges. These are the strategies identified in the CAP.

1. Form City **implementation team**
2. Work with **NCCE** and other **partners**
3. Increase **green mobility** (biking, walking, shuttles, etc.)
4. Advocate for more **progressive building codes**
5. Update zoning to incentivize **high-efficiency performance**, such as Passive House and/or net-zero new construction
6. Increase the amount of electricity provided by New England renewable energy resources through **Newton Power Choice** and the **City's municipal energy contract**.
7. **"Green" municipal operations**
8. **Incentivize EV ownership** to achieve 10% goal
9. Encourage **electrification of heating and cooling**
10. **Engage residents and businesses** to reduce GHG emissions

The Team

Creating and implementing this vision is a **collaborative effort** of City staff, the Newton Citizens Commission on Energy, and many other invaluable partners.

► City

- Mayor's Office
- Schools
- Sustainability
- Planning
- Inspectional Services Dept. (ISD)
- Public Works
- Public Buildings
- Transportation
- Newton Citizens Commission on Energy (NCCE)

► Partners

- Building Standards Committee
- Green Newton
- HeatSmart Newton
- EV Task Force
- 350 Mass-Newton Node
- Communications Strategy Group
- Mothers Out Front
- Volunteer Citizen Advisors/Coaches
- Eversource & National Grid
- ... and so many more!



Actions Taken To-Date

A. Administration (Actions Taken)

- ▶ Formed **City team** which meets bi-weekly
- ▶ Work closely with **volunteer team** which meets regularly
- ▶ Organized **project-based working groups (City staff & partners)**
- ▶ Developed a master **tracking** spreadsheet
- ▶ Created and filled **City Energy Coach** position
- ▶ Secured **MOU w/ Utilities** & began implementation
- ▶ Partnered with **UMass/Mt. Ida's Living Lab** courses
- ▶ Created **City Sustainability website** linked to:
 - Green Newton & MassEnergize's **Take-Action website**
 - **Volunteer Energy Coach website**
 - **EV Taskforce website**



B. Clean Energy (Actions Taken)

- ▶ **Solar Phase 1 & 2 = 12 projects (*complete*)** →
- ▶ **Solar Phase 3 = 17 projects (*in progress**)** →
 - Roof Installations
 - **FD #3, Ed Center, Zervas, Cabot*, Carr*, Angier*, and Williams* Schools**
 - Carport Installations
 - **NNHS #1, NNHS #2, Newton Free Library*, Ed Center*, Pleasant Street Parking Lot*; Wheeler Road Parking Lot*; and Memorial-Spaulling*, Mason Rice*, Brown*, Oak Hill* Schools**

4.4
MkWh/yr

\$ 577 K
per year

3.7
MkWh/yr

\$ 167 K
per year

Total Municipal Solar Production (all phases) = 40% of annual municipal electricity use



8.0
MkWh/yr

\$ 740 K
per year

B. Clean Energy (Actions Taken, cont'd)

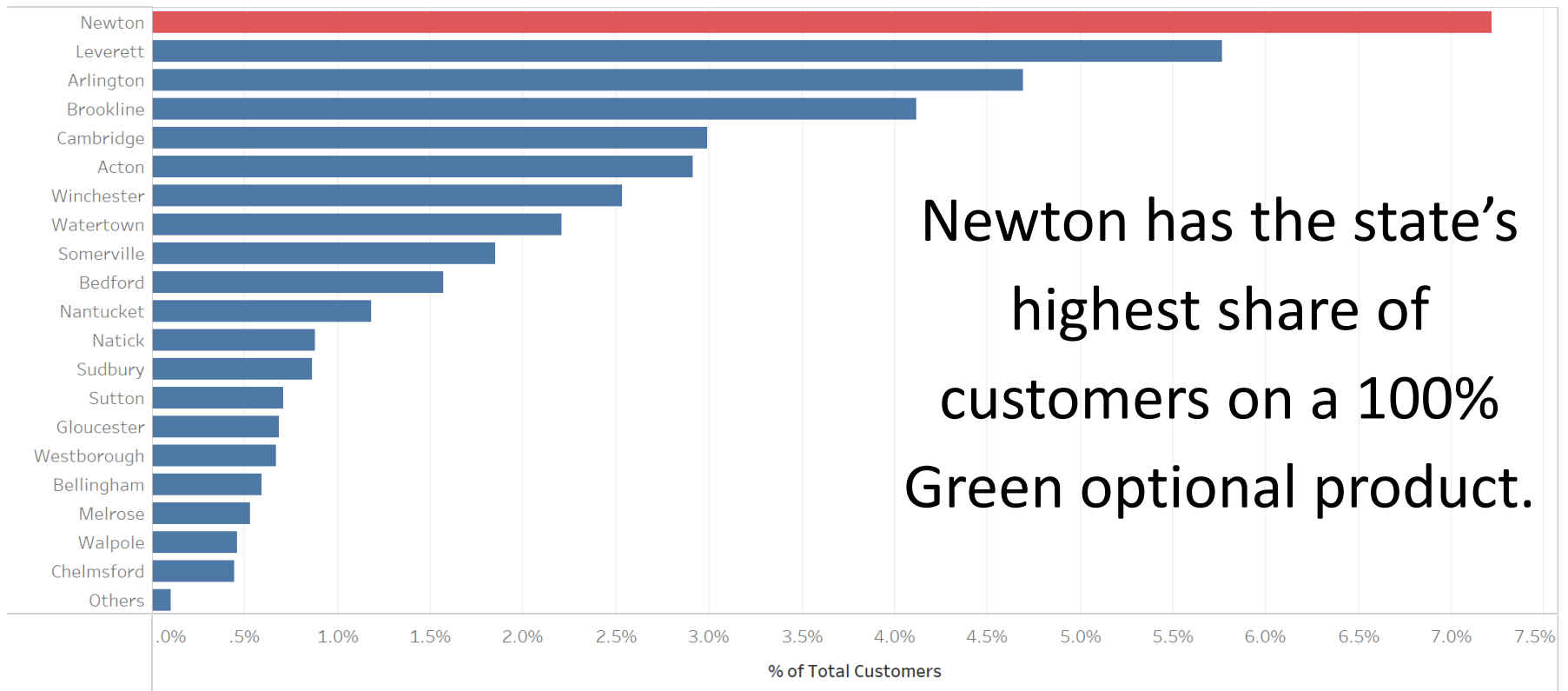
▶ Newton Power Choice

- Adopted **1st contract** with **62%** MA Class 1 RECS as default
 - 8 % (1,974 customers) opted to 100% under 1st contract
- Adopted **2nd contract** with **80%** MA Class 1 RECS as default, see graphic



B. Clean Energy (Actions Taken, cont'd)

100% Green customers



C. Green Transportation (Actions Taken)

▶ Bluebikes bikeshare and Park & Pedal stations

- Installed 8 Bluebikes bikeshare stations (2020)
- Installed 3 Park & Pedal electric bike rental stations – Albemarle Field, Forte Park, City Hall (2020)

▶ Bike Lanes

- Installed 4.3 miles of bike lane - NSHS, Walnut St., Comm. Ave Nahanton St., Braeland Ave., Washington St., (2019)
- Installed 0.4 miles of bike lane - Hagen Rd., Crafts St. (2020)

▶ Bike Racks

- Installed 28 racks in multiple village centers (2018)
- Installed 35 racks and 2 shelters installed at 19 schools and 3 village centers (2019)



C. Green Transportation (Actions Taken cont.)

▶ Electrifying the City Fleet

- Currently all non-emergency sedans are EVs (32 vehicles)

▶ EV charging stations

- Installed 7 chargers - War Memorial 5, NSHS, and Elliot Yard (2018)
- Installed 3 chargers - Richardson, 110 Crafts, and Lexington lots (2019)

▶ Electric car-share: GreenSpot public-private partnership

GreenSpot pays the City for space to provide cars and charging stations

- Operational: Richardson and Lexington
- Pending: Adams, Pearl, and Austin

▶ Private electric vehicles

- Newton (at 1.3%) is ahead of many other municipalities in EV ownership



D. New Construction (Actions Taken)

▶ City Zoning Ordinance Amendments

- Passed **Setbacks** (Ch. 30 §1.5)
 - Heat pump compressors, exterior insulation & vestibules may project
- Passed **Sustainable Development Design** (Ch. 30 §5.13)
 - Purpose: Increase renewable energy, electrification, EV chargers, and high-efficiency buildings; and minimize embedded carbon and waste in and from construction
 - Requires a green building rating system for new construction > 20K sf & major renovation
- Docketed **Special Permit Review** (Ch. 30 §7.3)
 - Grant of Permit, 5th criterion: “contribute significantly to the efficient use and conservation of natural resources and energy” (§7.3.3.C.5)
 - Site Plan Approval, criterion: “Significant contribution to the efficient use and conservation of natural resources and energy” (§7.4.5.B.8)



▶ Major Developments

- **Riverside** will meet LEED Neighborhood and be partly electrified and Passive House
- **Northland** will meet LEED Neighborhood standard and be partly electrified and Passive House
- **Riverdale** will meet LEED Residential standards and be partly electrified and Passive House
- **Dunstan East** (under appeal) will undertake a Passive House feasibility study

E. Existing Buildings (Actions Taken)

- ▶ **Support Residents/Contractors in Energy Performance Upgrades**
 - **City Energy Coach hired – Welcome Liora Silkes!**
 - Assist residents, contractors, and developers
 - **Energy Coach website** (*City and NCCE*)
 - Expert citizen coaches and City Energy Coach provide 1:1 advice
 - **HeatSmart Program**
 - 2 installers, webpage, marketing initiatives,
 - 36 contracts signed (~1/3 for “whole house” installations)
 - **Home Energy Rating System (HERS) rating in Assessor’s database and on map**
 - **City website**
 - Links to **City programs, MassEnergize Take Action webpage** (*Green Newton*) & **Energy Coach website** (*NCCE*)



E. Existing Buildings (Actions Taken)

- ▶ **Improve City Buildings** (*Public Buildings Dept.*)
 - Converted the **Auburndale Library** from oil/steam heating to an electric heat pump
 - Developed **heating transition plan for 687 Watertown St** (Horace Mann School) using electric heat pumps
 - Implemented “**Public Building Design & Construction Sustainability Guidelines**”
 - Converted to **LED lighting** at NSHS and DPW/Utilities Dept. building
 - Implemented **Solar Phases 1 and 2 (complete)**, and **Phase 3 (in progress)**

F. Consumption & Disposal (Actions Taken)

▶ Composting

- **Black Earth Compost** curbside collection program subscriptions rose from 1,200 to 2,000 households
- Launched **organics drop-off pilot** at Resource Recovery Center on Rumford Ave.



▶ Tree Planting

- Advertised a tree planting program in **Newton's Sister City, San Juan del Sur, Nicaragua** for cost-effective carbon sequestration

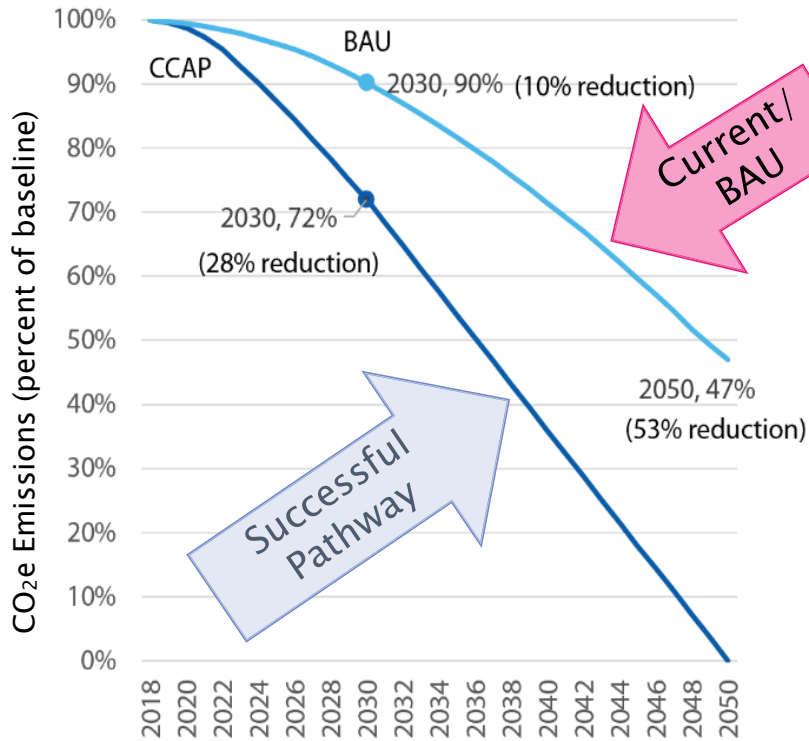


Outcomes

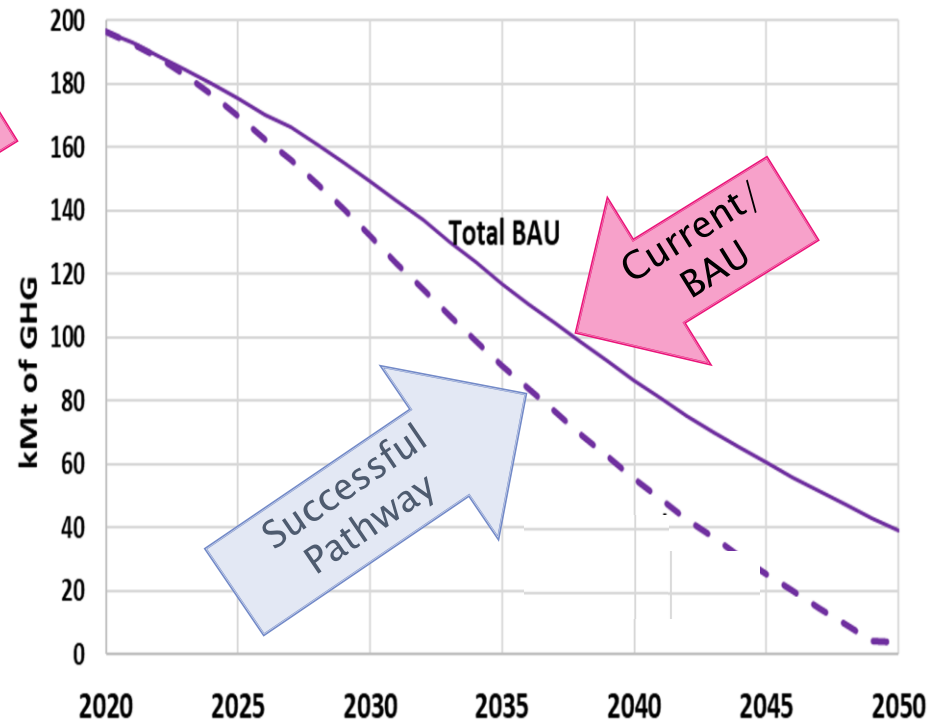
Pathways to Success: Dramatic Changes Needed

Graphic from the Citizens' Climate Action Plan

Residential Sector



Transportation Sector



Original Metrics from CAP

Metrics	2025 Milestones	2050 Goals
B. Clean Energy		
Percent renewables as Newton Power Choice base	100%	100%
Percent of residents opted up to 100% NPC match	15%	n.a.
C. Transportation		
Percent reduction in vehicle miles traveled	5%	20%
Percent of private cars in Newton that are electric	10%	100%
D. New Construction		
Percent of all-electric buildings	100%	100%
E. Existing Residential Buildings		
Number of home energy (re)assessments/year	4000	TBD
Number of insulation installations/year	800	all homes are insulated
Number of heat pump installations/year	450	all homes have heat pumps
Percent reduction in total energy consumption	3%	20%
Percent of all-electric buildings	5%	100%
F. Existing Commercial Buildings		
Percent reduction in total energy consumption	15%	50%

New Metrics Going Forward

Metric	Occurrences 2020	MOU 2021 Goal	2025 Milestone	2050 Goal
B. Clean energy				
1. Default or standard level of MA Class 1 RECs under NPC	80%	N/A	100%	100%
2. # of small-scale solar installations in Newton	177	No goal set	No goal set	No goal set
3. # of large-scale solar installations in Newton	29	No goal set	No goal set	No goal set
C. Transportation				
4. % (and #) of vehicles registered in Newton that are EVs	1.3% (913)	N/A	10%	100%
5. # of EV charging stations available to the public in Newton	102 ports, 16 loc	No goal set	No goal set	No goal set
6. # (and % reduction) of vehicle miles traveled	No data yet	N/A	5%	20%
D. New Construction and Major ("Gut") Renovations				
7. Average HERS rating in Newton (compare to requirement of 55)	50.4	N/A	No goal set	No goal set
8. % per year new housing units that are heat pump electric-heated	No data yet	N/A	100%	100%
9. % per year of commercial/retail buildings heated using all-electric	No data yet	N/A	100%	100%
10. # of Mass Save RNC* project participations (low rise 1-4 units)	No data yet	75	~100	No goal yet
11. # of Mass Save RNC* project participants (renovations/additions)	No data yet	15	~50	No goal yet
E. Existing Residential Buildings				
12. # of Mass Save energy assessments per year (2019 + 2020)	1964	2135	4000	TBD
13. # of insulation installations per year (2019 + 2020)	580	640	800	all homes
14. # of heat pump installations per year (through HeatSmart, 2020)	36	62	450	all homes
F. Existing Commercial Buildings				
15. # of Mass Save energy assessments	No data yet	175	225	N/A
16. # of Mass Save project implementations	No data yet	95	N/A	N/A

*RNC= Residential New Construction

New Metrics – Data Sources

Metric	Source of data
B. Clean energy	
1. Default or standard level of MA Class 1 RECs under NPC	Peregrine Energy Group
2. # of small-scale solar installations in Newton	Production Tracking System
3. # of large-scale solar installations in Newton	https://www.mass.gov/doc/smart-solar-tariff-generation-units
C. Transportation	
4. % (and #) of vehicles registered in Newton that are EVs	https://mor-ev.org/program-statistics and Assessing database
5. # of EV charging stations available to the public in Newton	Plugshare https://www.plugshare.com/
6. # (and % reduction) of vehicle miles traveled	https://datacommon.mapc.org/browser/datasets/330
D. New Construction and Major (“Gut”) Renovations	
7. Average HERS rating in Newton (compare to requirement of 55)	Assessor’s Database
8. % per year new housing units that are heat pump electric-heated	Special Permits and Building Permits
9. % per year of commercial/retail buildings heated using all-electric	Special Permits and Building Permits
10. # of Mass Save RNC* project participations (low rise 1-4 units)	Utility Quarterly Reports
11. # of Mass Save RNC* project participants (renovations/additions)	Utility Quarterly Reports
E. Existing Residential Buildings	
12. # of Mass Save energy assessments per year (2019 + 2020)	Utility Quarterly Reports
13. # of insulation installations per year (2019 + 2020)	Utility Quarterly Reports
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F. Existing Commercial Buildings	
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16. # of Mass Save project implementations	Utility Quarterly Reports

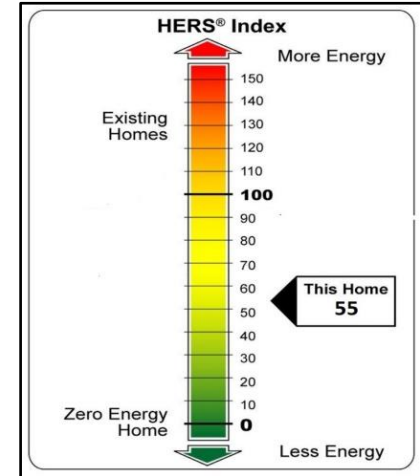


Next Steps: Priority Actions for 2021

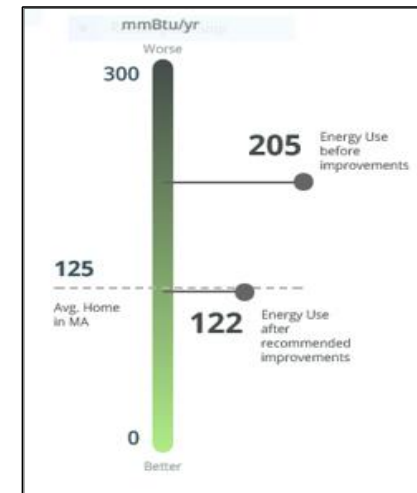
Priority Actions for 2021

► Existing Buildings (E): Heat Pumps & Insulation

- Conduct **targeted marketing** (*Energy Coach with grassroots organizations, realtors, and utilities*)
- Facilitate **training of contractors** in heat pumps and energy saving (*Energy Coach through Utilities MOU*)
- Investigate **regulatory policies regarding efficiency retrofits** (*NCCE and Sustainability*) e.g.:
 - Requiring contractors to include energy saving options in their proposals
 - Requiring (and posting) a Scorecard for home renovations above a yet-to-be-determined size
- Implement the **UMass/Mt Ida's Living Lab course** (*City Team with UMass/Mt. Ida and Jumbo Capital*)



HERS Index used by construction industry



Scorecard developed by MA Dept of Energy Resources (DOER)

Priority Actions for 2021 (continued)

▶ New Construction/Major Renovations (D)

- Promote **building electrification**
 - Consider regulatory means to require electrification (*State Leg. & City Council*)
 - Educate regarding electrification during design and review (*Energy Coach and Planning Dept., DRTs*)
- Promote **building efficiency**
 - Update Zoning Ordinance to increase energy efficient and electrified construction and appropriately dense village centers (*City Council*)
 - Develop a sustainability special permit criterion for residential buildings (*City Council*)
 - Streamline HERS data management using new system (*ISD*)
 - Continue to promote Passive House and electrification in large developments (*Building Standards Committee and City Council*)
 - Continue advocacy for Net Zero Stretch Code (*Mayor, City Council*)

Priority Actions for 2021 (continued)

▶ Green Transportation (C)

- **Install more EV chargers** in public locations (*Public Buildings and DPW*)
 - 3 at public parking lots (Adams Lot = 1, Pearl Lot = 1, Austin Lot = 1)
 - 8 at public buildings (NNHS = 4, Library = 4)
 - 14 at the municipal solar canopies
- **Advance 7.9 miles of bike lanes** (*Planning and DPW*)
 - Beacon Street, Parker Street
 - Protected: West Newton Square, Needham Street, Hammond Pond Parkway, Washington Street, Carriageway
- Develop a plan to **promote adoption of EVs** (*grassroots organizations*)
- **Purchase 3 PHEV SUVs & 1 PHEV sedan** for City use (*DPW*)

Priority Actions for 2021 (continued)

► Administrative (A)

- Activate **Implementation Strategy Group**, take advantage of talent
- Initiate **Energy Coach communications**, e.g., e-mails, DRTs (*Energy Coach*)
- **Advocate** for state climate/energy legislation and building codes (*Sust.*)
- Strengthen City **messaging**, e.g., “Climate in Everything” (*Sustainability*)
- Develop a plan to include **equity** in the City’s energy programs (*Sust.*)
- Update **GHG inventory** and analysis (*NCCE*)
- Work with Utilities to develop **data sharing** protocols (*Sustainability*)
- Develop an integrated system for effective data gathering and **metrics tracking** (*Sustainability*)

Priority Actions for 2021 (continued)

▶ Clean Energy (B)

- Celebrate **City's electricity supply** increasing its share of “100% Massachusetts Class 1 Renewables” from 5% to 10% (*everyone*)
- Discuss **City's next electricity contract** and the most effective use of City funds (*Mayor's Office, Sustainability*)
- Finish **Solar Phase 3** (*Sustainability, Public Buildings*)
- Oversee **Newton Power Choice 2nd contract** at 80% green energy default (*Sustainability*)



Use Less, Green the Rest: Accomplishments, Challenges, and Opportunities

Thank you, City Council.

We look forward to working closely with you to achieve the goals of the CAP!

