

Hingham Climate Action Planning Committee

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# **CAPC** Presentation to Hingham Net Zero

May 17, 2022

# Agenda



- CAPC Overview and History
- Energyzt (Climate Consultants)
- Climate Action Plans
- Workplan
- Public Outreach & Engagement
- Greenhouse Gas Inventory Tools
- Plan Consideration Example: Home Heating

# **CAPC Overview**



### • Members

- Energy Action Committee Representative: Brad E. Moyer, Chair
- Cleaner Greener Hingham Representative: Maria Zade
- School Committee Representative: TBD (formerly Carlos DaSilva)
- Hingham Municipal Lighting Plant Representative: Thomas Morahan
- Planning Board Representative: Gary Tondorf-Dick
- Conservation Commission Representative: Bob Hidell
- Development & Industrial Commission Representative: Nancy Wiley
- Select Board Appointees: Kathy Reardon and Elliott Place
- Moderator Appointees: Beth Porter and TBD

## Working Groups

Name	Purpose
Hingham Greenhouse Gas Reduction Initiatives	To investigate and compile actions taken by Town Administration and Town
Working Group	committees focused on sustainability and greenhouse gas reduction efforts
Energy Infrastructure Working Group	To research demand and capacity issues related to Hingham's energy infrastructure
	and transitioning to an all-electrical power source
Hingham Community Engagement Working Group	To engage with concerned citizens groups, both for informing the CAPC as to desires
	of the Town's citizens and to help report out the CAPC's activities and
	recommendations
Regional Engagement Working Group	To engage with regional municipal and citizen groups to share ideas and
	opportunities for pursuing net zero GHG emissions, including the hiring of a
	sustainability director
Residential Net Zero Working Group	To investigate how to improve energy efficiency and transition residential fossil fuel
	reliance onto electrical and/or renewable energy sources
Grant Research Opportunities & Incentives Working	To research and recommend pursuit of grant and incentive opportunities available
Group	for the Town and its residents

### https://www.hingham-ma.gov/917/Climate-Action-Planning-Committee

# **Brief History**



- CAPC formed August 2021 when all appointments completed
- Initial meeting September 22, 2021
  - Primary task was to select a consultant, which necessitated creation of a Request for Proposal (RFP) and selection process
- Oct Jan 2021
  - Creation and submission of RFP
  - Advocated for Sustainability Director (Coordinator)
- Feb March 2022
  - Evaluated and selected consultant (Energyzt Advisors LLC)
  - Obtained approval from Select Board to contract with Energyzt
- April 2022: Climate planning efforts fully underway



# Introductions About Energyzt

Founded in 2013, Energyzt is a limited liability corporation registered in Massachusetts and is a privately-held 100 percent woman-owned business. Since its inception, Energyzt was designed as a 21<sup>st</sup> century consulting company, with virtual offices located at the choice of each consultant, all of whom come together as needed to create the optimal team for the client's needs.







#### GLOBAL TEAM OF ENERGY EXPERTS

Energyzt is a global collaboration of energy experts who create value for our clients through actionable insights. Combining deep industry expertise with state-of-the-art analytical capabilities, we help governments, policy-makers, and companies make informed business decisions that create competitive advantage.

#### MULTIDISCIPLINED AREAS OF EXPERTISE

Energyzt consists of a core team of energy experts representing the power sector, transmission, natural gas industry, coal markets, environmental policy, and finance, along with an overseas team that offers operational research, software programming and modeling support.

#### APPLIED EXPERIENCE

Members of the Energyzt team have long-standing history working in industry, economic consulting firms, management consulting firms, private equity, research companies, engineering companies and government. The combination of industry expertise, market experience, and advanced analytics brings a unique set of market insights that are supported by facts and defensible in a court of law or regulatory hearing.

#### Energyzt is a local energy advisory firm bringing world-class expertise to Hingham



# Introductions Organization chart of Energyzt project team

# **Energyzt Project Organization Chart**



#### The Project Team is organized around key deliverables



### Introductions Tanya Bodell



MBA, Massachusetts Institute of Technology

MPP, University of Chicago

BA Mathematical Economics, Pomona College

## **Energyzt Project Team**

#### Tanya Bodell, Executive Director

For more than 25 years, Ms. Bodell has provided business advice and expert support to clients in the energy industry. Using economics, finance, business decisions analysis and a deep understanding of public policy impacts, she advises existing and new entrants looking to invest in the energy sector, informing their decisions on corporate strategy, investment opportunities, market conditions, asset valuation, mergers/acquisitions, restructuring, regulatory outreach and market analysis. Her clients range from government to energy industry participants. She has been a regular speaker and writer on industry topics and serves as the Chair of the Cohasset Alternative Energy Committee and recently completed a two-year term as the President of the Northeast Energy Commerce Association.

**Connection to Hingham:** Applying her college volleyball skills, she coached Hingham Girls Volleyball for two years while her youngest daughter was in Middle School. Her mother-in-law currently lives in the Shipyard and her family frequents Hingham restaurants and stores frequently. She often races her International 210 in Hingham Harbor and is Vice President of the Eastern Chapter of the 210 Association.

#### Tanya will be the Officer-in-Charge



# Introductions Virginia LeClair



BA Public Policy (Environmental Studies), Hobart and William Smith Colleges, Geneva, NY

## **Energyzt Project Team**

#### Virginia LeClair, Director

Virginia LeClair (Ginny) has over 18 years of experience in sustainable planning, energy efficiency, land use management, conservation, sustainable and equitable trasnprotation and renewable energy. Her work focuses on community climate action and resiliency planning with the goal of advancing equitable solutions for clean energy, mobility and resiliency within communities. Prior to joining Energyzt, Virginia served as the Environmental Coordinator for the Town of Dedham from 2007-2020 where she was responsible for the environmental programs, grant funding and creation of the Sustainable Dedham Climate Action and Resiliency Plan. Prior to Dedham, Virginia was the Conservation Assistant for the Town of Brookline, where she benchmarked greenhouse gas emissions and assisted the Town in drafting their award-winning Open Space Plan.

**Connection to Hingham:** Virginia used to live in Hingham and her husband's family still lives there. She served on the board of the Hingham Energy Action Committee from 2010-2013.

#### Virginia will serve as the Project Manager, responsible for day-to-day operations



# Introductions John Malloy Jr.



BA Finance, Peter T. Paul College of Business and Economics, University of New Hampshire

Hingham High School

# **Energyzt Project Team**

#### John Malloy, Senior Associate

John has been a consultant with Energyzt for four years. During this time he has performed a number of advanced quantitative analyses using publiclyavailable industry data including ISO-NE market data, hourly load data, hourly locational marginal prices, and EIA projections. He has generated price projections using PLEXOS and integrated Energyzt's PLEXOS model with GPCM, a national gas market model, analyzed the output data, modified the input data and summarized the conclusions in clear presentations. John has played a key role compiling and analyzing data for a number of Energyzt projects, including cost/benefit analyses of renewable energy projects.

**Connection to Hingham:** John spent his formative years growing up in Hingham and attended Hingham High School where he was the founder and president of the Hingham High School Fishing Club, and a member of the Hingham High School golf, baseball, and track and field teams. John now lives in South Boston, but visits his family home in Hingham often where his parents live.

John will be primarily responsible for the GHG Inventory and cost-benefit analyses



Hingham Climate Action Plan: An Introduction

# **CLIMATE ACTION PLANS**



# Climate Action Plans Climate Action Plans generally consist of primary categories



Gas Leaks

Addressing these categories will help the Hingham meet its climate action goals



# Links to Climate Action Plans Climate Action Plans from 25 Massachusetts towns are listed below

## Links to Climate Actions Plans for MA Towns

Town	Link to CAP	Town	Link to CAP
Amherst	https://www.pvpc.org/sites/default/files/Amherst%20Climate%20Plan%202 005_0.pdf	Medford	https://www.medfordma.org/wp- content/uploads/2012/12/FINAL_LAP.pdf
Arlington	https://www.arlingtonma.gov/home/showpublisheddocument/55139/6375 07913474030000	New Bedford	https://nbresilient.com/home
Belmont	https://www.wearestillin.com/sites/default/files/sustainability-plan/cap.pdf	Newton	https://www.newtonma.gov/government/climate-and- sustainability/climate-action-plan
Beverly & Salem	https://kladashboard-clientsourcefiles.s3.amazonaws.com/Beverly- Salem/Resilient+Together+Climate+Action+Plan+Final.pdf	Northampton	https://northamptonma.gov/DocumentCenter/View/16237/Northampto n-ResilienceRegeneration-Plan-as-adopted-2112021?bidId=
Boston	https://www.boston.gov/departments/environment/boston-climate-action	Pioneer Valley	https://www.adaptationclearinghouse.org/resources/pioneer-valley- massachusetts-climate-action-and-clean-energy-plan.html
Brookline	https://www.brooklinema.gov/702/Climate-Action-Plan	Reading	https://www.readingma.gov/sites/g/files/vyhlif1116/f/file/file/reading massachusetts_climate_action_plan.pdf
Cambridge	https://www.cambridgema.gov/CDD/climateandenergy/climatechangeplan ning/climateactionplan	Scituate	https://www.scituatema.gov/sites/g/files/vyhlif3781/f/pages/final.scitua te_climatevulnerabilityandactionplan_mapc_3.7.18_0.pdf
Cape Cod	https://www.capecodcommission.org/resource- library/file/?url=/dept/commission/team/climate/Shared%20Documents/Cli mate%20Action%20Plan/Cape-Cod-Climate-Action-Plan.odf	Somerville	https://www.somervillema.gov/departments/programs/somerville- climate-forward
Concord	https://concordma.gov/DocumentCenter/View/25318/Sustainable-Concord- Climate-Action-and-Resilience-Plan-2020?bidId=	Springfield	https://www.springfield- ma.gov/planning/fileadmin/community_dev/DR/CARP_FINAL_REV_2017 .pdf
Dedham	https://www.dedham- ma.gov/home/showpublisheddocument/13758/637320572656730000	Westborough	https://www.town.westborough.ma.us/sites/g/files/vyhlif5176/f/upload s/westborough_2021_climate_action_plan_draft_03-02-2021.pdf
Falmouth	https://www.falmouthma.gov/DocumentCenter/View/1691/Climate- Protection-Action-Plan-PDF	Weston	https://www.weston.org/DocumentCenter/View/29111/Climate-Action- and-Resilience-PlanWeston-Ahead-PDF?bidId=
Ipswich	https://www.ipswichma.gov/DocumentCenter/View/474/Climate-Action- Plan-PDF	Winchester	https://www.winchester.us/DocumentCenter/View/4632/Climate- Action-Plan-Executive-Summary
Just Energy / J	UST EXPERTS	Worcester	https://www.worcesterenergy.org/uploads/47/27/472786b8f49ef214aec d6bb94bf4d7dd/cap-final-report_2007.pdf



Hingham Climate Action Plan: An Introduction

# **PROJECT WORKPLAN**



# Project Workplan The appropriate approach requires an iterative process



The process requires feedback from stakeholder participation and adjustments



# **Project Timeline**

	M	ARCH	A	PRIL	M/	Y	J	UNE		JULY		AUGUS	ST	SEPTE	MBER		OBER		VEMBE	RD	ECEME	BER	JAN	UARY	FE	BRUA	RY	M	ARCH
	07 1	4 21 28	3 04 1	1 18 25	02 09	16 23	30 06	13 20 3	27 04	11 18 2	25 01 (	08 15 2	22 29	05 12	19 26	03 10	0 17 2	24 31	07 14	21 28	05 12	19 26	02 09	9 16 23	3 30	06 13	20 2	7 06	13 20 27
Hingham Community Climate Actio	n		1 1																										
Hingham	•									Key	/ Da	tes:																	
Establish Preliminary Goals															202	<b>a</b> . c.								- 6 - 1					
Compile Team										•	26	epten	npei	r 30,	202		ITTICI	enti	y dev	elop	the	cont	ours	orti	ne p	Jian			
Conduct Interviews												0	Det	ermi	ne if	any	acti	ion i	s requ	uired	by T	owr	Me	eting	5				
Create Survey												0	Pre	pare	acti	ons f	or a	vot	e by 1	Towr	n Mee	eting	g in S	prin	g 2(	)23			
Plan 1st public meeting																			-			-			-				
Benchmark Municipal GHG											<b>–</b>		har	21 .			m	o+o /	draft	of th			. A c+	ion r	مماد				
Discuss joining GCOM										•	U	ecem	iber	51, 4	2022	.: 0	mpi	ete	lidit	or th	e Cili	nate	ACL	ION F	'Idli				
Get Community Data																													
Benchmark Community GHG										•	M	larch	31,	2023	<b>3:</b> Fir	nal d	raft	of tl	ne Cli	mate	e Acti	on P	lan	read	v fo	r vo	te fo	or	
Hold 1st Public Meeting											20	Ionti	on h	v tha		wn									,				
Meeting Re-Cap with CAPC												Jopti		y the															
Develop Alternative Approaches																													
Draft Plan																													
Present draft of contours															-														
Plan 2nd Public Meeting																-													
Evaluate Alteranatives																													
Present Contours of Plan																													
Revise Draft																		•											
Second Public Meeting																													
Revise Draft																													
Create StoryMap																													
Complete draft and story map																						•							
Present Draft and Story Map																													
Revise Draft																													
Complete final draft of Plan																													
Final Presentation of Plan																													



# Project Workplan The final deliverable is a Climate Action Plan



Hingham's plan will be a Hingham document



Hingham Climate Action Plan

# **PUBLIC OUTREACH & ENGAGEMENT**



Communicate and engage

transparency and equity

through public avenues with

# Public Outreach There are three critical targets for communication and outreach

Identify and understand position of enablers (developers, landlords, citizen groups) and divergent points of view

Public Relations

Enablers/<br/>DivergersCommunity<br/>Leaders

Solicit feedback from leaders who can identify challenges/ opportunities and influence public opinion

Each plays an important role in community engagement and input into the process



# Outreach Plan Schedule Outreach is an ongoing process throughout the Climate Action Plan

Event	APR	MAY	JUN	JUL	AUG	SEP	ОСТ	NOV	DEC	JAN	FEB	MAR
Webpage for CAPC												
Establish link on Hingham homepage												
Coordinate with staff point person												
Post materials												
Community Survey												
Draft Survey / Working Group Review												
Approval by CAPC												
Insert into HMLP Bills												
Email to Town list serves/social media												
Hard copy in Town Hall												
Stakeholder Interviews				l								
Finalize list with Working Groups												
Approval by CAPC as part of Plan												
Finalize questions												
Assignment to Working Group members												
Outreach												
Interviews												
Summarize and present findings												
Community Events												
Public Meetings												
CAPC Meetings (1-2 per month)				Į	1	Į	Į	Į	Į	Į		Į
Select Board Meetings (quarterly)												
Initial meeting to identify concerns												
Present Outlines of Plan												
Present Draft Plan												
Present Final Plan												
Presentation at Town Meeting												

Key deliverables occur when content is developed and ready for presentation



Hingham Climate Action Plan

# **GHG INVENTORY TOOLS**



- Understand Hingham's energy use and greenhouse gas emissions as a whole including the relative impact of municipal, residential, commercial, and industrial sectors
- Benchmark residential, commercial and industrial sectors using data that is available at the municipal level from typical sources (e.g., utilities, census data, labor statistics, and transportation)
- Measure and compare energy usage and associated carbon to internal or external benchmarks (e.g., similar buildings, past consumption, or a reference performance level)
- Convert information into knowledge and action to establish target goals and actions to reduce energy and associated greenhouse gas emissions

A GHG inventory is the alpha and omega of a Climate Action Plan



# **GHG Inventory Tools** There are multiple tools that can be used to track GHG emissions



https://www.cdp.net/en/



Local Governments for Sustainability

ClearPath - (icleiusa.org)



https://www.massenergyinsight.net/home



Community GHG Inventory Resources - MAPC



https://www.epa.gov/ statelocalenergy/local -greenhouse-gasinventory-tool



**GLOBAL COVENANT** of MAYORS for **CLIMATE & ENERGY** 



**Recommended tool is CDP** 



### GHG Inventory Tools CDP (formerly the Carbon Disclosure Project)

 CDP (formerly the Carbon Disclosure Project) is an international non-profit that runs the leading global disclosure system for investors, companies, cities, states and regions to manage their environmental impacts



- Leading reporting software over the past 20 years questionnaire-pased approach that standardizes the information required
- Provide standardized, comparable system to track not only emissions from quantitative perspective, but full spectrum of climate management tools
- Aims to make environmental reporting easy and combined with ICLEI to do so
- Free and voluntary, cities can disclose publicly or privately
- Tools and guidance are available through workshops, webinars and documentation
- Participation includes a score and comprehensive feedback on local government's climate action efforts, along with a showcase of a town's plans, projects, and successes versus other towns

https://www.cdp.net/en/





# Home Heating Over half of Hingham properties have hot water heating systems





Source: Energyzt analysis of Hingham data, MapsOnline Site - Hingham, MA - SimpliCITY Mapping by PeopleGIS

Most heating systems rely on fossil fuels and limit achievement of net zero goals

ENERGYZT

Home Heating Oil and gas are the primary fuel source for over 90% of homes

# HINGHAM Summary of Heating Fuels by Property Size (2021)



Source: Energyzt analysis of Hingham data, MapsOnline Site - Hingham, MA - SimpliCITY Mapping by PeopleGIS

More properties use oil for heating but larger properties tend to rely on gas

ENERGYZT



Home Heating Heating fuel source vary by property types

In order to provide more insights into heating trends, the properties were broken down into three types



Focusing on patterns can identify potential pathways forward





depending on the property type

**Heating Type** 

ENERGYZT

**Heating Types for Commercial & Industrial Properties** 

# Home Heating A majority of homes use oil; businesses tend to use natural gas



ENERGYZT

# **Home Heating** Heating type varies by location due to proximity to gas lines

# **Heating Types**

# **Heating Fuels**

ENERGYZT



**Heating Fuels by Section of Town** 

Section	1	2	3
# of Properties	3,386	2,958	2,251

Note: Due to limitations in "sectioning" there is a handful of properties overlapping sections Source: Energyzt analysis of Hingham data, MapsOnline Site - Hingham, MA - SimpliCITY Mapping by PeopleGIS

There may be a logical way to phase in electrification by section and/or fuel type



# Home Heating There are a number of factors to consider

- Hingham is predominantly fossil fuel heating
- Conversion to electricity could be done strategically
  - Focus on home heating oil first biggest reduction in carbon emissions
  - Will be geographically clustered, which could create economies of scale
- Opportunities to increase savings for residents
  - Solar Plus programs sponsored by the state (currently in hiatus)
  - HMLP can play a significant role in incentives and to act as a trusted advisor
  - Potential for economies of scale through aggregation
- Regional synergies may be available
  - Hingham may increase savings through regional collaboration
  - Cohasset, Scituate and Norwell are considering a "Go-Electric" program
- Sustainability Director could focus on implementation