

# BEACON CLIMATE INOVATIONS



**Greentown** Labs Member

# Challenges to Developing Clean, Local, Equitable, Accessible & Resilient (CLEAR) Energy Solutions



"Today's energy challenges require <u>local solutions</u>" – *Lorenzo Kristof* 

But the challenges to developing <u>local energy solutions</u> are numerous ..

- Siloed governance/operations
- Risk adverse mindsets
- Byzantine bureaucracy and procurement practices.
- Lack of community-wide awareness.
- Incumbent resistance
- Insufficient bandwidth to address climate threats or accommodate energy opportunities.
- Vast gaps of useful information and analytics
- Labyrinth of state, federal, non-profit programs
- Hornets nest of technologies/providers/service
- Un-aligned prioritization from one community to the next

# TRUST & RESOURCES



### Our Approach to These Challenges...

- Meeting the communities where they are
- Community engagement
- Community awareness
- Community agency
- Community opportunity
- Incremental steps attuned to community needs
- Partnerships
- Identify a starting project that serves to coalesce entities, build trust and create a viable gateway to broader DER deployment



#### Some Definition of Terms

- Distributed Energy Resource (DER)
- Energyshed
- Clean Energy Community Resilience Hub (CCRH)
- Energy Village eVillage
- Community Based Organization CBO







CCRH create the potential for a climate focused workforce - creating local jobs to build and maintain the hub. Workforce development programs can generate real RFPs & Bids.

#### CLEAN TECH COMPANIES

An exciting market for clean-tech companies and startups to introduce communities and municipalities to their technology and pilot programs to test their products.



#### COMMUNITY GATHERING

A place to create a greater sense of community within a neighborhood When not being used in an emergency, the hub is a community center available for classes, events, parties, and whatever the residents need.

#### CLIMATE

Reducing carbon footprint by using cutting edge clean technologies that power, heat, and cool the hub using renewable and environmentally friendly practices

#### CLEAN ENERGY COMMUNITY RESILIENCE HUBS

#### ENVIRONMENTAL EDUCATION

A place to learn about the effects of Climate Change, and what steps are being taken to combat it. The hub is a direct and breathing example of a community climate resilient approach.

#### EMERGENCY RESILIENCE

During extreme weather emergencies, the hub can provide power/heat/cooling to the local residents and serve as a safe meeting point thanks to it's energy storage capabilities

#### COMMUNITY INPUT

Rather than feeling left behind, CCRHs focus on community involvement both taking in input into the design process and having a community board dedicated to helping run the hub.

#### GREENING THE HUB

A new framework for implementing climate friendly practices throughout neighborhoods - starting with one central hub that uses district energy practices to power, heat, cool the surrounding neighborhood

# CCRH - Technologies - Thomas Grant



#### **Primary Objectives**

- Exploring Resiliency & Opportunities for CCRH
- Create Framework for Categorizing & Research Clean-Technologies as they relate to Resilience Hubs
- Developing a list of climate-tech companies that could provide useful products for partnerships in CCHRs
- Outreach to targeted climate-tech companies to explore:
  - Relationships
  - Opportunities & Barriers for them to enter Municiple Market with CCRH Model
  - (In Conjunction w/ Kyle) Workforce opportunities for tech-company with a trade workforce pipeline anchored by the CCRH

#### Findings to date

- Greening the Hub as a Market Strategy
- Create Contain Connect
- Framework for identifying relevance of tech company based on criteria (Proximity, Commercialization, Community Focus, Applicability...)
- Started Outreach & Communcation with tech-companies



Greentown -	Mass Area 🔻	Commercialize(~	Mission Connection	CCRH Focus	Applicability ~	Ranking 🗸
0	1	3	2	1	3	10
1	1	3	2	0	3	10
1	1	3	1	0	3	9
1	1	3	1	0	3	9
1	1	3	1	0	3	9
1	1	2	2	0	3	9
1	1	1	3	0	2	8
0	1	3	1	0	3	8
1	1	3	1	0	2	8
1	1	3	1	0	2	8

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# CCRH - Workforce - Kyle Hammond

#### **Primary Research**

- What current opportunities (in MA) exist for individuals to be trained in the necessary trades for CCRHs?
- Barriers for MWBE's

What is the solution? - ALIGN

#### Findings to Date

- Schools & Trades DTBSE
- Unobtainable bids and RFPS
- Disorganization

Prospective Partners – Tech, CBO's, Startups, Nonprofits, Greentown

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#### CCRH --> Workforce - Technology Database



c	on	nmunity Cer	nter and Cle	ean Energy C	ommunity Re	esilience H	ub Work Breakd	low	n Structure
2.0		•							
Facility	~	Category3	× 400 ×	Systems	Category4	× 500 ×	Infrastructure	×	Category5
Carpentry		Trade	401	HVAC	Trade	501	Electrical		Trade
Fine Carpenti	ry	Trade	402	PV Installer	Trade	502	Gas		Trade
Plumbing		Trade	403			503	Water		Trade
Roofer		Trade	404			504	Sewer		Trade
			405			505	Broadband		Trade
			406			506			
			407			507			

Ex. Breakdown of diverse job creation from resilience hubs

Syst	em & Tech	Trade Profession	<b>Y</b>				
Systems	Technologies	Job	Gester Lawren	acetod seemon short shore leave	Madison Park Jackhical Jackhical Joedina School	Greater Lawell Wordstond	ue fills Regional School
Electrical		Roof installation	Υ	Υ		Y Y	
Electrical		Sizing/Design	Υ	Υ		Y	
Electrical	≥	Electrician	Υ	Υ		Y	
Electrical	_	Financing/Paperwork	Υ	Υ		Y Y	
Electrical		Permitting	Y	Υ		Y	
	t)		Y	Υ		Y	
Electrical	lan lan	Installers	Y	Υ		Y	
Electrical	ē	Insfastructure Designers	Y	Υ		Υ	
lectrical	Pow	Safety and Compliance	Y	Υ		Y	
lectrical	tual	Electrical Engineer	Y	Υ		Υ Υ	
	Ä	Renewable Energy Specialists	Y	Υ		Y	
lectrical							
lectrical	grids & Virtual Power Plants	Energy Storage Technicians	Y	Υ		Υ	

#### Technology – Skill – School – Potential Job



Individual Worker

Tech Company Looking to Hire – Schools to Look to

Tech Company





#### CCRH - Communities - Claire Ferris

#### **Primary Objectives**

- Create framework for identifying municipalities most in need of resilience hubs
- Create scalable, replicable resilience database for MA, NC to inform framework/BCI expansion strategy
  - Manual data scraping, template of database, report
- Support Taunton resilience hub project: community engagement, building relationships with CBOs
- Outreach to 5+ potential future sites (municipalities in MA) for resilience hubs
  - · Initial conversations on community, climate resilience

#### Findings to date

- Post-conversation with Holyoke: framework is accurate/reliable
- Sustainability "person" as starting contact --> local CBOs
- Finding balance between BCI's resilience hub model and locally tailored community solutions

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#### **FRAMEWORK**

Tier I: DAC tier 2 or 3, MBE > 10%, WBE > 15%, EJ population > 45%

Tier 2: DAC tier I, representative town meeting

Tier 3: Rural tier 1 or 2, MBE S, WBE S, EJ population > 30%

Tier 4: Local CDBG/budget > 7%, state CDBG/budget > 1.25%, city governance

Tier 5: (baseline) EJ community status (Y), population > 5000, poverty > 7.5%, per capita income < \$45,000







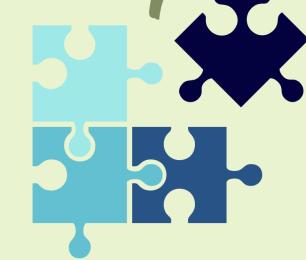
Opportunities to apply newfound skills, build real projects and establish strong reputation for new and pivoting MWBE Businesses

COMMUNITY CLEAN
ENERGY RESILIENCE HUBS
(CCERH)
&
GREEN TECH OTHER

**DEVELOPERS** 

TECHNOLOGIES

TRAINING & MENTORING



1- Engage 2 - Assess

3 - Upskilling

4 - Contracts

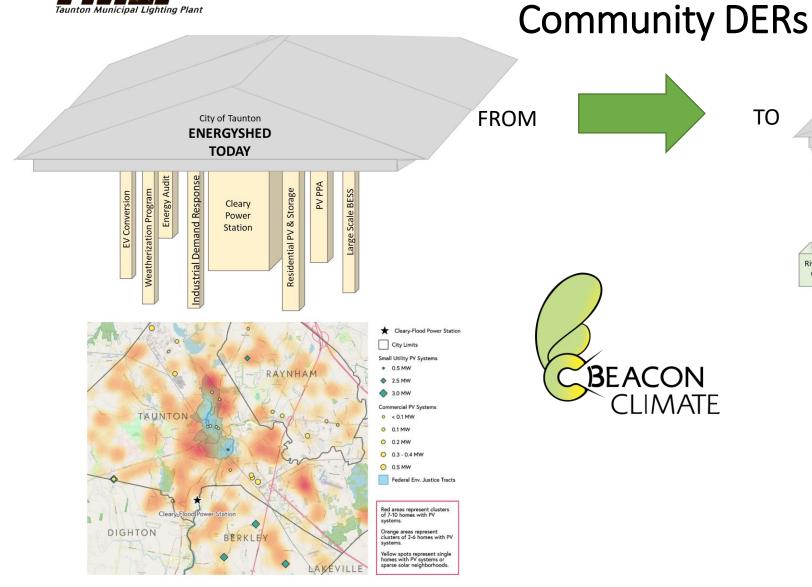
5 - Bids

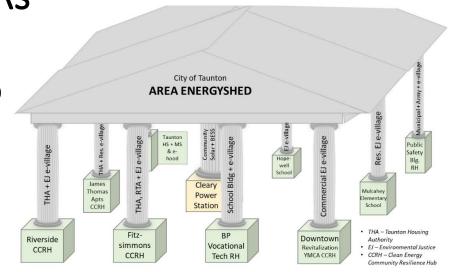
6 - Analyze

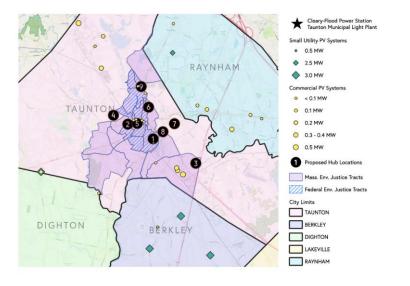
Taunton Municipal Lighting Plant

The T-CRED Vision: A Resilient Energyshed Built from

BEACON

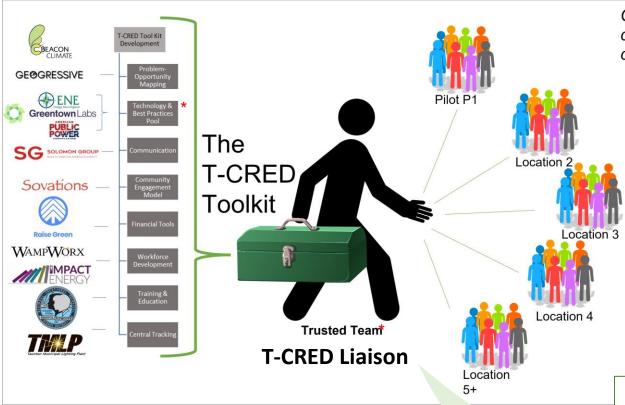






**OPPORTUNISTIC** 

INTENTIONAL



Collaborating on a cleaner, more resilient community energ

#### Community

- √ Savings
- ✓ Income
- √ Resilience
- ✓ Economic Activity
- ✓ GHG Reduction Municipality (TMLP)
- ✓ Generation
- √ % Full Energyshed
- ✓ Peak Load Reduction
- ✓ GHG Reduction

#### Using the **T-CRED Toolkit** Through the T-CRED **Liaison** Program

BEACON

\*The Trusted Team





Re-imagining A Local Utility's Relationship with Its Community

Taunton Community Resilient Energyshed ELIMATE Development (T-CRED) Project

AN INNOVATIVE APPROACH TO BUILDING A FULL AREA "ENERGYSHED" THROUGH LOCAL DEVELOPMENT OF INTEGRATED EQUITABLE CLEAN ENERGY COMMUNITY RESILIENCE HUBS (CCRHs) AND DISTRIBUTED ENERGY RESOURCES (DERs) IN ENERGY VILLAGES ("E-VILLAGES")





Community

Resource Ptrs Local Expert



































































Tom Worthington





Eva Henault





















# Questions?

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