



# C2C: Clean Energy to Communities

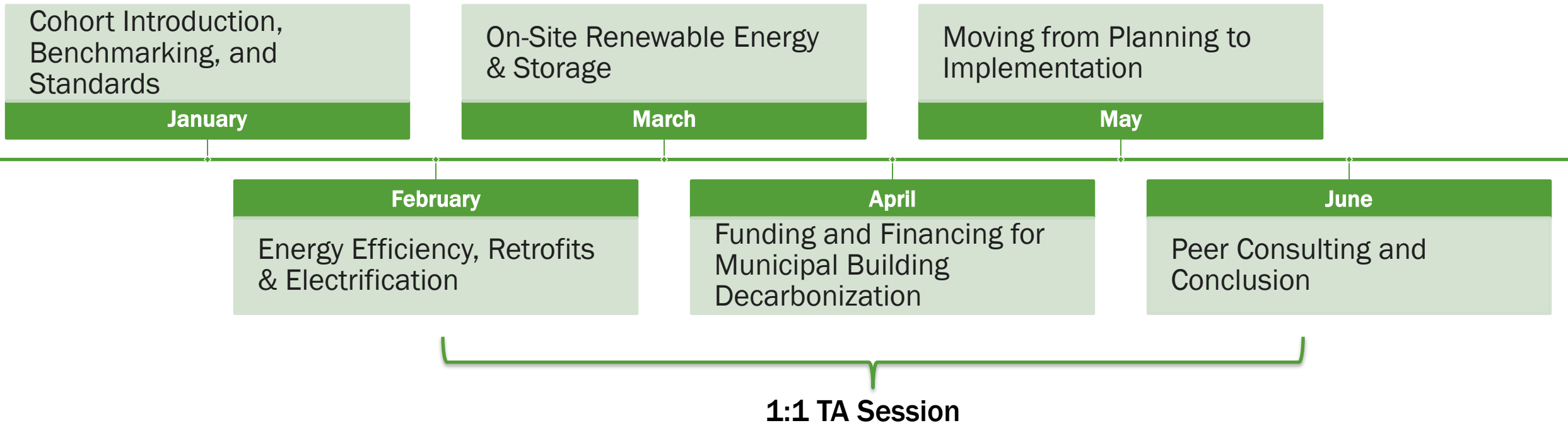
U.S. DEPARTMENT OF ENERGY

## Evaluating and Prioritizing Municipal Buildings for Energy Efficiency and Decarbonization Investment

Cohort Summary  
January 2024



# Evaluating and Prioritizing Municipal Buildings Energy Efficiency and Decarbonization Investments



# Cohort Participants

- **Ames, Iowa**
- **Baltimore, Maryland**
- **Boca Raton, Florida**
- **Cincinnati, Ohio**
- **Colorado Springs, Colorado**
- **Crafton Borough, Pennsylvania**
- **Hailey, Idaho**
- **Howard County, Maryland**
- **Key West, Florida**
- **Mount Vernon, New York**
- **Reading, Pennsylvania**
- **Salem, Oregon**
- **Skokie, Illinois**
- **Washtenaw County, Michigan**
- **Windham, Maine**

# Key Takeaway: Data collection and analysis is an important early step in developing a decarbonization strategy



U.S. buildings waste over 30% of energy use (over \$100 Billion annually)



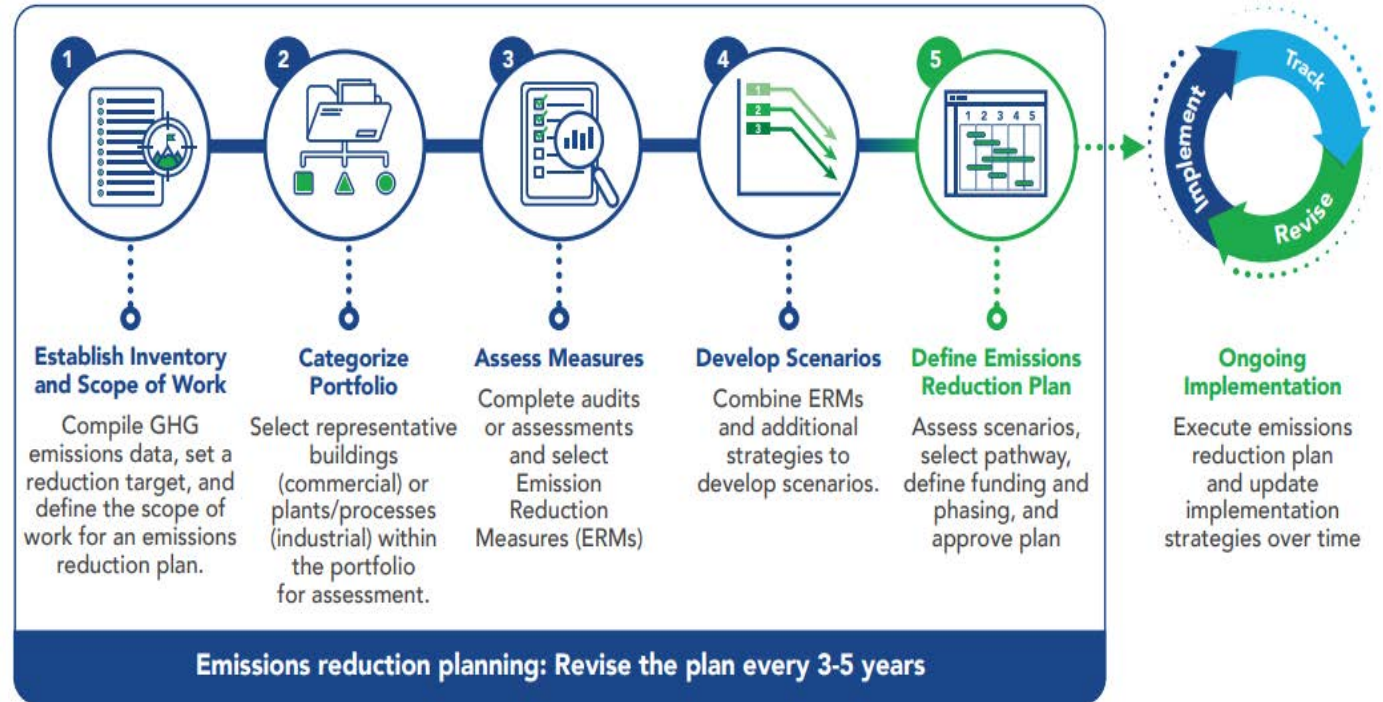
Most of today's buildings will still be operating in 2050 (~75% of residential and 50% of commercial in U.S.)



Buildings account for 75% of U.S. electricity use, and building heating and cooling drives peak demand



Buildings are where distributed solar, storage, and EV charging intersects with the distribution grid



<https://betterbuildingsolutioncenter.energy.gov>

# Key Takeaway: Project selection and implementation must account for a wide range of variables

- Mandates, planning documents, political will, internal capacity, staff willingness, and many more variables might limit the scope or timing of project implementation.
- Take advantage of available funding and consider adjusting your project scope to match the requirements of grant opportunities.

	Facility Improvement Measure	Implementation Price	Energy Savings
<b>PROJECT TOTAL</b>		<b>\$7,095,152</b>	<b>\$417,182</b>
th Center	LED Lighting Interior Retrofit & Occupancy Sensors	\$111,262	\$5,404
th Center	LED Lighting Exterior Retrofit	\$2,093	\$319
th Center	Pipe Insulation	\$667	\$49
th Center	Replace Existing Hvac System w/VAV System	\$1,671,119	\$6,300
th Center	Vending Machine Occupancy Controls	\$682	\$96
th Center	Building Envelope Improvements	\$21,360	\$1,397
OE	120 West Eagle LED Lighting Interior Retrofit & Occupancy Sensors	\$26,059	\$1,753
OE	134 West Eagle LED Lighting Interior Retrofit & Occupancy Sensors	\$101,728	\$8,557
OE	134 W. Eagle Night Setback With Steam Valves	\$75,028	\$7,518
OE	Install Controls On Exhaust Fans	\$35,147	\$1,768
nter	Holding Center Interior Retrofit	\$428,493	\$35,258
nter	Replace Chiller	\$384,680	\$4,599
nter	Install Condensing Domestic Hot Water Heaters	\$200,309	\$6,892
nter	Cap Abandon Ahu Roof Penetration	\$12,242	\$4,385
nter	Insulate Steam Pipes	\$2,149	\$1,807
nter	Pipe Insulation	\$4,658	\$121
nter	Extend Ddc To Uncontrolled Equipment/Pneumatics	\$1,453,591	\$8,648
nter	Add Variable Speed Drive To Hot Water Pump	\$66,163	\$1,196
nter	Add Variable Speed Drive To Chilled Water Pumps	\$34,005	\$1,044
nter	Repair Economizer Controls	\$5,787	\$14
nter	Vending Machine Occupancy Controls	\$2,386	\$468
nter	Open Balance Valve	\$2,823	\$177

Source: Erie County's "a la carte menu"

# Key Takeaway: On-site renewable energy generation can help decarbonize municipal buildings, but there are some key considerations

How will energy efficiency and other decarbonization efforts change your building's load?

What are the utility's net metering rules?

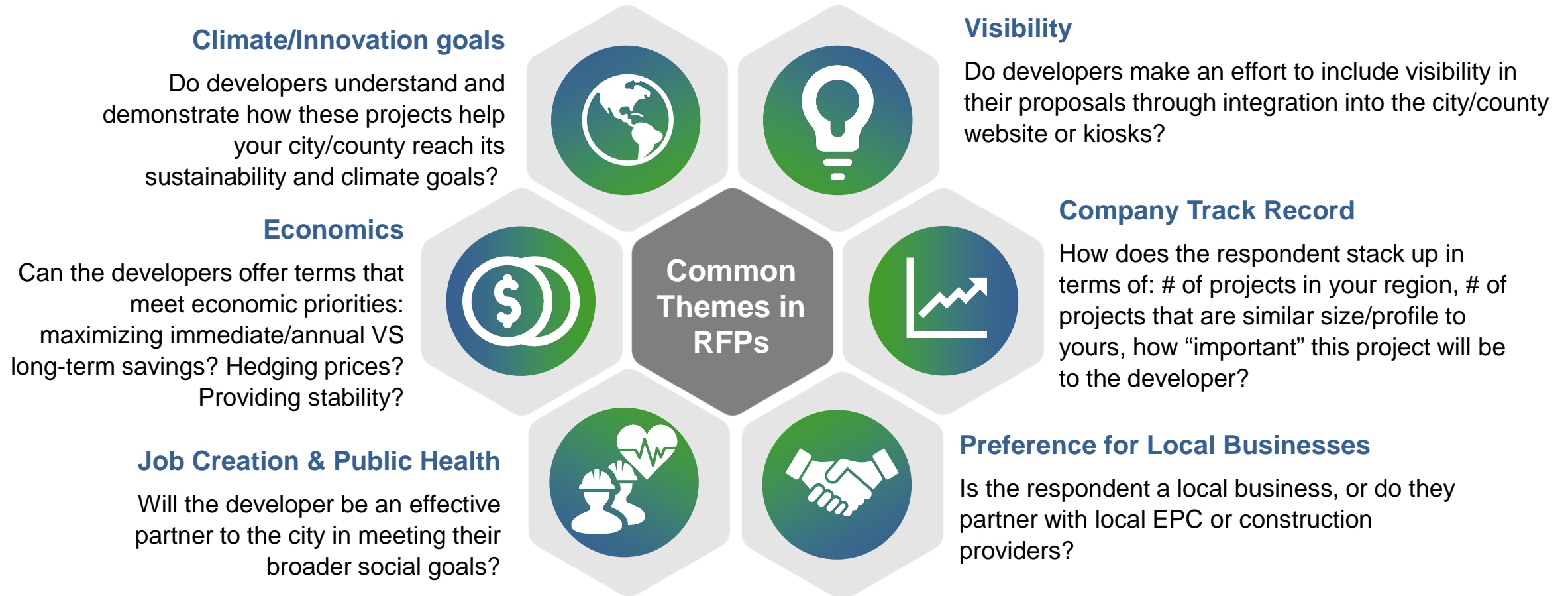
Outside of decarbonization, why else might you want to install clean energy?

What grant and funding opportunities are available and when are the deadlines?

Are your buildings structurally capable of hosting clean energy?

Other considerations?

# Key Takeaway: Objectives and value statements in RFPs offer clarity to developers to better understand the motivations for procurement



# Key Takeaway: There are alternatives to outright ownership of projects

## Third Party Ownership

- Energy savings performance contract (ESPC)
- Power purchase agreement (PPA)
- Leases

## Public Private Partnerships

When a state or local government agency takes a minority stake in ownership of an asset, with a private sector entity as the majority stakeholder.

## Pass-through benefits

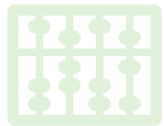
Many businesses like LLC's, sole-proprietorships, S-corporations, and LLP's pass-through their income to owners, individual members or partners, also passing-through tax-based benefits like tax credits and deductions. Through public-private partnerships, state and local governmental groups too can benefit from pass through benefits.



*Dublin, Ohio has a 15 year lease on a 248 kW CHP system that is estimated to save \$19,000 annually. Photo: Analogue Kid at en.wikipedia, CC BY-SA 3.0 <<https://creativecommons.org/licenses/by-sa/3.0/>>, via Wikimedia Commons*



# Key Takeaway: Local governments and utilities may be able to self-fund initiatives through existing funding pathways and tools



Local budget processes



Local taxation



Municipal bonds



Enterprise activities



Franchise agreements



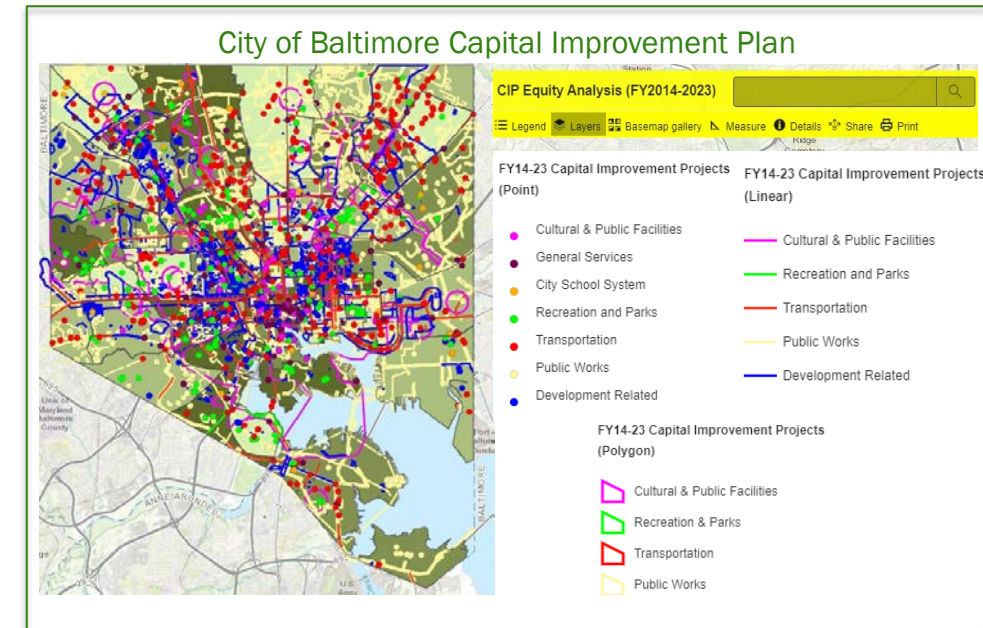
Utility rebates and programs



Energy performance contracting



Legal settlements



Source: CIP Equity Analysis (FY2014-2023). City of Baltimore Department of Public Planning. <https://arcg.is/ffGiq>

Politics & Elections



## Ann Arbor voters approve climate-action tax proposal with 71% support

Updated: Nov. 10, 2022, 11:54 a.m. | Published: Nov. 09, 2022, 12:32 p.m.

# Key Takeaway: Energy Savings Performance Contracting (ESPC) can provide a lower risk opportunity to fund energy upgrades

## General ESPC Benefits:

- No upfront costs needed
- ESCO accountable for project design, construction, and post-installation monitoring
- ESCO serves as single point of contact for project
- ESCO takes on project risks
- Guaranteed cost and energy savings
- Savings measured and verified as “real”



Check out the DOE Better Buildings Solution Center's ESPC Toolkit for resources and more related to ESPC:

<https://betterbuildingsolutioncenter.energy.gov/energy-savings-performance-contracting-esp-toolkit>

# Additional Technical Assistance Opportunities



SolSmart is a federally funded designation program that provides technical assistance to local governments that are working on reducing soft costs related to local solar deployment.

<https://www.solsmart.org>



The ESPC Campaign is a Department of Energy supported program that provides technical assistance and a space for public sector building owners to share and learn about the benefits of energy savings performance contracting.

<https://www.energy.gov/scep/espccampaign/home>



DOE's Better Buildings Climate Challenge is a network of participants working to reduce GHG emissions and decarbonize their building stock. Members have access to peer-learning opportunities, TA, and other resources.

<https://betterbuildingsolutioncenter.energy.gov/climate-challenge/about>