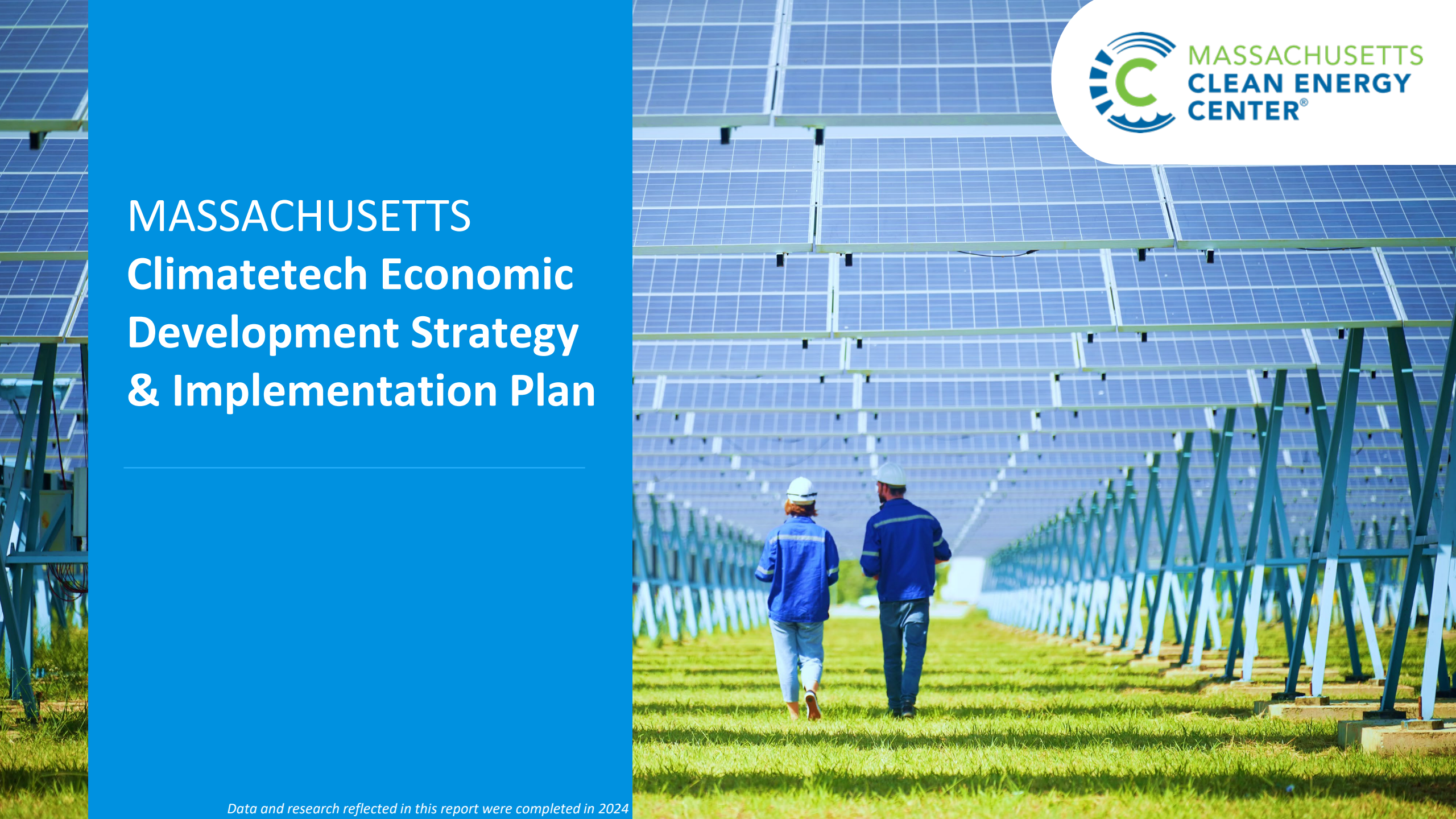
MASSACHUSETTS CLEAN ENERGY CENTER®

MASSACHUSETTS **Climatetech Economic Development Strategy & Implementation Plan**



Data and research reflected in this report were completed in 2024

WHY MASSACHUSETTS NEEDS TO ACT

A unique, time-limited opportunity to be a global climatetech leader

The climate crisis requires urgent innovation…
34% of the path to Net Zero requires technology not yet on the market – MA is a climatetech innovation leader that can develop and scale these technologies, while leveraging this market opportunity

The transition presents an opportunity to drive growth across MA…
The climatetech industry is growing at 25% per year with headroom for further growth and equitable job creation in key sectors for MA

Federal investment flow is uncertain…
As the new federal administration signals a shift away from climate innovation, MA must bolster its existing strengths and catalyze private investment

…but competition is accelerating
Since 2021, MA's share of climatetech investment in the US has declined while other states' climatetech industries have accelerated

WHAT THIS STRATEGY WILL ACHIEVE

Grow, retain, and attract climatetech companies as they scale and commercialize

Drive equitable growth & create high-quality jobs in every region across the state

Expand leadership to become the destination for climatetech capital and investment

Remain the #1 state for R&D and innovation in climatetech, building on existing strengths

WHAT IS CLIMATETECH?

"Climatetech" encompasses innovative technology solutions that mitigate the impacts of climate change and help communities adapt & build resilience to climate change

MITIGATION TECHNOLOGIES

capture or reduce greenhouse gas (GHG) emissions to reduce the impacts of climate change

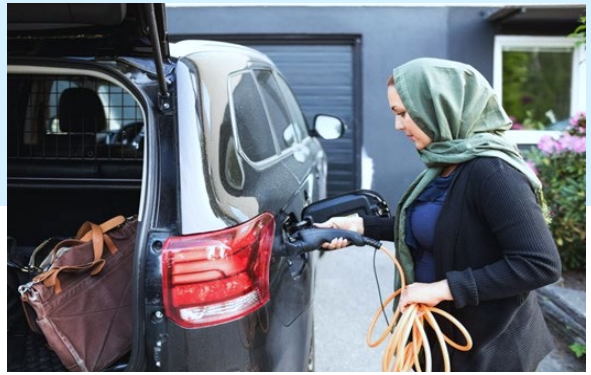
ADAPTATION & RESILIENCE TECHNOLOGIES

help prepare people, communities & infrastructure for the impacts of climate change

Decarbonize energy sources through renewable and clean energy and grid modernization

Reduce energy need across transport, buildings, industry, and other sectors of the economy

Examples include climate-smart planning, reducing embodied carbon, improving grid resilience, strengthening infrastructure, and using nature-based solutions to reduce climate change vulnerability



CLIMATETECH encompasses a wide range of tech solutions across sectors that further mitigation, adaptation, and resilience

Mitigation
capture or reduce greenhouse gas (GHG) emissions

Adaptation & Resilience
prepare for, and respond to, the impacts of climate change

Enabling Solutions (leverage AI, data systems, etc. to achieve climate goals)

Energy
Increasing renewable energy generation (e.g., offshore wind), improving energy efficiency, modernizing the grid leveraging batteries and energy storage technology

Transportation
Transitioning to zero-emissions vehicles (e.g., electric vehicles), enhancing public transit, and promoting alternative fuel options

Buildings
Improving energy and heating efficiency, transitioning to renewable energy sources, and implementing sustainable construction practices

Adaption & Resilience
Implementing climate-smart planning, strengthening infrastructure, and promoting nature-based solutions to reduce vulnerability to climate change with a focus on equity

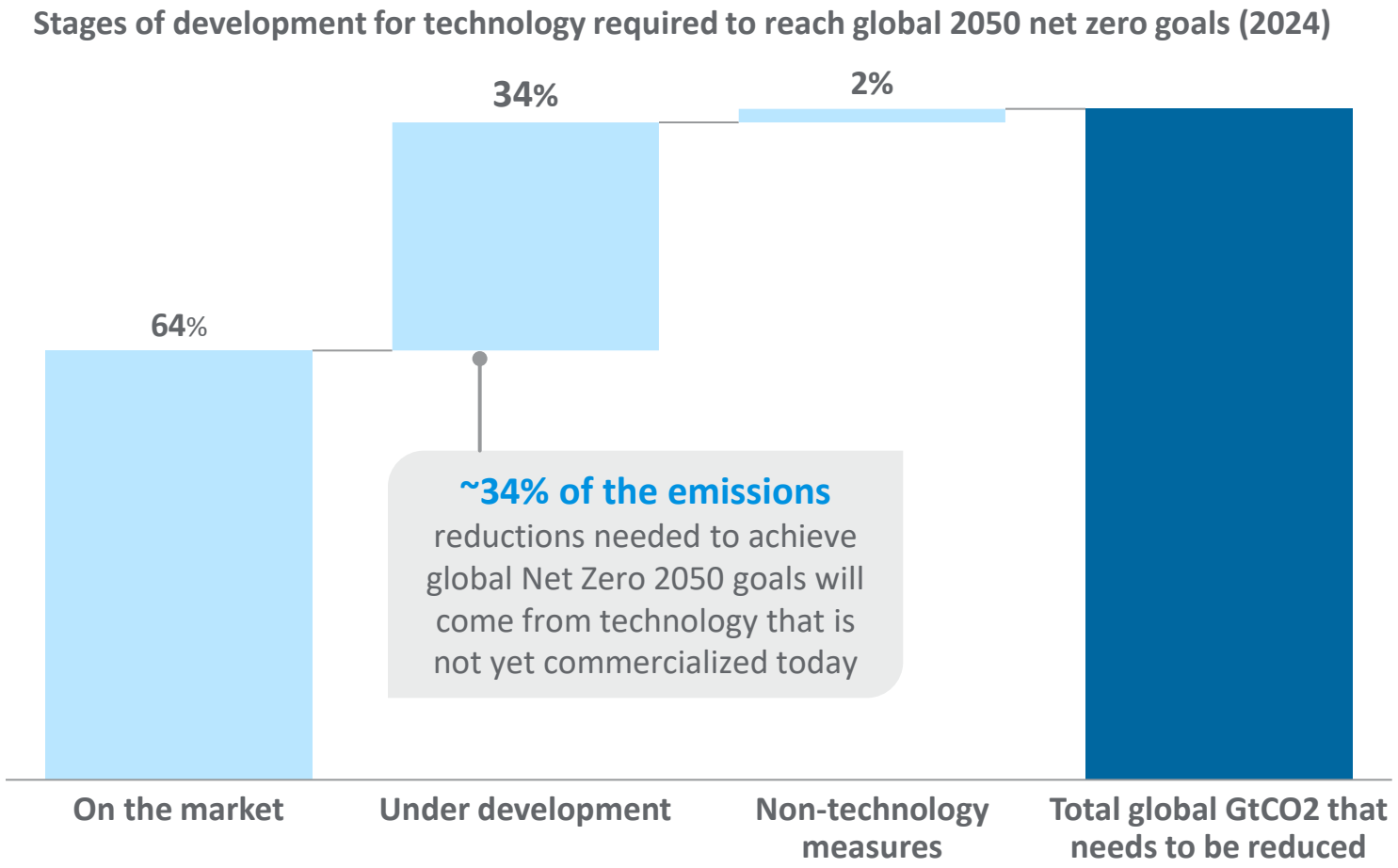
Industry and Manufacturing
Adopting carbon reducing technologies and processes, and implementing sustainable production practices through a circular economy

Agriculture, Food, and Nature
Adopting sustainable farming and forest management practices, developing alternative proteins, and leveraging nature-based solutions

Carbon Management
Developing and deploying carbon removal technologies, including bioenergy with carbon capture, direct air capture, and blue carbon technology

BREAKTHROUGH TECHNOLOGIES ARE NEEDED

to achieve climate goals on a global and state-level



Massachusetts' innovation ecosystem can catalyze these technologies' maturing and scaling[1].

Climatetech advancements will play a crucial role in Massachusetts reducing its GHG emissions from ~64 million metric tons of CO_2 equivalent to its net zero GHG emissions goal by 2050[2].

1. International Energy Agency: Net Zero Roadmap; 2. Massachusetts Clean Energy and Climate Metrics

MASSACHUSETTS IS A NATIONAL AND GLOBAL LEADER

in climatetech investment, with a world-class climatetech innovation ecosystem

The Commonwealth's robust climatetech ecosystem is anchored on many elements, including…

INNOVATION

#1 in US climatetech startups per capita[1]

#3 in US climatetech patent filings[2]

INVESTMENT

#2 largest — US climatetech ecosystem over past 5 years[3]

$14B invested — in climatetech since 2019[3]

WORKFORCE & EDUCATION

#2 in clean energy jobs per capita[4] *(#7 overall)*

#1 most educated state in US across degree levels[5]

POLICY & AMBITION

#1 most environmentally friendly state[6]

Net Zero Target by 2050 *One of 15 states with NZ target*

1. Powerhouse | The Geography of Climate Tech: Findings from Powerhouse's Data. 2. 2022-23 (>3k total). BCG Greentech Portal informed by natural language processing of United States Patent and Trademark Office filing data. 3. Based on 5-yr total investment (2019-23). BCG Greentech Portal investment data informed by multiple sources including Pitchbook. 4. E2 Clean Jobs America 2023 Report. 5. US Census American Community Survey, based on HS diploma, Bachelor's, and advanced degree attainment. 6. Forbes Sustainability Index ranking of 50 states' environmental policy based on water use, energy use, solar friendliness.

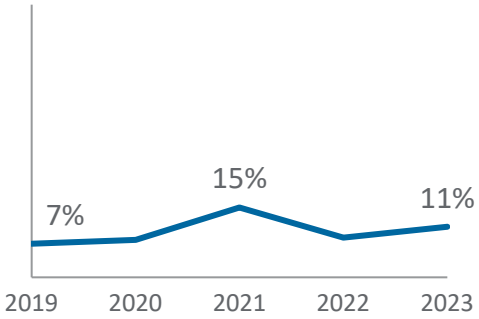
MASSACHUSETTS MUST CLOSE GAPS TO STAY COMPETITIVE

as other states expand climatetech activities and ecosystems

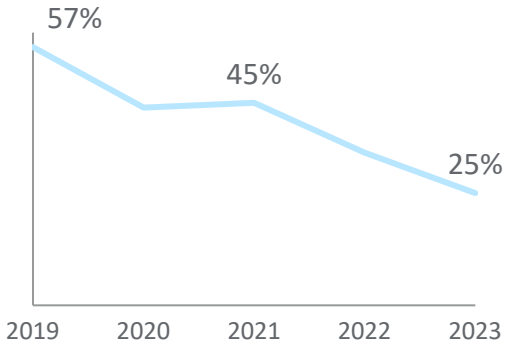
Share of total climatetech investment by state (%)[1]

Includes venture capital, institutional, private equity, corporate, angel, accelerator and incubator investments

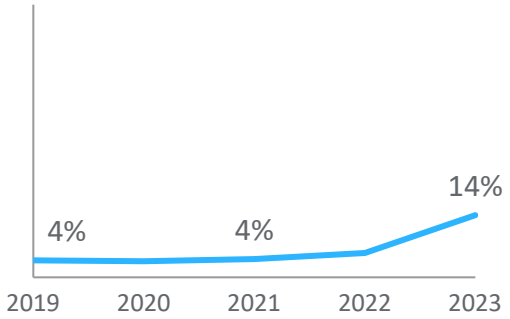
Massachusetts



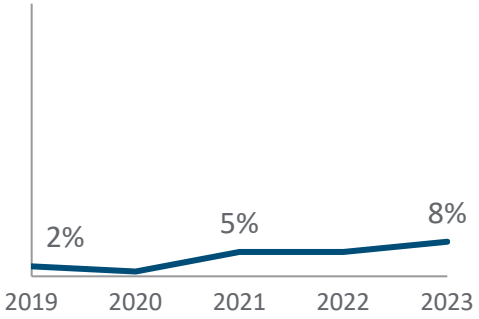
California



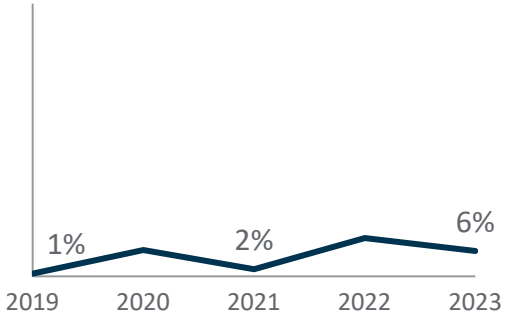
New York



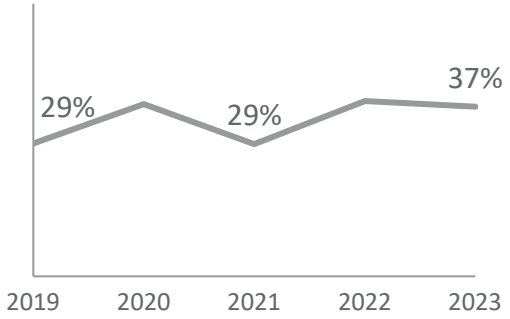
Texas



Illinois



Other states



Overall climatetech investment has declined since a peak in 2021-22, in line with broader market trends.

Since 2021, amid this trend, MA and CA shares have declined (-4pp and -20pp, respectively).

Meanwhile other states have increased share, particularly NY where deep government support has helped drive growth (+10pp). Over the past 5 years, MA received the 2nd largest total investment, but single-year investment levels in NY surpassed MA in 2023.

More broadly, while MA excels across early-stage innovation, it struggles to consistently retain firms as they progress towards commercialization.

Source(s): BCG Greentech Portal investment data informed by multiple sources including Pitchbook. 1. Includes VC, institutional, PE, corporate, angel, and accelerator/incubator investors. May not be exhaustive of all climatetech investment. Highlighting top 5 states based on total investment from 2019-23.

A NEW CLIMATETECH STRATEGY

To bring together the full potential of the state to grow as a global climatetech leader while driving an equitable Net Zero economy & climate resilience, MassCEC in partnership with EOED and other state agencies will…

INVEST

Fund companies and infrastructure to support climatetech growth in MA

1. **Provide funding supports to climatetech firms** across stages, including grants and tax incentives
2. **Invest in shared infrastructure & equipment** to build a testing & demonstration network grounded in regional clusters and support targeted deployment efforts (e.g., offshore wind)
3. **Provide funding supports to installation, maintenance, and supply chain** partners, particularly MWBEs[1]

ACCELERATE

Make Massachusetts the best place for climatetech companies to do business

4. **Drive equitable training & career advancement** to meet evolving climatetech workforce needs
5. **Build markets for emerging tech** by stimulating demand among early customers (e.g., #1-100), facilitating early-customer matching, and supporting green procurement
6. **Coordinate the development of move-in ready spaces & manufacturing sites** for climatetech to help firms expand quickly

CONNECT

Enhance and promote the MA climatetech ecosystem on a state and global scale

7. **Provide hands-on concierge supports** to connect companies with the resources & partners they need to scale
8. **Convene & strengthen networks** to build a statewide Climate Corridor leveraging the full strength of the Commonwealth
9. **Amplify awareness** of state supports and MA's global climatetech leadership through communications, marketing, and events

1. Minority and Women Owned Business Enterprises

WE RECEIVED INPUT FROM ACROSS THE CLIMATETECH ECOSYSTEM

100+ individuals have provided input into this strategy (e.g., through interviews) from several dozen organizations, including…

Climatetech Companies & Investors

VIA SEPARATIONS · Clean Crop Technologies · GE Vernova · ITHACA · Sublime Systems · ARCLIGHT CAPITAL PARTNERS, LLC · PPI Peerless Precision · GREENLAB · PHOENIX TAILINGS · Commonwealth Fusion Systems

Kalypso Offshore Energy · ELECTRIC HYDROGEN · WAVE Equity Partners · IVYS Energy Solutions · Proficio Capital Partners · EVOLOH · IDLE SMART · ASCEND ELEMENTS · 1BC · MCJ Collective Unleashing Climate Innovation

Higher Education & Research Institutions

STCC Springfield Technical Community College · HARVARD UNIVERSITY · University of Massachusetts Amherst · WPI · Woods Hole Oceanographic Institution

UMass Dartmouth · UMASS LOWELL · MIT · MARITIME · Franklin Cummings Tech

MA State Agencies & Partners

MassEcon Location is everything · MOITI · MASS VENTURES · DOER Massachusetts Department of Energy Resources · Massachusetts Technology Collaborative · Massachusetts Life Sciences Center

OSD Operational Services Division · MACP · Massachusetts Executive Office of Labor & Workforce Development · Massachusetts Bay Transportation Authority · MassDevelopment · EOED · MOBD · OCIR

Key Ecosystem Players

YB YouthBuild · BECMA Black Economic Council of Massachusetts · Greentown Labs · ICR Innovations in Climate Resilience Conference · FORGE · EVERSOURCE · The Engine · Boston Impact Initiative Investing for Justice · Valley Home Insulation

ResHydro Fluid Power · BGS Browning the Green Space · necec Your Partner in the Clean Energy Economy · ELM Environmental League of Massachusetts · Action for Equity · nationalgrid · South Shore Chamber of Commerce · NECA · Western Mass Economic Development Council · BRPC

South Shore Chamber of Commerce · City of Holyoke · NSTC · Forge · Coalition for an Equitable Economy · MACP Massachusetts Competitive Partnership · Berkshire Innovation Center · 495/MetroWest Partnership Leaders for Regional Prosperity · North Central Massachusetts Development Corporation · Middlesex 3 Coalition

1Berkshire · North Shore Alliance For Economic Development · MVPC · Massachusetts AFL-CIO · City of Salem At Your Service · innoventure labs Go Further. Faster. · LEVER Entrepreneurship + Innovation · The City of Worcester · Cape Cod Chamber of Commerce · City of Boston

NEWIEE · Greater New England Minority Supplier Development Council · MCCI · MAPC · MBR Massachusetts Business Roundtable · BLUEHUB CAPITAL

Not Exhaustive

CLIMATE CORRIDOR

integrates unique regional strengths to leverage MA's full potential and ensure that all regions benefit from climatetech leadership

1 Berkshires

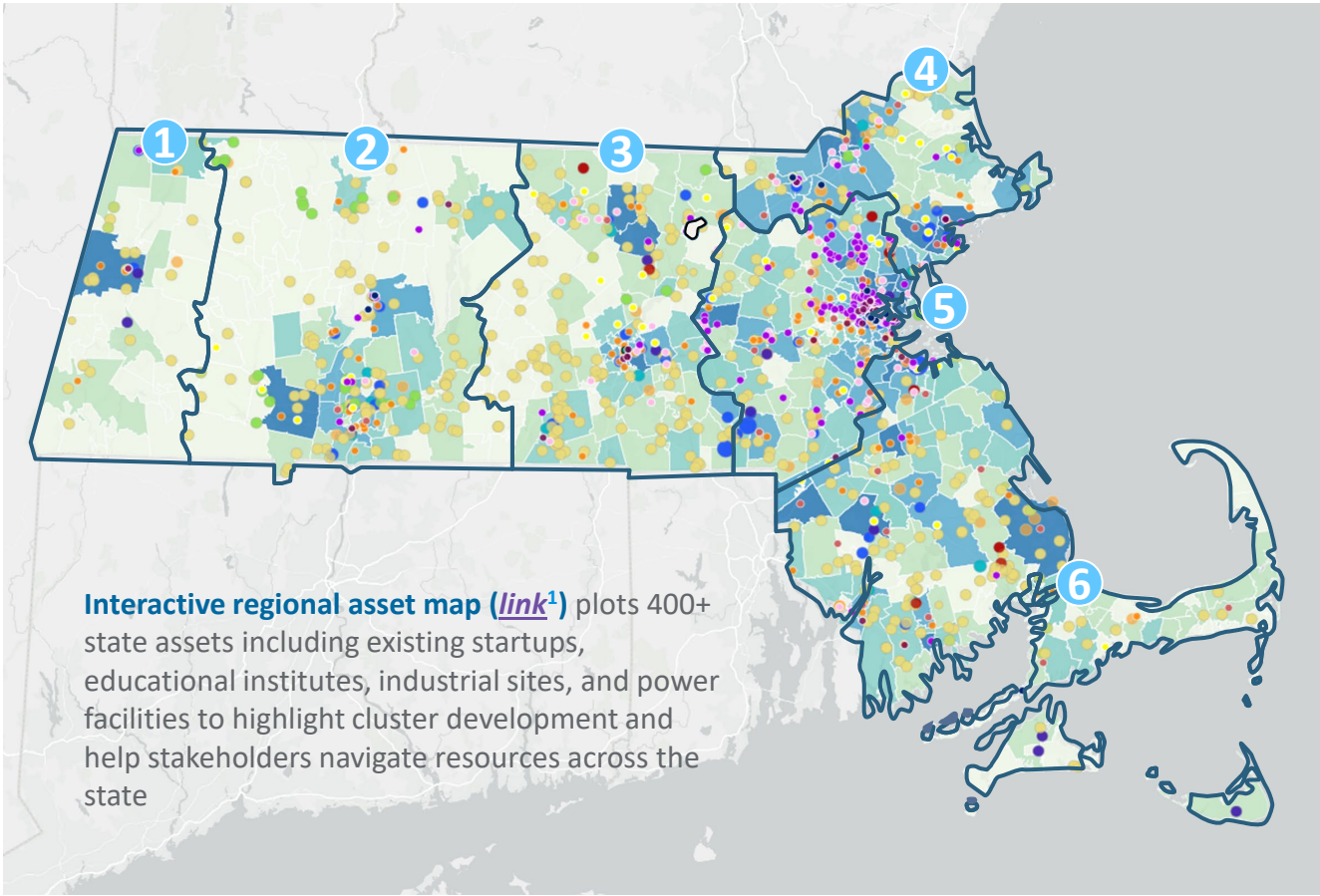
Near-term opportunity to **contribute to climatetech supply chain and AgTech leadership**, with opportunity to develop brownfield sites for **larger-scale manufacturing** particularly in long-term

2 Pioneer Valley

Strongest opportunities for scaled industrial climatetech manufacturing, due to cheap renewables, site avail., and base of industrial talent & innovation

3 Central

Innovation hub driving leadership in advanced climatetech manufacturing with particular focus on energy storage, bio-manufacturing, and industrial decarbonization



Interactive regional asset map (*link*[1]) plots 400+ state assets including existing startups, educational institutes, industrial sites, and power facilities to highlight cluster development and help stakeholders navigate resources across the state

4 Northeast

Leader in **advanced climatetech manufacturing requiring high-skilled labor**, and leadership in key elements of the offshore wind ecosystem

5 Greater Boston

Most dense cluster in the Massachusetts climatetech innovation ecosystem, generating R&D and startup activity across sectors and serving as 'HQ epicenter' of the state

6 Southeast & Cape

Leader in national blue economy, building on deep research & deployment assets and legacy as first mover in offshore wind

1. https://www.masscec.com/resources/making-massachusetts-climate-lab-world

ANTICIPATED IMPACT

This climatetech strategy has potential to create significant economic impact in Massachusetts over the next ten years

1.3k
Companies supported[1]

MassCEC is expected to directly fund **300+** companies and support **1,000+** additional companies[4]

35k
Jobs created[2]
+25k individuals trained

MassCEC funding to companies is expected to create **15k+** new jobs; additional support to climatetech ecosystem enables the creation of **20k+** more in the next ten years

7x
Additional funds attracted[3]

Every $1 invested by MassCEC catalyzes **$7** in additional public and private investment into climatetech, leading to **$14B** in incremental investment over next 10 years

Beyond economic impact, this strategy will reduce statewide GHG emissions, improve health and wellbeing across the state (especially in environmental justice communities), and create more affordable energy for Massachusetts residents.

1. Total companies directly funded by MassCEC, supported by MassCEC-funded incubators/accelerators, or receiving non-financial supports and services from MassCEC. 2. New jobs created in next ten years (assuming an increase in FY26 funding maintained annually). 3. Additional private and federal investment received by MassCEC awardees. Note: Estimates based on historic MassCEC program data on program participants, jobs created, and leveraged funds, as well as third-party analyses (e.g., from the Donahue Institute) and benchmark examples (e.g., MLSC tax incentive outcomes). As estimates are drawn from historic averages, actual impact of FY25 MassCEC spend may slightly differ due to different ecosystem and macroeconomic conditions; values shown here are intended to be approximate and directional. This estimate includes repeat companies often seen across both tech to market and investment programs.