



Office of Performance Management Oversight (OPMO)

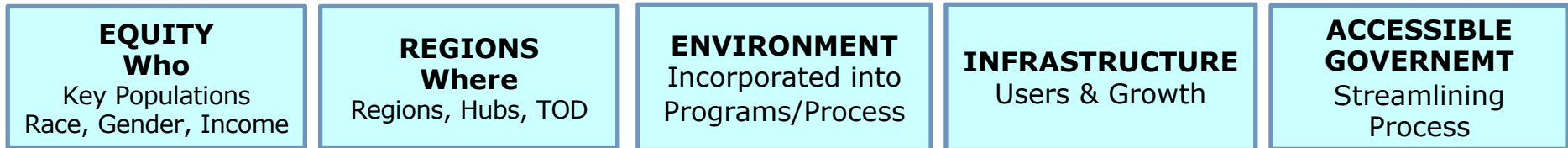
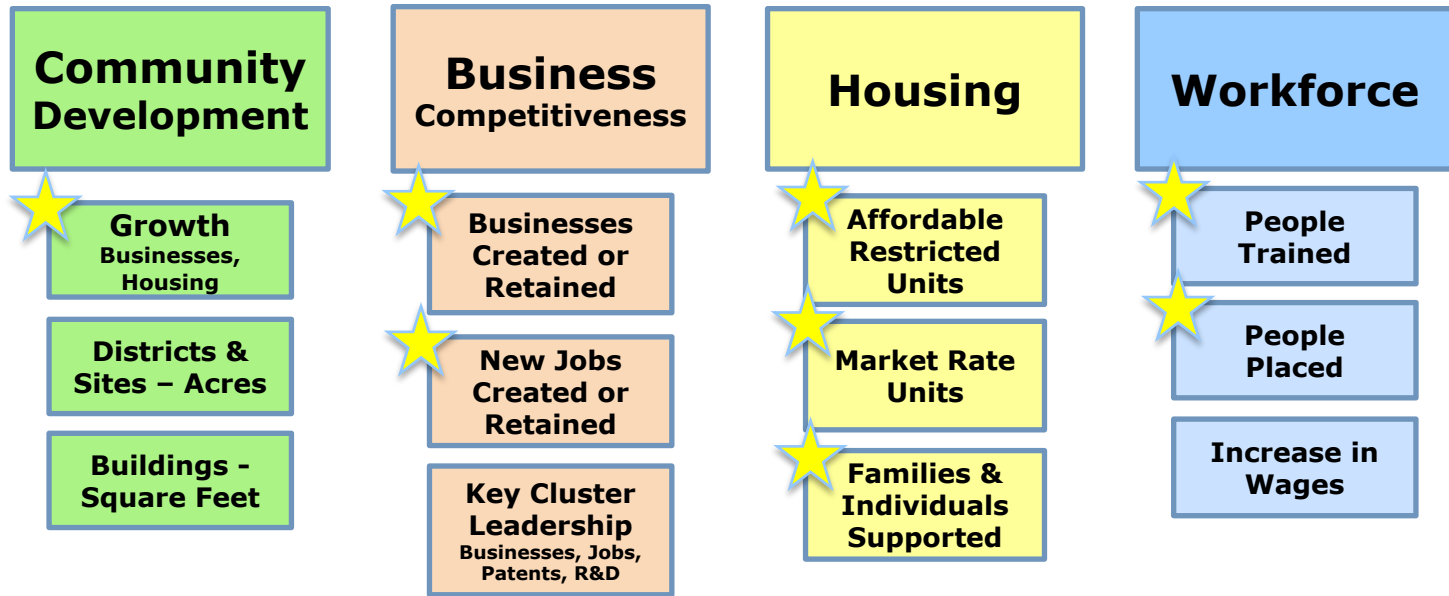
**Massachusetts Clean Energy Center
FY2022 Report**



Economic Development Plan

Key Outcome Metrics

Economic Development Plan Pillars & Principals



Investment Leveraged from Other Sources - \$

Engagement & Technical Assistance – Contact with Individuals & Companies



Agency Mission

- **Mission:** The Massachusetts Clean Energy Center's (MassCEC) mission is to accelerate the clean energy and climate solution innovation that is critical to meeting the Commonwealth's climate goals, advancing Massachusetts' position as an international climate leader while growing the state's clean energy economy.

Contribution to Partnerships for Growth: MassCEC contributes to the pillars in many ways, including:

- Tackling greenhouse gas emissions in the hard-to-reach areas of the buildings sector
- Increasing access to clean energy for environmental justice and underserved communities
- Increasing availability of healthy and energy efficient commercial and residential buildings including affordable housing
- Supporting clean energy businesses with funding for working capital, technology development, demonstrating solutions, and interns
- Creating jobs and providing workforce training in the clean energy sector
- Supporting the burgeoning offshore wind industry with a focus on regional supply chain development and workforce training
- Providing funding for projects that demonstrate solutions to the state's transportation emission barriers



Agency Goals

- **Agency Goal 1: Greenhouse Gas Emission Reduction:** Massachusetts has set ambitious energy and climate goals that require dramatic reductions in greenhouse gas (GHG) emissions, building a more resilient Commonwealth, meeting an energy storage deployment target and the state's procurement of additional megawatts of clean energy generation. MassCEC fosters innovation and the deployment of clean energy and resilient solutions that will drive emissions reductions and help Massachusetts achieve its 2030 and 2050 in an accelerated, equitable and cost-effective manner in all areas of the Massachusetts energy economy. (Includes: Commercial Renewable Energy, BETA: Triple Deckers, EmPower Mass, Decarbonization Pathways, ACT4All, Fleet Advisory)
- **Agency Target for Goal 1:**
 - Metric Tons (MT) of Avoided Carbon Dioxide (CO₂): 975 MT
 - Million Metric Tons (MMT) of Addressable CO₂: 4,000 MMT
- **Results of Goal 1:**
 - Metric Tons (MT) of Avoided Carbon Dioxide (CO₂): 3,734 MT
 - Million Metric Tons (MMT) of Addressable CO₂: 4,100 MMT



Agency Goals

- **Agency Goal 2: Drive Clean Energy Innovation:** Innovation is a key driver that will enable the clean energy transition and maintain a successful clean energy sector. The acceleration and expansion of markets and technology adoption will unlock solutions that will lead to safer, more reliable and more resilient energy infrastructure. To this end, MassCEC drives innovation that includes, but is not limited to, catalyzing new business and finance models, mobilizing third-party investments, fostering the demonstration of technologies, accelerating opportunities for the commercialization of next generation technology, supporting the formation and growth of early-stage companies, and informing new policy and regulatory solutions. (Includes Seed Investments, Equity Investments, Follow-on Investments, Accelerator Funding Program, IncubateMass, Clean Energy Innovation Network, Net Zero Grid, Catalyst, AmplifyMass, BETA: Triple Decker Challenge, Decarbonization Pathways, ACT4All, Fleet Advisory)
- **Agency Target for Goal 2:**
 - Funding Leveraged: \$47,056,000
 - Number of Private Entities Impacted: 412 businesses
 - Number of Public Entities Impacted: 44 public entities
- **Results of Goal 2:**
 - Funding Leveraged: \$75,158,509
 - Number of Private Entities Impacted: 608 businesses
 - Number of Public Entities Impacted: 52 public entities

(Note: The targets and results are based on all MassCEC programs in FY2022.)



Agency Goals

- **Agency Goal 3: Support the Clean Energy Industry Workforce:** The strength of Massachusetts' clean energy economy depends on the strength of its workforce. The future of clean energy - one powered by innovation, growth and sustainable companies, policies and technologies - requires employees with various levels of education, skills and on-the-ground experience. MassCEC plays an important role in continuing to implement efforts that prepare workers to meet the needs of the clean energy industry. (Workforce Development and Offshore Wind Workforce programs)
- **Agency Target for Goal 3:**
 - Number of students/interns supported: 667 students
 - Number of women and minority students and interns supported: 419 women/minorities
 - Number of interns and companies supported from Gateway Communities: 113 interns and companies
 - Number of community college students supported: 51 students
 - Number of companies/community development organizations supported through workforce programs: 217 businesses and CDOs.
- **Results of Goal 3:**
 - Number of students/interns supported: 649
 - Number of women and minority students and interns supported: 386
 - Number of interns, students, and companies from underrepresented populations and Gateway Communities: 213
 - Number of community college students supported: 13
 - Number of companies/community development organizations supported: 340



Agency Goals

- **Agency Goal 4: Economic Impact:** Massachusetts is a national leader in the transition to a clean energy future and boasts a significant local industry as well as a global cleantech sector innovation hub that is launching some of the world's top clean energy companies and technologies. MassCEC is well positioned to advance job and business growth by leveraging the Commonwealth's world-renowned academic & innovation resources to accelerate clean energy development, promoting a pipeline of skilled workers capable of meeting industry needs, creating and expanding clean energy businesses and helping to build supply chains to support emerging industries. Innovation is also one of the hallmarks of the Massachusetts economy and MassCEC will continue to build an integrated ecosystem of support for innovation and entrepreneurship that allows the next generation of clean technology innovation to make its home in Massachusetts.
- **Agency Target for Goal 4:**
 - Total clean energy jobs:
 - Rebound in clean energy jobs after initial COVID-19 losses:
 - Analysis of clean energy jobs by region:
 - Analysis in clean energy gross state product:
 - Analysis of clean energy industry economic contribution:



Agency Goals

- **Results of Goal 4:**

- Total clean energy jobs: 101,208
- Rebound in clean energy jobs after initial COVID-19 losses: lost ~20,000 jobs in first half of 2020, but added ~7,000 jobs in the second half of 2020
- Analysis of clean energy jobs by region: Northeast – 49,398 jobs and 3,301 businesses; Central – 16,370 jobs and 1,099 businesses; Western – 12,122 jobs and 1,036 businesses; Southeast – 23,318 jobs and 1,675 businesses
- Analysis in clean energy gross state product: Industry contributed \$13.7 billion to state's gross state product.
- Analysis of clean energy industry economic contribution: 101,208 direct clean energy jobs support an additional 34,735 indirect jobs and 66,488 induced jobs. The direct, indirect, and induced jobs are responsible for \$28.2 billion in MA gross state product, \$2.1 billion in state and local taxes, and \$4 billion in federal taxes on production and imports.



Offshore Energy Workforce

- **Program Description:** Investments, technical support, and engagement to increase Massachusetts' workforce capacity to participate in offshore wind deployment and operations.
- **Program Budget:*** \$1,000,000
- **Partnerships for Growth Goal Alignment:** Business, Workforce
- **Fiscal Year Goal 1:** Increase Massachusetts workforce capacity to participate in offshore wind manufacturing, deployment and operations.
- **Fiscal Year Target 1:**
 - New/Expanded Offshore Wind Workforce Training Programs: 8 programs
 - Universities Supported: 3 Universities
 - Community Colleges Supported: 2 community colleges
 - Community Development Organizations Supported: 6 CDOs
 - Private Businesses Supported: 1 business



Offshore Energy Workforce

- **Results of Goal 1:**

- New/Expanded Offshore Wind Workforce Training Programs: 9 programs
- Universities Supported: 5 Universities
- Community Colleges Supported: 1 community colleges
- Community Development Organizations Supported: 2 CDOs
- Private Businesses Supported: 2 business
- *(Note: The Program Budget numbers throughout the report represented budget amount but not necessarily actual expenditures over the fiscal year. Some program budget amounts may represent funding for more than one year, since some programs are multi-year.)*



InnovateMass

- **Program Description:** InnovateMass provides demonstration project grants of up to \$250k each to startup companies seeking to accelerate commercialization of innovative clean energy technologies and business models.
- **Program Budget:** \$1,590,000
- **Partnerships for Growth Goal Alignment:** Business
- **Fiscal Year Goal 1:** Support demonstration projects for innovative clean energy solutions, which help companies and their technologies move closer to commercialization.
- **Fiscal Year Target 1:**
 - MMT Addressable CO2 Supported: 3,000 MMT
 - Businesses Impacted: 8 businesses
 - Public Entities Impacted 2 public entities
 - Leveraged Funds: \$800,000
- **Results of Goal 1:**
 - MMT Addressable CO2 Supported: 3,200 MMT
 - Businesses Impacted: 22 businesses
 - Public Entities Impacted 2 public entities
 - Leveraged Funds: \$1,343,087



Catalyst Program

- **Program Description:** The Catalyst Program provides prototyping grants of up to \$65k to Massachusetts-based startup companies and academic researchers to seed commercial development of promising clean energy technologies.
- **Program Budget:** \$1,075,000
- **Partnerships for Growth Goal Alignment:** Business
- **Fiscal Year Goal 1:** Support academic researchers and early-stage companies looking to develop initial prototypes of their clean energy technologies
- **Fiscal Year Target 1:**
 - MMT Addressable CO2 Supported: 2,000 MMT
 - Private Entities Impacted: 10 businesses
 - Public Entities Impacted: 4 public entities
- **Results of Goal 1:**
 - MMT Addressable CO2 Supported: 3,700 MMT
 - Private Entities Impacted: 13 businesses
 - Public Entities Impacted: 5 public entities



AmplifyMass

- **Program Description:** AmplifyMass provides cost share grants of up to \$300k to Massachusetts-based startups and academic researchers receiving federal funding (e.g., from US DOE, NSF, or other federal funding agencies) for a clean energy project.
- **Program Budget:** \$2,000,000
- **Partnerships for Growth Goal Alignment:** Business
- **Fiscal Year Goal 1:** Supports startup companies and academic researchers secure federal funding for clean energy research and technology development projects
- **Fiscal Year Target 1:**
 - MMT Addressable CO2 Supported 2,000 MMT
 - Private Entities Impacted 6 businesses
 - Public Entity Impacted 4 public entities
 - Leveraged Funds \$19,200,000
- **Results of Goal 1:**
 - MMT Addressable CO2 Supported 2,700 MMT
 - Private Entities Impacted 73 businesses
 - Public Entity Impacted 13 public entities
 - Leveraged Funds \$36,098,441



Investments

- **Program Description:** Supports seed and early-stage companies in development and commercialization through seed investment funding, early-stage equity investments, and follow-on investments.
- **Program Budget:** \$2,400,000
- **Partnerships for Growth Goal Alignment:** Business
- **Fiscal Year Goal 1:** Support early-stage clean tech companies in development and commercialization stages.
- **Fiscal Year Target 1:**
 - MMT Addressable CO2 Supported: 2,300 MMT
 - Businesses Impacted: 15 businesses
 - Leveraged Funds \$4,650,000
- **Results of Goal 1:**
 - MMT Addressable CO2 Supported: 400 MMT
 - Businesses Impacted: 5 businesses
 - Leveraged Funds \$8,876,000

(Note: Fewer investments were made in cleantech startup companies than anticipated.)



On-the-Job Training (aka College Internship Program)

- **Program Description:** The Clean Energy Internship Program facilitates the placement of Massachusetts community college students, four-year college students, and recent graduates who are considering career opportunities in clean energy. This program provides paid full-time summer internships, as well as paid part-time (20hrs/week) academic year internships across the state. This program has placed 4,581 interns at 569 companies since 2011.
- **Program Budget:** \$3,500,000
- **Partnerships for Growth Goal Alignment:** Community, Business, Workforce
- **Fiscal Year Goal 1:** Facilitate the placement of Massachusetts college students and recent graduates in paid clean energy internships across the state.
- **Fiscal Year Target 1:**
 - Students Supported: 540 students
 - Companies Supported: 200 businesses
 - Women and Minority Participants: 380 women/minorities
 - Community College Participants: 22 students
 - Interns and Companies Supported from Gateway Communities: 90 interns/companies
- **Results of Goal 1:**
 - Students Supported: 506 students
 - Companies Supported: 324 businesses
 - Women and Minority Participants: 377 women/minorities
 - Community College Participants: 11 students
 - Interns and Companies Supported from Gateway Communities: 85 interns/companies



Vocational Internship Program

- **Program Description:** The Vocational Internship Program places vocational high school students into paid internships with local clean energy employers. The internships cover the academic school year (September-June).
- **Program Budget:** \$220,000
- **Partnerships for Growth Goal Alignment:** Community, Business, Workforce
- **Fiscal Year Goal 1:** Facilitate the placement of Massachusetts vocational high school students in paid clean energy internships across the state.
- **Fiscal Year Target 1:**
 - Students Supported: 25 students
 - Companies Supported: 10 businesses
 - Women and Minority Participants: 13 women/minorities
- **Results of Goal 1:**
 - Students Supported: 16 students
 - Companies Supported: 12 businesses
 - Women and Minority Participants: 9 women/minorities



Technical Training Internship Program Pilot

- **Program Description:** A paid on-the-job internship opportunity for graduates of technical training certificate programs in targeted industries where growth will be essential to meeting 2050 greenhouse gas emissions targets.
- **Program Budget:** \$392,200
- **Partnerships for Growth Goal Alignment:** Community, Business, Workforce
- **Fiscal Year Goal 1:** Facilitate the placement of graduates of pre-selected technical training certificate programs in paid clean energy internships across the state.
- **Fiscal Year Target 1:**
 - Students Supported: 40 students
 - Companies Supported: 15 businesses
 - Women and Minority Participants: 16 women/minorities
- **Results of Goal 1:**

(Note: The program launch occurred later than anticipated. Three grantees were awarded at the end of FY22, so impact goals have been rolled into FY23.)



Fleet Advisory

- **Program Description:** Program will provide up to 65 privately-held fleets with education about electrification options, provide a fleet analysis and electrification plan for up to 15 fleets, and provide procurement support for up to 5 fleets.
- **Program Budget:** \$1,000,000
- **Partnerships for Growth Goal Alignment:** Business, Workforce
- **Fiscal Year Goal 1:** Facilitate adoption of electric vehicle technology by private enterprises in the Commonwealth; encourage uptake of DOER's MOR-EV Truck incentive
- **Fiscal Year Target 1:**
 - MMT Addressable CO2 Supported: 70 MMT
 - Private Entities Impacted: 50 businesses
 - Environmental Justice Community sited fleets participating: 50% of sites
- **Results of Goal 1:**
 - MMT Addressable CO2 Supported: 70 MMT
 - Private Entities Impacted: 13 businesses
 - Environmental Justice Community sited fleets participating: 38% of sites (*Note: Program is still receiving requests for communities to participate, so this metric is expected to increase over time.*)



Accelerator and Incubator Support

- **Program Description:** Provide operational and programmatic grant funding to Massachusetts accelerators and incubators that support cleantech startups and provide scholarships for certain participating cleantech startup companies.
- **Program Budget:** \$900,000
- **Partnerships for Growth Goal Alignment:** Business
- **Fiscal Year Goal 1:** Support company incubators and accelerators directly as well as the companies that join incubators and accelerator programs.
- **Fiscal Year Target 1:**
 - Private Entities Impacted: 7 businesses
 - Cleantech Startups Participating in the accelerators and incubators: 120 businesses
 - Leveraged Funds: \$14,900,000
- **Results of Goal 1:**
 - Private Entities Impacted: 7 businesses
 - Cleantech Startups Participating in the accelerators and incubators: 179 businesses
 - Leveraged Funds: \$14,354,753