




MARYLAND  
CLEAN ENERGY CENTER

# ANNUAL REPORT FY 2023





As Chairman of the Board, I would like to introduce this Annual Report, which provides a summary of activity and accomplishments made by the Maryland Clean Energy Center during Fiscal Year 2023.

This year's report highlights the value of MCEC's work as we navigate challenges and unlock opportunities ahead in meeting our mission to advance clean energy and energy efficiency products, services, and technologies.

MCEC programs and financing activities were capitalized with \$36 million in private investment bringing the total leveraged capital generated by the Center to more than \$185 million. MCEC deploys this capital to facilitate the adoption of advanced clean energy, energy efficiency, cleantech solutions, and to drive related business growth in Maryland.

In efforts to broaden access to capital for financing targeted at measures to reduce greenhouse gas emissions and increase access to cost savings with clean energy for low income, disadvantaged and underserved consumers, MCEC is preparing to launch the C3 Fund and proactively pursuing various sources of federal funding through creative public private partnerships.

Through its subsidiary, the Maryland Energy Innovation Accelerator (MEIA), MCEC leveraged the wealth of cutting-edge climate tech discoveries, emanating from Maryland labs and universities, and resulting in the creation of new start-up companies created and products headed to market. Efforts to facilitate waste to value energy production from woody biomass materials continued this year through a partnership with the Maryland Department of Natural Resources and MCEC management of the State Wood Energy Team.

Procurement and Technical Assistance Services are now available through MCEC to municipalities, institutions, and industry clients. This support enables clean energy and climate mitigation strategies to move from vision to implementation more efficiently and expeditiously. The resulting work, valued in the millions for contractors and installers, employs the vibrant clean energy workforce in the state.

Supported by industry, academic, and government partners, MCEC delivered high-quality educational content and resources to diverse audiences through in-person gatherings, webinars, and digital platforms. Enhanced offerings and a growing range of focus on new programs, necessitated the addition of talented and passionate individuals to our diverse staff.

I want to thank my fellow board members, the hard-working staff, our forward-looking Advisory Council, and committed sponsors who make all MCEC's accomplishments happen. It has been my great honor and privilege to serve MCEC for the past 8 years. I have had the opportunity to work with some of the top talent in the clean energy industry and every day brings new innovation and insight. I am proud to see that MCEC is stronger today than ever, and has expanded its service to all Marylanders. Thank you all!

Best regards,



**Geoff Oxnam**

**Founder & CEO, American Microgrid Solutions**

The **Maryland Clean Energy Center (MCEC)** was created as an instrumentality of state by the Maryland General Assembly in 2008. The Center serves as a statewide green bank with a mission to transform the energy economy in Maryland by increasing clean energy jobs, driving commercialization of technological innovations, and enabling consumer adoption of clean energy products and services. **MCEC** facilitates access to capital through leveraged or direct investment and operates financing programs targeted to serve various consumer audiences and underserved communities. The Center provides specialized procurement and technical support in order to facilitate and expedite project implementation.

# Table of Contents

MCEC Board of Directors & Staff .....	■ 2
FY 2023 Executive Summary .....	■ 4
Highlights of Opportunities & Impacts for MCEC Operations .....	■ 4
Energy Sector Jobs & Wages as an Indicator Industry Health .....	■ 5
MCEC Operational Overview .....	■ 7
Funding Support and Budget .....	■ 7
Fiscal Report .....	■ 8
2023 Advisory Council .....	■ 9
Grant Applications & Network Support .....	■ 12
Mobilizing Capital & Providing Procurement & Technical Assistance Services .....	■ 13
Finance: Maryland Clean Energy Capital Program (MCAP) .....	■ 13
Procurement and Technical Assistance Services .....	■ 14
Maryland Property Assessed Clean Energy (MDPACE) Commercial Lending Program .....	■ 16
Clean Energy Advantage Residential Loan Program .....	■ 17
Biomass Energy Initiative - State Wood Energy Team Grant .....	■ 18
Innovation Advancement to Create Advanced Energy & Climate Tech Startups .....	■ 19
Outreach & Education to Strengthen the Advanced Energy Network .....	■ 22
Diversity, Equity & Inclusion .....	■ 24
2022 Connecting to the Energy Economy Speaker Series .....	■ 25
Policy Watch & 2023 Maryland Legislative Session Summary .....	■ 27
2023 Legislative Reception .....	■ 28
Looking Forward: MCEC FY 2024 Projections .....	■ 29



# Board of Directors



**Geoff Oxnam**

Board Chairman  
Founder & CEO, American Microgrid Solutions



**Mike Gill**

Vice Chair of the Board  
Portfolio Manager, Cornerstone Advisory



**Andrea Pelletier**

Treasurer of the Board  
Senior Vice President of Commercial Banking,  
Sandy Spring Bank



**Al Delia**

Board Member  
Vice President for Regional Development  
& Engagement, Frostburg State University



**Brittany Powel, Esq.**

Board member  
Attorney, Fox Rothschild LLP



**John Quinn**

Board Member  
Director of Energy Policy,  
Baltimore Gas & Electric Company



**Dr. Samuel I. Williams**

Board Member  
Professor of Government, Business,  
and Public Policy



**Paul G. Pinsky**

Ex- Officio Board Member  
Director, Maryland Energy Administration  
(Appointed January 18, 2023)



**Dr. Mary Beth Tung, Esq.**

Ex-Officio Board Member  
(Term of Service: May 17, 2016 – January 18, 2023)  
Director, Maryland Energy Administration



**Dr. Eric D. Wachsman**

Ex- Officio Board Member  
Director, Maryland Energy Innovation  
Institute & William D Crentz Centennial  
Chair in Energy Research, Distinguished  
University Professor, University of  
Maryland, College Park



# Staff



**Katherine Magruder**  
Executive Director



**Steven Cowan**  
Chief Investment Officer



**Amy Gillespie**  
Grant Administration  
& Compliance Officer



**Sabrina Bachman**  
Communications Director



**Benjamin Rupert**  
Director of Procurement  
& Technical Assistance Services



**Pamela Powers**  
Legislative Affairs  
& Administrative Manager



**Limunga Mingo**  
Energy Project  
& Procurement Manager



**Dorothy Kolb\***  
Controller



**Charmaine Brown\***  
Advisor - Diversity, Equity  
& Inclusion Strategies & Initiatives  
(Jan - June, 2023)



**Maura Ross**  
Wood Energy  
Coordinator



**Aziz Kamulegeya\***  
Clean Energy Advantage  
Loan Program Coordinator



**Rylee Kennedy**  
Marketing Program  
Assistant



**Mary Sirois**  
Administrative Assistant



**Wade Haerle\***  
Director  
Maryland Energy Innovation  
Accelerator



**Mike Ducker\***  
Associate Director  
Maryland Energy Innovation  
Accelerator



**Brian Toll\***  
Senior Advisor  
Maryland Energy Innovation  
Accelerator



**Emily Sheppard\***  
Team Coordinator  
Maryland Energy Innovation  
Accelerator



**Ben Margolis\***  
Commercialization  
Program Manager  
Maryland Energy  
Innovation Accelerator  
(Resigned August 31, 2022)



**Roop Vijayan\***  
MCEC Counsel  
Assistant Attorney General,  
Office of the Attorney General,  
Maryland Dept. of Commerce

## Interns

**Daniella DiRubba**  
Policy Intern  
University of Maryland College Park, c/o 2024

**Sarah Groff**  
Policy Intern  
University of Maryland College Park, c/o 2024

**Aiden Guzovsky**  
Corporate Finance Intern  
University of Maryland College Park c/o 2023

\*Contractual Team Members

## Highlights of Opportunities & Impacts for MCEC Operations

Our work to support advanced energy across the state continues to grow year-over-year. With enhanced program offerings and expanded support services, MCEC programs and financing activity were capitalized with over \$36 million in private investment, bringing the total leveraged capital generated by the Center to more than \$185 million. MCEC deploys this capital to facilitate the adoption of advanced clean energy, energy efficiency, cleantech solutions, and to drive related business growth in Maryland.

MCEC acts to:

- **Enable decarbonization and lessen the energy cost burden for homeowners and communities**
- **Build partnership connections between government, industry, utility, and academia**
- **Assist residential, small business, commercial, municipal, and institutional consumers**
- **Invest in underserved communities and project deployment**

In response to the responsibilities and opportunities presented to MCEC, resulting from the Climate Solutions Now Act and announced federal funding, there has been a heavy emphasis on strategic planning to efficiently and effectively build the capacity of The Center. New staff has joined the team, and consultants were engaged to prepare for the launch of the Climate Catalytic Capital (C3) Fund, as well as evaluate the MCEC brand valuation to set a framework for future program development and offerings:

- Project feasibility, design, development, and oversight
- Technical services sourcing and advisory services
- Centralized purchasing, procurement, and contract management
- Grant writing

The Connecting to the Energy Economy Speaker Series webinars delivered high quality educational content, in addition to the 2023 Legislative Reception and the development of a new Buying and Selling Properties with Solar Systems continuing education course for realtors.

FY 2023 also brought continued success for the growth of innovative climate tech companies and statewide collaboration to facilitate the adoption of biomass energy.





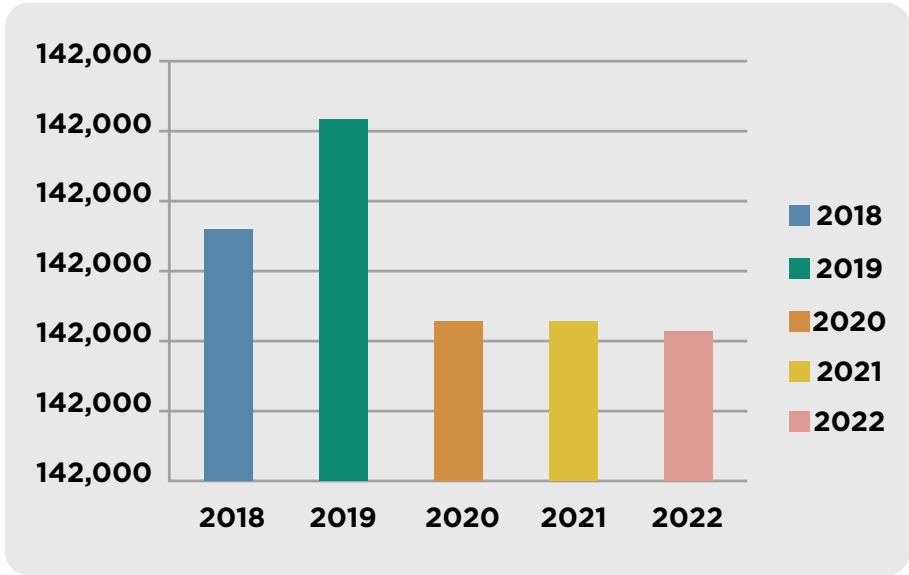
MCEC continues to thrive, with the support of our local stakeholders, industry, and government partners. Our work to raise awareness of environmental justice is moving beyond outreach and education efforts, with active partnerships to implement solutions and increase access for underserved communities to participate in the advanced energy economy.

*MCEC programs and financing activity were capitalized with over \$36 million in private investment, bringing the total leveraged capital generated by the Center to more than \$185 million.*

**ENERGY SECTOR JOBS & WAGES AS AN INDICATOR INDUSTRY HEALTH**  
**Jobs Decrease, but Earnings Up**

Compared to 2021, total sector-wide employment decreased by 161 jobs, while total sector annual earnings increased by a collective \$222,924,700. The decline in 2022 (roughly \$222M USD).

**TOTAL SECTOR EMPLOYMENT**



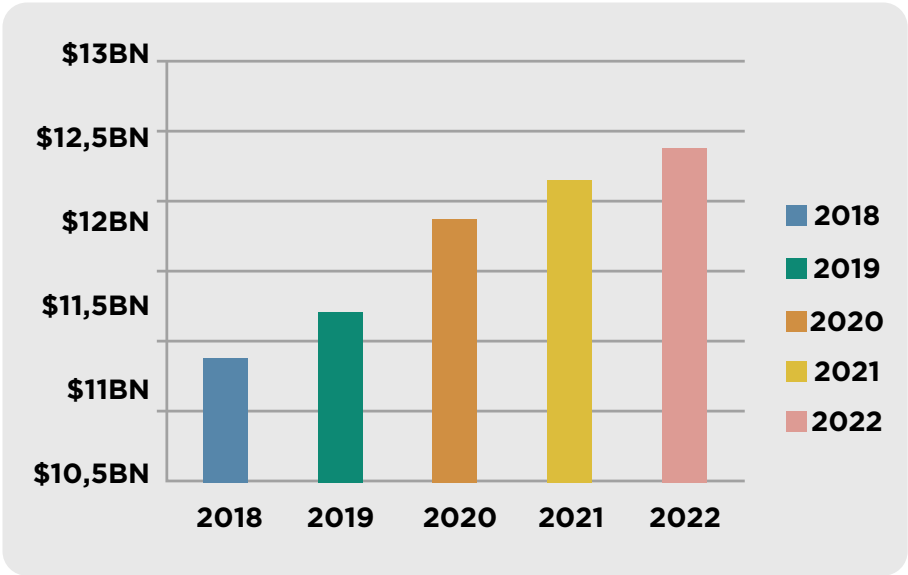
The 2023 MCEC Employment and Wages Report is derived from the most recently available (4th quarter of 2022) Bureau of Labor Statistics' (BLS) Quarterly Census of Employment and Wages (QCEW). The prior years' data source came from the 4th quarter (December) of each year (2018 - 2022).

Note: BLS data is typically unavailable for up to 6 months after it occurred.



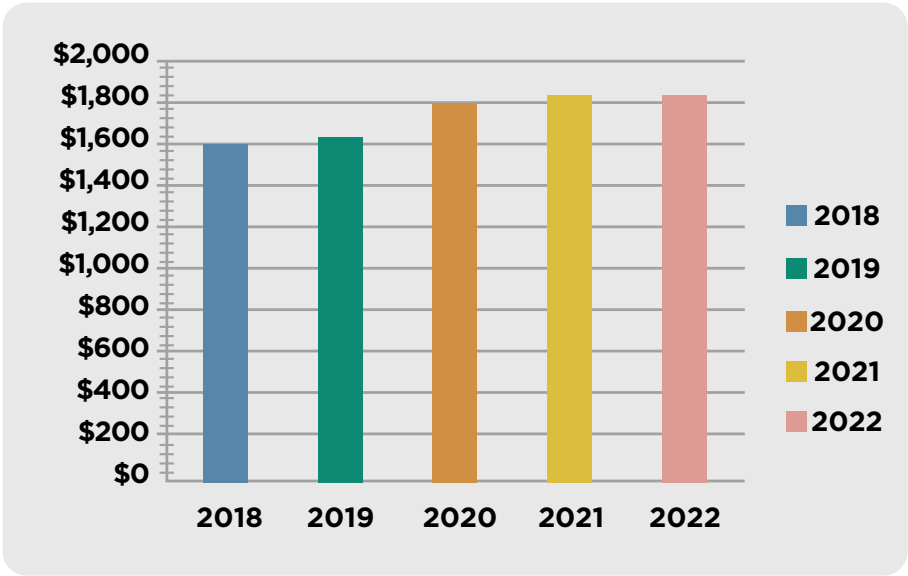
The 2022 MCEC Comparison Report shows that the collective annual earnings of all workers in the clean energy sector increased from \$11,354,785,392 in 2018 to \$12,791,339,324 in 2022. Compared to 2018, the estimated total earnings in the Maryland clean energy sector increased by \$1,436,553,932 through 2022.

TOTAL ESTIMATED ANNUAL EARNINGS



In addition, the sector-wide average weekly earnings increased from \$1,608.61 in 2018 to \$1,854.00 in 2022. This is a \$245.39 increase. Additionally, average weekly earnings decreased by \$5.00 from 2021.

AVERAGE WEEKLY EARNINGS





## Funding Support and Budget

**The Maryland Clean Energy Center budgeted for revenue of \$1,857,577 and expenses of \$1,708,523 for FY 2023.**

Sources of revenue for the period included: grants, excess energy savings revenue, project fees, sponsor and event revenue, bond administration revenue, and miscellaneous earned interest income. Total revenue at fiscal year-end was \$2,335,627 with a net operating loss of \$385,990.

In FY 2023, MCEC incurred a total of \$1,884,938 in operating expenses, with funds invested to support general administration, board activities, along with operation of the Maryland Clean Energy Capital (MCAP) Maryland Property Assessed Clean Energy (MDPACE) programs, and a new Clean Energy Advantage (CEA) Pilot Loan Program. The funds were also invested to support outreach and education activity.

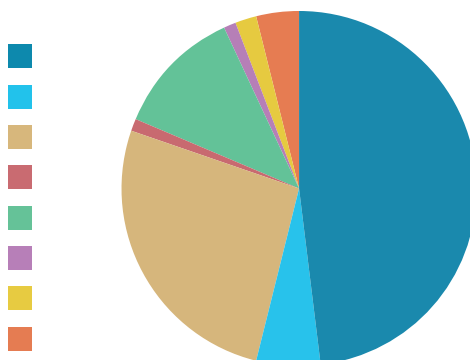
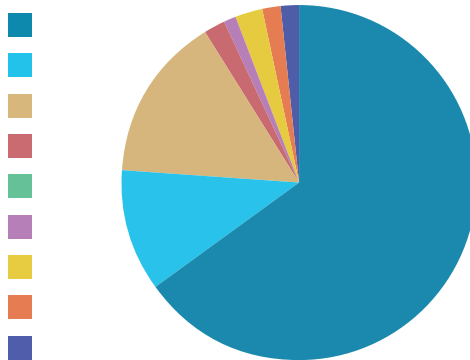
At the close of FY 2023, MCEC staff included nine full-time positions, including one grant-funded to support the Biomass Energy Initiative: State Wood Energy Team Grant. There were also one part-time administrative employee and four part-time contractual positions, one to support each of the following areas: accounting, human resources, program management for the Maryland Energy Innovation Accelerator (MEIA), and program management for CEA.

MCEC allocated \$300,000 to support MEIA operations, which is noted in the details for the detailed revenue and expenses for that program.

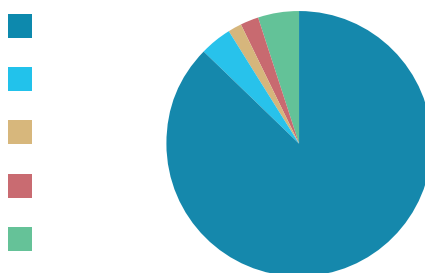
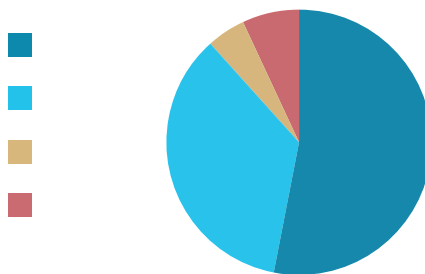


# MCEC Operational Overview

MCEC FY 2023 Revenue		
Leases	\$1,523,730	65%
Grants	\$256,527	11%
Consulting	\$354,116	15%
Excess Energy Savings	\$40,027	2%
Project fees	\$5,000	0%
Other	\$26,047	1%
Sponsor and event revenue	\$56,395	2%
Bond administration	\$35,285	2%
Donations & Contributions	\$38,500	2%
	<b>\$2,624,942</b>	<b>100%</b>
MCEC FY 2023 Expenses		
Salaries/Fringe	\$907,814	48%
Consultants/Professional Fees	\$111,966	6%
Project operating costs	\$494,823	26%
Cohort Expenses	\$19,896	1%
Office Expenses	\$219,842	12%
Advertising	\$20,713	1%
Event Expenses	\$38,144	2%
Conference/Travel	\$71,739	4%
	<b>\$1,884,937</b>	<b>100%</b>



MEIA FY 2023 Revenue		
MCEC Investment	\$300,000	53%
Grants	\$197,527	35%
Consulting	\$27,000	5%
Corporate Investment	\$38,500	7%
	<b>\$563,027</b>	<b>100%</b>
MEIA FY 2023 Expenses		
Administration	\$263,870	66%
Cohort Expenses	\$111,966	28%
Travel	\$4,683	1%
Legal & Professional Services	\$6,734	2%
Office & Other Expenses	\$15,072	4%
	<b>\$402,325</b>	<b>100%</b>



## FISCAL REPORT -

"Management's Discussion and Analysis and Financial Statements together with Independent Auditors' Report" can be found online at:

<https://www.mdcleanenergy.org/about-mcec/enabling-statute/financial-statements>.



The Maryland Clean Energy Center is required by statute to appoint an Advisory Council to help develop a work plan for MCEC, set the framework for activity of the organization, advise the Executive Director, and inform the Board of Directors. A total of 64 individuals were appointed to serve on the 2023 Advisory Council.

The Council evaluates issues, reviews proposed policy and regulatory matters, facilitates relationship building, and builds awareness of MCEC to encourage the adoption of its mission. In addition, the group identifies and works to remove barriers to success in the energy sector.

#### ADVISORY COUNCIL MEMBER INDUSTRY SECTOR REPRESENTATION



ADVISORY COUNCIL MEMBER INDUSTRY SECTOR REPRESENTATION

**Walt Alfred**  
CEO - Ally Power Inc.

**Michael Billingsley**  
Senior Director, Originations - Nuveen Green Capital

**Brent Bolea**  
Assistant General Counsel - BGE and  
Adjunct Professor - University of Maryland Francis King Carey  
School of Law

**Brandon Bowser**  
Section Chief, Clean Energy and Resiliency - Maryland Energy  
Administration

**Daniel Bresette**  
President - Environmental and Energy Study Institute

**Kevin Brown**  
Partner - Climate Tech Practice - True Search Partners

**Michael Bryant**  
President - Sabot Ventures LLC

**Todd Chason**  
Attorney - Gordon Feinblatt LLC

**Paul Clary**  
Co-Founder - MD Energy Advisors

**Shelley Cohen**  
Director, Clean Technology Business Development - Ameresco

**Musa Collidge-Asad**  
Chief Investment Officer - Inclusive Prosperity Capital

**Lushaé Cook**  
Senior Manager, Innovation & New Programs - Pepco

**Adam Dubitsky**  
State Director - ABD Communications

**William Ellis**  
Director, Governmental and External Affairs - Pepco, An Exelon Company

**Henry Fawell**  
Founder - Campfire Communications

**William Fields**  
Deputy People's Counsel - Office of People's Counsel

**Garrett Fitzgerald**  
State Climate and Energy Policy Manager - Montgomery County, MD

**Armando Gaetaniello**  
Community Solar Product Manager II - Reactivate

**Manuel Geraldo**  
Manager, Government Relations & Public Policy - Washington Gas

**Robert Gorsuch**  
Energy Trust Manager - ESMC Energy Trust

**Charles Hernick**  
Head of ESG Policy - Amazon

**Jeffrey Hood**  
Chief Executive Officer -  
Hood Engineering and Consulting Services, LLC

**Joanne Ivancic**  
Executive Director - Advanced Biofuels USA

**Frederick Johnson**  
Park Manager III - MNCPPC Department of Parks and Recreation

**James Johnson**  
Director of Facilities, UMD IBBR - University of MD IBBR

**Stephanie Johnson**  
Executive Director - CHESA

**Pari Kasotia**  
Senior Director and Head of Policy - DSD Renewables

**Andrew Kays**  
Executive Director - Northeast Maryland Waste Disposal Authority

**George Kervitsky, Jr.**  
President - Kervitsky Energy & Environmental Consulting

**John Kotek**  
Sr. VP, Policy & Public Affairs - Nuclear Energy Institute

**Adam Landsman**  
President - PulseIQ, LLC

**Kevin Lucas**  
Sr. Director of Utility Regulation and Policy - SEIA

**Arjun Makhijani**  
President - Institute for Energy and Environmental Research (IEER)

**Jim McDonnell**  
COO - Avalon Energy Services, LLC

**Susan Miller**  
Senior Attorney - Earthjustice

**Michele Mitch-Peterson**  
Energy Transformation Executive - Siemens Smart Infrastructure

**Shannon Moore**  
Director, Division of Energy and Environment - Frederick County Govt

**Nandini Mouli**  
President - eSai LLC

**Kobby Osei-Kusi**  
CEO - Pirl Technology, Inc.

**Kwabena Osei-Sarpong**  
President & CEO - RIFE International

**Alex Pavlak**  
Chairman - Future of Energy Initiative

**Christopher Peoples**  
Managing Partner - PP&A | Peoples Partners and Associates

**Pamela Peseux**  
Principal - Tuatara Group and Cimperium

**Kevin Porter**  
VP - Exeter Associates Inc.

**Sabine Rogers**  
Manager, Government & Regulatory Affairs - AnnDyl Policy Group

**Perry Rosensweig**  
Director, Public Sector - CPower Energy Management

**Benjamin Roush**  
Principal - FSi Engineers

**Jack Schammel**  
Director - TEDCO

**Cherise Seals**  
Senior Account Executive - NORESCO

**Alison Shea**  
Vice President of Sales - Limbach

**Grant Shmelzer**  
CEO - IEC Chesapeake

**Andre Slonopas**  
Engineer - DEVCOM

**Brooke Smallwood**  
Founder & CEO - OASIS Energy Partners

**Rachel Smucker**  
Manager, Government Affairs Southeast -  
Invenergy LLC

**Todd Stave**  
CEO - Blue Bear Management

**Mark Stewart**  
Climate Change Program Manager -  
Maryland Dept of the Environment

**Bill Temmink**  
Organizer - Carbon Free by 2040

**Paul Thompson**  
Community Development Banking – Bank of America

**Nicola Tran**  
Senior Energy Program Manager - Maryland Dept.  
of Housing & Community Development

**Barbara Tyran**  
Director, Macro Grid Initiative - ACORE

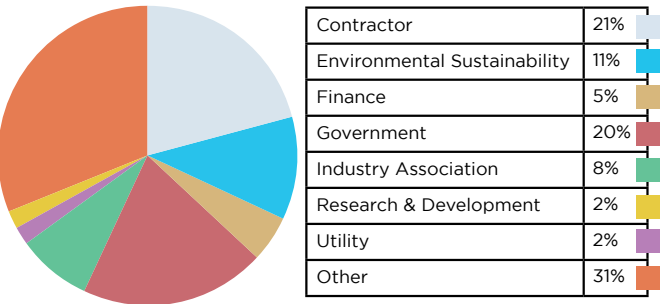
**Victoria Venable**  
Legislative Director - Frederick County Executive's Office

**Stuart Widom**  
Manager, Regulatory & Legislative Affairs -  
PJM Interconnection, LLC

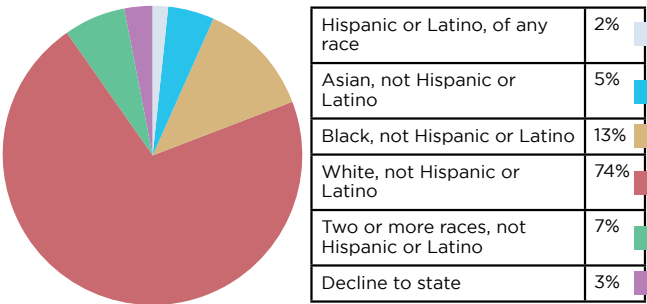
**David Wilson**  
Project Manager - Chesapeake Contracting Group

**Diana Younts**  
Co-Lead - MLC Climate Justice Wing

ADVISORY COUNCIL  
MEMBERS' COMPANY /  
ORGANIZATION TYPE



ADVISORY COUNCIL MEMBERS'  
SELF-REPORTED RACE /  
ETHNICITY





THE 2023 ADVISORY COUNCIL MEETING WAS HELD ON JUNE 21, 2023, IN COLLEGE PARK, MD.



## Focus on Pursuit of Federal Funds, Grant Administration & Compliance Officer Hired

During FY 2023 MCEC submitted several collaborative partnership federal grants. These grant requests totaled **\$168,443,891 in FY23, with \$185,634,937 in total project costs.** Grants include the DOT RAISE Grant, the DOT Port Infrastructure Development Program, the HeroX Walker 28 Community Solar Prize and the DOT Charging, Fueling and Infrastructure Grant. Award notifications are expected during FY 2024, and additional applications for the USDA Rural Energy Assistance Technical Assistance Grant, the GGRF/EPA Solar for All Grant, the GGRF/EPA Clean Communities Investment Accelerator, and the GGRF/EPA National Clean Investment Fund are pending.

## Maryland Equitable Charging Infrastructure Partnership (MECIP)

The MECIP is a collaboration of government, industry, academia, workforce, and community development organizations assembled to develop equitable access to charging and fueling infrastructure. MCEC served as the lead entity in convening and managing the MECIP Partnership for comprehensive grant application for the U. S. Department of Transportation (USDOT) Federal Highway Administration Charging and Fueling Infrastructure Discretionary Grant in June of 2023.

The MCEC application for the first round of funding included 29 Corridor sites and 58 Community sites in the final analysis, totaling 87 additions to the goal of expanding equitable EV charging across the State of Maryland.

The project results in the following pollutant reduction:

- Fuel use by 9,119.6 barrels annually
- Greenhouse gas (GHGs) emissions by 2,894.6 metric tons annually
- Other pollutants CO, NOx, PM10, PM2.5, VOC, and Sox by 44,121.4 lb. annually

*Note: Analysis provided by Dr. Qingbin Cui, Director, Building America Center at the University of Maryland College Park.*

Of the 87 total project sites, 51% are located in disadvantaged Census Tracts. Data scores from several different federal and state tools were included for each site and submitted with the application. The application exceeded LMI and Justice40 goals with the project sites submitted.

The application represents all areas of the state, provides additional density, and fills gaps in alignment with the state's MDOT NEVI plan.

The total federal request totals \$ 48,461,414.00, with \$15M COMMUNITY projects and \$33,461,414.00 CORRIDOR projects. The public-private match totals \$9,692,283.00. A funding decision is expected in September 2023.

# Grant Applications & Network Support

## Mobilizing Capital and Providing Procurement & Technical Assistance Services

Finance: Maryland Clean Energy Capital Program (MCAP)

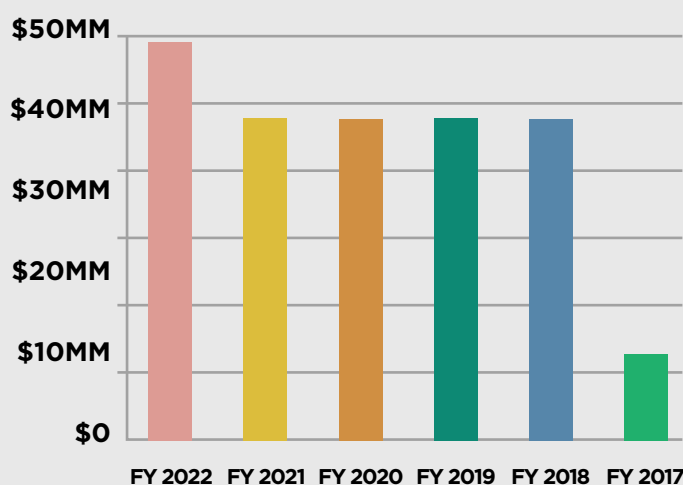
### FINANCE PROGRAM IMPACT METRICS

	FY 2023 Totals	FY 2022 Totals	Cumulative Totals (As of June 30, 2023)
Leveraged Investment (public to private \$\$)	\$29,304,705	\$35,789,501	<b>\$185,169,484</b>
Leveraged Ratio	23.5x	10.2x	<b>13.4x</b>
MCAP Income Generated	\$5,000	\$50,000	<b>\$110,990</b>
MCAP Deals Closed	0	1	<b>6</b>
Project Finance Pipeline Projects	12	10	<b>N/A</b>

The Maryland Clean Energy Capital Program (MCAP) provides access to private capital through the issuance of tax-exempt and taxable bonds. As a public instrumentality of the State of Maryland, MCEC is authorized by its enabling statute to be an issuer of tax-exempt debt for projects supporting the advancement of clean energy, economic development, energy innovation, and related jobs creation in the State.

Since MCEC's inception, bond proceeds and additional sources of capital have been used to fund over \$185 million in energy efficiency capital projects.

### MCEC CUMULATIVE BOND ISSUANCE





**Cumulative MCAP bond issuance through the period ending June 30, 2023, totaled \$43.3 million for tax-exempt bonds and \$5.1 million for taxable bonds.**

Proceeds from the six bonds and notes issued through MCAP-funded energy efficiency, mechanical equipment upgrades, and renewable energy production including capital improvements for lighting, HVAC, solar hot water heaters, boilers, chillers, building envelope renovations, water conservation measures, combined heat and power systems, demand response systems, construction management, capitalized interest, and cost of issuance.

Two large-scale energy efficiency projects, funded in part with proceeds from MCEC bond issuances, were still under construction during FY 2023.

### Procurement and Technical Assistance Services

**MCEC offers neutral third-party technical procurement, project development and financing support capabilities to help partners implement clean energy programs, projects and measures efficiently. In addition, MCEC has the capacity to facilitate procurement as a service, providing:**

- Project feasibility, design, development, and oversight
- Technical services sourcing and advisory services
- Centralized purchasing, procurement, and contract Management
- Grant writing



### PROCUREMENT AND TECHNICAL ASSISTANCE SERVICES (PTAS) IMPACT METRICS

	<b>FY 2023</b> Total	<b>FY 2022</b> Total	<b>Cumulative</b> Totals
Fee-for-Service Income Generated	\$79,650	\$51,454	\$188,326
Project Procurement, Technical Support & Management MOUs Executed	9	3	14
Internal Contract Solicitations	6	4	12
Internal Contract Awards	20	4	26
Value of Internal Awards	\$117,748	\$34,188	\$151,936
% MBE Goals Met - Internal	100%	100%	--
External Contract Solicitations	3	0	12
External Contract Awards	11	41	54
Value of External Awards	\$12,393,109	\$43,924,107	\$61,318,367
% MBE Goals Met - External	105%	100%	--



**MCEC has pushed over \$61 MM into the marketplace as a result of Procurement and Technical Assistance Services work.**

## ANNUAL ENERGY SAVINGS

	<b>FY 2023</b> Total	<b>FY 2022</b> Total	<b>Cumulative</b> Totals (As of June 30, 2023)
<b>FEE INCOME GENERATED</b>			
Fee-for-Service	\$79,650	\$51,454	\$188,326
Project Procurement, Technical Support & Management MOUs	12	2	4
<b>ENERGY-RELATED OUTCOMES OF PROJECTS</b>			
kWh Saved	18,445,619	18,533,980	125,979,599
kWh Cost Savings	\$1,752,249	\$1,675,905	\$9,920,558
kWh Renewable Generation	0	0	0
kWh Storage Capacity	0	0	0
BTU Therms Saved	206,570	176,963	1,312,543
BTU Cost Savings	\$156,277	\$71,968	\$711,869
Therms Generated	0	0	0
Industry Job Hours (CEA, MDPACE & MCAP)	101,920	535,268	2,949,796
<b>CLIMATE IMPACT (greenhouse gas reduction, carbon capture)</b>			
Greenhouse Gas Reduction (Tons-NOx, SOx & Methane)	0	0	0
CO <sub>2</sub> Avoided (MT)	1,293	1,534	7,761
Water / Sewer Conservation	36,697	28,106	216,641
Water / Sewer Conservation Cost Savings	\$178,976	\$149,157	\$1,194,991

This data represents numbers for Baltimore County Public Schools (BCPS), the Clean Energy Advantage (CEA) loan program, Coppin State University (CSU), University of Maryland Institute of Bioscience and Biotechnology Research (IBBR), and University of Maryland Baltimore County (UMBC).

**Note:** MCEC periodically revises historic data to account for newly acquired information and/or data corrections.

MARYLAND PROPERTY ASSESSED CLEAN ENERGY COMMERCIAL LENDING PROGRAM

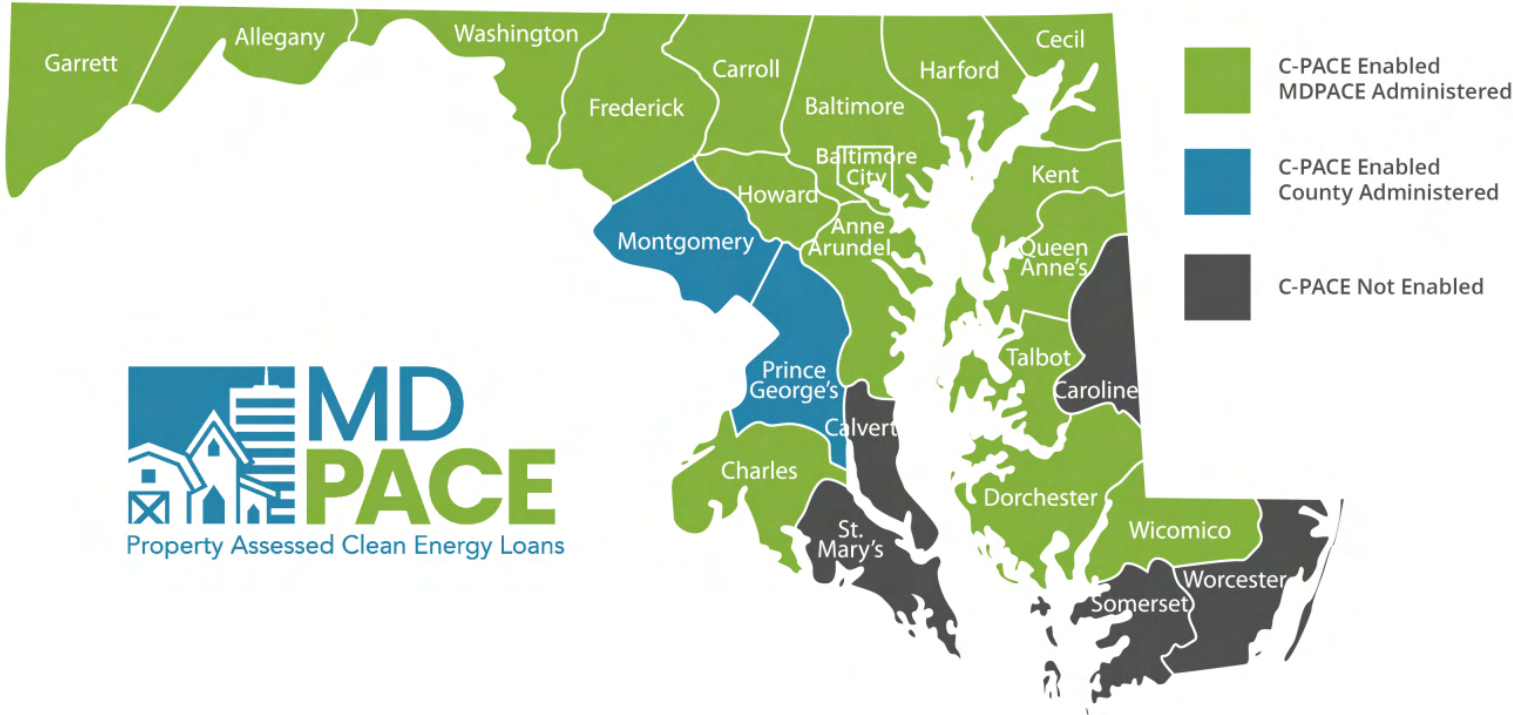
The Maryland Commercial PACE (MDPACE) program continues to expand its focus by working with capital providers, jurisdictions, and others to promote the clean energy loan program. In addition, MDPACE now allows for the refinancing of recently completed C-PACE eligible projects across the state. It also offers access to affordable, 100% up-front capital to assist retail, commercial, industrial, agricultural, and not-for-profit property owners.

MCEC oversees MDPACE, and FY 2023 saw the completion of the transition to Abacus Property Solutions as the administrator.

The program continues to reach out to local jurisdiction contacts. Updated Program Guidelines were made available on the Maryland Commercial PACE website by the end of last year in conjunction with the launch of the new Maryland PACE website: [md-pace.com](https://md-pace.com).

*During FY 2023, \$28,643,200 in MDPACE transactions closed in the state, bringing the cumulative total of transactions above \$104 MM (MDPACE only).*

WHERE IS C-PACE IN MARYLAND?



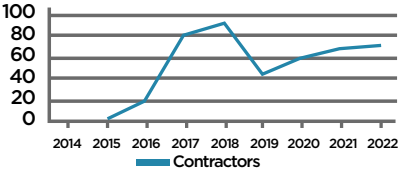
Of the nineteen jurisdictions in Maryland that have enabled C-PACE, seventeen are administered by MCEC. Washington County is a new addition to the program and Baltimore County has updated its ordinance to meet the new program guidelines. The Montgomery and Prince George's Counties enabled C-PACE programs are self-administered. Frederick County and Charles County are expected to be the next jurisdictions to adopt the new program guidelines. Outreach continues for passage of the new PACE program guidelines with Baltimore City, Anne Arundel, and Harford counties for 2023.

MDPACE PROGRAM PARTICIPATION OVERVIEW



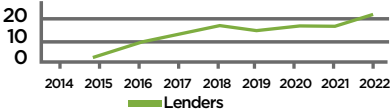
MDPACE Registered Contractors

67 (+10)



MDPACE Registered Capital Providers

21 (-1)



In an effort to support C-PACE efforts across the region, MCEC continues to offer administrative support for the Mid-Atlantic PACE Alliance (MAPA) initiative, previously supported by the US Department of Energy.



## CLEAN ENERGY ADVANTAGE RESIDENTIAL LOAN PROGRAM

The Clean Energy Advantage (CEA) Residential Lending Pilot Program is a lending initiative authorized by the Maryland Public Service Commission (PSC), to provide affordable financing for energy efficiency home improvements to all Maryland residents, regardless of income. The program is administered by the Maryland Clean Energy Center and the Montgomery County Green Bank.

Residents within Maryland service territories for BGE, SMECO, Potomac Edison, Delmarva Power, Pepco, and Washington Gas are eligible for this program, which is paired with utility Home Performance with ENERGY STAR (HPwES), Home Energy Improvement Programs (HEIP) or HVAC rebate programs.

*In fiscal year 2023, the CEA Pilot Program funded 71 loans totaling \$592,278. The projects related to these loans provided approximately 2,500 FTE contractor job hours and an estimated 148,000 annual kWh of energy savings.*

Of the 71 completed and funded projects, 37 were in Montgomery County and 34 were completed elsewhere in the state.



# CLEAN ENERGY Advantage



## USDA Forestry Grant Funds Biomass Energy Initiative

In FY 2023, the USDA Wood Innovations Project addressed several goals created in FY 2022 and began new projects, focused on Efforts to Advance Clean Energy from Waste continue. MCEC and the Department of Natural Resources were awarded another USDA Wood Innovations Grant to cover a wood energy coordinator work until FY 2025.

Continuous work has been completed for Frostburg State University (FSU), which has shown interest in converting its 113 fossil fuel boilers to wood energy. Additionally, Allegany County has continued interest in expanding the wood energy sector, this time for generating electricity. AES's Warrior Run power plant, located in Cumberland, is set to convert to wood energy. AES, the national company, is committed to being fossil fuel-free by 2025 and is looking to wood energy as its solution.

*Through this initiative, we strive to innovate, boost local economies, and cut our carbon footprint while showcasing biomass energy's pivotal role in creating a greener, more sustainable future.*

### NEW HAMPSHIRE WOOD ENERGY SITE VISIT



# Biomass Energy Initiative State Wood Energy Team Grant

**The Maryland Energy Innovation Accelerator (MEIA) is the venture development offered by MCEC, focused on commercializing advanced energy and climate technologies developed at Maryland-based businesses, universities, and laboratories.**

MEIA supports solar, wind, batteries, energy efficiency, grid modernization, carbon capture utilization and storage (CCUS), and any other technology that reduces greenhouse gas emissions or provides negative emissions benefits in the electric, oil and gas, commercial, or industrial sectors.

MEIA provides climate tech ventures access to domain experts, experienced executives, co-founders, investors, strategic partners, professional services, and project management support to execute commercialization milestones.

**FY 2023 Innovation Advancement Goals:**

- Accelerate the commercialization of clean tech discoveries in Maryland to marketable products and services
- Promote business and job creation in the clean tech sector for Maryland

**Key Innovation Advancement Objectives:**

- Identify promising technologies developed in Maryland
- Identify and onboard technologies from universities and labs into high-quality startups
- Facilitate Maryland Climate Tech ventures with important market actors
- Recruit and onboard Energy Executives in Residence (EEIR) to take roles as co-founders or advisors
- Connect Maryland Climate Tech ventures with needed capital
- Provide technical assistance with the development of commercialization plans
- Generate sponsorship and tech-to-market income to offset costs to operate MEIA above the State of Maryland contribution

**Innovation  
Advancement to  
Create Advanced  
Energy & Climate  
Tech Startup**



## INNOVATION IMPACT METRICS GRAPHIC

	<b>FY 2023</b> Totals	<b>FY 2022</b> Totals	<b>FY 2021</b> Totals	<b>FY 2020</b> Totals	<b>Cumulative</b> Totals
Number of Companies Formed	7	6	0	1	14
Number of Companies Served	16	17	22	5	60
Number of Full-time Jobs Created	34	7	8	0	49
Number of Part-time Jobs Created	25	3	2	0	30
Third-Party Capital Investment	\$3,888,250	\$1,800,000	\$3,200,000	\$-	\$8,888,250
Grant and Sponsorship Revenue for Teams	\$26,815,000	\$2,325,000	\$656,000	\$-	\$29,796,00
MEIA Tech to Market Fee Income	\$27,000	\$26,639	\$65,000	\$25,000	\$143,639

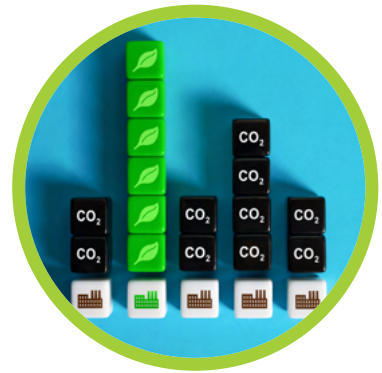
In September 2022, MCEC was awarded a three-year grant totaling \$750,000 from the U.S. Economic Development Administration (EDA) to support the Maryland Energy Innovation Accelerator. The award is part of EDA's 2021 Build to Scale Venture Challenge, which seeks to leverage regional competitive strengths to accelerate innovation and job creation through high-growth technology entrepreneurship and fostering inclusive access to proven entrepreneurship support models.

MEIA launched its first cohort in January 2020. In its first 30 months, it worked with (and continues to work with) 44 Startups that generated significant incremental economic development impact to the State of Maryland after enrolling in a MEIA program.

MEIA provides three programs that represent a three-tiered approach that moves technology from concept to demonstration:

1. Pre-Accelerator - A two-month customer-discovery program for the earliest technologies from universities and labs;
2. Launchpad - A six-month commercialization planning program for high-potential technologies in universities or labs
3. Accelerator - A six+ month program for established companies looking to fill senior roles, demonstrate technology, and obtain third-party capital investment.

The program also received local foundation support through a \$10,000 award from the Butz Foundation.



## LAUNCHPAD AND ACCELERATOR TEAMS

TEAM NAME	TECHNOLOGY	ENTRY DATE	AFFILIATION	STATUS
CUPTech	Upcycling of plastics	Spring 2021	JHU	Graduated from Launchpad
InventWood	Wood replacement for steel	Spring 2021	UMD	Graduated from Accelerator
ATP-MD	Biomass to value	Summer 2021	None	Graduated from Accelerator
Dynami Battery	Battery printing technology	Summer 2021	None	Graduated from Accelerator
Rechargeable Zinc Battery (RZB)	Zinc battery for wearable applications	Summer 2021	UMBC	Graduated from Launchpad
EDAC Labs	Direct air capture of carbon dioxide	Fall 2021	JHU	Graduated and Incorporated
Living Canopies	Ecofriendly bus shelters	Spring 2022	UMD	Accelerator participant
HighT-Tech	Catalyst manufacturing	Spring 2022	UMD	Accelerator participant
Alchemy SOFC	Low-temperature SOFC	Spring 2022	UMD	Launchpad participant and Incorporated
Carbon Lockdown	Wood harvest and burial for carbon sequestration	Spring 2022	UMD	Launchpad participant and Incorporated
Ionic Devices	Battery built using semiconductor manufacturing	Spring 2022	UMD	Launchpad participant
Liatriis	Fire-resistant insulation	Spring 2022	UMD	Accelerator participant
Archer Power Solution	Battery-operated air conditioner "off-grid" use	Spring 2023	None	Accelerator participant
Aquatic Circle	Advanced water filtration system	Spring 2023	None	Accelerator participant
WH Power	Low-temperature batteries	Spring 2023	UMD	Launchpad participant
Cooling - X	Paint for solar reflection	Spring 2023	UMD	Launchpad participant
ETCH	Converts natural gas into hydrogen and solid carbon	Spring 2023	JHU	Launchpad participant

Learn more about the teams at <https://www.mdeia.org/participating-startups>

*"MEIA has been critically important to the early success of our company. We are just entering the market, so revenues are just being generated. Our two closest investor prospects - we're expecting term sheets from both this week - were introduced to us by MEIA. We've received stellar support through connections and networking, and we were able to use the skills of an awesome EEIR. MEIA has also helped to fund some of our marketing efforts and website development. Prior to MEIA, we participated with another accelerator out of NYC, and MEIA was so much better for our company, hands down." - MEIA Participating Company*

In June 2023, MEIA hosted a Pitch Competition Finale. The virtual event culminated months of work by teams participating in MEIA's accelerator programs. Four Startup Teams pitched their innovative clean energy product or service to a panel of climate-focused investors who judged the competition. College Park based Alchemy was named the Grand Prize winner and awarded a \$1,000 Grand Prize sponsored by the Maryland Department of Commerce. MCEC convenes stakeholders and industry leaders, reports on policy activity that impacts the sector, and offers leadership perspective through participation in industry-related activities and engagement. Special events provide educational opportunities and facilitate networking to strengthen partnerships.



## MEIA Key Funders & Supporters



## Access to Impactful Information

The Maryland Clean Energy Center supports outreach and education activities to build the advanced energy economy in Maryland.

MCEC convenes stakeholders and industry leaders, reports on policy activity that impacts the sector, and offers leadership perspective through participation in industry-related activities and engagement. Special events provide educational opportunities and facilitate networking to strengthen partnerships.

### FY 2023 Outreach & Education Goals:

- Establish MCEC as a clearinghouse of information between industry, academia, government, and consumers
- Provide information about clean energy technologies, products, and services to a broad consumer audience to encourage adoption
- Be a resource and provide programming to facilitate industry networking, professional education, and partnerships

### Key Outreach & Education Objectives:

- Help customers and business partners connect
- Prioritize industry networking and professional education opportunities; with focus on environmental justice, MDPACE, K-12, and academic institution project development
- Educate stakeholders and support industry capacity to engage in the policy process



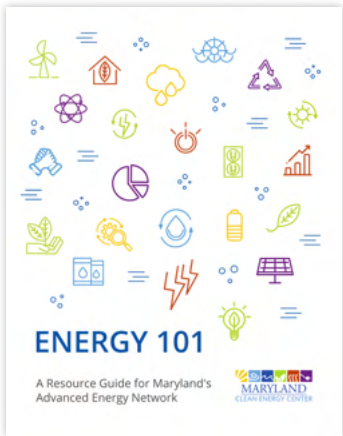
Outreach &  
Education to  
**Strengthen the  
Advanced Energy  
Network**





During FY 2023, MCEC continued to interact with stakeholders and assess market needs and trends, while meeting ongoing changes for best practices and audience preferences in response to evolving event best practices and enhanced digital tools.

**Energy 101: A Resource Guide for Maryland's Advanced Energy Network** was published at the end of 2022. The resource guide describes the key entities involved in energy generation, transmission, distribution, and regulation, as well as how they interact with each other. This publication also contains summaries of energy technologies currently available in Maryland, an energy policy history timeline, milestone goals that frame the market, a helpful glossary of industry-related terms, and a list of resource and reference links. Energy 101 is available for download at <https://www.mdcleanenergy.org/resources/energy101>.

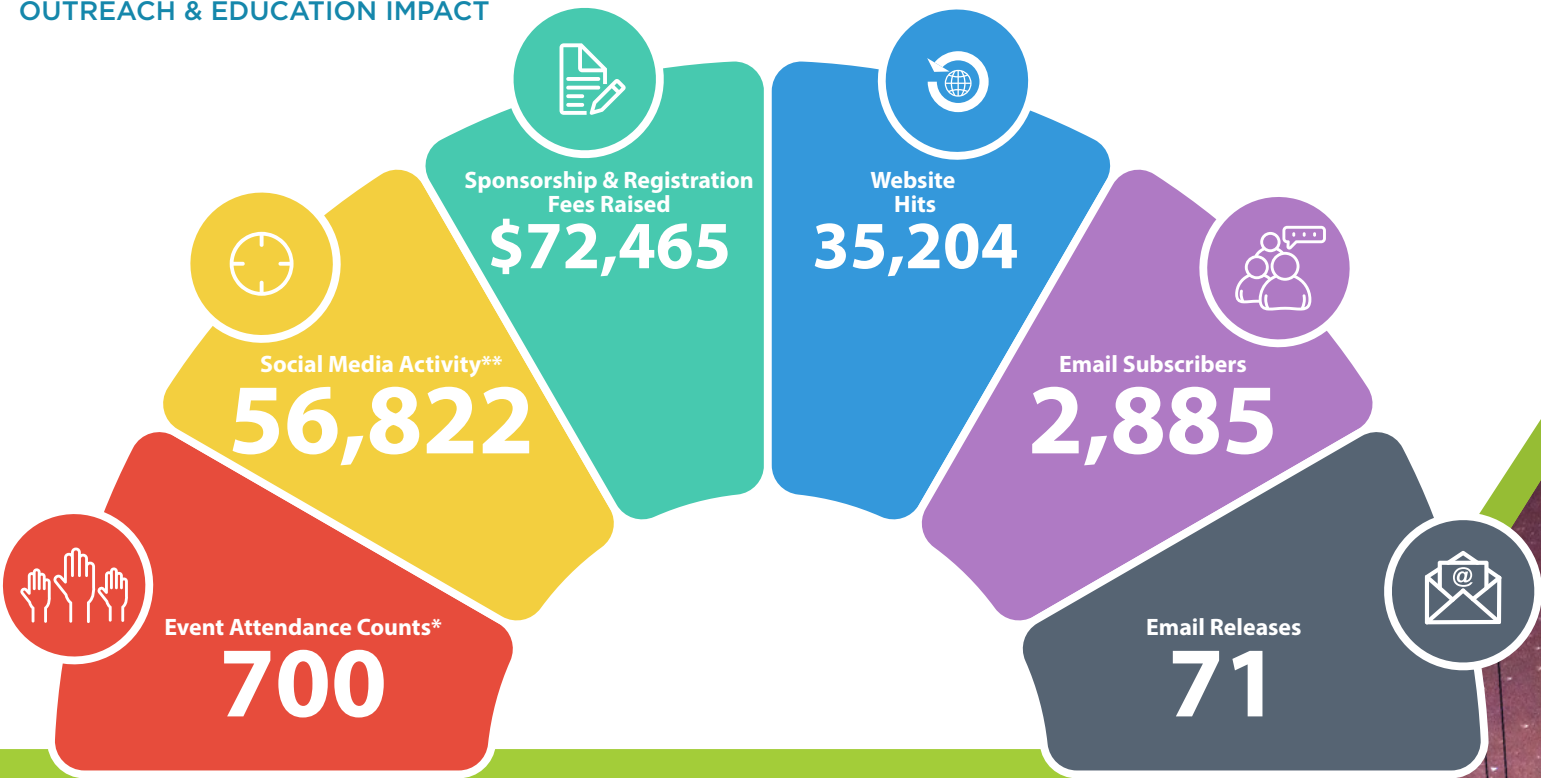


As part of a new engagement effort for MCEC, staff collaborated with the Maryland Association of Realtors (MAR) to acquire approval for a continuing education course informing real estate professionals of the intricacies of buying and selling properties offering solar systems. Almost 300 individuals attended 10 **Buying and Selling Properties with Solar Systems** courses offered by the following associations, between January 18 and May 18, 2023. **Future CE curriculum is planned for the Maryland Commission of Real Estate Appraisers, Appraisal Management Companies and Home Inspectors.**

The **Connecting to the Energy Economy Speaker Series**- a signature educational production for MCEC, was comprised of eight webinars during the fall of 2022. The recorded programs are available online as a free resource. Preparations are underway to resume hosting the in-person Maryland Clean Energy Summit planned in the fall of 2023.

MCEC measures the impact of its outreach and education activity with event attendance, social media engagement, revenue from program sponsorship, and website hits.

OUTREACH & EDUCATION IMPACT



Event attendance counts reflect individuals who participated in the combined events and webinars hosted by MCEC in FY 2023.

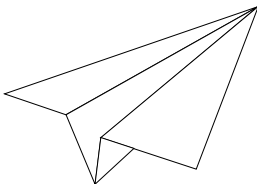
\*Count does not include attendance for Frederick County Realtors Association Solar Training Course; unable to verify.

\*\* Facebook, Twitter & LinkedIn impressions/ engagement.

Email engagement releases reflect MCEC Newsletters, special announcements, and Policy Watch updates sent to subscriber lists, in addition to press releases distributed to media contacts and program-specific contact lists.

Strategic plan priorities for MCEC include increasing focus on Environmental Justice & Equity in the Energy Sector, across programs and initiatives. MCEC has also incorporated the Diversity, Equity, and Inclusion (DEI) theme into every hosted event.

In addition to working with consultants and stakeholders focused on a comprehensive plan for Diversity, Equity & Inclusion Strategies & Initiatives, MCEC participated in multiple cultural heritage months by spreading awareness on social media, highlighting community members and organizations, and sharing resources and articles on the importance of each community in clean energy.



...a comprehensive plan for Diversity, Equity & Inclusion Strategies & Initiatives...



# Diversity, Equity & Inclusion



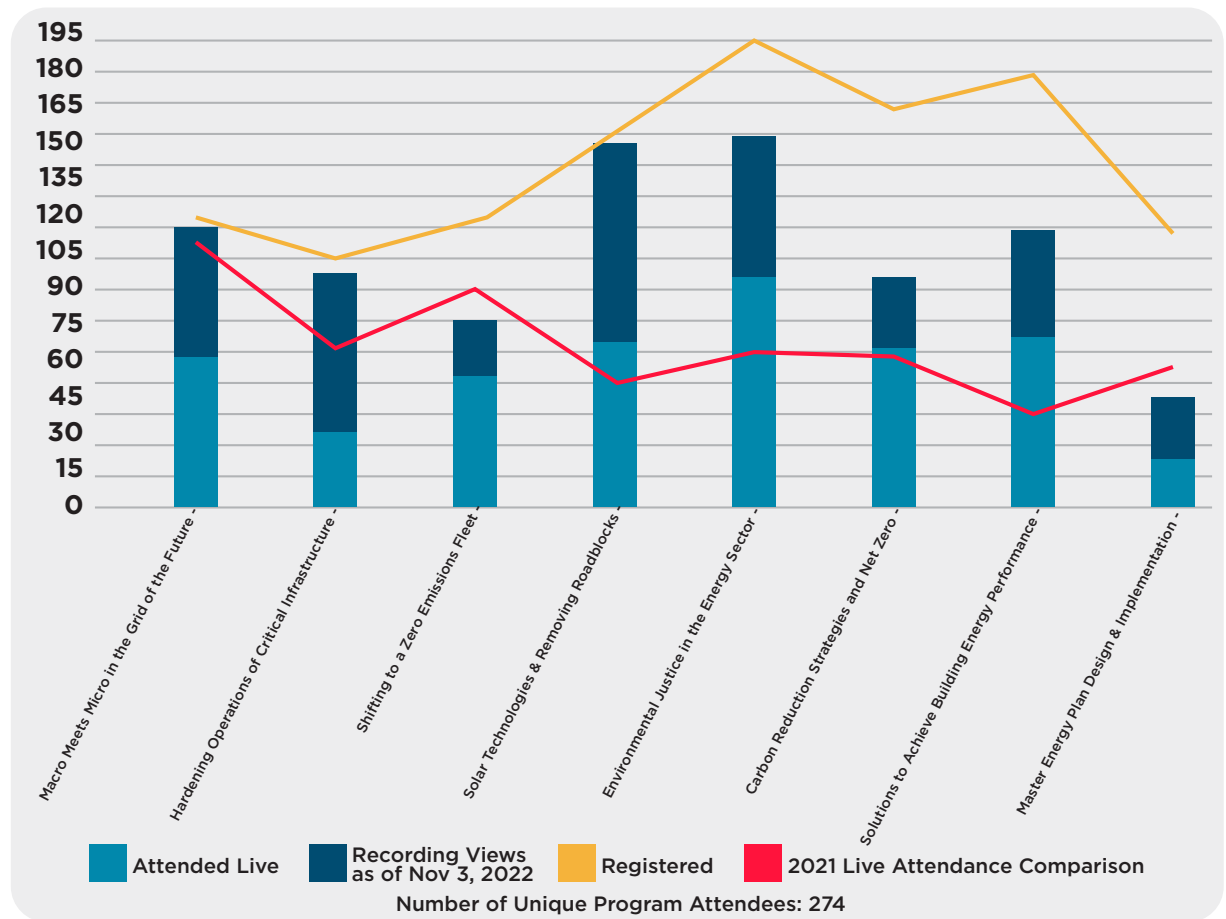


Following the success of last year's webinars, hosted in place of the Maryland Clean Energy Summit, MCEC produced eight programs for the 2022 Connecting to the Energy Economy Speaker Series.

277 individuals attended the live programs. The vast majority of series participants were based in Maryland, but also included representatives from 22 states, Individuals from Canada, Côte d'Ivoire, Peru, the Philippines, as well as Washington D.C.



## 2022 MCEC SPEAKER SERIES ENGAGEMENT



# 2022 Speaker Series Webinars

Program recordings are available online for FREE viewing at <https://www.mdcleanenergy.org/speakerseries>.






# 2022 Connecting to the Energy Economy Speaker Series Sponsors

CohnReznick 

 **bge**<sup>SM</sup>  
AN EXELON COMPANY

**Schneider**  
 **Electric**

**SIEMENS**

 **delmarva**  
**power**<sup>SM</sup>  
AN EXELON COMPANY

 **pepco**<sup>SM</sup>  
AN EXELON COMPANY

**GORDON • FEINBLATT**<sup>LLC</sup>  
ATTORNEYS AT LAW



In October 2023 (FY 2024), MCEC will resume hosting the Maryland Clean Energy Summit. This regional conference will bring together forward thinkers in policy and research, business and utility sector leaders, capital providers and finance partners for vibrant conversations and thought-provoking presentations, focused on Decarbonization Strategies & Solutions.

## MCEC Makes Connections to Policy Makers and Policy Matters

During the 2023 Legislative Session, MCEC staff monitored 75 pieces of legislation (44 cross-files) relevant to our mission and the adoption of clean energy products, services, and technologies. There was also a significant focus on meeting the Climate Solutions Now Act of 2022 goals through workforce development, EV Infrastructure, and environmental justice legislation.

Several themes in energy legislation noted during this session, included:

- Climate Action
- Electric Vehicles and EV Regulation and Infrastructure
- Workforce Development
- Offshore Wind
- Resiliency
- Environmental Justice, and
- Building Performance Standards

MCEC hosted weekly committee calls, distributed weekly email summaries, and maintained an updated online list of tracked legislation for stakeholder awareness and engagement.

Session Summary details and tracked legislation can be viewed at: <https://www.mdcleanenergy.org/policywatch2023/>





# PEOPLE POWER FOR DECARBONIZATION

2023 MCEC Legislative Reception



THE BUTZ FOUNDATION

MCEC's Legislative Reception returned in hybrid format, since it was last held in 2020. The event featured in-person networking at The Governor Calvert House in Annapolis, and hosted remote attendees to hear from guest speakers discussing climate and energy priorities for policy and regulation under consideration by the Maryland General Assembly.

*132 people attended the Legislative Reception, live: 104 onsite & 48 remotely, representing more than 70 companies, agencies, and organizations.*

The program featured panels on Workforce Development & Leadership: Preparing the People Needed Now and in the Future and Energy & Climate Justice, Equity, and Accessibility for ALL. Maryland Lt. Governor Aruna Miller, and Paul Pinsky - Director, Maryland Energy Administration also participated as guest speakers.

## 2023 LEGISLATIVE RECEPTION HIGHLIGHTS



# Legislative Reception: People Power for Decarbonization



As the Center continues to increase its capacity to support enhanced green bank capabilities to increase investment in innovation, infrastructure, and partnerships, it also seeks ways to leverage and enhance its role as a unique funding authority.

*MCEC operates as an effective and impactful instrumentality of the state, with active stakeholder engagement to monitor activity in the market to anticipate future needs and opportunities.*



# Looking Forward: MCEC FY 2024 Projections

## Future priorities for MCEC include:

- Advancing environmental justice & equity in the energy sector
- Administration of the Climate Catalytic Capital (C3) Fund
- Supporting collaborative efforts to secure federal funding to support clean energy-related efforts across the state
- Producing and partnering to provide enhanced resources for consumer education

## Overarching Strategic Plan Goals:

**Facilitate investment and access to capital for clean energy project and business development**

**Provide strategic guidance, centralized procurement, and grant writing capabilities to facilitate project development & deployment**

- Provide financing and technical support for various consumer audiences, including initiatives to address workforce development and energy equity for underserved communities
- Generate fee income to sustain MCEC operations

**Expand the economic impact of the clean energy and climate tech ecosystem through innovation advancement**

- Enable commercialization of nascent technologies for job creation in the clean tech sector.
- Develop support services and investment channels to grow the Maryland clean tech ecosystem as a nationally recognized model
- Facilitate translation of clean tech discoveries to marketable products and services

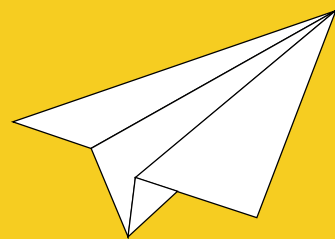
**Serve as a resource hub and bridge between industry, academia, government and consumers**

- Promote MCEC capabilities, services, and value in the marketplace
- Serve as a conduit for partnerships between industry and community stakeholders
- Build awareness about clean energy and climate mitigation technologies, products, services, policies, regulations and incentives
- Be a resource and provide programming to facilitate industry networking, professional education, and partnerships

**Advance equitable clean energy and climate mitigation outcomes**

- Enable pathways to deployment for low-income households as well as small businesses and organizations in disadvantaged communities
- Provide information and resources for effective decision-making and climate action planning

Clean energy is more than just a technological advancement; it serves as our pathway to a sustainable future.



A digital version of the FY 2023 Maryland Clean Energy Center Annual Report can be viewed online at:  
<https://www.mdcleanenergy.org/about-mcec/enabling-statute/annual-reports/>



5000 College Ave., Suite 31010 College Park, MD 20740

[www.mdcleanenergy.org](http://www.mdcleanenergy.org)

[info@mdcleanenergy.org](mailto:info@mdcleanenergy.org)

(301) 314-6061

Printed on recycled paper.