



INTRODUCTION TO THE

STATEWIDE GREEN BANK

Briefing Prince George's County Council Committee on
Transportation, Infrastructure Energy & Environment



What is the necessary \$ investment to achieve state Climate Goals?

- For Maryland to meet aggressive climate change targets on time PUBLIC Sector investment is NOT enough
- Leverage PRIVATE CAPITAL commitment with public funding, driven by policies and incentives
- Utilize Statewide Green Bank structures with demonstrated track record of success providing advantageous, affordable, equitable access to capital to expedite solution deployment
- Convene Public-Private Partnerships to Proactively capture Federal funding

What is a Green Bank and what does it do?

Green Banks use public funding to crowd-in private capital for targeted investment of capital to achieve environmental goals and desired outcomes.

Green Banks can invest in underserved communities and assist consumers without the profit motive characteristic of traditional capital providers.

Green Banks can mitigate risk to entice capital providers who might not otherwise invest, and secure lower interest rates and advantageous terms for consumers to help achieve climate justice.

Green Banks act as a bridge between government, industry, utility, and academia to facilitate partnerships for desirable outcomes.

What is MCEC and what does it do?

Quasi-governmental instrumentality of State that serves as a statewide Green Bank

Mission to increase clean energy jobs, drive commercialization of climate related technological innovations, and enable equitable adoption of clean energy products and services to reduce greenhouse gas emissions

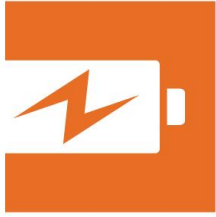
Facilitates access to capital and operates financing programs using leveraged or direct investment

Provides specialized third- party procurement and technical support to facilitate project implementation

Supports climate tech commercialization

Offers outreach & education programs and events to stimulate markets and enable climate justice

Slide 4 **MCEC is Building the Maryland Advanced Energy Economy!**



Address Energy Burden

Defined as the percentage of gross household income spent on energy costs.

According to DOE's Low-Income Energy Affordability Data (LEAD) Tool the national average energy burden for low-income households is 8.6%, three times higher than for non-low-income households which is estimated at 3%.



Strategically Invest to:

- **Equitably** reduce energy burden and minimize the cost of energy
- Provide **affordable** access to clean energy technologies and carbon reduction solutions, and help marginalized communities take advantage of solutions with minimal investment
- Build **capacity** and elevate the work of those making headway toward GHG reduction
- **Jobs** and business development



Considerations for Green Bank Creation

- **What is the green bank is intended to achieve and what key performance metrics will be tracked?**
- **What authority and capabilities will the green bank have to accomplish performance goals?**
- **What structure will a green bank operate under?**
- **Who will the green bank be accountable to and how will staff be employed and paid with access to benefits? Open Meeting compliant or not? Board Appointments?**
- **What fiscal resources and expertise will the green bank need to have to be successful at it's mission?**
- **How will the green bank be sustained over time? Will it have both operating and leveraging funds? and where will the funding come from to help?**
- **Where will the green bank office be located?**



Key Performance Indicators

ECONOMIC, ENVIRONMENTAL & SOCIAL

- FUNDS LEVERAGED **Over \$165M Private to \$12.1M of Public Funding**
- INDUSTRY JOB HOURS **2,312,606 FE**
- GHG REDUCTION **4,934 MT of CO₂ Avoided**
- kWh SAVED **89M**
- kWh COST SAVINGS **\$6.5M**
- BTU THERMS SAVED **929,010**
- BTU THERM COST SAVINGS **\$4.84M**
- GALLONS WATER CONSERVED **152,000**
- Kw RE GENERATION **29**

Slide 8



Potential Green Bank Funding Sources & Uses

- **SPECIAL PURPOSE FUNDS** (RGGI, OWDF, Settlement Funds)
- **RATE PAYER SURCHARGES** (EmPOWER, ETF, EUSP)
- **GENERAL FUND** (\$18.75M over 3 FY)
- **DEDICATED REVENUE STREAMS** (None)
- **GRANTS**



Maryland Green Bank Funding

vs. other state investments

\$1.2M Operations annual investment as of FY23

\$18.75 M for C3 Fund in increments over 3 years begins in FY24

Other Green Banks Capitalized Incrementally:

- **\$44M** NYGB
- **\$ 6M** MCGB Pepco Settlement Fund & **\$17M** in FY23 from Fuel Tax
- **\$ 2M** Climate Action Fund

Annual Funding Compared to other State Green Banks:

- **\$ 7M** DCGB (plus **\$60M** initial Balance Sheet)
- **\$ 8M** DELAWARE SEU
- **\$28M** CTGB
- **\$90M** NYSERDA*
- **\$22M** MASSCEC*

*Also invests in R&D



PROCUREMENT & TECHNICAL ASSISTANCE

add capacity and expedite outcomes
contractor and advisory expertise
affordable fee for service



Centralized Third-Party Procurement & Technical Assistance

Grant Writing Support

Master Services Agreements with Contractors for:

- Owners Representation
- Infrastructure as a Service (IaaS) –Building Assessment, Improvement & Operations
- Energy as a Service (EaaS)/ Energy Performance Contracting (EPC)
- Project Technical Support: Feasibility, Engineering, Design & Development
- Climate Action Strategy Planning
- Energy Procurement



Affordable Energy Project Financing Case Study

Morgan State University

As part of a comprehensive campus-wide master energy and sustainability plan, MSU completed an Energy Performance Contract debt financing to fund the installation of energy efficiency equipment around the University.

The energy savings measures are being implemented through agreements among MSU, MCEC and Siemens Industry, and will significantly reduce energy consumption, increase operational efficiency, and address selected deferred maintenance projects.

The MCAP Shared Energy Savings transaction model was used to facilitate third-party ownership of the project by MCEC and attract cost effective tax-exempt capital, supported by an Energy Performance Contract where the ESCO guarantees the energy, operation, and maintenance savings.



Photo courtesy of Morgan State University

Loan Amount	\$10,343,339
Loan Term	15 Years
Interest Rate	2.8898 %
Avg Annual Savings (Energy, O&M)	\$268,126
Avg Annual Debt Service	\$903,564
Lender	Siemens Financial Services
ESCO	Siemens Industry, Inc.

Energy Conservation Measures

- Interior, Exterior and Stadium Lighting
- Demand Flow
- Water Conservation Fixtures
- Duct Cleaning and Sealing
- Steam Trap Replacement
- Boiler Upgrades
- Steam and Condensate Pipe Insulation



MARYLAND
CLEAN ENERGY CENTER

ACCESS TO CAPITAL



RESIDENTIAL

+ \$500K Indirect Lending
since March 2022



COMMERCIAL

Small Business – Industrial
– Ag – Non-Profit

Approx. \$100M since December
2014



MUNICIPAL & INSTITUTIONAL

\$55M in Tax Exempt & Taxable
Bonds for Project Financing

CLIMATE CATALYTIC CAPITAL FUND

	STRATEGIES					
	ENERGY	BUILDINGS	TRANSPORTATION	AG/ FORESTRY	WASTE	CROSS CUTTING
AUDIENCES	RE GENERATION, TRANSMISSION; COST REDUCTION & RESILIENCE	EE, WEATHERIZATION, DEMAND MANAGEMENT, STORAGE, HVAC and ELECTRIFICATION MEASURES or TECHNOLOGIES to MEET BEPS REGS by 2025	ZERO EMISSION VEHICLES & INFRASTRUCTURE, HYDROGEN FUEL , SUSTAINABLE AVIATION FUELS	ENERGY FROM WASTE AND RENEWABLE BIOMASS SOURCES THAT MEET OR EXCEED MD GHG EMISSIONS REGULATIONS, CARBON SEQUESTRATION. ALTERNATIVE SOURCES FOR FOSSIL FUEL USES LIKE FERTILZER, DIESEL and PROPANE DISPLACEMENT.	SOURCE REDUCTION & REUSE; CHP STEAM; METHANE CAPTURE; ENERGY FROM SOLID & LIQUID WASTE SOURCES THAT MEET OR EXCEED MD GHG EMISSIONS REGULATIONS	WORKFORCE SKILLS TRAINING & ON THE JOB EXPERIENCE; CAPACITY BUILDING; OUTREACH & EDUCATION; PLANNING & ASSESSMENT
CONSUMER						
SMALL BUS/ COMMERCIAL						
INDUSTRIAL/ MANUFACTURING						
PRODUCERS/ DISTRIBUTORS						
MUNICIPAL/ INSTITUTIONAL						
NGOS						
ENTREPRENEURS						



Climate Catalytic Capital (C3) Fund

Create & Manage **FLEXIBLE FINANCIAL TOOLS**
LEVERAGE Public \$ to crowd in Private \$

- **Revolving Loan Fund (RLF)** - Debt, loss reserve and buy down
- **Equity Investment Fund (EIF)** - investments designed to earn return
- **Block Grant Program (BGP)** - grants
- **Capacity Building Fund (CBF)** - grants

40% Dedicated to Assist LMI Households & Communities



Lending initiative sponsored by the Maryland Public Service Commission to provide affordable financing for energy efficiency home improvements to all Maryland residents, regardless of income.



The CEA Loan Pilot Program is administered, in partnership, by the Maryland Clean Energy Center and the Montgomery County Green Bank and authorized by the Maryland Public Service Commission (PSC) to fund the program. EmPOWER Maryland programs are funded by a charge on your energy bill. EmPOWER programs can help you reduce your energy consumption and save you money.





Residential Loan Pilot Program

Program Performance March 2022 Thru May 2023

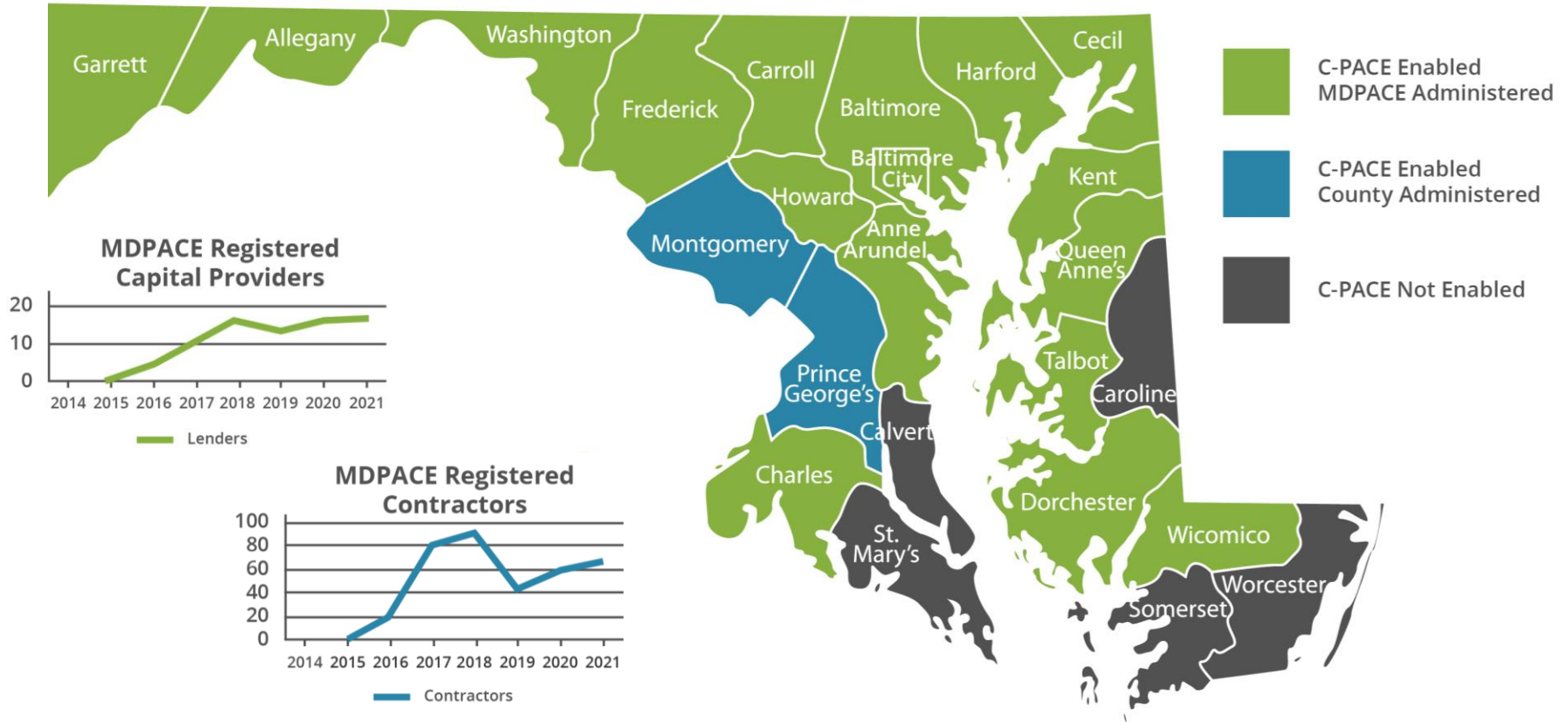
- **81** projects completed + 11 in progress + 13 in underwriting
- **\$707,351** total value of projects funded
- **2,295** FTE contractor job hours for completed & funded projects
- Over **131,000** kWh energy savings achieved

Long-term Goals

- Seek federal funds for direct lending to customers, standardize program eligibility measures and streamline underwriting process
- Add Rebates
- Expand to include Solar Photovoltaic measures



Since 2014 Over \$97 MM in MDPACE Transactions



Maryland Clean Energy Capital



Over \$55M invested in energy efficiency & clean energy projects

- Provides access to private capital through the issuance of tax-exempt and taxable bonds
- Targets projects that advance pursuit of clean energy, economic development, energy innovation and related jobs creation
- **Notable projects:**
 - ✓ Morgan State University
 - ✓ Coppin State University
 - ✓ University of Maryland, Baltimore County
 - ✓ University of Maryland, College Park & IBBR
 - ✓ National Aquarium, Baltimore

Coppin State University

Coppin State University needed to make energy-saving improvements to facilities, upfront capital to make upgrades, and find a solution that would not adversely impact the university's debt profile.

The MCAP Shared Energy Savings transaction model was used to facilitate third party ownership of the project by MCEC and attract cost effective tax-exempt capital supported by an Energy Performance Contract where the ESCO guarantees the energy, operation, and maintenance savings.

MCEC entered into a loan agreement with the Lender to provide 100% of the capital for the project. Cost savings delivered to date have been beyond projections.

Tax-Exempt Loan Amount* <i>Project cost financed 100%</i>	\$6,188,162
Loan Term	15 Years
Interest Rate	3.15 %
Annual Energy Savings	\$609,900 (Guaranteed)
Avg Annual Debt Service	\$570,000
Utility Rebates	\$200,000
Lender	Suntrust Bank
ESCO	Energy System Group

**A short-term Taxable Note of \$130,000 was also used for project development.*



Photo courtesy of Coppin State University

Project Scope

- Lighting
- HVAC
- Solar Hot Water
- Building Envelope
- Chiller
- Water Conservation Measures

Affordable Energy Project Financing Case Study

University of Maryland Baltimore County

University of Maryland Baltimore County needed to make energy-saving improvements to facilities, upfront capital to make upgrades, and find a solution that would not adversely impact their debt profile.

The MCAP Shared Energy Savings transaction model was used to facilitate third party ownership of the project by MCEC and attract cost effective tax-exempt capital supported by an Energy Performance Contract where the ESCO guarantees the energy, operation, and maintenance savings.

MCEC entered into a loan agreement with the Lender to provide 100% of the capital for the project. Cost savings delivered to date have been beyond projections.

Tax-Exempt Loan Amount* <i>Project cost financed 100%</i>	\$5,107,855
Loan Term	10 Years
Interest Rate	3.45 %
Annual Energy Savings	\$693,007 (Guaranteed)
Avg Annual Debt Service	\$613,000
Utility Rebates	\$629,190
Lender	Suntrust Bank
ESCO	Noresco

**A short-term Taxable Note of \$294,625 was also used for project development.*



Photo by Marlayna Demond for UMBC

Project Scope

- Lighting
- Equipment Controls for Demand Control Ventilation
- Water Irrigation Upgrades

University of Maryland, College Park

UMCP needed to make energy-saving facility improvements, find low cost project capital and structure project financing to optimize various University capital needs with existing funding alternatives.

The MCAP Shared Energy Savings transaction model was used to facilitate third party ownership of the project by MCEC and attract cost effective tax-exempt capital supported by an Energy Performance Contract where the ESCO guarantees the energy, operation, and maintenance savings.

Total Project Capital	\$21,500,773
Loan Amount	\$18,300,773
Loan Term	14.5 Years
Interest Rate (Adjusted to 3.0% as a result of Federal Tax Reform)	2.60 %
Avg Annual Savings (Energy, O&M)	\$1,760,000
Avg Annual Debt Service	\$1,667,000
Lender	BankUnited / Bridge Funding Group
ESCO	Constellation NewEnergy Inc.



Project Scope

- Replaced AHU (air handling unit) & transformer
- Improved building envelope
- Optimized chiller plant
- Upgraded HVAC, energy recovery, lighting & controls, ventilation controls, and water conservation

National Aquarium – Baltimore, MD

The National Aquarium was seeking lowest cost financing for energy saving improvements.

MCEC was able to issue a tax-exempt lease to finance the project.

Total Project Capital	\$3,400,000
Leasee	Maryland Clean Energy Center National Aquarium in Baltimore, Inc. & National Aquarium in Baltimore Foundation, Inc.
Sub-Leasees	
Loan Term	15 Years
Interest Rate	3.680 %
Utility Rebates	\$368,000
Lender	Bank of America Public Capital Corp.



Photo courtesy of the National Aquarium

Project Scope

- Lighting
- HVAC
- Chiller
- Kitchen Hood
- Water Conservation Measures
- Transformer Replacement
- Building Envelope
- Boiler Replacement



CLIMATE TECH COMMERCIALIZATION

Pre-Accelerator

Launchpad

Accelerator

Pulling advanced energy and climate technologies to market with executive expertise

43 Companies Accelerated **12 New Companies Formed**
15 FT Jobs Created **45 Patents** **\$5M Equity Raised**
\$6.8M Grants Awarded

MEIA Programs



Pre-accelerator



Launchpad

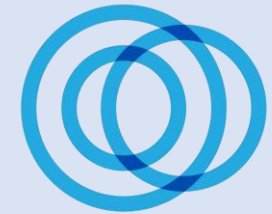


Accelerator

Criteria	Concept/idea stage, initial development.	Technology validated in lab environment, IP filed, no legal entity or management team.	Legal entity formed, management team in place.
Activities	Customer discovery. Determine value proposition.	Determine business model and financial model. Create business plan. Identify CEO. Create new company.	EEIRs solving specific problems. Leadership team augmentation.
Funding	\$1,000	\$15,000	\$10,000



CelluCell



Cleantech Ecosystem

ALCHEMITY



PULSEIQ!



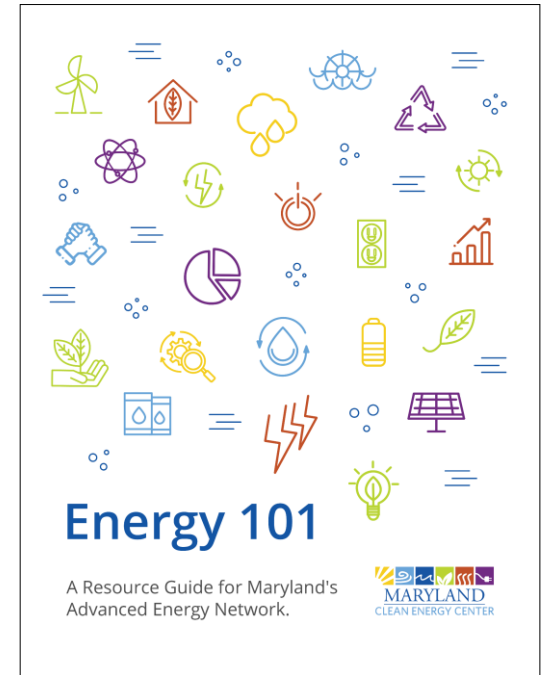
MARYLAND CLEAN ENERGY CENTER

OUTREACH & EDUCATION



2023 MARYLAND

Policy Watch



Never Lose a Sale With Solar!

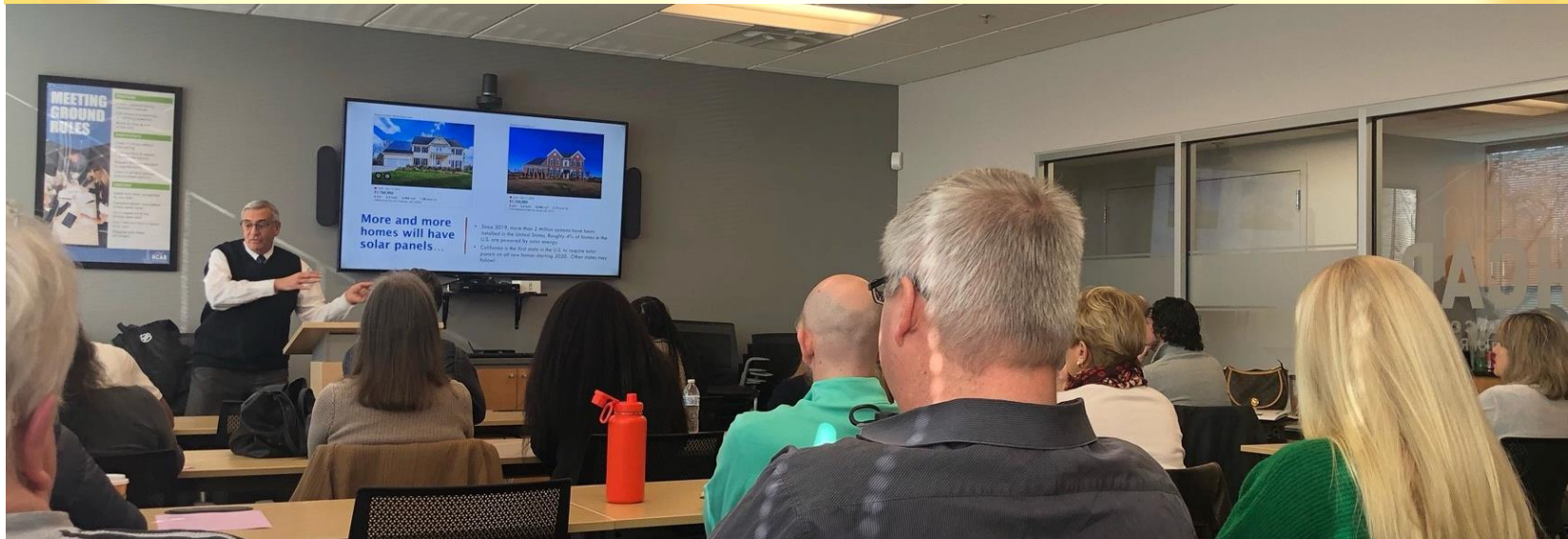
Continuing Education Realtor Course

January 2023

Instructor: Augie Conte



**Professional
Development
Training Program
for Realtors**



Equity Outreach & Community Development

Assisting Disadvantaged Communities & LMI Households



Enable Capacity Building through Partnerships & Workshops

Engage in *Listen, Learn & Share* Community Outreach Events

Host “Climate Action Planning: A Step-by-Step Process for Communities” & “Project Financing and Grant Funding” Webinar Training and Capacity Building Workshops for community stakeholders, elected officials and staff on

Create Downloadable Community Climate & Decarbonization Toolkit

Support community leaders in planning, permitting, financing and implementing projects and initiatives.

Provide Consumer Energy Literacy Resources

Facilitate effective energy & climate related decision making for adoption of measures by LMI households.

Partner with state agencies & utilities to create a “One-Stop-Shop” Consumer Energy & Climate Change Resources Web Portal to enable access to financing, resources & information



JOIN US ON
October 17

2023



MARYLAND
CLEAN ENERGY
SUMMIT

DECARBONIZATION

Strategies & Solutions



GREEN BONDS

John J. Semeniak
Partner
McGuireWoods LLP

What are Green Bonds?

A green bond is a fixed income debt instrument in which an issuer (typically a corporation, government, or financial institution) borrows a large sum of money from investors for use in sustainability-focused projects.

Green bonds work similarly to a traditional bond issuance, except the funds are slated for use in energy efficiency, renewable energy, or other projects that meet certain sustainability requirements, often formalized in a green bond “framework” developed by the issuer.

Green bonds typically involve one or more third-party firms to underwrite, certify, and monitor the bond issuance.

Green Bonds

MCEC takes action to designate a proposed bond issue as “green” based on the underlying characteristics of the project to be financed or refinanced.

In general, projects must have environmental benefits, whether renewable energy, energy efficiency, pollution control or other sustainability attributes.

Project may involve the use of a third-party verifier as it relates to the environmental benefits of a project (Climate Bonds Certification).

Second-party opinions and certifications for projects following a comprehensive assessment (Climate Bonds Certification).

Green Bonds

At the outset, issuer action (such as MCEC) must clearly express the objectives of the green project.

During development and construction, proceeds must be tracked to ensure allocation to eligible “green” components of a project.

Annual reporting on use of proceeds for green projects and other material developments will be required.

MCEC and Green Bonds

MCEC is positioned to take advantage of the green bond market and assist project developers.

MCEC policies and procedures allow it to properly evaluate green projects in furtherance of the guidelines established for green bond issuances.

MCEC has the expertise to work with local officials on the coordination of green projects.



Time is running out to invest and make a difference!

Our [Green Liberty Notes offering](#) closes soon, so place your orders now! Don't miss this opportunity to move money from your low-yield savings or checking accounts to our [1-year verified green investment earning 4.5% APY](#).

Help us confront climate change with a minimum investment of only \$100. [Learn more about this opportunity now.](#)

Invest Now

This crowdfunding campaign was launched by a Connecticut Green Bank subsidiary, and allows citizens to invest in our mission of [confronting climate change](#) while helping the Small Business Energy Advantage (SBEA) program. SBEA provides interest free loans to Connecticut businesses and towns who undertake energy efficiency projects.

Crowdfunding model deployed by Connecticut Green Bank

Raising capital to allow everyday investors a chance to take part in its work to grow the green economy in Connecticut.

Investments in this offering support the Small Business Energy Advantage (SBEA) program. The SBEA program enables small business, municipal and state customers to reduce their energy costs by making energy efficiency upgrades in their offices, shops, restaurants, and factories, using zero interest loans. Participants in the SBEA program can borrow up to \$100,000 for commercial and industrial customers or \$500,000 for municipalities, and repay their financing on their electric bills.

This innovative offering is a One Year Debt Note with a Minimum Investment of just \$100, and a 4.5% interest rate (compare to CDs!)**



Next Steps

Inter-governmental Agreement

- MCEC provides fee for service procurement, technical support, project management assistance to the County, based on specific Task Orders

Community Outreach & Education Partnerships

- Host Workshops and trainings, promote successes

Master Energy & Sustainability Plan Development

- Consider county facilities, energy supply and demand needs as a package, create investment strategy

MDPACE Program Administration Support

- County update ordinance to include additional measures, promote program with small business owners



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