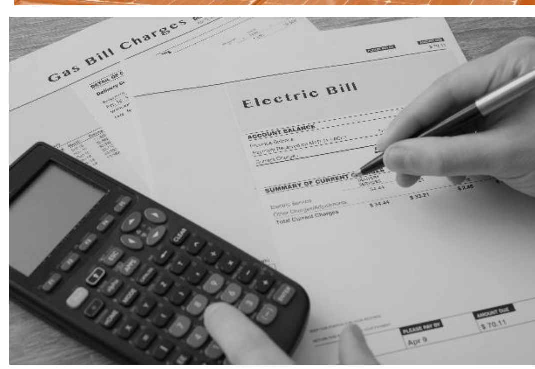
MARYLAND

Solar for All



Application Submitted to EPA/GGRF by

October 2023

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I. Program Strategy Narrative:

Overall Coalition Program Plan/Scope of Work:

The Maryland Solar for All Program (MSFAP) has been developed by the Maryland Clean Energy Center (MCEC) along with an assembled coalition of stakeholders, including: green banks, state agencies, local governments, academic centers, non-profit workforce training program operators, labor unions, utilities multi-family housing developers, affordable housing advocates, solar industry organizations and installers, and representatives of community development organizations serving as the voice of underserved households and communities across the state.

Throughout the process of developing this funding proposal MCEC held open meetings and solicited input from these stakeholder audiences, which is reflected in the approach ultimately adopted by the MSFAP. Participants in the process will continue to be involved in the governance strategy and workgroups are planned to be active in a further phase of planning and the implementation phase following an award of funding. This program deliberately aligns with the EPA/GGRF Solar for All goals and objectives and intends to impact over 10,000 household units with a minimum of 20% energy savings from day one of implementation.

In addition to grant funds awarded, a total of $7M in state funding through the Maryland Energy Administration and the Maryland Clean Energy Center C3 Fund, will be directly invested to help achieve MSFAP deliverables. A significant amount of direct investment by Coalition Partners will also be a valued contribution to the program.

The MSFAP will support projects, activities and technologies that reduce emissions of greenhouse gases and other air pollutants that harm communities and contribute to climate change, by providing:

- Direct and leveraged investment in single and multi-family residential rooftop solar, community solar and community solar with storage projects to enhance affordability
- Technical and procurement support for project planning and development, to expedite deployment and facilitate market transformation
- Coordinated outreach, education and engagement with consumers and in communities to facilitate access to cost savings associated with solar as an energy supply source
- Enabling accessibility to workforce training and development opportunities in the solar sector, especially within underserved and disadvantaged communities

The MSFAP will deploy and enable deployment of residential-serving solar, storage, and enabling upgrades through:

- Use of financing tools, including grants, credit enhancements and low-cost capital loans
- Direct outreach to contractors, project developers and property owners as well as assistance with project development and engineering
- Facilitating partnerships between state agencies, local governments, project developers and working directly with capital providers investing in and with disadvantaged communities in Maryland

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- Providing procurement and technical assistance, access to tools designed to enable successful project development and implementation, and assistance with utilities to enable successful interconnection

The MSFAP will invest in projects that directly benefit American communities through:

- Focusing the use of funds and financing to enable low-income and disadvantaged communities to deploy and benefit directly from distributed solar; and prioritizing the initial investment to serve low-income residential properties which have already been weatherized through prior state investment or are solar ready.
- Targeting investment in projects that will deliver meaningful benefits, including a minimum 20% household savings, employment opportunities, enabling ownership ability for communities and households in Maryland, and implementation of projects to provide resiliency for communities.
- Prioritizing the use of SFA funds for solar installations, workforce training programs, outreach and education in rural, urban, and suburban communities throughout the state; particularly in the most disadvantaged and low-income households in the communities the program is designed to serve.

The MSFAP will mobilize financing and private capital to stimulate additional deployment of gas- and air pollution-reducing projects through:

- Targeted investment in single-family, multi-family, community solar and community solar with storage projects; with greater share of support for the lowest income consumer audiences using a tiered percentage of grant combined with subsidized loan strategy.
- Using financing tools and deploying low-cost capital intended to crowd in additional private capital to support the delivery of program objectives, including; revolving loans, loan guarantees, bridge loans rate subsidies, and equity investments where appropriate
- Leveraging the advantageous policy landscape in Maryland to enable access to cost-saving solar energy for household where ownership is not feasible through enabling investments in community solar, and by braiding state funding program resources to maximize investment particularly in the multi-family housing market.
- Coordinating community outreach and workforce development partnerships between public and private partners in an effort to provide access to jobs and clean energy.

In regard to the target audiences to be served through the MSFAP the definitions identified in the NOFO for low-income households and properties providing affordable housing will be followed. MSFAP will recognize disadvantaged communities as those identified through CJEST or as defined by the Maryland Department of the Environment. Underserved populations to be assisted through the MSFAP are identified as those who are dependent on public assistance in some manner for housing, including: veterans, senior citizens, special needs individuals, the homeless or those re-entering society.

The MSFAP will engage communities through targeted outreach and education initiatives with and for community stakeholders and consumers using a projected budget of $4.885M in grant funds.

Workforce training will also be a key component of the MSFAP to be implemented through partnerships with labor organizations, workforce development boards, and non-profit organizations with a projected budget of approximately $9.2M. SFA funding requested to support planning & technical assistance and program administration is anticipated at $6,738,450 and $5,844,000.

1. Impact Assessment:

	Year 1	Year 2	Year 3	Year 4	Year 5	5-year Total
Number of Projects	773	776	777	776	776	3,878
Single-family	750	751	751	751	751	3,754
Multi-family	11	12	12	12	12	59
Community	2	3	4	3	3	15
Strategic Financing (Multi-family & Community)	10	10	10	10	10	50
Number of Households Added	3,076	3,239	3,314	3,239	3,239	16,104
Single-family	750	751	751	751	751	3,754
Multi-family	955	1042	1042	1042	1042	5,122
Community	150	225	300	225	225	1,125
Strategic Financing (Multi-family & Community)	1,221	1,221	1,221	1,221	1,221	6,103
Solar Capacity Installed (MW)	2.3	14.4	34	1.7	5	57.5
Single-family	3.8	3.8	3.8	3.8	3.8	18.8
Multi-family	2.2	2.3	2.3	2.3	2.3	10.2
Community	1.0	1.5	2.0	1.5	1.5	7.5
Strategic Financing (Multi-family & Community)	4.2	4.2	4.2	4.2	4.2	21.0
Clean Energy Generated (MWh)	14,458	29,736	45,565	60,639	75,614	226,013
Single-family	4,875	9,714	14,505	19,246	23,939	72,279
Multi-family	2,795	5,809	8,793	11,746	14,669	43,811
Community	1,300	3,237	5,805	7,696	9,568	27,606
Strategic Financing (Multi-family & Community)	5,488	10,976	16,463	21,951	27,439	82,317
Storage Capacity Installed (MWh)	7.57	7.57	7.57	7.57	7.57	37.8
GHG Emissions Avoided (tCO2)	10,063	20,696	31,713	42,205	52,628	157,305
SO2 avoided (short tons)	1.6	3.2	4.8	6.3	7.8	24

NOx avoided (short tons)	0.8	1.7	2.6	3.5	4.3	13
Amount of HH Savings (Total $1000)	$910	$1,864	$2,837	$3,792	$4,746	$14,148
Single-family	$383	$767	$1,151	$1,534	$1,918	$5,754
Multi-family	$268	$560	$853	$1,145	$1,437	$4,263
Community	$39	$98	$176	$234	$293	$839
Strategic Financing (Multi-family & Community)	$220	$439	$659	$878	$1,098	$3,293

	Western	**Capital**	**Central**	**Southern**	**Eastern Shore**	**Total**
Number of Projects	330	868	2,004	201	476	**3,878**
Single-family	326	833	1,931	198	467	**3,754**
Multi-family	2	24	28	2	3	**59**
Community	2	5	7	0	1	**15**
Strategic Financing (Multi-family & Community)	-	6	38	1	5	**50**
Number of Households Added	575	4,215	9,516	438	1,359	**16,104**
Single-family	326	833	1,931	198	467	**3,754**
Multi-family	205	2,079	2,405	138	295	**5,122**
Community	45	457	528	30	65	**1,125**
Strategic Financing (Multi-family & Community)	-	846	4,652	72	533	**6,103**
Solar Capacity Installed (MW)	2.3	11.4	18.0	1.5	3.4	**36.5**
Single-family	1.6	4.2	9.7	1.0	2.3	**18.8**
Multi-family	0.4	4.2	4.8	0.3	0.6	**10.2**
Community	0.3	3.0	3.5	0.2	0.4	**7.5**
Strategic Financing (Multi-family & Community)	-	3.0	16.0	0.3	1.7	**21.0**
Clean Energy Generated (MWh in Year 5)	3,045	19,104	44,649	2,278	6,539	**75,614**
Single-family	2,076	5,315	12,312	1,260	2,975	**23,939**
Multi-family	587	5,955	6,887	395	845	**14,669**

Community	383	3,884	4,492	258	551	**9,568**
Strategic Financing (Multi-family & Community)	-	3,950	20,957	364	2,167	**27,439**
Storage Capacity Installed (MWh)	0.1	8.2	28.4	0.1	1.0	**37.8**
GHG Emissions Avoided (tCO2/year in Year 5)	10,072	48,978	77,481	6,317	14,457	**157,305**
Amount of HH Savings (Total $1000) (First 5 years)	$703	$3,805	$7,864	$479	$1,297	**$14,148**
Single-family	$499	$1,277	$2,959	$303	$715	**$5,754**
Multi-family	$170	$1,731	$2,002	$115	$246	**$4,263**
Community	$34	$340	$394	$23	$48	**$839**
Strategic Financing (Multi-family & Community)	-	$456	$2,510	$39	$288	**$3,293**

PROGRAM DELIVERABLES (OUTPUTS AND OUTCOMES):

Climate and Air Pollution Benefits Outputs:

Total Households Added: 16,104 Western MD[i] #330 (326 single family, 2 multi-family, 2 community solar); Capital Area MD #868 (833 single family, 24 multi-family, 5 community solar, strategic financing 6); Central MD #2,004 (1,931 single family, 28 multi-family, 7 community solar, strategic financing 38); Southern MD #201 (198 single family, 2 multi-family, 0 community solar, strategic financing 1); Eastern Shore MD #476 (467 single family, 3 multi-family, 1 community solar, strategic financing 5)

Solar capacity installed by geography and type of project (MW): Western MD: 2.3 MW (1.6 MW single family, 0.4 MW multi-family, 0.3MW community); Capital Area MD: 11.4MW (4.2 MW single family, 4.2 MW multi-family, 3.0 MW community, 3.0 MW strategic financing); Central MD: 34MW (9.7MW single family, 4.8MW multi-family, 3.5MW community, 16MW strategic financing); Southern MD: 1.5MW (1MW single family, 0.3MW multi-family, 0.2MW community, 0.3MW strategic financing); Eastern Shore MD: 5MW (2.3MW single family, 0.6MW multi-family, 0.4MW community, 1.7MW strategic financing)

Storage capacity installed by geography (MWh): Western MD: 0.1 MWh multi-family and community projects; Capital Area MD: 8.2 MWh multi-family and community projects; Central MD: 28.4 MWh multi-family and community projects; Southern MD: 0.1 MWh multi-family and community projects; Eastern Shore MD: 1.0 MWh multi-family and community projects

Climate and Air Pollution Benefits Outcomes:

Clean Energy Generated (MWh in Year 5): Western MD: 3,045 MWh in Year 5; Capital Area MD: 19,104 MWh in Year 5; Central MD: 44,649 MWh in Year 5; Southern MD: 2,278 MWh in Year 5; Eastern Shore MD: 6,539 MWh in Year 5

Greenhouse gas emissions reduced and avoided by geography and type of project (short tons CO2e) in Year 5: Western MD: 6,401 tons CO2e all project types; Capital Area MD: 48,978 tons CO2e all project types; Central MD: 93,033 tons CO2e all project types; Southern MD: 4,776 tons CO2e all project types; Eastern Shore MD: 13,716 tons CO2e all project types

Other air pollution reduced and avoided by geography and type of project (tons other air pollutants such as particulate matter, nitrogen dioxide, ozone, etc.): Western MD: 2.1 SO2 avoided in short tons, 0.5 NOx avoided short tons all types of projects; Capital Area MD: 5.3 SO2 avoided in short tons, 5.3 NOx avoided short tons all types of projects; Central MD: 12.2 SO2 avoided in short tons, 0.4 NOx avoided short tons all types of projects; Southern MD: 1.2 SO2 avoided in short tons, 0.4 NOx avoided short tons all types of projects; Eastern Shore MD: 2.9 SO2 avoided in short tons, 0.7 NOx avoided short tons all types of projects

Equity and Community Benefits Outputs:

Number of households benefitting from projects by geography and type of project (#): Western MD #575 (326 single family, 205 multi-family, 45 community solar); Capital Area MD #4,215 (833 single family, 2,079 multi-family, 457 community solar, strategic financing 846); Central MD #9,516 (1,931 single family, 2,405 multi-family, 528 community solar, strategic financing 4,652); Southern MD #438 (198 single family, 138 multi-family, 30 community solar, strategic financing 72); Eastern Shore MD #1,359 (467 single family, 295 multi-family, 65 community solar, strategic financing 533)

Amount of household savings delivered by geography and type of project ($): Western MD: $703 (Total $1000, First 5 years), $499 single-family, $170 multi-family, $34 community, $0 strategic financing; Capital Area MD: $3,805 (Total $1000, First 5 years), $1,277 single-family, $1,731 multi-family, $340 community, $456 strategic financing; Central MD: $7,864 (Total $1000, First 5 years), $2,959 single-family, $2,002 multi-family, $394 community, $2,510 strategic financing; Southern MD: $479 (Total $1000, First 5 years), $303 single-family, $115 multi-family, $23 community, $39 strategic financing; Eastern Shore MD: $1,297 (Total $1000, First 5 years), $715 single-family, $246 multi-family, $48 community, $288 strategic financing

Workers trained by workforce development programs by geography: 650 Level 1 Trainees, **700** Level 2/3 union, apprentices/journeypersons (statewide), **20** Level 4 Community College Solar Certification (statewide); Western MD: **75** workers Level 2/3 Training Apprentices/Journeypersons, prevailing wage by trade, plus benefits; **4** Level 4 Training Community College Certification/Credit Program (wages/benefits vary); Capital Area MD**: 300** workers trained Level 1 Training/NABCEP Certification $18.50 to start, benefits possible; **150** workers Level 2/3 Training Apprentices/Journeypersons, prevailing wage by trade, plus benefits; **4** Level 4 Training Community College Certification/Credit Program (wages/benefits vary); Central MD: **300** workers trained Level 1 Training/NABCEP Certification $18.00 to start, benefits possible;**150** workers Level 2/3 Training Apprentices/Journeypersons, prevailing wage by trade, plus benefits; **4** Level 4 Training Community College Certification/Credit Program (wages/benefits vary); Southern MD: **75** workers Level 2/3 Training Apprentices/Journeypersons, prevailing wage by trade, plus benefits; **4** Level 4 Training Community College

Certification/Credit Program (wages/benefits vary); Eastern Shore MD: **75** workers Level 2/3 Training Apprentices/Journeypersons, prevailing wage by trade, plus benefits; **4** Level 4 Training Community College Certification/Credit Program (wages/benefits vary).

Projects executed using tools to promote good jobs and community benefits (e.g., Community Workforce Agreement, Community Benefits Agreement, Project Labor Agreement) by geography, project type (#): In the planning year, as MSFAP develops a project pipeline the MSFAP will incorporate Community Workforce Agreements, Community Benefits Agreements, Project Labor Agreements in all geographies/projects where it is appropriate. Our coalition partner, MD DOL, will assist with these agreements.

Investments in or in partnership with women- and minority-owned businesses by geography, type of engagement (e.g., investment in a business, partnership on a deal, procurement of services), type of project (# of businesses engaged) ($ of procurement costs): MSFAP does not currently have named partners or sub-recipients as these partnerships will occur in the procurement processes, but will encourage and track partnerships and investments in the planning phase.

Equity and Community Benefits Outcomes:

Number of households with resiliency benefits by geography (#):

Western MD: 72	Capital Area MD: 937	Central MD: 4,636	Southern MD: 72	Eastern Shore MD: 533

Clean energy capacity owned by communities in direct ownership models by geography, type of project, type of community owner (household, community-based organization) and technology (MW, MWh):

	Western	**Capital**	**Central**	**Southern**	**Eastern Shore**
Household owners, Solar PV (MW)	0.8	2.1	4.8	0.5	1.2
Community-based organization, Solar PV	0.3	3.0	3.5	0.2	0.4
Community-based organization, Storage (MWh)	0.1	0.7	0.8	0.0	0.1

Number of solar jobs created by geography: The MSFAP cannot speculate as to jobs created by geography at this point due to 2022 contractions in the solar market.[ii] In most industries it is an accepted Bureau of Labor statistic standard that for every $1M of funding 11.3 jobs result. MSFAP can anticipate at least 1,200 jobs will be created on that model. MSFAP will look into this further during the planning year.

Reduced disparities in energy burden between low-income and non-low-income households by geography ($): Disparities in energy burden between low-income and non-low-income households by geography will be impacted by reductions in energy costs. Western MD: $709 (Total $1000, First 5 years), $499 single-family, $170 multi-family, $34 community, $6 strategic financing; Capital Area MD: $4,067 (Total $1000, First 5 years), $1,277 single-family, $1,731 multi-family, $340 community, $718 strategic financing; Central MD: $7,824 (Total $1000, First

5 years), $2,959 single-family, $2,002 multi-family, $394 community, $2,426 strategic financing; Southern MD: $449 (Total $1000, First 5 years), $303 single-family, $115 multi-family, $23 community, $8 strategic financing; Eastern Shore MD: $1,100 (Total $1000, First 5 years), $715 single-family, $246 multi-family, $48 community, $91 strategic financing.

Increased wages for individuals working in solar energy by geography (%): Entry-level workers make from minimum wage at $13,25 to $17.08 in Maryland. NABCEP Certified installers have a starting wage statewide of around $18.50. Hourly wage for unionized workers at an apprenticeship level are $24 an hour and unionized journeypersons are upwards of $25-$35 depending on their trade. MSFAP anticipates that wages for all workers trained through this program will increase by at least $5 per hour and in most cases would include benefits. Our partnership with MD DOL will help us track prevailing wages.

Percentile wage estimates for Solar Photovoltaic Installers (www.bls.gov):

Market Transformation Benefits Outputs:

Grant funds deployed by type of cost (financial assistance, technical assistance, program administration) ($): Financial Assistance: $76,574,650; Technical Assistance: $21,106,350; Program Administration: $9,319,000.

Financial assistance deployed by geography, type of cost (solar, storage, and enabling upgrades), type of financial assistance (e.g., subsidy, loans), type of project, type of technology ($): The MSFAP budget calls for $76,574,650 for investment statewide, and will determine how financial assistance will be deployed by geography, type of cost, type of financial assistance, type of project and type of technology in the planning phase.

Total private sector financing mobilized, alongside projects funded directly by Solar for All by geography, type of project ($): The MSFAP will develop a statewide plan to mobilize private sector financing alongside projects funded by Solar for All in the planning year.

Number of community-based organizations engaged by Solar for All services (e.g., technical assistance programs for solar deployment, education programs) by geography (#): Although, some partners have committed to participate others will be determined in the planning phase.

Financial assistance deployed to consumers with limited credit history by geography, type of financial assistance, type of project, type of technology ($): MSFAP anticipates tracking consumers with limited credit history by geography as the project progresses. Individuals with a limited credit history would likely be eligible for grants, low-cost loans, tax credits, etc. funded by SFA, unless private capital leverage is combined. MSFAP will develop and track this metric pending grant award.

Table 2: Net Metering Capacity as of June 30, 2022 in kW

Electric Utility	Solar	Wind	Biomass	Utility Total	YOY % Change	kW Change
	Kilowatts of Installed Capacity					
Baltimore Gas and Electric Company	365,844	84	0	365,928	9%	28,675
Choptank Electric Cooperative	29,230	353	30	29,613	6%	1,579
Delmarva Power and Light Company	112,089	880	240	113,209	8%	8,758
Easton Utilities Commission	3,253	0	0	3,253	21%	555
Hagerstown Municipal Electric Light Plant	208	0	0	208	4%	9
Thurmont Municipal Light Company	214	0	0	214	7%	15
Mayor and Council of Berlin	574	0	0	574	19%	92
Potomac Electric Power Company	273,914	0	0	273,914	8%	19,530
Potomac Edison Company	104,499	7	256	104,762	10%	9,758
Williamsport Municipal Light Plant	28	0	0	28	0%	0
Southern Maryland Electric Cooperative, Inc.	70,081	36	320	70,437	8%	5,369
State Total	**959,934**	**1,360**	**846**	**962,140**	**8%**	**74,340**

Market Transformation Benefits Outcomes:

Changes in net metering caps by geography by type of project (MW, %): The Maryland Public Service Commission tracks and reports on the status of the net metering allocation, annually. The 2022 report states "the current level of installed capacity, approximately 1,033 megawatts ("MW"),1 is 34.4 percent of the eligible State cap of 3,000 MW." The report summarizes the total amount of excess generation credit payouts by rate class for each of the utilities operating in Maryland, indicating approximately $5,154,797 of excess generation credits was paid to customers in the 12-month period ending April 30, 2022. * *"Report on the Status of Net Energy Metering In the State of Maryland Prepared by the Public Service Commission of Maryland Prepared for the General Assembly of Maryland Under Public Utilities Article § 7-306(i) November 1, 2022"*

Changes in interconnection timelines by geography (days): Interconnection timelines do vary by utility service territory in Maryland, for both ATI (authorization to install) and PTO (permission to operate) No specific source of data is available. Per installers, the current anticipated time frame for final interconnection is between 77 days and 6 months, with particular delays in Delmarva Power and PE territories.

Changes in Solar Renewable Energy Credit (SREC) values by geography ($): Senate Bill No. 65 (SB 65) revised Maryland's renewable energy portfolio standard (RPS), increasing the solar alternative compliance payment (SACP) which utilities must pay when they do not meet RPS requirements but decreased the percentage of energy that utilities must procure from Tier I renewable resources and from solar resources under the solar carve-out. By increasing the SACP, the law effectively increased the "price ceiling" for (SRECs), and therefore the likely price at which SRECs will sell. The SACP in 2012 was $80 per SREC and $60 per SREC for 2022. Before SB 65, the SACP was set to drop to $45 per SREC in 2023, then $40 in 2024 and $35 in 2025. SB 65 increased these price ceilings to $60 per SREC in 2023 and 2024, and $55 in 2025.

Distributed clean energy capacity deployed benefitting communities not directly financed by Solar for All by geography, type of project, type of technology, and recipient-type (households, community-serving institutions), type of community (low-income and disadvantaged communities, other communities) (MW, MWh): MSFAP was not able to ascertain this data in the time allowed for submittal of this application. This data will be obtained pending grant award requirements.

Capital deployed to finance distributed clean energy capacity not directly financed by Solar for All by geography, type of project, type of technology, and recipient-type (households, community-serving institutions), type of community (low-income and disadvantaged communities, other communities) ($): MSFAP was not able to ascertain this data in the time allowed for submittal of this application. This data will be obtained pending grant award requirements.

2. Meaningful Benefits Plan:

Household Savings Benefit: The Maryland Rooftop Solar Coalition advises residential customers in the Baltimore area can save as much as $900 during the first year of ownership, and adding solar increases home values by approximately $15,000. MSFAP will require all projects funded to ensure all impacted households, including multi-family, mastered metered buildings will achieve a 20% minimum household savings, defined as 20% of the average household electricity bill in the utility territory. It is projected that in many cases households will achieve a higher percentage of savings. Households without an individual utility bill will receive a direct non-financial benefit equivalent in value to the savings target in the utility territory. This non-financial benefit will be determined during the planning phase. Absolute Annual Household Savings Over Time (5 years of the program) is $14,148,324, with savings over the life of the solar systems estimated at over $100 million. See Output and Outcomes Section for savings by geographic area. MSFAP anticipates that these numbers will be refined in the planning year.

The MSFAP will engage contractual service providers through a competitive bid process, to create and implement a feedback web portal and/or mail-in process to enable residential consumers, who have been identified as having benefitted from the use of SFA funds, to self-report on energy cost savings they are achieving throughout the grant reporting period.

Equitable Access to Solar: The MSFAP strategy for financial assistance and project technical assistance is based on the strength of partnerships developed in creating the Coalition, which will be called on to enable equitable access to solar. The program will work directly with the LIDAC communities to build relationships and trust, bring financial assistance to LIDAC participants including grants, low-cost loans, leveraging of existing resources, assistance with credit issues and provide education around solar installation and benefits it can provide. Financial partners, like MCEC, the Montgomery County Green Bank and the Climate Access Fund, will utilize the appropriate financial assistance based on the needs of the program participant. To increase equitable access to solar, MSFAP will implement outreach and education initiatives through engagement of several non-profit organizations to deploy a network of Community Navigators statewide who are trained in cultural competence and solar industry/installation/financial information. The Community Development Network of Maryland, Civic Works, Black Wall Street, LCV CHISPA and the Caucus of African American Leaders will provide channels through their networks to the MSFAP consumer target audiences. The Maryland Rooftop Solar Coalition and the Coalition for Community Solar Access industry organizations will serve among partners to facilitate outreach to installers.

Resilience Benefits: The MSFAP is committed to deliver resilience as an overarching program goal, and anticipates the program will deploy 37.8 MW hours of storage capacity. MSFAP program will involve Groundswell, and leverage MEA funds previously invested in feasibility studies to implement projects intended to increase the resiliency of the power grid by creating capacity that can deliver power to low-income and disadvantaged households and/or critical facilities serving low-income and disadvantaged households during a grid outage, particularly on community centers, veteran's homes, senior centers, dialysis centers, shelters, etc.

Household & Community Ownership Models: The MSFAP program is committed to deployment of solar with both household and community ownership models, and will support solar projects with equity for low-income and disadvantaged households and communities built into the financial model. MSFAP will invite project proposals for funding maximize ownership models to be supported by financing models that encourage ownership for participants.

Workforce Development and Entrepreneurship: The MSFAP program invests in high-quality jobs and businesses in low-income and disadvantaged communities by supporting union prevailing wages, investing in effective workforce training programs for underserved populations at the apprenticeship readiness and registered apprenticeships levels. Programs at both levels have supportive services support including support of driver's license attainment, food supports, transportation supports, tools, supplies and textbook supports and math remediation supports. MSFAP will also support the solar skill upgrade training at the existing journeyperson level so that current journeypersons can receive the training they need to accelerate the deployment of solar throughout the state. MSFAP will work with all levels of training providers to ensure that graduates at the apprenticeship readiness level have access to moving into unionized apprenticeship with the free and fair option to join a union. MSFAP anticipates working with local community colleges as well to incorporate their solar trade programs as another level of opportunity for those individuals looking to move to college credit/degree/certification programs that could move them toward management positions in the solar industry.

Plans for Investing in MBE, WBE, HUB Zones: The MSFAP Coalition is committed to prioritizing equitable economic opportunities for women, veteran and minority-owned businesses and contractors and will award extra points for businesses in these categories during our procurement processes upon award. MSFAP will also consider the HUB Zones in Maryland during our procurement processes upon award.

Plans with Unions and Signatory Contractors who are Committed to "High Road" Labor Practices: MCEC reached out directly to the Baltimore-D.C. Metro Building Trades Council and met with the Joint Apprenticeship Training Committee (including Electrical Workers, Insulators, Boilermakers, Plumbers & Gas Fitters, Sprinkler & Steam Fitters, Roofers, Masons, Teamsters, Laborers, Bricklayers, Ironworkers, Sheet Metal Workers, Elevator Constructors, Painters, Operating Engineers and Carpenters) to invite them to participate in the MSFAP. The Electrical Workers (IBEW) and Carpenter's Unions signed up to do Solar Skills Training for both Journeypersons and Apprentices. They have included an element of Math remediation as a supportive service in their apprenticeship element to ensure their success in the program. The programs have a high level of safety training embedded in them and all unionized apprentices/journeypersons are trained in OSHA 10/30 for their trade. MSFAP supports the "High Road" labor practices of unions and signatory contractors. Wage and benefit practices from unionized registered apprenticeships are a path to wealth creation and a giant leap out of poverty for LIDAC populations.

Program Income: Investments made through the program are anticipated to eventually generate some income for reinvestment. MSFAP will be better able to determine the amount as specific projects materialize during the planning phase, for funding and financing in the implementation phase. MSFAP will set goals for program income and parameters for future use, based on available grant resources and as specific investment strategies and programs are further defined.

3. Distributed Solar Market Strategy

Current Solar Market in Maryland: Policy and regulation currently enacted in Maryland is very conducive to the deployment of solar generation solutions for single-family roof-top, multi-family ground and roof-mounted, and community solar generation. Overall, Maryland DHCD data indicates that there are over 447,863 low-income household units in Maryland that may be eligible to take advantage of the MSFAP assistance.[iii]

In general, the state has enacted advantageous net metering policies and permits solar projects to be installed at scale up to 2 WM without requiring approval of the Maryland Public Service Commission. The Maryland Renewable Portfolio Standard (RPS) calls for 50% of the state's electricity generation to come from renewable resources by 2030, including a 14.5% carve out to come from solar resources by 2028. "Net metering is available statewide until the aggregate capacity of all net-metered systems reaches 3,000 MW. This limit was raised from 1,500 MW by S.B. 407 in 2021. The aggregate limit on net metering was 34.7 MW prior to the 2007 amendments."[1]

Net Metering Policies: Maryland net metering guidelines are outlined in Maryland Code §7-306 and COMAR 20.50.10. To qualify for net metering, energy systems must have a capacity of less than two megawatts (MW) or should not exceed 200 percent of the owner's annual baseline electricity consumption. In accordance with these regulations, Maryland's electric utilities and cooperatives are obligated to grant net metering access to all eligible customers.

Interconnection Processes: The regulations for electrical grid interconnection in Maryland can be found in the Code of Maryland Regulations, specifically under "COMAR Title 20. Public Service Commission Chapter 20.50.09." These regulations, which pertain to Small Generator Interconnection Standards, were most recently revised in 2018. In order to qualify for interconnection, the maximum allowable nameplate generation capacity is set at 10,000 kilowatts (kW). Implementing contractors are required to guide customers through the interconnection process and make technical assistance available to help navigate any challenges.

Renewable Portfolio Standard: Maryland Renewable Portfolio Standard (RPS) aims to acknowledge and foster the advantages linked to a wide range of renewable energy resources. The state RPS Program accomplishes this by acknowledging the positive impacts on the environment and consumers brought about by renewable energy.

Within the RPS Statute, renewable energy sources are categorized into Tier 1 and Tier 2, and the RPS Program mandates that electricity suppliers must fulfill a specified minimum portion of their retail electricity sales using these sources. The program's execution hinges on the generation, sale, and exchange of Renewable Energy Credits (RECs). Any renewable energy credits generated through a system installed under the Solar for All Grant will benefit either the system owners or tenants, depending on the financials for each project.

Third-Party Ownership: Maryland law does permit third-party ownership models through forms of power purchase agreements and subscriptions via community solar. MSFAP will fund projects that utilize such ownership models by funding and financing Community Solar and Community

[1] Source: DSIRE https://programs.dsireusa.org/system/program/detail/363#:~:text=Net%20metering%20is%20available%20statewide,prior%20to%20the%202007%20amendments.

Solar Projects with battery storage to serve the program target audiences and achieve cost savings over the grant period and beyond. The MSFAP will take advantage of these conducive policies by utilizing more than 75% of the overall grant budget to invest in funding and financing projects in all three target markets. The Funding & Financing Work Group will be charged with the creation and implementation of strategies to attract more private capital investment to address market demand for all of the above-referenced market sectors to achieve grant related target outcomes. The Outreach & Education Work Group will be involved to build awareness and drive the adoption of those strategies by consumers.

Interconnection Process: While the timing of interconnection can result in delays for project deployment in Maryland, this is more of an issue for utility scale systems then the residential scale systems proposed to be funded through the MSFAP. There are places where the line capacity may be a barrier for rapid deployment, but MCEC and the Maryland Environmental Service (MES) will be available through the MSFAP to work with utilities and mitigate such circumstances whenever possible for installers who come up against the challenge. Contractors, have expressed frustration with the occasional delay in interconnection timing as it impacts project financing, and the MSFAP is planning to address this barrier with SFA funding.

Understanding of Jurisdictional Nuances: In Maryland, the installation of solar panel systems, whether on the roof, elsewhere on the house, or on adjacent land, must be carried out by a certified home improvement contractor. Additionally, the person responsible for connecting these solar panels to the electrical box or grid is obligated to possess an electrician's license issued by the local jurisdiction in which the property is situated. Additional requirements, documentation, and timelines vary by jurisdiction.

Regarding barriers to solar deployment in Maryland, land use advocates particularly in rural areas, have been driving land use policy adoption intended to restrict larger scale solar projects. This creates a challenge to success for certain community solar projects. As part of the MSFAP strategy Maryland Clean Energy Center will work with the Maryland Department of the Environment (MDE), Maryland Energy Administration (MEA), University of Maryland Environmental Finance Center, and local governments to identify sites that are desirable for community solar development; and will engage the Climate Access Fund along with Groundswell among others working on community solar deployment to work around this barrier and finance installations to serve the target audience.

Single-family Market: DHCD Data indicates there are approximately 252,000 low-income single-family homes that may be eligible for funding assistance to make enabling upgrades and deploy solar through the MSFAP.[2] To date, residential roof-top solar has been adopted by homeowners in every utility service area of Maryland. Much of the residential market served to date however, has not been low-income households, and while the state has provided grant funding and incentives to drive consumer adoption only the Montgomery County Green Bank has offered a solar financing opportunity through their Advance Solar loan program.

[2] Department of Housing and Community Development Database, 2023

The Maryland Department of Housing & Community Development has invested significant federal Weatherization Assistance Program (WAP) funds to make enabling improvements on residential properties owned and occupied by low-income consumers in disadvantaged and underserved communities. The agency estimates over 1000 units have been made solar-ready and those units have been identified as first priorities for solar installation through the MSFAP.

The Maryland Clean Energy Center (MCEC) and Montgomery County Green Bank have partnered to implement the Clean Energy Advantage (CEA) residential loan program to help consumers finance eligible energy efficiency measures. Since its launch in March of 2022 the program has over 122 loans valued at over $1.170M have been financed as of September 30, 2023, resulting in over 227,895 kWh of energy savings and the associated GHG reduction. The loan processing infrastructure in place for this program could be adapted for solar loans. The Solar Energy Loan Fund (SELF), a Coalition Partner with the MSFAP, has a very successful track record of managing private capital leveraged with public capital to offer affordable loans to fund enabling improvements and solar installations for low-income households. Their program model allows for a tiered subsidy which may be a model MSFAP could implement using SFA funds.

Civic Works, Green & Healthy Homes Initiative, and Building Change have all submitted proposals for hands-on consumer engagement for project implementation of enabling upgrades, solar, and solar with storage, linked to a workforce development strategy operating in some of the most underserved areas of Maryland. During the planning year MSFAP will determine the scope, scale and type of investment best suited to address this target audience working with Coalition Partners.

MSFAP will investigate third-party ownership financing models for this market sector and will focus outreach education efforts to engage this audience. The MSFAP Coalition will work with relevant stakeholders and coalition partners, over the course of the first six months following award notification, to implement investment strategies designed to facilitate solar deployment benefitting low-income single and multifamily households through both direct and third-party ownership models. To ensure the program will be accessible to a diverse audience throughout the state, MCEC will work directly with the Maryland Veteran's Affairs Administration to facilitate project development that will benefit veterans housed in state-managed facilities, as well as with operators of nursing homes and organizations that manage housing for homeless or special needs populations to catalyze project design and planning, eligible for future financing and funding in out years. MCEC will utilize Climate Catalytic Capital (C3) Funds to leverage and extend available federal funding for these types of projects.

Multi-family Market: DHCD data indicates 228,579 low-income multi-family residential household units are eligible for SFA funding.[3] Funding, financing, technical support and outreach to address this market segment through the MSFAP will be overseen by the Maryland Department of Housing & Community Development. MCEC will manage a fund to provide low-cost bridge loan funding to help bridge a gap in cash flow while tax credits are being processed, which has in the past been a barrier to the success of projects in the market sector.

[3] Department of Housing and Community Development Database, 2023

Markets for Community Solar & Community Serving Solar & Storage: The Maryland community solar program is an ideal vehicle for achieving the objectives of the EPA's Solar for All initiative, specifically in its ability to leverage private capital to deploy clean energy while delivering lower energy costs and economic revitalization to communities that have historically been left behind. Maryland has established program infrastructure and market demand coupled with the major programmatic move toward requiring significant participation by those that would benefit from it most.

Maryland has a mature community solar market, originally enabled through legislation that passed in 2015[4] which established a pilot program. The pilot has held annual capacity allocations since 2017 – with set amounts distributed by each investor-owned utility and further separated into various "capacity buckets" differentiated by project size and location as well as the type of customers served. There is currently about 120 MW of community solar capacity operating in Maryland, and nearly 400 MW that is either reserved (under development) or waitlisted in the pilot program due to the pilot's capacity limits.[5]

The pilot will become a permanent program at the end of 2024 due to legislation that passed in early 2023[6]. The permanent program will accelerate the deployment of community solar in Maryland over the coming years, and it will also ensure that disadvantaged and underserved residents and communities will directly benefit from the projects being deployed. In the permanent program, projects must allocate at least 40% of capacity toward low-or-moderate income customers, and ensure those participating customers receive bill savings.[7] The permanent program also incorporates consolidated billing, which is consumer-friendly and allows for greater flexibility for lower-income customers to benefit from community solar in addition to other benefits from state or federal energy aid programs.

The permanent program has no capacity limits other than the state-wide net metering capacity cap of 3,000 MW [8], of which about one-third has been met, leaving nearly 2,000 MW available for community solar and net metered projects. In addition to new community solar project development -which the passage of the 2023 legislation has already begun driving in the state projects that were stuck in the pilot queue or waitlist can become operational in the permanent program.

While community solar in Maryland is rapidly growing and evolving into one of the most equitable markets in the country, it is not without its challenges. Several counties in Maryland have implemented policies prohibitive to the development of ground-mounted solar projects, due

[4] Maryland. HB 1087 (2015). Found here: https://mgaleg.maryland.gov/mgawebsite/Legislation/Details/HB1087?ys=2015rs

[5] Each investor-owned utility is required to track program applications. The PSC has links to each utility's website where individual capacity data can be downloaded. See here: https://www.psc.state.md.us/electricity/community-solar-pilot-program/

[6] Maryland. HB 908 (2023). Found here: https://mgaleg.maryland.gov/mgawebsite/Legislation/Details/hb0908

[7] HB 908 (2023) requires a minimum of 10% discount associated with the credit rate for low-to-moderate income subscribers of community solar projects in the permanent program.

[8] PUA §7-306.8d. Found here: https://mgaleg.maryland.gov/mgawebsite/Laws/StatuteText?article=gpu&section=7-306&enactments=True&archived=False

largely to concerns associated with aesthetics or competing agricultural interests. This has in turn created bottlenecks for interconnection due to congestion on the grid in areas where permitting is more reasonable.

Fortunately, projects between 2-5 MW fall under the Public Service Commission (PSC) jurisdiction which means they can avoid some of the more challenging county-level ordinances. In addition, efforts are underway at the PSC to address grid constraints and outdated utility protocols, and decision-makers at the highest level of state government are discussing strategies for overcoming the county siting challenges. In addition, there are limited state tax incentives (only available through 2025) for projects that allocate at least 50% of capacity for low-or-moderate income customers, and that use agri-voltaics or are installed on a rooftop, brownfield, parking facility canopy, landfill, or clean fill.

Maryland's Regulatory Frameworks that Support Community Solar Deployment: Feedback from Coalition for Community Solar Access, which represents the majority of community solar industry actors in Maryland and has robust familiarity with the market, indicates community solar is the most scalable market vehicle for reaching underserved residences and benefiting low or low to moderate income customers that don't own their home/residence. Even for those in a multi-family residence, a project located onsite is unlikely to be large enough to benefit all of its tenants. Community solar also stands alone as the most cost-effective tool for reaching the most customers given it can leverage economies of scale (and locational siting).

Due to legislation, the Maryland community solar program is about to move toward requiring 40% of every project be dedicated to low or low to moderate-income customers and/or those located in disadvantaged and underserved communities. While projects will already be required to include those customers, Solar for All funding will be used to:

1. Increase the level of benefit each subscribing customer receives (beyond a 10% bill discount currently required);
2. Increase the level of participation (beyond 40% of capacity) for each project; and
3. Support the siting of projects in "preferred" locations that benefit disadvantaged communities.

Increasing the Bill Savings for Community Solar LI Subscribers: Currently, the community solar program requires LMI customers to receive at least a 10% bill savings (tied to a 10% discount of the credit rate) through their subscription to a community solar project. Solar for All funding will be provided as a grant to increase that level of savings for each subscriber.

- Using a "pass-through" analysis and an example, assuming the credit rate is $0.10/kWh. Today the customer has a 10% savings rate so the developer is keeping 90% of the credit. For the developer to drop their portion to 80% they'd need a 10% incentive, or $0.01/kWh to make up the difference, which is approximately $13,000/MW/year.
- Using a real example, in Maryland, the credit rate varies by utility and customer class. For BGE residential customers, the pre-local tax credit rate is $0.14435. To increase customer

savings by an additional 10% (for example, from 10 to 20%) the projects need $0.014435/kWh of additional incentive to compensate ($18,765.5/MW/year, which is $93-125 a customer, assuming 150-200 households per MW).

Increasing the LI Participation in each Project: Currently, the Maryland community solar program requires every project to allocate at least 40% of its capacity to LMI subscribers. Solar for All funding will be used to increase the capacity above 40%.

- Estimates indicate that projects would need $0.03/kWh for incremental capacity.
- For example, at 50% LMI, a project would get $0.03/kWh * 10% of capacity, at 72% LMI project would get $0.03/kWh * 32% of capacity.
- The $/kwh should be translated to a capacity (per watt) incentive so units aren't confusing, so MSFAP could swap $0.03/kWh out and put in $0.039/Wdc instead).

Funding Projects on "Preferred" Locations: Projects on rooftops, and especially those located (on rooftops or not) in urban areas are more expensive than typical community solar projects. Solar for All funding will be used as a grant opportunity for applicants looking to locate projects in disadvantaged communities or other underserved areas. This should be on a case-by-case basis given that costs could differ by project. The MSFAP will work with local governments to identify and deploy projects on appropriate and desirable sites serving low-income households within rural, urban and suburban jurisdictions.

4. Financial Assistance Strategy:

The MSFAP is carefully developing an approach to the funding and financing aspect of the proposed program that is efficient, leverages other funds and maximizes solar deployment but also takes into consideration how these financial resources can be best used to remove barriers to adoption and facilitate program longevity. The MSFAP intends to utilize a variety of types of financial assistance strategies to achieve the goal of impacting 10,000 plus households and delivering the measurable benefits desired. The MSFAP Coalition, industry advisors and partners will utilize time allowed for a planning period to further refine the specific financing strategies and delivery processes to best serve the various target markets prioritized in this plan.

The MSFAP has committed to using 75% of the EPA grant funds awarded for financing and funding deployment of solar and solar with battery storage. The Maryland Energy Administration (MEA) and the Maryland Clean Energy Center (MCEC) have committed a total of $5,049,650 as a match to potentially $75,000 in EPA Solar for All grant funds, for a total investment in this budget category of $80,049,650.

Target Markets, Maximizing Impact and Leveraging Resources: Regarding criteria for deciding which projects will be funded and/ or receive financial assistance, MSFAP has budgeted $76,794,247 in SFA funding, from an overall program budget of $107,000,000, approximately 71% of available funds dedicated to support deployment of residential rooftop, residential serving community solar, and associated storage installations. The following target market audiences and project types have been identified for funding or financial assistance in this category:

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SINGLE-FAMILY LOW-INCOME OWNER OCCUPIED RESIDENTIAL: MSFAP budgeted $19,303,650 to provide low-cost financing to assist a target of 3,754 owner-occupied single-family residential consumers with enabling upgrades and solar installation. The percentage of grants and loans available to this market will be adjusted based on income as a percentage of AMI, so that the lowest income residential property owner is assisted at a greater scale. DHCD has verified there are 1,000 units currently weatherized and solar-ready through their programs. Of the overall available funding detailed above, $5M contributed by MEA will be dedicated specifically to serve low-income single-family households. MSFAP will connect with the Maryland Department of Human Resources to identify and implement outreach customers who are currently receiving LIHEAP and bill payment assistance a priority target audience for solar deployment using SFA funds.

MULTI-FAMILY RESIDENTIAL: MSFAP funding will be deployed to provide access to cost savings from solar for residents that do not own their home or unit in a multi-family property, through various community solar project models on rooftops, ground-mounted and on canopy structures, including some proposed for development by local government partners on local government properties, intended to serve low-income residents in Justice 40 communities. MSFAP has budgeted $26,000,000 to address this market sector with priority for funding and financing given to those properties verified to have been through DHCD weatherization programs and are solar-ready. Funding and financing to serve this market sector is projected to impact approximately 5,100 households in this market sector, over the grant implementation period.

Through MSFAP, MCEC also intends to expedite deployment by making low-cost capital available in the form of loans to landlords to help with cash flow in project construction until they are able to claim tax credits.

As the State's Housing Finance Agency, the **Maryland Department of Housing and Community Development** (DHCD), is uniquely positioned to lead the MSFAP to design, administer and ramp up the Solar for All (SFA) program for multi-family housing projects. DHCD's mission is to work with partners to finance housing opportunities and revitalize great places for Maryland citizens to live, work, and prosper. Energy programs are a critical component of the agency's approach to providing safe and affordable housing, encouraging quality and good-paying jobs, and reducing State-wide greenhouse gas emissions and their effects on climate change.

DHCD already possesses the partnerships and infrastructure for delivering funding and financing to limited income households and affordable housing properties across the State, administering a total of $168M in energy and rehab funding per year. To date, DHCD has successfully delivered energy-saving benefits to over 54,000 of the State's most vulnerable families. Solar funding will be deployed through the same funding channels to eligible housing applicants.

Over the next three years, DHCD plans to provide energy retrofits to over 60,000 limited-income households. These same households are automatically income-eligible for SFA benefits, and they will already be energy efficient, and come pre-assessed for on-site solar capacity. DHCD expects that approximately 20% of the households could benefit from on-site solar energy production; all others can be considered income-qualified participants for community solar subscriptions. With this strong pipeline of qualified households and its network of local weatherization agencies serving all counties, DHCD will be able to successfully help the MSFAP meet the goals of the Solar for All Program. Specifically, DHCD will:

- supply a pipeline of at least 1,000 single-family buildings that are ready for on-site solar.
- design, administer, deploy, and monitor the funding and technical compliance for all MF projects, to benefit around 3,600 housing units
- coordinate with all entities included in this application for outreach, workforce development and technical assistance
- refer all clients that are not eligible for on-site solar to the organizations providing community solar.

COMMUNITY SOLAR & COMMUNITY SERVING SOLAR with STORAGE: MSFAP will take advantage of recently enacted regulations shifting the state community solar program from a pilot to permanent, and has budgeted $ 26,490,592 in funding to serve this market sector within the MSFAP plan. To facilitate delivery of outcomes the Climate Access Fund (CAF) will manage project financing.

This funding will be utilized to support an estimated 15 projects resulting in a total of 7.5 MW of community solar, and community serving solar with storage projects serving low-income households and projects that serve as resilience hubs, or provide power to residential facilities serving special needs consumers through a solar system. MSFAP intends to use the funding budgeted for this consumer sector to impact approximately 7,228 household units. The MSFAP anticipates investment of grant funds will facilitate approximately 37 MWh of storage capacity installed in association with funded solar projects. Consumers subscribed to benefit from SFA funded systems, per state law must benefit from the minimum annual cost savings and any system owner/ operator will be required to verify those savings. Groundswell has agreed to make its subscriber management platform available to the MSFAP project to assist with this task for up to 10,000 households enrolled. In implementation, this service will be part of the MSFAP plan to ensure customers receive a minimum annual household savings benefit of 20%, directly or indirectly.

Serving Special Needs Populations: The MSFAP has included a budget of $5,000,000 with a desire to facilitate community solar deployment to serve low-income, disadvantaged, underserved audiences housed in critical facilities and residential facilities; including seniors, veterans and special needs populations which will benefit from solar projects designed to provide costs savings and/or an aspect of resilience. MCEC will manage this investment fund which may be deployed in the form of grants, revolving loans or equity investments; leveraging funding from its Climate Catalytic Capital (C3) Fund to assist. The Maryland Department of Veterans Affairs has identified projects at the two agency-run hospital facilities where community solar could help keep costs down for the residents, with any excess generation potentially serving more affordable power to residents in neighboring low-income communities as an example project priority. The MSFAP intends to further develop specific criteria to allow financial assistance for associated storage and

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enabling upgrades to maximize the number of households served and other associated meaningful benefits. With limited funding available to serve a significant demand, it is anticipated that the MSFAP investments in storage will be limited to those projects multi-family projects, and those that provide a community resilience aspect.

Use of Leveraging for Upgrades: Bridge loans and guarantees may be particularly helpful to assist with project development and remove roadblocks to deployment for underserved audiences in addition to direct loans, indirect loans, equity investments and grants. The MSFAP wants to consider how it can help address the volatility currently being experienced in the Maryland SREC market with a loan guarantee program, and how an affordable bridge loan could find projects that would likely have a cash flow delay because of the time it tax credits to be paid in many larger scale solar transactions. MCEC also has the statutory authority to issue green bonds and could play a central role in raising capital to support SFA project investment through this capability, and along with other Coalition Partner green bank organizations including, Montgomery County Green Bank (MOCO) and the Climate Access Fund (CAF) will focus on engaging other capital providers to achieve the desired outcomes of the MSFAP. Working with lenders who bring private capital to lending strategies, and using external capital sources to increase available funding as much as possible is one element of the MSFAP plan to maximize the number of households benefitting from funds awarded and that SFA funds invested complement but don't duplicate other capital sources. The MSFAP will utilize and leverage all federal and state funding, tax incentives, etc. prior to utilizing any funding for enabling upgrades. Our coalition partner DHCD administers the federal WAP funding in Maryland and will ensure that projects that need to have enabling upgrades will utilize that funding prior to utilizing Solar for All funding. MSFAP will continue to develop procedures and definitions of enabling upgrade criteria in our planning phase. DHCD will leverage its existing infrastructure for issuing grants and loans. This includes access to close to $100M annual funding for rehabilitation and energy efficiency work. By leveraging $150M of pre-existing energy efficiency and rehab funding ($55M for SF, $95M for MF), MSFAP will not have to utilize the SFA program expenditures in those categories and can allocate all program funds towards solar activities only. All funds can be issued through a combined project scope and the same financing vehicle, enabling comprehensive projects that maximize savings.

State/Federal Level Programmatic Leverage:
MSFAP will leverage existing federal and state programming to ensure that the benefits of Solar for All dollars expand as far and as fast as possible into Low Income/Disadvantaged Communities. The current list of programs available are listed below:

- Maryland Clean Energy Capital Program (MCEC)
- Maryland Property Assessed Clean Energy (MCEC)
- Maryland Clean Energy Advantage (MCEC)
- EmPower Low Income (DHCD)
- EmPower MEEHA (DHCD)
- LMI Community Solar Program (MEA)
- Resilient Maryland and Resiliency Hub Program (MEA)
- LMI EE Program and Low-Income Solar Program (MEA)
- Solar Canopies (and Dual Use) Program (MEA)

- Clean Energy Rebate Program (MEA)
- Energy Storage Grant Program (MEA)
- EARN Workforce Training (MD-DOL)
- Energy Assistance (Maryland Department of Human Services)

Alignment with Upcoming Federally Funded Programs:

- Clean Communities Investment Accelerator/Greenhouse Gas Reduction Fund (EPA - MCEC)
- Energy Efficiency and Conservation Block Grants (EECBG) (DOE - MEA)
- Climate Pollution Reduction Grants (EPA- MDE)
- IRA Homes and Electrification Rebates (DOE - MEA)
- Residential Energy Efficiency Loan Program (DOE - MEA - Implemented by DHCD)
- 40101(D) Grid Resiliency (DOE - MEA)
- SolarApp - grants to local governments for solar permit streamlining (DOE- MEA) (Awarded)
- Building Resilience in Communities (FEMA – MDEM)

Addressing Barriers to Adoption: A frequent need for roof and electrical upgrades, distribution and transmission infrastructure upgrades, and other market timing barriers were identified by stakeholders during the grant preparation process. The MSFAP will align solutions to the needs identified during the program planning period called for in the proposed timeline for delivery in attempting to address those barriers with associated mitigation strategies, including:

- The need for roof, electrical and efficiency upgrades for low-income owner-occupied and multi-family residential properties would be mitigated by allowing up to 20% of project costs to be funded and/or financed to cover those costs. Those improvements would be identified as part of the overall project plan to be approved by a program manager before contractors can begin work on the project to benefit from SFA funding.

  Sub-awards may be made to certain project developers who deliver whole home improvements including enabling upgrades with solar, and a workforce development aspect of their work.

- SREC valuation is unpredictable and production incentives are declining in Maryland according to installers. MSFAP may elect to implement loss guarantees to offset the volatility and create a less risky environment for private lenders to operate.

- Interconnection wait times can present a challenge to installers who may find that delays affect long-term financing. MSFAP may elect to implement a low bridge loan fund as a revolving financial tool to assist developers working with DACs and low-income households with SFA funds.

- Cash flow for project development is impacted by the lag in time between project completion and the realization of the benefit of tax credits as part of project equity, and the potential to invest in multiple projects simultaneously. MSFAP may implement a low-cost revolving bridge loan fund to help cover the gap and expedite projects that would otherwise not be achieved during the delay.

- Lack of funds for pre-development costs can be a significant barrier for disadvantaged communities and community serving non-profit organizations to be able to move a project from a vision to completion. MSFAP may implement a project development revolving loan fund which would help address this need. Funds could be rolled into the final project financing costs and the fund repaid for future project applicants.

- Installers have advised that requiring prevailing wage and Buy American for small residential projects will be a significant barrier to industry participation, and there is concern about the availability of PV panels and equipment with the demand anticipated from SFA funding awards in the future. MSFAP is not requesting a waiver of these requirements but is asking EPA to consider this concern since it will likely increase the per installation cost reducing the overall potential program impact and cannot be addressed by the grantees otherwise.

Use of Funds for Enabling Upgrades: The MSFAP will develop and implement strategies, policies, processes and protocols to ensure no more than 20% of overall financial assistance for the lifetime of the program is used for enabling upgrades. This will require certain verifications to be obtained from project developers and some element of M&V, either for every project and/or with random inspections of contractor work in the field. Contractual services will be obtained by the MSFAP through open solicitation for these services as deemed necessary.

Long Term Program Impact: To ensure program longevity and market transformation beyond the grant period, the MSFAP will also engage various consultants, capital providers, lending and program management partners to crowd-in more private investment for program delivery and long-term impact. Credit enhancements and loss coverage will be used to ensure interest rates are kept to a minimum, and consumer privacy protections are in place. Grant and lending amounts invested will be directly linked to incomes with the lowest income consumers eligible for a greater percentage of grants and higher income consumers participating in MSFA with a greater debt-to-grant eligibility ratio.

MSFAP Coalition Partner, non-profit Green & Healthy Homes Initiative (GHHI) will assist the development of strategies to integrate affordable housing into program operations, and offer on best practice guidance for contractors working with low-income homeowners. GHHI will also advise MSFAP Coalition and partners on how investment of funding and financing can be best used to maintain affordability of existing housing stock, advance anti-displacement policies and avoid rapid price increases as a result of measures implemented.

Supporting Operations, Maintenance and Recycling of Assets: The Maryland Department of the Environment (MDE) and MEA will provide technical guidance, programmatic efforts, and enabling policies to support the MSFAP to successfully manage ongoing operations, maintenance, and recycling of the assets funded under the program for the lifetime of the assets. Maryland will also leverage tools from the EPA, such as the EPA's Solar Photovoltaic Waste Estimation Tool, and other resources from the EPA Hazardous Waste Program and EPA Sustainable Materials Management Program and corresponding Maryland efforts.

Under the Climate Solutions Now Act (CSNA) passed into law in 2022, the Maryland Commission on Climate Change (MCCC) chaired by the Maryland Department of the Environment Secretary, is now charged with developing proposals that allow the state to reach that target by 2031, and "net zero" by 2045.

The MCCC Solar Photovoltaic Systems Recovery, Reuse, and Recycling Working Group, a sub-committee of the Commission, is currently engaged in statute-directed research and analysis, with plans to report its findings and recommendations on the following to the MCCC and the Maryland General Assembly, a directive which in part includes:

- Review solar photovoltaic systems currently used in the state, including: examining the expected economically productive life cycle of the systems; identifying materials that can be recycled or that exhibit any characteristics of hazardous waste under state or federal law; and estimating the potential impacts of disposing of the systems in the state's landfills.
- Identify ongoing and recent studies related to solar photovoltaic systems recycling, life-cycle analysis, and end-of-life programs.
- Review other programs and industry-approved best practices for managing end-of-life solar photovoltaic systems and their components.
- Perform an economic analysis to determine the potential impact of solar photovoltaic systems recovery, reuse, and recycling on ratepayers;
- Perform an impact assessment to examine the environmental impacts of various PV systems' end-of-life scenarios;
- Analyze whether financing mechanisms are necessary to ensure proper end-of-life management of solar photovoltaic systems; and recommend financing mechanisms that best support a circular economy approach.
- Examine and recommend the infrastructure needed to develop a practical, effective, and cost-efficient method for collecting and transporting end-of-life solar photovoltaic modules for reuse, refurbishment, recycling, or disposal.

Additionally, the Maryland Energy Administration (MEA) has engaged the University of Maryland Global Campus in a series of two projects to generate background research for use by Maryland State agencies and key stakeholders; including:

- Processing reusable solar modules, capacity for silicon-based solar module storage and reuse without repair
- Siting concerns of a PV module repair facility at a PV recycling plant, and
- Siting a recycling facility for unserviceable silicon-based PV Modules in the Mid-Atlantic.

The outcomes of these efforts will help support MSFAP in efforts to support the recycling of assets that have reached their useful life in the future.

Conducting Audits of Assets to Ensure Operations & Maintenance is Performed: As part of the grant compliance process, MCEC and procured site engineers and auditors will conduct an audit of assets throughout the grant timeframe to ensure that operations and maintenance is performed. MSFAP anticipates that these audits will be ongoing throughout the life of the program.

5. Project-Deployment Technical Assistance Strategy:

MSFAP has included $6,974,650 of the overall budget in funds requested to support communities and other solar market stakeholders by providing project-deployment technical services. This will be achieved through service agreements with partner organizations as well as access to software platforms and advisory assistance for project design, engineering, permitting and interconnectivity. Certain technical assistance needs may be identified through the planning process envisioned to occur in the first year of the funding plan timeline.

MCEC will provide resources through the Procurement & Technical Assistance division to offer efficient, cost-effective centralized procurement to source the technical expertise, products, equipment, services, software tools and any other contractual services competitively procured from for-profit vendors. MCEC will also manage a portion of funding in relation to Workforce Development to provide grants, subsidies, reimbursements and loans for tuition and wrap-around services supporting low-income workforce program participants and trainees.

Utility partners will be among advisory stakeholders engaged by MCEC through the Planning & Technical Assistance Workgroup through MSFAP to facilitate cooperation between industry, contractors and consumers and reduce barriers to success. Solar industry, Consumer Advocates and Community Development organization representatives will also be involved in the planning and delivery of MSFAP objectives.

The following non-profit technical assistance partners and service providers will be engaged to assist coalition partners with data collection and reporting on grant deliverables, outputs and outcomes related to project deployment:

Center for Climate Strategies (CCS), a global non-profit research and development organization; implements smart, shared solutions to climate change, economic development, social equity, and sustainability. CCS provides broad experience and expertise for all levels of government and economic sectors with a successful track record in the US and developing regions. CCS will serve to lead the MSFA Planning & Technical Assistance workgroup and provide technical assistance to the MSFA team; including determination of outcome metrics tracking, data management for efficient and effective program design and reporting

Maryland Department of Housing & Community Development (DHCD), will lead the delivery of the deployment strategy in the multi-family housing arena.

Green & Health Homes Initiative (GHHI), a non-profit organization; nationally recognized for outstanding consumer advocacy and work to implement cost-saving energy improvements to the affordable housing market; will bring technical assistance for solar developers, implementors and financiers along with a tool kit on braiding federal and utility funding and comprehensive solar assessment tool for implementers.

Technical Support Using IT Tools and Programs: SolarAPP+: Over the last few years, the National Renewable Energy Laboratory (NREL) has developed a computer program (SolarAPP+) that is able to review routine residential solar rooftop applications and determine if they meet applicable building and electrical codes. The program can be customized for each AHJ, but retains

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the basic functional review capability. Adoption of SolarAPP+ will allow for the timely review and approval of solar PV project building and electrical permits by automating the process, while still allowing localities to include items of specific concern. Over time this will allow for a reduction in the cost of permitting, thus reducing the "soft costs" associated with solar installation. The system will help with the high volume, low difficulty reviews associated with permitting a solar energy system on a residential property. This program, suggested by representatives of the solar industry, builds on a successful pilot implemented in Montgomery County is slated for permanent adoption.

Maryland Energy Administration (MEA), will fund SolarApps+ using $3.9M in DOE grants to make the software platform available and provide technical training support for code officials and permitting officers, and will do training for local officials. MEA will provide grants to local government AHJs, or possibly to an overarching organization that will provide subgrants. Funds may be used for IT systems integration, training, project staffing, and other necessary functions required to implement SolarAPP+, based on the unique needs of each AHJ. MEA, in association with the MSFAP, anticipates providing subgrants between $40,000 and $200,000 per jurisdiction, depending on population and the presence of Justice40 communities, with Justice40 communities being eligible for greater incentives and additional support. A total of 40 to 60 grants or subgrants are anticipated.

Groundswell, through the MSFAP, will provide access to its SHAREPOINT subscriber management software platform to enable the uniform collection of subscriber data, and cover all reporting and benefit delivery needs across as many as 10,000 MSFA assisted customer accounts.

Technical Assistance for Efficient Deployment: MCEC, on behalf of MSFAP, will use competitive solicitation and award processes to engage contractual service providers as deemed necessary and appropriate to support the delivery of the program, during the planning and development period through the phase of program delivery. The following eligible organizations have also been included among Coalition Partners to provide specific technical assistance to help achieve grant deliverables:

Maryland Environmental Services (MES), an instrumentality of the state, has a stellar track record of project development and delivery in waste, water and solar project management and delivery. As part of the MSFAP plan to ensure a sound project engineering; post-construction inspection and quality control process is in place, MES will be available to assist with MSFAP project design, siting, engineering, construction & interconnection **support**, as well as to support MCEC with performance measurement & verification associated with reporting of grant deliverables. MES will assist MCEC with auditing of assets and ensuring operation and maintenance is performed.

Maryland Department of the Environment (MDE), will act as a technical advisor to help ensure habitat and land use standards are met, and associated greenhouse gas reductions are applied to state goals.

University of Maryland Environmental Finance Center (UMD EFC), will deliver comprehensive services to help build the local capacity of Maryland communities to plan, fund, and implement solar projects and community-based solar outreach campaigns. UMD EFC will take a community-first approach in designing and delivering this assistance, working alongside communities to address their solar energy adoption challenges and encouraging them to take the lead in identifying priorities and opportunities for engaging residents in solar solutions. Through direct technical assistance, education and training, community outreach and engagement, and resource and tool development, the UMD EFC will mobilize resources to help communities advance their solar initiatives.

Maryland Department of Labor (MDOL) will lead MSFAP coordination of workforce development activity and training programs. MDOL will advise on the investment of MSFAP program funds to ensure effectiveness of programs and the achievement of desired outcomes. The agency will also help bridge the various local workforce development boards with the MSFAP activities, and track metrics related to reporting for the grant investment.

With regard to the MSFAP plan to develop the necessary workforce our partners include training program operators already operating successfully demonstrated training models. Those organizations will be engaged to train over 650 individuals to be ready to sit for NABCEP examinations, and to obtain licenses in the future as credentialed apprentices and journeypersons. MSFAP will fund those training providers to work specifically with individuals from low-income and disadvantaged communities for career pathways and job placements as performance metrics.

MSFAP will be working directly with the Baltimore-D.C. Metro Building Trades Council and their Apprenticeship Directors through their regional, statewide and local trade unions to provide Solar Installation trade-specific training to apprentices and journeypersons. This skills upgrade training will provide the trained workforce needed to quickly prepare the trades, particularly the IBEW and the Mid-Atlantic Carpenters, to quickly deploy this level of skilled worker through their signatory contractors throughout the state.

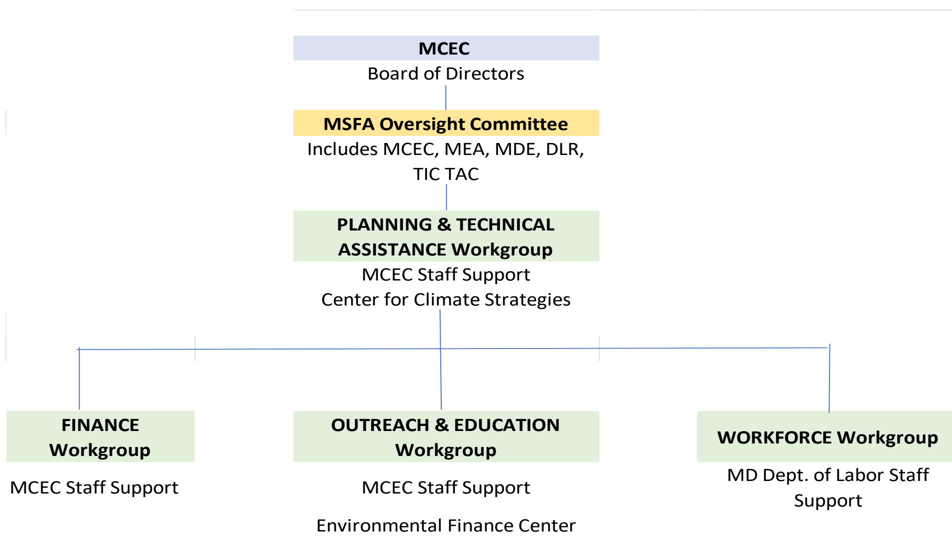
MCEC envisions the Planning & Technical Assistance and Workforce Development Workgroups will be engaged when grant award notices are announced, due to the need to provide opportunity for the largest number of participants to complete the two-year NABCEP and the seven-week, union specific IBEW's PV Solar Online Electrical Training (300 apprentices/300 journeypersons) and the Carpenter's UBC Solar Training Program (100 apprentices and journeypersons). Workforce development programs will start with funding in year one, following the execution of appropriate contracts and agreements. Having our coalition partner MD DOL oversee the program will ensure that Good Job Principles, Multi-Sectoral Partnerships and Job Quality best practices. MSFAP is encouraging the use of Project Labor Agreements, Community Benefit Agreements, prevailing wage and Registered Apprenticeship requirements throughout our projects.

6. Equitable Access and Meaningful Involvement Plan:

The MSFAP plan has identified strategies to address each of the key areas of focus desired in relation to the use of EPA SFA funds. Some of the specific processes and procedures necessary for implementation will be designed for implementation by the various workgroups, and approved by the oversight committee or MCEC Board of Directors if needed.

Plan for Participatory Governance & Partnerships: Members of the MSFAP Coalition have created a governance structure, illustrated below, which is envisioned to facilitate participatory governance, and community engagement in the planning and implementation phases of the grant.

Governance will be led by an Oversight Committee, which reports through MCEC staff to the MCEC Board of Directors appointed by the Governor with fiscal and operational management responsibility. MSAFP will also engage workgroups, to include representatives of state and local government, community leaders, industry, labor, utilities, program managers, and capital providers, including: Workforce Development, Funding & Financing, and Outreach & Education. These workgroups will deliberate and create implementation strategies, processes and parameters. The Planning & Technical Assistance workgroup, using input from the others, will be engaged to track outcomes and outputs, manage measurement & verification and provide technical support to achieve grant deliverables.



Meaningful Engagement & Community Involvement Strategy: Numerous partners who were engaged in the pre-application process undertaken by MCEC have agreed to participate in work groups, and others who are interested may be involved in the future. To successfully achieve future outcomes related to educating and engaging communities on the benefits of solar energy, and facilitating community involvement in program design and operations, the MSFAP will engage the Center for Energy & Environmental Justice & Health (CEEJH) and the Environmental Finance Center centers housed at the University of Maryland, and collaborate with trusted community-based organizations like the LCV CHISPA, Community Development Network of Maryland, NAACP and the Caucus of African American Leaders can be compensated through the MSFAP to facilitate outreach through their significant networks. Those same organizations will take part in efforts to ensure representatives of low-income and DACs will be involved in MSFA program design and operations.

Outreach to Native American Communities in Maryland: The MSFAP Coalition is currently reaching out to the Maryland Commission on Indian Affairs, the Native American Indian Resource Information Center—Maryland Area, and numerous other tribe-affiliated organizations in Maryland to be included in Maryland into the Solar for All program.

Customer Acquisition Strategy to Maximize Breadth & Diversity of Solar Deployment: The MSFAP plans to serve eligible households and communities across the entire state in urban, sub-urban and rural areas. Outreach and education efforts will be overseen by a workgroup focused on creating messaging, web content and collateral materials with culturally appropriate and translated to remove language barriers. Lending programs to be delivered for single-family household consumers through the MSFAP will be available statewide, multi-family projects will likely be implemented more in urban and suburban areas, and community solar projects planned will serve renters and special needs populations.

Plan for Income Verification and Coordinating with Needs-Based Utility Assistance Programs: The MSFAP program will be following the same policies and procedures utilized through DHCD because they manage the DOE WAP Funding in the state. Weatherization funding requires that all applicants upload income verification/documentation into the Hancock Energy Software systems. These documents are then reviewed and approved through the system. The income verification process follows DOE WAP regulations and is very strict. The Maryland Department of Human Resources Office of Home Energy Programs (OHEP) provides energy bill assistance to low-income households in the State of Maryland. The MSFAP will consult the office, and work with local government public assistance agencies, to identify eligible needs-based households that might benefit from SFA funded improvements. Coalition partners already working on delivery of home energy improvement programs, combined with community based on the job workforce training will be funded to assist with MSFAP implementation.

7. Program Planning Timeline and Workplan Narrative:

PHASE 1 PLANNING YEAR:

July 2024-June 2025 Administration/Program Development

- Work with EPA on grant agreements and MOUs
- Establish payout processes, sign up for drawdowns with EPA
- Hire program staff
- Research and implement industry best practices with technical assistance partners
- Establish robust Governance/Oversight Committee and Workgroups (with representation from the public, LIDAC leadership, etc.)
- Hold initial stakeholder launch meeting and monthly Workgroup and Oversight Committee meetings
- Initiate public communication/public comment
- Develop a program communications plan
- Develop definitions, policies procedures, regulations, processes, procedures, contract and reporting templates for use of funds, overall grant management & reporting
- Vet, select, develop partnership agreements with CBO/NPO implementers
- Identify shovel ready projects for initial deployment
- Draft and execute sub-awardee agreements as needed
- Solicit financial/funding partnerships and implementation plans
- Develop funding leveraging options/processes with financial partners

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- Develop technical assistance partnerships, needs assessment and implementation plans
- Develop site visit/auditing processes and procedures
- Establish parameters and processes to be implemented in relation to consumer protections
- Develop RFPs for all procurement processes and run procurement processes for necessary services and contracts
- Report progress to the EPA quarterly or as needed/requested

July 2024-June 2025 Workforce Development Training Implementation

- Work with CBO/NPO partners on MOUs, objectives, processes, procedures
- Review Uniform Guidance, regulations, required reporting statistics, documentation
- Conduct site visits
- Review results/deliverables as program progresses
- Implement Training Levels
  - ➢ Level 1 Training Apprenticeship Readiness/NABCEP Certification
  - ➢ Level 2 Training Unionized Apprenticeship Solar Training—IBEW/Carpenters
  - ➢ Level 3 Training Unionized Journeyperson Solar Training—IBEW/Carpenters
  - ➢ Level 4 Training Community College for credit/certification Solar Training
- Report progress to the EPA quarterly or as needed/requested

July 2024-June 2025 Technical Assistance Implementation

- Work with CBO/NPO Technical Assistance partners on MOUs, objectives, processes, procedures
- Review Uniform Guidance, regulations, required reporting statistics, documentation
- Review program best practices
- Review program plan and change as advised
- Report progress to the EPA quarterly or as needed/requested

September 2024-June 2025 Outreach and Education Implementation

- Work with CBO/NPO partners on MOUs, objectives, process, procedures
- Review Uniform Guidance, regulations, required reporting statistics, documentation
- Hire and train Community Navigators on processes, solar installation education, financing education
- Set up and launch MSFAP webpages for internal and external access
- Create content and translate outreach materials as needed
- Plan outreach events for the year
- Conduct site visits
- Report progress to the EPA quarterly or as needed/requested

September 2024-June 2025 Shovel Ready Program Implementation

- Complete RFP selection process for contractors/installers
- Review the determined shovel-ready projects with the Governance/Oversight Committee
- Work with Technical Assistance/Financial Assistance teams to determine project viability
- Conduct public comment/review
- Initiate shovel ready programs
- Conduct site visits

- Report progress to the EPA quarterly or as needed/requested
- Begin planning phases for PHASE 2 project implementation in 2025/2026

PHASE 2 IMPLEMENTATION 2025/2026

- Hold quarterly Oversight Committee and Workgroup meetings
- Implement Finance & Funding Programs and Investment Strategies
- Implement Workforce Development Training Programs and Initiatives
- Implement Outreach and Education Programs and Initiatives
- Implement Technical Assistance Programs and Initiatives
- Review the determined shovel ready projects with the Governance/Oversight Committee
- Work with Technical Assistance/Financial Assistance teams to determine project viability
- Conduct public comment/review
- Initiate shovel ready programs and conduct site visits
- Audit prior years' work
- Report progress to the EPA quarterly or as needed/requested

PHASE 3 IMPLEMENTATION 2026/2027

- Hold quarterly Oversight Committee and Workgroup meetings
- Evaluate all efforts to date and adjusts strategies as needed.
- Continue to Implement or Adjust Finance & Funding Programs and Investment Strategies
- Continue to Implement or Adjust Workforce Development Training Programs & Initiatives
- Continue to Implement or Adjust Outreach and Education Programs and Initiatives
- Continue to Implement or Adjust Technical Assistance Programs and Initiatives
- Review the determined shovel ready projects with the Governance/Oversight Committee
- Work with Technical Assistance/Financial Assistance teams to determine project viability
- Conduct public comment/review
- Initiate shovel ready programs and conduct project site visits
- Audit prior years' work and report progress to the EPA quarterly or as needed/requested

PHASE 4 IMPLEMENTATION 2027/2028

- Continue Workforce Development Training Programs
- Continue Outreach and Education Programs
- Continue Technical Assistance Programs
- Review the determined shovel ready projects with the Governance/Oversight Committee
- Work with Technical Assistance/Financial Assistance teams to determine project viability
- Conduct public comment/review
- Initiate shovel ready programs and conduct project site visits
- Audit prior years' work and report progress to the EPA quarterly or as needed/requested

PHASE 5 IMPLEMENTATION 2028/2029

- Continue Workforce Development Training Programs
- Continue Outreach and Education Programs
- Continue Technical Assistance Programs
- Review the determined shovel ready projects with the Governance/Oversight Committee

- Work with Technical Assistance/Financial Assistance teams to determine project viability
- Conduct public comment/review
- Initiate shovel ready programs and conduct site visits
- Audit prior years' work and report progress to the EPA quarterly or as needed/requested
- Grant close out and reporting period with EPA

Steps and Milestones to implementation: MSFAP has developed our program timeline in phases to ensure that deliverables are met at each stage. MSFAP anticipates starting several elements of the program during the planning phase as things progress and will adapt to changes as needed. The situation will be assessed on notice of award to determine if certain steps can be implemented to not delay shovel ready projects that can commence with an influx of capital.

Planning Period: MSFAP plans on our planning period to occur from July 2024 to June 2023, but will move it up as the project progresses if needed.

Refining the Program: MSFAP will work with their technical assistance and financial assistance partners to constantly review process and procedures and adapt the program in response to the solar market.

Planning Partnerships: MSFAP's planning partners are listed in ATTACHMENT H.

DOE National Community Solar Partnership technical expertise and capacity building services: MSFAP has outreached to several of the technical expertise and capacity building partners on the list from the EPA. NREL reviewed our submission data and sent us a Letter of Support for the MSFAP project.

8. Program Administration Narrative:

a. Budget Narrative:

Budget Narrative: Overview Narrative Description	Finance & Funding	Workforce Dev	O&E	Planning & Tech Support	Admin	Total Budget
SFA	**$75,000,000**	**$9,473,000**	**$4,500,000**	**$5,183,000**	**$5,844,000**	**$100,000,000**
MEA	**$5,000,000**					**$5,000,000**
MCEC	**$49,650**		**$385,000**	**$1,565,350**		**$2,000,000**
Overall MSFAP Grant Admin 9.03%	$3,475,000				$5,844,000	$9,319,000
Subtotal of Available Funds for Implementation	**$76,574,650**	**$9,473,000**	**$4,885,000**	**$6,748,350**	**$-**	**$97,681,000**
Projected Implementation Budget	$76,574,650	$9,473,000	$4,885,000	$6,748,350	$-	$97,681,000
Administration	$3,475,000				$5,844,000	$9,319,000
Total Budget	**$80,049,650**	**$9,473,000**	**$4,885,000**	**$6,748,350**	**$5,844,000**	**$107,000,000**

Federal Ask: **$100,000,000**

Maryland Energy Administration (MEA) Match: **$5,000,000**

Maryland Clean Energy Center Match: **$2,000,000**

Total Project Budget: **$107,000,000**

Funding Allocated to Funding and Finance: **$80,049,650**

Administration Allocated to Funding and Finance: **$3,475,000**

Funding Allocated to Technical Assistance (Administration, Workforce Development, Outreach and Education, Planning and Technical Support: **$26,950,350**

Workforce Development Allocation of Funds: **$9,473,000**

Outreach and Education Allocation of Funds: **$4,885,000**

Planning and Technical Support Allocation of Funds: **$6,748,350**

Administration Allocated to Technical Assistance: **$5,844,000**

Administration Budget Narrative Details:

Personnel: Total Personnel $2,429,340 over 5 years

- Creates 5 new staff positions, 1 Program Director, 1 Program Mgr., 1 Program Asst., 1 Bookkeeper and 1 Communication/Outreach Asst. with market rate salaries for like positions.
- Two existing staff, charged out 20% of time to the grant—Grant Compliance Officer and Equity and Outreach Director; Five existing staff will be charged out 10% of time to the grant—Executive Director, Industry Relations Mgr., Dir. Of Procurement, Procurement Mgr. and Communications Dir.

Fringe: Total Fringe $728,802

- 5 new staff, 30% average Fringe Rate, 7 existing staff, 30% average fringe rate, calculated based on their percentage on grant

Travel: Total Travel $16,482

- Local Mileage at 0.655 Federal Rate—200 miles per month
- Conference Expenses 2 events/3 staff persons for allowable costs (airfare, per diem, hotel)

Equipment: Total $0

Supplies: Total $73,550

- Office supplies $250 per month
- New staff laptops/software/hardware 5 staff at $2,500 each
- Copies/Printed Material $300 per month
- Postage $25 per month
- Cell phone stipend for new staff 5 at $75 monthly
- Cell phone stipend for existing staff at a percent of $75 per month per month

Contractual: Total $1,824,514

- Annual Single Audits $20,000 each
- IT Support $453 per month
- Accounting/Controller Services 20 hours per month @ $150
- Accounting Software/INACCT $1,000 per month
- HR support services $800 per month first 6 months, 20% per month after
- Legal support services 25% of FTE @$100 per hour
- Reporting, Site Service Auditing, Engineering Reviews as billed
- Rent $1,100 per month average at $3.50 per square foot

Total Other: $97,681,000

- Workforce Development Subawards $9,473,000
- Technical Assistance Subawards $6,748,350
- Outreach and Education Subawards $4,885,000
- Financial Assistance Subawards $76,574,650

MCEC is not claiming indirect charges from the grant, and has calculated indirect for potential future subrecipients in both the Financial Assistance and Technical Assistance buckets. Indirect charges total 4.56% of the grant funding. 75% of the funding is being used on the Financial Assistance side of the grant and 25% is being used on the Technical Assistance side. MCEC will only use 9.3% for overall MSFAP administration.

Funding and Financing Partnership: MSFAP Coalition has prepared a budget which maximizes use of grant funds for project funding and financing, identifies significant state and private capital investment as leverage against the funds requested by the applicant. Various financing strategies will be identified and crafted for deployment including; direct lending, indirect lending, credit enhancements, guarantees, equity investments, subordination agreements, tax credits and incentives. MCEC and MCGB do have bond issuance capability that could be utilized depending on the overall funding and financing strategy which will be developed during the planning period. MSFAP will support projects that serve target markets with specific financial tools to enable minority owned small businesses to more easily finance projects and enter the marketplace within DACs. MSFAP partners are engaging capital providers to create leveraged investment opportunities associated with the grant. MCEC, MCGB, CAF, FSC First and SELF are participating in NCIF and CCIA applications and intend to utilize funding available through those vehicles, if possible, to support delivery of MSFAP strategies. As intended sub-recipients of MSFAP funding for direct deployment of capital CAF, MCGB and DHCD will utilize innovative financing structures and seek to braid capital as loans, guarantees and grants with renewable energy credits, tax credits, and incentives through PPA and third-party ownership financing structures. MCEC will be responsible to ensure SFA funds are deployed in a timely and efficient manner to achieve grant deliverables, and that funds are deployed in a prudent manner for necessary costs.

b. Fiscal Stewardship Plan:

Reducing Fraud and Waste: As MSFAP lead, MCEC is committed to reducing waste and fraud, and has processes in place to for whistleblower and confidential reporting within the structure and polices of the organization. MCEC is required to comply with state ethics laws and will implement procedures to control conflicts of interest in relation to SFA grant expenditures. MCEC is Governmental Accounting Standards Board (GASB) compliant and required by statute to prepare independently audited financial statements prepared annually, which are available at www.mdcleanenergy.org. An independent audit will also be prepared in relation the use of MSFAP federal grant funds annually, pending award.

Ensuring Compliance: MCEC, as the lead applicant in Maryland's Solar for All program, will meet the following requirements in 2 CRF 200.332 (b) and (d). MSFAP will: Evaluate each subrecipient's risk of noncompliance with Federal statutes, regulations, and the terms and conditions of the subaward for purposes of determining the appropriate subrecipient monitoring including: the subrecipient's prior experience with the same or similar subawards; the results of previous audits including whether or not the subrecipient receives a Single Audit; whether the subrecipient has new personnel or new or substantially changed systems; and the extent and results of Federal awarding agency monitoring

Administrative and National Policy Requirements: MSFAP intends to honor Build America, Buy America (BABA) as well as Davis-Bacon and Related Acts (DBRA). MSFAP is aware that there will be changes to this legislation moving forward and MSFAP will stay on top of those changes and implement them rigorously. MSFAP will also honor URA, NHPA and Justice40. The NOFO also indicates that NEPA will not apply to projects funded by Solar for All.

Consumer Protections: The MSFAP will comply, and screen to ensure that all capital providers and contractors comply with Maryland laws protecting consumers in the program, this includes COMAR sections: 12.106,12.303, 12.314, 12.901, 12.903 and 12.904. Guardrails will be established through contract agreements and reporting requirements implemented with installers and other contracted service providers as part of efforts by MSFAP to combat predatory lending and to ensure household savings materialize for program beneficiaries. MSFAP will require compliance with COMAR regarding unfair trade practices, including sections 13.301 and 14.1302, and all sections of Maryland Home Improvement and Licensing Law. MSFAP will publish grievance procedures and processes for consumers to direct complaints or concerns directly to the Oversight Committee and MCEC staff, as well as to the Maryland Home Improvement Commission.

Revolving Loan Funds/Financial Management Plan for Program Income: The MSFAP does envision deploying SFA grant funds in the form of revolving loan funds, leveraging state and private capital in a manner designed to achieve the desired outcomes of the program. The Maryland Clean Energy Center will develop eligibility guidelines, application and approval processes to purpose funds it manages through RLF models. MCEC funds deployed in combination with MCEC investments will be overseen by the MCEC Finance Committee and or the C3 Fund Investment Oversight Committee. The MSFAP Funding & Finance Workgroup will develop eligibility guidelines, application and approval processes to purpose all other SFA funds, with approval from the Oversight Committee, sub-awardees may manage additional revolving funds. Program income generated from SFA supported RLF investments will to allowed for reinvestment under the terms and guidance applied to the original investments and considered toward the MSFAP goal to achieve program longevity.

c. Reporting Plan:

As MSFAP lead, MCEC will prepare quarterly and annual financial and workplan deliverable reports throughout the grant program period, including evidence and evaluation of outcomes and results achieved for each period and cumulatively. MCEC will develop and distribute grant reporting templates and forms to be distributed to and submitted by sub-awardees and contractors engaged to achieve grant deliverables and/or responsible for the use of grant funds. Personnel hours, rates and overhead will be tracked in association with hours for defined grant expense categories, equipment costs and payments for services rendered and all grant fund recipients will be required to submit invoices, receipts and evidence of expenses incurred to receive funding. The MSFAP Oversight Committee will approve expenses and budgets, along with drawl schedules in negotiating contracts for sub-awardees and contractors associated with the use of grant funds.

Grant Reporting Requirements to Achieve Expected Environmental Outputs & Outcomes: MCEC through their Grant Administration and Compliance Officer has 10 years of experience executing and reporting upon deliverables for state and federal awards. Her role in the grant administration will be to ensure grant compliance for the pass-through entity and all sub awardees of the MSFAP. MCEC, as the lead applicant in Maryland's Solar for All program, will meet the following requirements in 2 CFR 200.303.:

- Establish and maintain effective internal controls over the Federal award
- Comply with the U.S. Constitution, Federal statutes, regulations, and the terms and conditions of the Federal award
- Take reasonable measures to safeguard protected personally identifiable information and other information designated as sensitive

MSFAP will also follow 2 CFR 200.329 including oversight/monitoring; reporting on program including completing non-construction performance reports; construction performance reports; significant developments, including problems, delays, or adverse condition and favorable development in schedules, lower cost, etc.; and site visits. During a planning phase MSFAP will create a plan to integrate program evaluation activities into the reporting plan, including assessing effectiveness and efficiency in achieving outputs and outcomes. These evaluations will follow EPA Order 1000.33 including supporting EPA: Relevance and Utility; Rigor; Independence and Objectivity; Transparency; Ethics and Equity. MSFAP will invest program capacity in performing program evidence and evaluation activities and will communicate those details through State of Maryland networks, the MCEC Board of Directors, MCEC Annual Report and statewide communities at large. The coalition partners and Governance Oversight Committee will be tasked with helping to ensure that program developments and achievements are communicated in media, social media and formal reporting documents. Special efforts will be taken through the use of

Outreach and Education Navigators to ensure that LIDAC communities are communicated with in a culturally competent way and in the language of their choice.

9. Programmatic Capability and Environmental Results Past Performance:

MCEC has a demonstrated programmatic capability and environmental results in almost 15 years of performance. MCEC has leveraged over $185M in private capital with $13.3M in public funding in achieving its mission. The instrumentality has successfully deployed and leveraged federal funding to implement clean energy and energy efficiency measures, including over $30M in private capital leveraged with DOE ARRA funds, as a pass-thru grant from MEA, through the Maryland Home Energy Loan Program; which ran from 2011 to 2017. The financing program provided affordable lending capital for over 4,400 homeowners to make improvements and resulting in significant energy conservation, contractor job hours, and GHG emission reductions. See ATTACHMENT F. Tables I-V. Cumulative indicators of MCEC capability and performance.

Past Performance and History of Meeting Reporting Requirements: Additional past MCEC responsibility for the management and reporting of federal fund, includes:

USDA Forestry Service Grant/Cooperative Agreement with Maryland Department of Natural Resources to manage State Wood Energy Team MCEC successfully completed the deliverables and managed the outcomes per the agreement as sub-recipient to Md. DNR using staff specifically hired to support this work, with $212,000 in FY 22 -23 and an additional grant of $240,000 awarded to extend the work in FY 2024. MCEC met all reporting requirements for this grant, per the agreement in a timely manner.

EDA MEIA Grant MCEC has successfully completed certain deliverables and managed the outcomes, per performance period to date, associated with this award Direct award of $750,000 in grant funds covering a three-year period from FY22-24, to support subsidiary entity Maryland Energy Innovation Accelerator (MEIA) with climate tech commercialization. MCEC has met all reporting requirements for this grant, necessary to date per the agreement in a timely manner, and will submit a final report prior to the deadline at grant period end September 2024.

DOE Mid-Atlantic PACE Alliance MCEC participated as part of a cooperative three state alliance to successfully accomplish the required deliverables and outcomes per this grant agreement. MCEC provided all accounting and reporting requirements for this grant to Virginia Dept of Mines, Minerals & Energy as grant manager, per the agreement in a timely manner. MCEC has entered into grant and loan agreements using millions of dollars in various sources of state funds, successfully accomplishing the expected deliverables (outputs and outcomes), accountability, and submission of final technical reporting under these agreements. MCEC has been able to, or is in the process of, successfully completing and managing all of these grant agreements using hired staff and contractual services.

Organizational Experience: Maryland Clean Energy Center (MCEC) was created by the state General Assembly in 2008 and has been operating as a statewide green bank since 2009. MCEC is overseen by a Board of Directors, appointed by the Governor and approved by the Maryland Senate. MCEC works at the leading edge of clean energy and decarbonization as a bridge facilitating partnerships between industry, utility academia, government and consumers. MCEC employs full time staff and contractors to deliver on its mission, and is represented by counsel through the office of the Maryland Attorney General. The center operates direct and indirect lending and financing programs to assist homeowners, commercial property owners, municipal and institutional customers implement clean energy and decarbonization measures and building improvements as well as clean transportation solutions. As a neutral third-party entity in the marketplace, MCEC plays the role of convener and technical advisor, and has a demonstrated track record of successful outreach and education activity in addition to valuable procurement, project management and contract for services experience. Since 2010, through various funding and financing programs, MCEC has leveraged over $185M in private capital using $13.3M in public funds to deploy clean energy measures and improvements as part of the state decarbonization strategy. MCEC outreach and education capabilities are evident in numerous successful large-scale events, speaker series, webinars, training programs and roundtables hosted to engage stakeholders and facilitate productive working partnerships. MCEC will launch and manage the Climate Catalytic Capital (C3) Fund with $15M of state funding, available over three years during the grant period, which can be used as leverage with EPA SFA grant funds. MCEC is a member of the Coalition for Green Capital and CDFA, and leads a collaborative group of green bank organizations working across EPA Region 3. MCEC has been included as a transaction partner in numerous applications for EPA GGRF NCIF and CCIA funds, and is investigating ways to leverage DOE Loan Program office funds to support various investment strategies.

MCEC KPI Impact Metrics: 2023 Annual Report Data is included in ATTACHMENT F to illustrate the key performance indicators and meaningful benefits of MCEC organizational experience in project financing, procurement and technical assistance as well as outreach and education activities.

Staff Expertise: MCEC operations are supported by a combination of full-time staff and contractual services, with plans to expand its staff in the future. Key personnel involved with the MSFAP proposal are listed below:

I. Katherine Magruder, Executive Director
With over 34 years of experience managing government offices and organizations focused on sustainable economic development in Maryland at the state, local and municipal government levels throughout her career, Ms. Magruder has been at the forefront of clean energy economic development and industry relations and in the role of Executive Director of MCEC since its inception in 2009, leading programs and investment to facilitate access to capital, tech commercialization, industry relations and community outreach & education. She has successfully managed millions of dollars in federal grant funds from Departments of Commerce, Transportation and Agriculture as well as state loan and grant funds. Ms. Magruder will serve in the chief administrative and management role for all SFA grant related activity.

Amy R. Gillespie, Grant Management & Compliance Officer
Ms. Gillespie has 15 years of significant experience working with and managing public funds, grants and grant reporting in her role as Executive Director for a 501c3 workforce development and vocational rehabilitation non-profit for the labor movement. She led grant-funded workforce training programs in trade related fields for over ten years, has knowledge and ten years of experience with compliance and reporting related to federal and grant funding. She will serve as the point of contact and resource for grant partners and sub-recipients.

Dorothy Kolb, Controller
Dorothy Kolb is an operations and finance executive with over 20 years' experience in the sports, media and creative/marketing agency space including production, operations, and finance roles at CBS Sports, FOX Sports, NBC, Scripps Networks and CBS Radio as well as a foundational accounting start with Deloitte in NYC. She will serve at the Controller for the project.

Steven Cowan, Chief Investment Officer
Steven Cowan is a veteran energy corporate finance professional with over 20 years of experience focused on the energy and renewables sectors. He has executed over 80 debt, equity, and M&A transactions globally valued at more than $15 billion. In addition, he has significant expertise in originating, structuring, managing, and executing complex transactions.

Ben Rupert, Director Procurement & Technical Assistance Support
Ben Rupert has over 15 years of experience developing, creatively financing, and implementing clean energy projects and programs working in both the public and private sectors, He has unique experience developing collaborative procurement solutions to implement cost-effective clean energy projects. Ben has provided technical support and leadership for a wide array of energy projects, including energy efficiency, combined heat and power, microgrid, energy storage, and renewable energy systems including solar, wind, renewable natural gas (RNG), and biomass.

Sabrina Bachman, Communications Director
As MCEC's Communications Director, Sabrina is responsible for marketing and communications strategies to help MCEC meet its mission to advance the adoption of clean energy, and energy efficiency products, services and technologies. She will assist the project with communications and digital media.

Pamela Powers, Government & Industry Relations Manager
Pamela Powers joined the Maryland Clean Energy Center team in 2017. As MCEC's Government & Industry Relations Manager, she plans, develops, and executes a proactive government affairs strategy to meet the Center's mission and objectives. Pamela has years of service working in the Maryland General Assembly. She provides project management support and monitors policy, legislation and regulation for the organization.

Aziz Kamulegeya, Clean Energy Advantage Program Manager
Aziz Kamulegeya comes to MCEC from the commercial real estate finance industry, where he spent the last 12 years helping develop several lending and investment platforms providing solid support from finance, accounting, audit, tax, management, regulatory and technological perspectives. He the Clean Energy Advantage (CEA) Loan Program, which provides affordable financing to Maryland home owners looking to complete residential energy efficiency projects.

Limunga Mingo, Procurement Manager
Limunga Mingo was born and raised in Cameroon and moved to the US after high school. She received a B.S. in Mechanical Engineering and M.S. in Engineering Management (Cost and Finance Engineering) from The George Washington University. She specializes in managing technical projects and is often working to create or refine processes to streamline operations. She is fluent in French and has worked across various technical fields for foreign companies.

Future Staff: TBD, Equity Outreach & Engagement Manager: Hiring in Process; TBD, MSFAP Program Director: To be hired pending grant award; TBD, MSFAP Program Manager: To be hired pending grant award; TBD, MSFAP Bookkeeper: To be hired pending grant award; TBD, MSFAP Administrative Assistant: To be hired pending grant award; TBD, MSFAP Communication/Outreach Assistant: To be hired pending grant award.

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[i] Western Region in MD comprised of Garrett County, Alleghany County, Washington County

Capital Region in MD comprised of Frederick County, Montgomery County, Prince George's County

Central Maryland comprised of Anne Arundel County, Baltimore City, Baltimore County, Carroll County, Harford County, Howard County

Southern Maryland comprised of Calvert County, Charles County, St. Mary's County

Eastern Shore in MD comprised of Kent County Queen Anne's County, Cecil County, Talbot County, Caroline County, Dorchester County, Wicomico County, Somerset County, Worcester County

[ii] https://www.seia.org/research-resources/solar-market-insight-report-2023-q3#:~:text=With%20nearly%2012%20GWdc,the%20first%20half%20of%202023.

[iii] Maryland Department of Housing and Community Development database, 2023