Larry Hogan, Governor
Boyd K. Rutherford, Lt. Governor
Mary Beth Tung, Director

Funding Opportunity Announcement (FOA)
Combined Heat and Power (CHP) Grant Program

Fiscal Year 2021 – Round 2 of 2

Application Packages Due by 11:59 PM, EST, Friday, February 26, 2021

The Maryland Energy Administration (MEA) is pleased to announce **Round 2** of its Fiscal Year 2021 (FY21) Combined Heat and Power (CHP) Grant Program. The CHP Grant Program provides equipment and installation incentive dollars to help eligible entities install qualified CHP systems at their facilities. CHP technology provides affordable, sustainable, and efficient energy to facilities where it is installed, and when configured with other technologies can provide power reliability and redundancy in periods of grid outage. This first-come, first served grant program, is open to all qualifying entities as described below.

Organizations new to the concept of CHP are strongly encouraged to review MEA's CHP Resource Guide[1] prior to pursuing a CHP Grant.

Navigation

Program Description

MEA offers its FY21 CHP Grant Program in two (2) separate Application Rounds, subject to funding availability. We understand that the need to secure capital early-on for CHP projects is critical to buy-in from organizational decision makers and other capital providers contributing larger funding amounts to the total capital cost of the CHP system.

[1] *https://energy.maryland.gov/business/Documents/MEA%20CHP%20Resource%20Guide.pdf*

MEA also understands that organizations seek CHP systems for a few hallmark reasons: energy and cost efficiency, sustainability, and energy resilience to mitigate against prolonged absence of grid power or grid unreliability. FY21 funds are provided under two (2) Areas of Interest, which uniquely reflect these objectives and include eligibility requirements that accurately and effectively ensure the systems seeking funds will deliver the best value to Grantees while simultaneously contributing new CHP infrastructure that helps meet Maryland's long-term energy integrity goals.

Subject to funding availability and restrictions, grants will be awarded to eligible Applicants on a **first-come, first served basis** for projects which meet all eligibility requirements. All applications will be initially screened for completeness, and those which are complete will be placed into funding consideration in the order in which they were received. **Applicants seeking CHP planning and design funds may benefit from the Resilient Maryland program[2]. Applicants are highly encouraged to first explore Resilient Maryland if they have not completed full feasibility analysis, planning, and design of their CHP systems, as these funds can help reduce costs associated with this preliminary project stage and enhance the quality of equipment and installation proposals to organizational decision makers, capital providers, and incentive programs such as this one.**

Applicants that submit incomplete applications will be notified of missing information and given **30 days** from the notification date to submit missing information. If not received within this timeframe, **the application will be rejected from consideration.** Applicants rejected for this reason are free to re-apply, but will be treated as new.

Eligible Entities

- Commercial businesses
- Nonprofit organizations
- Critical infrastructure (including but not limited to healthcare, wastewater treatment, etc. A full list of critical infrastructure is available from the U.S. Department of Homeland Security[3].)
- Industrial and manufacturing entities
- Chemical and pharmaceutical organizations
- Institutional organizations (e.g. colleges and universities)
- Public and private educational facilities (schools, adult education facilities, etc.)
- Hotels and hospitality organizations
- Multifamily housing
- Agricultural entities
- Maryland State and local governments
- Others, on a case-by-case basis

[2] *https://energy.maryland.gov/business/Pages/ResilientMaryland.aspx*
[3] *https://www.cisa.gov/critical-infrastructure-sectors*

Program Budget & Incentive Amounts

Up to **$1.65 million** is available for this Program in **Round 2**, subject to availability. These funds are allocated to three Areas of Interest (AOIs) in the following manner:

- **AOI 1: CHP for Energy Resilience:** Funding under this AOI is available to Applicants for CHP systems which are primarily meant to enhance the energy resilience and/or redundancy of the Applicant facility. Eligible systems must include black start and islanding capability. **CHP systems under AOI 1 are eligible for an additional amount to the base incentive (see the "Resilience/Biogas Multiplier" section below).**

- **AOI 2: CHP for Energy Efficiency:** Funding under this AOI is available to Applicants for CHP systems which are primarily meant to improve the energy efficiency and affordability of the Applicant facility's operations. Black start and islanding capability are not required, but systems must achieve full project payback without accounting for incentives within 20 years.

- **AOI 3: Fuel Cells:** To encourage the use of emerging and innovative fuel cell technologies, funding is provided for fuel cell systems under this AOI. Eligible systems must achieve annual fuel use efficiency of at least 50% higher heating value (HHV). See the "Program Eligibility Requirements" section for further details. **AOI 3 projects may be eligible for an additional amount to the base incentive (see the "Resilience/Biogas Multiplier" section below).**

The program design will utilize a tiered approach, with smaller systems receiving a higher kW capacity incentive grant amount than larger systems. Base grant awards range in size from up to $500/kW to up to $600/kW per project, based on the size of the system and based on funding availability (See the table below). The maximum base incentive available per project in FY21 is up to $600,000. **Resilient systems and those which utilize biogas from onsite anaerobic digestion may be eligible for an incentive multiplier, described below the table.**

MEA CHP FY21 Base Incentive	
System Size	Capacity Payment per kW*
MICRO-CHP: (Equal to or less than 60kW)	Up to 50% of the total project costs, not exceeding $100,000**
Between 61kW and 500kW	Up to $600
Between 501kW and 1MW	Up to $550
Greater than 1MW	Up to $500

**Base incentives will be awarded in full only for systems which achieve 60% HHV and above (50% and above for fuel cells). For non-fuel cell CHP systems, each 1% reduction in efficiency (down to a minimum of 55%), the capacity payment may be reduced at an amount determined by MEA after review of the reasons presented for the deficiency. MEA will not award any CHP system which does not achieve at least 55% HHV efficiency.*

*** MICRO-CHP Projects, meaning projects which are 60 KW or less, are eligible for up to 50% of the total project cost, after all other incentives and rebates are applied, with a maximum of $100,000. Micro-CHP*

Projects must be cost-effective to be eligible for the up to 50% incentive, otherwise, projects will be eligible for incentives at $600 per kW.

Resilience/Biogas Multiplier: AOI 1 CHP systems, AOI 3 fuel cells that incorporate black start and islanding technologies, and/or systems which are fueled by biogas produced from an onsite anaerobic digester included as part of the proposed CHP project design may receive up to a **20% multiplier** (multipliers will be determined by MEA on a case-by-case basis after review of project complexity, capital cost, and FY21 CHP Program funding availability) to their final incentive. This is due to the typical higher cost per kW of black start and islanding technologies and/or anaerobic digester systems included in CHP projects as compared to traditional CHP systems without these technologies. The increased incentive is also provided to further the development of these technologies and increase Statewide adoption due to the energy resilience, renewable energy, and associated greenhouse gas reduction benefits which they generate.

The maximum **total grant award** for grants that include a resilience/biogas multiplier is **$650,000.**

See below for examples of how these grants are calculated:

- System Type: Reciprocating Engine CHP with Black Start and Islanding Capability (MEA awards a 15% multiplier)
- Nameplate Capacity: 1,100 kW
- Incentive Calculation: 1,100 kW x ($500 x 1.15) = $216,000

- System Type: Biogas CHP with Anaerobic Digester (MEA awards a 20% multiplier)
- Nameplate Capacity: 300 kW
- Incentive Calculation: 300 kW x ($600 x 1.20) = $632,500

Within each AOI, MEA reserves the right to lower the offered capacity payment incentives for each system size to qualified Applicants in order to maximize program participation.

MEA will make the grant funds available to the Grantee in **three (3)** installments: **(1) Up to 30%** of the total grant funds will be provided as a **Groundbreaking** incentive after MEA staff has verified that the CHP site construction has commenced and materials are onsite; **(2) Up to 60%** of the total grant funds will be provided as a **Commissioning** incentive after MEA staff has verified that the CHP system has been fully-commissioned, has passed all applicable inspections with all applicable authorities having jurisdiction, has received approval to operate from the utility, and has officially commenced commercial operation; and **(3) Up to 10%** of the total grant funds will be provided as an **Performance** incentive after the completion of a full year of commercial operation which demonstrates that the CHP system performs to designed expectations within a reasonable margin of error.

Eligible Technologies

The following technologies are eligible for consideration under the FY21 CHP Grant Program:

CHP Prime Mover/Core System

- Reciprocating engines

- Gas turbines
- Steam turbines
- Biogas/Biofuel systems
- Microturbines
- Micro-CHP (systems equal to or less than 60 kW in nameplate capacity)
- Waste Heat to Power Systems
- Fuel cells
- Innovative technologies, considered by MEA on a case-by-case basis

CHP eCatalog: *Applicants are highly encouraged to utilize the U.S. Department of Energy's (DOE) CHP eCatalog[4] when considering CHP systems for their facilities. This comprehensive searchable database provides detailed information on commercially-available packaged CHP systems which has been technically vetted by the U.S. DOE. Users can utilize multiple filters to tailor their searches based upon desired capacity, thermal output, thermal exchange, system footprint, and other various system and facility metrics to suit their needs. Packaged systems can significantly reduce the amount of capital required for feasibility, engineering, and design.*

Ancillary Technologies (must be used in conjunction WITH prime mover/core system)

MEA considers a CHP system to include the prime mover/core system and any connected ancillary technologies necessary to successfully integrate the electricity and thermal energy into facility operations. The cost of these ancillary technologies should be included in the total cost of the project when filling out the Application Workbook. Ancillary technologies include:

- CHP system black start and islanding technologies
- Heat exchangers
- Absorption chillers
- Heat recovery steam generators ("HRSG")
- Carbon sequestration/carbon capture technologies
- Energy storage technologies
- Anaerobic digesters to produce biofuel to be consumed by the CHP
- Innovative technologies, considered by MEA on a case-by-case basis

Program Eligibility Requirements

At a minimum, each proposed project must:

- Be located in Maryland;
- Meet all program requirements;
- Have an anticipated annual CHP system fuel use efficiency of at least 60% (some exceptions may be granted[5]), based on a Higher Heating Value (HHV)* of the fuel;

[4] https://chp.ecatalog.lbl.gov/

[5] *See "Efficiency Exceptions" under the "System Installation" requirements in the Restrictions, Requirements, and Limitations section.*

- For AOI 1, demonstrate that the proposed CHP system will provide energy resilience benefits to the Applicant facility through the inclusion of black start and islanding capability;
- For AOI 2, demonstrate that the proposed CHP system will maximize its efficiency gains through proper system sizing, production, and operational efficiency to achieve full system payback without the aid of incentives within 20 years;
- For AOI 3, demonstrate that the proposed fuel cell system will achieve an annual system fuel use efficiency of at least 50%, based on HHV of the fuel; and
- Satisfy all applicable statutory, regulatory, and environmental requirements.

*MEA calculates HHV fuel use efficiency of each CHP system using the following formula (all terms are in HHV MMBtu):

$$\text{HHV Fuel Use Efficiency} = \frac{(\textit{Annual Electricity Production} + \textit{Annual Thermal Output Recovered and Utilized})}{\textit{Annual Fuel Consumption}}$$

Applicants should use this calculation when preparing their Application Packages.

To be considered for a grant award, an application must be complete, accurate, and signed by the Applicant Signatory (the individual with signatory authority to obligate the Applicant organization into a Grant Agreement with MEA, should a Grant be offered) and, if applicable, either the CHP owner or the contractor. In addition, the application must be accompanied by all required supplemental documentation described in the Application Requirements section of this FOA.

Administrative

- **Multiple Systems:** Multiple CHP systems installed within the same facility, as well as campuses consisting of multiple affiliated buildings in one geographical location, will be considered one project for consideration of eligibility under this Program.
- **Facility Ownership:** Eligible entities must either: (a) own the facility where the CHP system will be installed, or (b) lease the facility under a leasing agreement which permits modification to the premises and/or have legal written permission to install the system from the landlord.
- **W9 Requirement:** Applicants selected for an award under this Program shall be required to submit a completed IRS Form W9 to MEA **prior** to award execution.
- **EmPOWER MD Utility CHP Incentive:** If the CHP system will be located in the service territory of a utility which participates in the EmPOWER MD program (BGE, PEPCO, Potomac Edison, Delmarva Power & Light, or SMECO), the Grantee is **required** to apply for the utility CHP incentive, if eligible. Application may (and is encouraged) to be completed prior to application to the FY21 MEA CHP Program, but **must** be completed within **60 days** of Grant Execution with MEA.
- **Project Timeline & Grant Execution Restrictions**
  - To receive a grant, a successful Applicant must be able to enter into a Grant Agreement with MEA by no later than April 30, 2021.
  - A project is **not** eligible if an agreement has been signed to order materials or to begin construction of the respective CHP system prior to the execution of a Grant Agreement under the MEA CHP program.
- MEA will **not** disburse grant funds to a project that orders equipment and/or starts construction prior to the effective date of the Grant Agreement with MEA.

- **Funding Availability:** MEA reserves the right to obligate all or none of the MEA CHP FY21 Grant Program budget, based on the quality and eligibility of applications submitted to MEA.
- **Maryland Historic Trust:** Prior to the start of construction, each project selected for funding must be reviewed by the Maryland Historic Trust (MHT) or the qualified historical preservation expert on MEA's staff to ensure that no historical property will be adversely impacted. MEA may require that the grantee provide additional information concerning the proposed project site in order to complete the historic preservation review.

System Installation

- **Permitting Requirements:** Each Grantee is responsible for acquiring and obtaining all necessary environmental and building permits or certificates. Prior to disbursement of any grant funds, MEA must receive a schedule and copies of all required permits and certificates.

- **Efficiency Exceptions:** MEA may grant an exception on 60% HHV fuel use efficiency to a minimum of 55% if the Applicant can demonstrate: (1) that the CHP system has been designed to capture and utilize the maximum amount of recoverable thermal output within the technical and economic limitations of the project, (2) that the system cannot be more optimally-sized based on available technology, and (3) that all other alternatives (such as other contractors, developers, and/or CHP products from other manufacturers) have been considered. MEA will **not** grant an exception to the 60% HHV efficiency requirement if these limitations cannot be adequately demonstrated by the Applicant. See "Request for Efficiency Exception" in the "Required Application Documents" section for details on what constitutes acceptable documentation.

- **Groundbreaking Requirements:** To receive the Groundbreaking Incentive disbursement, the CHP system equipment must be onsite and construction on the system must be started. MEA must receive the following documentation: Completed Groundbreaking Report and Disbursement Request (Attachment C to the Grant Agreement); copies of all developer/contractor/manufacturer invoices that provide an itemized breakdown of costs incurred; copy of finalized CHP system design drawings; system manufacturer cutsheets/datasheets; copy of the executed agreement between Grantee and the contractor/third-party owner (as applicable) of the CHP system; certificate(s) of insurance evidencing that MEA has been named as an additional insured in accordance with the Grant Agreement; copies of all permits as required by all applicable local, State of Maryland, and federal jurisdictions; utility interconnection agreement; copy of an at minimum five (5) year warranty and/or service agreement for the CHP system; CHP project team organizational chart with contact information; copy of the CHP system commissioning plan (to include at minimum the construction phase, acceptance phase, and post-acceptance phase); and, if applicable, a copy of the utility approval letter for the EmPOWER CHP incentive and the most recent utility monthly progress report.

- **Commissioning Requirements:** To receive the Commissioning Incentive disbursement, MEA must receive: Completed Commissioning Report and Final Disbursement Request (Attachment D to the Grant Agreement); copies of all developer/contractor/manufacturer invoices that provide an itemized breakdown of costs incurred; manufacturer startup report; final inspection/closeout documentation indicating approval for all permits required by all applicable local, State of Maryland, and federal jurisdictions; measurement and verification data demonstrating that the overall CHP system fuel use efficiency meets or exceeds at least 60% HHV (or, when an exception is granted by MEA, the agreed-upon minimum); approval to operate documentation from the utility; copies of the commissioning report and post-acceptance commissioning phase documents; and, if receiving an

EmPOWER utility CHP incentive, a copy of the utility letter indicating that all requirements for the incentive have been satisfied and a copy of the most recent utility monthly progress report. The CHP system commissioning report shall clearly define the capacity and expected annual generation output of the CHP system, avoided on-site energy benefits (in both avoided units of energy/year and annual financial savings), and estimated off-site energy efficiency benefits (through avoided transmission line losses). In addition, prior to final reimbursement, MEA staff may visit the project job site or require remote verification to verify CHP system completion.

- **Performance Reporting and Final Payout Requirements:** To receive the final payout of Grant funds, or the "Performance Incentive disbursement," Grantees will be required to submit quarterly reports to MEA throughout the first year of commercial operation of the CHP system, which provide operational data that MEA can use to verify system fuel use efficiency, uptime percentage, capacity factor, and any other operating metric deemed appropriate by MEA. Upon successful verification of system operation, within a reasonable margin of error from engineering projections, Grantee will need to submit a completed final Performance Report and Request for Final Disbursement (Attachment E to the Grant Agreement). MEA will then authorize disbursement of the Performance Incentive funds.

- **American Manufactured Goods:** Chapter 757 of the 2019 Acts of the General Assembly of Maryland requires any new loan or grant funded by the Strategic Energy Investment Fund ("SEIF") to a unit of State or local government to comply with §14-416 and §17-303 of the State Finance and Procurement Article. Applicants affected by this requirement should take it into account when developing FY21 applications to SEIF-funded programs. FY21 SEIF-funded grant agreements will contain a section outlining the American Manufactured Goods requirements with which impacted grantees will be required to comply.

- **Project Location:** Chapter 757 of the 2019 Acts of the General Assembly of Maryland requires at least 80% of workers participating in a SEIF-funded project or program to reside within 50 miles of the project or program. As the SEIF funds a statewide program, MEA will determine compliance based on whether at least 80% of workers participating in a SEIF-funded project reside in Maryland, or within 50 miles of Maryland's borders. Applicants should take this requirement into account when developing FY21 applications to SEIF-funded programs. FY21 SEIF-funded grant agreements will contain a section further outlining this requirement, including any documentation of compliance that will be required before grant funds are disbursed.

  Note: For CHP projects, this workforce requirement applies only to the workers participating in CHP site construction and physical installation of the CHP system. Engineering, planning, design, and all non-construction/installation personnel are exempt.

Required Application Documents

The following documents constitute a complete and accurate Application Package to the FY21 MEA CHP Grant Program:

MEA CHP Application Workbook: A complete and accurate **FY21 CHP Application Workbook** signed by the authorized signatory for the Applicant Organization (and project contractor/developer, if applicable at the

time of application) is required. Please note that the organization name on the MEA Application must match the name and address listed on the Applicant's IRS Form W9.

Feasibility Study: An Applicant must provide a CHP system feasibility study which gives an overview of the project site, its energy profile, and a detailed explanation of the proposed CHP system and projected operating metrics, energy savings, cost savings, and anticipated CHP system fuel use efficiency as defined by this FOA.

Utility Bills (for existing facilities only): An Applicant proposing a CHP system in an existing facility must submit 12 consecutive months of electric utility bills, and, if applicable, concurrent 12 consecutive months of natural gas/other fuel bills which **match** the utility data supplied in the Application Workbook.

Energy Baseline Model (for to-be-constructed facilities only): An Applicant proposing a CHP system which will be installed in a to-be-constructed facility must submit a modeled energy baseline that details the annual electricity and, if applicable, natural gas or other fuel required if the site did not install a CHP system. Details should be provided on how assumptions were formulated (e.g. modeling software, Technical Resource Manual ("TRM"), etc.).

Warranty/Service Contract: An Applicant must submit a copy of an at-minimum 5-year all-inclusive warranty or service contract for the CHP system.

IRS Form W9: A complete and accurate IRS Form W9 for the Applicant Organization is required. The Applicant Organization name provided on the IRS Form W9 must be the Applicant Organization name provided in the MEA CHP Application Workbook.

Verification of Good Standing: All Applicant organizations, with the exception of governmental bodies and nonprofit organizations, must submit proof of Good Standing with the Maryland State Department of Assessments and Taxation (SDAT). Entities can run a search for their status using Maryland's Business Entity Search engine[6], or they can submit a Certificate of Good Standing from SDAT. Instructions on how to obtain a Certificate of Good Standing are available on the Maryland SDAT website[7].

EmPOWER MD Utility CHP Application (optional): Applicants applying to an EmPOWER MD Utility CHP incentive program prior to application to the FY21 MEA CHP Program should submit:

- A copy of the initial utility CHP utility program application
- All Utility CHP program supplemental documents
- Utility CHP program pre-approval letter (if available)

Please note: Application to any applicable EmPOWER MD Utility CHP incentive program **is required** within **60 days** of Grant Execution with MEA. Failure to comply may result in enforcement action by MEA, up to and including termination of the Grant Agreement.

Request for Efficiency Exception (only if applicable, for non-fuel cell systems): An Applicant that wishes to request an exception to the 60% HHV fuel use efficiency requirement due to technical and economic limitations of its project **must submit** a letter on Applicant organization letterhead (letters from

[6] *https://egov.maryland.gov/BusinessExpress/EntitySearch*
[7] *https://dat.maryland.gov/businesses/Pages/Internet-Certificate-of-Status.aspx*

contractors/developers may be provided only as supplemental supportive documentation for the Applicant's request) indicating the following:

- Nature of Request: Applicant must detail the nature of its request for an exception (e.g. technical limitations of the project, lack of flexibility in available nameplate capacity ranges, economic impacts, a combination of these reasons, etc.)
- Justification for Exception: Applicant must justify its request for an exception. This includes the demonstration that all available alternatives were considered (the exploration of options available from other contractors/developers/vendors, etc.). The Applicant must also demonstrate that no additional recoverable thermal output can be usefully employed to the thermal loads of the facility or that doing so would erode project economics to the point the CHP system provides negligible or negative value. See "Efficiency Exceptions" under the "System Installation" requirements of the Restrictions, Requirements, and Limitations section of this FOA for further direction on required content in the justification.

MEA will consider the Applicant's reasoning for an efficiency exception request, but exceptions are not guaranteed.

Submission Instructions

MEA is encouraging the use of electronic applications to streamline processing and reduce environmental impacts. If you cannot apply electronically, please contact MEA no later than five (5) days prior to the application deadline to work on an alternative method to submit an application. Applications must be submitted no later than **February 26, 2021, 11:59 P.M. EST**, unless the Applicant has contacted MEA regarding an alternative application method and that method has been authorized in writing by MEA.

Application Packages should be submitted electronically to MEA via email to:

>>> CHP.MEA@Maryland.gov <<<

For more information or assistance, please visit the MEA CHP FY21 webpage[8] or contact **Brandon Bowser, CHP & Energy Resilience Program Manager** at BrandonW.Bowser@Maryland.gov or via phone at (443) 306-0304.

[8] *https://energy.maryland.gov/business/Pages/MEACHP.aspx*