

**BGE Smart Energy Savers Program® Combined Heat and Power  
2024 - 2026 Program Manual**



## Table of Contents

Introduction.....	3
Purpose .....	3
Goal .....	3
ICF’s Role .....	3
Overview of BGE.....	3
BGE Service Territory .....	4
Program Description .....	5
Participation Instructions .....	5
Project Submission .....	5
Eligibility .....	6
Project Qualification.....	7
Minimum Requirements Document.....	7
Monthly Progress Reports.....	7
Program Process.....	9
Incentives .....	9
Determination of Incentives.....	9
Forfeiture of Incentives Paid to Customer .....	11
Metering and Project Data .....	11
Technical Services .....	11
BGE Requirements.....	12
Interconnection .....	12
Schedule S .....	12
Other BGE Requirements .....	13
Appendix A: Feasibility Study Outline .....	14
Appendix B: Total Resource Cost (TRC) Calculator.....	16
Appendix C: Content and Format of Monthly Progress Report .....	17
Appendix D: BGE Schedule S.....	18

## Introduction

### Purpose

Baltimore Gas & Electric Company (BGE) is seeking qualified projects for its Combined Heat and Power (CHP) Program. BGE has worked with other stakeholders to develop a CHP program that encourages customer participation and conforms to industry best practices. The program is being offered as part of the utilities' EmPOWER Maryland energy efficiency programs. The CHP program is intended to provide customer incentives that will make it more economically viable for Commercial and Industrial (C&I) customers to employ CHP to reduce their energy (kWh) consumption and demand (KW) usage. The CHP program is an additional program component of the BGE Smart Energy Savers Program®.

### Goal

The primary objective of the CHP program is to encourage the use of CHP to support the aggressive EmPOWER Maryland goals by reducing grid-sourced electricity use. The incented projects in the CHP program will be limited to projects where the full CHP capacity is intended for use at the customer's site. The CHP program is not designed to encourage projects with capacity intended for export to the grid. The incentive structure is designed to reward those systems that maximize the kWh produced by the CHP system and used on site. Incentives are intended for projects that would not otherwise have a payback of 1.5 years or less. Participants should keep in mind that BGE strongly encourages projects that focus not only on CHP solutions, but also include other, complementary energy efficiency measures (e.g. lighting, high-efficiency HVAC). Through BGE's Smart Energy Savers Program®, customers may qualify for incentives for a wide variety of prescriptive and custom measures that produce significant energy saving. Additional programs can be found at the following BGE web site: [BGESmartEnergy.com/business](http://BGESmartEnergy.com/business) .

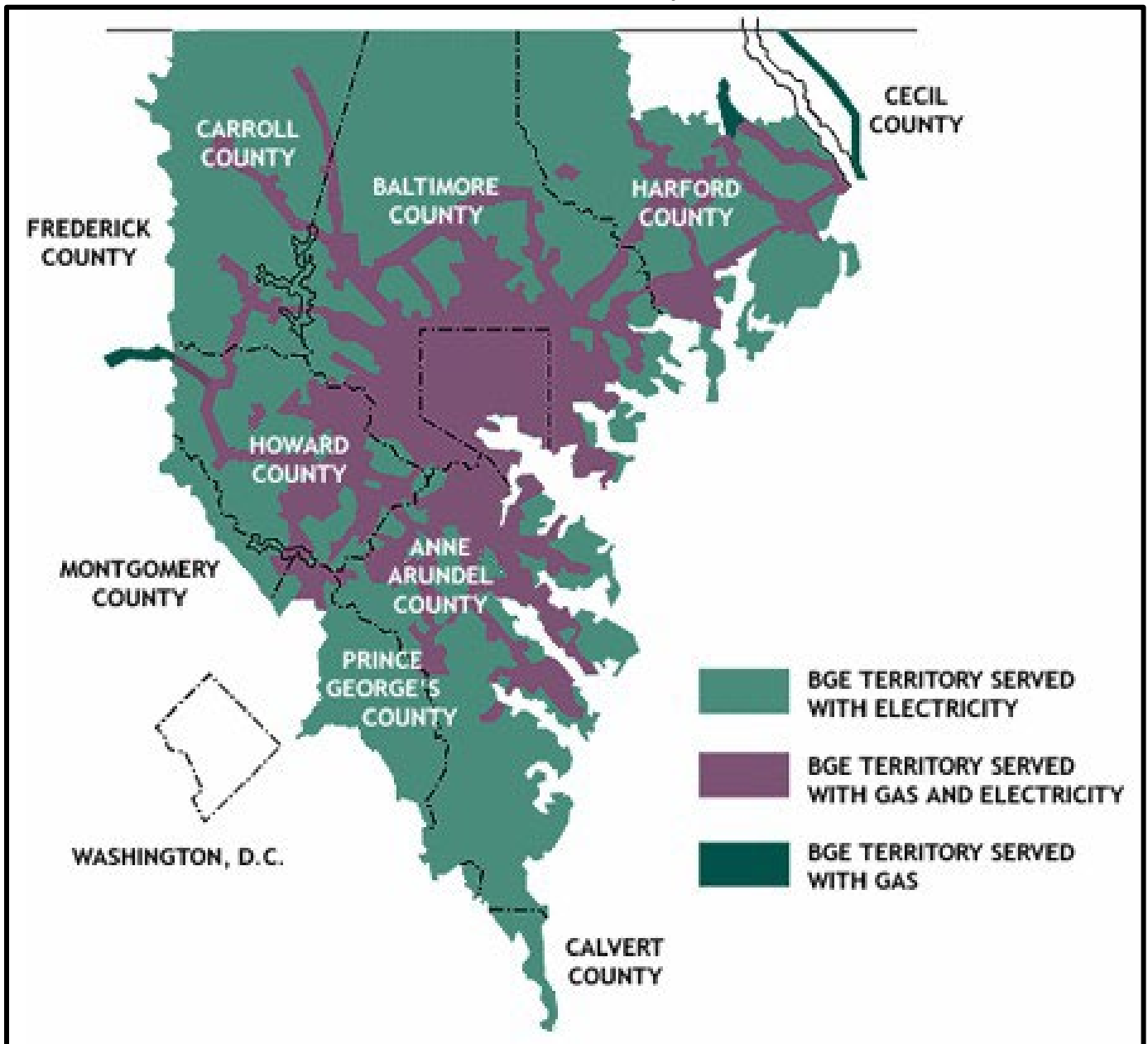
### ICF's Role

BGE has engaged ICF to assist with the administration of this program and to partner with BGE on marketing and communications, project submittal, project review and qualification as well as the incentives management process for the CHP Program. BGE hired ICF through a competitive bidding process and ICF partners with BGE on all of its energy efficiency programs that are in support of the EmPOWER Maryland goals. ICF's longstanding experience and proven approach in managing conservation programs for numerous utilities throughout the United States positions them to successfully help deliver this program to BGE customers utilizing a best practices approach.

### Overview of BGE

BGE, headquartered in Baltimore, is Maryland's largest gas and electric utility, delivering power to more than 1.2 million electric customers and more than 655,000 natural gas customers in central Maryland. The map on Page 4 illustrates BGE's service territory for its electric and gas services.

### BGE Service Territory



Since 2009, BGE has implemented a suite of conservation and energy efficiency programs to provide residential, small commercial and large C&I customers with energy and cost saving opportunities.

## Program Description

Details of the program and technical requirements are subject to change without prior notice. You may go to [BGESmartEnergy.com/CHP](http://BGESmartEnergy.com/CHP) to get the most current program information, or you may call 410.290.1202.

**Incentive Details:** Incentives under the program are calculated by the system capacity and three payments are comprised of a Design Incentive, Commissioning Incentive and Production Incentive.

**Incentive Amount:** Less than or equal to 50kW - \$2,000 per kW; Between 51kW and 200kW - \$1,600 per kW; Between 201kW and 1MW - \$1,200 per kW; Greater than 1MW - \$800 per kW. Incentives are tiered, which means the incentive levels vary based upon the installed rated capacity. For example, a 500 kW CHP system would receive \$2,000/kW for the first 50kW, \$1,600/kW for the next 150kW, and \$1,200/kW for the remaining 300kW; for a total incentive of \$700,000.

- **Design Incentive:** 10% of total incentive at project approval, subsequent to signed commitment letter and acceptance of minimum requirements document. Along with the following documentation: written confirmation verifying adequate natural gas capacity and pressures at site (or executed agreement to upgrade gas service capacity as needed), schedule and copies of required permits and certificates, and signed Interconnection Service Agreement.
- **Commissioning Incentive:** 30% of total incentive after installation is complete, subsequent to commissioning of the CHP system and BGE inspection.
- **Production Incentive:** 60% of total incentive after receiving 12 contiguous months of actual kWh generation received within 24 months of project installation, subsequent to review of metering data. Payment will be prorated, based on actual kWh generation and will be capped at 60% of total incentive. For example, if the actual kWh generation is 80% of estimated, the Production Incentive will be decreased by 20%.
- **Project Caps:** The maximum incentive any one CHP project could receive is \$2.5 million. Eligible projects are limited to one project per customer site every 3 years.

## Participation Instructions

### Step 1

Verify that your project meets the eligibility requirements specified in the CHP Program Manual. Visit the program website [BGESmartEnergy.com/CHP](http://BGESmartEnergy.com/CHP) and contact us at 410.290.1202 before proceeding.

### Step 2

Complete CHP Project submissions are comprised of:

1. CHP Application
2. CHP Feasibility Study
3. The Total Resource Cost (TRC) Calculator
4. Copy of Maryland Energy Administration (MEA) Grant Application, if applicable

Go to [BGESmartEnergy.com/CHP](http://BGESmartEnergy.com/CHP) to download and complete the CHP Application, TRC Calculator, and the CHP Program Manual. Ensure all required information outlined in the CHP Program Manual is addressed in your Feasibility Study.

Complete CHP project submissions may be submitted by U.S. mail, fax, or email.

**Mail:** BGE Smart Energy Savers Program®  
c/o ICF 7125 Thomas Edison Drive, Suite 100  
Columbia, MD 21046

**Fax:** 410.290.0861

**Email:** [Business@BGESmartEnergy.com](mailto:Business@BGESmartEnergy.com)

### **Step 3**

All project submissions will be reviewed for eligibility and completeness. Completed project submissions will be reviewed in the order received. Applicants who submit incomplete projects submissions will be notified of deficiencies. BGE and the Customer will develop a Minimum Requirements Document (MRD) specifying project-specific incentive offer conditions such as milestones, measurement & verification, interconnection and permitting plans and operational requirements along with any additional required documentation. The Customer will be required to sign a Customer Pre-Approval Letter from BGE and provide written verification of natural gas capacity and pressure at the project site (if applicable). Upon receipt of the signed letter, BGE will reserve funds and disburse the Design Incentive.

### **Step 4**

The Customer will be required to submit monthly progress reports detailing key project activities and milestones for each month up until the final inspection of the project by BGE. Monthly progress reports are due on the 10th day of the month and must cover the entire previous month.

### **Step 5**

Upon design, construction and commissioning of the CHP project, BGE will conduct an inspection. Unless there are significant issues, BGE will disburse the Installation Incentive or revise the incentive, as applicable.

### **Step 6**

The performance period may last up to 24 months from the date of final system inspection by BGE. Applicants must adhere to the agreed upon M&V plan as stated in the MRD. Unless there are significant issues, BGE will disburse the Production Incentive based on review of the contiguous 12-months of performance data submitted.

### **Eligibility**

BGE is seeking CHP projects where BGE customers have teamed with contractors or developers who have extensive and demonstrated expertise with CHP projects. Credible technical partners should provide the resources and management skill to plan, engineer, permit, build and, as necessary, operate CHP systems. Any BGE commercial and industrial customers including rate schedules G, GS, GL, P and T may submit projects. Eligible projects may include retrofits, new construction and major renovations.

The Customer may assign the incentive payment to a qualified contractor. The payments conferred upon the Customer or their designated contractor through participation in this program may be taxable by the federal, state and local government. The Customer or its designated contractor is responsible for declaring and paying all such taxes.

CHP projects participating in the program can either be driven by a reciprocating engine or combustion turbine. Fuel cell with heat recovery CHP projects will be reviewed on a case-by-case basis. The fuel used can be either natural gas or biogas. All projects must operate at a minimum overall annual efficiency of 65% (Higher Heating Value basis). There are no limits on the size (i.e. the kW nameplate rating of the generator) of the units. It is important to keep in mind, however, that if a proposed project is larger than 10MW, the permitting process could be more complicated than for smaller projects. Eligible CHP systems must be sized to meet all or a portion of the customer's on-site load, not to exceed 100% of most recent historical annual consumption or peak demand. Incentives are not available for CHP systems that serve off-site customers, exports to the grid, or are not located on the customer's property. Projects that

have had materials purchased and / or installed prior to the issuance of the BGE pre-approval letter will not qualify for incentives. In addition the project must meet BGE's Total Resource Cost test. It is recommended that prior to project preparation; prospective applicants download the TRC Calculator Spreadsheet (Appendix B) and check for project eligibility. **BGE reserves the right to reject any project for any reason.**

### **Project Qualification**

All projects will be evaluated on a first come first serve basis, using a two-step review process. The initial screen verifies project and participant eligibility; while the detailed review evaluates project readiness, as well as technical and economic feasibility.

As part of the initial screening, applicants are required to address the criteria below. Failure to address any of the criteria will result in the projects not being considered for funding.

- The proposed project site location is in BGE's service territory
- The proposed project does not export electricity to the grid
- The anticipated annual efficiency of the CHP system is at least 65% on a Higher Heating Value basis
- The application does not contain intentionally false or misleading information
- The project Total Resource Cost is greater than 1 (Appendix B)
- BGE CHP Application is complete and signed by the customer
- The CHP Feasibility Study is complete and contains the requisite information
- 5-year all-inclusive warranty or service contract required
- The project must satisfy all utility regulation and environmental requirements

The customer may be contacted by BGE for application clarification. After eligibility review, BGE will notify the customer either accepting or rejecting the application. If an application passes the initial screen, then BGE will conduct a review of the CHP feasibility study. If an application is received without a CHP feasibility study, it will be rejected. If the application is rejected, BGE will issue a letter to the customer. BGE will review the study and, if necessary, issue written comments to the customer requesting changes or clarification. Detailed requirements of elements that must be included in the CHP Feasibility Study can be found in Appendix A. The length of the BGE review process for a given project will depend greatly on the clarity and completeness of the response. Once BGE has reviewed a project and it qualifies for incentives, BGE will issue a "Pre-Approval Letter" that states the estimated incentives a project is eligible to receive.

### **Minimum Requirements Document**

Subsequent to BGE's review and approval of the CHP project, BGE will work with the applicant to develop a Minimum Requirements Document for the proposed project. Key project milestones (e.g. finalization of design drawings, equipment purchase, permitting applications, interconnection process) and dates will be finalized within the document.

Customers have 6 months from the date of issue on the Pre-Approval Letter and Minimum Requirements Document to return the signed documents in order for incentive funds to be reserved.

### **Project Timelines**

Projects must be pre-approved and be completed within eighteen (18) months of the pre-approval date. BGE may disqualify any application without liability if the Customer has (a) not installed the approved project and (b) has not

applied to BGE for a project extension within the eighteen month project installation stage. Extensions can be granted if significant progress can be clearly demonstrated and/or identified corrective actions have been implemented.

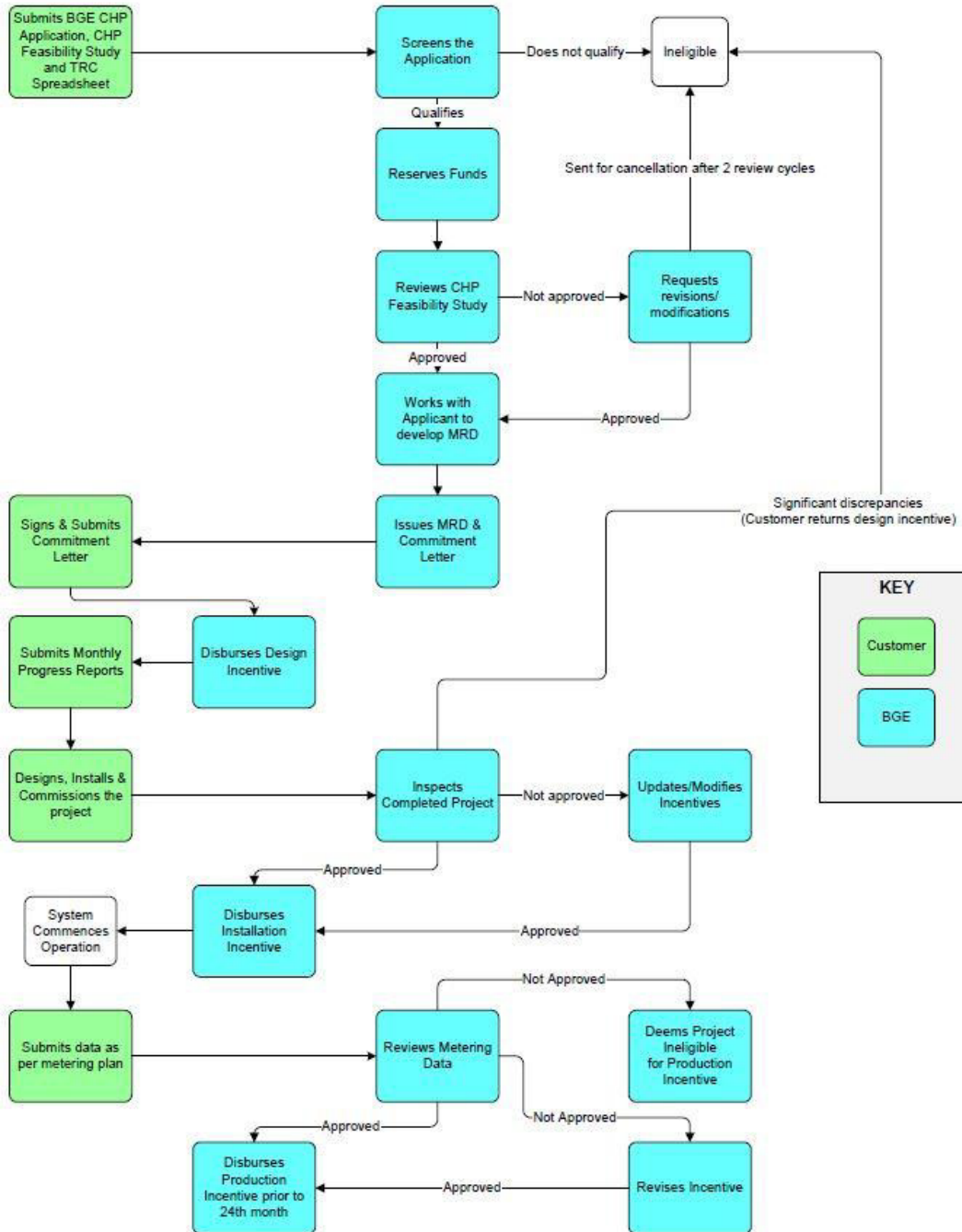
**Monthly Progress Reports**

Subsequent to acceptance of the MRD and the associated signed customer pre-approval letter, the applicant is required to submit monthly progress reports to BGE addressing project updates, significant modifications, adherence to schedule, MRD and other project related activities. Monthly progress reports need to be submitted until BGE conducts an inspection of the commissioned CHP system. A sample monthly progress report is attached in Appendix C.



## Program Process

The program process from project submittal to final payment of incentives is shown in the flowchart below:



## Incentives

### Determination of Incentives

Incentives under the program are calculated by the system capacity and three payments are comprised of a Design Incentive, Commissioning Incentive, and a Production Incentive.

**Incentive Amount:** Less than or equal to 50kW - \$2,000 per kW; Between 51kW and 200kW - \$1,600 per kW; Between 201kW and 1MW - \$1,200 per kW; Greater than 1MW - \$800 per kW. Incentives are tiered, which means the incentive levels vary based upon the installed rated capacity. For example, a 500 kW CHP system would receive \$2,000/kW for the first 50kW, \$1,600/kW for the next 150kW, and \$1,200/kW for the remaining 300kW; for a total incentive of \$700,000\$1,200/kW up to and including 1 MW; \$900/kW over 1 MW.

- 1) **Design Incentive:** 10% of total incentive at project approval, subsequent to signed commitment letter and acceptance of minimum requirements document.
- 2) **Commissioning Incentive:** 30% of total incentive after installation is complete, subsequent to commissioning of the CHP system and BGE inspection.
- 3) **Production Incentive:** 60% of total incentive after receiving 12 contiguous months of actual kWh generation data received within 24 months of project installation, subsequent to review of metering data. Payment will be prorated, based on actual kWh generation and will be capped at 60% of total incentive. For example, if the actual kWh generation is 80% of estimated, the Production Incentive will be decreased by 20%.

**Project Caps:** Incentives are capped at \$2.5million per project. A limit of one project per customer site every 3 years applies.

#### Example Incentive Calculation & Disbursement of Payments

Consider a hospital that operates 24/7 with a peak load of 3,000 kW and an annual electricity consumption of 15,768,000 kWh. The proposed CHP system includes a reciprocating engine with a full load capacity of 1,000 kW and a heat recovery generator to capture the waste heat to serve the steam requirements at the hospital. It is anticipated that the CHP system be in operation for 7,500 hours each year.

Incentive Calculation:  $50 \text{ kW} \times \$2,000 + 150 \text{ kW} \times \$1,600 + 800 \text{ kW} \times \$1,200 = \$1,300,000.00$  (potential total project incentive)

1. **Design Incentive** (subsequent to signed Pre-Approval Letter, MRD and verification of natural gas at site – if applicable)  
 $\$1,300,000.00 \times 10\% = \$130,000.00$
2. **Installation Incentive** (subsequent to Commissioning of CHP System & BGE Inspection)  
 $\$1,300,000.00 \times 30\% = \$390,000.00$
3. **Production Incentive** (subsequent to acceptance of 12 contiguous months of kWh generation received within 24 months of project installation)  
 $\$1,300,000.00 \times 60\% = \$780,000.00$

### **Forfeiture of Incentives Paid to Customer**

The incentives paid to the customer prior to the final inspection of the CHP system shall be repaid by the customer to BGE under the following conditions:

1. The final design is never completed – The Design Incentive is paid after BGE receives the signed Pre-Approval Letter. After this Letter is issued, BGE and the customer shall agree on a date by which the customer must deliver to BGE the final design for the CHP system. If the customer fails to provide BGE with a complete design by the agreed to date, the customer must immediately refund the Design Incentive to BGE. The project may be re-submitted at a later date at the discretion of BGE. Customers who are allowed to resubmit a project are still subject to the same requirements for initial project submittals.
2. The Commissioning of the CHP system is not completed properly – If the system fails to become operational the customer will repay the Design Incentive to BGE.

### **Metering and Project Data**

Once the system is operational, the customer shall be responsible for providing the necessary data to BGE electronically on a monthly basis as part of the verification of system performance. The data will have to be obtained from BGE-approved metering and all costs associated with the metering including labor, materials and electronic communication are the customer's responsibility. It is important to note that in the case of the metering for the CHP Program, Retail Electric Service Tariff Rider 23 – Advanced Meter Services is not applicable. Provisions of Rider 23 relate to options for the BGE electric account billing meter and not the sub-metering required for each CHP project. The following metering is required:

1. An electric interval meter on the output of the CHP system generator (to be approved by BGE); must include a dedicated analog phone line.
2. A gas sub-meter on the gas supply line to the CHP system engine (to be approved by BGE); must include a dedicated analog phone line.
3. A BTU meter appropriate for the system design that will measure the usable system heat output.

### **Technical Services**

BGE seeks to assist those customers who are interested in CHP, but who want to better understand the basic technical, operational and economic aspects of this technology. BGE wants customers to be able to make more informed decisions about possible participation in the CHP Program.

BGE has posted a "CHP Resource List" on the BGE CHP web page available to customers who are seeking CHP expertise and specifically request this information. The list is periodically updated, and vendors who have experience with CHP projects are encouraged to provide their contact information to [business@BGESmartEnergy.com](mailto:business@BGESmartEnergy.com).

## BGE Requirements

### Interconnection

The customer may move forward with the project after receipt of the BGE Commitment Letter. The next step is to apply for an interconnection agreement with BGE. Effective June 9, 2008, the Commission requires that all Small Generator Interconnection equipment that is or will be connected to BGE's electric utility distribution system be approved by BGE pursuant to the requirements of Section 20.50.09 of the Code of Maryland Regulations. (See the following for Maryland Standard Small Generator Interconnection Rule: [http://www.bge.com/myaccount/energysupplyoptions/customergenerated/Documents/SGI\\_SmallGeneratorInterconnectionRule.pdf](http://www.bge.com/myaccount/energysupplyoptions/customergenerated/Documents/SGI_SmallGeneratorInterconnectionRule.pdf).)

The regulations ensure that all persons or entities in the State of Maryland who want to install generators up to 10,000 kW (which will be connected for normal operation to an electric utility distribution system in Maryland) have a consistent way of applying to BGE for interconnection using standard application forms, fees and processes. The CHP system must adhere to this Interconnection Rule. The cost and installation of the hardware and software to assure compliance shall be the customer's responsibility. BGE shall require the customer to provide design details of this aspect of the system and the review of this information shall be part of the interconnection approval process. The steps to implement this process include:

1. The customer should contact BGE's CHP Program. The customer must work closely with the group to complete an "Interconnection Application."  
<http://www.bge.com/myaccount/energysupplyoptions/customergenerated/interconnection/choosinganapplication/pages/default.aspx>
2. With the completion of the Interconnection Application, BGE will then send the customer the "Small Generator Interconnection Agreement" which the customer must complete within thirty days. BGE will tell the customer which version of the Interconnection Agreement to use. Note: Once the customer has signed the Interconnection Agreement with BGE, the customer can move forward with other permitting. Prior to the start of operation of the CHP project, however, the customer is required to request that BGE inspect the project.
3. Once BGE is satisfied with the installation of the project, they will sign a "Certificate of Completion." The customer is responsible for requesting a copy of the signed certificate.

### Schedule S

Where the customer receives service under Retail Electric Service Tariffs GL or P, all projects that get qualified for incentives under the CHP Program shall be subject to BGE's Schedule S. (Schedule S does not apply to accounts that are on the G, GS or T rate schedules since these accounts do not involve distribution demand charges.) Schedule S is a tariff that charges the customer for the service of having the distribution capacity available ("standby capacity") on the BGE system that is equal to the coincident peak demand of the customer's self-generation. In the event that the CHP system shuts down, BGE is capable of providing distribution capacity to deliver the electricity necessary for the customer's entire load. (See Appendix D)

**Other BGE Requirements**

1. To be eligible for the BGE EmPOWER Maryland incentives, energy produced by the CHP projects must be fully used on site. Projects will be ineligible if there is any export from the site including into PJM or if any energy is used to supply another customer's facility or multiple facilities owned by the CHP customer unless the facilities are all part of a campus site or a master metered account. To be eligible for the incentives under the CHP Program, Rider 18 "Net Metering" per BGE's Electric Rates and Tariffs Services cannot be used.
2. Under the CHP Program, BGE is entitled to 100% of the energy benefits associated with the energy-savings measures, excluding the value of energy cost savings realized by the customer, but including all rights to all associated PJM Energy, Capacity and Reserves Products, and the customer agrees to provide BGE with such further documentation as BGE may request to confirm its ownership of such benefits and products.
3. The customer is responsible for obtaining and paying for all necessary permits associated with their CHP project.
4. BGE has the right to publicize your participation in this program and share information such as energy and total cost. BGE, however, understands that such information as financing and detailed cost breakdowns may be sensitive to your company and BGE will keep such details confidential unless BGE is required by the Commission to disclose it.

## Appendix A: Feasibility Study Outline

The study must be in report format, and must include (but not limited) the following elements:

### 1. Table of Contents

### 2. Executive Summary

- Site Description
- Summary of the site's existing energy profile and costs (gas, electricity, on-site power uses and thermal loads). *If the facility does not use natural gas, then include pertinent fuel use, characteristics and costs*
- Summary of the proposed CHP option including technology, capacity, use of waste heat and the estimated annual CHP efficiency (HHV Basis)
- Summary of emissions reductions
- Capital Costs, Cost Savings, Simple Payback & IRR

### 3. Site Description

- Primary Business
- Operating schedule
- Existing energy suppliers, contract terms and rates
- The pressure and availability of natural gas (if, it is the primary fuel)
- Reasons for CHP consideration from a host customer perspective
- Facility Energy Profile: Month-by-Month Summary of Electricity & fuel Use, Thermal Loads and Costs (most recent 12 months, 24 months preferable). *If loads exhibit significant variability, then an hourly analysis may be requested*

### 4. Project Description

- Narrative of CHP Rationale, subsequent technology selection process
- List Major Equipment
  - Prime mover– capacity, electrical efficiency, vendor cut sheets, part load performance, emissions signature, etc.
  - Heat Recovery equipment
  - Duct Burners, if applicable
  - Absorption Chillers, if applicable
- Estimated facility load profiles subsequent to CHP Installation *(If loads exhibit significant variability, then an hourly analysis may be requested)*
  - CHP electricity production
  - CHP provided heating and/or cooling
  - Grid supplied electricity
  - Thermal loads supplied by Existing Boiler and/or chillers
- Estimated CHP Efficiency (HHV) and related calculations on annual basis
- Emissions
  - CHP system emissions profile (NO<sub>x</sub>, SO<sub>2</sub> and CO<sub>2</sub>)

- Detail on-site emission abatement strategy, as applicable (Selective Catalytic reduction, etc.)
- Emissions reductions ( $NO_x - 1.94 \text{ lb./MWh}$ ,  $SO_2 - 5.25 \text{ lb./MWh}$  and  $1,329 \text{ CO}_2 \text{ lb./MWh}$ )

## 5. Project Financials

- CHP installed costs – Detailed Breakdown
  - a. Major Equipment
  - b. Engineering
  - c. Design
  - d. Construction
  - e. Permitting
  - f. Interconnection
- Maintenance
  - Estimated fixed and variable costs
  - An estimate of downtime that would occur due to routine maintenance must also be included
- Expected Customer Month by Month Savings and Simple Payback
- Financing Mechanism Narrative
  - Details vis-a-vis Self-Financed/ Third Party, Bank, Equity Holder, etc.
- Detailed 10 year Cash Flow Analysis including
  - Annual fuel and purchased power costs
  - Annual Operation & Maintenance costs
  - Annual Operating Savings
  - Assumed Unit Gas (or alternate fuel) and Electric Costs & pertinent escalations - 10 year
  - IRR & NPV
- Sensitivity Analyses
  - a. Electric price
  - b. Fuel price
  - c. Simple Payback (with incentive and without incentive)

## 6. Warranty

A brief description of the warranty and/or service plan.

## 7. System Interconnection

Site-specific grid interconnection issues and costs must be discussed. A brief, clear plan detailing the CHP interconnection to the grid and/or natural gas pipelines, along with timelines must be presented.

## 8. Permitting Plan

A brief description of the necessary environmental and building permits or certificates that the customer needs to obtain must be provided. A schedule of realistic permit receipt dates must be included in the anticipated project schedule.

## 9. Metering Plan

A detailed metering plan shall be included outlining the steps that will be taken to measure system performance post-installation. After the system is installed, applicant must provide 18 months of **hourly operational data** (15 minute data also acceptable) demonstrating that minimum efficiency was achieved. This shall be done by implementing appropriate metering as part of the system installation. Data collected should include, but is not limited to, fuel input (MMBtu), electrical output (kW),

recoverable and utilized thermal output (MMBtu). All applicants are responsible for the regular electronic delivery of requisite data to BGE.

#### **10. Project Team**

- Include an organizational chart listing all team members, including the project manager and any subcontractors and other sponsors involved in the CHP Project, showing their roles and responsibilities.
- Describe the qualifications of the Applicant and/or contractor's individual and combined expertise that will enable successful completion of the CHP Project.
- Describe the proposing team's experience in developing and operating conventional or renewable energy plants, marketing power, and other relevant areas. List related projects that have been undertaken and successfully completed by the Applicant and/or contractors.

#### **11. Anticipated Schedule**

A detailed project schedule that includes design, engineering, permitting, interconnection, construction, start-up and commissioning must be provided.



## Appendix B: Total Resource Cost (TRC) Calculator

Example below – please provide Excel file electronically. The TRC Calculator Excel file can be found on the BGE CHP web page, [BGESmartEnergy.com/business/CHP](http://BGESmartEnergy.com/business/CHP)

USER INPUTS		Description
Enter existing peak demand (kW)		The peak demand prior to the installation of the CHP System.
Enter existing annual electricity consumption (kWh)		The annual electricity consumption prior to the installation of the CHP system.
Enter the nameplate capacity of the prime-mover (kW)		This is the capacity of the engine or turbine.
Enter annual gas consumption by the prime-mover (therms)		The amount of fuel consumed by the engine or turbine.
Enter annual electricity generation by the prime-mover (kWh)		Annual electricity generated by the engine or turbine.
Enter annual gas savings (therms)		The fuel which is being avoided in the existing boilers, due to the installation of the CHP system.
Enter maximum demand offset by the absorption chiller (kW)		The demand being offset by the absorption chiller (Enter Zero, if no heat is converted to chilling).
Enter annual electricity (kWh) avoided by absorption chiller (Zero if no heat is captured to produce chilled water)		The electricity consumption being offset by the absorption chiller (Enter Zero, if no heat is converted to chilling).
Enter TOTAL CHP project costs (\$)		The total cost of the CHP system which includes all equipment, design, construction, commissioning and other project related costs. (Don't include any incentives)
Enter avoided costs (\$)		The costs avoided by the installation of the CHP system. Eligible equipment - chillers, backup generators, boilers. The age of the equipment and costs must be documented in the CHP feasibility
Enter demand increase due to parasitic loads (kW)		The demand increase due to any parasitic loads such as gas compressors, refrigerant pump for the absorption chiller,etc .
Enter annual electricity consumption increase due to parasitic loads (kWh)		The electricity consumption increase due to any parasitic loads such as gas compressors, pumps for the absorption chiller,etc.

## Appendix C: Content and Format of Monthly Progress Report

### Progress Report

Project ID:

Project Title:

Month, Year:

### What we planned to accomplish this period

*As per Minimum Requirements Document*

### What we actually accomplished this period

*As per Minimum Requirements Document*

### How we are doing compared to our plan

*[Explain the differences, if any, between the planned and the actual accomplishments. Describe what needs to be done, if anything, to get back on track.]*

### Significant problems or changes

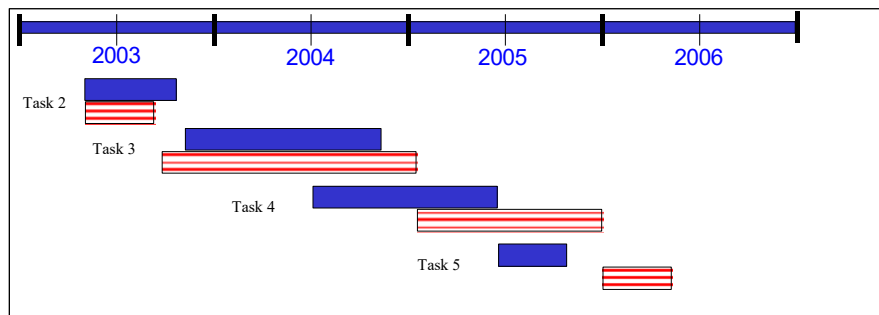
*[Describe any significant technical or fiscal problems. Request approval for significant changes in the MRD, revised milestone due dates, changes in key personnel assigned to the project, or reallocation of budget cost categories. If none, include the following statement: "Progress and expenditures will result in project being completed on time and within budget."]*

### What we expect to accomplish during the next month

*[Concise description of major activities and accomplishments expected. This will be transferred to the next progress report]*

### Status of Overall Milestones and Deliverables:

*[This should be the complete list as contained in the MRD. Highlight differences between actual and planned.]*



*[Planned is solid blue, actual is red striped. This work flow diagram needs to correlate with the schedule in Exhibit A. This example has been prepared as a Word Picture, but a comparable Excel diagram or Gantt chart is fine.]*

**Photographs:** *[Include photographs where appropriate to document program]*

# STANDBY SERVICES

## Schedule S

### Availability:

Required subject to Section 3.7, where the Customer uses self-provided generation to meet all or part of the Customer's electric load requirements. This Schedule is not applicable to emergency or other generation used solely as a backup to Company service or in concert with Company supported load control programs. This self-provided generation does not use the Company's transmission and distribution facilities in meeting all or part of the Customer's load requirements.

Customers that are not taking Market-Priced Service from the Company may purchase generation (energy and capacity) and transmission, including standby generation services, from third party suppliers. The Company does not require the Customer to purchase or have available any level of standby generation supply. In all circumstances, whether the Customer is receiving generation supply from the Company or an electric supplier, Schedule S provisions for Delivery Service are applicable.

Standby Services are provided under Schedule S in conjunction with the Customer's contract for service under Schedules GL or P (the Controlling Schedule). Controlling Schedule provisions apply, including applicable Riders, unless they are specifically altered herein.

### Definitions: Terms used herein are defined as follows:

- (1) **Delivery Service** – electric distribution services (wires, billing and metering) plus generation regulatory assets and nuclear decommissioning costs.
- (2) **Contract Capability (CC)** - the amount of load in kW supplied by the Customer's self-provided generation. Separate specification of the CC for summer and non-summer seasons is permitted. The CC is the level specified by the Customer and does not necessarily need to be equal to the installed nameplate capacity of the Customer's on-site generators.
- (3) **Delivery Service Requirement** - the maximum level of Delivery Service required, as specified by the Customer for use under Option B, Standby for Interruptible Delivery Service. The level of Delivery Service Requirement is specified by the Customer and applicable for the Term of Contract.

### Standby Services and Rates

#### Standby for Delivery Service:

**(Customer may choose between Option A and Option B; Option A is the default)**

#### Option A. Standby for Firm Delivery Service

Delivery Services provided by the Company for that portion of the Customer's total facility load above CC are provided at tariff rates under the Controlling Schedule. The Delivery Service Demand Charge under the Controlling Schedule is applied to the level of the Customer's CC. The Delivery Service usage below the CC is charged under the Controlling Schedule at the tariff kWh Delivery Service Energy Charge. In other words, the monthly charge for energy used is the total metered energy delivered over the Company's wires multiplied by the Controlling Schedule Delivery Service Energy Charge.

For Schedule GL Customers, the minimum monthly Delivery Service Demand Charge will be equal to the seasonal CC. For Schedule P Customers, the minimum monthly Delivery Service Demand Charge will be equal to the seasonal CC or the minimum billing demand as defined in Schedule P, whichever is greater. In addition to the application of the Delivery Service Demand Charge to the CC, to the extent that the Customer's total facility load exceeds the CC, then the Delivery Service Demand Charge under the Controlling Schedule will be applied to the Customer's total facility load above CC. That is, the Customer pays a monthly Delivery Service Demand Charge under the Controlling Schedule based on total facility load, with the CC as the minimum monthly Delivery Service Billing Demand (with the exception noted above regarding the minimum billing demand under Schedule P).

### **Option B. Standby for Interruptible Delivery Service**

Delivery Services will be provided by the Company up to the maximum level specified by the Customer as its Delivery Service Requirement. The monthly Delivery Service Demand Charge under the Controlling Schedule is applied to the Customer's specified Delivery Service Requirement. The Delivery Service usage is charged under the Controlling Schedule at the tariff kWh Delivery Service rate. At the Customer's expense, load monitoring and control equipment will be owned, installed, operated and maintained by the Company. This load limiting equipment will be designed to ensure that the maximum load to be delivered over the Company's distribution facilities to the Customer cannot exceed the Delivery Service Requirement. In the event that the Customer's actual requirements exceed the Delivery Service Requirement, the load limiting equipment will operate in such a manner as to completely sever all service to the Customer's facility. Service will be restored after the Customer's load falls below the Delivery Service Requirement and the load limiting equipment is reset.

### **Special Provisions:**

- (1) **Metering:** The Customer is required to furnish and maintain Company-approved metering and communication equipment necessary to allow the Company to monitor and meter the output of the Customer's self-provided generation power source(s), and to communicate rate and billing information on an interactive basis.
- (2) **Changes in Contract Capability:** A seasonal CC will be increased by the Company when the amount of actual self-provided generation is found to be 15% or more above the existing level. At the Customer's request and with the Company's approval, a seasonal CC will be reduced by up to 15% if such a request is consistent with the maximum use of the self-provided generation. One such request is permitted during the Term of Contract.
- (3) **Reporting:** At the Company's request, the Customer shall provide certain data or information concerning the unavailability of its alternative power source(s).
- (4) **Parallel Operation:** Operation by the Customer of electric generation facilities in parallel with the Company's service is permitted only where operating conditions satisfactory to the Company have been obtained. Special Provisions (4a) and (4b) apply to interconnection arrangements under this Schedule.
  - (4a) Interconnection with the Company's system requires the installation of protective equipment which, in the Company's judgment provides safety for personnel, affords adequate protection against damage to the Company's system or to its customers' property, and prevents any interference with the Company's supply of service to others. The Company is not liable for any loss, cost, damage or expense to any party resulting from the use or presence of electric current or potential which originates from a Customer's generating facility. The Company may require the Customer to purchase and maintain adequate insurance protection to save the Company harmless for any damage, loss or injury resulting from connection of the Customer's generating facility to the Company's electric system. Such protective equipment is installed, owned and maintained by the Customer at the Customer's expense.
  - (4b) Parallel operation must cease immediately and automatically during system outages and other emergency or abnormal conditions specified by the Company. The Customer must cease parallel operation upon notification by the Company if such operation is determined to be unsafe, interferes with the supply of service to others, or interferes with system maintenance or operation. The Company accepts no responsibility whatsoever for damage or injury to any person or property caused by failure of the Customer to operate in compliance with Company requirements.

- (5) **Ownership of Generation Facilities:** Services described above are not affected by ownership of the Customer's self-provided generation.
- (6) **Term of Contract:** The initial Term of Contract for Standby Service is one year and will automatically renew for subsequent 12 month periods beyond the initial term. The initial Term of Contract for Option B, Standby for Interruptible Delivery Service, is three years and will automatically renew for subsequent 3-year periods beyond the initial term.