

# **BGE Energy Solutions for Business – Custom Program**

## **Determining Baseline for Energy Calculations and Cost Estimates**

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To provide maximum flexibility for customers, BGE offers financial incentives for site-specific, cost-effective projects that go beyond the energy efficiency measures (EEM) addressed by the standard prescriptive applications. Through BGE's Custom program application, all commercial and industrial customers (Rate schedules G, GS, GL & P) may be eligible for these incentives.

Under the Custom offering, financial incentives are available to cover up to 50% of the total cost for "retrofit" projects or up to 75% of the incremental cost for new construction projects, major renovation projects where the customer has had all the equipment, fixtures and systems removed; and, projects where the existing equipment or systems are at the end of their useful life. (Note: BGE also offers a "Comprehensive Custom" approach with potentially greater incentives. See the details below in the *Retrofit* and *New Construction / Major Renovation* sections.)

For all of these project types the incentive is capped such that the incentive does not result in a project's post-incentive payback being less than 1.5 years. These incentives are meant to encourage customers to increase the planned efficiency from what they would have without incentives. BGE needs to balance costs with increased efficiency and strives to avoid free ridership where incentives are paid for what customers would already do.

In order to perform the necessary energy calculations for a custom project, the applicant must first propose the starting point or baseline from which to compare energy consumption. BGE will then discuss this with the customer and determine if this baseline is acceptable.

There are several methods that can be used to determine the baseline for a given project. Each method shall be subject to some degree of interpretation by BGE. However, closely examining the intent of the custom program strategies (retrofit, new construction or major renovation or end of useful life) will usually point the applicant in the right direction. Program staff is also available to discuss projects and assist applicants in determining the proper baseline for their project. In situations involving comprehensive system upgrades, a single comprehensive project may be considered that applies a combination of baselines for both retrofit and end of life replacements.

### **Retrofit Projects**

Retrofit projects are those in which existing equipment is in working condition and is not at or near the end of its useful life. Applicants typically pursue retrofit projects strictly on the basis of potential energy savings. In these cases, the resulting energy savings associated with upgrading to higher efficiency equipment outweighs the benefit of

keeping the existing equipment in service. In short, retrofit projects are not “necessary” for the continued operation of a facility or process.

Retrofit projects will always occur in existing facilities and typically involve building spaces or industrial processes which are not being significantly modified or renovated. With few exceptions, retrofit projects involve one-for-one replacement with like-kind equipment or improvements resulting in more efficient operation of existing equipment.

Since replacement of the affected equipment is being pursued strictly for energy savings purposes, the baseline for energy calculations is the current system, as currently operated. Applicants should describe the existing system and indicate how the system is currently operating. The baseline for retrofit costs is zero since the improvements are not necessary for continued operation. BGE will review the proposed project and all associated energy savings and cost data to determine if the project is cost effective and if any incentives are available. Retrofit projects may qualify for incentives up to 50% of the project cost with a 1.5 year payback threshold. Cost estimates from a qualified contractor are required for the proposed system. Program staff reserves the right to adjust project costs based on experience and industry practice as well as limiting costs to only those investments necessary to achieve the electrical energy savings.

An alternative option for existing facilities is the **Comprehensive Systems Track**. For custom measures, the incentives would increase to up to 75% of the total cost or a buy down to a one year payback, whichever is less. (For interactive retrofit equipment such as lighting, the incentive for prescriptive measures would be increased by 10 %.)

### **New Construction, Major Renovation and End of Life Projects**

New construction, major renovation and projects where the equipment or systems are at the end of their useful life are distinctive in that if the efficiency improvement is not achieved at the time of new equipment or system installation, it is unlikely to be achieved in the near term. The useful life for a piece of equipment or a system is determined by program guidelines (as contained in the “Measure Life Assumption” document) and is typically assumed to be the measure’s useful life used in program reporting and is not based on the on-going operation of existing equipment.

These types of projects require a different approach than retrofit projects in terms of baseline determination, applicable costs and energy savings calculations. The equipment or systems for these projects are installed because they are necessary for the proper operation of the facility or industrial process. All measures must be installed in a manner compliant with all applicable codes required at the time a construction permit is submitted or at the time of submission of BGE Custom application for projects that do not requiring a permit. For efficiency opportunities not governed by efficiency codes or standards, industry practices or demonstrated customer practice are typically

used to establish the baseline. The baseline for these projects is NOT existing equipment or systems. Since these are Custom projects, the Custom baseline case is determined and generated for each project individually.

The Custom Program's goal is to encourage a higher level of equipment efficiency than the baseline. Therefore, all energy and cost calculations are performed by comparing the [Custom] baseline equipment or system to the proposed high-efficiency equipment or system. Applicants must provide detailed information on the baseline system, including:

- Detailed description of the baseline equipment including system capacity, load profiles, capacity, production rate and hours of operation
- Number of existing units, if any
- Manufacturer data sheets with equipment performance ratings (BHP, CFM, PSI, kW, Efficiency rating, U-value, etc.). Provide nameplate data if manufacturer data sheets are unavailable
- Part load performance data if applicable
- Description of controls and sequence of operation

Provided the project meets cost-effectiveness criteria, projects may qualify for up to 75% of the total incremental cost associated with upgrading from baseline equipment or systems to high efficiency equipment or systems as described above, with a 1.5 year payback threshold. Applicants may use RS Means or similar methodology to estimate baseline system costs, provided the method is indicated and consistently applied throughout the application. Actual cost estimates are required for high-efficiency systems. Program staff reserves the right to adjust project costs based on experience and industry practice as well as limiting the costs to only those investments resulting in electrical energy savings.

For new construction and major renovations the customer may also consider the **Comprehensive Design Track**. This offering targets opportunities during the design phase of a new facility or major renovation where the customer (unlike in the retrofit situation) must install a replacement system. The Comprehensive Design Track provides the customer with the opportunity to capture the maximum energy savings potential for the project by examining the building as an integrated system. Enhanced incentives would be available for up to 90% of the incremental cost or a buy down to a one year payback, whichever is less. (Note: In order for a project to have a Comprehensive Custom designation, it must achieve 80% of the achievable kWh savings.)

An alternative option for existing facilities where equipment may be at end-of-life is the **Comprehensive Systems Track**. This approach encourages a comprehensive system-wide view for end-of-life-system replacements by providing enhanced incentives for interactive measures that focus on right sizing the system. For custom measures, the

incentives would increase to up to 75% of the total cost or a buy down to a one year payback, whichever is less. (Note: In order for a project to have a Comprehensive Custom designation, it must achieve 80% of the achievable kWh savings.)

## Summary

The baseline case is the starting point for a Custom application, both in terms of energy savings and project costs. The baseline case is a programmatic determination. .

Baseline cases are different for retrofit projects versus new construction, major renovation and end of life equipment replacement projects.

- Retrofit – improving operating equipment or systems not at or near the end of their useful life – The baseline is what is currently existing
  - Baseline energy is current consumption
  - Baseline cost is zero
- New construction, major renovation and end of life projects – baseline is code or standard practice
  - Baseline energy – minimum-efficiency compliant equipment or system usage
  - Baseline cost – minimum-efficiency compliant equipment or system cost

Interested parties are encouraged to attend BGE Service Provider Training to learn more details on the Custom program and its requirements. This training occurs frequently throughout the year and is offered at no charge. BGE also schedules individual meetings, as needed. Please visit [www.bgesmartenergy.com](http://www.bgesmartenergy.com) for more information.