



# The Georgetown University Energy Prize

## Competition Guidelines

Version 6.0 – April 23, 2014

### Introduction

Energy efficiency is the single most important source of energy available to the world's economies for years to come. To help tap that resource, Georgetown University's [Program for Science in the Public Interest](#), [Global Social Enterprise Initiative](#), and [Environment Initiative](#) are launching the Georgetown University Energy Prize (GUEP), a projected \$5M national incentive prize for small to medium size residential communities. The competition will challenge communities to achieve innovative, replicable, scalable and continual reductions in the energy-per-capita consumed from local natural gas and electric utilities. For a brief overview, see the [Competition Summary](#) in these Guidelines and also the [GUEP website](#)<sup>1</sup>.

The GUEP will:

- Challenge a large number of communities to work together with their local governments and utilities to create and begin implementing long-term plans for the continual improvement of energy efficiency;
- Stimulate replicable innovations in community energy efficiency;
- Encourage a large number of communities to participate in the early stages of the competition;
- Educate the public about the total energy and environmental costs of the full fuel cycle;
- Educate the public and engage students in energy efficiency issues, methods, and benefits, and encourage lasting behavior change;
- Help to grow markets for products and services that facilitate energy efficiency and renewable, clean energy production;
- Reward the community as a whole, and not specific individuals;

This document provides a high-level description of the prize design.

### What's New?

This release of the Competition Guidelines includes numerous clarifications and changes. Here are the most significant changes:

- The outline and form of the Application are revised (see "[Applications](#)").
- The "[Selection of Finalists](#)" is revised, with additional details.

---

<sup>1</sup> <http://quep.org>

- The contents of the Final Report and the criteria for selecting the prize winners are revised and expanded; see [“Final Judging”](#).
- The normalization of the [“Basic Figure of Merit”](#) is changed from per-residential-account to per-residential-bill.
- We no longer will require monthly cost data – rather we will use average cost data from the baseline period. See [“Data from Local Utilities”](#).

## Competition Summary

The Georgetown University Energy Prize (GUEP) challenges U.S. communities to work together with their local governments and utilities in order to develop and begin implementing plans for innovative, replicable, scalable and continual reductions in the energy-per-residential-account consumed from local natural gas and electric utilities. Communities are encouraged (but not required) to strengthen their plan via partnerships with businesses, foundations, local colleges and universities, as well as by exploiting other resources (see [“Energy Efficiency Resources for Communities”](#)).

For this competition, a “community” is defined geographically by the limits of a municipality – a town, city, or county that has corporate status and local government. All small to medium municipalities in the U.S.A. with populations between 5,000 and 250,000 are eligible to apply<sup>2</sup>.

The competition comprises four stages over a three year period that started April, 2014. It challenges communities to develop a long-term energy efficiency plan and to demonstrate initial effectiveness. The winning community will receive a projected \$5M prize purse, to be spent on energy-efficiency programs that reward the community as a whole, for example to ensure the continuing implementation of long term plan.

Here is an overview of the GUEP competition stages (for details and discussions of issues, see subsequent Sections, including [FAQs](#)):



***Pre-Launch – Letter of Intent (July, 2013 – April, 2014)*** Fifty communities submitted a Letter of Intent (LOI) during this stage of the competition, which is now closed.

***Stage 1 - Applications (April – June, 2014):*** Using a template provided by the GUEP at <http://guep.org/apply>, communities will submit basic applications. After a review by the Energy Prize team, all credible applications from eligible communities will be accepted as Quarterfinalists and invited to compete in Stage 2 by submitting detailed Program Plans.

<sup>2</sup> These limits of community size include approximately 65% of the U.S. population

**Stage 2 - Quarterfinalist Energy Efficiency Program Plans (August – November, 2014):**

Quarterfinalists will each submit a detailed Program Plan for their community's energy-saving program. These should be long-term Plans, with commitments by residential associations, governments, institutions, or businesses in the community to policies and projects that will yield continual improvement. Energy-saving Plans can be a part of a larger pre-existing plan that the community has begun, or they can be new plans that will be implemented specifically to meet the GUEP challenge. In addition, Quarterfinalist communities will have opportunities to apply for seed grants from GUEP partners and other organizations to help them implement their Plan.

Based on the submitted Plans and seed-funding proposals, the Energy Prize team will select up to [TBD; 50+]<sup>3</sup> communities who will be invited to compete as Semifinalists in Stage 3.

The Energy Prize team will also award an Energy Plan Certificate of Merit to communities that submitted exceptionally worthy applications but were not selected as Semifinalists.

**Stage 3 - Semifinalist Performance Competition (January, 2015 – December, 2016):**

The Semifinalists will compete for 2 years to reduce their utility-supplied energy consumption in a manner that is likely to yield continuing improvements within their own community and replication in other communities. For purposes of this prize, community energy consumption measurements are restricted to energy supplied by gas and electric utilities directly to all residential and municipal customers.

**Stage 4 - Finalist Selection, Judging and Awards (January – June, 2017):**

Up to [TBD; 10] Finalists will be selected based primarily on energy-saving performance during Stage 3. These Finalists will be invited to submit Final Reports covering relevant aspects of the community's plan, performance, and future prospects. The Judging Panel will score the final reports in specific, weighted categories and select the winners based on a combination of these scores and the Stage 3 energy-saving performance.

The highest-ranking community will be awarded first place, with the requirement that the prize purse benefit the community at large in accordance with spending proposed in the community's Stage 2 Program Plan. Second and third place will also be awarded; these additional winners will receive special recognition and additional benefits, which may include cash purses.

## Eligible Communities

For purposes of the GUEP, a "community" is normally defined geographically by the limits of a single municipality – a town, city or county that has corporate status and local government. All municipalities in the U.S.A. with populations between 5,000 and 250,000 are eligible to apply. Eligibility is based on the 2010 Census. To see if a particular community is eligible, see this [interactive map](#)<sup>4</sup> as a guideline. For official census figures, visit [www.census.gov](http://www.census.gov).

In the case of communities with overlapping jurisdictions (e.g., both a town and its county apply), only one community may apply and compete. GUEP will monitor entries for such overlaps and

<sup>3</sup> This notation is used throughout the Guidelines for parameters that may change, with the candidate value(s) shown after the "TBD".

<sup>4</sup> <http://guep.org/who-can-compete>

notify the overlapping communities. It will be up to the communities to decide which entry remains; if they can't agree, then the earliest application will have priority.

We will also consider applications from “combined communities”: multiple, contiguous municipalities that together have a total population between 5,000 and 250,000. The geographic border of such a combined community must surround a single, contiguous region that contains the entirety of every participating municipality, and no portion of a non-participating municipality. Such combined communities will have to provide additional information in their application as follows:

- Evidence that the communities can work together successfully (ideally by citing previous cooperation);
- An explanation of how the local governments, utilities, and relevant community organizations will work together on GUEP.
- A description of how the purse would be shared or jointly-used, if won.

## Energy Consumption Reporting During Competition Stage 3 (Semifinal)

### Data from Local Utilities

In order to compete for the GUEP, a community must obtain the cooperation of all natural gas and electric utilities that serve the community. The utilities must have or commit to develop the capability of reporting at least quarterly to GUEP the total (aggregate) monthly energy directly supplied by natural gas and electric utilities to all of their residential and municipal customers in the community, as well as the monthly number of residential bills issued. Aggregate data will be reported separately for the residential and municipal sectors. (For a discussion of this limitation to residential and municipal sectors, see the FAQ [“Why restrict the energy consumption to residential and municipal?”](#)).

Aggregate energy use (vs. use in individual buildings or residences) is used for simplicity and to avoid privacy concerns. Prior to the start of the Semifinalist Performance Competition (Stage 3), the utilities must report the community's baseline energy use: the monthly Adjusted Energy Use per Residential Bill ([defined here](#)) for the 24 months prior to the start. For a discussion of the required data format, see [“Format of Data Provided by Utilities.”](#)).

While it's non-trivial to provide the required data, in most cases it will not be challenging (see the discussion about residential and municipal accounts, below).

Furthermore, we believe that most local utilities have the authority to provide aggregate energy-use data without regulatory approval, and we believe that many utilities will choose to do so if asked by municipal and community leaders. Apart from the general incentive of good community relations, some utilities will have additional motivations. This is clearly the case for publically owned utilities, but it's also true for many investor-owned utilities. For example, if a utility has a regulatory-approved Energy Efficiency Program, cooperation with the community's GUEP effort should lead to increased customer participation in the utility's Program. Another point is that most utilities have a desire to get their customers to engage with them online, something that's likely to occur naturally in the case of GUEP competitors.

To enable energy-cost estimation in the [Performance Dashboard](#), we also require that utilities provide the average cost per electrical and per gas energy unit over the 12 months preceding the start of Stage 3 Performance Competition.

### **Residential Accounts**

Since utilities generally have a specific rates for residential accounts, residential customers are defined for the GUEP simply as customers whose bills are computed using residential rates. Thus, the aggregate residential energy usage can be determined by adding up the energy usage from all bills that satisfy two criteria:

- (a) The property is in the municipality. In some cases this can be determined by selecting for the municipality name in the address to which the bill is sent (or the address where the meter is installed). In other cases it can be done via a list of zip codes. Note that zip codes at the boundary of the municipality may extend beyond the municipality. This is acceptable provided that the additional population covered does not exceed 5% of the total population of zip codes that are entirely within the municipality. For competitors that advance to the Stage 3 competition, this will be reviewed by GUEP on a case-by-case basis.
- (b) The bill is computed using residential rates.

Note that this includes apartment buildings, and it includes both renters and owners. Compared to owners, renters typically have limited abilities to install retrofits, install energy-saving appliances, and take other measures. But there are energy-saving measures that renters can take, and they are part of the community.

Since some utility bills may be paid by out-of-town landlords, the approach above will not be 100% accurate, but we believe it will be accurate enough for the purposes of the GUEP. If there are special circumstances that would result in significant underestimates of energy use (and therefore energy savings), it's in the community's interest to bring this to the attention of GUEP.

Although we encourage the involvement of local colleges and universities, on-campus housing is excluded (primarily because billing practices generally make it difficult to report their energy use). Students and faculty who live off-campus are included (and would not be distinguished from other residents).

Military bases (including on-base military housing) are excluded. Military personnel who live off-base are included (and would not be distinguished from other residents).

### **Municipal Accounts**

For purposes of the GUEP, municipal energy use is defined as the energy billed to accounts that are paid by the municipality. Since municipal accounts typically do not have a special rate (e.g., as distinct from commercial or industrial), the approach (above) for residential customers can't be used.

However, since there will typically be a small number of municipal buildings, the municipal accounts can be identified by enumeration. It will be the responsibility of the municipality to provide the local utilities with a list of all such accounts. Like various other aspects of the GUEP, this list will be subject to an audit if the community becomes a GUEP winner.

All offices and buildings used by the municipality are to be included, whether owned, leased, or rented by the municipality. – e.g., municipal offices, police stations, fire stations, public schools, water treatment and delivery facilities, etc. State and Federal buildings that happen to be in the municipality are not included; likewise, local military bases are not included.

A municipal office or building must be included in the account list whether or not the municipality actually pays a bill for that account. For example, some municipalities have franchise agreements with utilities that only require the municipality to pay bills for revenue-generating buildings (e.g., parking garages).

In keeping with the GUEP's educational goals, all (K-12) public schools located within the municipal boundaries must be included in the account list, whether or not the municipality owns the buildings, pays the utility bills, or has education-related jurisdiction over the schools. For example, in some states, independent school districts have jurisdiction over the schools and are responsible for paying utility bills. As mentioned, the account list provided by the municipality must include the schools that are within the municipal boundaries so that their energy consumption can be included in the aggregate data provided by utilities. If the utilities require permission from the school district (or from the schools themselves), it is up to the municipality to secure permission.

Buildings owned by the municipality but leased to others (and not used by the municipality) are not included.

In the case of public housing, if the account is charged a residential rate, it will be included in the residential sector (above). Otherwise, it will be included as a municipal account.

Accounts paid by a municipal transit authority are not included.

For some municipal buildings, cooling is achieved in part or whole via a chilled water loop serving multiple buildings, thereby reducing the building's requirement for energy consumed directly from utilities. This could give such buildings a significant advantage, particularly in Southern climates. However, if the chilled water is produced by a municipally-owned facility, then the energy consumption of that facility will be included in the municipality's total energy consumption (assuming the facility is powered by gas or electricity). Regardless, this is not a significant issue since judging is based on the percentage change in energy consumption.

### **Basic Figure of Merit (Adjusted Energy Use per Residential Bill)**

The basic GUEP figure of merit for tracking community energy use is the Adjusted Energy Use per Residential Bill. The (non-adjusted) Energy Use per Residential Bill is defined as the total electrical energy (BTUs) billed each month by utilities to the community's residential and municipal customers (regardless of the number of different billing dates within the month), divided by the number of residential electricity bills issued, plus the total gas energy (BTUs) billed to residential and municipal customers, likewise divided by the number of residential gas bills issued. The results are then adjusted to account for weather differences (heating/cooling demands), yielding the Adjusted Energy Use per Residential Bill.

Weather normalization will be performed using EPA's [Portfolio Manager](#)<sup>5</sup>. Although Portfolio Manager is intended primarily to benchmark the performance of a commercial building or a

---

<sup>5</sup> <http://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager>

portfolio of buildings, its weather-normalization features apply generally to any input set of utility bills.

We recognize that electricity and gas do not account for all residential and municipal usage, the primary omissions being oil and propane used for heating. Unfortunately, measurable energy use is essential to the prize design, and there's no straightforward way to measure the use of these other energy sources with adequate accuracy.

For some of the reasoning behind this basic figure of merit, see the FAQ "[In the basic figure of merit, why normalize the total residential and municipal energy use by the number of residential accounts?](#)"

### **Format of Data Provided by Utilities**

To deliver data for the 24 months of baseline energy use and for the quarterly reports of monthly energy use during the 24 months of Stage 3 (Semifinalist Performance Competition), utilities must use a standard GUEP spreadsheet template (or equivalent CSV), available [here](#)<sup>6 7</sup>.

### **Energy Consumption Reporting – The Performance Dashboard**

The basic figure of merit (Adjusted Energy use per Residential Bill) is simple to understand and uncontroversial to measure. Moreover, it directly measures what individuals and communities can control (their energy consumption), while adjusting for the main national consideration that they can't control (the weather).

That said, the amount of energy consumed from local utilities is far from the whole picture in terms of how energy consumption affects personal, community, and national resources. One goal of the GUEP is to educate energy consumers nationwide about other major consequences of energy consumption over the full fuel cycle.

#### **The Performance Dashboard**

Accordingly, during the Semifinalist Performance Competition (Stage 3), the GUEP website will maintain an energy-consumption performance "dashboard" that tracks the following:

- The energy consumed from utilities locally (i.e., the Adjusted Energy Use per Residential Bill).
- The total energy consumed in the full fuel cycle, i.e., including the energy consumed in the production, transportation, and delivery of the energy to the local utilities.
- The carbon (greenhouse gas) emissions resulting from the full fuel cycle.
- The financial cost of the energy as paid by consumers. This will be estimated from the average cost of energy that utilities report for the 12 months prior to the start of Stage 3 (see "[Data from Local Utilities](#)").

The performance dashboard will be based on the monthly energy-consumption data provided quarterly by utilities (see below). The dashboard will include separate displays for electrical energy, gas energy, and total (gas + electric) energy. Graphical and dynamic, it will allow

---

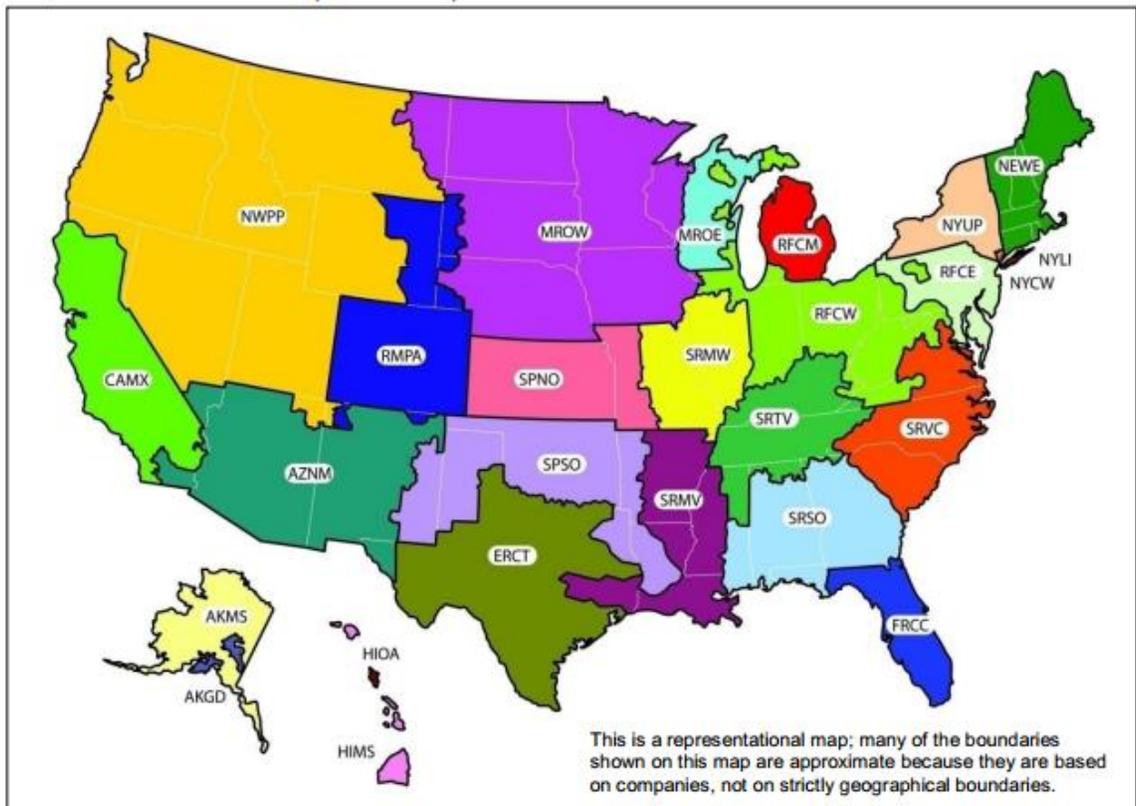
<sup>6</sup> [http://guep.org/docs/20140423\\_GUEP\\_Energy\\_Data\\_Template.xlsx](http://guep.org/docs/20140423_GUEP_Energy_Data_Template.xlsx)

<sup>7</sup> Note that we are still gathering feedback from utilities on the energy data template.

viewers to track the performance of single communities and compare the performance of multiple communities. It will also show the current performance relative to the performance during the baseline (24 months prior to the Stage 3 competition).

### Full Fuel Cycle Estimates of Energy and Emissions

The full fuel cycle energy consumption and greenhouse gas emissions include contributions from energy production, transportation, and delivery. For natural gas, it's appropriate to use national averages. For electricity, fair comparisons are highly-dependent on location; GUEP will use estimates based on the [eGRID](#)<sup>8</sup> location of communities:



To estimate the full fuel cycle energy consumption, we will use the “source energy” approach, which applies a multiplicative factor (“source-site ratio”) to the “site energy” (in our case, site energy is the energy delivered to an account by a utility). An introduction to source energy is provided [here](#)<sup>9</sup>, with additional details [here](#)<sup>10</sup>.

<sup>8</sup> <http://www.epa.gov/cleanenergy/energy-resources/egrid/index.html>

<sup>9</sup> [http://www.energystar.gov/index.cfm?c=evaluate\\_performance.bus\\_benchmark\\_comm\\_bldgs](http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_benchmark_comm_bldgs)

<sup>10</sup> [http://www.energystar.gov/ia/business/evaluate\\_performance/site\\_source.pdf?0667-90cd](http://www.energystar.gov/ia/business/evaluate_performance/site_source.pdf?0667-90cd)

To estimate the full fuel cycle emissions, we will use the emissions data such as provided [here](#)<sup>11</sup>

## Electric and Natural Gas Vehicles

Since the GUEP is based on the residential and municipal use of energy delivered by electric and natural gas utilities, and does not attempt to include transportation uses of energy, widespread adoption of Electric Vehicles (EVs) and Compressed Natural Gas (CNG) vehicles could result in a significant increase in energy consumed from local utilities, and therefore could unfairly penalize the community. In most cases, we believe that the effect would be small, so we do not include a general mechanism to account for adoption of EVs and CNG vehicles.

However, if a community that advances to Stage 4 believes that the effect would be significant, in their Stage 4 Final Report, they may offer supporting evidence and propose a method for taking the effect into account.<sup>12</sup> It will be up to the Judging Panel to accept or reject the proposed method (which, if accepted, would be subject to audit).

## Natural Disasters

Energy use data may be skewed by natural disasters, e.g., earthquakes, extreme weather, failures of local energy production or distribution facilities, etc., GUEP will deal with these on a case by case basis, allowing petitions from affected communities. Petitions should include a description of the disaster, information about any official U.S. or State disaster declarations, and a justified estimate of the effect on energy usage.

Possible remedies include extrapolation from past data, possible removable of a 1-3 month segment of the prize timeframe, etc.

## Competition

### Timeline



For details on dates, please see "[Competition Summary](#)".

<sup>11</sup> [http://www.epa.gov/cleanenergy/documents/eGRID2012V1\\_0\\_year09\\_GHGOutputrates.pdf](http://www.epa.gov/cleanenergy/documents/eGRID2012V1_0_year09_GHGOutputrates.pdf)

<sup>12</sup> For EVs, since the installation of (240V) Level 2 charging stations requires utility involvement, the utility may have relevant information.

## Pre-Launch

The Letter-of-Intent (LOI) stage is now closed. Fifty communities submitted LOIs and supporting information. Participation in the LOI program is not a prerequisite for competing in the GUEP.

## Stage 1 – Applications

To compete, eligible communities (including LOI communities) must submit a standard-form application available [here](#)<sup>13</sup>, covering the following:

- Brief description of the community and brief biographies of key community and municipal leaders. (LOI communities need not include the community description, since that was submitted with the LOI.)
- Brief description, history, and current status of existing community energy-savings programs, if any.
- Description of the process that will be used to develop the energy-savings Program Plan if the Application is accepted. (As part of the planning process, some communities may find it useful to consult the ACEEE [Local Energy Efficiency Self-Scoring Tool](#)<sup>14</sup>.)
- Letters of commitment from municipal leaders, utility officials, and (optionally) other community organizations that will support the effort.
- Combined Communities must also submit the following: (1) Evidence that the communities can work together successfully (ideally by citing previous cooperation); (2) An explanation of how the local governments, utilities, and relevant community organizations will work together on GUEP; and (3) A description of how the purse would be shared or jointly-used, if won.

After a review by Prize Judges, all credible applications from eligible communities will be accepted as Quarterfinalists and invited to compete in Stage 2 by submitting detailed plans.

## Stage 2 – Quarterfinals (Energy Efficiency Program Plans)

### Program Plan

Quarterfinalists prepare and submit a Program Plan based on the following outline:

- 1) Overall Program - Description of the community's long term energy-savings program that will be implemented, including:
  - Leadership and management;
  - Energy-saving methods and technologies;
  - How the program will be staffed and funded;
  - Local government involvement and commitments;
  - Any benefits and incentives available from local utilities via official Energy Efficiency Programs (which are mandated in many states);

---

<sup>13</sup> <http://guep.org/apply>

<sup>14</sup> <http://www.aceee.org/research-report/e13/>

- Involvement of businesses or business-groups (even though their energy use isn't counted);
  - Involvement by citizen groups and major landlords;
  - Involvement of other partnering organizations (including letters of commitment, if available);
  - Any Plan components that target high-return opportunities
  - Any municipal incentives that can be provided via local regulations, zoning, taxation, etc.;
  - How retrofits and other capital improvements will be included in the program (diverse retrofit technology is widely available, but adoption rates historically have been low); this portion of the Program Plan should address
    - : Types of retrofits that will be encouraged;
    - Retrofit financing (preferably with no cash from current property owners);
    - Retrofit business resources;
    - Retrofit marketing and sales strategies;
    - Adoption goals.
- 2) Innovation – What's innovative about the Plan?
  - 3) Potential for Replication – Why might aspects of the Plan become a model for other communities?
  - 4) Likely Future Performance – Why are the energy-savings that will be achieved under the Plan likely to be permanent? And why is the Plan likely to yield additional savings, continually, after the competition?
  - 5) Equitable Access – Discussion of how the Plan will reach diverse aspects of the community - geographic, demographic, economic, functional, etc
  - 6) Education – How will local K-12 schools be involved? What community-wide educational programs are planned?
  - 7) Proposal for how the projected prize purse would be used to promote and implement energy efficiency measures in a way that benefits the community as a whole, including all demographic and economic sectors.

For additional details and examples of what might be included in the Program Plan, see the discussion of the Final Report that will be required from communities that advance to Stage 4 – [“Final Judging”](#). Note that final judging will be based on the information in the Final Report, and not on the extent to which the community stayed with the original Program Plan.

### **Optional Proposal for Funding**

In addition to their proposed Energy Efficiency Program Plan, communities may submit a proposal to receive seed funding from certain GUEP sponsors and partners. Some communities

may be able to obtain seed funding from their local utilities, from local businesses, or from the community itself (e.g., via [Kickstarter](#)).

GUEP sponsors and partners will review the seed funding proposals submitted to them. The GUEP will coordinate with these partners and sponsors to give priority to a diverse set of communities with high-quality Program Plans that are particularly innovative and replicable (e.g., based on an innovative and replicable approach to retrofit financing).

### **Selection of Semifinalists**

Based on the Program Plans and seed-funding proposal reviews, GUEP Prize Judges will select up to [TBD; 50] communities who will be invited to compete as Semifinalists in the Stage 3 performance competition, including up to [TBD; 10] communities who will receive seed funding.

Semifinalist selections will be based primarily on the overall quality of the Program Plans and the extent to which they are innovative and replicable. Selections will also attempt to achieve regional diversity, population-size diversity, and diversity of the proposed energy-savings program approaches.

In order to compete, Semifinalists will have to sign a Master Team Agreement that covers the obligations of GUEP competitors.

Prior to the start of the Semifinalist Performance Competition (Stage 3), the local utilities must report the community's baseline energy use: the total residential energy used and the total municipal energy used monthly for each of the two years prior to the start, covering a total of 24 months prior to the start.

### **Additional Recognition**

The Prize Judges will also identify exceptionally worthy applications that did not make the selection of Semifinalists – i.e., communities that would have been selected as Semifinalists had we been able to run a larger competition, and in particular, communities whose plans aim to achieve large benefits without large costs, and communities with plans that are highly innovative but hard to replicate. The GUEP will recognize and publicize these communities by awarding an Energy Plan Certificate of Merit. Our hope is that some of these communities will still go forward with their Energy Plan.

## **Stage 3 – Semifinalist Performance Competition**

During the 24 month Competition phase, participating utilities will provide the GUEP administrators and local community leaders with monthly aggregate community energy data (see "[Energy Consumption Reporting During Competition Stage 3](#)"), and the community will provide informal progress reports (blog, video, etc.) at least once every two months.

GUEP will publicize the competition status via a generally-available website. The informal progress reports will be posted there, and the monthly energy data will feed the performance dashboard (see "[The Performance Dashboard](#)"). The website will also offer general educational information about energy and energy efficiency, as well as links to relevant resource materials.

## Stage 4 – Finalist Selection, Judging and Awards

### Selection of Finalists

Based on 48 months of data (24 months baseline, 24 months Stage 3), up to [TBD; 10] Finalists will be selected as follows:

All Semifinalists will be ranked by an Overall Energy Score (OES) that quantifies their energy-saving performance relative to the community's baseline as a percentage change. The OES is based on the Adjusted Energy Use per Residential Bill (AEU) averaged over the baseline and Stage 3 Performance Competition periods. In particular, given

$AEU_B = \text{AEU averaged over the 24 months before the start of the Stage 3 Competition}$

and

$AEU_C = \text{AEU averaged over the 24 months of the Stage 3 Competition,}$

the Overall Energy Score (OES) is defined as

$$OES = 100 \times (AEU_B - AEU_C) / AEU_B$$

Decreased energy use will result in a negative OES, and the more negative the better. Note that for some communities the OES may be positive (increased energy use); the more positive the Energy Score, the lower the ranking.

The Energy Prize Team will select the [TBD; 10] Finalists from the top [TBD; 20] Semifinalists (i.e., the [TBD; 20] with the best Energy Scores, with the Energy Score being the primary factor. That is, all other things being equal, the [TBD; 10] top Semifinalists will advance to the Final. However, the Judging Panel may consider other outstanding factors, including extent of innovation, diversity of approach, size and geographic diversity, etc.

### Additional Recognition

The Prize Judges will also identify exceptionally worthy Semifinalists that did not make the Finals. The GUEP will recognize and publicize these communities by awarding an Energy Plan Certificate of Accomplishment.

### Final Judging

All Finalists will have demonstrated exemplary performance via the Overall Energy Score (see above). Selection of the final GUEP winners will be based, not just on performance, but on other considerations as well. Accordingly, the Finalists will be invited to submit a Final Report within 45 days, addressing the following:

#### Competition Performance

- Summary of the energy-savings program, including any short- or long-term changes introduced during the two-year Stage 3 Performance Competition.
- General discussion of how well the energy-savings program has worked to date.

- Results of a certified, third-party audit of the Adjusted Energy Use per Residential Bill data that was provided by utilities. (*Issue: how to arrange and finance this.*)
- Discussion of the role and effectiveness of energy retrofits and other capital improvements.
- Discussion of the implementation and success of any program components that target high-return opportunities, for example:
  - Affordable housing; (It has been reported that public housing typically uses almost 40% more energy per square foot than privately-owned housing.<sup>15</sup>)
  - Residential rentals; (Short-term renters have little incentive to invest in retrofits.)
  - Buildings in historic neighborhoods (neighborhoods that have been formally designated as “historic” by the municipality prior to 2014); Many buildings in such neighborhoods are energy inefficient, and historic-preservation restrictions can impede retrofits.
- Optionally, if energy retrofits or other capital improvements were a particularly important and effective component of the community’s Program Plan, the community may also submit an Energy Retrofit Report that includes –
  - An accounting of the number and types of retrofits and capital improvements that were installed prior to the end of the Semifinal, and a description of how the data were collected.
  - A description and accounting of any formal energy audits that were conducted – examples include the DOE [Home Energy Score](#)<sup>16</sup> and audits according to the [Building Performance Institute](#)<sup>17</sup> or the [Residential Energy Services Network](#) (RESNET)<sup>18</sup>.
  - The total energy savings predicted by such audits for the 12 months following the end of the Semifinal.

#### Innovation

- Discussion of what’s innovative about the energy-savings plan, and how effective the innovations were. Relevant innovations include aspects of the plan that are completely new and different, as well as creative ways of implementing existing approaches. For example, existing approaches for financing energy retrofits have not been very effective, and experts believe that innovative financing could increase adoption rates significantly.

#### Potential for Replication

- Discussion of the likelihood of replication in other communities; here are examples of topics that might be relevant:

---

<sup>15</sup> <http://www.earthtechling.com/2013/08/energy-efficiency-can-help-affordable-housing/>

<sup>16</sup> [http://www1.eere.energy.gov/buildings/residential/hes\\_index.html](http://www1.eere.energy.gov/buildings/residential/hes_index.html)

<sup>17</sup> <http://www.bpi.org/what.aspx>

<sup>18</sup> <http://resnet.us/energy-audit>

- What resources were developed that other communities might use? Such resources might include community-engagement or other systems, websites, documentation, personnel, etc.
- Are there aspects of the energy-savings program that are particularly well-suited for replicated in other communities?
- Lessons learned, and advice for other communities

#### Likely Future Performance

- Discussion of why the energy-savings achieved to date by the program are likely to be permanent, including evidence of widespread behavior change, and discussion of why the energy-savings program is likely to yield additional savings, continually in future years. Here are some examples of topics that might be relevant:
  - How have aspects of the energy-savings program been institutionalized through policies and other means? For example, this discussion could include the results of applying ACEEE's [Local Energy Efficiency Self-Scoring Tool](#)<sup>19</sup> another source that might be useful is [ISO 50001](#)<sup>20</sup>, a standard that provides organizations with a framework for integrating energy performance into their management practices.
  - To what extent has there been “capacity building” to support continued efforts? Examples might include professional development and business development efforts.
  - What systems or approaches are being used to collect, manage, manage, and exploit relevant data? One possible example is the increasingly-common use of [Green Button](#)<sup>21</sup>, an industry-led effort to provide electricity customers with easy access to their usage data via a “Green Button” on their utility’s website. Green Button was developed in response to a [White House call-to-action](#)<sup>22</sup>. [Some electric utilities](#) have already adopted or committed to adopting Green Button.<sup>23</sup> For more information about Green Button, see the [NIST Smart Grid Collaboration Wiki](#)<sup>24</sup>. Another example is EPA’s [Portfolio Manager](#)<sup>25</sup> – an online tool for measuring and tracking the energy consumption of a building or portfolio of buildings. For other possible examples, see the Section “[Energy Efficiency Resources for Communities](#).”

#### Equitable Access; Community and Stakeholder Engagement

- Discussion of how the program was designed to reach diverse aspects of the community - geographic, demographic, economic, functional, etc. – and to what extent it succeeded.

<sup>19</sup> <http://www.aceee.org/research-report/e13/>

<sup>20</sup> [http://www.iso.org/iso/iso\\_50001\\_energy.pdf](http://www.iso.org/iso/iso_50001_energy.pdf)

<sup>21</sup> <http://www.greenbuttondata.org/>

<sup>22</sup> <http://www.whitehouse.gov/blog/2011/09/15/modeling-green-energy-challenge-after-blue-button>

<sup>23</sup> <http://www.greenbuttondata.org/greenadopt.html>

<sup>24</sup> <http://collaborate.nist.gov/twiki-sggrid/bin/view/SmartGrid/GreenButtonInitiative>

<sup>25</sup> <http://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager>

- Summary of how the community at large was engaged (including material used to engage) and evidence of how well it was engaged (e.g., how many people took a documented action a part of the program?).
- Summary of the role of the utilities (all electric and gas utilities serving the community) and evidence of how well they were engaged.
- Summary of the role of the municipal government, and evidence of how it worked together with the community).

Education

- Summary of how the local K-12 school system was engaged (including educational materials), and evidence of how well it was engaged.
- Summary of any community-wide educational programs.

The Judging Panel will review the Final Reports (and optional Energy Retrofit Reports), and score them in five categories, with a maximum score of 100:

| <b>Category</b>  | <b>Points</b> |
|--|---------------|
| Competition Performance                                | 25            |
| Innovation   | 15            |
| Potential for Replication                              | 15            |
| Likely Future Performance                              | 10            |
| Equitable Access, Community and Stakeholder Engagement | 10            |
| Education  | 10            |
| Overall quality and success                            | 15            |

The highest-ranking community will be awarded first place, with the requirement that the purse benefit the entire community at large in accordance with spending proposed in the community’s Stage 2 Program Plan. Second and third place will also be awarded; these additional winners will receive special recognition and additional benefits, which may include cash purses.

All finalists will be subject to audits by the GUEP, e.g. to verify the performance data, to verify the enumeration of the utilities’ municipal customers, etc.

**The Judging Panel**

The GUEP Judging Panel will comprise distinguished, reputable, well-known individuals with diverse backgrounds in business, NGOs, education, and government. Collectively, the Judging Panel will have expertise in the technical, educational, business, political, and regulatory aspects

of energy efficiency. It will also have expertise in existing community-wide energy-efficiency programs at both the city and state levels.

The Judges are likely to be individuals with many demands on their time, so GUEP will support them with a Judges' Advisory Council. The Council will respond to questions; provide summaries, perhaps provide recommendations, and generally be helpful based on detailed knowledge of the GUEP, the competitors, and the Final Reports.

## Georgetown University Engagement

In addition to managing the GUEP, Georgetown University will support the competitors by offering webinars at least quarterly, skills workshops, templates for news releases and other publications, and similar services.

Georgetown University is collaborating with partners to provide each community with a liaison who can help with the development and implementation of their energy efficiency plan. Community Liaisons will work closely with Georgetown University students to provide information and direct assistance to communities, while working to connect them with the full range of community resources and technical assistance that GUEP partners have available.

In addition Georgetown University students will work directly on the prize by:

- Spending time in a community, providing on-the-ground assistance and participating in experiential learning opportunities;
- Working with sponsors and partners to ensure that their resources and engagement are enhancing the educational, energy efficiency, and innovation objectives of the Prize;
- Serving as members of the Judge's Advisory Council (see "[The Judging Panel](#)"), and being represented on the final Judges Panel.

At the start of the two-year Stage 3 competition and at the end of the first year, we will host a forum at the University for GUEP competitors – an opportunity for them to exchange ideas, hear from experts and opinion leaders, and present progress. It will also provide an opportunity for visits with their House and Senate Members, as well as with DOE, EPA, and other relevant Executive branch offices.

In keeping with Georgetown University's role as an educational institution, GUEP competitors are required to involve their local school system, and the effectiveness of that involvement is one of the criteria for selecting winners. As mentioned earlier, Final Reports must address "how the local school system was engaged (including educational materials) and evidence of how well it was engaged.

To make it easier for communities to address these educational requirements, we are looking into coordination with the [American Home Energy Education Challenge](#)<sup>26</sup> (AHEEC), a competition sponsored by DOE in partnership with the [National Science Teachers Association](#), in which students work to reduce the energy consumption of their home.

---

<sup>26</sup> <http://www.homeenergychallenge.org>

Likewise, we would like to coordinate with two organizations that specifically address energy education (and that support the AHEEC): [EnergyTeachers.org](http://EnergyTeachers.org) and the [National Energy Education Development Project](http://National Energy Education Development Project)<sup>27</sup> (NEED).

Long term, data from the GUEP will provide a research opportunity – for example, educators who are studying what does and doesn't work in energy education. All such shared data will be aggregate data that does not contain private information.

## Energy Efficiency Resources for Communities

One goal of the GUEP is to stimulate replicable innovations in community energy efficiency, but this does not mean that competing communities should start from scratch. Communities (together with their local governments and utilities) can and should learn from and, as appropriate, use the many resources that are available from governments, non-profits, and commercial companies.

We will publicize these and other resources in a [section of the GUEP website](#)<sup>28</sup>. We encourage their use, but there's no requirement to do so. Examples include:

- [DOE's Better Buildings Neighborhood Program](#)<sup>29</sup> - a collection of information developed for and by state and local governments describing successful strategies for designing and implementing residential retrofit programs. (DOE is also launching a peer sharing network and Solution Center on April 30, 2013, to which all GUEP competitors will be invited.)
- DOE's [Home Energy Score](#)<sup>30</sup> – a quick and easy tool that allows qualified assessors to
  - Generate clear, credible home energy assessments at a reasonable cost;
  - Recommend customized upgrades and other cost saving tips; and,
  - Help consumers compare the energy use of different homes;
- Various DOE guides, including
  - [Advanced Energy Retrofit Guide \(AERG\) for K-12 Schools](#)<sup>31</sup>
  - [Advanced Energy Retrofit Guide \(AERG\) for Office Buildings](#)<sup>32</sup>
  - [Community Strategic Energy Planning Guide](#)<sup>33</sup>
  - [Strategic Energy Planning Guide for the Public Sector](#)<sup>34</sup>

---

<sup>27</sup> <http://www.need.org/>

<sup>28</sup> <http://guep.org/resources-for-competitors>

<sup>29</sup> <http://www1.eere.energy.gov/buildings/betterbuildings/neighborhoods/>

<sup>30</sup> [http://www1.eere.energy.gov/buildings/residential/hes\\_index.html](http://www1.eere.energy.gov/buildings/residential/hes_index.html)

<sup>31</sup> <https://buildingdata.energy.gov/cbrd/resource/17>

<sup>32</sup> <https://buildingdata.energy.gov/cbrd/resource/19>

<sup>33</sup> [http://www1.eere.energy.gov/wip/solutioncenter/strategic\\_energy\\_planning\\_guide.html](http://www1.eere.energy.gov/wip/solutioncenter/strategic_energy_planning_guide.html)

<sup>34</sup> <http://www4.eere.energy.gov/alliance/activities/public-sector-teams/community-strategic-energy-planning>

- EPA’s [Portfolio Manager](#)<sup>35</sup> – an online tool for measuring and tracking the energy consumption of a building or portfolio of buildings. In the case of GUEP, this is applicable to municipal buildings.
- HUD’s [Guide to Energy-Efficient and Healthy Homes](#) – a consumer guide describing how to improve a home’s energy efficiency and indoor environmental quality.
- [ICLEI - Local Governments for Sustainability](#)<sup>36</sup> – an association of cities and local governments dedicated to sustainable development
- Sources for energy education curricula, such as [EnergyTeachers.org](#) and the [National Energy Education Development Project](#)<sup>37</sup> (NEED)
- Energy saving cloud services and apps (We believe that the Internet, the cloud, social media, GPS, and smart-phones have come together in way that can provide new technology for crowd-sourced energy efficiency among a community of users). Some emerging examples:
  - DOE’s [“Apps for Energy” competition](#)<sup>38</sup>;
  - City of [Chicago apps competition](#)<sup>39</sup>;
  - The DOE-Livermore-Laboratory [Home Energy Saver](#)<sup>40</sup>;
  - EPA’s [Energy Star Portfolio Manager](#)<sup>41</sup>;
  - The Delaware Electric Co-Op [“Beat the Peak](#)<sup>42”</sup> indicator light (for communicating load information to utility customers
- Commercial companies that help consumers to understand, track, and reduce their energy consumption; examples include:
  - [Opower – partners with utilities to provide household-specific energy-efficiency information and advice](#)
  - [EcoFactor](#)<sup>43</sup> - works with utilities and homeowners to reduce energy consumption via internet-connected programmable thermostats
  - [C3 Energy](#)<sup>44</sup> - offers software solutions to help organizations understand, optimize, and report on their energy use.
  - [Itron](#)<sup>45</sup> – provides utilities with energy-management products, services, and analyses

---

<sup>35</sup> <http://www.energystar.gov/buildings/facility-owners-and-managers/existing-buildings/use-portfolio-manager>

<sup>36</sup> <http://www.iclei.org>

<sup>37</sup> <http://www.need.org/>

<sup>38</sup> <http://appsforenergy.challenge.gov/>

<sup>39</sup> <http://www.appsformetrochicago.org/>

<sup>40</sup> <http://homeenergysaver.lbl.gov/consumer/>

<sup>41</sup> [http://www.energystar.gov/index.cfm?c=evaluate\\_performance.bus\\_portfoliomanager](http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager)

<sup>42</sup> <http://www.delaware.coop/beat-peak/indicator-light>

<sup>43</sup> <http://www.ecofactor.com>

<sup>44</sup> [www.c3energy.com](http://www.c3energy.com)

<sup>45</sup> <https://www.itron.com/>

- [Enterprise Community Investment](#)<sup>46</sup> - a for-profit company dedicated to affordable housing, with a specific program for [Green Communities](#)<sup>47</sup>.
- [AmericanEfficient](#)<sup>48</sup>
- Non-profits with a focus on energy-efficiency; examples include:
  - [The Joyce Foundation](#)<sup>49</sup> – focused on improving the quality of life in the Great Lakes region, including community energy-efficiency.
  - [SmartPower](#)<sup>50</sup> - a non-profit marketing firm dedicated to promoting clean, renewable energy and energy efficiency.
  - [Vermont Energy Investment Corporation](#)<sup>51</sup> - a nonprofit dedicated to reducing the economic and environmental costs of energy consumption, VEIC designs programs that reduce energy use through energy efficiency and renewable energy. VEIC is member of DOE's Technical Assistance Program team.
  - [The Home Performance Resource Center](#)<sup>52</sup> - a national not-for-profit organization formed to conduct research and education concerning the field of home energy performance
  - [The Energy Foundation](#)<sup>53</sup> – awards grants to promote the transition to a sustainable energy future by advancing energy efficiency and renewable energy
  - [Enterprise Community Partners](#)<sup>54</sup> – a non-profit associated with Enterprise Community Investment (see above), with a particular focus on financing
  - [Living Cities](#)<sup>55</sup> – a collaboration of the world's largest foundations and financial institutions, dedicated to improving low-income communities
  - [JPB Foundation](#)<sup>56</sup> – focused on improving the quality of life in low-income communities, including environmental sustainability
- Retrofit technologies, installation examples, and services (e.g., see [DOE's Building America program Solution Center](#)<sup>57</sup>)
- Retrofit financing models
- Other innovative financing mechanisms (e.g., [Kickstarter](#))<sup>58</sup>
- Certified energy audits
- Alternative energy sources (solar, wind, geothermal, etc.)

---

<sup>46</sup> <http://www.enterprisecommunity.com/>

<sup>47</sup> <http://www.enterprisecommunity.com/solutions-and-innovation/enterprise-green-communities>

<sup>48</sup> <http://www.americanefficient.com/>

<sup>49</sup> <http://www.joycefdn.org/>

<sup>50</sup> <http://www.smartpower.org/>

<sup>51</sup> <http://www.veic.org>

<sup>52</sup> <http://www.hprcenter.org/about-us>

<sup>53</sup> <http://www.ef.org>

<sup>54</sup> <http://www.enterprisecommunity.com/>

<sup>55</sup> <http://www.livingcities.org/>

<sup>56</sup> <http://jpbfoundation.org/>

<sup>57</sup> <http://basc.pnnl.gov>

<sup>58</sup> <http://www.kickstarter.com/>

- Long-term energy-saving devices (appliances, lights, smart thermostats, etc.)
- [ISO 50001](#)

## FAQs

Although we have reasons for the choices we've made, we acknowledge that a more expansive competition could lead to greater change. But we can't do it all – complexity goes way up and with it goes manageability, gaming issues, resource issues, judging controversies, etc. Keeping the competition's long term goal in mind (community energy efficiency), we think that the restrictions we've made are a reasonable balance between complexity and expansiveness.

### **Why restrict the competition to municipalities with populations between 5,000 and 250,000?**

First, note that this definition of eligible communities includes 65% of the U.S. population.

Regarding cities with populations greater than 250,000, many such cities already have long-term energy and environment programs (with major funding and staff), which would give them an unfair advantage. It might be possible to create a fair competition, but that would complicate the prize rules and administration. Large size disparities between competing communities could easily lead to unforeseen advantages that spoil the competition. Furthermore, the need is greater in smaller communities, which typically do not have such aggressive energy and environment programs (with major funding and staff).

At the other extreme, some towns with very small populations could easily achieve high participation rates, giving them an unsurmountable advantage; hence the lower limit of 5,000. Note, however, that GUEP will also consider applications from “combined communities” – communities with common borders that together have a total population greater than 5,000 (see [“Eligible Communities”](#)).

### **In the basic figure of merit, why normalize the total residential and municipal energy use by the number of residential accounts?**

To enable fair comparisons, it's essential to adjust the total gas and electric energy use to account for differences in community size. One obvious approach (indeed, our initial approach) is to compute the total energy use per capita. But this has two major problems. One is that community populations can change significantly during the two-year competition period, but there's no easy and authoritative way to measure that.

The other problem is fuel-switching. For example, if there's a trend to switch from heating via fuel oil to heating via gas or electricity, the total gas and electric energy per capita would increase, thereby penalizing the community unfairly. (Indeed, depending on the situation, such fuel-switching can increase overall energy efficiency and decrease greenhouse gas emissions, so it would be particularly pernicious for the GUEP to penalize such a trend.)

To avoid these problems, we will normalize by the number of residential accounts. This has several advantages:

- It avoids penalizing communities for switching to gas or electricity. (The total energy use increases, but so does the number of residential accounts.)

- It avoids penalizing (or rewarding!) communities for changes in population size. (The number of residential accounts is highly correlated with population size.)
- The number of residential utility accounts is easily measured as it changes over time.

Note that we will normalize both residential and municipal energy use by the number of residential accounts (rather than normalizing residential use by the number of residential accounts, and normalizing municipal use by the number of municipal accounts). This makes sense because the main purpose of the municipal government is to serve the residents. It's also simpler.

### **Why not adjust for inherent advantages or disadvantages that some communities may have? ?**

Some communities may have a “head start” – inherent advantages such as existing energy efficiency programs with existing municipal staff, smart meters, and access to State funds for clean energy deployment<sup>59</sup>. Why not take this into account?

On the other hand, communities that don't have such a “head start” may have a different inherent advantage: the availability of “low hanging fruit” that “head start” communities have already picked. Why not take this into account?

So it's unclear whether it's more advantageous to be a “head start” community or a “fresh start” community.

It may be true that “fresh start” communities have an advantage with respect to reducing the Adjusted Energy Use per Residential Bill. On the other hand, an important Final Judging criterion is the likelihood of continuing change, not just two years of change. And in this respect “head start” communities with well-established energy-efficiency programs may have an advantage.

We believe that possible advantages or disadvantages of “head start” vs., “fresh start” will balance. Besides, it would be complicated, difficult, and controversial to specify entrance or judging criteria that address this issue.

That said, the selection of semifinalists for Stage 3 includes a subjective component, and the GUEP Judging Panel could choose to exclude communities that have too much of a head start (and in fact really don't need GUEP) and likewise exclude communities that have achieved dramatic improvements in energy-efficiency but haven't implemented a long-term energy-efficiency program.

### **Why not adjust for economic differences?**

Since major economic changes can lead to reduced or increased energy use independent of community efforts, and since rich communities have more resources than poor communities, we considered having the Adjusted Energy Use per Residential Bill include an adjustment based on economic considerations.

This would have been essential if industrial and commercial energy use were to be included (vs. just residential and municipal). For example, the opening or closing of a major factory could

<sup>59</sup> <http://www.nrel.gov/docs/fy11osti/49340.pdf>

have significant effects. Indeed, this is one of the reasons for excluding industrial and commercial energy use.

Even with the restriction to residential and municipal energy use, one can argue that an economic adjustment should still be made. For example, in the absence of creative financing models, wealthy communities may have an advantage in being able to afford more retrofits and energy-saving appliance replacements.

But there are counterarguments; for example, wealthy communities may have the means to purchase retrofits, but they also generally buy newer, more efficient houses to begin with. On the other hand, GUEP challenges communities to develop creative financing models for retrofits that do not require cash from residents, and we want to retain the incentive to do so. Similarly, we hope that lower-income communities will be creative in the cost or financing of other energy saving measures. For these reasons, and also because it would add considerable complexity to the GUEP rules, we chose not to adjust for economic differences.

**The GUEP eligibility requirements will exclude many communities from competing. Shouldn't it be easier for communities to enter?**

We do understand (and regret) that the not all communities will be eligible, but the eligibility requirements are needed to make the GUEP measureable, manageable, and fair. Based on our analysis of population and utility data, we believe that several thousand communities will be able to meet the eligibility requirements, which should lead to a robust and productive competition.

**The prize is awarded based on a combination of objective figures of merit and subjective judging. Why not award the prize entirely based on objective figures of merit?**

We want the GUEP to lead to continuing improvements after the competition, and to replication in other communities. These aspects require subjective judgments following the Competition Stage – to develop an objective figure of merit would be difficult and controversial. Note that we do specify the judging criteria and the quantitative weights that will be applied to the judged score for each criterion.

**Why restrict the energy consumption to residential and municipal? Why not commercial, industrial, transportation, etc.**

We omitted transportation because it is too difficult to measure in a simple way (unlike energy from utilities).

We chose residential plus municipal because our focus is on communities, including public schools, and we believe that long-term energy-saving actions will require the cooperation of community citizens and community-selected municipal leaders. Municipal energy use is included in the scoring to provide an incentive for the municipality and the community to work together, and providing seed funding will facilitate that work.

Another reason is to keep the playing field relatively level. Including commercial and industrial energy uses complicates things because these sectors are more likely to be responsive to economic and business forces outside of the community (market conditions, ownership, etc.). In addition, including these sectors could give certain communities an overwhelming advantage

(since committed commercial and industrial consumers can produce relatively large increases in efficiency).

Finally, excluding these sectors reduces the problem of economic normalization (what if a big factory opens or closes?; likewise large commercial consumers).

Of course we hope that the community efforts spread to these other sectors, and it seems reasonable that to some extent this will happen – thus, in some way we are affecting commercial/industrial usage even though we exclude them from the competition.

### **Why restrict the measurement of energy consumption to electricity and gas?**

We recognize that electricity and gas do not account for all residential and municipal use, the primary omission being oil and propane used for heating. Unfortunately, measurable energy use is essential to the prize design, and there's no straightforward way to measure the use of these other energy sources uniformly and with adequate accuracy.

### **Why doesn't the basic figure of merit include full fuel cycle energy consumption and carbon emissions?**

We chose the basic figure of merit (Adjusted Energy Use per Residential Bill) because it's simple to explain, it's uncontroversial to measure, and it directly addresses what individuals and communities can control: their energy consumption. However, the comprehensive performance dashboard will include and give equal prominence to the estimates of full fuel cycle energy consumption and carbon emissions.

### **Why doesn't GUEP generally favor renewable over non-renewable energy sources?**

Renewable doesn't mean free or unlimited. GUEP is focused on a single goal – energy efficiency – and does not attempt to value one source of energy over another. We deliberately avoid issues that arguably make one energy source “better” than another, because such arguments depend on one's viewpoint (e.g., environmental vs. national security).

An exception to this is the possible local installation of solar or wind power sources (e.g., solar panels on residential rooftops). Since we make no attempt to account for these local energy sources, they would be advantageous since they would presumably decrease the demand from utilities.

### **What happens if the municipal or community leadership changes during the competition?**

We recognize that leadership changes are likely during the course of the competition, but we consider that to be something that the community has to deal with.

## **Acknowledgements**

A large number of individuals and organizations have contributed to the development of these Competition Guidelines. A credible and effective GUEP could not exist without their generous help. We are immensely grateful.

