
HACKENSACK UNIVERSITY MEDICAL CENTER — no.1770710

# Partner for Change - 2016: Energy

## Introduction

The generation of energy from fossil fuels emits a range of different pollutants, in addition to being the largest contributor to greenhouse gas emissions. Air pollutants from energy sources can cause asthma, respiratory disease and other ailments in the community. Please use this section of the application to enter your energy data and report on energy conservation successes. This section of the application is tied to the Climate section, due to energy's contribution to an organization's carbon footprint.

## Energy Use Demographics

**1.** Please enter the facility's **Baseline Year** for Energy data:

2013

**Baseline Year** is the year the facility began actively tracking energy and utility use or initiated a water conservation program. If you provide this historic data, it is worth additional points—so PGH can get a better sense of the facility's organizational progress over time and assess performance metrics.

PGH uses Energy Star Portfolio Manager's definition of **Gross Floor Area**. If the facility uses Portfolio Manager, you can cut and paste the value for **Gross Floor Area** into the application.

Please enter the facility's **Gross Floor Area in Square Feet** below:

| Baseline Year Sq Ft | Previous Year Sq Ft | Current Year Sq Ft |
|---|---|---|
| **2.** 2504408 | **3.** 2504408 | **4.** 2504408 |
| Enter same value for all three **Gross Floor Area** questions if the facility's **Gross Floor Area** has remained unchanged. These values will be pre-populated to the Water page. | | |

## Energy Usage

**New in 2016** Practice Greenhealth requests that all energy data be provided for a 12-month **CALENDAR YEAR**, meaning we are seeking data from January 1, 2015 through December 31, 2015 for Current Year. Baseline and Previous Year data will also need to be updated. The reason for this transition is that in order to appropriately compare energy performance, Practice Greenhealth has to utilize weather normalization. To use weather normalization appropriately, there is a need for data from the **same 12-month period** (e.g. we need to see energy use in an especially cold February

for all sites for an accurate comparison--not just those who typically utilize a calendar year for reporting.)

Please provide details on energy usage at your facility.

**5.** Do you have an **onsite laundry?**

- ○ Yes
- ◉ No

**6.** Please indicate the number of **MRI machines** at your facility:

4

Please indicate the facility's energy use in **Table A** below. Every applicant is required to complete the CURRENT YEAR USAGE (2015) column, even if this is first year completing an application.

We also need the facility's baseline and previous year (2014) data. If this is your first year of tracking energy data, you should enter your 2015 data in both the baseline and current year columns and leave previous year blank. If last year (2014) was the facility's baseline year, enter it for both previous year and baseline year below. **If you do not use a particular energy type, please leave it blank. Do not enter zeros.**

PGH would like your facility to properly identify **energy used to power parking lots/structures** (lighting, HVAC, etc) and **remove this data** from your entries for energy use in Table A below. The first row of data in Table A should not include parking kWh.

**7.** Do you **submeter** your **parking** lots/structures?

- ○ Yes
- ◉ No

**NEW IN 2016** Facilities should provide **calendar year data** for energy use (January 1st- December 31st).

**Table A. Fossil Fuel-Based Energy Use** Please check that the data for any given fuel type (electricity, natural gas, etc) is the same order of magnitude for all three years, and check the units for each energy type for each year. It is best to include any given fuel type for all three years if appropriate.

| Energy Categories | Baseline Year Usage | Units (baseline) | Previous Year Usage | Units (previous) | Current Year Usage | Units (current) |
|---|---|---|---|---|---|---|
| **Electricity (fossil fuel)** | 8. 74638653 | 9. kWh | 10. 73982840 | 11. kWh | 12. 75150045 | 13. kWh |
| **Natural Gas** | 14. 3125598 | 15. Therms | 16. 3257360 | 17. Therms | 18. 3074980 | 19. Therms |
| **Fuel Oil (#2)** | 20. | 21. Select an option ... | 22. | 23. Select an option ... | 24. | 25. Select an option ... |
| **Steam** | 26. | 27. Select an option ... | 28. | 29. 1000 Pounds | 30. | 31. Select an option ... |

| | | | | | | |
|---|---|---|---|---|---|---|
| **Chilled Water** | **32.** | **33.** Select an option ... | **34.** | **35.** Ton-Hour | **36.** | **37.** Select an option ... |
| **Purchased Hot Water** | **38.** | **39.** Select an option ... | **40.** | **41.** Select an option ... | **42.** | **43.** Select an option ... |
| **Diesel** | **44.** 0 | **45.** Diesel-U.S. Gallons | **46.** 12747 | **47.** Diesel-U.S. Gallons | **48.** 3,184 | **49.** Diesel-U.S. Gallons |
| **50.** Enter Other fossil fuel type | **51.** | **52.** | **53.** | **54.** | **55.** | **56.** |
| **57.** Enter Other fossil fuel type | **58.** | **59.** | **60.** | **61.** | **62.** | **63.** |

**64.** Did you enter data for calendar year (Jan 1, 2015-Dec 31, 2015)?

- (•) Yes
- ( ) No

**64.a** Did you ensure baseline and previous year data was updated to calendar year as well?

- (•) Yes
- ( ) No

Otherwise the facility **will not get credit for the energy reduction metric**--as it needs baseline and previous year data to be in same 12 month period as current year.

**65.** Please describe any barriers or challenges to providing data in calendar year format:

No barriers

*Please be specific. If your facility is unable to access December data until late February, please try to be as detailed as possible about when your facility would be able to have access to calendar year data.

**66.** Does the facility generate or purchase **renewable energy**?

No

**67.** Has the facility put a **combined heat and power/cogeneration project** into place in the last 5 years?

- ( ) Yes
- (•) No

**Current Energy Costs**

| Type | Total Cost ($) Current |
|---|---|
| **Conventional Energy Categories** | |
| Electricity (fossil fuel) | **68.** 8968757 |
| Natural Gas | **69.** 1981098 |
| Fuel Oil | **70.** |
| Steam | **71.** |
| Chilled Water | **72.** |
| Purchased Hot Water | **73.** |
| Diesel | **74.** 6877 |
| **Renewable Energy Categories** | |
| **75.** Type 1: Generated On-Site — Select an option... | **76.** |
| **77.** Type 2: Generated Off-Site — Select an option... | **78.** |
| **79.** Type 3: Generated Off-Site — Select an option... | **80.** |
| **81.** Type 4: Purchased **Renewable Energy**/ **Renewable Energy** Credits — Select an option... | **82.** |
| **Total Energy Costs** | **83.** 10956732 |

This table **auto-calculates the facility's Energy Use Portfolio** (percent energy usage and cost by energy type) and is based on values entered in Table A (and Table B if applicable).

**Table C. Current Energy Use Portfolio**

| Category | kBtus (Baseline) | kBtus (Previous) | kBtus (Current) | Percent of Total Usage (Current) | Percent of Total Cost (Current) |
|---|---|---|---|---|---|
| **Conventional Electricity (Fossil Fuel or Nuclear)** | **84.** 254741723 | **94.** 252503433 | **104.** 256487104 | **105.** 45.4 | **124.** 81.9 |

| | | | | | |
|---|---|---|---|---|---|
| **Natural Gas** | **85.** 312559800 | **95.** 325736000 | **106.** 307498000 | **107.** 54.5 | **125.** 18.1 |
| **Fuel Oil** | **86.** 0 | **96.** 0 | **108.** 0 | **109.** 0 | **126.** 0 |
| **Steam** | **87.** 0 | **97.** 0 | **110.** 0 | **111.** 0 | **127.** 0 |
| **Chilled Water** | **88.** 0 | **98.** 0 | **112.** 0 | **113.** 0 | **128.** 0 |
| **Purchased Hot Water** | **89.** 0 | **99.** 0 | **114.** 0 | **115.** 0 | **129.** 0 |
| **Diesel** | **90.** 0 | **100.** 1759086 | **116.** 439392 | **117.** 0.1 | **130.** 0.1 |
| **Onsite Renewable Energy** | **91.** 0 | **101.** 0 | **118.** 0 | **119.** 0 | **131.** 0 |
| **Offsite Renewable Energy** | **92.** 0 | **102.** 0 | **120.** 0 | **121.** 0 | **132.** 0 |
| **Total** | **93.** 567301523 | **103.** 579998519 | **122.** 564424496 | **123.** 100.0 | **133.** 100.1 |

**134.** Based on this data, the below % of your facility's energy portfolio is from renewable sources.

0

### Energy Performance Metrics : Energy Use Intensity (EUI)

**Table D** auto-calculates and summarizes your **energy performance metrics** based on values entered in **Table A** above. If your EUI (kBtus/sq ft) is **less than 75 or greater than 480**, please review your energy data and **gross floor area** for errors. The median data from 2015 award winners was **237 kBtus/sq ft.**

**Table D. Energy Use Intensity (EUI)** Note: EUI values should be the same order of magnitude for all three years. Percent change from baseline should usually fall between 30-150%. Percent change from previous year will generally fall in the range of 20-120%. If this is not true of your data in Table D, please review your energy data in Table A and **gross floor area** above).

| Current Year kBtus | Baseline Year kBtus | Previous Year kBtus | % Change from Baseline kBtus | % Change from Previous kBtus |
|---|---|---|---|---|
| **135.** 564424496 | **136.** 567301523 | **137.** 579998519 | **138.** 0.5 | **139.** 2.7 |
| **Current Year EUI** | **Baseline Year EUI** | **Previous Year EUI** | **% Change from Baseline EUI** | **% Change from Previous EUI** |
| | | | | |

| 140. | 141. | 142. | 143. | 144. |
|---|---|---|---|---|
| 225.4 | 226.5 | 231.6 | 0.5 | 2.7 |

**145.** Is your facility participating in the Healthier Hospitals Leaner Energy Challenge?

- (•) Yes
- ( ) No

**145.a** Please indicate which challenge level your organization is striving for?

- (•) 3% reduction
- ( ) 5% reduction
- ( ) 10% reduction

**146.** Does the facility have an energy manager?

- (•) Yes
- ( ) No

**147.** Does the facility use **Energy Star Portfolio Manager**?

- (•) Yes
- ( ) No

**147.a** Has the facility **shared access to its energy data through Portfolio Manager** with Practice Greenhealth (through the Healthier Hospitals program)?

- ( ) Yes
- (•) No

**147.a.a** Are you willing to **share read-only access to your Portfolio Manager account** with Practice Greenhealth so your member engagement liaison can provide customized support on energy performance and metrics?

- (•) Yes
- ( ) No

If you respond Yes to this question, Christopher Bodkin from the Practice Greenhealth Sector Performance team will contact you to follow-up on how to **share read-only access to Portfolio Manager**.

**147.b** Has your facility benchmarked your hospital using **EnergyStar's Portfolio Manager**?

- (•) Yes
- ( ) No

**147.b.a** Please indicate most recent Energy Star score:

35

**147.b.b** Please indicate the facility's **Site EUI** for 2015 according to Portfolio Manager:

261

**147.b.c** Please indicate the facility's **Weather-Normalized Site EUI** for 2015 according to Portfolio Manager:

257

**148.** Does the facility have a **written plan to reduce energy use** over time with timelines and goals?

- (•) Yes
- ( ) No

**148.a** Please describe:

In 2015 we laid the ground work for an energy program at the main campus of HackensackUMC. Attached is a powerpoint that lays out some of the priorities for moving forward and some of the work that was done in 2015.

**148.b** Please attach:

**HUMC Energy Savings Plan 2015 2016.pdf**

Plan must be attached to get points for this item.

**148.c** Please indicate who is accountable for the plan:

Gotham360

**148.d** Name:

Jennifer Kearney

**148.e** Title:

Executive Partner

**148.f** Email:

Jkearney@gotham360.com

**148.g** Phone:

(917) 338-1023 (office)

**149.** Has the facility developed a **Strategic Energy Master Plan (SEMP)**?

- ○ Yes
- ◉ No

**150.** Has the facility conducted a **baseline energy audit** for the institution in the past five years?

- ◉ Yes
- ○ No

**150.a** ASHRAE Level I performed?

- ○ Yes
- ◉ No

**150.b** ASHRAE Level II

- ◉ Yes
- ○ No

**150.b.a** Name of Firm:

DLB Engineering and Concord Engineering

**150.b.b** Date audit was completed:

2012

**150.c** ASHRAE Level III

- ◉ Yes
- ○ No

**150.c.a** Name of Firm:

DLB Engineering and Concord Engineering

**150.c.b** Date audit was completed:

2012

**151.** Has the facility engaged a **retrocommissioning firm** to **optimize building performance**?

- ○ Yes
- ◉ No

**152.** Does the facility **utilize submeters** to better monitor energy efficiency opportunities?

- ○ Yes
- ◉ No

**153.** Has the facility **collaborated** with the **Information Technology (IT) Department** to integrate energy efficiency measures?

- ◉ Yes
- ○ No

**153.a** Please describe this work:

EPEAT Policy, Energy Star Monitors/Hardrives, Server Virtualization

**154.** Does the facility have an **onsite data center** that requires a constant power load of **75 kW** or more?

- ◉ Yes
- ○ No

## EPEAT

**155.** Does the facility **purchase energy-efficient equipment** that is **EnergyStar labeled?**

Yes

Provide the Top 3 **Energy Star product purchases** by dollars spent last year (note: larger projects are requested in the "Energy Efficiency Projects" section below).

**155.a** Product 1:

(309) HP 800 G1 Mini Desktops @ $700 ea. = $216,300

**155.b** Product 2:

(130) HP 840 Laptops @ $900 ea. = $117,000

**155.c** Product 3:

(80) Microsoft Surface 3 @ $625 ea. = $50,000

**156.** When an **EnergyStar** label is not available for a given technology, does the hospital consider **energy performance** as a part of cost of operation for the product?

- (•) Yes
- ( ) No

**156.a** Please provide example and description:

When we were purchasing anesthesia machines our old machines required multiple outlets due to the amount of energy required. The MindRay machines allowed us to cut down on a number of outlets because it is only 1 plug instead of multiple. This along with the fact that machine warm up is much quicker we decided there would be energy savings.

## Energy Efficiency Project Data

Please list the biggest **energy-saving projects** implemented in 2015 in Table E.

**Table E. Energy Efficiency Project Data**

| Project Description | Project Category | Energy Saved/Year | Units | kBtus Saved | Dollar Savings |
|---|---|---|---|---|---|
| **157.** 1500 Ton Chiller/connecting to Research Building | **158.** Cooling | **159.** 2,800,000 | **160.** kWh | **161.** 9556400 | **162.** 580000 |
| **163.** AHU Cycling | **164.** Cooling | **165.** 326505 | **166.** kWh | **167.** 1114362 | **168.** 39181 |
| **169.** 90 Psi Steam Header Pressure Set point | **170.** Heating | **171.** 267000 | **172.** Therms | **173.** 26700000 | **174.** 170000 |
| **175.** SAT Reset Schedule | **176.** Cooling | **177.** 423863 | **178.** Ton-Hour | **179.** 5086356 | **180.** 34069 |
| **181.** Removal of 147 printers | **182.** Information Technology | **183.** 230,496 | **184.** kWh | **185.** 786683 | **186.** 13,917.96 |
| **Totals** | | | | **187.** 43243801 | **188.** 837168 |

Please describe any other successes or innovations in the energy program or projects at your facility that you would like to share in the space provided

below. Please feel free to provide commentary and/or attach a file.

**189.** Success 1: Please describe

We brought on Gotham360 as our energy management firm. We put together an energy plan with them that consisted of the following steps in 2015: Standard Operating Procedures were updated for the boiler room with training provided by Utilivisor. By having Gotham as our energy consultant we have 3rd party verification of all our utility information, verification of vendor reports (i.e. Siemens and what energy projects they are working on), standardized training program for all plant operators, a 3rd party handling all outside surveys (lighting, steam trap etc) and insight into industry best practices. Example of progress report attached.

**190.** Please attach any additional documentation (optional):

**_HUMC 07.07.2015.pdf**

**191.** Success 2: Please describe

in 2015 we were able to secure capital money to upgrade our Building Automation System in the Medical Plaza (10 floor outpatient services). The bid was awarded to Siemens and as part of the performance agreement we have set a 20% energy reduction using 2013 numbers as a benchmark. April 2nd 2016 the transition will begin. We also completed a lighting survey in 2015 and will begin implementing suggested changes in 2016, the survey is attached here.

**192.** Please attach any additional documentation (optional):

**_HUMC Lighting Survey Results.pdf**

**193.** Success 3: Please describe

Released an energy case study that summarized our partnership with PSEG (our Utility) and the hospital carbon abatement program. Due to the success of the program we are about to enter into a 3rd phase with them that looks to include an economizer for our boiler, LED lighitng and a couple other plant upgrades.

**194.** Please attach any additional documentation (optional):

**_Healthier Hospitals Initiative Case Study.pdf**