

## GREEN COMMUNITY ANNUAL REPORT

1) In order for a municipality to maintain its Green Community Designation and be eligible for the next available Green Communities funding opportunity, reports must be submitted **no later than 5:00 PM December 11, 2017 for the reporting period July 1, 2016 – June 30, 2017**

**Late reports WILL deem a community ineligible for Spring 2018 Competitive Grant.**

- 2) Please be certain to address all areas in full. If certain requested information does not apply, then please note it as "N/A."
- 3) Please follow the instruction for reporting on each Criteria on the individual Criterion Excel Sheets.
- 4) If you have any questions on these reporting requirements, please contact your DOER Green Communities Regional Coordinator (RC). The objective is to have a dialogue with Green Communities staff **BEFORE** the report is due so that minimal follow-up with the municipality is required after the due date.
- 5) Print, fill out completely, and submit a signed copy of this page of the completed annual report as a PDF via the online system.
- 6) Submit your community's full Excel file electronically as Excel to Jane Pfister at [jane.pfister@state.ma.us](mailto:jane.pfister@state.ma.us) with any other supporting files. This page must be signed, made into a PDF, and submitted as a separate file. Please submit only one Excel file for the annual report. DOER will not accept multiple spreadsheets.
- 7) NOTE: In the case of any criteria violations( e.g. a vehicle purchased that does not meet the fuel efficient vehicle policy), the municipality will be asked to provide a corrective action plan. A first-time violation will be factored into consideration when DOER awards funds under the next available Green Communities funding opportunity. A second violation may prohibit the municipality from being eligible for any funds in the next available Green Communities funding opportunity.

8) Fields highlighted in yellow should be completed by Green Communities.

9) Fields highlighted in green should be pre-populated by the Regional Coordinators

<b>Date Designated:</b>	<b>December-14</b>	<b>PLEASE NOTE:</b> For a municipality designated December 2015, the reporting period is 18 months, Jan 1 2016 - June 30 2017
<b>Date of Annual Report Submission</b>	11-Dec-17	
<b>Name of Preparer of Annual Report</b>	Gerald R. Boyle	
<b>Title</b>	Director of Facilities	
<b>Municipality Name</b>	<b>Belmont</b>	

I confirm that I have reviewed this report and verify all information is true.

<b>Signature of Chief Executive Officer</b>		The Chief Executive Officer is defined as the manager in any city having a manager and in any town having a city form of government, the mayor in any other city, and the board of selectmen in any other town unless some other officer or body is designated to perform the functions of a chief executive officer under the provisions of a local charter or laws having the force of a charter. Any signatures of designees will be considered an attestation that the signatory has been designated the designee by the municipality.
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**Criteria 1 and 2**

Type of as-of-right siting approval received:

R&D

Type of expedited permitting approval received:

Local

**REGULATIONS (zoning & permitting):**

1) Have any significant changes been made to the **zoning district(s)** for which the community received Green Communities designation? Significant changes, such as changes to the geographic extent of the district, allowed uses, and dimensional requirements, would impact the ability to construct a qualifying clean energy use in the district. Overlay districts, such as water protection districts that impose special permitting requirements, count as significant changes.

**If yes**, submit the same documentation required for designation for CR1 to verify that you still meet the requirements (applicable sections of the zoning by-law, definitions, as well as a revised zoning map.)  
Please select YES or NO in the dropdown on the right.

NO

2) Have any significant changes been made to **site plan, design, or other development review criteria** or any permit review procedures that would impact the ability to permit qualifying clean energy uses as-of-right and in a timely manner? Significant changes would be anything that pertains to the "by-right" nature of the zoning or to the amount of time necessary to review required permits.

**If yes**, attach a letter from municipal counsel that describes the changes, illustrates any potential impact on the siting of clean energy projects, and affirms continued compliance with the Green Communities As-of-Right Zoning and Expedited Permitting criteria.  
Please select YES or NO in the dropdown on the right.

NO

3) Has the space designated for "as-of right" development for which the community received Green Communities designation been reduced?  
Please select YES or NO in the dropdown on the right. **If YES**, explain what has happened since the community applied for, and received, Green Communities designation and describe any plans the community may have to make such development feasible again

NO

**NARRATIVE:**

**PERMITTING:**

Have any clean energy projects applied for approval under the zoning for which the community received Green Community Designation?

NO

Please select YES or NO in the dropdown on the right. If YES, fill out or update Table 1 below:

**Table 1**  
**Expedited Permitting Projects (Please add rows as required)**

[Click here to view a sample version of this table.](#)

PROJECT NAME	Type (Generation (Capacity), R&D, and/or Manufacturing)	As-of-right designated location	Applicant	Project Description	Permit(s) (use as many rows as required)	Status	Date Submitted	Decision Date	Other Pertinent Information
To insert additional rows, select this row, right-click, and select "Insert."									

[Click here to return to Table 1](#)

Table 1: <i>SAMPLE</i> Expedited Permitting Projects									
PROJECT NAME	Type (Generation (Capacity), R&D, and/or Manufacturing)	As-of-right designated location	Applicant	Project Description	Permit(s) (use as many rows as required)	Status	Date Submitted	Decision Date	Other Pertinent Information
Hilltop Wind	Renewable Energy (wind) 9 MW	landfill	Peak Performance, LLC.	Six 1.5 MW wind turbines on 16 acres of land	Site Plan Review	Approved	11/1/2010	1/21/2011	Modest design changes to conform to as-of-right bylaw
					Wetlands (access road is in buffer zone)	Approved	10/16/2010	12/2/2010	

**Criterion 3 Instructions: Complete Steps 1-7 Below**

**1. Read and complete all questions below.**

**2. Complete Table 2: Progress**

Please complete Table 2, located 3 tabs to the right. ALL categories are required, with the exception of open space.

Fuel use from all vehicles, including those characterized as exempt AND non-exempt under Criterion 4, must be included.

Renewable Energy is a fuel source and the amount of renewable energy consumed by the Green Community must be included. [Go to Table 2](#)

**If you are using MEI. Please note that there is a new report available (entitled Energy Reduction Plan Guidance Table 2). This contains the data you need to enter into Table 2. Please review the data in MEI and, if accurate, enter it into Table 2, located 3 tabs to the right. Note also that if you click on the "years" down arrow on that MEI report, you can choose which year is your baseline year.**

**3. Complete Table 3: Energy Use (NON-MEI Users)**

[Go to Table 3](#)

REMEMBER to load all diesel, gasoline, heating oil and propane energy usage, as well as renewable energy usage that is NOT net-metered, into MEI prior to providing a date that your data is complete. Also, confirm that Table 3 in MEI matches the data provided in Table 2.

If your community uses MassEnergyInsight (MEI) to provide data for Table 2, provide the date the information in MassEnergyInsight was last verified. By including a date below, you are **confirming that the information in MEI is accurate and complete (including all fuels and renewable energy)** and that you wish to report your Green Community annual energy usage directly through MEI. If your community does not use MEI, please complete "Crit 3 - Tbl 3 Non-MEI User Only."

12/8/2017

**WEATHER NORMALIZED DATA - DOER is encouraging Green Communities to assess their progress using weather-normalized data through a DOER-approved weather normalization methodology. Qualifying methods include use of MassEnergyInsight or Energy Star Portfolio Manager. Please contact your Regional Coordinator for assistance if you use a different energy-tracking tool.**

Enter weather-normalized total energy consumption for each year of your ERP in Table 2, Row 17. In MassEnergyInsight, this information is available in the "Annual Report Table 2" report.

To include a percentage of the energy use of a **Regional School District**, please include that prorated usage as a separate entry in line 15 of Table 2: Enter here the % you are using to prorate the energy usage (i.e. the percentage of the RSD funding that the municipality contributes)

% of RSD

**4. Complete Table 4: Energy Conservation Measures (ECMs)**

[Go to Table 4](#)

Update your ECMs in Table 4 by: 1) changing the status and status date for any ECMs already included, 2) adding any new ECMs, 3) and providing an ECM type in Column F.

If your community uses an Energy Management Services (EMS) Agreement, your EMS annual report may be used to fulfill your Green Communities Annual Report Table 4 requirement. Please provide the date it was filed with DOER, or the date it will be filed if filing is anticipated in the next six months. Other efficiency measures undertaken independently of the performance contract should be reported using Table 4. All other portions of the Green Communities Annual Report must be completed.

DATE:

**5. Complete Table 5: Renewable Energy Projects**

[Go to Table 5](#)

Update your RE projects in Table 5 by: 1) changing any status dates, 2) adding, in bold, any new RE projects, and 3) drawing a line through any RE projects that have been abandoned.

Does your Green Community use any energy produced by renewable energy within your community? For example, solar PV systems installed on school or municipal buildings, RE PPAs in which the town buys the electricity, or renewable thermal. Please select YES or NO in the dropdown on the right. If YES, complete Table 5.

NO

**6. Provide a Narrative**

Provide a brief narrative explaining changes seen and what is anticipated for the next year. Any notes on successes or challenges are welcome.

*Sample Narrative: Our buildings have a 12 percent decrease in energy use and the vehicles have a 4 percent reduction. We have implemented projects in the Town Hall and would have expected larger savings. We are investigating this. We are also intending to implement a large retrofit at the drinking water treatment plant this year that should yield a significant level of savings.*

**NARRATIVE: We have seen reductions in many categories, but continue to question the accuracy of the MEI data. The Town relies on manual uploading of electrical data from the Belmont Municipal Light Department (BMLD). We suspect there may be gaps in that data over the years. In general, we believe additional effort is needed to make the best use of MEI. Also, the Town has undertaken a number of ECM's outside of the Green Communities grant funding, seeking energy reduction measures as a matter of course in building upgrades. We presume energy reductions from these measures, but do not have the expertise to undertake the calculation to quantify said reductions. These measures would include the Winn Brook School boiler replacement, upgrades to LED fixtures at the High School Field House, and HVAC improvements at the DPW garage. Although not reported with the Vehicle Inventory, the Town is making use of a DEP grant to lease two electric vehicles for three years.**

**7. Building Stock Changes**

Please describe any building stock changes that have occurred since your GC baseline year. Include the year and whether any changes are a replacement, addition, removal or renovation. The adjustments to energy usage should be entered on Table 2, Line 14 (you may use the Building Stock Changes Calculator herein).

NARRATIVE: N/A.

## Guidance for Reporting Building Stock Changes in Annual Report

For changes in building stock (including additions, new construction, demolition, replacement or acquisition), **PLEASE CONSULT WITH DOER TO DETERMINE THE PROPER TREATMENT OF THEIR ENERGY USE IN THE FUTURE ANNUAL REPORTS.** In general, the guidance provided in the table below will be followed. However, due to the unique nature of many building projects, a community should consult with DOER regarding building stock changes prior to submission of its Green Communities Annual Report. Please contact your Regional Coordinator to initiate this conversation.

### Building Stock Changes Summary Guidance

	New or Altered Building Energy Included in Energy Consumption vs. Baseline?	How to Report?
Retrofit/Renovation	Yes	Annual report
Addition	Yes, pro-rated by square footage	Annual report
New Construction	No	Separate monitoring
Removal/Demolition	Up to community's discretion	Annual report
Replacement of an Existing Building	Yes	Annual report
Acquisition of an Existing Building	Only if desired	Separate monitoring or add to baseline in annual report

- Retrofit/Renovations:** Retrofits and Renovations will be factored into the 20% reduction and do not alter the energy use baseline. These do not increase building square footage and renovations should be done such that the renovated space becomes more efficient.
- Additions:** The energy load for a building and its addition will be counted towards the 20% reduction target but will be pro-rated based on the "new" building square footage. For example, if a 10,000 sq. foot building added 5,000 sq. feet (an additional 33.33%), then 66.67% of the energy usage for the building would be accounted for in monitoring the community's progress towards meeting its 20% energy reduction target.

Sample Building from Energy Baseline	
size (sq ft)	10,000
plus addition	5,000
<b>TOTAL new building size</b>	<b>15,000</b>
% Prorated energy use = $(10,000/15,000) \times 100$	66.67%
Total Electric Energy Use (kWH)	2,500
<b>Prorated Energy use <math>(1,250,000 \times 0.66)</math></b>	<b>1,666.67</b>

Report this in Annual Report

- New Construction:** The additional energy load from these buildings will **NOT** be added into the energy use baseline and therefore the additional load will **NOT** be factored into the 20% reduction target. Municipalities using MassEnergyInsight should flag the building to "exclude from baseline." However, a municipality will be expected to monitor the performance of this building, using MassEnergyInsight or another tool, under its annual Green Communities reporting to verify that it is performing as designed and modeled.
- Removal/Demolition:** For buildings that are removed from the building stock, the community has the option to adjust the energy use baseline by subtracting that building's energy use and revising the 20% reduction target accordingly. This will occur **ONLY** for buildings that are **not** replaced by a new building or leased space (see below).
- Replacement of an Existing Building:** For buildings originally included in the baseline that go offline and are replaced by a new building, the energy use baseline will not change and the new building will be included in the 20% reduction target. If the new building is larger than the replaced building, then the energy use will be pro-rated according to the difference in their square footages. For example, if a 25,000 sq foot building was replaced with a 50,000 sq feet (an additional 50%), then 50% of the energy bills for the building would be accounted for in monitoring the community's progress towards meeting its 20% energy reduction target.

Sample Building from Energy Baseline	
original size (sq ft)	25,000
Size of new building	50,000
% Prorated energy use = $(25,000/50,000) \times 100$	50%
Total Energy Use (MMBTU)	13,000
<b>Prorated Energy use <math>(1,500,000 \times 0.50)</math></b>	<b>6,500</b>

Report this in Annual Report

- Acquisition of an Existing Building:** If a municipality acquires an old building (i.e., not new construction) after the baseline year, and that building is not replacing a building already included in the baseline, the additional load from such a building will not be required to be included in the consumption profile and therefore the additional load will not be factored into the 20% reduction target. **HOWEVER**, one of the following two should occur:
  - The municipality should address these buildings separately in its Annual Report, noting what their baseline energy use was when they were acquired and what measures are planned for their improved energy performance.
  - As an alternative, if a municipality so chooses, it can add the load from these buildings into the energy use baseline when they were acquired and include them in the 20% reduction target. (A municipality may choose to do this because it may provide a better opportunity for them to achieve the 20% reduction target). A municipality choosing to do this must provide an explanation in its Annual Report.
- Petition to Modify Energy Use Baseline:** At any time, a municipality can petition DOER to consider modification of its baseline. For example, a municipality may replace an existing smaller school with a new school that is significantly larger, with a pool added, etc, and it may wish to adjust its baseline to take this added square footage and energy use data into consideration. DOER reserves the right to approve or deny any such petition.

**INSTRUCTIONS on how to calculate your prorated energy use for building stock changes**  
 Please keep track of the prorated use for every year (Year One is the first year following your baseline year). If you had a new building that replaced an old building in your baseline year, use **Calculator 1 - New Buildings Replacing Old Buildings Worksheet**. If you had building additions that you need to account for, scroll down and use **Calculator 2 - Building Additions Worksheet**. Once you have input all the information in calculators 1 & 2, take the highlighted totals in **Calculator 3 - Prorated Energy Use** and input them into the appropriate year in the "Building Stock Changes adjustment" row on the CR3 - Table 2 Progress worksheet. These should be negative numbers, and should be input as negative numbers in Table 2.

**How the calculator if you had a new energy that replaced an old building in your baseline year?**  
 Input the square footage for the old building that is being replaced, and for the new building that has replaced it. Then input the total building energy use (MMBTU) for the new building. Start with BUILDING ONE, if you have more than one applicable building then move on to BUILDING TWO etc.

**Calculator 1 - New Buildings Replacing Old Buildings Worksheet**

	Sq footage	Building Energy Use (MMBTU)	Prorated energy use (MMBTU)
<b>Year One</b>			
BUILDING ONE		N/A	
Old Building			0.00
New Building			0.00
BUILDING TWO			
Old Building		N/A	
New Building			0.00
BUILDING THREE			
Old Building		N/A	
New Building			0.00
<b>Year Two</b>			
BUILDING ONE			
Old Building		N/A	
New Building			0.00
BUILDING TWO			
Old Building		N/A	
New Building			0.00
BUILDING THREE			
Old Building		N/A	
New Building			0.00
<b>Year Three</b>			
BUILDING ONE			
Old Building		N/A	
New Building			0.00
BUILDING TWO			
Old Building		N/A	
New Building			0.00
BUILDING THREE			
Old Building		N/A	
New Building			0.00
<b>Year Four</b>			
BUILDING ONE			
Old Building		N/A	
New Building			0.00
BUILDING TWO			
Old Building		N/A	
New Building			0.00
BUILDING THREE			
Old Building		N/A	
New Building			0.00
<b>Year Five</b>			
BUILDING ONE			
Old Building		N/A	
New Building			0.00
BUILDING TWO			
Old Building		N/A	
New Building			0.00
BUILDING THREE			
Old Building		N/A	
New Building			0.00
<b>Year Six</b>			
BUILDING ONE			
Old Building		N/A	
New Building			0.00
BUILDING TWO			
Old Building		N/A	
New Building			0.00
BUILDING THREE			
Old Building		N/A	
New Building			0.00
<b>Year Seven</b>			
BUILDING ONE			
Old Building		N/A	
New Building			0.00
BUILDING TWO			
Old Building		N/A	
New Building			0.00
BUILDING THREE			
Old Building		N/A	
New Building			0.00
<b>Year Eight</b>			
BUILDING ONE			
Old Building		N/A	
New Building			0.00
BUILDING TWO			
Old Building		N/A	
New Building			0.00
BUILDING THREE			
Old Building		N/A	
New Building			0.00
<b>Year Nine</b>			
BUILDING ONE			
Old Building		N/A	
New Building			0.00
BUILDING TWO			
Old Building		N/A	
New Building			0.00
BUILDING THREE			
Old Building		N/A	
New Building			0.00

**How the calculator for any building additions that you need to account for?**  
 Input the building's square footage prior to the addition, and post addition, the total energy use for the year, and then the number of months that the building addition was online during that reporting year. Note that additions in one reporting year need to be included in subsequent years, only the # of "months online" will then be 12. Start with Building One, if you have more than one applicable building in a given year then move on to Building Two etc.

**Calculator 2 - Building Additions worksheet**

	Pre-addition sq. ft.	Post-addition sq. ft.	% to include	FY17 total energy use (MMBTU)	How many months was the addition online during the reporting FY?	Prorated energy use (MMBTU)
<b>Year One</b>						
Building One			0.00%			0.00
Building Two			0.00%			0.00
Building Three			0.00%			0.00
Building Four			0.00%			0.00
<b>Year Two</b>						
Building One			0.00%			0.00
Building Two			0.00%			0.00
Building Three			0.00%			0.00
Building Four			0.00%			0.00
<b>Year Three</b>						
Building One			0.00%			0.00
Building Two			0.00%			0.00
Building Three			0.00%			0.00
Building Four			0.00%			0.00
<b>Year Four</b>						
Building One			0.00%			0.00
Building Two			0.00%			0.00
Building Three			0.00%			0.00
Building Four			0.00%			0.00
<b>Year Five</b>						
Building One			0.00%			0.00
Building Two			0.00%			0.00
Building Three			0.00%			0.00
Building Four			0.00%			0.00
<b>Year Six</b>						
Building One			0.00%			0.00
Building Two			0.00%			0.00
Building Three			0.00%			0.00
Building Four			0.00%			0.00
<b>Year Seven</b>						
Building One			0.00%			0.00
Building Two			0.00%			0.00
Building Three			0.00%			0.00
Building Four			0.00%			0.00
<b>Year Eight</b>						
Building One			0.00%			0.00
Building Two			0.00%			0.00
Building Three			0.00%			0.00
Building Four			0.00%			0.00
<b>Year Nine</b>						
Building One			0.00%			0.00
Building Two			0.00%			0.00
Building Three			0.00%			0.00
Building Four			0.00%			0.00

**How NOT input anything into this calculator?**

This calculator will populate based on what is input into calculators 1 & 2. Take the values from the yellow highlighted cells and input them into the appropriate year in the "Building Stock Changes adjustment" row on the CR3 - Table 2 Progress worksheet.

**Calculator 3 - Prorated Energy Use**

<b>Year One</b>			
Total Energy Use			0.00
Total Prorated Energy Use			0.00
Difference to be used to adjust total			0.00
<b>Year Two</b>			
Total Energy Use			0.00
Total Prorated Energy Use			0.00
Difference to be used to adjust total			0.00
<b>Year Three</b>			
Total Energy Use			0.00
Total Prorated Energy Use			0.00
Difference to be used to adjust total			0.00
<b>Year Four</b>			
Total Energy Use			0.00
Total Prorated Energy Use			0.00
Difference to be used to adjust total			0.00
<b>Year Five</b>			
Total Energy Use			0.00
Total Prorated Energy Use			0.00
Difference to be used to adjust total			0.00
<b>Year Six</b>			
Total Energy Use			0.00
Total Prorated Energy Use			0.00
Difference to be used to adjust total			0.00
<b>Year Seven</b>			
Total Energy Use			0.00
Total Prorated Energy Use			0.00
Difference to be used to adjust total			0.00
<b>Year Eight</b>			
Total Energy Use			0.00
Total Prorated Energy Use			0.00
Difference to be used to adjust total			0.00
<b>Year Nine</b>			
Total Energy Use			0.00
Total Prorated Energy Use			0.00
Difference to be used to adjust total			0.00
<b>Year Ten</b>			
Total Energy Use			0.00
Total Prorated Energy Use			0.00
Difference to be used to adjust total			0.00







**For use in next Table 4 - ECMs**

**Project Type**

**Definition/Includes:**

<b>Behav &amp; Training</b>	Behavioral programs, building operator training, etc.
<b>Building Control</b>	HVAC controls, energy management systems (NO vending misers)
<b>Exterior Lighting</b>	Streetlights, traffic lights, parking lots/garages, exterior lighting
<b>Interior Lighting</b>	Interior lighting & controls
<b>Fuel Conversion</b>	Conversion from one heating fuel type to another (often oil to natural gas)
<b>Hot Water</b>	Hot water heaters, pipe insulation, showerheads, faucet aerators, efficient dish washers
<b>HVAC</b>	Heating or cooling equipment, economizers, destratification fans, dehumidifiers, duct
<b>Pump/Motor/Drive</b>	Pumps, motors, variable frequency/speed drives
<b>Refrigeration</b>	Refrigeration and controls, including vending misers
<b>Retrocommission</b>	Retrocommissioning and submetering projects
<b>Vehicles</b>	Energy-savings vehicles & their operations: GPS, anti-idling retrofits, routing software,
<b>Weatherization</b>	Insulation, air-sealing, windows, etc.
<b>Comprehensive</b>	Large-scale retrofit of the entire building or multiple systems. Examples: building renovations, lighting + HVAC + EMS
<b>Other</b>	Use this only if types above do not fit

**Status Type**

**Definition/Includes:**

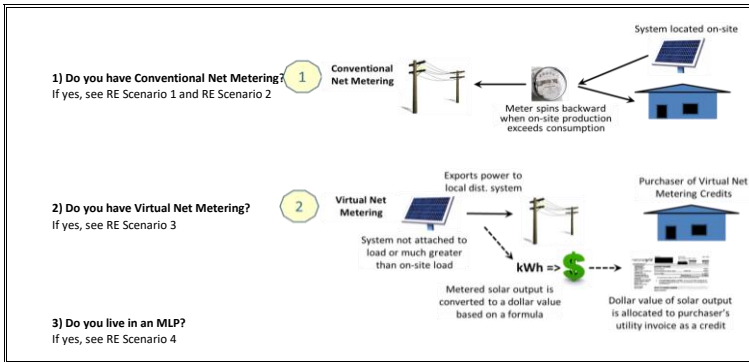
<b>Complete</b>	Project is complete & operational.
<b>Active</b>	Project is actively underway - procurement completed and in any stage of construction.
<b>Planned</b>	Identified project that will be pursued; may be in budgeting or procurement.
<b>Abandoned</b>	Project is not completed and will no longer be pursued.





## GUIDANCE FOR REPORTING RENEWABLE ENERGY GENERATION AS ENERGY CONSUMPTION

The following scenarios apply to renewable energy systems that are interconnected to the electric grid. It is possible that more than one scenario applies to the same renewable energy system; for example, a solar PV system may generate less energy than its building uses in the winter (scenario 1), but generate more energy than its building uses in the summer (scenario 2). Ideally, calculations should be done for each month.



### RE Scenario 1: Conventional Net Metering, System Generation < Building Use = Importing Power

If the building uses more electricity than the RE system generates, your electric meter registers positive. The building is importing power from the electric company. Then a Green Community should add in the amount of RE generation. This means the total building energy use = total kWh on electric bill + kWh generated by RE.

For example:

Total Grid Electricity on electric bill (kWh):	3
Total Net Metering Credits on electric bill (kWh):	-2
<u>Total generated by the RE system (kWh):</u>	+7
Total building use (kWh):	1



**Find and Calculate:** Find the kWh generated each month from your RE system. Contact your Regional Coordinator if you are having trouble finding the kWh generated each month.

**Action:** Load the building renewable energy usage into MassEnergyInsight. Create a separate account for each RE system at each building. Load the RE generation for each month by going to "Upload a Spreadsheet." Choose "solar electric" or "wind power." Upload your usage data. If not using MassEnergyInsight, report to DOER in your Annual Report.

### RE Scenario 2: Conventional Net Metering, System Generation > Building Use = Exporting Power

If the RE system generates more electricity than the building uses your electric meter registers negative. The RE system is exporting power to the electric company. Then a Green Community should not add in the amount of generation over and above what the building used. This means the total building energy use = kWh generated by RE - kWh credited to electric bill for net metering.

For example:

Total Grid Electricity on electric bill (kWh):	3
Total Net Metering Credits on electric bill (kWh):	-2
<u>Total generated by the RE system (kWh):</u>	7
Total building use (kWh):	1



For help locating net metering credits on your electric bill go to:

[https://www.nationalgridus.com/non\\_html/MA\\_DG\\_First\\_Bill.pdf](https://www.nationalgridus.com/non_html/MA_DG_First_Bill.pdf)

<https://www.eversource.com/Content/ema-e/residential/programs-services/interconnections-net-metering/net-metering-faq>

**Find and Calculate:** Find the total kWh generated each month from your RE system. Find the net metering credits in kWh applied to your electric bill each month. Subtract the net metering credits in kWh from the total RE generated. This is your building's NET use of renewable energy generated. Contact your Regional Coordinator if you are having trouble finding the kWh generated and credited each month.

**Action:** Load the NET building renewable energy usage into MassEnergyInsight. Create a separate account for each RE system for each building. Load the RE generation for each month by going to "Upload a Spreadsheet." Choose "solar electric" or "wind power." Upload your usage data. Or, report to DOER in your Annual Report.

### RE Scenario 3: Virtual Net Metering

If a building is virtually net metered, in which the RE system has its own separate meter but the financial credits are applied to a different building, then the actual amount of electricity use of the building will be on its electric bill. For example, a municipality may have built a solar PV array on a closed landfill. The PV system has a meter but does not link to any buildings that consume a substantial amount of energy. (The PV system will be linked to its inverter and perhaps to a small shed or security lights.) The financial value of the electricity that is generated by the landfill solar PV system is applied to an account for electric use at the town hall and to an account for electric use at the library. The electric bills for the town hall and library thus will show the amount of electricity that is actually used by those buildings, but only charge for the amount of electricity above and beyond what was generated by the solar PV system on the landfill. See DOER's Net Metering page for more details on credits for renewable generation.

**Information Needed:** Written confirmation of virtual net metering documenting there is a separate meter used for the RE system with only a small load-side usage. The load-side usage should be reported to MassEnergyInsight under Scenario 2 above.

**Action:** Generation does not impact baseline and should NOT be loaded into MassEnergyInsight. Provide information needed as noted above. Report load-side usage under Scenario 2 above.

### RE Scenario 4: RE Generation to Control Rates (for MLPs)

If an MLP uses its RE generation to control its system-wide rates and does not use the RE for a specific municipal building, either directly or through virtual net metering, then the amount of RE generation does not need to be included.

**Information Needed:** Written confirmation of RE generation for system-wide benefit with no virtual net metering. The load-side usage should be reported to MassEnergyInsight under Scenario 2 above.

**Action:** Generation does not impact baseline and should NOT be loaded into MassEnergyInsight. Provide information needed as noted above.

**Please refer to Guidance on Reporting Renewable Energy Generation and Only Include Projects with Conventional Net Metering (scenario 1 and scenario 2) in Table 5**

Criterion 3 Step 5: Complete Table 5 - Renewable Energy

Project Description				Status and Timing		Electricity Data		Thermal Energy Data (representing consumption)			Financial Data				Reference Info		
Project Name	Resource Type (select from drop down)	Site Type (select from drop down)	Town Procuring Energy Output? (select from drop down)	Project Status (select from drop down)	Year Completed (i.e., 2016)	Size of System (kW, DC)	Annual Electricity Generation (kWh)	Annual Natural Gas (therms)	Annual Wood (cords)	Annual Wood (pellets)	Annual Cost Savings (\$)	Total Installed Cost (\$)	Green Community Grant (\$)	Other Grant (\$)	Net Cost (\$)	Funding Source(s) for Net Costs	Source for Projected Savings
<i>Sample Data - City Hall</i>	<i>Solar PV, Roof</i>	<i>Municipal Building</i>	<i>Y - conventional net metered</i>	<i>Complete</i>	<i>2016</i>	<i>26.5</i>	<i>26,507</i>				<i>\$302</i>	<i>\$439,632</i>	<i>\$0</i>	<i>\$337,500</i>	<i>\$102,132</i>	<i>City Capital Funds</i>	<i>Soltrex online PV systems portfolio dashboard</i>
To insert additional rows, select this row, right-click, and select "Insert."																	
TOTALS							26,507		0	0							
TOTAL RENEWABLE ENERGY PRODUCTION (MMBtu)						90.441884	90.441884		0	0	302	439,632	0	337,500	102,132		

**Criterion 4 - Purchase Fuel Efficient Vehicles**

1) Did you update your vehicle inventory ?

2) Did you install electric vehicle charging stations?

3) Did you implement anti-idling technology and/or campaigns?

4) Did you implement a driving monitoring system that records miles driven and/or fuel consumption?

5) Did you implement a fuel use reporting system for operators on fuel efficiency?

6) Any other policies and/or technologies not listed above? Please estimate annual fuel savings from each new technology or policy in the yellow box below. Also please attach any new vehicle policies and technologies adopted by the municipality to this annual report.

*NARRATIVE: Although not listed in the Vehicle Inventory, the Town is making use of a DEP grant to lease two electric vehicles (both Nissan Leafs) for a period of three years.*

7) For communities that met Criterion 4 through alternative compliance, provide a narrative in the space below of the policies and programs that have been adopted to reduce fuel consumption.

*NARRATIVE:n/a*

7b) For communities that met Criterion 4 through alternative compliance, provide as a status regarding the success of these programs and policies.

*NARRATIVE:*

8) Have there been any changes to your vehicle inventory since the last annual report?

9) Please provide the most current vehicle inventory that includes ALL vehicles (Both exempt and non-exempt) for ALL departments, including schools. Please do not report any exempt off-road vehicles, trailers, etc. The inventory submitted with either your most recent Annual Report filing or, if filing for the first time, submitted with your designation application, is either contained in the next worksheet, "Crit 4 - Table 6 Vehicle Inv.," or provided as separate file. In the inventory, 1) note in column L if a vehicle has been acquired since the last annual report, 2) if yes, note what the newly acquired vehicle replaced in the inventory in column M, and 3) note in column N if the vehicle has been retired. NOTE: For the purposes of the program, municipalities must use the EPA combined fuel economy estimate listed at FuelEconomy.gov and ensure that the rating greater than or equal to the requirement for the relevant vehicle type.



Table 6: *SAMPLE* Vehicle Inventory

[Click here to return to Table 6](#)

Model	Make	Model Year	Month/Year Purchased	Drive System: 2WD, 4 WD, or AWD	> 8500 pounds? (Y or N or NA)	Exempt or Non- Exempt? E or NE	COMBINED MPG Rating	Vehicle Function	Is this a new acquisition?	If new acquisition, what vehicle did it replace?	Removed from inventory?
Honda	Civic Hybrid	2013	July, 2013	2WD	N	NE	43	Inspector/Assess or shared car	YES	see vehicle on line 8 now deleted	
Ford	Crown Victoria	2011	April, 2011	2WD	NA	E	14	Police CRUISER			
Ford	Crown Victoria	1999		2WD	N	NE	13	Assesor			YES



## Criterion 5 - Stretch Code Adoption

Date Stretch Code Concurrency Period Began:

7/1/2011

Date Stretch Code Became Sole Effective Code:

1/1/2012

Have there been any new building permits since the Stretch Code became sole effective code?

YES

*Please list all residential and commercial projects that were affected by the Stretch Code and for which building permits have been issued since the Stretch Code became the sole effective code, along with accompanying information noted below. If a previous Annual Report was filed, your table from the previous report is provided for updating. For notes on Certificate of Occupancy: if New Residential (NR), provide final HERS Rating; If Commercial and > 100K sq ft, note percent energy savings relative to ASHRAE 90.1-2007.*

Address of Building	New Residential (NR), or Commercial (C)	Date Building Permit Issued : Month - Year	Dated Certificate of Occupancy Issued (if not issued, please note NA)	Notes on Cert of Occupancy (see above )
75 ACORN PARK DR	NR	4/9/2015	NA	-
58 MARLBORO ST	NR	1/5/2016	7/23/2016	66
34 MERRILL AVE	NR	1/9/2015	6/4/2015	53
318 TRAPELO RD	NR	2/19/2015	2/26/2016	61
17 HAMILTON AVE	NR	1/9/2015	7/4/2015	56
10 SUMNER LANE	NR	5/1/2015	8/1/2016	50
115 FARNHAM ST	NR	8/20/2015	9/1/2016	61
151 DALTON RD	NR	8/13/2015	12/1/2015	56
54 EVERGREEN WAY	NR	7/24/2015	3/29/2016	64
16 TROY RD	NR	8/12/2015	7/28/2016	58
17 OAKMONT LANE	NR	3/28/2016	NA	-
7 OAKMONT LANE	NR	3/28/2016	NA	-
51 OAKMONT LANE	NR	3/28/2016	NA	-
9 AUDREY RD	NR	10/22/2015	10/26/2016	59
13 BIRCH ST	NR	11/12/2015	6/3/2016	48
15 WAVERLEY TER	NR	1/12/2016	8/30/2016	55
39 OAKMONT LANE	NR	3/28/2016	NA	-
11 WAVERLEY TER	NR	4/25/2016	8/30/2016	52
5 SUMNER LANE	NR	2/29/2016	NA	-
122 WAVERLEY ST	NR	4/11/2016	9/1/2016	56
54 WHITE ST	NR	3/16/2016	NA	-
24 UPLAND RD	NR	5/25/2016	NA	-
38 WELLINGTON LN	NR	8/5/2016	NA	-
7 SUMNER LANE	NR	4/25/2016	NA	-
26-28 DANTE AVE	NR	8/15/2016	NA	-
55 CONCORD AVE	NR	7/20/2016	NA	-
51 OAKMONT LANE	NR	8/17/2016	NA	-
9 WESTLUND RD	NR	10/27/2016	NA	-
45 MIDDLECOT ST	NR	12/7/2016	NA	-
505 COMMON ST	MIXED	12/6/2017	NA	-
100 CLIFTON ST	NR	6/13/2017	NA	-
1047 CONCORD AVE	NR	8/14/2017	NA	-
To insert additional rows, select this row, right-click, and select "Insert."				

**Other Notes**

**Please provide in the space below any anecdotal information about your community's experience with the Stretch Code** (e.g. local banks loaning more to people purchasing stretch code homes, satisfied homeowners, frustrated builders, etc.).

**Please provide in the space below any information about additional measures taken by the community that are consistent with its status as a designated Green Community**(e.g. additional as-of-right siting put in place since designation for renewable or alternative energy generation, R&D, or Manufacturing facilities).

**Please provide in the space below what percentage of your municipality's electricity consumption is supported by renewable energy generation?** Of this percentage, how much of this is onsite generation? How much of this is net metering? How much of this is through the purchase of Renewable Energy Certificates (RECs)?