



The Small Town Carbon Calculator (STOCC) User's Guide

"Helping communities save money and reduce air pollution"

WHY TAKE STOCC?

Developed to serve the needs of small towns addressing the growing costs of municipal energy use and emissions of heat trapping gases, STOCC simplifies the process of creating a greenhouse gas and energy inventory. STOCC will enable you to better understand and assess the sources of your energy expenses as well as the majority of your greenhouse gas emissions. STOCC is intended for small towns with relatively few municipal buildings/facilities and vehicles. If you represent a larger municipality, consider using ICLEI's Clean Air Climate Protection software tool, which is designed for local governments with more diverse energy usage and emissions sources. Please visit www.icleiusa.org for more information.

STOCC is the first step towards reducing energy and greenhouse gas emissions at your most inefficient sources. This process will help your town to address the growing concern of climate change as well as the ever-present effort to reduce municipal energy costs. Note that STOCC does not provide suggestions for addressing energy efficiency. It simply identifies the source of your costs and emissions.

The inventory process is an ideal initial task for your Local Energy Committee (LEC). The inventory you create with STOCC can serve as the foundation of your Energy and Climate Action Plan. This process will assist you with creating a sound energy chapter in your Master Plan by providing figures upon which you can base your suggestions.

HOW TO INVENTORY?

1. Choose a baseline year that you would like to inventory. Ideally, this should be the earliest year for which you have complete data (Note: 2003 is the earliest available version of STOCC). Many municipalities choose a year so that recent energy improvements may be accounted for as successes in their Climate Action Plan. Just remember that any projects implemented in the years prior to the baseline year you pick will not be shown as reductions in your inventory as you compare your baseline year to the current/future years. It is certainly worthwhile to do the inventory for several years in a row if the data is available. Keep in mind that STOCC is year specific. Be sure that you are using the correct STOCC file for your inventory. For example, if you choose to inventory for the year 2008, use the STOCC 2008 file.

2. The STOCC process begins with data collection in your town. Refer to the **STOCC Data Collection Checklist** for the information required in your inventory. This document outlines the data you need to collect for the buildings & facilities, vehicles, and streetlights within your municipality and where you may be able to find this data.

3. Once you have collected all of the data on the checklist, input the information into the **STOCC calculator**. STOCC is a Microsoft Excel spreadsheet, and information regarding its use is embedded in the spreadsheet itself. Follow these guidelines when inputting information (**each of these categories has its own separate tab at the bottom of the spreadsheet**):

Buildings & Facilities

- Include all buildings & facilities owned/operated by the municipality, including police, fire department, highway/transportation department, water/sewer works, pump house, recycling, library, town administrative buildings, municipal parks, etc.
- Each of these buildings should occupy one or more rows in the calculator. If a building uses both No. 2 heating oil and electricity, for example, it would occupy 2 rows.
- If your municipality owns/operates your public schools, you can also include these in your inventory. If one or more of your public schools is not owned directly by the municipality, you may either:
 - Exclude them from the inventory
 - OR, work with the school to complete a STOCC inventory and then allocate a certain amount of the emissions/cost of the school based on the percentage of students that attend from your town

Vehicles

- Include all vehicles (on and off-road) owned/operated by the municipality, including police, fire, highway/transportation, public works, administrative and school (if applicable to your municipality) vehicles. You may also choose to include the fuel consumed by official travel in personal vehicles.
- Vehicle records can sometimes be difficult to obtain. If you cannot obtain the amount/cost of fuel used per vehicle, you must:
 - Determine the miles traveled by the vehicle in the year of inventory and divide this number by the vehicles miles per gallon (MPG). MPG values can be obtained online at:
<http://www.fueleconomy.gov/mpg/MPG.do?action=browseList>. This will give you the total amount of gallons of fuel used
 - To calculate total fuel costs for the year, multiply the total amount of fuel used by the average cost of fuel for the year. For New England, the average cost of regular unleaded gasoline has been \$2.59 (2006), \$2.82 (2007), and \$3.89 (2008). The cost of diesel has been: \$2.80 (2006), \$2.98 (2007), and \$4.02 (2008). More info at: www.eia.doe.gov
- If you can find the amount of fuel used in the town records but cannot find costs, simply multiply the amount of fuel used per vehicle by the average cost of fuel per gallon for the year.

Streetlights

- Streetlights may be inventoried as a whole, or by section. Determine how your streetlight electricity is billed to you. If it is by section, input these individually into the calculator.

What if I require more rows to input information?

- If you require more space within a given fuel category, insert a new row where needed. Make sure you add the new row ABOVE the last row in the fuel category to ensure that formulas stay intact. Copy a pre-existing row within the category, and paste it into the newly added row. This should preserve formats and formulas.

4. Once you input all of your data into STOCC, consult the summary tab in the spreadsheet for total cost and emissions. Note that these numbers are automatically calculated in the spreadsheet. These figures may be helpful as you prepare your inventory report and for comparing the year inventoried to years in the past/future.

PORTFOLIO MANAGER

STOCC may be used by itself as a tool to understand your municipality's costs and emissions related to energy use. However, you may also choose to use STOCC in conjunction with the ENERGY STAR **Portfolio Manager** tool in order to determine which of your buildings/facilities are the most energy/cost inefficient. Portfolio Manager helps you to benchmark each municipal building against the national average or surrounding comparable buildings in your region. **STOCC** incorporates energy use from buildings, vehicles, and streetlights. Using both tools will give you a comprehensive energy/emissions picture.

Portfolio Manager requires additional information that is not used by STOCC. **If you choose to use the Portfolio Manager as well, consult the Portfolio Manager checklist located in the same document as the STOCC checklist.**

You can access the ENERGY STAR Portfolio Manager and more detailed instructions regarding its use from the following web address:

http://www.energystar.gov/index.cfm?c=evaluate_performance.bus_portfoliomanager

The US EPA New England has a program called the community Energy Challenge. To join the Challenge, communities pledge to form a Local Energy Committee, benchmark their municipal buildings using ENERGY STAR's Portfolio Manager, and reduce their energy use by 10%.

For more information on the ENERGY STAR Portfolio Manager or EPA New England's Community Energy Challenge, contact: Linda Darveau, US EPA New England at darveau.linda@epa.gov or (617) 918-1718, or go to: <http://www.epa.gov/region1/eco/energy/energy-challenge.html>.

If you have questions or would like more information about STOCC, contact: stocc@cleanair-coolplanet.org