Capital District
2010 Regional
GHG Inventory

With community GHG inventories for all 160 municipalities in the Capital District.

Prepared for
The New York Energy Development and Research Authority (NYSERDA), Albany, NY.
Jennifer Manierre, Associate Project Manager

Prepared by
The Capital District Regional Planning Commission (CDRPC)
Todd Fabozzi, Project Manager

and

Climate Action Associates LLC
Jim Yienger, Lead Author

NYSERDA Contract #24253

FINAL REPORT: 5/20/2013
Notice
This report was prepared by Climate Action Associates LLC, a sub-consultant to the Capital District Regional Planning Commission, in the course of performing work contracted for the New York State Energy Research and Development Authority (NYSERDA). The opinions expressed in this report do not necessarily reflect those of NYSERDA or the State of New York, and reference to any specific product, service, process, or method does not constitute an implied or expressed recommendation or endorsement of it. Further, NYSERDA and the State of New York make no warranties or representations, expressed or implied, as to the fitness for particular purpose or merchantability of any product, apparatus, or service, or the usefulness, completeness, or accuracy of any processes, methods, or other information contained, described, disclosed, or referred to in this report. NYSERDA, the State of New York, and the contractor make no representation that the use of any product, apparatus, process, method, or other information will not infringe privately owned rights and will assume no liability for any loss, injury, or damage resulting from, or occurring in connection with, the use of information contained, described, disclosed, or referred to in this report.
# Contents

Notice ......................................................................................................................... ii
List of Tables and Figures ........................................................................................ iv
Preface ......................................................................................................................... 5
Notable Findings ........................................................................................................... 6
GHG Accounting Overview .......................................................................................... 7
  Regional GHG Accounting Framework ..................................................................... 7
    Geographic Boundaries: Regional and Community GHG Inventories ................... 7
    Scopes Based GHG Accounting ............................................................................ 8
    Reporting GHG Emissions ..................................................................................... 9
GHG Emissions and Bio-fuels .................................................................................... 11
GHG Emissions and Electricity Use .......................................................................... 12
Regional and County GHG Emissions ........................................................................ 13
Household Energy, Land Use, and GHG Emissions .................................................... 19
Reducing GHG Emissions from On-Road Transportation .......................................... 29
Sector-by-Sector GHG Methods, Results, and Data Sources ........................................ 31
  Emissions in the Built Environment ........................................................................ 31
    Residential, Commercial, and Industrial Energy Consumption ............................ 31
    Transmission and Distribution (T/D) Losses ....................................................... 33
    Industrial Process and Product Use .................................................................... 33
    Power Generation- Scope 1 .................................................................................. 34
Transportation ............................................................................................................ 37
    Waste (Solid and Sewage) .................................................................................... 38
Agriculture ................................................................................................................... 40
Improving Your Community's GHG Inventory ............................................................. 42
Works Cited ................................................................................................................ 43
Appendix A. Regional and County Detailed GHG Emission Inventories ...................... 45
Appendix B. Community GHG Inventories and Related Data ....................................... 54
Appendix C. Emission Factors .................................................................................... 74
List of Tables and Figures

Table 1: Regional GHG Inventory Framework .................................................................................. 10
Table 2. Regional GHG Emissions By Sector and Source ................................................................. 13
Table 3: Per Capita GHG Emissions by County (MTCDE/person) ....................................................... 17
Table 4: Capital District Industrial GHG Point Sources ................................................................. 18
Table 5: Energy Cost of Living (ECOL) and GHG Emissions per Household .................................... 25
Table 6: Reducing Transportation Emissions in the Capital District .................................................. 30
Table 7: GHG Emissions by Sector, Scope, and County (MCTDE) .................................................... 31
Table 8: Facilities that Create Industrial Process GHG Emissions .................................................... 33
Table 9: Product Use and T/D Loss Emissions by County (MTCDE) .................................................. 34
Table 10: Electricity Generation vs. Consumption (MTCDE) ............................................................ 35
Table 11: Capital District Electric Power Generation Facilities ....................................................... 36
Table 12: Transportation Emissions By Mode and County (MTCDE) .................................................. 37
Table 13: Solid Waste Origin and Destination, and GHG Emissions by County ................................. 40
Table 14: Agricultural Emissions by County and Sector (MTCDE) ..................................................... 41
Table B 1: Municipal Roll-Up GHG Inventories (MTCDE) ............................................................... 54
Table B 2: Utility-Supplied Energy Consumption Data for 2010 by Municipality ............................ 59
Table B 3: Vehicle Miles Traveled and Fuel Consumption (gallons) by Municipality ...................... 64
Table B 4: Household GHG emissions and Energy Cost of Living .................................................... 69
Table C 1: Fuel (Scope 1) and Electricity (Scope 2) Emission Factors ............................................... 74

Figure 1: Regional GHG Inventory Boundaries ............................................................................. 8
Figure 2. Simplified Carbon Cycle of Bio-fuels ........................................................................... 11
Figure 3: New York vs. US Grid Electricity Generation Mix .......................................................... 12
Figure 4. Energy Use by Sector per Capita (MMBTU/person) .......................................................... 14
Figure 5: GHG Emissions by County (MTCDE) ............................................................................. 15
Figure 6: GHG Emissions by County, by Source and Sector (MTCDE) ........................................... 16
Figure 7: GHG Emissions per Household Attributed to Domestic Energy Use ............................... 20
Figure 8: GHG Emissions per Household Attributed to Transportation Demand ......................... 21
Figure 9: GHG Emissions per Household ....................................................................................... 22
Figure 10: Energy Cost of Living (ECOL) per Household ............................................................... 23
Figure 11: Energy Use and GHG Emissions per Household .............................................................. 24
Figure 12: Energy Cost of Living as a Percent of Income ............................................................... 26
Figure 13: 10-Year Cost Increase for Energy ($/household) ............................................................. 27
Figure 14: Annual Energy Costs ($) and GHG Emissions (MTDCE) per Household ....................... 28
Figure 15: Agricultural GHG Emissions by County and Sector (MTCDE) ......................................... 41
Preface

Creating a greenhouse gas (GHG) emissions inventory baseline is an important component of long term sustainability planning.

This GHG inventory was commissioned by the Capital District Regional Planning Commission (CDRPC), and covers all major GHG sources in the eight-county Capital District Regional Economic Development Council (REDC) region. It was developed to support communities participating in the Climate Smart Communities (CSC) program. It also serves as the baseline for the Capital District Regional Sustainability Plan developed under the Cleaner Greener Communities (CGC) Program.

The inventory was developed for the year 2010 and is based upon methods, data sources, and protocol established by the CSC and CGC programs. This work includes separate inventories for the REDC as a whole, for each county, and for each of the region’s 160 municipalities. Counties and municipalities can use the inventories in this report as a baseline to develop a community Climate Action Plan as part of the Climate Smart Communities pledge. They can track progress by periodically updating the inventories in future years following the methods described in this report.

This report is primarily a GHG baseline and is not intended to cover the options available to reduce GHG emissions in the region. However, it does include policy scenarios to show how alternative fuels and vehicles may reduce emissions from the transportation sector. It also includes a detailed study of how household energy use varies across the region to help planners identify strategies to engage households in local sustainability efforts.

Regional and county GHG inventories are presented in Appendix A in the format required by the Capital District Regional Sustainability Plan. Community inventories suitable for the Climate Smart Communities program are presented in Appendix B along with supporting data on energy use and transportation demand. The report also includes tips for how municipalities can, in some cases, improve the community-scale inventories provided in this report. Emission factors are in Appendix C.

All data in the Appendices are available in spreadsheets maintained by CDRPC.
Notable Findings

In 2010 Capital District greenhouse gas (GHG) emissions were 15.8 million MTCDE (Metric Tons Carbon Dioxide Equivalent), or 14.7 MTCDE/person. Fossil fuels created 84% of the emissions. Smaller sources included chemical bi-products of the region’s cement industry, fugitive refrigerant leakage from buildings and vehicles, and emissions from agriculture and waste management practices.

Energy is expensive and investing in energy efficiency will reduce emissions, save money, and help improve the economy. The Capital District spent $4.5 billion for energy ($4100 / person), paying 60% more than it did 10 years ago after adjusting for inflation. Much of the increase was driven by rising petroleum fuel prices.

The Capital District is diverse and one set of GHG strategies will not necessarily work for all counties. Albany and Saratoga counties have an even balance of residential, commercial, and industrial emissions, whereas Schenectady and Rensselaer counties have a higher proportion of emissions in the residential sector. Albany, Greene and Warren counties have most of the region’s cement and paper industry. Washington and Columbia counties, on the other hand, have the largest share agriculture. Each county and community pursuing sustainability will need to engage stakeholders based on its own unique emissions profiles as presented in this report.

Individual industries and large commercial entities can sometimes dominate community and county inventories. Identifying and engaging these large stakeholders directly will be an important part of meeting long term regional or county-scale GHG mitigation targets.

Transportation fuels dominate in all counties and account for 40% of the Capital District’s GHG emissions. Significant reductions and cost savings may be possible by introducing electric vehicles, alternative fuels, more efficient vehicles, transit, and more walkable, compact development patterns.

Upstate New York’s electricity is the least-carbon intensive in the nation and offers a unique opportunity to reduce emissions and save residents money by electrifying on-road transportation. Shifting 20% of on-road gasoline vehicles to electricity would reduce Capital District emissions by 4.5% and save drivers $174 million in fuel costs.

Development patterns in the Capital District influence emissions. Households in compact, employment-accessible areas generate 31% less greenhouse gas emissions and have 39% lower energy costs. Households in some rural towns consume three times more energy than households in some cities. Rising energy prices hit rural areas harder because they have longer commute distances (using gasoline) and rely on fuel oil and propane for heating. Households in some rural communities now spend 15-18% of total income on energy compared to those in urban communities that spend as little as 5-7%.

The Capital District is a major electric power generating region in New York. Emissions from Athens Generating, the PSEG Bethlehem Energy Center, and Selkirk Cogeneration Partners are equivalent to the emissions from all vehicles, operating on all roads, in all eight counties combined.
GHG Accounting Overview
At the start of the Climate Smart Communities coordinators program, NYSERDA convened the New York GHG Working Group—an informal body of all CGC Planning Teams, CSC consultants, state agencies, regional and municipal officials, and others to:

- Review existing national GHG protocol available for regional inventories, and,
- Establish consensus methods and data sources relevant for all of New York.

This body created the New York Community and Regional GHG Inventory Guidance report which outlines group consensus recommended and alternate methods for New York inventories (NYSERDA, 2013). The methods applied in this work are compliant with all recommended methods in that guidance report and the reader should refer to it for detailed step-by-step method details. In this report the reader will find an overview of group consensus methods and in some cases additional new methodology needed in the Capital District that went beyond the scope of the regional guidance.

This inventory accounts for all major GHGs including carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). In the Capital District emissions come from three basic activities:

- Burning fossil fuels creates CO₂ and a small amount of CH₄ and N₂O. Fossil fuels are the dominant source of GHG emissions in the region.
- Solid and sewage waste management, agriculture practices, and chemical processes in Capital District cement and paper industries release fugitive emissions of CH₄, N₂O, and some PFCs.
- Common refrigerants (HFCs and SF₆) used by homes, businesses, vehicles, and the utility industry are GHGs themselves, and they create a net footprint when they leak to the air as fugitive emissions. HFCs are also called Ozone Depleting Substitutes (ODS) because they were created to replace chlorofluorocarbons (CFCs) that had been found to be degrading the ozone layer.

Regional GHG Accounting Framework

Geographic Boundaries: Regional and Community GHG Inventories
Regional GHG Inventories count all emissions attributed to residences, businesses, farms, county and municipal operations, and industries within a multi-county region. For this study, the region is the eight-county Capital District Regional Economic Development Council (REDC) Region.

As shown in Figure 1, a regional GHG inventory can be further broken into inventories for counties, towns, cities, and villages. County inventories include composite town and city inventories and similarly, town inventories include composite village inventories. At a county-level and below, the GHG inventories reported here are called community-wide GHG inventories specific to each county or municipality.
Figure 1. Regional GHG Inventory Boundaries

Also as shown in Figure 1, each county or municipality can also prepare its own distinct government operations GHG inventory, which includes only emissions associated with its own services and facilities. This report does not separately break out government operations inventories although they are inherently included in the community inventories. The reason is because regional and community inventories are prepared with estimated or aggregated public data, whereas local governments can make more accurate inventories using proprietary energy and fleet fuel data. Typically government operations make up 2-4% of a community inventory.

Climate Smart Communities are encouraged to use the inventories reported in Appendix B (Table B 1) to support community climate action planning, and to develop government operations GHG inventories to track performance of their own facilities and operations. Finally, the community inventories reported here use methods that, in some cases, may be improved upon by communities. See the section “Improving Your Community’s GHG Inventory” for more information.

Scopes Based GHG Accounting

Within the regional or any community inventory, GHG sources are organized by what is known as “Scopes” based accounting that assign sources as either:

- Scope 1 (direct) emissions that physically occur within the regional or community boundary such as those emitted by burning natural gas or fuel oil in homes and businesses; or
- Scope 3 (indirect) emissions attributed to region or community activities that cause emissions whether the emissions physically occur in-boundary or not. Scope 2 is a special category of emissions to attribute a share of regional power plant emissions to individual communities based on how much electricity they use.
Scopes based accounting allows a community to have both Scope 1 and 3 emissions for what is essentially the same source. For example, communities with electric power stations have very large Scope 1 sources from fuel burned by the power plants inside the community. Power plants, however, do not supply electricity to communities directly. They supply the electricity grid. Therefore, communities will also have separate Scope 2 emissions based on (1) the amount of electricity they consume and (2) on the average carbon intensity of all the plants supplying the regional grid. In solid waste the City of Albany and the Town of Colonie each have scope 1 GHG emissions from landfills. However all communities including Albany and the Town of Colonie are assigned separate Scope 3 emissions based on how much waste they produce and send for disposal to landfills and waste-to-energy plants.

Scopes accounting can inherently double count, so they are never added together. The point of organizing inventories by scopes is to empower stakeholders to reduce emissions they influence. Therefore power plant and landfill operators can record GHG reductions against community Scope 1 footprints, whereas municipalities can tie community-wide energy and waste reduction efforts against their Scope 2 and 3 footprints.

The GHG Working Group identified scope 1 methods for all sources, and Scope 2 or 3 methods for electricity consumption, solid waste generation, and air transportation demand. With the exception of air travel, the Working Group adopted only Scope 1 methods to count physical emissions from all vehicles, locomotives, and boats that happen to operate in the community boundary. The group recognized that Scope 3 approaches should be developed in the future to attribute emissions to traffic created by communities and not to only traffic that happens to occur inside their boundaries. While Scope 1 accounting works well to describe transportation demand at a regional level, at a community level those with interstate highways have pass-through traffic emissions that they cannot influence. Currently ICLEI is piloting several Scope 3 approaches as part of the Community GHG Protocol Initiative (ICLEI, 2013).

**Reporting GHG Emissions**

The GHG Working Group developed two formats to report emissions:

- The **Detailed GHG Inventory Report** is like a chart of accounts listing emissions by sector and scope in a table modeled after the GHG Accounting Framework presented in Table 1.
- The **Rollup GHG Inventory Report** lists certain emissions from the detailed report that can be added to form what is accepted to be the “total” GHG footprint for the region or community. It is designed to prevent double counting across scopes. The GHG Accounting Framework identifies which sources are “rolled up” and which are not. In general the GHG Working Group decided to roll up Scopes 2 and 3 in favor of Scope 1 when both exist for the same source.

All GHG emissions in this report are reported in units of **Metric Tons Carbon Dioxide Equivalent (MTCDE)** which is the convention for reporting regional GHG inventories. One MTCDE is equal to 1000 kgs of CO₂. Non-CO₂ GHGs are first converted to an equivalent amount CO₂ using a global warming potential (GWP) unique to each gas as defined in the Intergovernmental Panel on Climate Change
(IPCC) Second Assessment Report. Table 1 shows the GHG Accounting Framework created by the GHG Working Group and identifies the complete listing of all sources included in the study.

**Table 1. Regional GHG Inventory Framework**

<table>
<thead>
<tr>
<th>Sector / Source</th>
<th>Description of the Source</th>
<th>Scope</th>
<th>Rolled Up?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Built Environment</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residential Energy</td>
<td>Direct emissions from natural gas, fuel oils, wood, and propane consumed in boundary.</td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Indirect emissions attributed to electricity consumption.</td>
<td>2</td>
<td>Yes</td>
</tr>
<tr>
<td>Commercial Energy</td>
<td>Direct emissions from natural gas, fuel oils, wood, and propane consumed in boundary.</td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Indirect emissions attributed to electricity consumption.</td>
<td>2</td>
<td>Yes</td>
</tr>
<tr>
<td>Industrial Energy</td>
<td>Direct emissions from natural gas, fuel oils, wood, coal, residual fuel oils, petroleum</td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>coke, and others consumed in boundary.</td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Indirect emissions attributed to electricity consumption.</td>
<td>2</td>
<td>Yes</td>
</tr>
<tr>
<td>Power Generation</td>
<td>Direct emissions from grid-connected power generating facilities of capacity 1 MW or</td>
<td>1</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>greater in boundary.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transmission Losses</td>
<td>Direct fugitive emissions of natural gas that leaks from the gas transmission and</td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>(T/D)</td>
<td>distribution system in boundary.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indirect emissions associated with transmission and distribution (line losses) when</td>
<td>2</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>communities consume electricity in boundary.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Direct fugitive emissions from gas, oil, and coal production sites.</td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>Industrial Processes and Product Use</td>
<td>Direct chemical process emissions (non energy related) from the cement, paper, metals,</td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>and other industries.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Direct emissions of PFCs and HFCs (refrigerants) used in vehicles, buildings, and</td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>industry.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Direct fugitive emissions of SF₆, a specialized coolant used in the utility industry.</td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td>Transportation</td>
<td>On road</td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Direct emissions from on-road vehicles in boundary.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Off-road</td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Direct emission from off-road equipment (e.g., construction, agricultural, lawn care,</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>etc.) in boundary.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rail</td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Direct emissions from rail locomotives in boundary.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Marine</td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Direct emissions from boats including private craft on lakes and rivers, and commercial</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>shipping operating on rivers and around ports.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Air</td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Indirect emissions attributed to regional domestic and international air travel demand.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Waste</td>
<td>Solid Waste</td>
<td>1</td>
<td>No</td>
</tr>
<tr>
<td></td>
<td>Direct emissions from regional landfills and waste incinerators. Grid-connected waste-</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>to-energy (WTE) facilities are reported under Scope 1 in Power Generation.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Indirect emissions attributed to communities based on the amount of solid waste they</td>
<td>3</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>create in boundary.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sewage Waste</td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Direct emissions from waste water treatment plants and septic systems in boundary.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Agriculture</td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Livestock / Manure</td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Direct emissions from livestock operations (enteric fermentation and manure management)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>in boundary.</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Fertilizer and Soils</td>
<td>1</td>
<td>Yes</td>
</tr>
<tr>
<td></td>
<td>Direct emissions from cropland management and fertilizer application in boundary.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
GHG Emissions and Bio-fuels

Burning biodiesel, wood, and ethanol releases CO$_2$ just like burning fossil fuels but as shown in Figure 2, biogenic CO$_2$ does not cause a build-up of carbon in the air, land, and water.

Figure 2. Simplified Carbon Cycle of Bio-fuels

The human act of obtaining and burning fossil fuels releases fossil carbon that had been sequestered stably in the ground and out of the active biosphere. Once released the extra carbon increases CO$_2$ concentrations in the air and oceans causing climate change and related environmental impacts. For example, widespread coral bleaching seen today is thought to be caused by acidification due to increased carbon loading (NOAA, 2012).

For the Capital District this study adopted decisions by the GHG Working Group in that:

- Bio-fuel CO$_2$ emissions will be reported separately as “biogenic” on the detailed GHG inventory reports but will not be added to the roll-up GHG inventories. Including them on the detailed report will help the Capital District target and track increasing use of bio-fuels as a GHG mitigation measure.
- All conventional gasoline consumption in New York is considered to be a 10% blend of ethanol, and that portion is counted as biogenic.
• Municipal solid waste (MSW) used as a fuel will be considered 56% biogenic and 44% fossil-based (US EIA, 2007) in the form of plastics and other oil-derivatives. CO₂ emissions from MSW will be split into fossil (Scope 1) CO₂ and biogenic CO₂ categories.

At first glance it appears that switching to bio-fuels from fossil fuels is an excellent GHG mitigation measure. While true not all bio-fuels are created equal and they each have a lifecycle CO₂e emissions footprint associated with producing and distributing them. For example, conventional corn ethanol is thought to have only a 25% lifecycle GHG benefit over gasoline, where as advanced ethanol from cellulose reduces emissions between 50-90% (Schnepf, 2013). It is important to use bio-fuel types that reduce GHG emissions on the life-cycle and do not cause other environmental problems locally or upstream. The most beneficial bio-fuels are those produced and sourced sustainably such as biodiesel from waste oil, firewood and wood waste, agricultural residue and municipal waste converted to solid fuels, and bio-methane from landfills, waste water plants, farm operations, and digested municipal waste.

**GHG Emissions and Electricity Use**

When communities use grid electricity they create Scope 2 emissions at regional power plants based on fossil carbon-intensity of the electricity. This study uses grid carbon intensities developed by the US EPA called the Emissions & Generation Resource Integrated Database- EGRID (US EPA, 2012). According to EGRID upstate New York’s electricity mix is the least fossil-carbon intensive in the nation, featuring significant hydro, nuclear, and renewable fuels. It produces only 500 lbs CO₂e/MWh consumed compared to the national average of 1222 lbs CO₂e/MWh. The Capital District is home to several major natural gas-fired power stations in Bethlehem, Rensselaer, and Athens, but these form part of the regional grid mix and do not feed consumers directly.

**Figure 3. New York vs. US Grid Electricity Generation Mix**

It should be noted NYSERDA is currently updating the carbon intensity estimates of the New York grid to better reflect imports, and so emissions estimates for Scope 2 may change.
Regional and County GHG Emissions

In 2010, the Capital District emitted 15,831,238 Metric Tons Carbon Dioxide Equivalent (MTCDE) greenhouse gas (GHG) emissions. Transportation fuels accounts for 40%, followed by energy consumption in the residential (17%), commercial (14%), and industrial (15%) sectors. Fugitive emissions contribute 12%, defined in the figures as the sum of industrial process, product use, and transmission/distribution loss emissions. Agriculture and waste sectors are the smallest contributing 2% each.

Table 2. Regional GHG Emissions By Sector and Source.

<table>
<thead>
<tr>
<th>Sector</th>
<th>Energy (MMBTU*)</th>
<th>GHG (MTCDE)</th>
<th>Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Transportation</td>
<td>92,132,492</td>
<td>6,258,855</td>
<td>2,034,241,256</td>
</tr>
<tr>
<td>Residential Energy</td>
<td>50,545,185</td>
<td>2,707,593</td>
<td>1,253,684,694</td>
</tr>
<tr>
<td>Industrial Energy</td>
<td>36,852,803</td>
<td>2,258,018</td>
<td>426,936,148</td>
</tr>
<tr>
<td>Commercial Energy</td>
<td>32,956,047</td>
<td>1,984,986</td>
<td>839,997,242</td>
</tr>
<tr>
<td>Process and Fugitive</td>
<td>1,883,042</td>
<td>1,883,042</td>
<td>48,430,800</td>
</tr>
<tr>
<td>Agriculture</td>
<td>379,096</td>
<td>379,096</td>
<td>196,904,506</td>
</tr>
<tr>
<td>Waste</td>
<td>359,648</td>
<td>359,648</td>
<td>196,904,506</td>
</tr>
<tr>
<td>Totals</td>
<td>212,485,527</td>
<td>15,831,238</td>
<td>4,554,859,339</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Source</th>
<th>Energy (MMBTU)</th>
<th>GHG (MTCDE)</th>
<th>Cost ($)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Natural Gas</td>
<td>45,417,113</td>
<td>2,410,377</td>
<td>499,434,373</td>
</tr>
<tr>
<td>Electricity</td>
<td>27,576,233</td>
<td>1,855,273</td>
<td>1,369,241,326</td>
</tr>
<tr>
<td>Fuel Oils / Propane</td>
<td>25,402,850</td>
<td>1,836,073</td>
<td>534,756,704</td>
</tr>
<tr>
<td>Coal / Coke</td>
<td>9,481,109</td>
<td>898,503</td>
<td>48,430,800</td>
</tr>
<tr>
<td>Biofuels</td>
<td>18,441,223</td>
<td>27,075</td>
<td>196,904,506</td>
</tr>
<tr>
<td>Gasoline</td>
<td>64,068,955</td>
<td>4,514,875</td>
<td>1,429,764,082</td>
</tr>
<tr>
<td>Diesel</td>
<td>22,098,044</td>
<td>1,667,275</td>
<td>476,327,547</td>
</tr>
<tr>
<td>Process and Fugitive</td>
<td></td>
<td>1,883,042</td>
<td>48,430,800</td>
</tr>
<tr>
<td>Agriculture</td>
<td></td>
<td>379,096</td>
<td>196,904,506</td>
</tr>
<tr>
<td>Waste</td>
<td></td>
<td>359,648</td>
<td>196,904,506</td>
</tr>
<tr>
<td>Totals</td>
<td>212,485,527</td>
<td>15,831,238</td>
<td>4,554,859,339</td>
</tr>
</tbody>
</table>

*MMBTU is an energy unit equal to 1 million British thermal units.

On a per capita basis, GHG emissions are 14.7 MTCDE / person compared to the 2010 US average of 21.7 MTCDE / person. Part of the difference is because New York’s electricity is cleaner on average. Part of the difference is somewhat artificial because the region is less industrial than the US as a whole as shown in Figure 4.
National average per-capita industrial energy consumption is 75 MMBTU / person, whereas in the Capital District it is only 34 MMBTU / person. In other words the regional inventory does not include “embodied” emissions connected to products and food consumed in the Capital District but manufactured by industry elsewhere. There is work underway by groups like ICLEI to develop Scope 3 methods to attribute GHG emissions to materials and food consumption but these were not finalized when the GHG Working Group convened.

Regional Energy Mix and GHG Emissions

Considering all forms of energy consumption in Table 2, the region’s energy mix is about 86% non-renewable and 14% renewable. Non-renewable energy includes fossil fuels and the portion of grid electricity consumed attributed to fossil fuels. It does not include fossil fuel energy used at grid-connected power stations. Renewable energy includes wood used in homes and industries, organic waste used to generate power, biogas used at landfills and wastewater treatment plants, ethanol in gasoline, and the renewable portion of electricity consumed in the region. It does not include energy produced by onsite solar, wind, and small-scale hydro projects.

Only non-renewable fuels create Scope 1 or 2 GHG emissions. On-road motor gasoline and diesel creates the most at 39% of total GHG emissions, followed by stationary fuel oils, natural gas, and electricity consumption at 10-15% each (Table 2). New York’s clean electricity contributes only 12% to the total emissions whereas nationally electricity contributes 32%. Considering that gasoline is an expensive petroleum fuel and is the single largest source of GHG emissions, New York’s clean electricity opens up a unique opportunity for the Capital District to significantly reduce emissions and save money by switching vehicles from gasoline to electricity (UCS, 2012).
Energy Cost

Energy is expensive. Across all forms, Capital District residents and business in 2010 spent $4.5 billion on energy of which two thirds ($2.9 billion) was on petroleum-based gasoline, diesel, and fuel oils. The cost of these fuels rose more than others and today the region pays $1.75 billion more per year for petroleum fuels than it did 10 years ago - that’s a rise of $1600 per person (adjusted for inflation). Rural areas with lower incomes and those dependent upon fuel oil have been hit the hardest.

County GHG Emissions

The Capital District counties are diverse and strategies to reduce GHG emissions must be tailored for each county and municipality based on their unique emissions profile. Across the counties as shown in Figure 5, Albany and Saratoga County have 5.1 and 3 million MTCDE GHG emissions respectively and account for half of the region’s emissions. This is primarily because they have the region’s highest populations and larger concentrations of commercial and industrial activities. On the other hand, Columbia County has a low population and less commerce and industry, and is therefore the smallest emitter at 887,247 MTCDE.

Figure 5. GHG Emissions by County (MTCDE)

Columbia, Rensselaer, and Schenectady Counties are more residential with households producing 20-25% of all emissions. Washington and Columbia Counties have significant agriculture that accounts for 17% and 8% of county emissions respectively. In some Washington County dairy towns this share rises to close to 40% rivaling on-road vehicles. Transportation emissions dominate in all counties, though the share differs, ranging from 32% in Warren County to 47% in Saratoga County.
Figure 6. GHG Emissions by County, by Source and Sector (MTCDE)

County-by-county energy mix as shown in
Figure 6 is similar across all counties, although it varies based upon how much grid-supplied natural gas is available in the county. In Columbia and Washington counties where there is less natural gas availability, fuel oil counts for 20% of all emissions whereas in Albany and Schenectady Counties fuel oil makes up only 8% of emissions. Given the rise in petroleum energy costs, counties and towns with a higher reliance on fuel oil have been hit harder by rising fuel prices and will benefit most from energy conservation.

Regionally as shown in Table 3, per-capita emissions are 14.7 MTCDE / person. Between counties it varies significantly from 9.8 MTCDE/person in Schenectady County to 23.7 MTCDE/person in Warren County.

Table 3. Per Capita GHG Emissions by County (MTCDE/person)

<table>
<thead>
<tr>
<th>County</th>
<th>Emissions (MTCDE)</th>
<th>Emissions per Capita (MTCDE/person)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>res / com</td>
</tr>
<tr>
<td>Albany</td>
<td>5,146,057</td>
<td>16.9</td>
</tr>
<tr>
<td>Saratoga</td>
<td>3,035,995</td>
<td>13.8</td>
</tr>
<tr>
<td>Rensselaer</td>
<td>1,687,291</td>
<td>10.6</td>
</tr>
<tr>
<td>Warren</td>
<td>1,558,953</td>
<td>23.7</td>
</tr>
<tr>
<td>Schenectady</td>
<td>1,523,806</td>
<td>22.8</td>
</tr>
<tr>
<td>Greene</td>
<td>1,074,747</td>
<td>14.5</td>
</tr>
<tr>
<td>Washington</td>
<td>917,143</td>
<td>14.7</td>
</tr>
<tr>
<td>Columbia</td>
<td>887,247</td>
<td>14.7</td>
</tr>
<tr>
<td>REDC</td>
<td>15,831,238</td>
<td>14.7</td>
</tr>
</tbody>
</table>

* Industrial includes process emissions

The differences are driven in part by lower transportation and residential energy use in more densely populated areas, but are driven more so simply by whether or not a county has large industry relative to population. Warren and Green Counties have higher transportation and domestic energy use per capita, but they also low populations and large cement industries (e.g., Holcim US Inc. and Lehigh Northeast Cement). Conversely Schenectady and Rensselaer counties have less industrial activity and residents and businesses are located in cities such as Troy and Schenectady, which use less energy because of their compact form.

Industrial facility emissions can be large and dominate emission inventories, and therefore it is important to engage these stakeholders as part of sustainability planning. Communities can find detailed data on all Capital District GHG point sources in Table 4. For example the Lafarge, Inc. cement plant in the Village of Ravena counts for 20% of Albany County’s entire GHG inventory, emitting roughly the same as all emissions sources from the City of Albany combined. Within the City of Albany, the Office of General Services (OGS) Sheridan Steam Plant facility that heats the Empire State Plaza accounts for 50% of the cities industrial sector GHG inventory.
## Table 4. Capital District Industrial GHG Point Sources

<table>
<thead>
<tr>
<th>Facility Name</th>
<th>Industry</th>
<th>Municipality</th>
<th>County</th>
<th>GHG Emissions (MTCDE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laffarge Building Materials, Inc.</td>
<td>Cement</td>
<td>Ravena</td>
<td>Albany</td>
<td>524,461</td>
</tr>
<tr>
<td>Lehigh Northeast Cement Company</td>
<td>Cement</td>
<td>Glens Falls</td>
<td>Warren</td>
<td>125,070</td>
</tr>
<tr>
<td>Holcim US Inc</td>
<td>Cement</td>
<td>Catskill</td>
<td>Greene</td>
<td>158,231</td>
</tr>
<tr>
<td>Momentive Per. Materials</td>
<td>Chemical</td>
<td>Waterford</td>
<td>Saratoga</td>
<td>133,893</td>
</tr>
<tr>
<td>Finch Paper LLC</td>
<td>Paper</td>
<td>Glens Falls</td>
<td>Warren</td>
<td>113,442</td>
</tr>
<tr>
<td>Albany Rapp Rd. Landfill</td>
<td>Landfill</td>
<td>Albany</td>
<td>Albany</td>
<td>78</td>
</tr>
<tr>
<td>Colonie Town Landfill</td>
<td>Landfill</td>
<td>Cohoes</td>
<td>Albany</td>
<td>95</td>
</tr>
<tr>
<td>Sabic Innovative Plastics US LLC</td>
<td>Paper</td>
<td>Selkirk</td>
<td>Albany</td>
<td>53,332</td>
</tr>
<tr>
<td>SCA Tissue</td>
<td>Paper</td>
<td>South Glens Falls</td>
<td>Saratoga</td>
<td>38,433</td>
</tr>
<tr>
<td>St Group, Inc.</td>
<td>Chemical</td>
<td>Rotterdam Junction</td>
<td>Schenectady</td>
<td>26,790</td>
</tr>
<tr>
<td>Iroquois Gas Transmission, L.P.</td>
<td>Gas Distrib.</td>
<td>Delanson</td>
<td>Schenectady</td>
<td>23,866</td>
</tr>
<tr>
<td>Owens-Corning Insulating Systems</td>
<td>Chemical</td>
<td>Feura Bush</td>
<td>Albany</td>
<td>23,655</td>
</tr>
<tr>
<td>GE Global Research Center</td>
<td>General</td>
<td>Niskayuna</td>
<td>Schenectady</td>
<td>22,427</td>
</tr>
<tr>
<td>Compressor Station 254</td>
<td>Gas Distrib.</td>
<td>Riders Mills</td>
<td>Columbia</td>
<td>20,428</td>
</tr>
<tr>
<td>Hollingsworth &amp; Vose-Easton Mill</td>
<td>Paper</td>
<td>Greenwich</td>
<td>Washington</td>
<td>20,419</td>
</tr>
<tr>
<td>NYS Washington Correctional Facility</td>
<td>General</td>
<td>Comstock</td>
<td>Washington</td>
<td>16,167</td>
</tr>
<tr>
<td>Norlite Corp</td>
<td>Cement</td>
<td>Cohoes</td>
<td>Albany</td>
<td>10,724</td>
</tr>
<tr>
<td>Ball Metal Beverage Container Corp</td>
<td>Metals</td>
<td>Saratoga Springs</td>
<td>Saratoga</td>
<td>10,393</td>
</tr>
<tr>
<td>Buckeye Albany Terminal LLC</td>
<td>General</td>
<td>Albany</td>
<td>Albany</td>
<td>8,950</td>
</tr>
<tr>
<td>Quadgraphics</td>
<td>Printing</td>
<td>Saratoga Springs</td>
<td>Saratoga</td>
<td>8,757</td>
</tr>
<tr>
<td>Amri Rensselaer</td>
<td>Chemical</td>
<td>Rensselaer</td>
<td>Rensselaer</td>
<td>6,945</td>
</tr>
<tr>
<td>Hollingsworth &amp; Vose Greenwich Mill</td>
<td>Paper</td>
<td>Center Falls</td>
<td>Washington</td>
<td>6,265</td>
</tr>
<tr>
<td>Commonwealth Plywood Inc.</td>
<td>Paper</td>
<td>Whitehall</td>
<td>Washington</td>
<td>4,923</td>
</tr>
<tr>
<td>Von Roll Usa Inc</td>
<td>Industry</td>
<td>Schenectady</td>
<td>Schenectady</td>
<td>3,873</td>
</tr>
<tr>
<td>Hess Rensselaer Terminal</td>
<td>Energy Distr.</td>
<td>Rensselaer</td>
<td>Rensselaer</td>
<td>3,472</td>
</tr>
<tr>
<td>Saint Gobain Per. Plastics</td>
<td>Chemical</td>
<td>Hoosick Falls</td>
<td>Rensselaer</td>
<td>2,696</td>
</tr>
<tr>
<td>Lehigh Northeast Cement – Greene</td>
<td>Cement</td>
<td>Catskill</td>
<td>Greene</td>
<td>933</td>
</tr>
<tr>
<td>Manchester Wood Inc</td>
<td>Paper</td>
<td>Granville</td>
<td>Washington</td>
<td>143</td>
</tr>
<tr>
<td>Petroleum Fuel &amp; Terminal Co</td>
<td>Energy Distr.</td>
<td>Rensselaer</td>
<td>Rensselaer</td>
<td>91</td>
</tr>
<tr>
<td>Global Companies LLC</td>
<td>General</td>
<td>Albany</td>
<td>Albany</td>
<td>58</td>
</tr>
<tr>
<td>Citgo Petroleum Glenmont Terminal</td>
<td>Energy Distr.</td>
<td>Glenmont</td>
<td>Albany</td>
<td>18</td>
</tr>
</tbody>
</table>
Household Energy, Land Use, and GHG Emissions

Capital District GHG emissions are driven by a nexus between the residential and transportation sectors. The residential sector is the largest of the “RCI” sectors (residential, commercial, industrial) and transportation is the single largest sector overall. They are linked because while households create energy demand for domestic heating and cooling, household residents create transportation demand that forms the majority of on-road transportation GHG emissions. Together how much an individual household and its residents contribute to GHG emissions depends upon household size and efficiency, choice of heating fuels, community land use patterns, proximity to work, and accessibility of transit.

For regional and community planners to find drivers to engage community residents in GHG reduction programs, it’s important they understand how and why their households use energy, how much it costs them, and how consumption patterns vary across the region. The study evaluated the following per-household metrics for each municipality:

**Domestic energy use:** The sum total of all electricity, gas, fuel oil, and wood used in a household reported in MMBTU. This energy data comes directly from the GHG inventory and utility-supplied data.

**Attributed transportation energy use:** This is an estimate of fuel use attributed to households to meet transportation needs (i.e., directly through fueling of personal vehicles or indirectly through use of transit.) To estimate it, it was assumed that Capital District households consume at the national average rate of 132 MMBTU/household. Half of that rate was assigned to municipalities by default and the balance was apportioned weighted to average community commute time reported in the American Community Survey. This method ensures that the average household rate remains 132 over the whole region, but allows communities with longer commutes to receive more energy than those with shorter commute times.

**Attributed GHG footprint:** Total GHG emissions attributed to a household for meeting both its domestic energy and transportation energy needs. The calculation assumes for simplicity that all transportation energy is conventional motor gasoline.

**Energy Cost of Living (ECOL):** The total cost for all energy paid by households to meet domestic and transportation needs. ECOL is compared with household incomes to determine how the energy cost burden varies across the counties and municipalities.

Maps depicting each of these four municipal household metrics are shown on the following pages on Figures 7 - 10, and summarized by county in Figure 11 and Table 5. Results for all municipalities are presented in Appendix B, Table B 4.
Figure 7. GHG Emissions per Household Attributed to Domestic Energy Use.
Figure 8. GHG Emissions per Household Attributed to Transportation Demand
Figure 9. GHG Emissions per Household.
Figure 10. Energy Cost of Living (ECOL) per Household.

Energy Cost of Living

- $3,581.45 - $5,320.13
- $5,320.14 - $6,575.48
- $6,575.49 - $7,718.20
- $7,718.21 - $9,147.85

Total cost of household energy for domestic and transportation needs.

* Climate Smart Communities Labeled Green.
Figure 11. Energy Use and GHG Emissions per Household

Domestic Energy
Per-household use of electricity, natural gas, fuel oil, and wood. Wood based energy is shown separately in green.

Transportation Energy
Per-household use of gasoline and diesel attributed to household members using private vehicles, transit, and trains.

GHG Emissions
Per-household GHG emissions (MTCDE) caused by a household’s domestic and transportation energy demand.

Energy Cost of Living
Total cost for domestic and transportation energy. Domestic energy costs are broken out by fuel oil (purple) and others (light blue). Black diamonds indicate the fraction of average household income that is spent on energy.
As shown in Figure 11 households in the Capital District consumed 114 MMBTU/year in 2010 for domestic energy, higher than both state (103) and national (89) averages. This is reasonable because New York is a cold state, and because upstate has lower development density than downstate.

Looking across the counties, households in Greene, Columbia, and Washington counties consume the most domestic and transportation energy, create the most GHG emissions, and spend the most on energy. They have more single family households, residents have longer commute times, and households are more dependent on fuel oil for heating. Greene and Washington County households combine high energy bills with the lowest average incomes and consequently spend 12% of household income on energy (Table 5). In some towns that percentage rises to 20% or more.

### Table 5. Energy Cost of Living (ECOL) and GHG Emissions per Household

<table>
<thead>
<tr>
<th>County</th>
<th>Energy Use (MMBTU)</th>
<th>Energy Cost ($)</th>
<th>GHG Emissions (MTCDE)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Domestic</td>
<td>Transport</td>
<td>Total</td>
</tr>
<tr>
<td>Greene</td>
<td>151</td>
<td>141</td>
<td>291</td>
</tr>
<tr>
<td>Columbia</td>
<td>145</td>
<td>141</td>
<td>286</td>
</tr>
<tr>
<td>Washington</td>
<td>158</td>
<td>146</td>
<td>304</td>
</tr>
<tr>
<td>Saratoga</td>
<td>122</td>
<td>141</td>
<td>263</td>
</tr>
<tr>
<td>Rensselaer</td>
<td>107</td>
<td>129</td>
<td>237</td>
</tr>
<tr>
<td>Schenectady</td>
<td>122</td>
<td>128</td>
<td>250</td>
</tr>
<tr>
<td>Warren</td>
<td>104</td>
<td>132</td>
<td>235</td>
</tr>
<tr>
<td>Albany</td>
<td>95</td>
<td>122</td>
<td>217</td>
</tr>
<tr>
<td><strong>Class</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Rural</td>
<td>159.86</td>
<td>145.89</td>
<td>306</td>
</tr>
<tr>
<td>Suburban</td>
<td>116.66</td>
<td>131.84</td>
<td>249</td>
</tr>
<tr>
<td>Urban</td>
<td>79.07</td>
<td>121.61</td>
<td>201</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td>114.62</td>
<td>131.92</td>
<td>247</td>
</tr>
</tbody>
</table>

Conversely, households in Albany, Rensselaer, and Schenectady counties consume the least domestic and transportation energy, create 40% less GHG emissions, and spend the least on energy. These counties are more urban and compact, have lower commute times, and have more households in multifamily buildings. Households in Warren and Saratoga Counties fall in the middle, though Saratoga has higher transportation emissions.

As shown in the top panel of Figure 11, counties with households that use firewood as a heating fuel reduce GHG emissions per household. For example, while Washington County households have the highest domestic and transportation energy consumption needs, its households rank only 3rd in GHG emissions because 38% of domestic energy needs are met with renewable wood that doesn’t create GHG emissions.
Energy performance and cost varies even more across individual municipalities. For example, Figure 12 shows that rural and more outlying communities spend a greater percentage of income on energy compared to urban communities.

**Figure 12. Energy Cost of Living as a Percent of Income**
Appendix B, Table B 4, provides the Energy Cost of Living and GHG emissions / household data for all 160 municipalities. Households in some rural towns consume three to four times more energy than their urban counterparts. For example, households the city of Troy, which is compact and has a high proportion of multi-family housing, are by far the least energy demanding in the Capital District, consuming only 38 MMBTU/year to meet domestic energy needs.

**Energy prices- a driver for energy and GHG reduction efforts**

As shown in Figure 13, households today pay on average $2300/year more to power homes and vehicles than they did ten years ago (adjusted for inflation). Energy bills in Greene and Columbia county households have risen about a thousand dollars more than those in Albany County. Across individual municipalities the difference is even greater. Some rural Towns have seen average household and vehicle fuel bills increase in excess of $3500/year.

**Figure 13. 10-Year Cost Increase for Energy ($$/household)**

Petroleum fuel prices have increased far more than natural gas and electricity, and so rising prices have hit rural areas harder because they rely on gasoline for transport and fuel oil for heating. The purple shading in Figure 13 shows the portion of the 10-year energy price increase that is due to domestic fuel oil, which accounts for much of the cost increase difference between counties. Overall, with energy bills now consuming 8-20% of a household income prices likely have already had, and will continue to have, a depressive effect on local economies if energy efficiency measures are not pursued.

Most counties are a mix of urban, suburban, and rural communities. To investigate consumption differences between types, the study averaged household consumption data from all communities by type instead of by county. As shown in Figure 14 rural households create 31% more GHG emissions and pay 37% more for energy than urban counterparts to meet transportation and domestic energy needs.
Figure 14. Annual Energy Costs ($) and GHG Emissions (MTDCE) per Household

Suburban and rural households consume similar amounts of transportation fuels, but rural households consume more energy for domestic use at home. Urban households consume considerably less energy for both transportation and domestic needs. It is clear that as a long term GHG mitigation strategy, emphasizing compact and employment accessible land use development would reduce GHG emissions and save residents money.
Reducing GHG Emissions from On-Road Transportation

With transportation accounting for 40% of all emissions in the Capital District, this is a priority area for regional GHG mitigation efforts. Reducing emissions typically involves around (1) introducing alternative fuels and more efficient vehicles to reduce the impact of current on-road travel demand, and (2) implementing land use policy and transit measured to reduce both existing and future travel demand. This study developed and compared several scenarios around electric vehicles, bio-fuels, and land use policy. The results are presented in Table 6.

Electric Vehicles

New York has a unique opportunity to power on-road and off-road vehicles with clean electricity, which lowers both costs and GHG emissions. According to a recent study by the Union of Concerned Scientists (UCS, 2012), New York’s power grid is the cleanest in the nation and switching passenger cars from gasoline to electric will reduce emissions by 75% per mile. Electrifying transportation requires developing a market (most likely starting in urban areas) and implementing charging infrastructure. As shown in Table 6, this is switching 20% of on-road vehicle miles to electricity would reduce the Capital District emissions by 5% and save residents and estimated $175 million in fuel costs per year.

Bio-Fuels

Bio-fuels can also reduce GHG emissions, though as discussed previously the lifecycle benefit varies from 25% for corn ethanol to GHG to 60% or more from cellulosic ethanol from switch grass and other feedstock (Schnepf, 2013). Using locally recycled oils and bio-methane from waste to create fuel can increase that savings even further.

The American Renewable Fuels standard was created under the Energy Policy Act (EPAct) of 2005, and established the first renewable fuel volume mandate in the United States. Under the Energy Independence and Security Act (EISA) of 2007, the RFS program set lifecycle greenhouse gas performance standards to ensure that each category of renewable fuel emits fewer greenhouse gases than the petroleum fuel it replaces. The act created a category of “advanced” bio-fuels, requiring that they save 50% on the lifecycle. These fuels, like cellulosic ethanol from switch grass, are in limited production today but the Act is seeking to make them widely available by 2020.

As shown in Table 6, if the Capital District shifts 20% of on-road gasoline and diesel consumption to advanced bio-fuels as defined by the RFS, this will reduce the Capital District GHG emissions by 3.3%.

Land use planning and compact, mixed-used development

While electric vehicles and alternative fuels provide immediate gains to reduce the impact of current transportation demand, the best option to reduce GHG emissions and fuel costs is to simply reduce automobile use. Compact, transit accessible, pedestrian friendly development requires 20-50% less vehicle use and creates less GHG emissions per household (US EPA, 2011). For many communities it is challenging to change existing land use patterns, but it is possible to introduce mixed use development, complete streets, and urban infill to bring people closer to employment and transit.
As shown in Table 6, reducing VMT demand in the Capital District by 10% would reduce GHG emissions by 3.2% and save residents $200 million in fuel costs - savings on par with those gained by introducing alternative fuels and vehicles.

Natural Gas

Natural gas is becoming a more cost effective fossil fuel. In addition, studies show that on the lifecycle, natural gas can reduce GHG emissions over petroleum by 6-10% (US DOE).

Vehicle Efficiency

All vehicles, whether alternative or conventional, can always be chosen to be more efficient over the ones they are replacing. This is perhaps the easiest way to reduce emissions and to save money. For example, hybrid-electric gasoline vehicles can cut fuel use in half by themselves.

Table 6. Reducing Transportation Emissions in the Capital District

<table>
<thead>
<tr>
<th>Shift light duty gasoline cars and trucks to electricity(^1)</th>
<th>(%) Shift of VMT</th>
<th>GHG Savings</th>
<th>Fuel Cost Savings (^2)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emissions (MTCDE)</td>
<td>% transport</td>
<td>% of total baseline</td>
</tr>
<tr>
<td>10</td>
<td>340,176</td>
<td>6.9%</td>
<td>2.2%</td>
</tr>
<tr>
<td>20</td>
<td>680,351</td>
<td>13.7%</td>
<td>4.4%</td>
</tr>
<tr>
<td>50</td>
<td>1,700,878</td>
<td>34.3%</td>
<td>10.9%</td>
</tr>
<tr>
<td>100</td>
<td>3,401,756</td>
<td>68.6%</td>
<td>21.8%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Reduce overall travel demand (VMT)</th>
<th>(%) Reduction of VMT</th>
<th>GHG Savings</th>
<th>Fuel Cost Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emissions (MTCDE)</td>
<td>% transport</td>
<td>% of total baseline</td>
</tr>
<tr>
<td>2</td>
<td>99,217</td>
<td>2.0%</td>
<td>0.6%</td>
</tr>
<tr>
<td>5</td>
<td>248,042</td>
<td>5.0%</td>
<td>1.6%</td>
</tr>
<tr>
<td>10</td>
<td>496,085</td>
<td>10.0%</td>
<td>3.2%</td>
</tr>
<tr>
<td>20</td>
<td>992,170</td>
<td>20.0%</td>
<td>6.3%</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Shift from gasoline to E-85 (cellulosic or advanced cornstarch)</th>
<th>(%) Shift</th>
<th>GHG Savings</th>
<th>Fuel Cost Savings</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Emissions (MTCDE)</td>
<td>% transport</td>
<td>% of total baseline</td>
</tr>
<tr>
<td>2</td>
<td>51,281</td>
<td>1.0%</td>
<td>0.3%</td>
</tr>
<tr>
<td>5</td>
<td>128,202</td>
<td>2.6%</td>
<td>0.8%</td>
</tr>
<tr>
<td>10</td>
<td>256,404</td>
<td>5.2%</td>
<td>1.6%</td>
</tr>
<tr>
<td>20</td>
<td>512,809</td>
<td>10.3%</td>
<td>3.3%</td>
</tr>
</tbody>
</table>

\(^1\) Electric vehicle efficiency set to 0.34 Kwh / mile (UCS, 2012), total cost of electricity $0.17/KWh
\(^2\) Presumed $4.00/gallon for gasoline
\(^3\) Assumes sustainable ethanol has 60% lifecycle emissions reduction per gallon over gasoline
Sector-by-Sector GHG Methods, Results, and Data Sources

Emissions in the Built Environment

Residential, Commercial, and Industrial Energy Consumption
Fuels and energy used in homes, businesses, and industry are combined the largest source of GHG emissions in the Capital District. They include:

- Scope 1 direct emissions from burning natural gas, coal, fuel oils (#1, #2, #4, #5, #6), kerosene, propane, used oils, petroleum coke, motor gasoline, other petroleum products.
- Scope 2 emissions attributed to electricity consumption.
- Biogenic CO₂ emissions from wood and bio-methane combustion.

Table 7 shows a breakdown of GHG emission by sector and county.

<table>
<thead>
<tr>
<th>County</th>
<th>Residential</th>
<th>Commercial</th>
<th>Industrial</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Scope 1</td>
<td>Scope 2</td>
<td>Biogenic</td>
</tr>
<tr>
<td>Albany</td>
<td>484,926</td>
<td>181,769</td>
<td>73,093</td>
</tr>
<tr>
<td>Columbia</td>
<td>154,399</td>
<td>58,821</td>
<td>83,462</td>
</tr>
<tr>
<td>Greene</td>
<td>123,375</td>
<td>48,772</td>
<td>69,029</td>
</tr>
<tr>
<td>Rensselaer</td>
<td>247,175</td>
<td>105,426</td>
<td>124,918</td>
</tr>
<tr>
<td>Saratoga</td>
<td>399,738</td>
<td>174,351</td>
<td>151,399</td>
</tr>
<tr>
<td>Schenectady</td>
<td>262,536</td>
<td>92,594</td>
<td>27,899</td>
</tr>
<tr>
<td>Warren</td>
<td>141,581</td>
<td>55,074</td>
<td>74,991</td>
</tr>
<tr>
<td>Washington</td>
<td>128,066</td>
<td>48,989</td>
<td>137,804</td>
</tr>
<tr>
<td>REDC</td>
<td>1,941,798</td>
<td>765,795</td>
<td>742,594</td>
</tr>
</tbody>
</table>

For each municipality, electricity and fuel consumption data was collected or estimated in units of MMBTU (Million British Thermal Units) and converted into GHG emissions using methods recommended by GHG Working Group (NYSERDA, 2013). The methods and data sources are summarized below and for reference the emission factors can be found in Appendix C, Table C 1.

Natural gas and electricity: National Grid, Central Hudson, New York State Electric and Gas (NYSEG), and the Green Island Power Authority (GIPA) provided aggregate electricity and natural gas consumption by sector for all 160 municipalities in the Capital District. The data are available in Appendix B, Table B 2. It was provided in aggregate and includes no private data for any specific utility customers.

Residential non-utility fuels (coal, fuel oils/kerosene, wood, and propane): Consumption by each municipality was estimated by allocating a portion of total US Energy Information Administration (EIA) reported statewide consumption of each fuel weighted to American Community Survey (ACS)
demographic information on household counts, home-heating fuel preference, and housing unit size. The method also incorporates weighting for heating-degree-day (HDD) differences across New York.

- The ACS data is available online via the Census Bureau’s American Fact Finder. The study used ACS five-year moving average demographics for home heating and housing counts, and 2010 census data for population.
- Statewide consumption of residential fuels reported by the US Energy Information Administration (EIA) and is available online at the State Energy Data System (SEDS) at http://www.eia.gov/state/seds/. For residential fuels, the study used five year moving average (2006-2010) consumption rates to match the timescale of the ACS data.

Commercial fuels (coal, fuel oils/kerosene, wood, and propane): Consumption by each municipality was estimated by allocating a portion of total statewide consumption to each municipality weighted to local employment totals, commercial floor square footage, home-heating fuel preference, and heating-degree-day (HDD) differences across New York. Home heating fuel choice in a community is used as a proxy to determine which fuels are most likely to be used by businesses in the same community.

Industrial fuels (coal, petroleum coke, fuel oils/residual fuel oil/kerosene, natural gas, and others): Large industry and power generators in the Capital District report fuel use and emissions directly to one or more of the following three mandatory programs from which data is made public:

- NYSDEC’s Title 5 permits issued under the Air Permitting and Registration Program with data available at http://www.dec.ny.gov/chemical/32249.html
- Energy Information Administration (EIA)’s Schedule 923 Annual electric utility reporting program with data available at http://www.eia.gov/electricity/data/elaq23/

All relevant sources were pulled from these databases for 2010 and placed directly in the inventories of the communities in which they are located. Where the same facility was listed in multiple reporting sources, NYSDEC data was preferred as it is most quality controlled.

Because smaller industry does not report to the above mandatory reporting programs, the GHG Working Group created a “pie slice” method to estimate the emission contribution of unaccounted-for-industry. The method compares total statewide emissions from actual reporting facilities to industry-wide sector totals derived using EIA/SEDS energy data. The difference between the two at the state level was assumed to be a “pie slice” representing smaller unaccounted for industry, and that portion was then allocated from the state level to counties based manufacturing employment data from the New York State Department of Labor (NYSDOL). County totals were then further allocated to communities using the community-to-county ratio of industrial electricity consumption reported by the utilities.
Transmission and Distribution (T/D) Losses

When utilities supply natural gas and electricity to consumers, some of it is lost during transmission and distribution (T/D). The study adopted the GHG Working Group recommendation to use a regional T/D loss rate of 1.9% for natural gas and 5.28% for electricity. T/D loss emissions are assigned to municipalities by applying the above percentages to actual natural gas and electricity consumption levels provided by the utilities. Natural gas T/D is counted as direct unburned fugitive emissions of methane, whereas electricity T/D is treated as consumption and emissions are calculated using the electricity scope 2 emissions factors.

As shown in Table 9, T/D emissions from natural gas loss are higher than those from electricity because raw unburned methane is a potent GHG with a global warming potential (GWP) of 21.

Another potential source of T/D GHG emissions is direct fugitive methane (CH$_4$) emissions that can leak from coal, oil, and natural gas mining and drilling operations. There are no active energy wells in the region and so this source is not reported.

Industrial Process and Product Use

Industrial Process Emissions

Industrial process GHG emissions are chemical by-products of certain manufacturing processes. In the Capital District in 2010 they come from cement and paper production at four facilities that report emissions to EPA’s GHGRP program (Table 8). Because these industries also use fuels for energy, Table 8 shows total facility GHG emissions broken into industrial process emissions, Scope 1 emissions from fossil fuel combustion, and biogenic CO$_2$ emissions from wood combustion.

<table>
<thead>
<tr>
<th>Facility</th>
<th>Industry</th>
<th>Municipality</th>
<th>County</th>
<th>GHG Emissions (MTCDE)</th>
<th>% of Inventory</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lafarge, Inc.</td>
<td>Cement</td>
<td>Ravena</td>
<td>Albany</td>
<td>524,461  0  544,401  1,068,862</td>
<td>21%  95%</td>
</tr>
<tr>
<td>Lehigh Northeast</td>
<td>Cement</td>
<td>Glens Falls</td>
<td>Warren</td>
<td>125,070  0  321,965  447,035</td>
<td>49%  58%</td>
</tr>
<tr>
<td>Holcim US Inc</td>
<td>Cement</td>
<td>Catskill</td>
<td>Greene</td>
<td>158,231  0  160,108  318,339</td>
<td>19%  62%</td>
</tr>
<tr>
<td>Finch Paper LLC</td>
<td>Paper</td>
<td>Glens Falls</td>
<td>Warren</td>
<td>113,442  318,416  3,407  116,849</td>
<td>13%  15%</td>
</tr>
<tr>
<td>Totals</td>
<td></td>
<td></td>
<td></td>
<td>921,203  318,416  1,029,881  1,951,084</td>
<td></td>
</tr>
</tbody>
</table>

Facility emissions are large and, as discussed earlier, can represent a major portion of county and local emissions. The Lehigh Northeast cement facility in Warren County burns coal and represents half of the entire county’s GHG inventory. As major energy consumers these large facilities are not limited to using fossil fuels. Finch Paper LLC is the region’s single largest consumer of bio-fuel (as wood) which significantly reduces GHG emissions from that facility.

This study, for 2010, does not include possible emissions related to semiconductor manufacturing at GlobalFoundries in Malta, a source that may need to be included in the future.
Product Use Emissions

Many refrigerants are GHGs by themselves and create a GHG footprint when they leak to the atmosphere. Product use emissions are broken into two categories:

HFCs, also called Ozone Depleting Substitutes, include common refrigerants and fire retardants used ubiquitously in homes, buildings, and vehicles, and in commercial facilities like ice rinks and supermarkets.

Sulfur Hexafluoride (SF₆) is a specialized coolant used by the utility industry and is very potent GHG. It is reported separately because unlike HFCs, SF₆ is highly specific utilities and each one can manage losses and report progress as a sustainability strategy.

Community level Scope1 HFC emissions were computed by applying a national average emissions rate of 0.37 MTCDE/person to local population. Scope 1 SF₆ emissions were calculated using a national average emissions rate of 0.000921 MTCDE/MMBTU of electricity consumed. Both emission rates were developed by the GHG Working Group (NYSERDA, 2013).

Table 9. Product Use and T/D Loss Emissions by County (MTCDE)

<table>
<thead>
<tr>
<th>County</th>
<th>Product Use (MTCDE)</th>
<th>T/D Losses (MTCDE)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>SF₆ Utility</td>
<td>ODS/Refrigerants</td>
</tr>
<tr>
<td>Albany</td>
<td>8,090</td>
<td>112,914</td>
</tr>
<tr>
<td>Saratoga</td>
<td>5,259</td>
<td>81,514</td>
</tr>
<tr>
<td>Rensselaer</td>
<td>3,231</td>
<td>59,177</td>
</tr>
<tr>
<td>Warren</td>
<td>1,801</td>
<td>24,389</td>
</tr>
<tr>
<td>Schenectady</td>
<td>2,656</td>
<td>57,431</td>
</tr>
<tr>
<td>Greene</td>
<td>1,493</td>
<td>18,270</td>
</tr>
<tr>
<td>Washington</td>
<td>1,333</td>
<td>23,464</td>
</tr>
<tr>
<td>Columbia</td>
<td>1,538</td>
<td>23,420</td>
</tr>
<tr>
<td>REDC</td>
<td>25,401</td>
<td>400,579</td>
</tr>
</tbody>
</table>

Power Generation- Scope 1

There are 14 grid-connected power generators in the region with nameplate capacity of 1 MWh or greater that use fuel and create GHG emissions (Table 11). Smaller facilities that generate power for onsite consumption (i.e., non-grid connected) are counted as Scope 1 emissions in the industrial or commercial sectors. For example, the Office of General Services (OGS) Sheridan Steam plant that serves the Empire State Plaza in Albany is considered an industrial source. Also excluded in this list are renewable facilities regardless of size like hydro, wind, and on-site solar because they do not create GHG emissions.
Regional power stations are fired with a variety of fuels and create significant GHG emissions. The largest power stations are fired with natural gas. Athens Generating, Selkirk Cogeneration Partners, and the PSEG Bethlehem Energy Center create more emissions than the sum total of all vehicles, operating on all roads, in all eight counties combined. Smaller renewable facilities like the landfills in the City of Albany and Town of Colonie generate power with landfill gas that contributes no GHG emissions and reduces direct fugitive emissions from the landfills. The Wheelabrator Hudson Falls waste-to-energy (WTE) plant uses municipal solid waste (MSW) that is 56% organic (US EIA, 2007) and can be considered the second largest consumer of bio-fuel in the region second only to Finch Paper LLC in Warren County.

The Capital District is an energy and GHG emissions exporter—meaning that its power plants creates more direct GHG emissions than can be attributed indirectly to its regional electricity consumption. Table 10 shows that direct Scope 1 emissions are 5,646,929 MTCDE compared to only 1,855,273 MTCDE in Scope 2. The majority of generation is in Albany and Greene Counties.

Table 10. Electricity Generation vs. Consumption (MTCDE)

<table>
<thead>
<tr>
<th>County</th>
<th>Generation / Scope 1</th>
<th>Consumption / Scope 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albany</td>
<td>2,479,133</td>
<td>590,899</td>
</tr>
<tr>
<td>Saratoga</td>
<td>263,921</td>
<td>384,115</td>
</tr>
<tr>
<td>Rensselaer</td>
<td>498,712</td>
<td>235,972</td>
</tr>
<tr>
<td>Warren</td>
<td>0</td>
<td>131,528</td>
</tr>
<tr>
<td>Schenectady</td>
<td>0</td>
<td>193,991</td>
</tr>
<tr>
<td>Greene</td>
<td>2,319,605</td>
<td>109,037</td>
</tr>
<tr>
<td>Washington</td>
<td>85,557</td>
<td>97,372</td>
</tr>
<tr>
<td>Columbia</td>
<td>0</td>
<td>112,360</td>
</tr>
<tr>
<td>REDC</td>
<td>5,646,929</td>
<td>1,855,273</td>
</tr>
</tbody>
</table>

Fuel consumption data were taken from either from the EPA GHG Reporting Program (GHGRP), NYSDEC’s Title 5 Air Permitting and Registration Program, or from the US Energy Information Administration’s (EIA) Schedule 923 reporting program that collects data annually from that nation’s power producers. Where facilities were represented in more than one reporting program, NYSDEC data was preferred because it is quality controlled by the Agency. Scope 1 emissions are reported in the Detailed GHG Inventory Reports for the region and counties in Appendix A, but as per reporting convention they are not counted in the “roll up” emission inventories.
Table 11. Capital District Electric Power Generation Facilities

<table>
<thead>
<tr>
<th>Power Facility</th>
<th>Municipality</th>
<th>County</th>
<th>GHG Emissions (MTCDE)</th>
<th>Energy Use</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Scope 1</td>
<td>Bio-Fuel</td>
</tr>
<tr>
<td>Athens Generating Company</td>
<td>Athens</td>
<td>Greene</td>
<td>2,319,226</td>
<td>0</td>
</tr>
<tr>
<td>PSEG Bethlehem Energy Center</td>
<td>Glenmont</td>
<td>Albany</td>
<td>1,641,254</td>
<td>0</td>
</tr>
<tr>
<td>Selkirk Cogeneration Partners</td>
<td>Selkirk</td>
<td>Albany</td>
<td>837,720</td>
<td>0</td>
</tr>
<tr>
<td>Empire Generating LLC</td>
<td>Rensselaer</td>
<td>Rensselaer</td>
<td>415,212</td>
<td>0</td>
</tr>
<tr>
<td>Indeck-Corinth Energy Center</td>
<td>Corinth</td>
<td>Saratoga</td>
<td>263,921</td>
<td>0</td>
</tr>
<tr>
<td>NYSOGS Sheridan Steam Plant</td>
<td>Albany</td>
<td>Albany</td>
<td>72,962</td>
<td>0</td>
</tr>
<tr>
<td>Castleton Power, LLC</td>
<td>Castleton-on-Hudson</td>
<td>Rensselaer</td>
<td>70,193</td>
<td>0</td>
</tr>
<tr>
<td>Wheelabrator Hudson Falls LLC</td>
<td>Hudson Falls</td>
<td>Washington</td>
<td>68,010</td>
<td>80,893</td>
</tr>
<tr>
<td>Gen. Electric Steam Turbine Global</td>
<td>Schenectady</td>
<td>Schenectady</td>
<td>20,933</td>
<td>0</td>
</tr>
<tr>
<td>Rensselaer Cogeneration</td>
<td>Rensselaer</td>
<td>Rensselaer</td>
<td>13,307</td>
<td>0</td>
</tr>
<tr>
<td>Central Hudson, South Cairo</td>
<td>Cairo</td>
<td>Greene</td>
<td>235</td>
<td>0</td>
</tr>
<tr>
<td>Central Hudson, West Coxsackie</td>
<td>Coxsackie</td>
<td>Greene</td>
<td>145</td>
<td>0</td>
</tr>
<tr>
<td>Town of Colonie Town Landfill</td>
<td>Cohoes</td>
<td>Albany</td>
<td>95</td>
<td>19,598</td>
</tr>
<tr>
<td>Albany Rapp Rd. Landfill</td>
<td>Albany</td>
<td>Albany</td>
<td>78</td>
<td>9,748</td>
</tr>
</tbody>
</table>
Transportation

Transportation GHG emissions are broken into five categories: On-road, off-road, rail, marine, and aircraft emissions. Off-road transportation includes agricultural machinery, construction and maintenance vehicles, lawn and garden equipment, and other vehicles that use transportation fuels but don’t operate on roads.

Table 12. Transportation Emissions By Mode and County (MTCDE)

<table>
<thead>
<tr>
<th>County</th>
<th>On-Road</th>
<th>Non-Road</th>
<th>Air</th>
<th>Rail</th>
<th>Marine</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Albany</td>
<td>1,496,750</td>
<td>125,791</td>
<td>150,131</td>
<td>28,092</td>
<td>65,297</td>
<td>1,866,061</td>
</tr>
<tr>
<td>Saratoga</td>
<td>1,177,072</td>
<td>110,503</td>
<td>108,381</td>
<td>13,181</td>
<td>11,019</td>
<td>1,420,156</td>
</tr>
<tr>
<td>Rensselaer</td>
<td>619,296</td>
<td>58,214</td>
<td>78,682</td>
<td>24,656</td>
<td>5,056</td>
<td>785,903</td>
</tr>
<tr>
<td>Warren</td>
<td>360,093</td>
<td>76,612</td>
<td>32,428</td>
<td>31,199</td>
<td>351</td>
<td>490,858</td>
</tr>
<tr>
<td>Schenectady</td>
<td>459,058</td>
<td>43,553</td>
<td>76,361</td>
<td>22,814</td>
<td>1,196</td>
<td>602,982</td>
</tr>
<tr>
<td>Greene</td>
<td>313,107</td>
<td>39,856</td>
<td>24,292</td>
<td>8,100</td>
<td>4,827</td>
<td>390,181</td>
</tr>
<tr>
<td>Washington</td>
<td>227,888</td>
<td>39,041</td>
<td>31,199</td>
<td>8,211</td>
<td>3,584</td>
<td>310,583</td>
</tr>
<tr>
<td>Columbia</td>
<td>307,583</td>
<td>39,250</td>
<td>31,399</td>
<td>8,211</td>
<td>5,947</td>
<td>392,131</td>
</tr>
<tr>
<td>REDC</td>
<td>4,960,848</td>
<td>532,820</td>
<td>532,613</td>
<td>114,276</td>
<td>118,299</td>
<td>6,258,855</td>
</tr>
</tbody>
</table>

On-road vehicles dominate as expected and account for 79% of transportation sector emissions. Off-road equipment contributes a surprisingly high 9%, followed by marine vessels and rail locomotives at roughly 2% each. Albany County has the largest marine sector emissions attributed to commercial vessels operating in and around the Port of Albany. Scope 3 emissions attributed to regional demand for commercial and passenger air travel is equivalent to roughly 8% of the transportation sector.

Transportation sector GHG accounting methods and data sources are summarized as follows:

On-road: The Capital District Transportation Committee (CDTC) provided detailed vehicle-miles-traveled (VMT) data for Albany, Rensselaer, Schenectady, and Saratoga Counties at a municipal level. The New York Department of Transportation (NYSDOT) provided county-level data for Columbia, Greene, Warren, and Washington Counties which was then allocated to communities by the ratio of municipal to county road length as reported in the NYSDOT state inventory of highways. Community VMT was converted into fuel consumption and GHG emissions following the recommended methods created by the GHG Working Group (NYSGHG, 2013). Municipal level VMT data and estimated fuel consumption for all 160 Capital District municipalities is available in Appendix B, Table B 3.

Off-road: NYSDEC provided detailed county-level GHG emissions for 214 types of off-road equipment for the year 2007. NYSDEC prepares the data every three years to support air quality modeling and was in the process of updating the data at the time of this study. The GHG Working Group decided that the 2007 data, in absence of updated data, can be presumed valid for 2010. The county data was further allocated to individual municipalities based on population.
**Rail:** Rail is categorized into four main groups: Class I freight, Class II/III freight, passenger/commuter, and switchyard rail. Within the Capital District all eight counties contain Class I railways, while only two counties (Rensselaer and Washington) contain Class II/III freight. Passenger lines include Amtrak and Adirondack Scenic Railroad. There is no electric rail in the region. As per decisions of the GHG Working Group, diesel consumption by county was pulled directly from the 2002 Locomotive Survey for New York State (NYSERDA, 2007) and that data was used as a proxy for year 2010. The GHG Working Group looked at updating this source but found it impractical to do so. The NYSERDA county level data was allocated to communities by relative length of rail track passing through each community.

**Air:** Unlike the other transportation sectors that count Scope 1 (direct) emissions, this mode follows a Scope 3 method that attributes emissions to flight miles arriving and departing from regional airports. The GHG Working Group created an emissions factor of 0.02381497 MTCDE/flight-mile (NYSGHG 2012.) In 2010, Albany Airport (ALB), Glens Falls Airport (GLF), Schenectady County Airport (SCH), and Saratoga Springs (VWK) reported to the Federal Aviation Administration (FAA) a total of 22,364,620 arrival and departure flight miles, translating into a regional footprint of 532,613 MTCDE. Regional emissions were then allocated to counties based on population and reported in Table 12. Scope 3 air emissions were not allocated to communities and are not included in the roll up GHG inventory transportation sector totals in Appendix B, Table B 1.

**Marine:** Marine emissions come from private and commercial vessels. County-level emissions from private craft were included in the non-road data set provided to the GHG Working Group by NYSDEC. Those emissions were allocated to communities based on the ratio of municipal to county surface water area as reported in the 2010 census. Commercial emissions were not included in the NYSDEC non-road dataset, and so county-level CO (carbon monoxide) emissions from commercial marine vessels were taken from the 2008 US National Emissions Inventory and converted into CO$_2$ on a mass basis using a ratio of 1:150. This ratio was derived from the CO and CO$_2$ emission factors for non-ocean going vessels contained in the Intergovernmental Panel on Climate Change (IPCC) 1996 Guidelines for GHG inventories (IPCC, 1996).

**Waste (Solid and Sewage)**

**Solid Waste**

Solid waste management accounts for 1.6% of regional GHG emissions. Landfills slowly create methane because the organic component of municipal solid waste (MSW) buried in one year decays and releases methane over many years. Modern landfills collect methane and use it to generate power, and so actual GHG emissions are the fugitive portion that escapes capture. MSW that is incinerated creates CO$_2$e emissions that are reported as 56% biogenic and 44% fossil-based Scope 1 emissions (US EIA, 2007). Grid connected waste-to-energy (WTE) plant emissions are reported in the Power Generation sector.

---

1 Currently searchable by county at [http://www.epa.gov/ttn/chief/net/2008inventory.html](http://www.epa.gov/ttn/chief/net/2008inventory.html)
The GHG Working Group developed Scope 1 and Scope 3 methods to estimate this source. The group concluded that both should be listed on the Detailed GHG Inventory Reports in Appendix A, but that only Scope 3 will be included in "roll up" GHG inventories. The methods are summarized as follows:

**Scope 1 (direct) emissions** come from landfills within a community boundary and in the Capital District there are only two sources, the City of Albany’s Rapp Rd. landfill and the Town of Colonie’s landfill. Closed landfills can also create emissions but they were excluded because they all have been closed for more than 20 years and emissions should be low. The Wheelabrator Hudson Falls LLC WTE plant in Hudson Falls in Washington County is counted in the power generation sector and not in the waste sector. All three facilities report to US EPA’s GHGRP and to NYS DEC’s Title 5 air permitting rule and so emissions data were pulled directly from these sources for 2010.

**Scope 3 (attributed) emissions** are based on how much solid waste communities send to landfills and WTE plants each year. Therefore all communities have Scope 3 emissions.

For Scope 3 the GHG Working Group decided to adopt a “forward commitment” method that links emissions directly to base-year waste generation- regardless of whether the waste is incinerated immediately or is deposited in a landfill where it’s actual emissions will be created slowly over the next 100 years. Although WTE plants were not counted in the Scope 1 waste footprint they are included in the Scope 3 waste footprint calculation.

The GHG Working Group compiled data from annual reports submitted to NYSDEC by landfill and WTE plant operators. These reports show much MSW each facility receives by county of origin. The GHG Working Group collated data from all reports statewide and developed a waste flow matrix showing how much waste originated from each county, where it went, and how much went to landfills vs. WTE plants. Results are shown in Table 13.

Scope 3 waste GHG emissions were computed from the waste tonnages sent by counties to landfills and WTE plants. For the land-filled portion, emissions were calculated using the “First Order Decay” (FOD) model developed by the California Air Resources Board and recommended by ICLEI Local Governments for Sustainability as part of the Local Government Operations Protocol (ICLEI, 2011). The model was set up using waste stream composition data for New York (NYSDEC, 2012) and then forward integrated 100 years presuming an average landfill methane capture rate of 75%. For the MSW portion sent to WTE plants, CO₂ emissions were calculated using the emissions factors in Appendix C-Table C 1. Together, landfill and WTE plant emissions form the Scope 3 total.

As shown in Table 13, the Capital District is a net waste and GHG exporter. It produced and sent 967,130 tons of MSW to facilities regionally and around the state, but physically processed only 538,040 tons at facilities in the region. Most of the exported waste went to the Seneca Meadows landfill near Syracuse and to a separate Wheelabrator LLC WTE facility in Dutchess County.

Comparing Scope 1 and 3 emissions across counties shows how solid waste management is a regional issue. Albany County produces 122,399 MTCDE of emissions in Scope 1 from its two landfills but the
The county’s own waste generation is only responsible for only about half of that, or 65,900 MTCDE, in Scope 3.

Table 13. Solid Waste Origin and Destination, and GHG Emissions by County

<table>
<thead>
<tr>
<th>County</th>
<th>MSW Sent By County to… (tons)</th>
<th>MSW Processed in County at… (tons)</th>
<th>GHG Emissions (MTCDE)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Total</td>
<td>Landfills</td>
<td>WTE plants</td>
</tr>
<tr>
<td>Albany</td>
<td>272,626</td>
<td>260,145</td>
<td>12,481</td>
</tr>
<tr>
<td>Columbia</td>
<td>56,546</td>
<td>56,546</td>
<td>0</td>
</tr>
<tr>
<td>Greene</td>
<td>44,112</td>
<td>44,112</td>
<td>0</td>
</tr>
<tr>
<td>Rensselaer</td>
<td>142,411</td>
<td>142,411</td>
<td>469</td>
</tr>
<tr>
<td>Saratoga</td>
<td>196,811</td>
<td>140,164</td>
<td>56,647</td>
</tr>
<tr>
<td>Schenectady</td>
<td>138,666</td>
<td>138,666</td>
<td>0</td>
</tr>
<tr>
<td>Warren</td>
<td>58,886</td>
<td>54,07</td>
<td>53,479</td>
</tr>
<tr>
<td>Washington</td>
<td>56,654</td>
<td>13,205</td>
<td>43,449</td>
</tr>
<tr>
<td>REDC</td>
<td>967,180</td>
<td>800,655</td>
<td>166,525</td>
</tr>
</tbody>
</table>

*S: Scope 1 emissions are from the county WTE plant and are shown for illustration only since they are counted in the power generation sector.

Sewage Treatment

Waste water treatment plants (WWTPs) create methane (CH₄) and small amounts of N₂O during and after water treatment. Private and commercial septic systems create methane that is vented to the atmosphere. Regionally waste water treatment creates 104,847 MTCDE GHG emissions, or about 0.6% of the total regional inventory making this the smallest subsector of emissions. Emission levels scale to population and are included in the County and Community level GHG inventories presented in Appendices A and B, Table B 1.

This study used EPA’s State Inventory Tool (SIT) modified for use in individual counties (US EPA, 2012). This tool collapses a number of complex emissions pathways into a simple per-capita estimate based on state profiles of climate, WWTP operations, and fraction of population served by WWTPs vs. septic systems. Because this source is small and because there are so many WWTPs in any region, the GHG Working Group adopted this method as acceptable for regional inventories recognizing that individual communities may wish to use the process-specific methods defined in the Local Government Operations Protocol (ICLEI, 2011) to improve the results.

In the Capital District there are 69 WWTP facilities. Some are major facilities serving cities and others are very small sewer districts servicing just a few hundred households. The study authors validated the SIT estimates for Schenectady County against a detailed evaluation of county WWTPs using the LGOP methods and found that the SIT estimate was within 5% validating its use region-wide.

Agriculture

Capital District agriculture creates 379,096 MTCDE GHG emissions, or 2.4% of the total inventory. While small overall the source is important in Washington, Columbia, and Saratoga counties. In
Washington County, in particular, it is a major source at 17% of total county emissions. GHG sources include:

**Enteric fermentation**: methane (CH₄) emissions from livestock as a byproduct of digestion.

**Manure management**: methane (CH₄) emissions from processing livestock manure, as well as fugitive emissions from field manure. This methane can be harnessed to generate power and reduce GHG emissions using technologies to capture methane.

**Soils and Field Management**: fugitive N₂O emissions from nitrogen-based fertilizer, as well as small amounts of CH₄ from burning crop residues.

Like the waste water sector, the GHG Working Group recommended using the US EPA State Inventory Tool to estimate emissions (US EPA, 2012). Emissions are driven primarily by livestock population and crop acreage, and so the SIT was modified and applied to each Capital District county with data from the National Agricultural Statistics Service (NASS.) NASS provides data on the number of farms, amount of crop area, and livestock counts for each New York County. County emissions were allocated to towns by the ratio of town land area to total town land area in the county. No emissions were assigned to cities and villages.

**Table 14. Agricultural Emissions by County and Sector (MTCDE)**

<table>
<thead>
<tr>
<th>County</th>
<th>Totals</th>
<th>Enteric Fermentation</th>
<th>Manure Management</th>
<th>Use of Fertilizer / Ag Soils</th>
</tr>
</thead>
<tbody>
<tr>
<td>Washington</td>
<td>151,710</td>
<td>88,848</td>
<td>29,735</td>
<td>33,128</td>
</tr>
<tr>
<td>Columbia</td>
<td>69,896</td>
<td>33,381</td>
<td>9,568</td>
<td>26,946</td>
</tr>
<tr>
<td>Saratoga</td>
<td>61,428</td>
<td>33,730</td>
<td>10,993</td>
<td>16,704</td>
</tr>
<tr>
<td>Rensselaer</td>
<td>49,502</td>
<td>23,995</td>
<td>6,574</td>
<td>18,934</td>
</tr>
<tr>
<td>Albany</td>
<td>26,544</td>
<td>11,174</td>
<td>2,363</td>
<td>13,008</td>
</tr>
<tr>
<td>Greene</td>
<td>14,133</td>
<td>6,210</td>
<td>1,216</td>
<td>6,707</td>
</tr>
<tr>
<td>Schenectady</td>
<td>4,368</td>
<td>2,083</td>
<td>300</td>
<td>1,984</td>
</tr>
<tr>
<td>Warren</td>
<td>3,515</td>
<td>342</td>
<td>15</td>
<td>1,159</td>
</tr>
<tr>
<td>REDC</td>
<td>379,096</td>
<td>199,762</td>
<td>60,764</td>
<td>118,570</td>
</tr>
</tbody>
</table>

**Figure 15: Agricultural GHG Emissions by County and Sector (MTCDE)**
Improving Your Community’s GHG Inventory

Appendix B, Table B 1 provides community-wide roll up GHG inventories along with supporting data on utility energy use, transportation demand, and household fuel consumption in subsequent tables. With the exception of per-household energy cost of living and utility energy tables (Table B 4 and Table B 2), data sets for towns include villages.

Communities may use the data in Appendix B for their 2010 community inventory “as is”, or may improve the data. Prior to using the inventories, communities should review them and perform a simple “common sense” check. Do the sector breakdowns make sense and are large point sources in Table 4 and Table 11 accurately placed in the community inventory? Regional inventories are large and complex data studies and, on occasion, data sets may accidently have emission sources in the wrong municipality because of address errors and other mistakes.

In some cases communities can improve the inventory in Appendix B although, in most cases, estimates are already based on methods typically used by communities when they develop GHG inventories independently. In general:

- Natural gas and electricity consumption is provided by National Grid, Central Hudson, New York State Electric and Gas (NYSEG), and the Green Island Power Authority (GIPA) at a community level. It is the best data available and cannot be improved.
- Non-utility fuel consumption (e.g., fuel oils, propane, and wood, etc.) is estimated with demographic methods created by the GHG Working Group that are the kind most often used by communities when they develop inventories on their own. They usually cannot be improved unless communities have specific local fuel survey or sales data from fuel suppliers.
- Large industry and power plant emissions come directly from state and federal reporting sources and are placed directly in the community inventory. The estimates cannot be improved although correct placement should be checked.
- Detailed community level transportation (VMT) data was provided by the Capital District Transportation Committee (CDTC) for Albany, Rensselaer, Saratoga, and Schenectady counties, and is the best available data. For Columbia, Greene, Washington, and Warren Counties, NYS Department of Transportation (NYSDOT) county data was allocated to communities by road length as discussed in the transportation sector. Communities in Warren and Washington counties may be able to obtain better local VTM estimates by contacting the Glens Falls / Adirondack Transportation Council, the MPO serving those two counties.
- Scope 1 estimates from landfills are reported directly by the landfills to the US EPA’s mandatory GHG reporting program (GHGRP). They cannot be improved. Municipal solid waste (MSW) generation in tons for the Scope 3 calculation is estimated by allocating county data to communities based on population. Communities that haul waste can improve the calculation with actual hauled waste totals.
- Wastewater emissions are estimated with the EPA’s State Inventory Tool which combines per-capita emission averages with community population. Communities can improve the estimates
by applying process-specific methods to waste water treatment plants in the community following the Local Government Operations Protocol (ICLEI, 2011).

- Agricultural emissions are first created at a county level with EPA’s State Inventory Tool and then allocated to towns based on land area. Agricultural methods are driven with county data from the National Agricultural Statistics Service (NASS) on crop acreage and livestock population. Local estimates could be improved if actual community-level livestock populations and crop acreage is available.

CDRPC will be able to assist Climate Smart Communities in making use of this product. For those planning to update or create a new GHG inventory for years beyond 2010, they should check with CDRPC on the status of updated utility and transportation data that may be available to them.

**Works Cited**


NYSERDA. (2013). *New York Community and Regional GHG Inventory Guidance*. NYSERDA.


### Appendix A. Regional and County Detailed GHG Emission Inventories

#### REDC GHG Emissions 2010

<table>
<thead>
<tr>
<th>Sector / Source</th>
<th>GHG Emissions (MTCDE)</th>
<th>Energy</th>
<th>Rolled up?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Scope 1</td>
<td>Scope 2</td>
<td>Scope 3</td>
</tr>
<tr>
<td>Residential Energy Consumption</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>765,795</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>894,450</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>184,517</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>842,211</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>4,991</td>
<td>742,594</td>
<td></td>
</tr>
<tr>
<td>Wood</td>
<td>15,628</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

| Commercial Energy Consumption |  |  |  |  |  |
| Electricity / Steam | 821,339 |  |  | Yes | 12,208,145 |
| Natural Gas | 683,605 |  |  | Yes | 12,880,719 |
| Propane / LPG | 44,651 |  |  | Yes | 7,358,703 |
| Distillate Fuel Oil (#1, #2, #4, Kerosene) | 318,078 |  |  | Yes | 3,985,535 |
| Residential Fuel Oil (#5 and #6) | 214,492 |  |  | Yes | 6,295 |
| Coal | 819,981 |  |  | Yes | 8,711,435 |
| Wood | 3,890 | 403,406 |  | Yes | 4,309,707 |

| Industrial Energy Consumption |  |  |  |  |  |
| Electricity / Steam | 268,139 |  |  | Yes | 3,985,535 |
| Natural Gas | 829,354 |  |  | Yes | 15,626,964 |
| Propane / LPG | 7,357 |  |  | Yes | 116,535 |
| Distillate Fuel Oil (#1, #2, #4, Kerosene) | 94,391 |  |  | Yes | 1,271,966 |
| Natural Gas | 73,306 | 63,558 |  | Yes | 25,004 |
| Petroleum Coke | 819,981 | 28,820 |  | Yes | 8,711,435 |
| Motor Gasoline (E-10) | 69,145 |  |  | Yes | 387,722 |
| Other Oils | 78,569 |  |  | Yes | 1,655,495 |
| Wood | 8,490 | 403,406 |  | Yes | 4,309,707 |

| Energy Generation and Supply |  |  |  |  |  |
| Natural Gas | 5,560,890 |  |  | No | 104,780,116 |
| Distillate Fuel Oil (#1, #2, #4, Kerosene) | 1,855 |  |  | No | 25,004 |
| MSW | 84,036 | 63,558 |  | No | 1,592,624 |
| Landfill Gas | 145 | 28,820 |  | No | 553,480 |
| Electricity T/D Losses | 96,366 |  |  | Yes | 1,455,025 |
| Natural Gas T/D Losses | 330,814 |  |  | Yes | 816,502 |

| Industrial Processes |  |  |  |  |  |
| Cement Production | 1,026,474 |  |  | Yes |  |
| Pulp and Paper Manufacturing | 3,407 |  |  | Yes |  |

| Product Use (HFC, ODS) |  |  |  |  |  |
| Use of SF6 in the Utility Industry | 25,401 |  |  | Yes |  |
| All Refrigerants - except SF6 | 400,579 |  |  | Yes |  |

| Transport: On-Road |  |  |  |  |  |
| Motor Gasoline (E-10) | 4,273,665 | 309,894 |  | Yes | 65,170,313 |
| Diesel | 687,183 | N/A |  | Yes | 9,107,915 |
| Ethanol (E-85) | N/A | N/A |  | No |  |
| Biodiesel | N/A | N/A |  | No |  |

| Transport: Rail, Marine, Off-Road, Air |  |  |  |  |  |
| Motor Gasoline (E-10) | 714,519 | 23,147 |  | Yes | 3,382,092 |
| Diesel | 447,480 | 65,213 |  | Yes | 5,901,220 |
| Natural Gas | 2,967 | 532,613 |  | Yes | 7,059,242 |
| Propane / LPG | 62,668 |  |  | Yes | 55,901 |
| Jet Kerosene (Air) |  |  |  | Yes | 7,059,242 |

| Waste Management |  |  |  |  |  |
| Landfill Methane | 122,399 | 187,237 |  | Yes (S3) |  |
| MSW incineration | N/A | 67,564 |  | Yes (S3) |  |
| Sewage treatment | 104,847 |  |  | Yes |  |

| Agriculture |  |  |  |  |  |
| Enteric Fermentation / Manure | 260,526 |  |  | Yes |  |
| Soils / Fertilizer | 118,570 |  |  | Yes |  |

| Totals by Scope | 18,957,877 | 1,855,273 | 787,414 | 1,698,759 | 321,709,278 |
## Albany County GHG Emissions 2010

<table>
<thead>
<tr>
<th>Sector / Source</th>
<th>GHG Emissions (MTCDE)</th>
<th>Energy (MMBT)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Scope 1</td>
<td>Scope 2</td>
</tr>
<tr>
<td><strong>Residential Energy Consumption</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>181,769</td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>346,111</td>
<td></td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>16,575</td>
<td></td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>120,077</td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>625</td>
<td></td>
</tr>
<tr>
<td>Wood</td>
<td>1,538</td>
<td></td>
</tr>
<tr>
<td><strong>Commercial Energy Consumption</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>310,454</td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>281,503</td>
<td></td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>7,897</td>
<td></td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>58,403</td>
<td></td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>57,362</td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>99</td>
<td></td>
</tr>
<tr>
<td>Wood</td>
<td>514</td>
<td></td>
</tr>
<tr>
<td><strong>Industrial Energy Consumption</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>98,676</td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>254,734</td>
<td></td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>1,073</td>
<td></td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>12,769</td>
<td></td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>3,936</td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>495,057</td>
<td></td>
</tr>
<tr>
<td>Petroleum Coke</td>
<td>48,468</td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>6,456</td>
<td></td>
</tr>
<tr>
<td>Other Oils</td>
<td>35,397</td>
<td></td>
</tr>
<tr>
<td>Wood</td>
<td>269</td>
<td></td>
</tr>
<tr>
<td><strong>Energy Generation and Supply</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>2,477,641</td>
<td></td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>1,346</td>
<td></td>
</tr>
<tr>
<td>MSW</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Landfill Gas</td>
<td>145</td>
<td></td>
</tr>
<tr>
<td>Electricity T/D Losses</td>
<td>30,692</td>
<td></td>
</tr>
<tr>
<td>Natural Gas T/D Losses</td>
<td>121,248</td>
<td></td>
</tr>
<tr>
<td><strong>Industrial Processes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cement Production</td>
<td>544,401</td>
<td></td>
</tr>
<tr>
<td>Pulp and Paper Manufacturing</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td><strong>Product Use (HFC, ODS)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of SF6 in the Utility Industry</td>
<td>8,090</td>
<td></td>
</tr>
<tr>
<td>All Refrigerants- except SF6</td>
<td>112,914</td>
<td></td>
</tr>
<tr>
<td><strong>Transport: On-Road</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>1,309,225</td>
<td></td>
</tr>
<tr>
<td>Diesel</td>
<td>187,525</td>
<td></td>
</tr>
<tr>
<td>Ethanol (E-85)</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Biodiesel</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td><strong>Transport: Rail, Marine, Off-Road, Air</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>32,317</td>
<td></td>
</tr>
<tr>
<td>Diesel</td>
<td>116,649</td>
<td></td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>59,882</td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>917</td>
<td></td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>9,415</td>
<td></td>
</tr>
<tr>
<td>Jet Kerosene (Air)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Waste Management</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landfill Methane</td>
<td>122,399</td>
<td>60,836</td>
</tr>
<tr>
<td>MSW incineration</td>
<td></td>
<td>5,064</td>
</tr>
<tr>
<td>Sewage treatment</td>
<td>29,554</td>
<td></td>
</tr>
<tr>
<td><strong>Agriculture</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enteric Fermentation / Manure</td>
<td>13,536</td>
<td></td>
</tr>
<tr>
<td>Soils / Fertilizer</td>
<td>13,008</td>
<td></td>
</tr>
<tr>
<td><strong>Totals by Scope</strong></td>
<td>6,940,658</td>
<td>530,899</td>
</tr>
</tbody>
</table>
# Capital District 2010 Regional GHG Inventory

**Columbia County GHG Emissions 2010**

<table>
<thead>
<tr>
<th>Sector / Source</th>
<th>GHG Emissions (MTCDE)</th>
<th>Energy</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Scope 1</td>
<td>Scope 2</td>
<td>Scope 3</td>
<td>Biogenic</td>
<td>Rolled up?</td>
<td>(MMBT)</td>
</tr>
<tr>
<td><strong>Residential Energy Consumption</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>12,425</td>
<td>58,821</td>
<td>Yes</td>
<td>874,296</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>16,230</td>
<td></td>
<td>Yes</td>
<td>234,299</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>123,688</td>
<td></td>
<td>Yes</td>
<td>263,007</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>290</td>
<td></td>
<td>Yes</td>
<td>1,666,749</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>1,756</td>
<td></td>
<td>Yes</td>
<td>3,078</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood</td>
<td></td>
<td></td>
<td></td>
<td>889,785</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Commercial Energy Consumption</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>19,459</td>
<td>38,467</td>
<td>Yes</td>
<td>571,757</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>2,884</td>
<td></td>
<td>Yes</td>
<td>366,652</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>23,131</td>
<td></td>
<td>Yes</td>
<td>311,696</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>22,718</td>
<td></td>
<td>Yes</td>
<td>302,510</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>18</td>
<td></td>
<td>Yes</td>
<td>193</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood</td>
<td>228</td>
<td></td>
<td></td>
<td>120,629</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Industrial Energy Consumption</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>23,126</td>
<td>15,073</td>
<td>Yes</td>
<td>224,036</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>161</td>
<td></td>
<td>Yes</td>
<td>435,744</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>1,634</td>
<td></td>
<td>Yes</td>
<td>2,924</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>440</td>
<td></td>
<td>Yes</td>
<td>5,843</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>3,596</td>
<td></td>
<td>Yes</td>
<td>38,205</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>0</td>
<td></td>
<td>Yes</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Petroleum Coke</td>
<td>0</td>
<td></td>
<td>Yes</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>1,066</td>
<td></td>
<td>Yes</td>
<td>15,132</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Oils</td>
<td>2,236</td>
<td></td>
<td>Yes</td>
<td>30,117</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood</td>
<td>44</td>
<td></td>
<td>Yes</td>
<td>22,473</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Energy Generation and Supply</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>0</td>
<td></td>
<td>No</td>
<td>104,780,116</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>0</td>
<td></td>
<td>No</td>
<td>25,004</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSW</td>
<td>0</td>
<td></td>
<td>No</td>
<td>1,592,624</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landfill Gas</td>
<td>0</td>
<td></td>
<td>No</td>
<td>553,480</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity T/D Losses</td>
<td>5,836</td>
<td></td>
<td>Yes</td>
<td>88,181</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas T/D Losses</td>
<td>7,560</td>
<td></td>
<td>Yes</td>
<td>18,660</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Industrial Processes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cement Production</td>
<td>0</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulp and Paper Manufacturing</td>
<td>0</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Product Use (HFC, ODS)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of SF6 in the Utility Industry</td>
<td>1,538</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Refrigerants- except SF6</td>
<td>23,420</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transport: On-Road</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>259,043</td>
<td>18,784</td>
<td>Yes</td>
<td>3,950,225</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diesel</td>
<td>48,540</td>
<td></td>
<td>Yes</td>
<td>643,347</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethanol (E-85)</td>
<td>N/A</td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biodiesel</td>
<td>N/A</td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transport: Rail, Marine, Off-Road, Air</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>21,151</td>
<td>2,282</td>
<td>Yes</td>
<td>333,463</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diesel</td>
<td>28,445</td>
<td></td>
<td>Yes</td>
<td>377,010</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>1,642</td>
<td></td>
<td>Yes</td>
<td>21,787</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>166</td>
<td></td>
<td>Yes</td>
<td>3,127</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>2,005</td>
<td></td>
<td>Yes</td>
<td>34,715</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jet Kerosene (Air)</td>
<td>31,139</td>
<td></td>
<td>Yes</td>
<td>412,720</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Waste Management</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landfill Methane</td>
<td>0</td>
<td>13,224</td>
<td>Yes (S3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSW incineration</td>
<td>0</td>
<td></td>
<td>Yes (S3)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sewage treatment</td>
<td>6,130</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Agriculture</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enteric Fermentation / Manure</td>
<td>42,949</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soils / Fertilizer</td>
<td>26,946</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Totals by Scope</strong></td>
<td>730,524</td>
<td>112,360</td>
<td>44,363</td>
<td>117,951</td>
<td>119,277,966</td>
<td></td>
</tr>
<tr>
<td>Sector / Source</td>
<td>GHG Emissions (MTCDE)</td>
<td>Energy</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>----------------------------------------</td>
<td>------------------------</td>
<td>-----------------</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Scope 1</td>
<td>Scope 2</td>
<td>Scope 3</td>
<td>Biogenic</td>
<td>Rolled up?</td>
<td>(MMBT)</td>
</tr>
<tr>
<td>Residential Energy Consumption</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>48,772</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>724,933</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>4,494</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>84,675</td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>14,917</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>244,734</td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>101,984</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>1,376,280</td>
</tr>
<tr>
<td>Coal</td>
<td>528</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>5,608</td>
</tr>
<tr>
<td>Wood</td>
<td>1,453</td>
<td></td>
<td>69,029</td>
<td></td>
<td>Yes</td>
<td>735,916</td>
</tr>
<tr>
<td>Commercial Energy Consumption</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>38,135</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>566,829</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>16,609</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>317,947</td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>3,167</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>51,323</td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>22,904</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>308,640</td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>22,496</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>298,553</td>
</tr>
<tr>
<td>Coal</td>
<td>44</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>469</td>
</tr>
<tr>
<td>Wood</td>
<td>233</td>
<td></td>
<td>11,092</td>
<td></td>
<td>Yes</td>
<td>118,247</td>
</tr>
<tr>
<td>Industrial Energy Consumption</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>22,130</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>348,933</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>1,987</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>37,435</td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>136</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>2,144</td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>3,677</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>49,556</td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>371</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>4,919</td>
</tr>
<tr>
<td>Coal</td>
<td>135,152</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>1,435,845</td>
</tr>
<tr>
<td>Petroleum Coke</td>
<td>24,523</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>239,850</td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>898</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>12,738</td>
</tr>
<tr>
<td>Other Oils</td>
<td>1,882</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>25,353</td>
</tr>
<tr>
<td>Wood</td>
<td>37</td>
<td></td>
<td>1,775</td>
<td></td>
<td>Yes</td>
<td>18,919</td>
</tr>
<tr>
<td>Energy Generation and Supply</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>2,319,364</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td>104,780,116</td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>242</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td>25,004</td>
</tr>
<tr>
<td>MSW</td>
<td>0</td>
<td></td>
<td>0</td>
<td></td>
<td>No</td>
<td>1,592,624</td>
</tr>
<tr>
<td>Landfill Gas</td>
<td>0</td>
<td></td>
<td>0</td>
<td></td>
<td>No</td>
<td>553,480</td>
</tr>
<tr>
<td>Electricity T/D Losses</td>
<td>5,664</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>86,573</td>
</tr>
<tr>
<td>Natural Gas T/D Losses</td>
<td>3,173</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>7,831</td>
</tr>
<tr>
<td>Industrial Processes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cement Production</td>
<td>160,108</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Pulp and Paper Manufacturing</td>
<td>0</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Product Use (HFC, ODS)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of SF6 in the Utility Industry</td>
<td>1,493</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>All Refrigerants- except SF6</td>
<td>18,270</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Transport: On-Road</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>259,480</td>
<td></td>
<td>18,816</td>
<td></td>
<td>Yes</td>
<td>3,965,886</td>
</tr>
<tr>
<td>Diesel</td>
<td>53,627</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>710,769</td>
</tr>
<tr>
<td>Ethanol (E-8g)</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Biodiesel</td>
<td>N/A</td>
<td></td>
<td></td>
<td></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Transport: Rail, Marine, Off-Road, Air</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>20,170</td>
<td></td>
<td>2,176</td>
<td></td>
<td>Yes</td>
<td>318,002</td>
</tr>
<tr>
<td>Diesel</td>
<td>30,404</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>403,975</td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>1,200</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>15,931</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>78</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>1,466</td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>930</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td>16,715</td>
</tr>
<tr>
<td>Jet Kerosene (Air)</td>
<td></td>
<td>24,292</td>
<td></td>
<td></td>
<td>Yes</td>
<td>321,961</td>
</tr>
<tr>
<td>Waste Management</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landfill Methane</td>
<td>0</td>
<td>10,316</td>
<td></td>
<td></td>
<td>Yes (S3)</td>
<td></td>
</tr>
<tr>
<td>MSW incineration</td>
<td></td>
<td></td>
<td>0</td>
<td></td>
<td>Yes (S3)</td>
<td></td>
</tr>
<tr>
<td>Sewage treatment</td>
<td>4,782</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Agriculture</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enteric Fermentation / Manure</td>
<td>7,426</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Soils / Fertilizer</td>
<td>6,707</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Totals by Scope</td>
<td>3,250,707</td>
<td>109,037</td>
<td>34,607</td>
<td>102,887</td>
<td>119,767,167</td>
<td></td>
</tr>
</tbody>
</table>
## Rensselaer County GHG Emissions 2010

<table>
<thead>
<tr>
<th>Sector / Source</th>
<th>GHG Emissions (MTCDE)</th>
<th>Energy</th>
<th>Rolled up? (MMBT)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential Energy Consumption</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>105,426</td>
<td>Yes</td>
<td>1,557,014</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>68,934</td>
<td>Yes</td>
<td>1,929,503</td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>29,443</td>
<td>Yes</td>
<td>477,417</td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>145,357</td>
<td>Yes</td>
<td>1,958,800</td>
</tr>
<tr>
<td>Coal</td>
<td>802</td>
<td>Yes</td>
<td>8,524</td>
</tr>
<tr>
<td>Wood</td>
<td>2,629</td>
<td>Yes</td>
<td>1,343,747</td>
</tr>
<tr>
<td><strong>Commercial Energy Consumption</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>106,655</td>
<td>Yes</td>
<td>1,585,284</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>90,409</td>
<td>Yes</td>
<td>1,793,513</td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>5,864</td>
<td>Yes</td>
<td>95,019</td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>30,540</td>
<td>Yes</td>
<td>411,545</td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>29,996</td>
<td>Yes</td>
<td>398,095</td>
</tr>
<tr>
<td>Coal</td>
<td>58</td>
<td>Yes</td>
<td>615</td>
</tr>
<tr>
<td>Wood</td>
<td>397</td>
<td>Yes</td>
<td>201,234</td>
</tr>
<tr>
<td><strong>Industrial Energy Consumption</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>23,891</td>
<td>Yes</td>
<td>355,113</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>33,464</td>
<td>Yes</td>
<td>592,851</td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>3,197</td>
<td>Yes</td>
<td>50,568</td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>4,272</td>
<td>Yes</td>
<td>57,561</td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>4,618</td>
<td>Yes</td>
<td>61,284</td>
</tr>
<tr>
<td>Coal</td>
<td>3,355</td>
<td>Yes</td>
<td>99,387</td>
</tr>
<tr>
<td>Petroleum Coke</td>
<td>0</td>
<td>Yes</td>
<td>0</td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>2,774</td>
<td>Yes</td>
<td>39,285</td>
</tr>
<tr>
<td>Other Oils</td>
<td>5,817</td>
<td>Yes</td>
<td>78,348</td>
</tr>
<tr>
<td>Wood</td>
<td>115</td>
<td>Yes</td>
<td>58,483</td>
</tr>
<tr>
<td><strong>Energy Generation and Supply</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>498,444</td>
<td>No</td>
<td>106,780,116</td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>268</td>
<td>No</td>
<td>25,004</td>
</tr>
<tr>
<td>MSW</td>
<td>0</td>
<td>No</td>
<td>1,592,624</td>
</tr>
<tr>
<td>Landfill Gas</td>
<td>0</td>
<td>No</td>
<td>553,480</td>
</tr>
<tr>
<td>Electricity T/D Losses</td>
<td>12,257</td>
<td>Yes</td>
<td>185,191</td>
</tr>
<tr>
<td>Natural Gas T/D Losses</td>
<td>26,217</td>
<td>Yes</td>
<td>64,708</td>
</tr>
<tr>
<td><strong>Industrial Processes</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cement Production</td>
<td>0</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Pulp and Paper Manufacturing</td>
<td>0</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td><strong>Product Use (HFC, ODS)</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of SF6 in the Utility Industry</td>
<td>3,231</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>All Refrigerants- except SF6</td>
<td>59,177</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td><strong>Transport: On-Road</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>533,593</td>
<td>Yes</td>
<td>8,115,333</td>
</tr>
<tr>
<td>Diesel</td>
<td>85,933</td>
<td>Yes</td>
<td>1,137,099</td>
</tr>
<tr>
<td>Ethanol (E-85)</td>
<td>N/A</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Biodiesel</td>
<td>N/A</td>
<td>No</td>
<td></td>
</tr>
<tr>
<td><strong>Transport: Rail, Marine, Off-Road, Air</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>19,144</td>
<td>Yes</td>
<td>301,829</td>
</tr>
<tr>
<td>Diesel</td>
<td>63,811</td>
<td>Yes</td>
<td>845,744</td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>1,037</td>
<td>Yes</td>
<td>33,758</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>298</td>
<td>Yes</td>
<td>5,608</td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>3,636</td>
<td>Yes</td>
<td>57,511</td>
</tr>
<tr>
<td>Jet Kerosene (Air)</td>
<td>78,682</td>
<td>Yes</td>
<td>1,042,847</td>
</tr>
<tr>
<td><strong>Waste Management</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landfill Methane</td>
<td>33,303</td>
<td>Yes (S3)</td>
<td></td>
</tr>
<tr>
<td>MSW incineration</td>
<td>190</td>
<td>Yes (S3)</td>
<td></td>
</tr>
<tr>
<td>Sewage treatment</td>
<td>15,489</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td><strong>Agriculture</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enteric Fermentation / Manure</td>
<td>30,568</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Soils / Fertilizer</td>
<td>18,924</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td><strong>Totals by Scope</strong></td>
<td>1,837,857</td>
<td>235,972</td>
<td>112,175</td>
</tr>
</tbody>
</table>
Saratoga County GHG Emissions 2010 3,035,995 MTCDE

<table>
<thead>
<tr>
<th>Sector / Source</th>
<th>Energy</th>
<th>GHG Emissions (MTCDE)</th>
<th>Scope 1</th>
<th>Scope 2</th>
<th>Scope 3</th>
<th>Biogenic</th>
<th>Rolled up?</th>
<th>Energy (MMBT)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential Energy Consumption</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td></td>
<td></td>
<td>174,351</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
<td>2,594,495</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>204,528</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,893,373</td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>55,482</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>899,994</td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>135,577</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,846,957</td>
</tr>
<tr>
<td>Coal</td>
<td>955</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>40,150</td>
</tr>
<tr>
<td>Wood</td>
<td>3,186</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
<td>1,644,057</td>
</tr>
<tr>
<td><strong>Commercial Energy Consumption</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td></td>
<td></td>
<td>133,367</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
<td>1,982,335</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>94,042</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,771,968</td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>13,262</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>214,907</td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>33,798</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>455,442</td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>33,196</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>440,558</td>
</tr>
<tr>
<td>Coal</td>
<td>78</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>827</td>
</tr>
<tr>
<td>Wood</td>
<td>552</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
<td>279,687</td>
</tr>
<tr>
<td><strong>Industrial Energy Consumption</strong></td>
<td></td>
<td></td>
<td>76,397</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
<td>1,155,539</td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>249,950</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>4,709,642</td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>699</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>11,053</td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>53,745</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>744,734</td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>1,911</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25,356</td>
</tr>
<tr>
<td>Coal</td>
<td>15,606</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>165,792</td>
</tr>
<tr>
<td>Petroleum Coke</td>
<td>0</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>0</td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>4,627</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>65,667</td>
</tr>
<tr>
<td>Other Oils</td>
<td>9,704</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>130,666</td>
</tr>
<tr>
<td>Wood</td>
<td>193</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
<td>97,525</td>
</tr>
<tr>
<td><strong>Energy Generation and Supply</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>263,920</td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>106,780,116</td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>0</td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>25,004</td>
</tr>
<tr>
<td>MSW</td>
<td>0</td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,592,624</td>
</tr>
<tr>
<td>Landfill Gas</td>
<td>0</td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>553,480</td>
</tr>
<tr>
<td>Electricity T/D Losses</td>
<td>19,952</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>301,455</td>
</tr>
<tr>
<td>Natural Gas T/D Losses</td>
<td>75,376</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>186,040</td>
</tr>
<tr>
<td><strong>Industrial Processes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cement Production</td>
<td>0</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulp and Paper Manufacturing</td>
<td>0</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Product Use (HFC, ODS)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of SF6 in the Utility Industry</td>
<td>5,759</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Refrigerants- except SF6</td>
<td>84,934</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transport: On-Road</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>1,016,142</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15,405,434</td>
</tr>
<tr>
<td>Diesel</td>
<td>160,930</td>
<td>73,683</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2,132,967</td>
</tr>
<tr>
<td>Ethanol (E-8s)</td>
<td>N/A</td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biodiesel</td>
<td>N/A</td>
<td></td>
<td>No</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transport: Rail, Marine, Off-Road, Air</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>38,157</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>601,577</td>
</tr>
<tr>
<td>Diesel</td>
<td>89,298</td>
<td>4,117</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,833,554</td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>1</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>550</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>10,371</td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>6,697</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>105,919</td>
</tr>
<tr>
<td>Jet Kerosene (Air)</td>
<td>108,381</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1,436,480</td>
</tr>
<tr>
<td><strong>Waste Management</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landfill Methane</td>
<td>0</td>
<td>32,778</td>
<td>Yes (53)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSW incineration</td>
<td></td>
<td>22,983</td>
<td>Yes (53)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Sewage treatment</td>
<td>21,335</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Agriculture</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enteric Fermentation / Manure</td>
<td>46,723</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soils / Fertilizer</td>
<td>16,704</td>
<td></td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Totals by Scope</strong></td>
<td>2,751,658</td>
<td>384,115</td>
<td>164,142</td>
<td>264,581</td>
<td></td>
<td></td>
<td></td>
<td>151,413,984</td>
</tr>
</tbody>
</table>
## Schenectady County GHG Emissions 2010

### 1,523,806 MTCDE

<table>
<thead>
<tr>
<th>Sector / Source</th>
<th>GHG Emissions (MTCDE)</th>
<th>Energy</th>
<th>Biogenic</th>
<th>Rolled up?</th>
<th>(MMBT)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential Energy Consumption</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>92,594</td>
<td>Yes</td>
<td>1,376,289</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>196,551</td>
<td>Yes</td>
<td>3,793,470</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>10,940</td>
<td>Yes</td>
<td>177,380</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>54,721</td>
<td>Yes</td>
<td>731,325</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>188</td>
<td>Yes</td>
<td>1,998</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood</td>
<td>587</td>
<td>Yes</td>
<td>297,433</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Commercial Energy Consumption</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>97,570</td>
<td>Yes</td>
<td>1,450,255</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>107,925</td>
<td>Yes</td>
<td>2,033,554</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>2,741</td>
<td>Yes</td>
<td>44,418</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>14,475</td>
<td>Yes</td>
<td>195,052</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>14,217</td>
<td>Yes</td>
<td>188,678</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>18</td>
<td>Yes</td>
<td>196</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood</td>
<td>110</td>
<td>Yes</td>
<td>55,710</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Industrial Energy Consumption</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>3,847</td>
<td>Yes</td>
<td>56,886</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>97,388</td>
<td>Yes</td>
<td>1,835,044</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>779</td>
<td>Yes</td>
<td>12,319</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>8,492</td>
<td>Yes</td>
<td>114,428</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>7,676</td>
<td>Yes</td>
<td>101,874</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>17,266</td>
<td>Yes</td>
<td>182,795</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Petroleum Coke</td>
<td>0</td>
<td>Yes</td>
<td>0</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>5,102</td>
<td>Yes</td>
<td>72,401</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Other Oils</td>
<td>10,743</td>
<td>Yes</td>
<td>144,690</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wood</td>
<td>212</td>
<td>Yes</td>
<td>107,526</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Energy Generation and Supply</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>0</td>
<td>No</td>
<td>106,780,116</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>0</td>
<td>No</td>
<td>25,004</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MSW</td>
<td>0</td>
<td>No</td>
<td>1,592,624</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landfill Gas</td>
<td>0</td>
<td>No</td>
<td>553,480</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity T/D Losses</td>
<td>10,076</td>
<td>Yes</td>
<td>152,745</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas T/D Losses</td>
<td>55,222</td>
<td>Yes</td>
<td>136,297</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Industrial Processes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cement Production</td>
<td>0</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Pulp and Paper Manufacturing</td>
<td>0</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Product Use (HFC, ODS)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of SF6 in the Utility Industry</td>
<td>1,656</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>All Refrigerants- except SF6</td>
<td>57,431</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transport: On-Road</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>398,331</td>
<td>Yes</td>
<td>6,074,267</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diesel</td>
<td>60,727</td>
<td>Yes</td>
<td>804,874</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ethanol (E-85)</td>
<td>N/A</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Biodiesel</td>
<td>N/A</td>
<td>No</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transport: Rail, Marine, Off-Road, Air</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>12,172</td>
<td>Yes</td>
<td>191,896</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Diesel</td>
<td>45,096</td>
<td>Yes</td>
<td>650,722</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>1</td>
<td>Yes</td>
<td>10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>413</td>
<td>Yes</td>
<td>7,789</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>5,880</td>
<td>Yes</td>
<td>93,001</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Jet Kerosene (Air)</td>
<td>76,361</td>
<td>Yes</td>
<td>1,032,091</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Waste Management</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landfill Methane</td>
<td>0</td>
<td>Yes</td>
<td>53</td>
<td>(S3)</td>
<td></td>
</tr>
<tr>
<td>MSW incineration</td>
<td>32,428</td>
<td>Yes</td>
<td>53</td>
<td>(S3)</td>
<td></td>
</tr>
<tr>
<td>Sewage treatment</td>
<td>0</td>
<td>Yes</td>
<td>53</td>
<td>(S3)</td>
<td></td>
</tr>
<tr>
<td><strong>Agriculture</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enteric Fermentation / Manure</td>
<td>2,384</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Soils / Fertilizer</td>
<td>1,984</td>
<td>Yes</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Totals by Scope</strong></td>
<td>1,221,026</td>
<td>193,991</td>
<td>108,789</td>
<td>73,408</td>
<td>128,958,008</td>
</tr>
</tbody>
</table>


**Warren County GHG Emissions 2010**

**1,558,953 MTCDE**

<table>
<thead>
<tr>
<th>Sector / Source</th>
<th>GHG Emissions (MTCDE)</th>
<th>Energy (MMBT)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Scope 1</td>
<td>Scope 2</td>
</tr>
<tr>
<td><strong>Residential Energy Consumption</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>55,074</td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>45,385</td>
<td></td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>1,905</td>
<td></td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>72,862</td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>851</td>
<td></td>
</tr>
<tr>
<td>Wood</td>
<td>1,578</td>
<td></td>
</tr>
<tr>
<td><strong>Commercial Energy Consumption</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>66,721</td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>42,760</td>
<td></td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>6,360</td>
<td></td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>23,174</td>
<td></td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>22,761</td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>93</td>
<td></td>
</tr>
<tr>
<td>Wood</td>
<td>357</td>
<td></td>
</tr>
<tr>
<td><strong>Industrial Energy Consumption</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>9,733</td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>116,114</td>
<td></td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>547</td>
<td></td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>5,643</td>
<td></td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>6,963</td>
<td></td>
</tr>
<tr>
<td>Coal</td>
<td>134,828</td>
<td></td>
</tr>
<tr>
<td>Petroleum Coke</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>3,620</td>
<td></td>
</tr>
<tr>
<td>Other Oils</td>
<td>7,592</td>
<td></td>
</tr>
<tr>
<td>Wood</td>
<td>6,852</td>
<td></td>
</tr>
<tr>
<td><strong>Energy Generation and Supply</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>MSW</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Landfill Gas</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Electricity T/D Losses</td>
<td>6,832</td>
<td></td>
</tr>
<tr>
<td>Natural Gas T/D Losses</td>
<td>28,068</td>
<td></td>
</tr>
<tr>
<td><strong>Industrial Processes</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cement Production</td>
<td>321,985</td>
<td></td>
</tr>
<tr>
<td>Pulp and Paper Manufacturing</td>
<td>3,407</td>
<td></td>
</tr>
<tr>
<td><strong>Product Use (HFC, ODS)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of SF6 in the Utility Industry</td>
<td>1,801</td>
<td></td>
</tr>
<tr>
<td>All Refrigerants- except SF6</td>
<td>24,389</td>
<td></td>
</tr>
<tr>
<td><strong>Transport: On-Road</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>302,369</td>
<td>21,926</td>
</tr>
<tr>
<td>Diesel</td>
<td>57,724</td>
<td></td>
</tr>
<tr>
<td>Ethanol (E-85)</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Biodiesel</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td><strong>Transport: Rail, Marine, Off-Road, Air</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>56,385</td>
<td>6,084</td>
</tr>
<tr>
<td>Diesel</td>
<td>37,067</td>
<td></td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>315</td>
<td></td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>4,570</td>
<td></td>
</tr>
<tr>
<td>Jet Kerosene (Air)</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Waste Management</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landfill Methane</td>
<td>0</td>
<td>1,264</td>
</tr>
<tr>
<td>MSW incineration</td>
<td></td>
<td>21,698</td>
</tr>
<tr>
<td>Sewage treatment</td>
<td>6,384</td>
<td></td>
</tr>
<tr>
<td><strong>Agriculture</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enteric Fermentation / Manure</td>
<td>356</td>
<td></td>
</tr>
<tr>
<td>Soils / Fertilizer</td>
<td>1,159</td>
<td></td>
</tr>
<tr>
<td><strong>Totals by Scope</strong></td>
<td>1,372,034</td>
<td>133,528</td>
</tr>
</tbody>
</table>
# Washington County GHG Emissions 2010

## GHG Emissions (MTCDE)

<table>
<thead>
<tr>
<th>Sector / Source</th>
<th>Scope 1 (MMBT)</th>
<th>Scope 2 (MMBT)</th>
<th>Scope 3 (MMBT)</th>
<th>Biogenic</th>
<th>Rolled up?</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Residential Energy Consumption</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>48,989</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>16,023</td>
<td></td>
<td></td>
<td>Yes</td>
<td>728,156</td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>20,006</td>
<td></td>
<td></td>
<td>Yes</td>
<td>324,472</td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>88,386</td>
<td></td>
<td></td>
<td>Yes</td>
<td>1,193,044</td>
</tr>
<tr>
<td>Coal</td>
<td>752</td>
<td></td>
<td></td>
<td>Yes</td>
<td>7,992</td>
</tr>
<tr>
<td>Wood</td>
<td>2,900</td>
<td></td>
<td>137,804</td>
<td>Yes</td>
<td>1,469,130</td>
</tr>
<tr>
<td><strong>Commercial Energy Consumption</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>29,971</td>
<td></td>
<td></td>
<td>Yes</td>
<td>445,480</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>30,900</td>
<td></td>
<td></td>
<td>Yes</td>
<td>581,211</td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>2,495</td>
<td></td>
<td></td>
<td>Yes</td>
<td>40,434</td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>11,655</td>
<td></td>
<td></td>
<td>Yes</td>
<td>157,053</td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>11,447</td>
<td></td>
<td></td>
<td>Yes</td>
<td>151,921</td>
</tr>
<tr>
<td>Coal</td>
<td>3</td>
<td></td>
<td></td>
<td>Yes</td>
<td>339</td>
</tr>
<tr>
<td>Wood</td>
<td>278</td>
<td></td>
<td>1,227</td>
<td>Yes</td>
<td>141,010</td>
</tr>
<tr>
<td><strong>Industrial Energy Consumption</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Electricity / Steam</td>
<td>18,412</td>
<td></td>
<td></td>
<td>Yes</td>
<td>273,669</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>54,592</td>
<td></td>
<td></td>
<td>Yes</td>
<td>1,028,636</td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>766</td>
<td></td>
<td></td>
<td>Yes</td>
<td>12,257</td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>4,159</td>
<td></td>
<td></td>
<td>Yes</td>
<td>56,045</td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>25,961</td>
<td></td>
<td></td>
<td>Yes</td>
<td>344,550</td>
</tr>
<tr>
<td>Coal</td>
<td>8,182</td>
<td></td>
<td></td>
<td>Yes</td>
<td>86,925</td>
</tr>
<tr>
<td>Petroleum Coke</td>
<td>0</td>
<td></td>
<td></td>
<td>Yes</td>
<td>0</td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>2,426</td>
<td></td>
<td></td>
<td>Yes</td>
<td>34,429</td>
</tr>
<tr>
<td>Other Oils</td>
<td>5,088</td>
<td></td>
<td></td>
<td>Yes</td>
<td>68,524</td>
</tr>
<tr>
<td>Wood</td>
<td>768</td>
<td></td>
<td>36,471</td>
<td>Yes</td>
<td>388,812</td>
</tr>
<tr>
<td><strong>Energy Generation and Supply</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Natural Gas</td>
<td>1,521</td>
<td></td>
<td></td>
<td>No</td>
<td>104,780,116</td>
</tr>
<tr>
<td>Distillate Fuel Oil (#1, #2, #4, Kerosene)</td>
<td>0</td>
<td></td>
<td>63,558</td>
<td>No</td>
<td>25,004</td>
</tr>
<tr>
<td>MSW</td>
<td>84,036</td>
<td></td>
<td>0</td>
<td>No</td>
<td>1,592,624</td>
</tr>
<tr>
<td>Landfill Gas</td>
<td>0</td>
<td></td>
<td></td>
<td>No</td>
<td>553,480</td>
</tr>
<tr>
<td>Electricity T/D Losses</td>
<td>5,058</td>
<td></td>
<td></td>
<td>Yes</td>
<td>76,448</td>
</tr>
<tr>
<td>Natural Gas T/D Losses</td>
<td>13,950</td>
<td></td>
<td></td>
<td>Yes</td>
<td>34,430</td>
</tr>
<tr>
<td><strong>Industrial Processes</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Cement Production</td>
<td>0</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Pulp and Paper Manufacturing</td>
<td>0</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td><strong>Product Use (HFC, ODS)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Use of SF6 in the Utility Industry</td>
<td>1,333</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>All Refrigerants- except SF6</td>
<td>23,464</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td><strong>Transport: On-Road</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>195,571</td>
<td></td>
<td>14,181</td>
<td>Yes</td>
<td>2,982,320</td>
</tr>
<tr>
<td>Diesel</td>
<td>32,317</td>
<td></td>
<td></td>
<td>Yes</td>
<td>428,324</td>
</tr>
<tr>
<td>Ethanol (E-85)</td>
<td>N/A</td>
<td></td>
<td></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td>Biodiesel</td>
<td>N/A</td>
<td></td>
<td></td>
<td>No</td>
<td></td>
</tr>
<tr>
<td><strong>Transport: Rail, Marine, Off-Road, Air</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Motor Gasoline (E-10)</td>
<td>15,023</td>
<td></td>
<td>1,621</td>
<td>Yes</td>
<td>236,856</td>
</tr>
<tr>
<td>Diesel</td>
<td>32,710</td>
<td></td>
<td></td>
<td>Yes</td>
<td>433,521</td>
</tr>
<tr>
<td>Residual Fuel Oil (#5 and #6)</td>
<td>0</td>
<td></td>
<td></td>
<td>Yes</td>
<td>4,329</td>
</tr>
<tr>
<td>Natural Gas</td>
<td>350</td>
<td></td>
<td></td>
<td>Yes</td>
<td>55,887</td>
</tr>
<tr>
<td>Propane / LPG</td>
<td>3,534</td>
<td></td>
<td>31,199</td>
<td>Yes</td>
<td>443,505</td>
</tr>
<tr>
<td>Jet Kerosene (Air)</td>
<td></td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td><strong>Waste Management</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Landfill Methane</td>
<td>0</td>
<td></td>
<td>3,088</td>
<td>Yes (S3)</td>
<td></td>
</tr>
<tr>
<td>MSW incineration</td>
<td>17,628</td>
<td></td>
<td></td>
<td>Yes (S3)</td>
<td></td>
</tr>
<tr>
<td>Sewage treatment</td>
<td>6,142</td>
<td></td>
<td>137,804</td>
<td>Yes</td>
<td>1,469,130</td>
</tr>
<tr>
<td><strong>Agriculture</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Enteric Fermentation / Manure</td>
<td>118,583</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>Soils / Fertilizer</td>
<td>33,128</td>
<td></td>
<td></td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td><strong>Totals by Scope</strong></td>
<td>853,413</td>
<td>97,372</td>
<td>51,915</td>
<td>266,863</td>
<td>119,451,541</td>
</tr>
</tbody>
</table>
### Community GHG Inventories and Related Data

#### Table B 1. Municipal Roll-Up GHG Inventories (MTCDE)

<table>
<thead>
<tr>
<th>Community</th>
<th>Type</th>
<th>County</th>
<th>Res</th>
<th>Com</th>
<th>Industry</th>
<th>Process</th>
<th>Transport</th>
<th>Waste</th>
<th>Ag</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coeymans</td>
<td>Town</td>
<td>Albany</td>
<td>22,213</td>
<td>13,040</td>
<td>554,492</td>
<td>547,297</td>
<td>84,755</td>
<td>2,328</td>
<td>2,685</td>
<td>1,226,809</td>
</tr>
<tr>
<td>Albany</td>
<td>City</td>
<td>Albany</td>
<td>177,473</td>
<td>307,650</td>
<td>178,464</td>
<td>38,796</td>
<td>484,002</td>
<td>30,706</td>
<td>0</td>
<td>1,217,091</td>
</tr>
<tr>
<td>Ravena</td>
<td>Village</td>
<td>Albany</td>
<td>8,963</td>
<td>5,654</td>
<td>551,922</td>
<td>545,672</td>
<td>17,709</td>
<td>1,025</td>
<td>0</td>
<td>1,130,946</td>
</tr>
<tr>
<td>Colonie</td>
<td>Town</td>
<td>Albany</td>
<td>216,847</td>
<td>270,913</td>
<td>14,404</td>
<td>32,714</td>
<td>573,016</td>
<td>25,602</td>
<td>2,997</td>
<td>1,136,493</td>
</tr>
<tr>
<td>Bethlehem</td>
<td>Town</td>
<td>Albany</td>
<td>92,935</td>
<td>50,595</td>
<td>138,831</td>
<td>13,882</td>
<td>172,624</td>
<td>10,561</td>
<td>2,626</td>
<td>482,053</td>
</tr>
<tr>
<td>Guilderland</td>
<td>Town</td>
<td>Albany</td>
<td>91,299</td>
<td>69,965</td>
<td>219</td>
<td>13,904</td>
<td>202,311</td>
<td>11,077</td>
<td>3,102</td>
<td>391,878</td>
</tr>
<tr>
<td>New Scotland</td>
<td>Town</td>
<td>Albany</td>
<td>30,424</td>
<td>16,413</td>
<td>31,847</td>
<td>3,365</td>
<td>54,459</td>
<td>2,714</td>
<td>3,080</td>
<td>142,302</td>
</tr>
<tr>
<td>Cohoes</td>
<td>City</td>
<td>Albany</td>
<td>30,149</td>
<td>15,843</td>
<td>41,022</td>
<td>6,484</td>
<td>33,003</td>
<td>5,073</td>
<td>0</td>
<td>131,275</td>
</tr>
<tr>
<td>Colonie</td>
<td>Village</td>
<td>Albany</td>
<td>21,818</td>
<td>21,028</td>
<td>0</td>
<td>3,097</td>
<td>58,995</td>
<td>2,445</td>
<td>0</td>
<td>107,384</td>
</tr>
<tr>
<td>Watervliet</td>
<td>City</td>
<td>Albany</td>
<td>17,284</td>
<td>9,905</td>
<td>21,256</td>
<td>4,025</td>
<td>49,672</td>
<td>3,218</td>
<td>0</td>
<td>105,899</td>
</tr>
<tr>
<td>Menands</td>
<td>Village</td>
<td>Albany</td>
<td>10,208</td>
<td>25,958</td>
<td>4,209</td>
<td>1,691</td>
<td>54,997</td>
<td>1,752</td>
<td>0</td>
<td>98,315</td>
</tr>
<tr>
<td>Westerlo</td>
<td>Town</td>
<td>Albany</td>
<td>11,111</td>
<td>5,147</td>
<td>573</td>
<td>1,300</td>
<td>17,535</td>
<td>1,055</td>
<td>3,096</td>
<td>39,817</td>
</tr>
<tr>
<td>Green Island</td>
<td>Village</td>
<td>Albany</td>
<td>5,840</td>
<td>8,160</td>
<td>12,882</td>
<td>1,115</td>
<td>8,114</td>
<td>822</td>
<td>0</td>
<td>36,933</td>
</tr>
<tr>
<td>Green Island</td>
<td>Town</td>
<td>Albany</td>
<td>5,840</td>
<td>8,160</td>
<td>12,882</td>
<td>1,115</td>
<td>8,114</td>
<td>822</td>
<td>0</td>
<td>36,933</td>
</tr>
<tr>
<td>Berne</td>
<td>Town</td>
<td>Albany</td>
<td>8,511</td>
<td>3,969</td>
<td>0</td>
<td>1,077</td>
<td>13,962</td>
<td>877</td>
<td>3,430</td>
<td>31,825</td>
</tr>
<tr>
<td>Knox</td>
<td>Town</td>
<td>Albany</td>
<td>8,291</td>
<td>3,645</td>
<td>0</td>
<td>1,031</td>
<td>11,512</td>
<td>845</td>
<td>2,237</td>
<td>27,561</td>
</tr>
<tr>
<td>Rensselaerville</td>
<td>Town</td>
<td>Albany</td>
<td>7,076</td>
<td>3,317</td>
<td>47</td>
<td>715</td>
<td>10,966</td>
<td>578</td>
<td>3,292</td>
<td>25,991</td>
</tr>
<tr>
<td>Voorheesville</td>
<td>Village</td>
<td>Albany</td>
<td>7,699</td>
<td>3,447</td>
<td>0</td>
<td>1,070</td>
<td>9,040</td>
<td>875</td>
<td>0</td>
<td>22,101</td>
</tr>
<tr>
<td>Altamont</td>
<td>Village</td>
<td>Albany</td>
<td>4,993</td>
<td>1,947</td>
<td>0</td>
<td>661</td>
<td>4,830</td>
<td>540</td>
<td>0</td>
<td>12,972</td>
</tr>
<tr>
<td>Chatham</td>
<td>Town</td>
<td>Columbia</td>
<td>20,896</td>
<td>8,385</td>
<td>27,657</td>
<td>1,692</td>
<td>50,576</td>
<td>1,266</td>
<td>5,882</td>
<td>116,354</td>
</tr>
<tr>
<td>Claverack</td>
<td>Town</td>
<td>Columbia</td>
<td>21,042</td>
<td>7,368</td>
<td>3,278</td>
<td>2,372</td>
<td>31,821</td>
<td>1,847</td>
<td>5,255</td>
<td>72,983</td>
</tr>
<tr>
<td>Greenport</td>
<td>Town</td>
<td>Columbia</td>
<td>12,777</td>
<td>19,364</td>
<td>9,245</td>
<td>1,784</td>
<td>23,203</td>
<td>1,278</td>
<td>2,056</td>
<td>69,705</td>
</tr>
<tr>
<td>Kinderhook</td>
<td>Town</td>
<td>Columbia</td>
<td>27,942</td>
<td>10,358</td>
<td>0</td>
<td>3,300</td>
<td>18,336</td>
<td>2,607</td>
<td>3,515</td>
<td>65,957</td>
</tr>
<tr>
<td>Canaan</td>
<td>Town</td>
<td>Columbia</td>
<td>7,443</td>
<td>4,793</td>
<td>73</td>
<td>686</td>
<td>42,840</td>
<td>525</td>
<td>4,053</td>
<td>60,411</td>
</tr>
<tr>
<td>Hudson</td>
<td>City</td>
<td>Columbia</td>
<td>14,343</td>
<td>21,916</td>
<td>26</td>
<td>2,633</td>
<td>16,800</td>
<td>2,059</td>
<td>0</td>
<td>57,778</td>
</tr>
<tr>
<td>Ghent</td>
<td>Town</td>
<td>Columbia</td>
<td>19,094</td>
<td>6,865</td>
<td>171</td>
<td>2,086</td>
<td>23,790</td>
<td>1,657</td>
<td>4,987</td>
<td>58,651</td>
</tr>
<tr>
<td>Copake</td>
<td>Town</td>
<td>Columbia</td>
<td>16,859</td>
<td>5,025</td>
<td>6</td>
<td>1,431</td>
<td>20,335</td>
<td>1,109</td>
<td>4,504</td>
<td>49,069</td>
</tr>
<tr>
<td>Hillsdale</td>
<td>Town</td>
<td>Columbia</td>
<td>8,163</td>
<td>3,548</td>
<td>0</td>
<td>775</td>
<td>23,394</td>
<td>591</td>
<td>5,733</td>
<td>41,744</td>
</tr>
<tr>
<td>Livingston</td>
<td>Town</td>
<td>Columbia</td>
<td>10,342</td>
<td>3,923</td>
<td>0</td>
<td>1,415</td>
<td>13,957</td>
<td>1,118</td>
<td>4,217</td>
<td>34,972</td>
</tr>
<tr>
<td>Ancram</td>
<td>Town</td>
<td>Columbia</td>
<td>6,106</td>
<td>1,876</td>
<td>5,650</td>
<td>663</td>
<td>14,041</td>
<td>4,82</td>
<td>4,694</td>
<td>33,512</td>
</tr>
<tr>
<td>Austerlitz</td>
<td>Town</td>
<td>Columbia</td>
<td>5,772</td>
<td>1,545</td>
<td>0</td>
<td>644</td>
<td>16,926</td>
<td>507</td>
<td>5,384</td>
<td>30,777</td>
</tr>
<tr>
<td>New Lebanon</td>
<td>Town</td>
<td>Columbia</td>
<td>8,779</td>
<td>3,294</td>
<td>217</td>
<td>906</td>
<td>13,109</td>
<td>707</td>
<td>3,962</td>
<td>30,995</td>
</tr>
<tr>
<td>Stockport</td>
<td>Town</td>
<td>Columbia</td>
<td>9,067</td>
<td>2,586</td>
<td>0</td>
<td>1,078</td>
<td>12,058</td>
<td>863</td>
<td>1,287</td>
<td>26,939</td>
</tr>
<tr>
<td>Stuyvesant</td>
<td>Town</td>
<td>Columbia</td>
<td>7,339</td>
<td>2,122</td>
<td>0</td>
<td>780</td>
<td>9,863</td>
<td>622</td>
<td>2,763</td>
<td>23,489</td>
</tr>
<tr>
<td>Taghkanic</td>
<td>Town</td>
<td>Columbia</td>
<td>4,180</td>
<td>2,255</td>
<td>0</td>
<td>519</td>
<td>10,741</td>
<td>402</td>
<td>4,417</td>
<td>22,514</td>
</tr>
</tbody>
</table>
### Table B.1. Municipal Roll-Up GHG Inventories (MTCDE)

<table>
<thead>
<tr>
<th>Community</th>
<th>Type</th>
<th>County</th>
<th>Roll Up GHG Emissions By Sector (MTCDE)</th>
<th>Res</th>
<th>Com</th>
<th>Industry</th>
<th>Process</th>
<th>Transport</th>
<th>Waste</th>
<th>Ag</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Germantown</td>
<td>Town</td>
<td>Columbia</td>
<td></td>
<td>6,654</td>
<td>2,549</td>
<td>3,636</td>
<td>794</td>
<td>6,944</td>
<td>599</td>
<td>1,337</td>
<td>22,510</td>
</tr>
<tr>
<td>Gallatin</td>
<td>Town</td>
<td>Columbia</td>
<td></td>
<td>6,502</td>
<td>1,844</td>
<td>5</td>
<td>648</td>
<td>7,530</td>
<td>512</td>
<td>4,322</td>
<td>21,162</td>
</tr>
<tr>
<td>Chatham</td>
<td>Village</td>
<td>Columbia</td>
<td></td>
<td>7,401</td>
<td>4,275</td>
<td>2,517</td>
<td>739</td>
<td>4,307</td>
<td>543</td>
<td>0</td>
<td>19,782</td>
</tr>
<tr>
<td>Clermont</td>
<td>Town</td>
<td>Columbia</td>
<td></td>
<td>6,143</td>
<td>1,867</td>
<td>0</td>
<td>753</td>
<td>5,031</td>
<td>603</td>
<td>1,989</td>
<td>16,386</td>
</tr>
<tr>
<td>Kinderhook</td>
<td>Village</td>
<td>Columbia</td>
<td></td>
<td>5,078</td>
<td>1,622</td>
<td>0</td>
<td>468</td>
<td>3,615</td>
<td>371</td>
<td>0</td>
<td>11,155</td>
</tr>
<tr>
<td>Valatie</td>
<td>Village</td>
<td>Columbia</td>
<td></td>
<td>4,347</td>
<td>2,070</td>
<td>0</td>
<td>706</td>
<td>2,337</td>
<td>558</td>
<td>0</td>
<td>10,017</td>
</tr>
<tr>
<td>Philmont</td>
<td>Village</td>
<td>Columbia</td>
<td></td>
<td>3,773</td>
<td>1,356</td>
<td>2</td>
<td>535</td>
<td>1,621</td>
<td>423</td>
<td>0</td>
<td>7,712</td>
</tr>
<tr>
<td>Catskill</td>
<td>Town</td>
<td>Greene</td>
<td></td>
<td>38,044</td>
<td>26,981</td>
<td>185,821</td>
<td>164,983</td>
<td>89,688</td>
<td>3,612</td>
<td>1,320</td>
<td>510,457</td>
</tr>
<tr>
<td>Coxsackie</td>
<td>Town</td>
<td>Greene</td>
<td></td>
<td>20,729</td>
<td>24,768</td>
<td>1,608</td>
<td>3,504</td>
<td>51,724</td>
<td>2,735</td>
<td>805</td>
<td>105,873</td>
</tr>
<tr>
<td>Cairo</td>
<td>Town</td>
<td>Greene</td>
<td></td>
<td>22,898</td>
<td>9,878</td>
<td>41</td>
<td>2,605</td>
<td>34,444</td>
<td>2,046</td>
<td>1,307</td>
<td>73,008</td>
</tr>
<tr>
<td>New Baltimore</td>
<td>Town</td>
<td>Greene</td>
<td></td>
<td>11,365</td>
<td>4,657</td>
<td>22</td>
<td>1,307</td>
<td>45,458</td>
<td>1,034</td>
<td>905</td>
<td>64,747</td>
</tr>
<tr>
<td>Athens</td>
<td>Town</td>
<td>Greene</td>
<td></td>
<td>15,801</td>
<td>6,055</td>
<td>2,534</td>
<td>1,593</td>
<td>36,182</td>
<td>1,254</td>
<td>573</td>
<td>63,991</td>
</tr>
<tr>
<td>Durham</td>
<td>Town</td>
<td>Greene</td>
<td></td>
<td>10,065</td>
<td>3,669</td>
<td>3,377</td>
<td>1,099</td>
<td>25,263</td>
<td>836</td>
<td>1,977</td>
<td>45,387</td>
</tr>
<tr>
<td>Catskill</td>
<td>Village</td>
<td>Greene</td>
<td></td>
<td>12,374</td>
<td>13,785</td>
<td>1,456</td>
<td>1,643</td>
<td>12,646</td>
<td>1,252</td>
<td>0</td>
<td>43,156</td>
</tr>
<tr>
<td>Hunter</td>
<td>Town</td>
<td>Greene</td>
<td></td>
<td>13,599</td>
<td>9,159</td>
<td>10</td>
<td>1,157</td>
<td>13,629</td>
<td>838</td>
<td>1,975</td>
<td>40,367</td>
</tr>
<tr>
<td>Greenville</td>
<td>Town</td>
<td>Greene</td>
<td></td>
<td>13,373</td>
<td>6,388</td>
<td>102</td>
<td>1,470</td>
<td>16,123</td>
<td>1,147</td>
<td>847</td>
<td>39,450</td>
</tr>
<tr>
<td>Windham</td>
<td>Town</td>
<td>Greene</td>
<td></td>
<td>12,330</td>
<td>8,394</td>
<td>102</td>
<td>784</td>
<td>13,993</td>
<td>522</td>
<td>987</td>
<td>37,010</td>
</tr>
<tr>
<td>Coxsackie</td>
<td>Village</td>
<td>Greene</td>
<td></td>
<td>8,619</td>
<td>4,183</td>
<td>303</td>
<td>1,093</td>
<td>7,955</td>
<td>863</td>
<td>0</td>
<td>23,016</td>
</tr>
<tr>
<td>Jewett</td>
<td>Town</td>
<td>Greene</td>
<td></td>
<td>5,023</td>
<td>1,593</td>
<td>0</td>
<td>383</td>
<td>10,171</td>
<td>292</td>
<td>1,099</td>
<td>18,661</td>
</tr>
<tr>
<td>Lexington</td>
<td>Town</td>
<td>Greene</td>
<td></td>
<td>4,764</td>
<td>1,601</td>
<td>1</td>
<td>315</td>
<td>9,180</td>
<td>247</td>
<td>1,740</td>
<td>17,848</td>
</tr>
<tr>
<td>Athens</td>
<td>Village</td>
<td>Greene</td>
<td></td>
<td>5,626</td>
<td>2,168</td>
<td>226</td>
<td>647</td>
<td>5,829</td>
<td>512</td>
<td>0</td>
<td>15,008</td>
</tr>
<tr>
<td>Ashland</td>
<td>Town</td>
<td>Greene</td>
<td></td>
<td>2,844</td>
<td>1,090</td>
<td>0</td>
<td>291</td>
<td>9,385</td>
<td>240</td>
<td>567</td>
<td>14,417</td>
</tr>
<tr>
<td>Prattsville</td>
<td>Town</td>
<td>Greene</td>
<td></td>
<td>3,358</td>
<td>1,457</td>
<td>0</td>
<td>279</td>
<td>7,714</td>
<td>215</td>
<td>429</td>
<td>13,451</td>
</tr>
<tr>
<td>Hunter</td>
<td>Village</td>
<td>Greene</td>
<td></td>
<td>3,686</td>
<td>3,634</td>
<td>2</td>
<td>245</td>
<td>1,900</td>
<td>154</td>
<td>0</td>
<td>9,620</td>
</tr>
<tr>
<td>Tannersville</td>
<td>Village</td>
<td>Greene</td>
<td></td>
<td>2,479</td>
<td>2,131</td>
<td>3</td>
<td>232</td>
<td>1,352</td>
<td>165</td>
<td>0</td>
<td>6,362</td>
</tr>
<tr>
<td>Halcott</td>
<td>Town</td>
<td>Greene</td>
<td></td>
<td>1,487</td>
<td>491</td>
<td>0</td>
<td>101</td>
<td>3,227</td>
<td>79</td>
<td>593</td>
<td>5,888</td>
</tr>
<tr>
<td>Troy</td>
<td>City</td>
<td>Rensselaer</td>
<td></td>
<td>50,980</td>
<td>94,405</td>
<td>35,985</td>
<td>19,560</td>
<td>59,038</td>
<td>15,401</td>
<td>0</td>
<td>309,369</td>
</tr>
<tr>
<td>East Greenbush</td>
<td>Town</td>
<td>Rensselaer</td>
<td></td>
<td>44,021</td>
<td>62,906</td>
<td>0</td>
<td>6,628</td>
<td>184,844</td>
<td>5,061</td>
<td>1,861</td>
<td>205,321</td>
</tr>
<tr>
<td>Schodack</td>
<td>Town</td>
<td>Rensselaer</td>
<td></td>
<td>41,089</td>
<td>19,211</td>
<td>0</td>
<td>4,986</td>
<td>111,557</td>
<td>3,931</td>
<td>4,798</td>
<td>185,571</td>
</tr>
<tr>
<td>North Greenbush</td>
<td>Town</td>
<td>Rensselaer</td>
<td></td>
<td>36,251</td>
<td>30,102</td>
<td>9,605</td>
<td>4,902</td>
<td>65,166</td>
<td>3,710</td>
<td>1,437</td>
<td>151,172</td>
</tr>
<tr>
<td>Rensselaer</td>
<td>City</td>
<td>Rensselaer</td>
<td></td>
<td>17,765</td>
<td>16,254</td>
<td>40,187</td>
<td>3,675</td>
<td>31,665</td>
<td>2,886</td>
<td>0</td>
<td>112,431</td>
</tr>
<tr>
<td>Brunswick</td>
<td>Town</td>
<td>Rensselaer</td>
<td></td>
<td>31,764</td>
<td>13,341</td>
<td>0</td>
<td>4,521</td>
<td>54,671</td>
<td>3,669</td>
<td>3,436</td>
<td>111,502</td>
</tr>
<tr>
<td>Schaghticoke</td>
<td>Town</td>
<td>Rensselaer</td>
<td></td>
<td>23,273</td>
<td>6,011</td>
<td>0</td>
<td>2,956</td>
<td>51,601</td>
<td>2,359</td>
<td>3,854</td>
<td>90,054</td>
</tr>
<tr>
<td>Sand Lake</td>
<td>Town</td>
<td>Rensselaer</td>
<td></td>
<td>29,766</td>
<td>8,396</td>
<td>742</td>
<td>3,320</td>
<td>33,103</td>
<td>2,621</td>
<td>2,716</td>
<td>80,664</td>
</tr>
<tr>
<td>Hoosick</td>
<td>Town</td>
<td>Rensselaer</td>
<td></td>
<td>19,416</td>
<td>9,931</td>
<td>3,163</td>
<td>2,707</td>
<td>35,750</td>
<td>2,227</td>
<td>4,884</td>
<td>77,978</td>
</tr>
<tr>
<td>Pittstown</td>
<td>Town</td>
<td>Rensselaer</td>
<td></td>
<td>16,382</td>
<td>3,960</td>
<td>0</td>
<td>2,185</td>
<td>49,968</td>
<td>1,762</td>
<td>4,775</td>
<td>71,031</td>
</tr>
<tr>
<td>Nassau</td>
<td>Town</td>
<td>Rensselaer</td>
<td></td>
<td>15,951</td>
<td>4,366</td>
<td>0</td>
<td>1,840</td>
<td>26,514</td>
<td>1,471</td>
<td>3,443</td>
<td>53,585</td>
</tr>
</tbody>
</table>
### Table B 1. Municipal Roll-Up GHG Inventories (MTCDE)

<table>
<thead>
<tr>
<th>Community</th>
<th>Type</th>
<th>County</th>
<th>Res</th>
<th>Com</th>
<th>Industry</th>
<th>Process</th>
<th>Transport</th>
<th>Waste</th>
<th>Ag</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Poestenkill</td>
<td>Town</td>
<td>Rensselaer</td>
<td>12,900</td>
<td>3,529</td>
<td>0</td>
<td>1,738</td>
<td>23,649</td>
<td>1,392</td>
<td>2,507</td>
<td>45,715</td>
</tr>
<tr>
<td>Stephentown</td>
<td>Town</td>
<td>Rensselaer</td>
<td>9,122</td>
<td>2,307</td>
<td>1,268</td>
<td>1,130</td>
<td>19,347</td>
<td>892</td>
<td>4,485</td>
<td>37,551</td>
</tr>
<tr>
<td>Hoosick Falls</td>
<td>Village</td>
<td>Rensselaer</td>
<td>9,289</td>
<td>5,709</td>
<td>3,162</td>
<td>1,376</td>
<td>7,826</td>
<td>1,076</td>
<td>0</td>
<td>28,437</td>
</tr>
<tr>
<td>Berlin</td>
<td>Town</td>
<td>Rensselaer</td>
<td>6,826</td>
<td>2,043</td>
<td>300</td>
<td>734</td>
<td>12,150</td>
<td>578</td>
<td>4,618</td>
<td>27,249</td>
</tr>
<tr>
<td>Grafton</td>
<td>Town</td>
<td>Rensselaer</td>
<td>7,181</td>
<td>2,181</td>
<td>0</td>
<td>822</td>
<td>11,276</td>
<td>654</td>
<td>3,465</td>
<td>25,579</td>
</tr>
<tr>
<td>Petersburgh</td>
<td>Town</td>
<td>Rensselaer</td>
<td>5,457</td>
<td>1,405</td>
<td>1,759</td>
<td>604</td>
<td>10,921</td>
<td>469</td>
<td>3,224</td>
<td>23,837</td>
</tr>
<tr>
<td>Castleton-on-Hudson</td>
<td>Village</td>
<td>Rensselaer</td>
<td>4,107</td>
<td>2,465</td>
<td>0</td>
<td>574</td>
<td>4,204</td>
<td>453</td>
<td>0</td>
<td>21,802</td>
</tr>
<tr>
<td>Nassau</td>
<td>Village</td>
<td>Rensselaer</td>
<td>3,700</td>
<td>1,182</td>
<td>0</td>
<td>436</td>
<td>4,964</td>
<td>348</td>
<td>0</td>
<td>10,630</td>
</tr>
<tr>
<td>Schaghticoke</td>
<td>Village</td>
<td>Rensselaer</td>
<td>1,856</td>
<td>876</td>
<td>0</td>
<td>232</td>
<td>5,555</td>
<td>182</td>
<td>0</td>
<td>8,601</td>
</tr>
<tr>
<td>East Nassau</td>
<td>Village</td>
<td>Rensselaer</td>
<td>1,955</td>
<td>535</td>
<td>0</td>
<td>226</td>
<td>4,598</td>
<td>180</td>
<td>0</td>
<td>7,494</td>
</tr>
<tr>
<td>Valley Falls</td>
<td>Village</td>
<td>Rensselaer</td>
<td>1,620</td>
<td>400</td>
<td>0</td>
<td>180</td>
<td>3,353</td>
<td>143</td>
<td>0</td>
<td>5,697</td>
</tr>
<tr>
<td>Clifton Park</td>
<td>Town</td>
<td>Saratoga</td>
<td>99,042</td>
<td>52,279</td>
<td>92</td>
<td>14,375</td>
<td>262,681</td>
<td>12,886</td>
<td>3,791</td>
<td>445,045</td>
</tr>
<tr>
<td>Saratoga Springs</td>
<td>City</td>
<td>Saratoga</td>
<td>68,673</td>
<td>76,661</td>
<td>61,223</td>
<td>10,849</td>
<td>129,676</td>
<td>9,333</td>
<td>0</td>
<td>356,416</td>
</tr>
<tr>
<td>Waterford</td>
<td>Town</td>
<td>Saratoga</td>
<td>20,742</td>
<td>10,074</td>
<td>270,643</td>
<td>3,876</td>
<td>25,317</td>
<td>2,957</td>
<td>516</td>
<td>334,125</td>
</tr>
<tr>
<td>Halfmoon</td>
<td>Town</td>
<td>Saratoga</td>
<td>57,636</td>
<td>32,438</td>
<td>26,301</td>
<td>8,586</td>
<td>135,040</td>
<td>7,560</td>
<td>2,562</td>
<td>270,125</td>
</tr>
<tr>
<td>Malta</td>
<td>Town</td>
<td>Saratoga</td>
<td>37,252</td>
<td>21,017</td>
<td>812</td>
<td>5,782</td>
<td>185,646</td>
<td>5,183</td>
<td>2,196</td>
<td>257,706</td>
</tr>
<tr>
<td>Moreau</td>
<td>Town</td>
<td>Saratoga</td>
<td>39,633</td>
<td>17,481</td>
<td>87,983</td>
<td>5,685</td>
<td>82,221</td>
<td>5,470</td>
<td>3,297</td>
<td>244,470</td>
</tr>
<tr>
<td>Wilton</td>
<td>Town</td>
<td>Saratoga</td>
<td>42,617</td>
<td>30,805</td>
<td>0</td>
<td>6,408</td>
<td>127,210</td>
<td>5,678</td>
<td>2,818</td>
<td>215,537</td>
</tr>
<tr>
<td>Ballston</td>
<td>Town</td>
<td>Saratoga</td>
<td>23,967</td>
<td>13,120</td>
<td>1,655</td>
<td>3,765</td>
<td>60,935</td>
<td>3,443</td>
<td>2,326</td>
<td>109,100</td>
</tr>
<tr>
<td>Milton</td>
<td>Town</td>
<td>Saratoga</td>
<td>50,041</td>
<td>20,705</td>
<td>1,622</td>
<td>7,177</td>
<td>65,455</td>
<td>6,521</td>
<td>2,807</td>
<td>154,328</td>
</tr>
<tr>
<td>South Glens Falls</td>
<td>Village</td>
<td>Saratoga</td>
<td>7,842</td>
<td>4,929</td>
<td>88,382</td>
<td>1,364</td>
<td>7,942</td>
<td>1,235</td>
<td>0</td>
<td>111,693</td>
</tr>
<tr>
<td>Stillwater</td>
<td>Town</td>
<td>Saratoga</td>
<td>25,509</td>
<td>8,133</td>
<td>232</td>
<td>3,240</td>
<td>42,421</td>
<td>2,909</td>
<td>3,239</td>
<td>65,685</td>
</tr>
<tr>
<td>Greenfield</td>
<td>Town</td>
<td>Saratoga</td>
<td>25,192</td>
<td>10,382</td>
<td>0</td>
<td>3,019</td>
<td>35,010</td>
<td>2,730</td>
<td>5,300</td>
<td>81,632</td>
</tr>
<tr>
<td>Corinth</td>
<td>Town</td>
<td>Saratoga</td>
<td>19,986</td>
<td>6,743</td>
<td>0</td>
<td>2,518</td>
<td>27,868</td>
<td>2,393</td>
<td>4,464</td>
<td>63,871</td>
</tr>
<tr>
<td>Saratoga</td>
<td>Town</td>
<td>Saratoga</td>
<td>17,100</td>
<td>6,210</td>
<td>0</td>
<td>2,194</td>
<td>23,597</td>
<td>1,992</td>
<td>3,190</td>
<td>54,282</td>
</tr>
<tr>
<td>Galway</td>
<td>Town</td>
<td>Saratoga</td>
<td>12,726</td>
<td>3,676</td>
<td>0</td>
<td>1,375</td>
<td>30,052</td>
<td>1,245</td>
<td>3,447</td>
<td>52,522</td>
</tr>
<tr>
<td>Charlton</td>
<td>Town</td>
<td>Saratoga</td>
<td>15,035</td>
<td>3,942</td>
<td>0</td>
<td>1,593</td>
<td>25,167</td>
<td>1,451</td>
<td>2,577</td>
<td>49,766</td>
</tr>
<tr>
<td>Northumberland</td>
<td>Town</td>
<td>Saratoga</td>
<td>14,425</td>
<td>3,399</td>
<td>0</td>
<td>1,952</td>
<td>18,803</td>
<td>1,786</td>
<td>2,540</td>
<td>42,704</td>
</tr>
<tr>
<td>Mechanicville</td>
<td>City</td>
<td>Saratoga</td>
<td>16,131</td>
<td>6,353</td>
<td>25</td>
<td>2,020</td>
<td>12,792</td>
<td>1,824</td>
<td>0</td>
<td>39,145</td>
</tr>
<tr>
<td>Ballston Spa</td>
<td>Village</td>
<td>Saratoga</td>
<td>11,186</td>
<td>7,742</td>
<td>1,672</td>
<td>2,087</td>
<td>13,023</td>
<td>1,899</td>
<td>0</td>
<td>37,608</td>
</tr>
<tr>
<td>Hadley</td>
<td>Town</td>
<td>Saratoga</td>
<td>6,292</td>
<td>1,627</td>
<td>0</td>
<td>784</td>
<td>10,998</td>
<td>719</td>
<td>3,123</td>
<td>22,643</td>
</tr>
<tr>
<td>Round Lake</td>
<td>Village</td>
<td>Saratoga</td>
<td>1,569</td>
<td>488</td>
<td>0</td>
<td>242</td>
<td>17,081</td>
<td>239</td>
<td>0</td>
<td>19,599</td>
</tr>
<tr>
<td>Providence</td>
<td>Town</td>
<td>Saratoga</td>
<td>6,419</td>
<td>1,601</td>
<td>0</td>
<td>764</td>
<td>5,927</td>
<td>700</td>
<td>3,460</td>
<td>18,871</td>
</tr>
<tr>
<td>Edinburg</td>
<td>Town</td>
<td>Saratoga</td>
<td>7,405</td>
<td>2,038</td>
<td>0</td>
<td>475</td>
<td>3,866</td>
<td>426</td>
<td>4,732</td>
<td>18,943</td>
</tr>
<tr>
<td>Waterford</td>
<td>Village</td>
<td>Saratoga</td>
<td>5,585</td>
<td>1,922</td>
<td>0</td>
<td>760</td>
<td>7,233</td>
<td>699</td>
<td>0</td>
<td>16,198</td>
</tr>
<tr>
<td>Corinth</td>
<td>Village</td>
<td>Saratoga</td>
<td>7,681</td>
<td>3,270</td>
<td>0</td>
<td>991</td>
<td>3,641</td>
<td>898</td>
<td>0</td>
<td>16,482</td>
</tr>
<tr>
<td>Stillwater</td>
<td>Village</td>
<td>Saratoga</td>
<td>5,233</td>
<td>1,875</td>
<td>30</td>
<td>682</td>
<td>5,714</td>
<td>610</td>
<td>0</td>
<td>14,144</td>
</tr>
</tbody>
</table>
### Table B 1. Municipal Roll-Up GHG Inventories (MTCDE)

<table>
<thead>
<tr>
<th>Community</th>
<th>Type</th>
<th>County</th>
<th>Roll Up GHG Emissions By Sector (MTCDE)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Day</td>
<td>Town</td>
<td>Saratoga</td>
<td>4,469 1,180 0 333 2,274 301 5,042 13,599</td>
</tr>
<tr>
<td>Schuylerville</td>
<td>Village</td>
<td>Saratoga</td>
<td>3,276 2,740 0 542 3,383 487 0 10,428</td>
</tr>
<tr>
<td>Victory</td>
<td>Village</td>
<td>Saratoga</td>
<td>1,560 341 0 231 1,267 212 0 3,610</td>
</tr>
<tr>
<td>Galway</td>
<td>Village</td>
<td>Saratoga</td>
<td>516 204 0 77 1,864 70 0 2,731</td>
</tr>
<tr>
<td>Schenectady</td>
<td>City</td>
<td>Schenectady</td>
<td>131,239 98,774 66,283 25,492 103,742 20,286 0 445,816</td>
</tr>
<tr>
<td>Rotterdam</td>
<td>Town</td>
<td>Schenectady</td>
<td>82,610 58,602 39,815 11,402 157,432 8,924 805 359,589</td>
</tr>
<tr>
<td>Glens Falls</td>
<td>Town</td>
<td>Schenectady</td>
<td>80,632 53,892 0 11,515 121,384 9,402 1,109 277,575</td>
</tr>
<tr>
<td>Niskayuna</td>
<td>Town</td>
<td>Schenectady</td>
<td>64,500 38,754 29,468 8,500 69,284 6,681 319 217,006</td>
</tr>
<tr>
<td>Duanesburg</td>
<td>Town</td>
<td>Schenectady</td>
<td>20,694 6,026 29,276 2,362 48,338 1,878 1,596 110,170</td>
</tr>
<tr>
<td>Scotia</td>
<td>Village</td>
<td>Schenectady</td>
<td>19,715 5,876 0 2,962 15,883 2,371 0 46,806</td>
</tr>
<tr>
<td>Princetown</td>
<td>Town</td>
<td>Schenectady</td>
<td>6,925 1,920 0 817 26,440 649 539 37,289</td>
</tr>
<tr>
<td>Delanson</td>
<td>Village</td>
<td>Schenectady</td>
<td>1,206 689 30,693 149 992 116 0 33,845</td>
</tr>
<tr>
<td>Glens Falls</td>
<td>City</td>
<td>Warren</td>
<td>33,122 47,417 306,449 331,334 42,425 6,565 0 767,162</td>
</tr>
<tr>
<td>Queensbury</td>
<td>Town</td>
<td>Warren</td>
<td>75,680 71,238 3,764 11,091 153,436 12,461 110 327,779</td>
</tr>
<tr>
<td>Lake George</td>
<td>Town</td>
<td>Warren</td>
<td>15,083 14,379 0 1,445 61,954 1,570 53 94,384</td>
</tr>
<tr>
<td>Chester</td>
<td>Town</td>
<td>Warren</td>
<td>12,029 5,474 0 1,310 57,992 1,498 148 78,453</td>
</tr>
<tr>
<td>Bolton</td>
<td>Town</td>
<td>Warren</td>
<td>13,670 6,934 0 932 36,573 1,039 111 58,660</td>
</tr>
<tr>
<td>Warrensburg</td>
<td>Town</td>
<td>Warren</td>
<td>14,258 7,661 0 1,603 24,178 1,828 111 49,639</td>
</tr>
<tr>
<td>Johnsburg</td>
<td>Town</td>
<td>Warren</td>
<td>7,931 5,542 0 961 30,004 1,070 358 45,866</td>
</tr>
<tr>
<td>Lake Luzerne</td>
<td>Town</td>
<td>Warren</td>
<td>11,936 4,941 0 1,298 15,038 1,495 92 34,799</td>
</tr>
<tr>
<td>Horicon</td>
<td>Town</td>
<td>Warren</td>
<td>8,560 3,310 0 548 9,960 620 115 23,214</td>
</tr>
<tr>
<td>Hague</td>
<td>Town</td>
<td>Warren</td>
<td>5,082 1,971 0 280 10,467 312 112 18,225</td>
</tr>
<tr>
<td>Lake George</td>
<td>Village</td>
<td>Warren</td>
<td>3,552 6,159 0 386 6,078 405 0 16,579</td>
</tr>
<tr>
<td>Thurman</td>
<td>Town</td>
<td>Warren</td>
<td>3,866 1,395 0 467 9,819 544 160 16,254</td>
</tr>
<tr>
<td>Stony Creek</td>
<td>Town</td>
<td>Warren</td>
<td>3,446 1,380 0 296 6,584 343 144 12,193</td>
</tr>
<tr>
<td>Fort Edward</td>
<td>Town</td>
<td>Washington</td>
<td>15,443 27,725 38,673 2,622 15,682 2,707 4,862 117,712</td>
</tr>
<tr>
<td>Kingsbury</td>
<td>Town</td>
<td>Washington</td>
<td>29,259 19,996 1 4,897 33,838 5,838 7,242 100,616</td>
</tr>
<tr>
<td>Greenwich</td>
<td>Town</td>
<td>Washington</td>
<td>15,914 8,667 35,343 1,970 19,370 2,100 7,970 94,334</td>
</tr>
<tr>
<td>Fort Edward</td>
<td>Village</td>
<td>Washington</td>
<td>7,521 18,429 38,766 1,450 8,380 1,434 0 75,980</td>
</tr>
<tr>
<td>Fort Ann</td>
<td>Town</td>
<td>Washington</td>
<td>11,872 2,699 19,794 2,360 17,721 2,630 19,895 76,522</td>
</tr>
<tr>
<td>Granville</td>
<td>Town</td>
<td>Washington</td>
<td>21,646 6,304 5,877 2,643 23,267 2,833 10,152 72,722</td>
</tr>
<tr>
<td>Easton</td>
<td>Town</td>
<td>Washington</td>
<td>8,092 4,451 26,387 976 17,727 992 11,372 69,998</td>
</tr>
<tr>
<td>Hudson Falls</td>
<td>Village</td>
<td>Washington</td>
<td>15,772 8,886 1 2,784 14,195 3,093 0 44,730</td>
</tr>
<tr>
<td>Whitehall</td>
<td>Town</td>
<td>Washington</td>
<td>13,179 5,370 1,138 1,580 13,048 1,717 10,436 46,469</td>
</tr>
<tr>
<td>Argyle</td>
<td>Town</td>
<td>Washington</td>
<td>17,769 3,907 0 1,472 15,453 1,607 10,319 45,527</td>
</tr>
<tr>
<td>Salem</td>
<td>Town</td>
<td>Washington</td>
<td>11,110 2,848 37 1,065 16,683 1,153 9,557 42,452</td>
</tr>
<tr>
<td>White Creek</td>
<td>Town</td>
<td>Washington</td>
<td>9,413 1,970 0 1,269 14,022 1,426 8,747 36,847</td>
</tr>
</tbody>
</table>
### Table B 1. Municipal Roll-Up GHG Inventories (MTCDE)

<table>
<thead>
<tr>
<th>Community</th>
<th>Type</th>
<th>County</th>
<th>Roll Up GHG Emissions By Sector (MTCDE)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Res</td>
</tr>
<tr>
<td>Hebron</td>
<td>Town</td>
<td>Washington</td>
<td>5,982</td>
</tr>
<tr>
<td>Jackson</td>
<td>Town</td>
<td>Washington</td>
<td>6,800</td>
</tr>
<tr>
<td>Cambridge</td>
<td>Town</td>
<td>Washington</td>
<td>7,001</td>
</tr>
<tr>
<td>Hartford</td>
<td>Town</td>
<td>Washington</td>
<td>6,321</td>
</tr>
<tr>
<td>Dresden</td>
<td>Town</td>
<td>Washington</td>
<td>3,062</td>
</tr>
<tr>
<td>Putnam</td>
<td>Town</td>
<td>Washington</td>
<td>3,109</td>
</tr>
<tr>
<td>Granville</td>
<td>Village</td>
<td>Washington</td>
<td>8,242</td>
</tr>
<tr>
<td>Whitehall</td>
<td>Village</td>
<td>Washington</td>
<td>8,230</td>
</tr>
<tr>
<td>Cambridge</td>
<td>Village</td>
<td>Washington</td>
<td>5,123</td>
</tr>
<tr>
<td>Hampton</td>
<td>Town</td>
<td>Washington</td>
<td>2,612</td>
</tr>
<tr>
<td>Greenwich</td>
<td>Village</td>
<td>Washington</td>
<td>5,447</td>
</tr>
<tr>
<td>Salem</td>
<td>Village</td>
<td>Washington</td>
<td>3,806</td>
</tr>
<tr>
<td>Fort Ann</td>
<td>Village</td>
<td>Washington</td>
<td>1,391</td>
</tr>
<tr>
<td>Argyle</td>
<td>Village</td>
<td>Washington</td>
<td>1,151</td>
</tr>
<tr>
<td>Municipality</td>
<td>Type</td>
<td>County</td>
<td>Electricity (MWh)</td>
</tr>
<tr>
<td>---------------</td>
<td>----------</td>
<td>--------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Albany</td>
<td>City</td>
<td>Albany</td>
<td>787,013</td>
</tr>
<tr>
<td>Colonie</td>
<td>Town</td>
<td>Albany</td>
<td>640,730</td>
</tr>
<tr>
<td>Bethlehem</td>
<td>Town</td>
<td>Albany</td>
<td>441,651</td>
</tr>
<tr>
<td>Guilderland</td>
<td>Town</td>
<td>Albany</td>
<td>247,534</td>
</tr>
<tr>
<td>Watervliet</td>
<td>City</td>
<td>Albany</td>
<td>69,686</td>
</tr>
<tr>
<td>Menands</td>
<td>Village</td>
<td>Albany</td>
<td>66,902</td>
</tr>
<tr>
<td>Colonie</td>
<td>Village</td>
<td>Albany</td>
<td>65,173</td>
</tr>
<tr>
<td>Cohoes</td>
<td>City</td>
<td>Albany</td>
<td>58,060</td>
</tr>
<tr>
<td>Green Island</td>
<td>Village</td>
<td>Albany</td>
<td>45,266</td>
</tr>
<tr>
<td>New Scotland</td>
<td>Town</td>
<td>Albany</td>
<td>38,286</td>
</tr>
<tr>
<td>Coeymans</td>
<td>Town</td>
<td>Albany</td>
<td>26,764</td>
</tr>
<tr>
<td>Ravena</td>
<td>Village</td>
<td>Albany</td>
<td>18,598</td>
</tr>
<tr>
<td>Westerlo</td>
<td>Town</td>
<td>Albany</td>
<td>16,842</td>
</tr>
<tr>
<td>Berne</td>
<td>Town</td>
<td>Albany</td>
<td>12,645</td>
</tr>
<tr>
<td>Voorheesville</td>
<td>Village</td>
<td>Albany</td>
<td>11,022</td>
</tr>
<tr>
<td>Knox</td>
<td>Town</td>
<td>Albany</td>
<td>10,138</td>
</tr>
<tr>
<td>Rensselaerville</td>
<td>Town</td>
<td>Albany</td>
<td>9,860</td>
</tr>
<tr>
<td>Altamont</td>
<td>Village</td>
<td>Albany</td>
<td>7,107</td>
</tr>
<tr>
<td>Green Island</td>
<td>Town</td>
<td>Albany</td>
<td>0</td>
</tr>
<tr>
<td>Greenport</td>
<td>Town</td>
<td>Columbia</td>
<td>75,598</td>
</tr>
<tr>
<td>Hudson</td>
<td>City</td>
<td>Columbia</td>
<td>44,949</td>
</tr>
<tr>
<td>Claverack</td>
<td>Town</td>
<td>Columbia</td>
<td>35,978</td>
</tr>
<tr>
<td>Kinderhook</td>
<td>Town</td>
<td>Columbia</td>
<td>30,710</td>
</tr>
<tr>
<td>Copake</td>
<td>Town</td>
<td>Columbia</td>
<td>28,335</td>
</tr>
<tr>
<td>Chatham</td>
<td>Village</td>
<td>Columbia</td>
<td>26,124</td>
</tr>
<tr>
<td>Ghent</td>
<td>Town</td>
<td>Columbia</td>
<td>25,812</td>
</tr>
<tr>
<td>Ancram</td>
<td>Town</td>
<td>Columbia</td>
<td>25,207</td>
</tr>
<tr>
<td>Chatham</td>
<td>Town</td>
<td>Columbia</td>
<td>24,743</td>
</tr>
<tr>
<td>Germantown</td>
<td>Town</td>
<td>Columbia</td>
<td>21,780</td>
</tr>
<tr>
<td>Livingston</td>
<td>Town</td>
<td>Columbia</td>
<td>19,603</td>
</tr>
<tr>
<td>Hillsdale</td>
<td>Town</td>
<td>Columbia</td>
<td>18,844</td>
</tr>
<tr>
<td>Canaan</td>
<td>Town</td>
<td>Columbia</td>
<td>16,409</td>
</tr>
<tr>
<td>New Lebanon</td>
<td>Town</td>
<td>Columbia</td>
<td>16,030</td>
</tr>
<tr>
<td>Stockport</td>
<td>Town</td>
<td>Columbia</td>
<td>10,500</td>
</tr>
<tr>
<td>Taghkanic</td>
<td>Town</td>
<td>Columbia</td>
<td>10,449</td>
</tr>
<tr>
<td>Valatie</td>
<td>Village</td>
<td>Columbia</td>
<td>9,689</td>
</tr>
<tr>
<td>Municipality</td>
<td>Type</td>
<td>County</td>
<td>Electricity (MWh)</td>
</tr>
<tr>
<td>--------------</td>
<td>---------</td>
<td>------------</td>
<td>-------------------</td>
</tr>
<tr>
<td>Austerlitz</td>
<td>Town</td>
<td>Columbia</td>
<td>9,434</td>
</tr>
<tr>
<td>Gallatin</td>
<td>Town</td>
<td>Columbia</td>
<td>9,116</td>
</tr>
<tr>
<td>Stuyvesant</td>
<td>Town</td>
<td>Columbia</td>
<td>8,915</td>
</tr>
<tr>
<td>Clermont</td>
<td>Town</td>
<td>Columbia</td>
<td>7,670</td>
</tr>
<tr>
<td>Philmont</td>
<td>Village</td>
<td>Columbia</td>
<td>7,515</td>
</tr>
<tr>
<td>Kinderhook</td>
<td>Village</td>
<td>Columbia</td>
<td>5,921</td>
</tr>
<tr>
<td>Catskill</td>
<td>Village</td>
<td>Greene</td>
<td>119,428</td>
</tr>
<tr>
<td>Windham</td>
<td>Town</td>
<td>Greene</td>
<td>48,197</td>
</tr>
<tr>
<td>Coxsackie</td>
<td>Town</td>
<td>Greene</td>
<td>46,079</td>
</tr>
<tr>
<td>Cairo</td>
<td>Town</td>
<td>Greene</td>
<td>41,113</td>
</tr>
<tr>
<td>Catskill</td>
<td>Village</td>
<td>Greene</td>
<td>40,881</td>
</tr>
<tr>
<td>Durham</td>
<td>Town</td>
<td>Greene</td>
<td>27,983</td>
</tr>
<tr>
<td>Greenville</td>
<td>Town</td>
<td>Greene</td>
<td>26,185</td>
</tr>
<tr>
<td>Hunter</td>
<td>Village</td>
<td>Greene</td>
<td>18,640</td>
</tr>
<tr>
<td>New Baltimore</td>
<td>Town</td>
<td>Greene</td>
<td>17,990</td>
</tr>
<tr>
<td>Hunter</td>
<td>Town</td>
<td>Greene</td>
<td>16,865</td>
</tr>
<tr>
<td>Prattsilville</td>
<td>Village</td>
<td>Greene</td>
<td>15,556</td>
</tr>
<tr>
<td>Athens</td>
<td>Town</td>
<td>Greene</td>
<td>15,028</td>
</tr>
<tr>
<td>Tannersville</td>
<td>Village</td>
<td>Greene</td>
<td>10,044</td>
</tr>
<tr>
<td>Jewett</td>
<td>Town</td>
<td>Greene</td>
<td>9,270</td>
</tr>
<tr>
<td>Athens</td>
<td>Village</td>
<td>Greene</td>
<td>8,910</td>
</tr>
<tr>
<td>Prattsville</td>
<td>Village</td>
<td>Greene</td>
<td>5,980</td>
</tr>
<tr>
<td>Lexington</td>
<td>Town</td>
<td>Greene</td>
<td>5,085</td>
</tr>
<tr>
<td>Halcott</td>
<td>Town</td>
<td>Greene</td>
<td>1,615</td>
</tr>
<tr>
<td>Ashland</td>
<td>Town</td>
<td>Greene</td>
<td>0</td>
</tr>
<tr>
<td>Troy</td>
<td>City</td>
<td>Rensselaer</td>
<td>303,129</td>
</tr>
<tr>
<td>East Greenbush</td>
<td>Town</td>
<td>Rensselaer</td>
<td>163,363</td>
</tr>
<tr>
<td>North Greenbush</td>
<td>Town</td>
<td>Rensselaer</td>
<td>133,572</td>
</tr>
<tr>
<td>Schodack</td>
<td>Town</td>
<td>Rensselaer</td>
<td>66,739</td>
</tr>
<tr>
<td>Brunswick</td>
<td>Town</td>
<td>Rensselaer</td>
<td>60,095</td>
</tr>
<tr>
<td>Rensselaer</td>
<td>City</td>
<td>Rensselaer</td>
<td>60,027</td>
</tr>
<tr>
<td>Sand Lake</td>
<td>Town</td>
<td>Rensselaer</td>
<td>49,053</td>
</tr>
<tr>
<td>Schaghticoke</td>
<td>Town</td>
<td>Rensselaer</td>
<td>31,262</td>
</tr>
<tr>
<td>Hoosick Falls</td>
<td>Village</td>
<td>Rensselaer</td>
<td>24,281</td>
</tr>
<tr>
<td>Hoosick</td>
<td>Town</td>
<td>Rensselaer</td>
<td>19,339</td>
</tr>
<tr>
<td>Pittstown</td>
<td>Town</td>
<td>Rensselaer</td>
<td>17,993</td>
</tr>
<tr>
<td>Poestenkill</td>
<td>Town</td>
<td>Rensselaer</td>
<td>17,845</td>
</tr>
</tbody>
</table>
### Table B 2. Utility-Supplied Energy Consumption Data for 2010 by Municipality

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Type</th>
<th>County</th>
<th>Electricity (MWh)</th>
<th>Natural Gas (Thers)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stephentown</td>
<td>Town</td>
<td>Rensselaer</td>
<td>16,775</td>
<td>13,949</td>
</tr>
<tr>
<td>Nassau</td>
<td>Town</td>
<td>Rensselaer</td>
<td>15,030</td>
<td>13,105</td>
</tr>
<tr>
<td>Petersburgh</td>
<td>Town</td>
<td>Rensselaer</td>
<td>12,006</td>
<td>6,749</td>
</tr>
<tr>
<td>Berlin</td>
<td>Town</td>
<td>Rensselaer</td>
<td>11,540</td>
<td>8,336</td>
</tr>
<tr>
<td>Grafton</td>
<td>Town</td>
<td>Rensselaer</td>
<td>9,943</td>
<td>7,534</td>
</tr>
<tr>
<td>Castleton-on-Hudson</td>
<td>Village</td>
<td>Rensselaer</td>
<td>8,558</td>
<td>4,122</td>
</tr>
<tr>
<td>Nassau</td>
<td>Village</td>
<td>Rensselaer</td>
<td>4,813</td>
<td>3,401</td>
</tr>
<tr>
<td>Schaghticoke</td>
<td>Village</td>
<td>Rensselaer</td>
<td>3,941</td>
<td>1,920</td>
</tr>
<tr>
<td>Valley Falls</td>
<td>Village</td>
<td>Rensselaer</td>
<td>2,338</td>
<td>2,018</td>
</tr>
<tr>
<td>East Nassau</td>
<td>Village</td>
<td>Rensselaer</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Saratoga Springs</td>
<td>City</td>
<td>Saratoga</td>
<td>312,120</td>
<td>78,603</td>
</tr>
<tr>
<td>Clifton Park</td>
<td>Town</td>
<td>Saratoga</td>
<td>238,802</td>
<td>124,831</td>
</tr>
<tr>
<td>Waterford</td>
<td>Town</td>
<td>Saratoga</td>
<td>231,639</td>
<td>20,687</td>
</tr>
<tr>
<td>Halfmoon</td>
<td>Town</td>
<td>Saratoga</td>
<td>189,274</td>
<td>82,386</td>
</tr>
<tr>
<td>Wilton</td>
<td>Town</td>
<td>Saratoga</td>
<td>128,931</td>
<td>55,471</td>
</tr>
<tr>
<td>Malta</td>
<td>Town</td>
<td>Saratoga</td>
<td>92,691</td>
<td>55,008</td>
</tr>
<tr>
<td>Milton</td>
<td>Town</td>
<td>Saratoga</td>
<td>64,646</td>
<td>45,616</td>
</tr>
<tr>
<td>Moreau</td>
<td>Town</td>
<td>Saratoga</td>
<td>51,192</td>
<td>35,653</td>
</tr>
<tr>
<td>Ballston</td>
<td>Town</td>
<td>Saratoga</td>
<td>43,312</td>
<td>26,940</td>
</tr>
<tr>
<td>Greenfield</td>
<td>Town</td>
<td>Saratoga</td>
<td>42,238</td>
<td>28,360</td>
</tr>
<tr>
<td>Stillwater</td>
<td>Town</td>
<td>Saratoga</td>
<td>40,547</td>
<td>31,329</td>
</tr>
<tr>
<td>Mechanicville</td>
<td>City</td>
<td>Saratoga</td>
<td>29,035</td>
<td>18,985</td>
</tr>
<tr>
<td>Ballston Spa</td>
<td>Village</td>
<td>Saratoga</td>
<td>25,120</td>
<td>11,848</td>
</tr>
<tr>
<td>Northumberland</td>
<td>Town</td>
<td>Saratoga</td>
<td>19,922</td>
<td>17,123</td>
</tr>
<tr>
<td>Charlton</td>
<td>Town</td>
<td>Saratoga</td>
<td>18,861</td>
<td>57,030</td>
</tr>
<tr>
<td>South Glens Falls</td>
<td>Village</td>
<td>Saratoga</td>
<td>18,353</td>
<td>9,509</td>
</tr>
<tr>
<td>Galway</td>
<td>Town</td>
<td>Saratoga</td>
<td>17,966</td>
<td>14,978</td>
</tr>
<tr>
<td>Saratoga</td>
<td>Town</td>
<td>Saratoga</td>
<td>17,306</td>
<td>15,037</td>
</tr>
<tr>
<td>Corinth</td>
<td>Town</td>
<td>Saratoga</td>
<td>16,545</td>
<td>13,831</td>
</tr>
<tr>
<td>Corinth</td>
<td>Village</td>
<td>Saratoga</td>
<td>13,162</td>
<td>7,839</td>
</tr>
<tr>
<td>Stillwater</td>
<td>Village</td>
<td>Saratoga</td>
<td>11,647</td>
<td>8,156</td>
</tr>
<tr>
<td>Schuylerville</td>
<td>Village</td>
<td>Saratoga</td>
<td>8,681</td>
<td>3,879</td>
</tr>
<tr>
<td>Edinburg</td>
<td>Town</td>
<td>Saratoga</td>
<td>7,846</td>
<td>6,909</td>
</tr>
<tr>
<td>Hadley</td>
<td>Town</td>
<td>Saratoga</td>
<td>7,554</td>
<td>7,004</td>
</tr>
<tr>
<td>Providence</td>
<td>Town</td>
<td>Saratoga</td>
<td>7,370</td>
<td>6,936</td>
</tr>
<tr>
<td>Waterford</td>
<td>Village</td>
<td>Saratoga</td>
<td>6,813</td>
<td>4,953</td>
</tr>
<tr>
<td>Municipality</td>
<td>Type</td>
<td>County</td>
<td>Electricity (MWh)</td>
<td>Natural Gas (Thers)</td>
</tr>
<tr>
<td>--------------------</td>
<td>-----------</td>
<td>----------</td>
<td>-------------------</td>
<td>---------------------</td>
</tr>
<tr>
<td>Day</td>
<td>Town</td>
<td>Saratoga</td>
<td>4,993</td>
<td>4,774</td>
</tr>
<tr>
<td>Round Lake</td>
<td>Village</td>
<td>Saratoga</td>
<td>3,315</td>
<td>2,616</td>
</tr>
<tr>
<td>Victory</td>
<td>Village</td>
<td>Saratoga</td>
<td>1,940</td>
<td>1,791</td>
</tr>
<tr>
<td>Galway</td>
<td>Village</td>
<td>Saratoga</td>
<td>1,009</td>
<td>619</td>
</tr>
<tr>
<td>Schenectady</td>
<td>City</td>
<td>Schenectady</td>
<td>300,295</td>
<td>115,980</td>
</tr>
<tr>
<td>Rotterdam</td>
<td>Town</td>
<td>Schenectady</td>
<td>195,623</td>
<td>93,356</td>
</tr>
<tr>
<td>Glenville</td>
<td>Town</td>
<td>Schenectady</td>
<td>152,604</td>
<td>70,977</td>
</tr>
<tr>
<td>Niskayuna</td>
<td>Town</td>
<td>Schenectady</td>
<td>131,997</td>
<td>70,253</td>
</tr>
<tr>
<td>Scotia</td>
<td>Village</td>
<td>Schenectady</td>
<td>29,639</td>
<td>21,402</td>
</tr>
<tr>
<td>Duaneburg</td>
<td>Town</td>
<td>Schenectady</td>
<td>25,672</td>
<td>21,577</td>
</tr>
<tr>
<td>Princetown</td>
<td>Town</td>
<td>Schenectady</td>
<td>10,106</td>
<td>8,435</td>
</tr>
<tr>
<td>Delanson</td>
<td>Village</td>
<td>Schenectady</td>
<td>2,903</td>
<td>1,270</td>
</tr>
<tr>
<td>Queensbury</td>
<td>Town</td>
<td>Warren</td>
<td>235,588</td>
<td>97,436</td>
</tr>
<tr>
<td>Glens Falls</td>
<td>City</td>
<td>Warren</td>
<td>159,933</td>
<td>34,866</td>
</tr>
<tr>
<td>Lake George</td>
<td>Town</td>
<td>Warren</td>
<td>28,896</td>
<td>14,833</td>
</tr>
<tr>
<td>Warrensburg</td>
<td>Town</td>
<td>Warren</td>
<td>26,498</td>
<td>14,170</td>
</tr>
<tr>
<td>Johnstown</td>
<td>Town</td>
<td>Warren</td>
<td>23,051</td>
<td>10,519</td>
</tr>
<tr>
<td>Bolton</td>
<td>Town</td>
<td>Warren</td>
<td>21,812</td>
<td>15,346</td>
</tr>
<tr>
<td>Chester</td>
<td>Town</td>
<td>Warren</td>
<td>20,648</td>
<td>14,202</td>
</tr>
<tr>
<td>Lake Luzerne</td>
<td>Town</td>
<td>Warren</td>
<td>17,679</td>
<td>13,149</td>
</tr>
<tr>
<td>Lake George</td>
<td>Village</td>
<td>Warren</td>
<td>15,776</td>
<td>3,953</td>
</tr>
<tr>
<td>Horicon</td>
<td>Town</td>
<td>Warren</td>
<td>10,470</td>
<td>8,748</td>
</tr>
<tr>
<td>Hague</td>
<td>Town</td>
<td>Warren</td>
<td>6,516</td>
<td>5,533</td>
</tr>
<tr>
<td>Thurman</td>
<td>Town</td>
<td>Warren</td>
<td>4,468</td>
<td>4,192</td>
</tr>
<tr>
<td>Stony Creek</td>
<td>Town</td>
<td>Warren</td>
<td>3,492</td>
<td>2,904</td>
</tr>
<tr>
<td>Fort Edward</td>
<td>Village</td>
<td>Washington</td>
<td>62,869</td>
<td>7,082</td>
</tr>
<tr>
<td>Kingsbury</td>
<td>Town</td>
<td>Washington</td>
<td>35,728</td>
<td>16,470</td>
</tr>
<tr>
<td>Easton</td>
<td>Town</td>
<td>Washington</td>
<td>34,735</td>
<td>8,570</td>
</tr>
<tr>
<td>Greenwich</td>
<td>Town</td>
<td>Washington</td>
<td>33,209</td>
<td>12,208</td>
</tr>
<tr>
<td>Granville</td>
<td>Town</td>
<td>Washington</td>
<td>27,635</td>
<td>18,639</td>
</tr>
<tr>
<td>Hudson Falls</td>
<td>Village</td>
<td>Washington</td>
<td>25,818</td>
<td>18,374</td>
</tr>
<tr>
<td>Granville</td>
<td>Village</td>
<td>Washington</td>
<td>25,792</td>
<td>10,617</td>
</tr>
<tr>
<td>Argyle</td>
<td>Town</td>
<td>Washington</td>
<td>19,189</td>
<td>12,282</td>
</tr>
<tr>
<td>Fort Edward</td>
<td>Town</td>
<td>Washington</td>
<td>19,039</td>
<td>10,394</td>
</tr>
<tr>
<td>Fort Ann</td>
<td>Town</td>
<td>Washington</td>
<td>16,901</td>
<td>14,451</td>
</tr>
<tr>
<td>Whitehall</td>
<td>Town</td>
<td>Washington</td>
<td>14,902</td>
<td>4,966</td>
</tr>
<tr>
<td>Salem</td>
<td>Town</td>
<td>Washington</td>
<td>11,834</td>
<td>9,099</td>
</tr>
</tbody>
</table>
### Table B.2. Utility-Supplied Energy Consumption Data for 2010 by Municipality

<table>
<thead>
<tr>
<th>Municipality</th>
<th>Type</th>
<th>County</th>
<th>Electricity (MWh)</th>
<th>Natural Gas (Therms)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Whitehall Village</td>
<td>Village</td>
<td>Washington</td>
<td>10,518</td>
<td>6,581</td>
</tr>
<tr>
<td>Cambridge Village</td>
<td>Village</td>
<td>Washington</td>
<td>10,258</td>
<td>5,056</td>
</tr>
<tr>
<td>Jackson Town</td>
<td>Town</td>
<td>Washington</td>
<td>10,080</td>
<td>7,613</td>
</tr>
<tr>
<td>Greenwich Village</td>
<td>Village</td>
<td>Washington</td>
<td>9,916</td>
<td>6,420</td>
</tr>
<tr>
<td>Hartford Town</td>
<td>Town</td>
<td>Washington</td>
<td>9,482</td>
<td>5,085</td>
</tr>
<tr>
<td>Hebron Town</td>
<td>Town</td>
<td>Washington</td>
<td>9,308</td>
<td>8,603</td>
</tr>
<tr>
<td>Cambridge Town</td>
<td>Town</td>
<td>Washington</td>
<td>7,372</td>
<td>5,947</td>
</tr>
<tr>
<td>White Creek Town</td>
<td>Town</td>
<td>Washington</td>
<td>7,325</td>
<td>6,054</td>
</tr>
<tr>
<td>Salem Village</td>
<td>Village</td>
<td>Washington</td>
<td>6,167</td>
<td>3,872</td>
</tr>
<tr>
<td>Hampton Town</td>
<td>Town</td>
<td>Washington</td>
<td>3,752</td>
<td>3,318</td>
</tr>
<tr>
<td>Putnam Town</td>
<td>Town</td>
<td>Washington</td>
<td>3,309</td>
<td>3,049</td>
</tr>
<tr>
<td>Dresden Town</td>
<td>Town</td>
<td>Washington</td>
<td>3,284</td>
<td>2,893</td>
</tr>
<tr>
<td>Fort Ann Village</td>
<td>Village</td>
<td>Washington</td>
<td>3,066</td>
<td>1,378</td>
</tr>
<tr>
<td>Argyle Village</td>
<td>Village</td>
<td>Washington</td>
<td>2,507</td>
<td>1,329</td>
</tr>
</tbody>
</table>
Table B 3. Vehicle-miles-traveled and Fuel Consumption (gallons) by Municipality

<table>
<thead>
<tr>
<th>Community Name</th>
<th>Type</th>
<th>County</th>
<th>VMT</th>
<th>Gasoline</th>
<th>Ethanol</th>
<th>Diesel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Menands</td>
<td>Village</td>
<td>Albany</td>
<td>131,076,906</td>
<td>5,105,949</td>
<td>567,328</td>
<td>672,121</td>
</tr>
<tr>
<td>Colonie</td>
<td>Village</td>
<td>Albany</td>
<td>142,982,262</td>
<td>5,559,689</td>
<td>617,743</td>
<td>658,896</td>
</tr>
<tr>
<td>Voorheesville</td>
<td>Village</td>
<td>Albany</td>
<td>20,464,079</td>
<td>794,377</td>
<td>88,242</td>
<td>84,410</td>
</tr>
<tr>
<td>Bethlehem</td>
<td>Town</td>
<td>Albany</td>
<td>359,198,482</td>
<td>13,952,741</td>
<td>1,550,305</td>
<td>1,638,551</td>
</tr>
<tr>
<td>Altamont</td>
<td>Village</td>
<td>Albany</td>
<td>6,605,201</td>
<td>256,775</td>
<td>28,531</td>
<td>35,328</td>
</tr>
<tr>
<td>Cohoes</td>
<td>City</td>
<td>Albany</td>
<td>60,520,335</td>
<td>2,345,765</td>
<td>260,641</td>
<td>247,388</td>
</tr>
<tr>
<td>Guilderland</td>
<td>Town</td>
<td>Albany</td>
<td>472,166,930</td>
<td>18,346,988</td>
<td>2,038,554</td>
<td>2,088,286</td>
</tr>
<tr>
<td>Watervliet</td>
<td>City</td>
<td>Albany</td>
<td>111,067,234</td>
<td>4,324,953</td>
<td>480,550</td>
<td>563,806</td>
</tr>
<tr>
<td>Albany</td>
<td>Village</td>
<td>Albany</td>
<td>1,041,725,983</td>
<td>40,542,803</td>
<td>4,504,756</td>
<td>5,132,858</td>
</tr>
<tr>
<td>Green Island</td>
<td>Village</td>
<td>Albany</td>
<td>17,866,323</td>
<td>695,426</td>
<td>77,270</td>
<td>86,947</td>
</tr>
<tr>
<td>Ravena</td>
<td>Village</td>
<td>Albany</td>
<td>25,278,922</td>
<td>983,622</td>
<td>109,291</td>
<td>138,578</td>
</tr>
<tr>
<td>New Scotland</td>
<td>Town</td>
<td>Albany</td>
<td>122,784,111</td>
<td>4,767,469</td>
<td>529,719</td>
<td>572,753</td>
</tr>
<tr>
<td>Coeymans</td>
<td>Town</td>
<td>Albany</td>
<td>144,222,286</td>
<td>5,468,897</td>
<td>607,655</td>
<td>974,333</td>
</tr>
<tr>
<td>Knox</td>
<td>Town</td>
<td>Albany</td>
<td>26,123,677</td>
<td>1,015,549</td>
<td>112,839</td>
<td>139,722</td>
</tr>
<tr>
<td>Rensselaerville</td>
<td>Town</td>
<td>Albany</td>
<td>25,469,880</td>
<td>990,067</td>
<td>110,007</td>
<td>143,517</td>
</tr>
<tr>
<td>Berne</td>
<td>Town</td>
<td>Albany</td>
<td>32,213,436</td>
<td>1,252,181</td>
<td>139,131</td>
<td>171,339</td>
</tr>
<tr>
<td>Westerlo</td>
<td>Town</td>
<td>Albany</td>
<td>40,583,926</td>
<td>1,577,686</td>
<td>175,298</td>
<td>217,062</td>
</tr>
<tr>
<td>Green Island</td>
<td>Town</td>
<td>Albany</td>
<td>17,866,323</td>
<td>695,426</td>
<td>77,270</td>
<td>86,947</td>
</tr>
<tr>
<td>Hudson</td>
<td>City</td>
<td>Columbia</td>
<td>29,666,690</td>
<td>1,149,913</td>
<td>127,768</td>
<td>114,067</td>
</tr>
<tr>
<td>Greenport</td>
<td>Town</td>
<td>Columbia</td>
<td>49,732,416</td>
<td>1,927,806</td>
<td>214,201</td>
<td>199,050</td>
</tr>
<tr>
<td>Stockport</td>
<td>Town</td>
<td>Columbia</td>
<td>23,379,816</td>
<td>906,566</td>
<td>100,730</td>
<td>101,106</td>
</tr>
<tr>
<td>Claverack</td>
<td>Town</td>
<td>Columbia</td>
<td>69,775,758</td>
<td>2,707,430</td>
<td>300,826</td>
<td>353,451</td>
</tr>
<tr>
<td>Ghent</td>
<td>Town</td>
<td>Columbia</td>
<td>49,867,292</td>
<td>1,935,922</td>
<td>215,102</td>
<td>274,136</td>
</tr>
<tr>
<td>Copake</td>
<td>Town</td>
<td>Columbia</td>
<td>43,566,618</td>
<td>1,691,708</td>
<td>187,968</td>
<td>269,002</td>
</tr>
<tr>
<td>Canaan</td>
<td>Town</td>
<td>Columbia</td>
<td>95,128,023</td>
<td>3,660,888</td>
<td>406,765</td>
<td>837,551</td>
</tr>
<tr>
<td>Hillsdale</td>
<td>Town</td>
<td>Columbia</td>
<td>54,384,901</td>
<td>2,111,553</td>
<td>234,617</td>
<td>309,132</td>
</tr>
<tr>
<td>Ancram</td>
<td>Town</td>
<td>Columbia</td>
<td>32,194,143</td>
<td>1,250,557</td>
<td>138,951</td>
<td>190,461</td>
</tr>
<tr>
<td>Austerlitz</td>
<td>Town</td>
<td>Columbia</td>
<td>39,018,597</td>
<td>1,515,491</td>
<td>168,355</td>
<td>239,341</td>
</tr>
<tr>
<td>Chatham</td>
<td>Village</td>
<td>Columbia</td>
<td>6,510,663</td>
<td>252,756</td>
<td>28,084</td>
<td>41,234</td>
</tr>
<tr>
<td>Gallatin</td>
<td>Town</td>
<td>Columbia</td>
<td>16,072,730</td>
<td>624,822</td>
<td>69,425</td>
<td>85,965</td>
</tr>
<tr>
<td>Chatham</td>
<td>Town</td>
<td>Columbia</td>
<td>109,201,924</td>
<td>4,206,449</td>
<td>467,383</td>
<td>918,325</td>
</tr>
<tr>
<td>New Lebanon</td>
<td>Town</td>
<td>Columbia</td>
<td>28,535,163</td>
<td>1,109,088</td>
<td>123,232</td>
<td>171,819</td>
</tr>
<tr>
<td>Germantown</td>
<td>Town</td>
<td>Columbia</td>
<td>10,763,627</td>
<td>418,432</td>
<td>46,492</td>
<td>57,569</td>
</tr>
<tr>
<td>Taghkanic</td>
<td>Town</td>
<td>Columbia</td>
<td>24,559,282</td>
<td>954,241</td>
<td>106,027</td>
<td>140,546</td>
</tr>
<tr>
<td>Philmont</td>
<td>Village</td>
<td>Columbia</td>
<td>1,688,364</td>
<td>65,635</td>
<td>7,293</td>
<td>9,030</td>
</tr>
<tr>
<td>Stuyvesant</td>
<td>Town</td>
<td>Columbia</td>
<td>17,782,070</td>
<td>690,797</td>
<td>76,755</td>
<td>103,965</td>
</tr>
<tr>
<td>Community Name</td>
<td>Type</td>
<td>County</td>
<td>VMT</td>
<td>Gasoline</td>
<td>Ethanol</td>
<td>Diesel</td>
</tr>
<tr>
<td>--------------------</td>
<td>----------</td>
<td>--------</td>
<td>------------</td>
<td>----------</td>
<td>---------</td>
<td>--------</td>
</tr>
<tr>
<td>Kinderhook</td>
<td>Village</td>
<td>Columbia</td>
<td>6,832,765</td>
<td>265,203</td>
<td>29,467</td>
<td>43,618</td>
</tr>
<tr>
<td>Livingston</td>
<td>Town</td>
<td>Columbia</td>
<td>26,360,816</td>
<td>1,024,211</td>
<td>113,802</td>
<td>151,182</td>
</tr>
<tr>
<td>Clermont</td>
<td>Town</td>
<td>Columbia</td>
<td>9,262,586</td>
<td>560,080</td>
<td>40,009</td>
<td>49,541</td>
</tr>
<tr>
<td>Valatie</td>
<td>Village</td>
<td>Columbia</td>
<td>2,715,058</td>
<td>105,519</td>
<td>11,724</td>
<td>15,040</td>
</tr>
<tr>
<td>Kinderhook</td>
<td>Town</td>
<td>Columbia</td>
<td>29,863,670</td>
<td>1,260,479</td>
<td>128,942</td>
<td>168,324</td>
</tr>
<tr>
<td>Catskill</td>
<td>Village</td>
<td>Greene</td>
<td>22,012,941</td>
<td>853,219</td>
<td>94,802</td>
<td>78,710</td>
</tr>
<tr>
<td>Coxsackie</td>
<td>Village</td>
<td>Greene</td>
<td>12,688,532</td>
<td>491,784</td>
<td>54,643</td>
<td>40,582</td>
</tr>
<tr>
<td>Catskill</td>
<td>Town</td>
<td>Greene</td>
<td>185,335,012</td>
<td>7,146,952</td>
<td>794,106</td>
<td>1,329,715</td>
</tr>
<tr>
<td>New Baltimore</td>
<td>Town</td>
<td>Greene</td>
<td>94,529,042</td>
<td>3,651,723</td>
<td>403,969</td>
<td>812,550</td>
</tr>
<tr>
<td>Coxsackie</td>
<td>Town</td>
<td>Greene</td>
<td>100,090,581</td>
<td>3,853,655</td>
<td>428,184</td>
<td>758,493</td>
</tr>
<tr>
<td>Windham</td>
<td>Town</td>
<td>Greene</td>
<td>31,012,164</td>
<td>1,204,593</td>
<td>133,844</td>
<td>184,419</td>
</tr>
<tr>
<td>Hunter</td>
<td>Village</td>
<td>Greene</td>
<td>3,671,399</td>
<td>142,724</td>
<td>15,858</td>
<td>19,636</td>
</tr>
<tr>
<td>Jewett</td>
<td>Town</td>
<td>Greene</td>
<td>23,506,024</td>
<td>913,711</td>
<td>101,523</td>
<td>125,711</td>
</tr>
<tr>
<td>Tannersville</td>
<td>Village</td>
<td>Greene</td>
<td>2,208,626</td>
<td>85,860</td>
<td>9,540</td>
<td>11,813</td>
</tr>
<tr>
<td>Lexington</td>
<td>Town</td>
<td>Greene</td>
<td>21,337,192</td>
<td>829,476</td>
<td>92,164</td>
<td>114,122</td>
</tr>
<tr>
<td>Halcott</td>
<td>Town</td>
<td>Greene</td>
<td>7,554,980</td>
<td>293,697</td>
<td>32,633</td>
<td>40,408</td>
</tr>
<tr>
<td>Prattsville</td>
<td>Town</td>
<td>Greene</td>
<td>17,628,376</td>
<td>684,748</td>
<td>76,083</td>
<td>104,523</td>
</tr>
<tr>
<td>Durham</td>
<td>Town</td>
<td>Greene</td>
<td>56,787,612</td>
<td>2,205,845</td>
<td>245,094</td>
<td>336,439</td>
</tr>
<tr>
<td>Hunter</td>
<td>Town</td>
<td>Greene</td>
<td>28,262,054</td>
<td>1,098,677</td>
<td>122,075</td>
<td>151,159</td>
</tr>
<tr>
<td>Cairo</td>
<td>Town</td>
<td>Greene</td>
<td>70,486,903</td>
<td>2,737,499</td>
<td>304,167</td>
<td>400,640</td>
</tr>
<tr>
<td>Greenville</td>
<td>Town</td>
<td>Greene</td>
<td>32,306,379</td>
<td>1,255,899</td>
<td>139,544</td>
<td>174,790</td>
</tr>
<tr>
<td>Athens</td>
<td>Village</td>
<td>Greene</td>
<td>11,286,371</td>
<td>437,604</td>
<td>48,523</td>
<td>39,153</td>
</tr>
<tr>
<td>Athens</td>
<td>Town</td>
<td>Greene</td>
<td>71,756,332</td>
<td>2,759,331</td>
<td>306,592</td>
<td>597,498</td>
</tr>
<tr>
<td>Ashland</td>
<td>Town</td>
<td>Greene</td>
<td>22,524,104</td>
<td>835,918</td>
<td>92,880</td>
<td>130,490</td>
</tr>
<tr>
<td>North Greenbush</td>
<td>Town</td>
<td>Rensselaer</td>
<td>148,483,374</td>
<td>5,766,690</td>
<td>640,743</td>
<td>657,513</td>
</tr>
<tr>
<td>Rensselaer</td>
<td>City</td>
<td>Rensselaer</td>
<td>63,716,996</td>
<td>2,477,187</td>
<td>275,243</td>
<td>302,976</td>
</tr>
<tr>
<td>Castleton-on-Hudson</td>
<td>Village</td>
<td>Rensselaer</td>
<td>6,658,956</td>
<td>258,865</td>
<td>28,763</td>
<td>35,615</td>
</tr>
<tr>
<td>East Greenbush</td>
<td>Town</td>
<td>Rensselaer</td>
<td>191,343,209</td>
<td>7,435,300</td>
<td>826,256</td>
<td>950,651</td>
</tr>
<tr>
<td>Brunswick</td>
<td>Town</td>
<td>Rensselaer</td>
<td>128,312,180</td>
<td>4,976,175</td>
<td>552,908</td>
<td>606,383</td>
</tr>
<tr>
<td>Schaghticoke</td>
<td>Town</td>
<td>Rensselaer</td>
<td>113,449,606</td>
<td>4,403,630</td>
<td>489,292</td>
<td>646,612</td>
</tr>
<tr>
<td>Troy</td>
<td>City</td>
<td>Rensselaer</td>
<td>183,491,144</td>
<td>7,113,436</td>
<td>790,382</td>
<td>758,439</td>
</tr>
<tr>
<td>Schodack</td>
<td>Town</td>
<td>Rensselaer</td>
<td>247,177,562</td>
<td>9,577,137</td>
<td>1,064,126</td>
<td>1,669,037</td>
</tr>
<tr>
<td>Poestenkill</td>
<td>Town</td>
<td>Rensselaer</td>
<td>55,801,122</td>
<td>2,167,412</td>
<td>240,824</td>
<td>273,832</td>
</tr>
<tr>
<td>Pittstown</td>
<td>Town</td>
<td>Rensselaer</td>
<td>92,924,302</td>
<td>3,607,578</td>
<td>400,842</td>
<td>586,940</td>
</tr>
<tr>
<td>Stephentown</td>
<td>Town</td>
<td>Rensselaer</td>
<td>45,636,357</td>
<td>1,773,544</td>
<td>197,060</td>
<td>254,433</td>
</tr>
<tr>
<td>Berlin</td>
<td>Town</td>
<td>Rensselaer</td>
<td>28,508,735</td>
<td>1,107,712</td>
<td>123,079</td>
<td>162,830</td>
</tr>
<tr>
<td>Petersburgh</td>
<td>Town</td>
<td>Rensselaer</td>
<td>23,020,640</td>
<td>893,804</td>
<td>99,312</td>
<td>143,930</td>
</tr>
</tbody>
</table>
# Table B 3. Vehicle-miles-traveled and Fuel Consumption (gallons) by Municipality

<table>
<thead>
<tr>
<th>Community Name</th>
<th>Type</th>
<th>County</th>
<th>VMT</th>
<th>Gasoline</th>
<th>Ethanol</th>
<th>Diesel</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sand Lake</td>
<td>Town Rensselaer</td>
<td>Rensselaer</td>
<td>75,284,141</td>
<td>2,925,671</td>
<td>325,075</td>
<td>392,982</td>
</tr>
<tr>
<td>Valley Falls</td>
<td>Village Rensselaer</td>
<td>Rensselaer</td>
<td>5,372,086</td>
<td>208,547</td>
<td>23,172</td>
<td>34,169</td>
</tr>
<tr>
<td>Grafton</td>
<td>Town Rensselaer</td>
<td>Rensselaer</td>
<td>25,743,803</td>
<td>999,529</td>
<td>111,059</td>
<td>161,056</td>
</tr>
<tr>
<td>Schafticoke</td>
<td>Village Rensselaer</td>
<td>Rensselaer</td>
<td>12,948,026</td>
<td>502,885</td>
<td>55,876</td>
<td>77,930</td>
</tr>
<tr>
<td>Nassau</td>
<td>Village Rensselaer</td>
<td>Rensselaer</td>
<td>11,162,279</td>
<td>433,425</td>
<td>48,158</td>
<td>69,114</td>
</tr>
<tr>
<td>Hoosick Falls</td>
<td>Village Rensselaer</td>
<td>Rensselaer</td>
<td>6,409,069</td>
<td>248,754</td>
<td>27,639</td>
<td>41,667</td>
</tr>
<tr>
<td>East Nassau</td>
<td>Village Rensselaer</td>
<td>Rensselaer</td>
<td>24,321,087</td>
<td>942,444</td>
<td>104,716</td>
<td>108,763</td>
</tr>
<tr>
<td>Mechanicville</td>
<td>City Saratoga</td>
<td>Saratoga</td>
<td>291,683,676</td>
<td>11,338,523</td>
<td>1,259,836</td>
<td>1,381,076</td>
</tr>
<tr>
<td>Waterford</td>
<td>Village Saratoga</td>
<td>Saratoga</td>
<td>619,794,846</td>
<td>24,098,814</td>
<td>2,677,646</td>
<td>2,843,771</td>
</tr>
<tr>
<td>Saratoga Springs</td>
<td>City Saratoga</td>
<td>Saratoga</td>
<td>16,124,312</td>
<td>626,499</td>
<td>69,611</td>
<td>92,366</td>
</tr>
<tr>
<td>Clifton Park</td>
<td>Town Saratoga</td>
<td>Saratoga</td>
<td>10,845,082</td>
<td>421,244</td>
<td>46,805</td>
<td>64,617</td>
</tr>
<tr>
<td>Schuylerville</td>
<td>Village Saratoga</td>
<td>Saratoga</td>
<td>26,280,680</td>
<td>1,018,920</td>
<td>113,213</td>
<td>103,465</td>
</tr>
<tr>
<td>South Glens Falls</td>
<td>Village Saratoga</td>
<td>Saratoga</td>
<td>438,791,944</td>
<td>17,052,847</td>
<td>1,894,761</td>
<td>2,657,904</td>
</tr>
<tr>
<td>Ballston Spa</td>
<td>Village Saratoga</td>
<td>Saratoga</td>
<td>26,280,680</td>
<td>1,018,920</td>
<td>113,213</td>
<td>103,465</td>
</tr>
<tr>
<td>Waterford</td>
<td>Town Saratoga</td>
<td>Saratoga</td>
<td>49,986,881</td>
<td>1,937,595</td>
<td>215,288</td>
<td>202,912</td>
</tr>
<tr>
<td>Milton</td>
<td>Town Saratoga</td>
<td>Saratoga</td>
<td>288,071,847</td>
<td>1,183,063</td>
<td>1,242,563</td>
<td>1,789,432</td>
</tr>
<tr>
<td>Malta</td>
<td>Town Saratoga</td>
<td>Saratoga</td>
<td>438,791,944</td>
<td>17,052,847</td>
<td>1,894,761</td>
<td>2,657,904</td>
</tr>
<tr>
<td>Halfmoon</td>
<td>Town Saratoga</td>
<td>Saratoga</td>
<td>311,953,409</td>
<td>12,123,534</td>
<td>1,347,059</td>
<td>1,503,297</td>
</tr>
<tr>
<td>Ballston</td>
<td>Town Saratoga</td>
<td>Saratoga</td>
<td>137,711,937</td>
<td>5,345,971</td>
<td>593,997</td>
<td>728,303</td>
</tr>
<tr>
<td>Milton</td>
<td>Town Saratoga</td>
<td>Saratoga</td>
<td>153,930,109</td>
<td>17,532,724</td>
<td>603,666</td>
<td>718,496</td>
</tr>
<tr>
<td>Moreau</td>
<td>Town Saratoga</td>
<td>Saratoga</td>
<td>181,630,402</td>
<td>7,066,318</td>
<td>785,446</td>
<td>1,061,192</td>
</tr>
<tr>
<td>Northumberland</td>
<td>Town Saratoga</td>
<td>Saratoga</td>
<td>12,150,299</td>
<td>472,339</td>
<td>52,482</td>
<td>64,986</td>
</tr>
<tr>
<td>Galway</td>
<td>Town Saratoga</td>
<td>Saratoga</td>
<td>37,619,288</td>
<td>1,462,284</td>
<td>162,467</td>
<td>205,549</td>
</tr>
<tr>
<td>Victory</td>
<td>Village Saratoga</td>
<td>Saratoga</td>
<td>57,482,683</td>
<td>2,232,629</td>
<td>248,070</td>
<td>315,404</td>
</tr>
<tr>
<td>Stillwater</td>
<td>Town Saratoga</td>
<td>Saratoga</td>
<td>93,051,957</td>
<td>3,613,943</td>
<td>401,549</td>
<td>539,279</td>
</tr>
<tr>
<td>Greenfield</td>
<td>Town Saratoga</td>
<td>Saratoga</td>
<td>72,344,925</td>
<td>2,809,785</td>
<td>312,298</td>
<td>435,402</td>
</tr>
<tr>
<td>Saratoga</td>
<td>Town Saratoga</td>
<td>Saratoga</td>
<td>50,607,255</td>
<td>1,964,902</td>
<td>218,322</td>
<td>309,058</td>
</tr>
<tr>
<td>Edinburg</td>
<td>Town Saratoga</td>
<td>Saratoga</td>
<td>8,047,993</td>
<td>312,863</td>
<td>34,763</td>
<td>43,045</td>
</tr>
<tr>
<td>Day</td>
<td>Town Saratoga</td>
<td>Saratoga</td>
<td>4,536,530</td>
<td>176,358</td>
<td>19,595</td>
<td>24,646</td>
</tr>
<tr>
<td>Stillwater</td>
<td>Village Saratoga</td>
<td>Saratoga</td>
<td>11,742,693</td>
<td>455,696</td>
<td>50,533</td>
<td>72,472</td>
</tr>
<tr>
<td>Galway</td>
<td>Town Saratoga</td>
<td>Saratoga</td>
<td>69,940,099</td>
<td>2,716,711</td>
<td>301,857</td>
<td>408,260</td>
</tr>
<tr>
<td>Round Lake</td>
<td>Village Saratoga</td>
<td>Saratoga</td>
<td>42,168,162</td>
<td>1,643,788</td>
<td>182,643</td>
<td>221,473</td>
</tr>
<tr>
<td>Providence</td>
<td>Town Saratoga</td>
<td>Saratoga</td>
<td>12,150,299</td>
<td>472,339</td>
<td>52,482</td>
<td>64,986</td>
</tr>
<tr>
<td>Hadley</td>
<td>Town Saratoga</td>
<td>Saratoga</td>
<td>21,130,735</td>
<td>821,059</td>
<td>91,229</td>
<td>120,308</td>
</tr>
<tr>
<td>Galway</td>
<td>Village Saratoga</td>
<td>Saratoga</td>
<td>4,416,233</td>
<td>171,679</td>
<td>19,075</td>
<td>25,620</td>
</tr>
<tr>
<td>Community Name</td>
<td>Type</td>
<td>County</td>
<td>VMT</td>
<td>Gasoline</td>
<td>Ethanol</td>
<td>Diesel</td>
</tr>
<tr>
<td>---------------</td>
<td>------------</td>
<td>-----------</td>
<td>------</td>
<td>----------</td>
<td>--------</td>
<td>--------</td>
</tr>
<tr>
<td>Corinth</td>
<td>Village</td>
<td>Saratoga</td>
<td>5,529,327</td>
<td>214,781</td>
<td>23,865</td>
<td>32,732</td>
</tr>
<tr>
<td>Corinth</td>
<td>Town</td>
<td>Saratoga</td>
<td>57,816,612</td>
<td>2,425,996</td>
<td>249,555</td>
<td>339,157</td>
</tr>
<tr>
<td>Niskayuna</td>
<td>Town</td>
<td>Schenectady</td>
<td>164,540,861</td>
<td>6,377,943</td>
<td>708,660</td>
<td>667,651</td>
</tr>
<tr>
<td>Scotia</td>
<td>Village</td>
<td>Schenectady</td>
<td>31,505,021</td>
<td>1,221,181</td>
<td>135,687</td>
<td>123,762</td>
</tr>
<tr>
<td>Rotterdam</td>
<td>Town</td>
<td>Schenectady</td>
<td>364,438,349</td>
<td>14,173,596</td>
<td>1,574,844</td>
<td>1,892,049</td>
</tr>
<tr>
<td>Schenectady</td>
<td>City</td>
<td>Schenectady</td>
<td>205,927,380</td>
<td>7,994,084</td>
<td>888,232</td>
<td>913,632</td>
</tr>
<tr>
<td>Glensville</td>
<td>Town</td>
<td>Schenectady</td>
<td>276,672,614</td>
<td>10,725,803</td>
<td>1,191,756</td>
<td>1,163,847</td>
</tr>
<tr>
<td>Princetown</td>
<td>Town</td>
<td>Schenectady</td>
<td>53,016,737</td>
<td>2,041,812</td>
<td>226,868</td>
<td>449,879</td>
</tr>
<tr>
<td>Duanesburg</td>
<td>Town</td>
<td>Schenectady</td>
<td>101,431,220</td>
<td>3,904,630</td>
<td>433,848</td>
<td>876,968</td>
</tr>
<tr>
<td>Delanson</td>
<td>Village</td>
<td>Schenectady</td>
<td>2,224,899</td>
<td>86,492</td>
<td>9,610</td>
<td>11,900</td>
</tr>
<tr>
<td>Glens Falls</td>
<td>City</td>
<td>Warren</td>
<td>53,645,121</td>
<td>2,079,387</td>
<td>231,043</td>
<td>215,812</td>
</tr>
<tr>
<td>Lake George</td>
<td>Village</td>
<td>Warren</td>
<td>12,206,519</td>
<td>474,063</td>
<td>52,674</td>
<td>54,039</td>
</tr>
<tr>
<td>Queensbury</td>
<td>Town</td>
<td>Warren</td>
<td>286,891,001</td>
<td>11,150,359</td>
<td>1,238,929</td>
<td>1,318,273</td>
</tr>
<tr>
<td>Lake George</td>
<td>Town</td>
<td>Warren</td>
<td>137,641,277</td>
<td>5,328,241</td>
<td>592,027</td>
<td>949,909</td>
</tr>
<tr>
<td>Lake Luzerne</td>
<td>Town</td>
<td>Warren</td>
<td>24,785,669</td>
<td>962,869</td>
<td>106,985</td>
<td>144,892</td>
</tr>
<tr>
<td>Hague</td>
<td>Town</td>
<td>Warren</td>
<td>23,213,038</td>
<td>901,236</td>
<td>100,137</td>
<td>145,844</td>
</tr>
<tr>
<td>Bolton</td>
<td>Town</td>
<td>Warren</td>
<td>76,612,986</td>
<td>2,943,449</td>
<td>327,050</td>
<td>704,458</td>
</tr>
<tr>
<td>Horicon</td>
<td>Town</td>
<td>Warren</td>
<td>19,871,835</td>
<td>772,508</td>
<td>85,834</td>
<td>106,332</td>
</tr>
<tr>
<td>Johnsburg</td>
<td>Town</td>
<td>Warren</td>
<td>65,207,394</td>
<td>2,531,882</td>
<td>281,320</td>
<td>405,338</td>
</tr>
<tr>
<td>Chester</td>
<td>Town</td>
<td>Warren</td>
<td>122,171,972</td>
<td>4,690,424</td>
<td>521,138</td>
<td>1,145,774</td>
</tr>
<tr>
<td>Stony Creek</td>
<td>Town</td>
<td>Warren</td>
<td>13,706,244</td>
<td>532,825</td>
<td>59,203</td>
<td>73,308</td>
</tr>
<tr>
<td>Warrensburg</td>
<td>Town</td>
<td>Warren</td>
<td>42,821,585</td>
<td>1,651,068</td>
<td>183,452</td>
<td>345,408</td>
</tr>
<tr>
<td>Thurman</td>
<td>Town</td>
<td>Warren</td>
<td>20,072,753</td>
<td>780,136</td>
<td>86,682</td>
<td>110,806</td>
</tr>
<tr>
<td>Hudson Falls</td>
<td>Village</td>
<td>Washington</td>
<td>24,304,242</td>
<td>942,074</td>
<td>104,675</td>
<td>96,818</td>
</tr>
<tr>
<td>Fort Edward</td>
<td>Village</td>
<td>Washington</td>
<td>14,538,017</td>
<td>563,517</td>
<td>62,613</td>
<td>57,520</td>
</tr>
<tr>
<td>Fort Edward</td>
<td>Town</td>
<td>Washington</td>
<td>50,672,890</td>
<td>1,965,276</td>
<td>218,364</td>
<td>236,623</td>
</tr>
<tr>
<td>Kingsbury</td>
<td>Town</td>
<td>Washington</td>
<td>62,813,809</td>
<td>2,435,270</td>
<td>270,697</td>
<td>267,423</td>
</tr>
<tr>
<td>Greenwich</td>
<td>Town</td>
<td>Washington</td>
<td>37,267,141</td>
<td>1,447,994</td>
<td>160,888</td>
<td>213,366</td>
</tr>
<tr>
<td>Easton</td>
<td>Town</td>
<td>Washington</td>
<td>38,955,738</td>
<td>1,513,647</td>
<td>168,183</td>
<td>222,217</td>
</tr>
<tr>
<td>Argyle</td>
<td>Town</td>
<td>Washington</td>
<td>32,507,212</td>
<td>1,263,706</td>
<td>140,412</td>
<td>177,864</td>
</tr>
<tr>
<td>Putnam</td>
<td>Town</td>
<td>Washington</td>
<td>25,364,624</td>
<td>984,865</td>
<td>109,429</td>
<td>157,601</td>
</tr>
<tr>
<td>Hebron</td>
<td>Town</td>
<td>Washington</td>
<td>37,990,734</td>
<td>1,475,637</td>
<td>163,960</td>
<td>226,315</td>
</tr>
<tr>
<td>Dresden</td>
<td>Town</td>
<td>Washington</td>
<td>28,743,351</td>
<td>1,115,944</td>
<td>123,994</td>
<td>180,662</td>
</tr>
<tr>
<td>Argyle</td>
<td>Village</td>
<td>Washington</td>
<td>467,695</td>
<td>18,181</td>
<td>2,020</td>
<td>2,501</td>
</tr>
<tr>
<td>Jackson</td>
<td>Town</td>
<td>Washington</td>
<td>36,475,864</td>
<td>1,416,540</td>
<td>157,393</td>
<td>222,071</td>
</tr>
<tr>
<td>Granville</td>
<td>Village</td>
<td>Washington</td>
<td>3,370,048</td>
<td>134,004</td>
<td>14,556</td>
<td>18,128</td>
</tr>
<tr>
<td>Salem</td>
<td>Village</td>
<td>Washington</td>
<td>4,791,077</td>
<td>186,016</td>
<td>20,668</td>
<td>30,023</td>
</tr>
</tbody>
</table>
Table B 3. Vehicle-miles-traveled and Fuel Consumption (gallons) by Municipality

<table>
<thead>
<tr>
<th>Community Name</th>
<th>Type</th>
<th>County</th>
<th>Vehicle Miles Traveled and Fuel Consumption (gallons)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>VMT</td>
</tr>
<tr>
<td>Greenwich</td>
<td>Village</td>
<td>Washington</td>
<td>4,742,402</td>
</tr>
<tr>
<td>Hartford</td>
<td>Town</td>
<td>Washington</td>
<td>19,529,882</td>
</tr>
<tr>
<td>Hampton</td>
<td>Town</td>
<td>Washington</td>
<td>7,798,934</td>
</tr>
<tr>
<td>Salem</td>
<td>Town</td>
<td>Washington</td>
<td>35,567,558</td>
</tr>
<tr>
<td>Cambridge</td>
<td>Town</td>
<td>Washington</td>
<td>30,539,953</td>
</tr>
<tr>
<td>Fort Ann</td>
<td>Village</td>
<td>Washington</td>
<td>568,949</td>
</tr>
<tr>
<td>Granville</td>
<td>Town</td>
<td>Washington</td>
<td>46,619,760</td>
</tr>
<tr>
<td>Cambridge</td>
<td>Village</td>
<td>Washington</td>
<td>7,297,908</td>
</tr>
<tr>
<td>Whitehall</td>
<td>Village</td>
<td>Washington</td>
<td>7,523,647</td>
</tr>
<tr>
<td>Fort Ann</td>
<td>Town</td>
<td>Washington</td>
<td>29,956,324</td>
</tr>
<tr>
<td>White Creek</td>
<td>Town</td>
<td>Washington</td>
<td>27,799,351</td>
</tr>
<tr>
<td>Whitehall</td>
<td>Town</td>
<td>Washington</td>
<td>23,049,819</td>
</tr>
</tbody>
</table>
## Table B 4. Household GHG emissions and Energy Cost of Living

<table>
<thead>
<tr>
<th>Community</th>
<th>Type</th>
<th>County</th>
<th>Per-Household GHG Footprint (MTCDE)</th>
<th>Energy Cost of Living (ECOL)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Energy</td>
<td>Transport</td>
<td>HH Total</td>
</tr>
<tr>
<td>Coeymans</td>
<td>Town</td>
<td>Albany</td>
<td>8.0</td>
<td>8.0</td>
<td>15.9</td>
</tr>
<tr>
<td>Albany</td>
<td>City</td>
<td>Albany</td>
<td>4.3</td>
<td>3.9</td>
<td>8.2</td>
</tr>
<tr>
<td>Ravena</td>
<td>Village</td>
<td>Albany</td>
<td>6.6</td>
<td>6.6</td>
<td>13.2</td>
</tr>
<tr>
<td>Colonie</td>
<td>Town</td>
<td>Albany</td>
<td>6.9</td>
<td>6.3</td>
<td>13.1</td>
</tr>
<tr>
<td>Bethlehem</td>
<td>Town</td>
<td>Albany</td>
<td>7.2</td>
<td>6.7</td>
<td>13.8</td>
</tr>
<tr>
<td>Guilderland</td>
<td>Town</td>
<td>Albany</td>
<td>6.4</td>
<td>5.9</td>
<td>12.3</td>
</tr>
<tr>
<td>New Scotland</td>
<td>Town</td>
<td>Albany</td>
<td>9.9</td>
<td>9.2</td>
<td>19.1</td>
</tr>
<tr>
<td>Cohoes</td>
<td>City</td>
<td>Albany</td>
<td>4.0</td>
<td>3.6</td>
<td>7.6</td>
</tr>
<tr>
<td>Colonie</td>
<td>Village</td>
<td>Albany</td>
<td>6.8</td>
<td>6.3</td>
<td>13.0</td>
</tr>
<tr>
<td>Watervliet</td>
<td>City</td>
<td>Albany</td>
<td>3.7</td>
<td>3.4</td>
<td>7.1</td>
</tr>
<tr>
<td>Menands</td>
<td>Village</td>
<td>Albany</td>
<td>5.6</td>
<td>5.1</td>
<td>10.7</td>
</tr>
<tr>
<td>Westerlo</td>
<td>Town</td>
<td>Albany</td>
<td>8.1</td>
<td>8.0</td>
<td>16.1</td>
</tr>
<tr>
<td>Green Island</td>
<td>Village</td>
<td>Albany</td>
<td>5.0</td>
<td>4.5</td>
<td>9.5</td>
</tr>
<tr>
<td>Green Island</td>
<td>Town</td>
<td>Albany</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Berne</td>
<td>Town</td>
<td>Albany</td>
<td>6.9</td>
<td>6.9</td>
<td>13.8</td>
</tr>
<tr>
<td>Knox</td>
<td>Town</td>
<td>Albany</td>
<td>8.5</td>
<td>8.4</td>
<td>16.8</td>
</tr>
<tr>
<td>Rensselaerville</td>
<td>Town</td>
<td>Albany</td>
<td>8.4</td>
<td>8.3</td>
<td>16.7</td>
</tr>
<tr>
<td>Voorheesville</td>
<td>Village</td>
<td>Albany</td>
<td>6.9</td>
<td>6.4</td>
<td>13.3</td>
</tr>
<tr>
<td>Altamont</td>
<td>Village</td>
<td>Albany</td>
<td>7.6</td>
<td>7.1</td>
<td>14.7</td>
</tr>
<tr>
<td>Chatham</td>
<td>Town</td>
<td>Columbia</td>
<td>13.1</td>
<td>11.9</td>
<td>25.0</td>
</tr>
<tr>
<td>Claverack</td>
<td>Town</td>
<td>Columbia</td>
<td>8.7</td>
<td>8.5</td>
<td>17.2</td>
</tr>
<tr>
<td>Greenport</td>
<td>Town</td>
<td>Columbia</td>
<td>5.8</td>
<td>5.5</td>
<td>11.3</td>
</tr>
<tr>
<td>Kinderhook</td>
<td>Town</td>
<td>Columbia</td>
<td>8.5</td>
<td>8.4</td>
<td>16.8</td>
</tr>
<tr>
<td>Canaan</td>
<td>Town</td>
<td>Columbia</td>
<td>10.8</td>
<td>10.4</td>
<td>21.2</td>
</tr>
<tr>
<td>Hudson</td>
<td>City</td>
<td>Columbia</td>
<td>5.0</td>
<td>4.5</td>
<td>9.5</td>
</tr>
<tr>
<td>Ghent</td>
<td>Town</td>
<td>Columbia</td>
<td>8.3</td>
<td>8.2</td>
<td>16.5</td>
</tr>
<tr>
<td>Copake</td>
<td>Town</td>
<td>Columbia</td>
<td>9.6</td>
<td>9.5</td>
<td>19.1</td>
</tr>
<tr>
<td>Hillsdale</td>
<td>Town</td>
<td>Columbia</td>
<td>8.9</td>
<td>8.7</td>
<td>17.6</td>
</tr>
<tr>
<td>Livingston</td>
<td>Town</td>
<td>Columbia</td>
<td>8.1</td>
<td>8.0</td>
<td>16.0</td>
</tr>
<tr>
<td>Ancram</td>
<td>Town</td>
<td>Columbia</td>
<td>8.5</td>
<td>8.3</td>
<td>16.8</td>
</tr>
<tr>
<td>Austerlitz</td>
<td>Town</td>
<td>Columbia</td>
<td>9.1</td>
<td>9.0</td>
<td>18.1</td>
</tr>
<tr>
<td>New Lebanon</td>
<td>Town</td>
<td>Columbia</td>
<td>7.9</td>
<td>7.8</td>
<td>15.7</td>
</tr>
<tr>
<td>Stockport</td>
<td>Town</td>
<td>Columbia</td>
<td>7.5</td>
<td>7.3</td>
<td>14.8</td>
</tr>
<tr>
<td>Stuyvesant</td>
<td>Town</td>
<td>Columbia</td>
<td>8.4</td>
<td>8.3</td>
<td>16.7</td>
</tr>
<tr>
<td>Taghkanic</td>
<td>Town</td>
<td>Columbia</td>
<td>7.9</td>
<td>7.8</td>
<td>15.7</td>
</tr>
<tr>
<td>Germantown</td>
<td>Town</td>
<td>Columbia</td>
<td>8.2</td>
<td>8.0</td>
<td>16.1</td>
</tr>
<tr>
<td>Gallatin</td>
<td>Town</td>
<td>Columbia</td>
<td>8.3</td>
<td>8.2</td>
<td>16.4</td>
</tr>
</tbody>
</table>
Table B 4. Household GHG emissions and Energy Cost of Living

<table>
<thead>
<tr>
<th>Community</th>
<th>Type</th>
<th>County</th>
<th>Per-Household GHG Footprint (MTCDE)</th>
<th>Energy Cost of Living (ECOL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Energy Transport HH Total ECOL ($) income % income</td>
<td></td>
</tr>
<tr>
<td>Chatham</td>
<td>Village</td>
<td>Columbia</td>
<td>8.0 7.8 15.8 6,776 63,206 11%</td>
<td></td>
</tr>
<tr>
<td>Clermont</td>
<td>Town</td>
<td>Columbia</td>
<td>8.1 8.1 16.4 6,936 81,906 8%</td>
<td></td>
</tr>
<tr>
<td>Kinderhook</td>
<td>Village</td>
<td>Columbia</td>
<td>9.2 9.1 18.3 7,465 84,974 9%</td>
<td></td>
</tr>
<tr>
<td>Valatie</td>
<td>Village</td>
<td>Columbia</td>
<td>8.0 7.9 16.0 6,665 72,175 9%</td>
<td></td>
</tr>
<tr>
<td>Philmont</td>
<td>Village</td>
<td>Columbia</td>
<td>7.3 7.1 14.4 6,322 47,533 13%</td>
<td></td>
</tr>
<tr>
<td>Catskill</td>
<td>Town</td>
<td>Greene</td>
<td>7.8 7.8 15.6 6,641 61,225 11%</td>
<td></td>
</tr>
<tr>
<td>Coxsackie</td>
<td>Town</td>
<td>Greene</td>
<td>8.8 8.2 17.0 6,716 64,558 10%</td>
<td></td>
</tr>
<tr>
<td>Cairo</td>
<td>Town</td>
<td>Greene</td>
<td>7.7 7.6 15.2 7,017 58,747 11%</td>
<td></td>
</tr>
<tr>
<td>New Baltimore</td>
<td>Town</td>
<td>Greene</td>
<td>8.7 8.4 16.9 7,224 69,468 10%</td>
<td></td>
</tr>
<tr>
<td>Athens</td>
<td>Town</td>
<td>Greene</td>
<td>9.1 8.8 17.9 7,048 64,257 11%</td>
<td></td>
</tr>
<tr>
<td>Durham</td>
<td>Town</td>
<td>Greene</td>
<td>9.3 9.2 18.5 7,577 56,117 14%</td>
<td></td>
</tr>
<tr>
<td>Catskill</td>
<td>Village</td>
<td>Greene</td>
<td>8.8 8.4 17.3 6,324 63,949 10%</td>
<td></td>
</tr>
<tr>
<td>Hunter</td>
<td>Town</td>
<td>Greene</td>
<td>7.0 6.8 13.8 7,538 43,167 17%</td>
<td></td>
</tr>
<tr>
<td>Greenville</td>
<td>Town</td>
<td>Greene</td>
<td>8.6 8.5 17.1 7,670 53,295 14%</td>
<td></td>
</tr>
<tr>
<td>Windham</td>
<td>Town</td>
<td>Greene</td>
<td>10.8 10.5 21.3 9,007 58,086 16%</td>
<td></td>
</tr>
<tr>
<td>Coxsackie</td>
<td>Village</td>
<td>Greene</td>
<td>7.7 7.4 15.1 6,313 63,966 10%</td>
<td></td>
</tr>
<tr>
<td>Jewett</td>
<td>Town</td>
<td>Greene</td>
<td>7.8 7.7 15.5 7,676 57,528 13%</td>
<td></td>
</tr>
<tr>
<td>Lexington</td>
<td>Town</td>
<td>Greene</td>
<td>8.5 8.4 16.8 7,147 58,927 12%</td>
<td></td>
</tr>
<tr>
<td>Athens</td>
<td>Village</td>
<td>Greene</td>
<td>8.3 8.2 16.4 6,751 64,492 10%</td>
<td></td>
</tr>
<tr>
<td>Ashland</td>
<td>Town</td>
<td>Greene</td>
<td>8.9 8.2 16.8 8,025 46,312 11%</td>
<td></td>
</tr>
<tr>
<td>Prattsville</td>
<td>Town</td>
<td>Greene</td>
<td>9.4 9.2 18.6 7,233 53,646 13%</td>
<td></td>
</tr>
<tr>
<td>Hunter</td>
<td>Village</td>
<td>Greene</td>
<td>8.9 8.3 17.8 8,387 58,585 12%</td>
<td></td>
</tr>
<tr>
<td>Tannersville</td>
<td>Village</td>
<td>Greene</td>
<td>8.0 8.2 16.1 6,925 40,297 11%</td>
<td></td>
</tr>
<tr>
<td>Halcott</td>
<td>Town</td>
<td>Greene</td>
<td>8.8 8.8 17.6 7,477 56,598 13%</td>
<td></td>
</tr>
<tr>
<td>Troy</td>
<td>City</td>
<td>Rensselaer</td>
<td>2.5 2.3 4.8 4,017 48,936 8%</td>
<td></td>
</tr>
<tr>
<td>East Greenbush</td>
<td>Town</td>
<td>Rensselaer</td>
<td>6.7 6.2 12.9 5,320 84,059 6%</td>
<td></td>
</tr>
<tr>
<td>Schodack</td>
<td>Town</td>
<td>Rensselaer</td>
<td>8.2 8.0 16.2 6,509 82,141 8%</td>
<td></td>
</tr>
<tr>
<td>North Greenbush</td>
<td>Town</td>
<td>Rensselaer</td>
<td>7.9 7.5 15.4 6,042 81,881 7%</td>
<td></td>
</tr>
<tr>
<td>Rensselaer</td>
<td>City</td>
<td>Rensselaer</td>
<td>4.2 3.8 8.0 4,081 57,435 7%</td>
<td></td>
</tr>
<tr>
<td>Brunswick</td>
<td>Town</td>
<td>Rensselaer</td>
<td>6.5 6.2 12.7 5,957 80,672 7%</td>
<td></td>
</tr>
<tr>
<td>Schaghticoke</td>
<td>Town</td>
<td>Rensselaer</td>
<td>8.2 8.0 16.2 7,127 76,268 9%</td>
<td></td>
</tr>
<tr>
<td>Sand Lake</td>
<td>Town</td>
<td>Rensselaer</td>
<td>8.2 8.5 17.2 7,392 82,519 9%</td>
<td></td>
</tr>
<tr>
<td>Hoosick</td>
<td>Town</td>
<td>Rensselaer</td>
<td>7.4 7.3 14.8 6,961 59,992 12%</td>
<td></td>
</tr>
<tr>
<td>Pittstown</td>
<td>Town</td>
<td>Rensselaer</td>
<td>7.7 7.6 15.3 7,323 70,356 10%</td>
<td></td>
</tr>
<tr>
<td>Nassau</td>
<td>Town</td>
<td>Rensselaer</td>
<td>8.4 8.3 16.7 7,769 70,762 10%</td>
<td></td>
</tr>
<tr>
<td>Poestenkill</td>
<td>Town</td>
<td>Rensselaer</td>
<td>8.0 7.9 15.8 7,164 78,198 9%</td>
<td></td>
</tr>
<tr>
<td>Stephentown</td>
<td>Town</td>
<td>Rensselaer</td>
<td>7.9 7.7 15.6 8,315 71,939 12%</td>
<td></td>
</tr>
<tr>
<td>Community</td>
<td>Type</td>
<td>County</td>
<td>Per-Household GHG Footprint (MTCDE)</td>
<td>Energy Cost of Living (ECOL)</td>
</tr>
<tr>
<td>--------------------------</td>
<td>-------</td>
<td>------------</td>
<td>------------------------------------</td>
<td>-----------------------------</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Energy</td>
<td>Transport</td>
</tr>
<tr>
<td>Hoosick Falls</td>
<td>Village</td>
<td>Rensselaer</td>
<td>7.0</td>
<td>6.9</td>
</tr>
<tr>
<td>Berlin</td>
<td>Town</td>
<td>Rensselaer</td>
<td>7.8</td>
<td>7.7</td>
</tr>
<tr>
<td>Grafton</td>
<td>Town</td>
<td>Rensselaer</td>
<td>7.7</td>
<td>7.6</td>
</tr>
<tr>
<td>Petersburgh</td>
<td>Town</td>
<td>Rensselaer</td>
<td>7.9</td>
<td>7.8</td>
</tr>
<tr>
<td>Castleton-on-Hudson</td>
<td>Village</td>
<td>Rensselaer</td>
<td>7.3</td>
<td>6.9</td>
</tr>
<tr>
<td>Nassau</td>
<td>Village</td>
<td>Rensselaer</td>
<td>7.2</td>
<td>7.2</td>
</tr>
<tr>
<td>Schaghticoke</td>
<td>Village</td>
<td>Rensselaer</td>
<td>8.0</td>
<td>7.8</td>
</tr>
<tr>
<td>East Nassau</td>
<td>Village</td>
<td>Rensselaer</td>
<td>7.1</td>
<td>7.1</td>
</tr>
<tr>
<td>Valley Falls</td>
<td>Village</td>
<td>Rensselaer</td>
<td>9.6</td>
<td>9.5</td>
</tr>
<tr>
<td>Clifton Park</td>
<td>Town</td>
<td>Saratoga</td>
<td>7.3</td>
<td>6.7</td>
</tr>
<tr>
<td>Saratoga Springs</td>
<td>City</td>
<td>Saratoga</td>
<td>5.8</td>
<td>5.3</td>
</tr>
<tr>
<td>Waterford</td>
<td>Town</td>
<td>Saratoga</td>
<td>6.1</td>
<td>5.5</td>
</tr>
<tr>
<td>Halfmoon</td>
<td>Town</td>
<td>Saratoga</td>
<td>6.4</td>
<td>6.0</td>
</tr>
<tr>
<td>Malta</td>
<td>Town</td>
<td>Saratoga</td>
<td>6.0</td>
<td>5.6</td>
</tr>
<tr>
<td>Moreau</td>
<td>Town</td>
<td>Saratoga</td>
<td>7.6</td>
<td>7.2</td>
</tr>
<tr>
<td>Wilton</td>
<td>Town</td>
<td>Saratoga</td>
<td>7.1</td>
<td>6.7</td>
</tr>
<tr>
<td>Ballston</td>
<td>Town</td>
<td>Saratoga</td>
<td>7.2</td>
<td>6.7</td>
</tr>
<tr>
<td>Milton</td>
<td>Town</td>
<td>Saratoga</td>
<td>7.6</td>
<td>7.2</td>
</tr>
<tr>
<td>South Glens Falls</td>
<td>Village</td>
<td>Saratoga</td>
<td>5.0</td>
<td>4.6</td>
</tr>
<tr>
<td>Stillwater</td>
<td>Town</td>
<td>Saratoga</td>
<td>8.4</td>
<td>8.1</td>
</tr>
<tr>
<td>Greenfield</td>
<td>Town</td>
<td>Saratoga</td>
<td>7.7</td>
<td>7.6</td>
</tr>
<tr>
<td>Corinth</td>
<td>Town</td>
<td>Saratoga</td>
<td>8.0</td>
<td>7.9</td>
</tr>
<tr>
<td>Saratoga</td>
<td>Town</td>
<td>Saratoga</td>
<td>8.4</td>
<td>8.3</td>
</tr>
<tr>
<td>Galway</td>
<td>Town</td>
<td>Saratoga</td>
<td>8.2</td>
<td>8.1</td>
</tr>
<tr>
<td>Charlton</td>
<td>Town</td>
<td>Saratoga</td>
<td>8.7</td>
<td>8.4</td>
</tr>
<tr>
<td>Northumberland</td>
<td>Town</td>
<td>Saratoga</td>
<td>8.1</td>
<td>7.8</td>
</tr>
<tr>
<td>Mechanicville</td>
<td>City</td>
<td>Saratoga</td>
<td>7.0</td>
<td>6.4</td>
</tr>
<tr>
<td>Ballston Spa</td>
<td>Village</td>
<td>Saratoga</td>
<td>5.1</td>
<td>4.7</td>
</tr>
<tr>
<td>Hadley</td>
<td>Town</td>
<td>Saratoga</td>
<td>7.3</td>
<td>7.2</td>
</tr>
<tr>
<td>Round Lake</td>
<td>Village</td>
<td>Saratoga</td>
<td>8.0</td>
<td>7.8</td>
</tr>
<tr>
<td>Providence</td>
<td>Town</td>
<td>Saratoga</td>
<td>7.7</td>
<td>7.6</td>
</tr>
<tr>
<td>Edinburg</td>
<td>Town</td>
<td>Saratoga</td>
<td>7.5</td>
<td>7.4</td>
</tr>
<tr>
<td>Waterford</td>
<td>Village</td>
<td>Saratoga</td>
<td>6.2</td>
<td>5.6</td>
</tr>
<tr>
<td>Corinth</td>
<td>Village</td>
<td>Saratoga</td>
<td>7.2</td>
<td>7.0</td>
</tr>
<tr>
<td>Stillwater</td>
<td>Village</td>
<td>Saratoga</td>
<td>7.6</td>
<td>7.5</td>
</tr>
<tr>
<td>Day</td>
<td>Town</td>
<td>Saratoga</td>
<td>5.8</td>
<td>5.7</td>
</tr>
<tr>
<td>Schuylerville</td>
<td>Village</td>
<td>Saratoga</td>
<td>5.3</td>
<td>4.8</td>
</tr>
</tbody>
</table>
### Table B 4. Household GHG emissions and Energy Cost of Living

<table>
<thead>
<tr>
<th>Community</th>
<th>Type</th>
<th>County</th>
<th>Per-Household GHG Footprint (MTCDE)</th>
<th>Energy Cost of Living (ECOL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Energy</td>
<td>Transport</td>
</tr>
<tr>
<td>Victory</td>
<td>Village</td>
<td>Saratoga</td>
<td>7.6</td>
<td>7.4</td>
</tr>
<tr>
<td>Galway</td>
<td>Village</td>
<td>Saratoga</td>
<td>10.2</td>
<td>10.0</td>
</tr>
<tr>
<td>Schenectady</td>
<td>City</td>
<td>Schenectady</td>
<td>5.3</td>
<td>4.9</td>
</tr>
<tr>
<td>Rotterdam</td>
<td>Town</td>
<td>Schenectady</td>
<td>7.1</td>
<td>6.5</td>
</tr>
<tr>
<td>Glenville</td>
<td>Town</td>
<td>Schenectady</td>
<td>7.3</td>
<td>6.8</td>
</tr>
<tr>
<td>Niskayuna</td>
<td>Town</td>
<td>Schenectady</td>
<td>8.0</td>
<td>7.3</td>
</tr>
<tr>
<td>Duanesburg</td>
<td>Town</td>
<td>Schenectady</td>
<td>9.0</td>
<td>8.4</td>
</tr>
<tr>
<td>Scotia</td>
<td>Village</td>
<td>Schenectady</td>
<td>6.3</td>
<td>5.8</td>
</tr>
<tr>
<td>Princetown</td>
<td>Town</td>
<td>Schenectady</td>
<td>8.5</td>
<td>8.4</td>
</tr>
<tr>
<td>Delanson</td>
<td>Village</td>
<td>Schenectady</td>
<td>10.5</td>
<td>9.3</td>
</tr>
<tr>
<td>Glens Falls</td>
<td>City</td>
<td>Warren</td>
<td>4.8</td>
<td>4.5</td>
</tr>
<tr>
<td>Queensbury</td>
<td>Town</td>
<td>Warren</td>
<td>6.4</td>
<td>6.0</td>
</tr>
<tr>
<td>Lake George</td>
<td>Town</td>
<td>Warren</td>
<td>8.0</td>
<td>7.7</td>
</tr>
<tr>
<td>Chester</td>
<td>Town</td>
<td>Warren</td>
<td>7.6</td>
<td>7.5</td>
</tr>
<tr>
<td>Bolton</td>
<td>Town</td>
<td>Warren</td>
<td>9.0</td>
<td>8.9</td>
</tr>
<tr>
<td>Warrensburg</td>
<td>Town</td>
<td>Warren</td>
<td>7.4</td>
<td>7.3</td>
</tr>
<tr>
<td>Johnsburg</td>
<td>Town</td>
<td>Warren</td>
<td>6.7</td>
<td>6.6</td>
</tr>
<tr>
<td>Lake Luzerne</td>
<td>Town</td>
<td>Warren</td>
<td>8.1</td>
<td>8.0</td>
</tr>
<tr>
<td>Horicon</td>
<td>Town</td>
<td>Warren</td>
<td>7.8</td>
<td>7.7</td>
</tr>
<tr>
<td>Hague</td>
<td>Town</td>
<td>Warren</td>
<td>7.6</td>
<td>7.5</td>
</tr>
<tr>
<td>Lake George</td>
<td>Village</td>
<td>Warren</td>
<td>6.2</td>
<td>5.8</td>
</tr>
<tr>
<td>Thurman</td>
<td>Town</td>
<td>Warren</td>
<td>6.9</td>
<td>6.8</td>
</tr>
<tr>
<td>Stony Creek</td>
<td>Town</td>
<td>Warren</td>
<td>7.3</td>
<td>7.2</td>
</tr>
<tr>
<td>Fort Edward</td>
<td>Town</td>
<td>Washington</td>
<td>6.9</td>
<td>6.4</td>
</tr>
<tr>
<td>Kingsbury</td>
<td>Town</td>
<td>Washington</td>
<td>6.2</td>
<td>5.9</td>
</tr>
<tr>
<td>Greenwich</td>
<td>Town</td>
<td>Washington</td>
<td>8.3</td>
<td>7.6</td>
</tr>
<tr>
<td>Fort Edward</td>
<td>Village</td>
<td>Washington</td>
<td>5.2</td>
<td>4.8</td>
</tr>
<tr>
<td>Fort Ann</td>
<td>Town</td>
<td>Washington</td>
<td>8.2</td>
<td>8.1</td>
</tr>
<tr>
<td>Granville</td>
<td>Town</td>
<td>Washington</td>
<td>9.1</td>
<td>8.9</td>
</tr>
<tr>
<td>Easton</td>
<td>Town</td>
<td>Washington</td>
<td>8.7</td>
<td>8.1</td>
</tr>
<tr>
<td>Hudson Falls</td>
<td>Village</td>
<td>Washington</td>
<td>4.9</td>
<td>4.5</td>
</tr>
<tr>
<td>Whitehall</td>
<td>Town</td>
<td>Washington</td>
<td>8.7</td>
<td>8.5</td>
</tr>
<tr>
<td>Argyle</td>
<td>Town</td>
<td>Washington</td>
<td>7.5</td>
<td>7.4</td>
</tr>
<tr>
<td>Salem</td>
<td>Town</td>
<td>Washington</td>
<td>8.4</td>
<td>8.3</td>
</tr>
<tr>
<td>White Creek</td>
<td>Town</td>
<td>Washington</td>
<td>6.6</td>
<td>6.6</td>
</tr>
<tr>
<td>Hebron</td>
<td>Town</td>
<td>Washington</td>
<td>7.8</td>
<td>7.7</td>
</tr>
<tr>
<td>Jackson</td>
<td>Town</td>
<td>Washington</td>
<td>8.0</td>
<td>7.9</td>
</tr>
</tbody>
</table>
Table B 4. Household GHG emissions and Energy Cost of Living

<table>
<thead>
<tr>
<th>Community</th>
<th>Type</th>
<th>County</th>
<th>Per-Household GHG Footprint (MTCDE)</th>
<th>Energy Cost of Living (ECOL)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td>Energy</td>
<td>Transport</td>
</tr>
<tr>
<td>Cambridge</td>
<td>Town</td>
<td>Washington</td>
<td>26.8</td>
<td>25.8</td>
</tr>
<tr>
<td>Hartford</td>
<td>Town</td>
<td>Washington</td>
<td>7.4</td>
<td>7.3</td>
</tr>
<tr>
<td>Dresden</td>
<td>Town</td>
<td>Washington</td>
<td>7.1</td>
<td>7.0</td>
</tr>
<tr>
<td>Putnam</td>
<td>Town</td>
<td>Washington</td>
<td>8.5</td>
<td>8.4</td>
</tr>
<tr>
<td>Granville</td>
<td>Village</td>
<td>Washington</td>
<td>7.9</td>
<td>7.8</td>
</tr>
<tr>
<td>Whitehall</td>
<td>Village</td>
<td>Washington</td>
<td>7.2</td>
<td>7.1</td>
</tr>
<tr>
<td>Cambridge</td>
<td>Village</td>
<td>Washington</td>
<td>7.2</td>
<td>7.1</td>
</tr>
<tr>
<td>Hampton</td>
<td>Town</td>
<td>Washington</td>
<td>8.0</td>
<td>7.9</td>
</tr>
<tr>
<td>Greenwich</td>
<td>Village</td>
<td>Washington</td>
<td>7.1</td>
<td>7.0</td>
</tr>
<tr>
<td>Salem</td>
<td>Village</td>
<td>Washington</td>
<td>8.5</td>
<td>8.4</td>
</tr>
<tr>
<td>Fort Ann</td>
<td>Village</td>
<td>Washington</td>
<td>8.3</td>
<td>8.1</td>
</tr>
<tr>
<td>Argyle</td>
<td>Village</td>
<td>Washington</td>
<td>7.5</td>
<td>7.4</td>
</tr>
</tbody>
</table>
## Appendix C. Emission Factors

### Table C.1. Fuel (Scope 1) and Electricity (Scope 2) Emission Factors

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Heating Value</th>
<th>CO₂ Factor</th>
<th>CH₄ Factor</th>
<th>N₂O Factor</th>
<th>CO₂e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Anthracite Coal</td>
<td>25.09</td>
<td>103.54</td>
<td>11</td>
<td>1.60</td>
<td>104.27</td>
</tr>
<tr>
<td>Bituminous Coal</td>
<td>24.93</td>
<td>93.40</td>
<td>11</td>
<td>1.60</td>
<td>94.13</td>
</tr>
<tr>
<td>Sub-bituminous Coal</td>
<td>17.25</td>
<td>97.02</td>
<td>11</td>
<td>1.60</td>
<td>97.75</td>
</tr>
<tr>
<td>Lignite Coal</td>
<td>14.21</td>
<td>96.36</td>
<td>11</td>
<td>1.60</td>
<td>97.09</td>
</tr>
<tr>
<td>Mixed (Commercial Sector)</td>
<td>21.39</td>
<td>95.26</td>
<td>11</td>
<td>1.60</td>
<td>95.99</td>
</tr>
<tr>
<td>Mixed (Electric Power Sector)</td>
<td>19.73</td>
<td>94.38</td>
<td>11</td>
<td>1.60</td>
<td>95.11</td>
</tr>
<tr>
<td>Mixed (Industrial Coking)</td>
<td>26.28</td>
<td>93.65</td>
<td>11</td>
<td>1.60</td>
<td>94.38</td>
</tr>
<tr>
<td>Mixed (Industrial Sector)</td>
<td>22.35</td>
<td>93.91</td>
<td>11</td>
<td>1.60</td>
<td>94.64</td>
</tr>
<tr>
<td>Coke</td>
<td>24.80</td>
<td>102.04</td>
<td>11</td>
<td>1.60</td>
<td>102.77</td>
</tr>
<tr>
<td>Municipal Solid Waste</td>
<td>9.95</td>
<td>90.70</td>
<td>32</td>
<td>4.20</td>
<td>92.67</td>
</tr>
<tr>
<td>Petroleum Coke (Solid)</td>
<td>30.00</td>
<td>102.41</td>
<td>32</td>
<td>4.20</td>
<td>104.38</td>
</tr>
<tr>
<td>Plastics</td>
<td>38.00</td>
<td>75.00</td>
<td>32</td>
<td>4.20</td>
<td>76.97</td>
</tr>
<tr>
<td>Tires</td>
<td>26.87</td>
<td>85.97</td>
<td>32</td>
<td>4.20</td>
<td>87.94</td>
</tr>
<tr>
<td>Agricultural Byproducts</td>
<td>8.25</td>
<td>118.17</td>
<td>32</td>
<td>4.20</td>
<td>120.14</td>
</tr>
<tr>
<td>Peat</td>
<td>8.00</td>
<td>111.84</td>
<td>32</td>
<td>4.20</td>
<td>113.81</td>
</tr>
<tr>
<td>Solid Byproducts</td>
<td>25.83</td>
<td>105.51</td>
<td>32</td>
<td>4.20</td>
<td>107.48</td>
</tr>
<tr>
<td>Wood and Wood Residuals</td>
<td>15.38</td>
<td>95.80</td>
<td>32</td>
<td>4.20</td>
<td>95.77</td>
</tr>
<tr>
<td>Natural Gas (per scf)</td>
<td>0.001028</td>
<td>53.02</td>
<td>1.00</td>
<td>0.100</td>
<td>53.072</td>
</tr>
<tr>
<td>Blast Furnace Gas</td>
<td>0.0000092</td>
<td>274.32</td>
<td>0.022</td>
<td>0.100</td>
<td>274.351</td>
</tr>
<tr>
<td>Coke Oven Gas</td>
<td>0.000599</td>
<td>46.85</td>
<td>0.480</td>
<td>0.100</td>
<td>46.891</td>
</tr>
<tr>
<td>Fuel Gas</td>
<td>0.003388</td>
<td>59.00</td>
<td>0.022</td>
<td>0.100</td>
<td>59.031</td>
</tr>
<tr>
<td>Propane Gas</td>
<td>0.002516</td>
<td>61.46</td>
<td>0.022</td>
<td>0.100</td>
<td>61.491</td>
</tr>
<tr>
<td>Biogas (Captured Methane)</td>
<td>0.000841</td>
<td>52.07</td>
<td>3.200</td>
<td>0.630</td>
<td>52.333</td>
</tr>
<tr>
<td>Asphalt and Road Oil</td>
<td>0.158</td>
<td>75.36</td>
<td>3.0</td>
<td>0.60</td>
<td>75.609</td>
</tr>
<tr>
<td>Aviation Gasoline</td>
<td>0.120</td>
<td>69.25</td>
<td>3.0</td>
<td>0.60</td>
<td>69.499</td>
</tr>
<tr>
<td>Butane</td>
<td>0.101</td>
<td>65.15</td>
<td>3.0</td>
<td>0.60</td>
<td>65.399</td>
</tr>
<tr>
<td>Butylene</td>
<td>0.103</td>
<td>67.73</td>
<td>3.0</td>
<td>0.60</td>
<td>67.979</td>
</tr>
<tr>
<td>Crude Oil</td>
<td>0.138</td>
<td>74.49</td>
<td>3.0</td>
<td>0.60</td>
<td>74.739</td>
</tr>
<tr>
<td>Distillate Fuel Oil No. 1</td>
<td>0.139</td>
<td>73.25</td>
<td>3.0</td>
<td>0.60</td>
<td>73.499</td>
</tr>
<tr>
<td>Distillate Fuel Oil No. 2</td>
<td>0.138</td>
<td>73.96</td>
<td>3.0</td>
<td>0.60</td>
<td>74.209</td>
</tr>
<tr>
<td>Distillate Fuel Oil No. 4</td>
<td>0.146</td>
<td>75.04</td>
<td>3.0</td>
<td>0.60</td>
<td>75.289</td>
</tr>
<tr>
<td>Ethane</td>
<td>0.069</td>
<td>62.64</td>
<td>3.0</td>
<td>0.60</td>
<td>62.889</td>
</tr>
<tr>
<td>Ethylene</td>
<td>0.100</td>
<td>67.43</td>
<td>3.0</td>
<td>0.60</td>
<td>67.679</td>
</tr>
<tr>
<td>Heavy Gas Oils</td>
<td>0.148</td>
<td>74.92</td>
<td>3.0</td>
<td>0.60</td>
<td>75.169</td>
</tr>
<tr>
<td>Isobutane</td>
<td>0.097</td>
<td>64.91</td>
<td>3.0</td>
<td>0.60</td>
<td>65.159</td>
</tr>
</tbody>
</table>
Table C 1. Fuel (Scope 1) and Electricity (Scope 2) Emission Factors

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>Heating Value</th>
<th>CO₂ Factor</th>
<th>CH₄ Factor</th>
<th>N₂O Factor</th>
<th>CO₂e</th>
</tr>
</thead>
<tbody>
<tr>
<td>Isobutylene</td>
<td>0.103</td>
<td>67.74</td>
<td>3.0</td>
<td>0.60</td>
<td>67.989</td>
</tr>
<tr>
<td>Kerosene</td>
<td>0.135</td>
<td>75.20</td>
<td>3.0</td>
<td>0.60</td>
<td>75.449</td>
</tr>
<tr>
<td>Kerosene-type Jet Fuel</td>
<td>0.135</td>
<td>72.22</td>
<td>3.0</td>
<td>0.60</td>
<td>72.489</td>
</tr>
<tr>
<td>Liquefied Petroleum Gases (LPG)</td>
<td>0.092</td>
<td>62.98</td>
<td>3.0</td>
<td>0.60</td>
<td>63.229</td>
</tr>
<tr>
<td>Lubricants</td>
<td>0.144</td>
<td>74.27</td>
<td>3.0</td>
<td>0.60</td>
<td>74.519</td>
</tr>
<tr>
<td>Motor Gasoline</td>
<td>0.125</td>
<td>70.22</td>
<td>3.0</td>
<td>0.60</td>
<td>70.469</td>
</tr>
<tr>
<td>Naphtha (&lt;401 deg F)</td>
<td>0.125</td>
<td>68.02</td>
<td>3.0</td>
<td>0.60</td>
<td>68.269</td>
</tr>
<tr>
<td>Natural Gasoline</td>
<td>0.110</td>
<td>66.83</td>
<td>3.0</td>
<td>0.60</td>
<td>67.079</td>
</tr>
<tr>
<td>Other Oil (&gt;401 deg F)</td>
<td>0.139</td>
<td>76.22</td>
<td>3.0</td>
<td>0.60</td>
<td>76.469</td>
</tr>
<tr>
<td>Pentanes</td>
<td>0.120</td>
<td>70.97</td>
<td>3.0</td>
<td>0.60</td>
<td>71.219</td>
</tr>
<tr>
<td>Petrochemical Feedstocks</td>
<td>0.129</td>
<td>102.41</td>
<td>3.0</td>
<td>0.60</td>
<td>102.659</td>
</tr>
<tr>
<td>Petroleum Coke</td>
<td>0.091</td>
<td>61.46</td>
<td>3.0</td>
<td>0.60</td>
<td>61.709</td>
</tr>
<tr>
<td>Propane</td>
<td>0.091</td>
<td>65.95</td>
<td>3.0</td>
<td>0.60</td>
<td>66.199</td>
</tr>
<tr>
<td>Propylene</td>
<td>0.140</td>
<td>72.93</td>
<td>3.0</td>
<td>0.60</td>
<td>73.179</td>
</tr>
<tr>
<td>Residual Fuel Oil No. 5</td>
<td>0.150</td>
<td>75.10</td>
<td>3.0</td>
<td>0.60</td>
<td>75.349</td>
</tr>
<tr>
<td>Residual Fuel Oil No. 6</td>
<td>0.125</td>
<td>72.34</td>
<td>3.0</td>
<td>0.60</td>
<td>72.589</td>
</tr>
<tr>
<td>Special Naphtha</td>
<td>0.143</td>
<td>66.72</td>
<td>3.0</td>
<td>0.60</td>
<td>66.969</td>
</tr>
<tr>
<td>Still Gas</td>
<td>0.139</td>
<td>74.49</td>
<td>3.0</td>
<td>0.60</td>
<td>74.739</td>
</tr>
<tr>
<td>Unfinished Oils</td>
<td>0.135</td>
<td>74.00</td>
<td>3.0</td>
<td>0.60</td>
<td>74.249</td>
</tr>
<tr>
<td>Biodiesel (100%)</td>
<td>0.128</td>
<td>73.84</td>
<td>3.0</td>
<td>0.60</td>
<td>73.897</td>
</tr>
<tr>
<td>Ethanol (100%)</td>
<td>0.084</td>
<td>68.44</td>
<td>3.0</td>
<td>0.60</td>
<td>68.479</td>
</tr>
<tr>
<td>Rendered Animal Fat</td>
<td>0.092</td>
<td>71.06</td>
<td>3.0</td>
<td>0.60</td>
<td>71.117</td>
</tr>
<tr>
<td>Vegetable Oil</td>
<td>0.120</td>
<td>81.55</td>
<td>3.0</td>
<td>0.60</td>
<td>81.607</td>
</tr>
</tbody>
</table>

Electricity Consumption (Scope 2)

<table>
<thead>
<tr>
<th></th>
<th>lb/MWh</th>
<th>lb/GWh</th>
<th>lb/GWh</th>
<th>Kg/MMBTU</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upstate New York Grid (EGRID- NYUP)</td>
<td>497.92</td>
<td>15.94</td>
<td>6.77</td>
<td>66.18</td>
</tr>
</tbody>
</table>

Sources: