Planning Goals set for:

- Energy
- Land Use
- Transportation
- Agriculture and Forestry
- Water Resources
- Waste Management

Strategies were developed for each goal.

Sustainability Indicators chosen to establish a baseline and as a tool to measure progress toward achieving goals.

Measurable Targets were set for selected some indicators in each focus area.

WNY Regional Sustainability Plan can be found at: [http://www.nyserda.ny.gov/Governor-Initiatives/Cleaner-Greener-Communities/Regional-Sustainability-Plans.aspx](http://www.nyserda.ny.gov/Governor-Initiatives/Cleaner-Greener-Communities/Regional-Sustainability-Plans.aspx)
**Target:** Increase the implementation of NYSERDA-funded energy efficiency projects by 34%, or to 250,000 MMBtu by 2015.
Target: Increase renewable energy generation to 75% by 2025.
Target: Reduce vehicle miles traveled (VMTs) by 3% through 2020.
No Target identified
Target: Reduce municipal solid waste (MSW) disposal to 0.11 tons per person per year (0.6 pounds per person per day) by 2030.
Does not include Electricity Generation or Forest/urban tree sinks

WNY Regional GHG Inventory: Results

WNY GHG Emissions
18 Million MT CO2e

- Residential Energy Consumption
  - 25%
- Commercial Energy Consumption
  - 16%
- Industrial Energy Consumption
  - 6%
- Transportation
  - 37%
- Agriculture
  - 2%
- Transmission Losses
  - 6%
- Wastewater Treatment
  - 1%
- Solid Waste Management
  - 4%
- Ozone Depleting Substances
  - 2%
- Industrial Processes
  - 1%
- WNY GHG Emissions
  - 18 Million MT CO2e
WNY Regional GHG Inventory: Results

- **GHG Emissions per Capita:** 12.8 MTCO$_2$e
  - Total Emissions: 17.9 Million MT CO2e

- **Energy Consumption/person:** 181 MMBTU
  - Total Energy Consumption: 254,028,790 MMBTU
  - Total Population: 1,399,677

- **Transportation VMT per Capita:** 9,043 miles
  - Total Transportation VMTs: 12,657,221,755 miles
Sustainability Indicator 1A: Regional Energy Use per Capita

Energy Consumption, per Capita
181 MMBTU/per person

- Residential Energy Consumption, 60, 33%
- Commercial Energy Consumption, 39, 21%
- Transportation, 70, 39%
- Industrial Energy Consumption, 12, 7%

Includes Transportation and Electricity Consumption, not Electricity Generation
WNY Electricity Consumption

Electricity Consumption in WNY
9 Million MWh

Residential 42%
Commercial 30%
Industrial 29%
Energy Use (MMBTU) by Fuel Type

Energy (MMBTU) by Fuel Type

- Natural Gas: 49%
- Coal: 39%
- Wood: 4%
- Waste: 4%
- Other: 2%
- Bottled Gas, LNG: 1%
- Fuel Oil: 1%

Includes Electricity Generation, does not include Transportation
# NY eGRID GHG Emission Factors for Electricity Consumption

<table>
<thead>
<tr>
<th></th>
<th>CO(_2) lbs/MWh</th>
<th>Year 2009 (eGRID 2012) Total output emission rates (used in WNY inventory)</th>
<th>Year 2010 (eGRID 2014) Total output emission rates</th>
<th>Year 2010 (eGRID 2014) Non-baseload output emission rates</th>
</tr>
</thead>
<tbody>
<tr>
<td>eGRID2012, NYUP (All Upstate NY)</td>
<td>497.92</td>
<td>545.79</td>
<td>1253.77</td>
<td></td>
</tr>
<tr>
<td>eGRID2012, NYCW (NYC/Westchester)</td>
<td>610.67</td>
<td>622.42</td>
<td>1131.63</td>
<td></td>
</tr>
<tr>
<td>eGRID2012, NYLI (Long Island)</td>
<td>1347.99</td>
<td>1336.11</td>
<td>1445.94</td>
<td></td>
</tr>
</tbody>
</table>

Source: [http://www.epa.gov/cleanenergy/energy-resources/egrid/](http://www.epa.gov/cleanenergy/energy-resources/egrid/)
## Emission Factors*

### Petroleum Products

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>mmBtu/gallon</th>
<th>kg CO₂/mmBtu</th>
<th>kg CH₄/mmBtu</th>
<th>kg N₂O/mmBtu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distillate Fuel Oil No. 2 (Heating Oil)</td>
<td>0.138</td>
<td>73.96</td>
<td>0.003</td>
<td>0.0006</td>
</tr>
<tr>
<td>Liquefied Petroleum Gases (LPG)</td>
<td>0.092</td>
<td>62.98</td>
<td>0.003</td>
<td>0.0006</td>
</tr>
</tbody>
</table>

### Coal and Coke

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>mmBtu/short ton</th>
<th>kg CO₂/mmBtu</th>
<th>kg CH₄/mmBtu</th>
<th>kg N₂O/mmBtu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Coke</td>
<td>24.8</td>
<td>102.04</td>
<td>0.011</td>
<td>0.0016</td>
</tr>
</tbody>
</table>

### Natural Gas

<table>
<thead>
<tr>
<th>Fuel Type</th>
<th>mmBtu/scf</th>
<th>kg CO₂/mmBtu</th>
<th>kg CH₄/mmBtu</th>
<th>kg N₂O/mmBtu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pipeline (US Weighted Ave)</td>
<td>0.001028</td>
<td>53.02</td>
<td>0.001</td>
<td>0.0001</td>
</tr>
</tbody>
</table>

### Global Warming Potential: converting to CO$_2$e

<table>
<thead>
<tr>
<th>Emissions</th>
<th>100-yr Global Warming Potential</th>
</tr>
</thead>
<tbody>
<tr>
<td>Carbon dioxide (CO$_2$)</td>
<td>1</td>
</tr>
<tr>
<td>Methane (CH$_4$)</td>
<td>21</td>
</tr>
<tr>
<td>Nitrous oxide (N$_2$O)</td>
<td>310</td>
</tr>
</tbody>
</table>

Western NY GHG Inventory – On Road Vehicles

WNY GHG Emissions from On-Road Vehicles

- Cars/SUVs/Pick-Ups/Motorcycles: 75%
- Large Trucks: 21%
- Buses: 4%
### Vehicle Usage emission factors/ assumptions

<table>
<thead>
<tr>
<th>Emission Factor</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>GHG per gallon of gasoline (MT CO₂e)</td>
<td>0.00889</td>
</tr>
<tr>
<td>GHG per gallon of diesel (MT CO₂e)</td>
<td>0.01018</td>
</tr>
<tr>
<td>Average miles per gallon (mpg) of passenger vehicles</td>
<td>21.6</td>
</tr>
</tbody>
</table>

Greenhouse Gas Equivalencies Calculator

Did you ever wonder what reducing carbon dioxide (CO₂) emissions by 1 million metric tons means in everyday terms? The greenhouse gas equivalencies calculator can help you understand just that, translating abstract measurements into concrete terms you can understand, such as "equivalent to avoiding the carbon dioxide emissions of 183,000 cars annually."

This calculator may be useful in communicating your greenhouse gas reduction strategy, reduction targets, or other initiatives aimed at reducing greenhouse gas emissions.

Enter Your Data

There are two options for entering reduction data into this calculator.

If You Have Energy Data

Please note that these estimates are approximate and should not be used for emission inventory or formal carbon footprinting exercises. Read more about the caveats and explanations on the Calculations and References page

If You Have Emissions Data

1 gallons of gasoline

Calculate

http://www.epa.gov/cleanenergy/energy-resources/calculator.html#results