

RIEC⁴



RHODE ISLAND 2022 CLIMATE UPDATE

RI EXECUTIVE CLIMATE CHANGE COORDINATING COUNCIL



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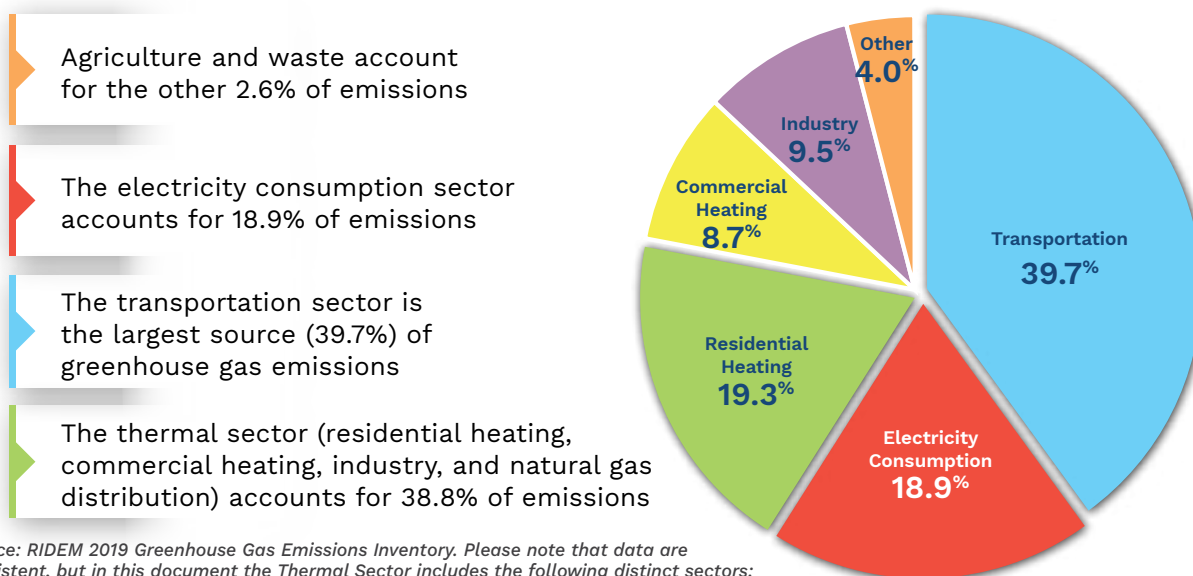
The SIT estimates GHG emissions by applying pollutant-specific emission factors to Rhode Island activity data. The US EPA updates the SIT annually with the latest activity data. If needed, any updates to emission factors and/or parameters like global warming potentials are made as well. Greenhouse gas emissions are converted to a summary unit of measure called million metric tons of carbon dioxide equivalent (MMT_{CO₂e}) based on their global warming potentials that allows for better comparison of the impact of different greenhouse gases. These conversions are completed within the SIT.

RIDEM releases annual greenhouse gas emissions inventories. Every three years, RIDEM publishes a “triennial summary” that coincides with the releases of the US EPA’s triennial National Emissions Inventory. Each National Emissions Inventory details emissions of criteria air pollutants, criteria precursors, and hazardous air pollutants. Triennial greenhouse gas emissions summaries provide a greater level of detail than annual emissions inventories. Table 2 below displays the history of default versus non-default model runs. All inventories since 2013 were non-default runs and RIDEM anticipates using non-default runs for all future emissions inventories. In these years, state-specific data was utilized to obtain the most robust emissions estimates. Inventory years 2011 and 2012 were default runs for which emissions were estimated using primarily default data in the SIT. This default data relies on top-down estimates rather than bottom-up primary data collection. Non-default model runs are considered more precise. Consistent methodologies – even with differently sourced data – still allows for comparisons of emissions estimates from year to year. However, caution should be applied when comparing emissions estimates year-over-year when we expect the results to be biased differently when using default versus non-default data. See the callout box on *The Role of Models* below for additional explanation.

Table 2. Model Run Types by Emissions Inventory Year.

RI Greenhouse Gas Emissions Inventory	1990	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Triennial Summary Released	No	No	No	No	No	No	No	Yes	No	No	Yes
Model Run Type	Non-Default	Non-Default	Default	Default	Non-Default	Non-Default	Non-Default	Non-Default	Non-Default	Non-Default	Non-Default

Some categories of emissions require other tools and methods instead of or in addition to the SIT. All of RIDEM’s tools provide emissions estimates in MMT_{CO₂e} for each of the nine emissions categories: transportation, electricity, residential heating, commercial heating, industry, waste, natural gas distribution, agriculture, and land use, land use change, and forestry. We summarize these emissions estimated for 2019 below; these sectors – transportation, electricity, and thermal¹⁸ – correspond to the following chapters that identify priority actions to reduce emissions.



Source: RIDEM 2019 Greenhouse Gas Emissions Inventory. Please note that data are consistent, but in this document the Thermal Sector includes the following distinct sectors: residential heating, commercial heating, industry, and natural gas distribution.