







# DRAWDOWN

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**Commercial Sector** 

**Local GHG Emissions Tracker** 

Technical Documentation Figures for Major Data Sources and Emissions Calculations

# Commercial sector emissions

### Commercial data sources

- 1. EIA Open Data API monthly data
  - a. Commercial natural gas deliveries
  - b. Prior calculation of commercial electricity emissions
- 2. Census Quarterly Workforce Indicators (QWI) employment by county and NAICS code
- 3. EIA commercial buildings energy consumption survey (CBECS) microdata from 2012
- 4.EIA crosswalk to convert NAICS employment to CBECS Principal Building Activity employment

## Commercial basic strategy

- 1. From the EIA API download monthly statewide commercial natural gas deliveries and calculate natural gas emissions
- 2. Load prior calculated commercial **electricity** emissions
- 3. Download, if needed, most recent QWI **NAICS** county employment, forecast and interpolate to generate monthly employment
- 4. Convert NAICS employment to CBECS Principal Building Activities
- 5. From CBECS microdata, calculate PBA energy use per employee factors for electricity, natural gas, and district heat
- Apply CBECS factors to county employment, sum by energy source
- Allocate statewide emissions by county percent of energy use for each fuel

### Commercial emissions



Download from EIA each month, statewide commercial natural gas deliveries



Use CO2 coefficients to convert to emissions



Combine with pre-calculated commercial electricity emissions



Statewide commercial emissions for electricity and natural gas



Download each quarter, QWI employment by NAICS and county



Forecast with STL method and interpolate to monthly values



Convert to PBA employment with crosswalk



Use county fuel shares to allocate statewide emissions

Download CBECS microdata for S. Atlantic region and climate zones 2&3



For electricity,
natural gas and
district heat,
calculate BTUs per
employee by PBA



Multiply PBA employment times BTUs per employee by fuel and climate zone



Sum county energy use by fuel and convert to statewide shares