Global carbon emissions from fossil fuels

Greenhouse gases (GHGs), including carbon dioxide, methane, and nitrous oxide, warm the Earth by absorbing energy and slowing the rate at which incoming solar radiation escapes to space. Essentially, GHGs act like a blanket insulating the planet. As human activities add more GHGs into the atmosphere, global land and ocean temperatures will rise.

Since 1751, around the start of the Industrial Revolution, just over 400 billion metric tons of carbon have been released to the atmosphere from the production and consumption of fossil fuels. Half of these fossil-fuel carbon emissions occurred since the mid-1980s. The latest available measurement of annual emissions are for the year 2014: according to the U.S. Department of Energy, approximately 9.9 billion metric tons of carbon were released globally, which represents an all-time high and a 0.8% increase over 2013 emissions.[1] In total, humans have increased the concentration of atmospheric carbon dioxide by more than a third since the Industrial Revolution began.[2]

[1] Boden, T.A., G. Marland, and R.J. Andres. 2016. *Global, Regional, and National Fossil-Fuel CO2 Emissions*. Carbon Dioxide Information Analysis Center, Oak Ridge National Laboratory, United States Department of Energy (DOE).

[2] *A blanket around the Earth*. Global Climate Change: Vital Signs of the Planet, National Aeronautics and Space Administration (NASA).

Learn about what Erie County is doing to address climate change at www.erie.gov/sustainability.

Compare the carbon emissions from fossil fuels in the years 1760, 1870 and 2014. One dot represents one million metric tons of carbon emissions; count how many dots you can color in for each year.