Energy

Reduce Local Greenhouse Gas Emissions

Target(s):

Reduce citywide per capita greenhouse gas emissions by 7% by 2015, using 1990 as baseline.

Lincoln Now:

The local consumption of nonrenewable sources impacts the environment, as our use of fossil fuels contributes to air and water pollution. Carbon dioxide is produced when oil, coal, and gas combust in power stations, heating systems, and car engines. Carbon dioxide in the atmosphere acts as a transparent blanket that contributes to the global warming of the earth, or "greenhouse effect." There is consensus of scientific thought that this warming trend is significantly altering our climate. Possible impacts include a threat to human health, environmental impacts such as rising sea levels that can damage coastal areas, and major changes in vegetation growth patterns that could affect agricultural productivity and cause some plant and animal species to become extinct.

In 2005, the U.S. Conference of Mayors created its "Climate Protection Agreement" to advance the goals of international climate agreements to lower greenhouse gas emissions at the local level. Under the agreement, participating Mayors committed to taking three actions: 1) striving to meet or exceed the target of a 7% reduction from 1990 levels by 2012 in their own communities, through actions such as land-use policies, urban forestation, and public information campaigns; 2) urging state and federal governments to enact policies helping to meet or beat this target; and, 3) urging creation at federal level of greenhouse gas reduction legislation, including the creation of a national emissions trading system. The U.S. Conference of Mayors has also endorsed a national goal of reducing greenhouse gas emissions by 80 percent from 1990 levels by 2050.

Lincoln Mayor Colleen Seng signed the "Mayors Climate Protection Agreement" in 2006; as of 2012, there are 1,054 U.S. cities/mayors which have signed the agreement. In 2008, Lincoln Mayor Chris Beutler signed Executive Order 80968 (2008) which, among other things, established the following environmental policy: "The City of Lincoln shall consider the enactment of fiscally sound policies and programs that address the per capita reduction of emissions associated with climate change to seven percent below the established 1990 levels by the year 2015. The City of Lincoln shall consider an inventory of emissions associated with climate change in city operations, developing targeted reductions and creating action plans to implement those proposed reductions" (emphasis added).

The Lincoln-Lancaster County Health Department (LLCHD) as part of its public environmental health responsibilities, had generated an inventory of such greenhouse gas (CO2e) emissions in the community using 1990 data; this data was then updated using 2005 data. These detailed

studies concluded that, in 1990, the per capita emissions were approximately 14.79 metric tonnes of CO2e, and in 2005, 17.15 metric tonnes of CO2e.

In 2010-11, the LLCHD updated this inventory using 2008 data and newly upgraded emissions inventory software. Data was gathered from a variety of community, industry, utility, transportation, and government sources. The inventory concluded that, as of 2008, the Lincoln community emitted approximately 4.8 million metric tonnes of CO2e, or approximately 19.03 metric tonnes per capita of CO2e. This compares to the 2008 national average in the United States of 22.9 metric tonnes per capita. Both in Lincoln and across the United States this average has probably gone down, due to the economic recession. A 7% per capita reduction below 1990 levels by 2015 would be approximately 13.75 metric tonnes per capita.

The 2008 greenhouse gas emissions inventory found over 2.8 million tonnes of CO2e are from electricity and natural gas used to light, heat, and cool homes and businesses. Another 700,000 tonnes are generated from personal vehicle use. These combine to account for nearly 75% of all greenhouse gas emissions in Lincoln. Significantly reducing emissions means efforts must be made across all sectors, particularly through reductions in home and office heating/cooling and changes in driving habits.

Certain other actions have a significant impact on local greenhouse gas emissions. For example, the actions by the City of Lincoln to recently capture and use its landfill methane gas, which is of particular concern as a greenhouse gas since each unit of methane has an effective equivalent to 21 units of carbon dioxide, is a reduction in greenhouse gas equal to removing 30,780 passenger vehicles from Lincoln's roads. The methane is also set to be converted to electricity by LES in early 2013. The capture and use of this landfill gas means the per capita rates in Lincoln will be considerably lower when the next inventory is completed.