



MEMORANDUM

TO: Mayor and Council

FROM: Lucia Athens, Chief Sustainability Officer
Zach Baumer, Climate Program Manager

DATE: March 1, 2018

SUBJECT: Greenhouse Gas Emissions Reduction Progress Report

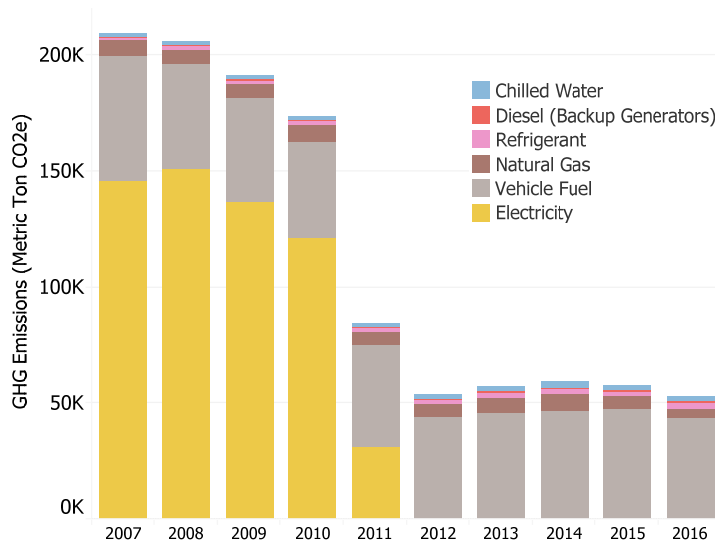
Background

The City of Austin is committed to protecting the long-term health and viability of our community through strategies designed to reduce greenhouse gas emissions and mitigate the negative effects of climate change. In 2007, City Council approved Resolution 20070215-0232, the Climate Protection Resolution, which set the goal to make **all City of Austin facilities, fleets and operations totally carbon neutral by 2020**. In 2015, Council approved Resolution 20150604-048, which adopted the Austin Community Climate Plan to achieve **net-zero community-wide greenhouse gas emissions by 2050**. This memo provides a progress report on meeting both municipal and community-wide targets for emissions reduction.



A. Municipal Carbon Footprint

The municipal greenhouse gas inventory, or carbon footprint, includes electricity, natural gas, and fuel used for day-to-day operations in City-owned buildings, facilities, and vehicles. The 2016

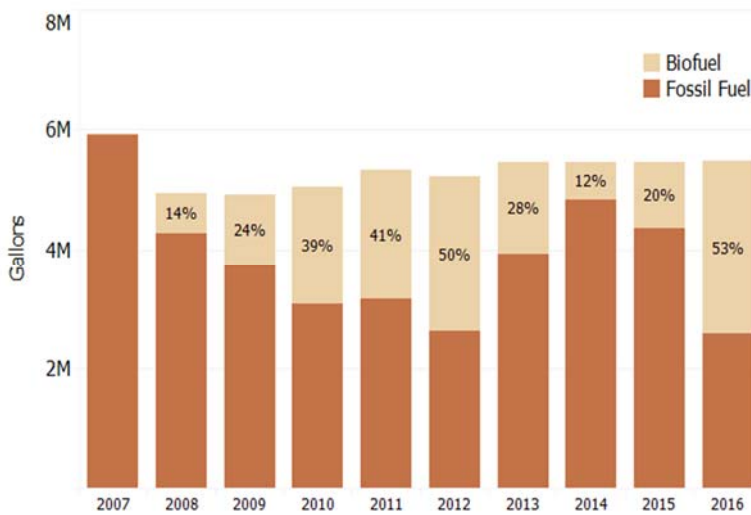


2016 City of Austin Municipal Carbon Footprint
52,656 Metric Tons of Carbon Dioxide-equivalent

carbon footprint for City of Austin operations reached an **all-time low and represents an overall reduction by 75 percent** from the baseline inventory calculated in 2007.

In the past, the municipal carbon footprint was predominately the result of emissions from electricity use. In 2012, the City of Austin became the largest local government in the United States to subscribe to 100 percent renewable energy to power all City-owned buildings and facilities through Austin Energy's GreenChoice™

program, which virtually eliminated emissions from electricity. Other emissions sources from energy include natural gas used for heating and cooking, followed by chilled water used in downtown facilities for air conditioning. Diesel used for backup generators contributes a very small amount of the emissions associated with energy use. In 2016, there was a reduction in natural gas used for heating facilities due to an abnormally low number of cold days.



Emissions from City Vehicle Fleet

Today, the municipal carbon footprint is composed primarily of emissions resulting from the City's vehicle fleet. However, much progress is being made in this area as well. **Vehicle emissions from fossil fuel use dropped nine percent** compared to 2015 levels, due to the increased use of biodiesel and E85 fuels.

We can expect emissions to decline even further by 2020 with plans underway to

increase electrification of the City's vehicle fleet; 330 plug-in electric and battery-electric vehicles will be incorporated into the City fleet over the next three years. These vehicles will be light-duty sedans and most will replace vehicles as they are retired. Electric vehicles operated by the City of Austin will be powered with 100 percent renewable energy from wind and solar sources through Austin Energy's GreenChoice™ program.

Electric vehicle offerings by vehicle manufacturers are expected to increase dramatically in the coming years. As electric vehicles options are offered for SUVs, pick-up trucks, and with larger batteries, the numbers purchased by the City could rise to more than the 330 identified in initial planning efforts due to the low total cost of ownership. Battery-electric vehicles produce zero tailpipe emissions, offer the equivalent of 100 miles per gallon according to the Federal Environmental Protection Agency, and each vehicle is projected to save the City over \$9,000 in fuel costs over its lifetime.

Carbon Offsets

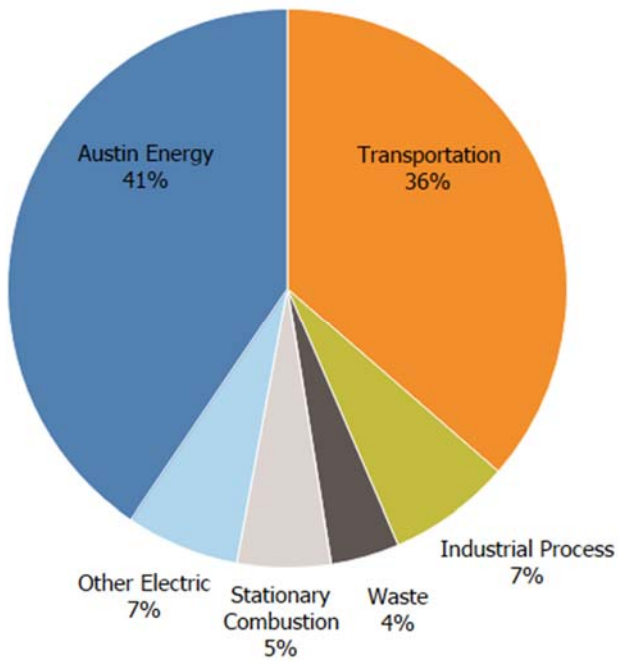
Despite the significant progress in mitigating emissions from municipal operations, **carbon offset purchases will be required to meet the target of municipal net zero carbon emissions by 2020.** Since 2013, offsets have accounted for approximately 5,000 metric tons of emissions reduction annually. The first department to purchase offsets as part of their emissions reduction plan was the Austin Convention Center.

Over the next three years, the cost of purchasing carbon offsets to "neutralize" the remaining emissions will cost a minimum of \$200,000 (40,000 tons at \$5 per ton), to as much as \$900,000 (60,000 tons at \$15 per ton). The Office of Sustainability will continue to explore carbon offset purchases by assessing third-party verified projects that are closest to Austin and provide additional benefits for our community, such as creating jobs that contribute to a stronger economy, and reducing pollutants that can impact the health of our constituents.

B. Community Carbon Footprint

The City of Austin is providing leadership by taking action to reduce the municipal carbon footprint. However, **the municipal greenhouse gas inventory accounts for only 0.4 percent of the total community-wide carbon footprint.**

The Office of Sustainability continues to track Austin's progress toward the goal of net-zero community-wide emissions by 2050, by regularly calculating the community-wide greenhouse gas inventory for Travis County. This is a significant undertaking, which in the past has required hundreds of hours of staff time. Therefore, the numbers were only calculated every three years. With recent improvements in methodology and data collection process improvements, we are pleased to report that the Community Carbon Footprint will now be updated annually, providing more up-to-date analytics for planning purposes.

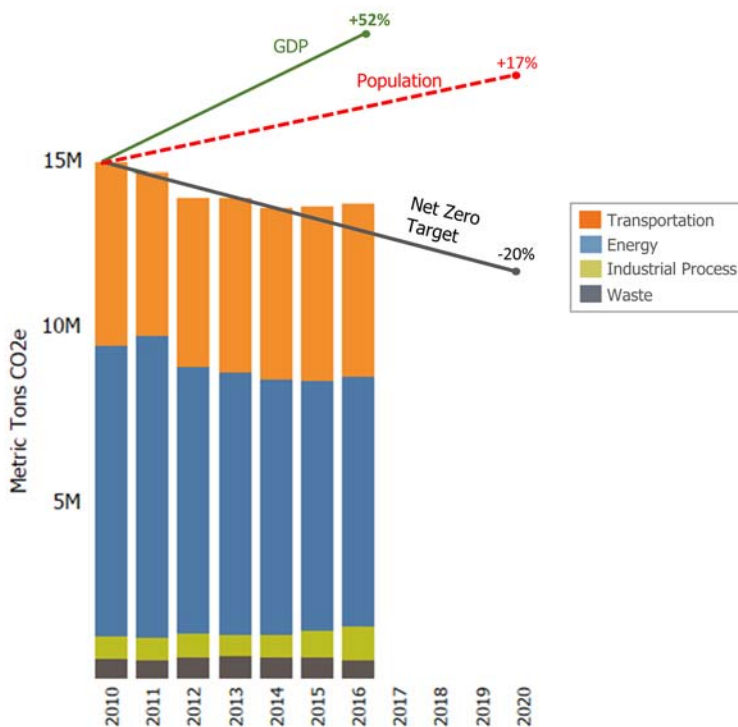


2016 Travis County Carbon Footprint
13.5 Million Metric Tons Carbon Dioxide-equivalent

Our Footprint is Going Down:

Using the most recent available data, the 2016 Travis County greenhouse gas inventory is calculated to be 13.5 million metric tons of carbon dioxide equivalent. **This is a slight decrease from the 2013 community-wide total of 13.7 million metric tons.** The good news is that between 2010 and 2016, the population increased by ten percent with a 52 percent rise in GDP, while emissions decreased by seven percent. This represents a 16 percent reduction in emissions per capita and a 39 percent reduction in emissions per dollar of GDP.

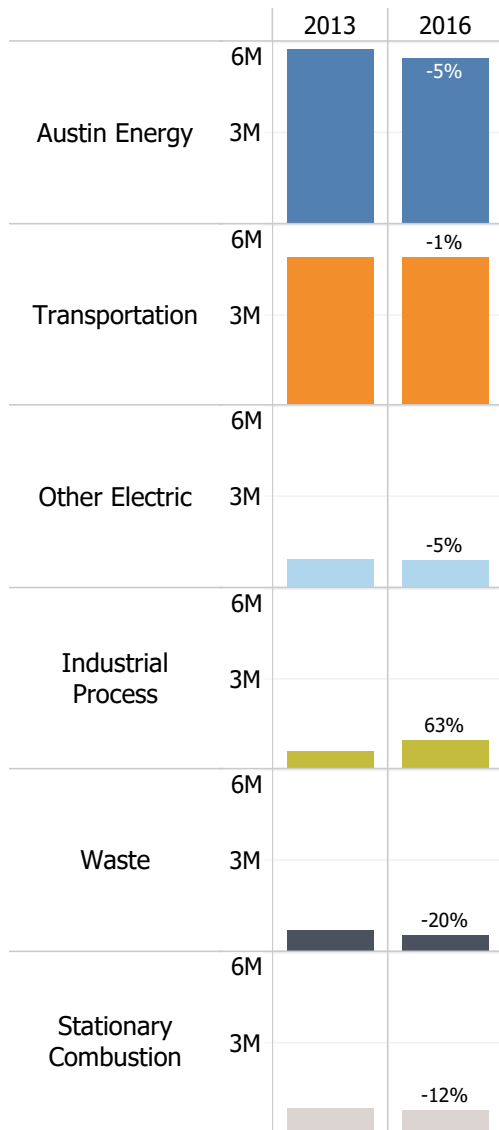
Overall greenhouse gas emissions were slightly reduced despite a rapidly growing population and growing GDP. Strategies to reduce emissions from fossil fuel sources have been successful on a per capita basis.



Emissions Trends with Interim Reduction Targets for Travis County

Progress by Sector:

A comparison of greenhouse gas emissions totals between 2013 and 2016 for each sector is shown in the following table. Emissions have decreased from the following sources since 2013:



Travis County Emissions Sectors
Comparison between 2013 and 2016

- Electricity use from Austin Energy.** While electricity demand has increased, the City of Austin’s commitment to an increasing portfolio of renewables and natural gas resulted in lower emissions.
- Transportation.** A growing population resulted in additional cars on the road. However, emissions standards for vehicles have continued to improve fuel efficiency, which resulted in a slight decrease in overall emissions from transportation sources.
- Electricity use from other regional utilities.** Electricity demand for other regional utilities increased four percent. Despite this increase, emissions are down five percent, mainly due to ERCOT’s switch from coal to natural gas fueling.
- Waste management.** Private landfill operators have reduced methane emissions, likely from improved emissions capture and destruction.
- Stationary combustion.** Warmer winter weather in 2016 resulted in less natural gas usage and a reduction in emissions.

Emissions in one category increased:

- Industrial processes.** While emissions in this category have increased since 2013, they still account for only six percent of the total greenhouse gas inventory for Travis County. The increase is due to fluctuations in production.

Next Steps

The Office of Sustainability continues to report progress on implementation of the Community Climate Plan to the Joint Sustainability Committee and other pertinent Boards and Commissions. The Office of Sustainability, Austin Energy, Austin Transportation Department, Development Services Department, and Austin Resource Recovery currently lead in implementing specific actions identified in the Austin Community Climate Plan related to emissions reduction. **Current projections based on these activities suggest that Austin will meet the interim emissions reduction target of 11.3 million metric tons of carbon dioxide equivalent by 2020.** This is largely due to the fact that emissions from the energy sector will continue to decline as the Austin Energy Resource, Generation, and Climate Protection Plan is implemented, which includes the goal of 65 percent renewable energy by 2027. Strategies to reduce emissions from transportation sources and associated land use decisions will be increasingly important to achieve Austin's goal of net-zero emissions by 2050.

In the coming months, the Office of Sustainability will provide a Climate Resilience Action Plan for City of Austin Assets and Operations, as well as an update on the Carbon Impact Statement Pilot. In the meantime, please contact either of us if you have any questions.

CC: Spencer Cronk, City Manager
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Assistant City Managers