

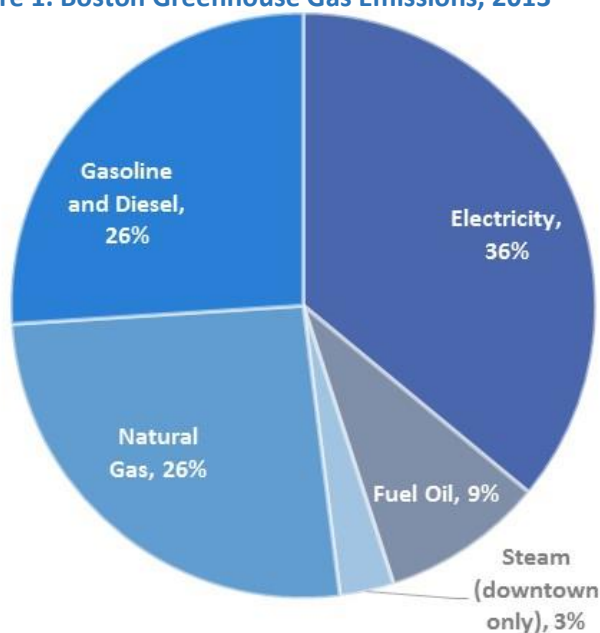
Boston Community Choice Energy and Greenhouse Gas Emissions

The City of Boston is considering adopting Community Choice Energy (CCE). This would allow residents and businesses to procure electricity from cleaner sources than are currently provided in their utility's basic service. How would CCE impact the city's greenhouse gas footprint? How would the program contribute to the city's climate goals? This policy brief describes the greenhouse gas emission reductions expected to result from Boston's new CCE program.

CCE reduces Boston's greenhouse gas footprint by increasing the use of cleaner sources of electricity

CCE would result in investment in new renewables and a cleaner electric grid, while reducing Boston's greenhouse gas emissions. Boston was responsible for about 6.5 million tons of carbon dioxide (CO₂) emissions in 2015, mostly from electricity, transportation, and buildings. Electricity alone was responsible for 36 percent of the City's CO₂ emissions (see Figure 1)—these emissions are primarily from natural gas generation on New England's regional grid. While the use of renewable energy will increase due to policies like the Massachusetts Renewable Portfolio Standard and Clean Energy Standard, clean sources are still a relatively small part of New England's electric supply.

Figure 1. Boston Greenhouse Gas Emissions, 2013



The City's CCE authorization calls for Boston to procure at least 5 percent renewable energy on top of the 13 percent that is currently required by the Massachusetts' Renewable Portfolio Standard. Customers would be automatically enrolled in the program but could choose to "opt out" if they wished. We estimate that if most residential and commercial customers were to stay with the program, it would generate 281 gigawatt-hours of additional renewable energy in New England each year.¹ By adding these resources onto the grid, carbon-emitting natural gas power plants would run less often. As a result, Boston's CCE would reduce CO₂ emissions by 145,000 tons each year—about 6 percent of the City's total CO₂ emissions from electricity. This reduction is equivalent to removing more than 28,200 cars from Boston's streets and highways (see Figure 1). If Boston adopts a higher share of renewables for its CCE program, CO₂ emissions would be reduced proportionally—e.g. 10 percent additional renewables would result in approximately double the emission reductions of a 5 percent CCE.

The greenhouse gas emissions reduction from Boston's CCE surpasses seven of the nine current emission reduction policies and programs listed in Boston's latest Community Greenhouse Gas Inventory (see Figure 2).

CCE helps Boston meet its climate goals

Participating in a CCE program allows Boston's households and businesses to contribute to helping the City lower its greenhouse gas emissions and take a step toward achieving its climate goals. The City of Boston has pledged to be "carbon neutral" by 2050 and is working toward an interim target of a 25 percent reduction in its

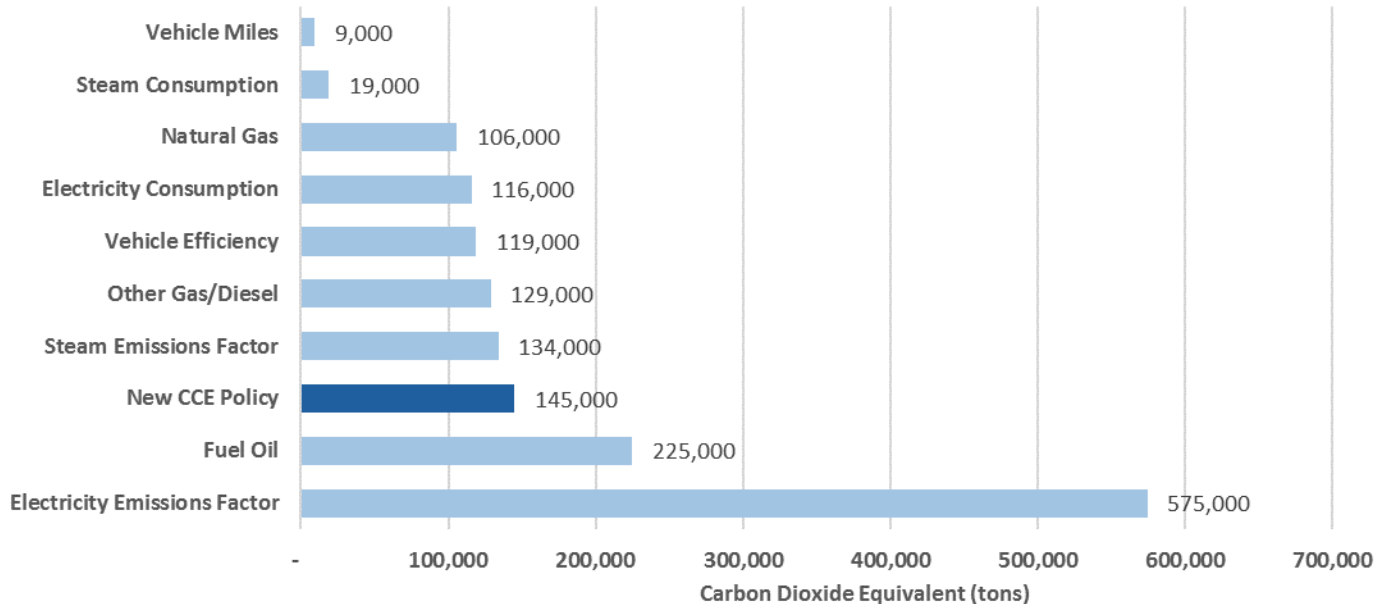
Tyler Comings and Elizabeth A. Stanton, PhD

March 2018

greenhouse gas emissions by 2020 and a 50 percent reduction by 2030. Boston has backed policies that reduce the use of fossil fuels, such as energy efficiency, but reaching carbon neutrality will require a suite of new programs and policies—in addition to the

Commonwealth’s renewable and clean energy policies. Boston CCE makes a valuable contribution to Massachusetts’ climate targets that builds upon existing state policies, and can be one part of the city’s own efforts to meet its climate goals.

Figure 2. Boston Greenhouse Gas Emission Reduction Policies and Programs



Notes

¹ This assumes that electricity sales and CO₂ emissions are flat from 2015 to 2018. Total usage for residential and commercial customers in Boston was 6,238 GWh in 2015, according to Mass Save. We also assumed that Boston adopts 5 percent additional Class I renewable energy above the state requirement. Based on survey responses from towns that have adopted CCE, we assumed that 90 percent of customers would participate in the program (i.e. 10 percent would opt out).

Works Cited

Applied Economics Clinic. October 2017. An Analysis of Community Choice Energy for Boston. https://static1.squarespace.com/static/5936d98f6a4963bcd1ed94d3/t/59d385712aeba5aac1ab5c8a/1507034485942/AEC_Boston_CCE_Full_Report_10_03_17.pdf.

Boston City Council, Docket 1063. August 2017. An Order Authorizing the City of Boston to Adopt Community Choice Energy. https://www.boston.gov/sites/default/files/document-file-09-2017/docket_1063_0.pdf

City of Boston, Community Greenhouse Gas Inventory, 2005-2013. https://www.cityofboston.gov/images_documents/Community%20GHG%20Inventory%202013_tcm3-49977.pdf

Imagine Boston 2030 Plan.

<https://analytics.boston.gov/app/imagine-boston>

ISO-New England. 2015 Electric Generator Air Emissions Report.

https://www.iso-ne.com/static-assets/documents/2017/01/2015_emissions_report.pdf

ISO-New England. Resource Mix. <https://www.iso-ne.com/about/key-stats/resource-mix>

ISO New England. 2016 Regional Electricity Outlook.

https://www.iso-ne.com/static-assets/documents/2016/03/2016_reo.pdf.

Mass Save data for 2015:

<http://www.masssavedata.com/Public/GeographicSavings?view=T>

U.S. EPA. Greenhouse Gas Emissions from a Typical Passenger Vehicle. <https://www.epa.gov/greenvehicles/greenhouse-gas-emissions-typical-passenger-vehicle>

Using Wind Energy to Power the City. July 2016.

<https://www.boston.gov/departments/environment/using-wind-energy-power-city>