



Energy Use in Cambridge

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Presentation to
Cambridge Net Zero Task Force
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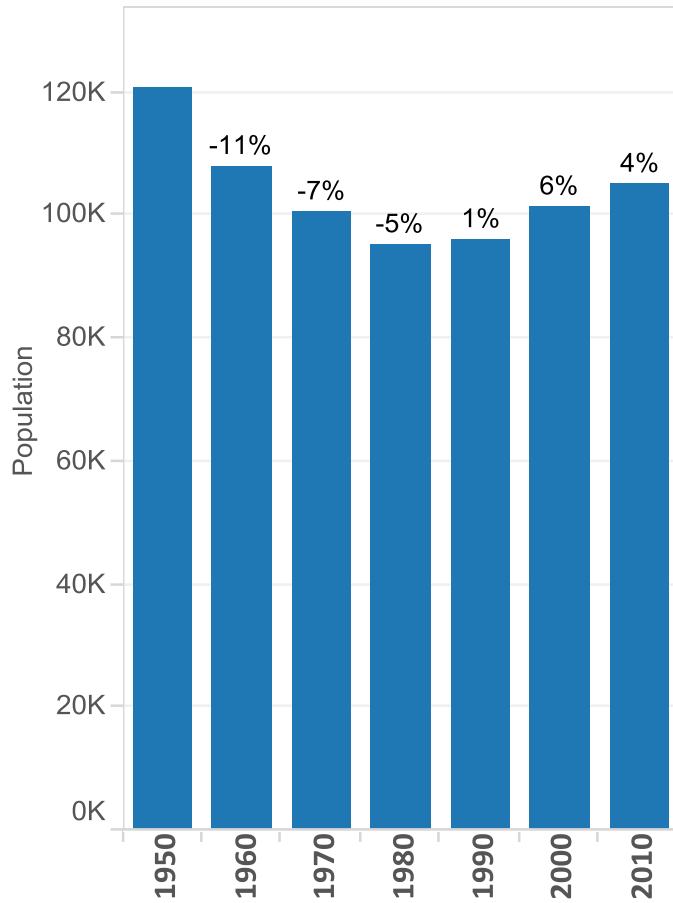
Objectives

- Preview Building Energy Primer
- Build common understanding of Cambridge energy use and building stock
- Identify key issues

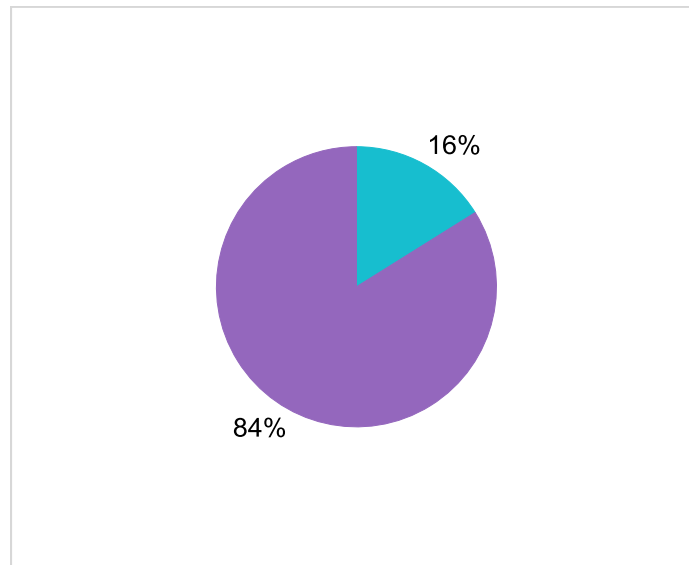


Cambridge population

Population 1950 - 2010



Population by Housing Type



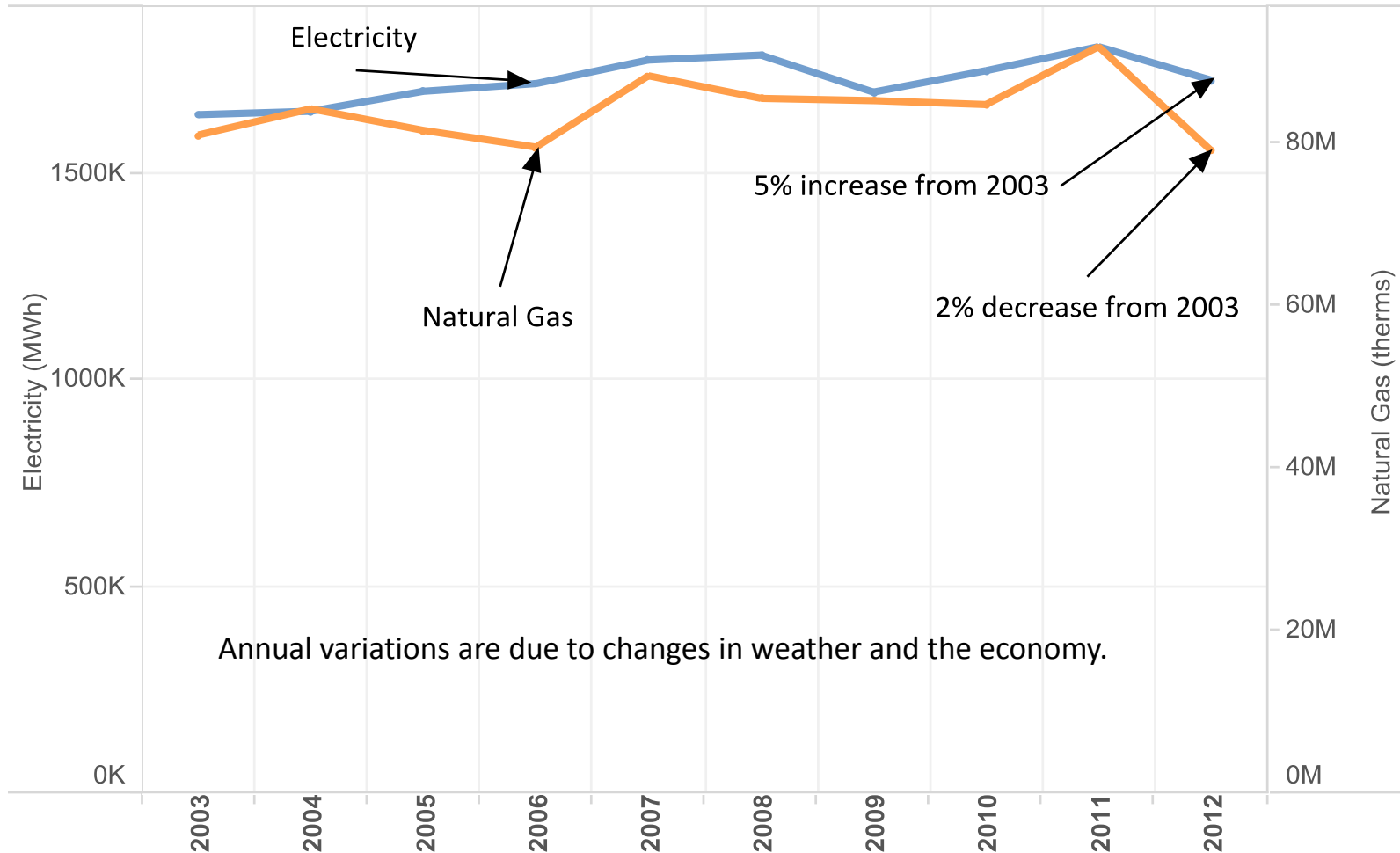
Type

- Group Quarters
- Household



Electricity and natural gas use have been relatively flat over the last decade.

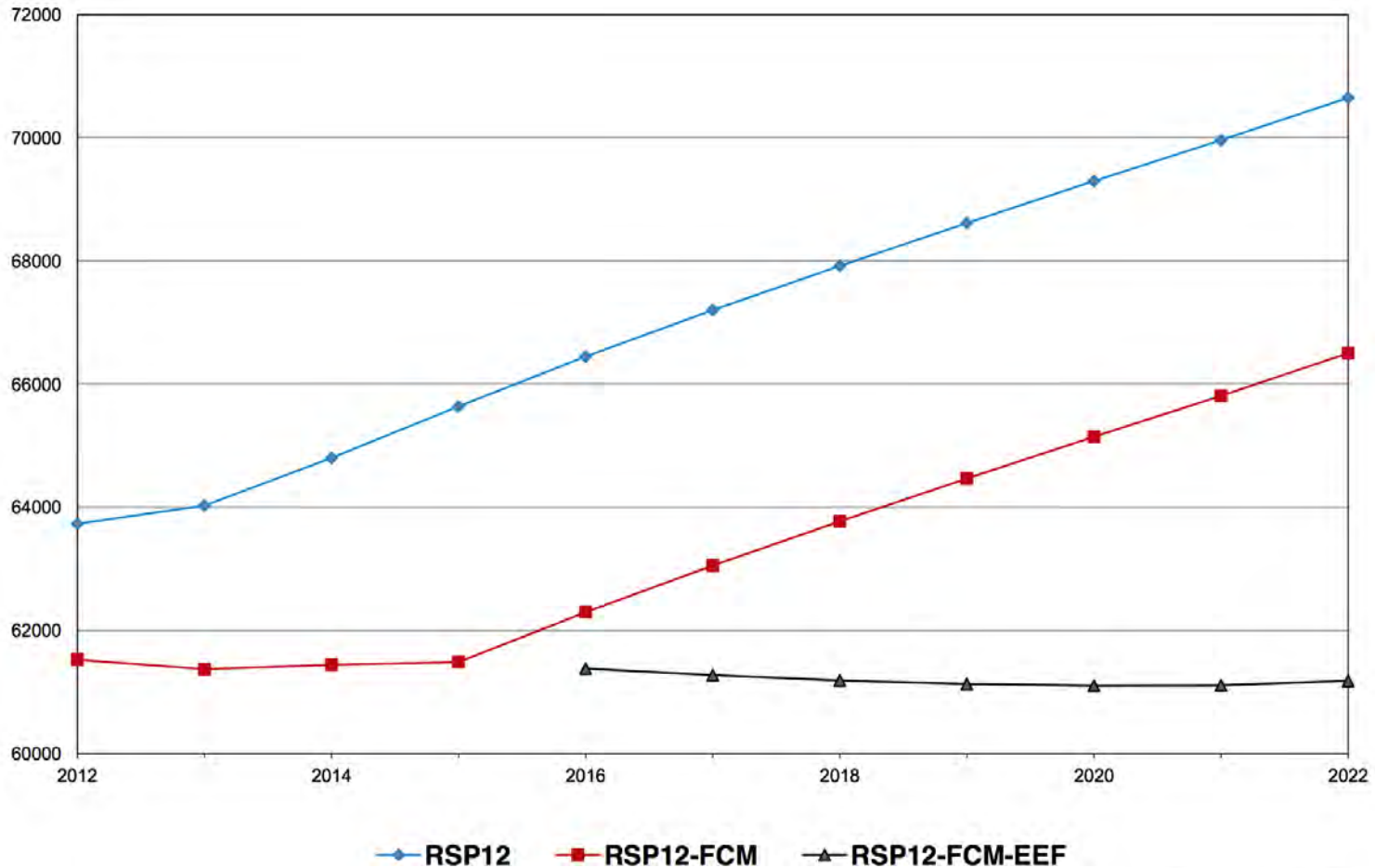
Electricity and Gas Use





Efficiency programs are offsetting load growth.

ISO New England Energy Forecast for Massachusetts

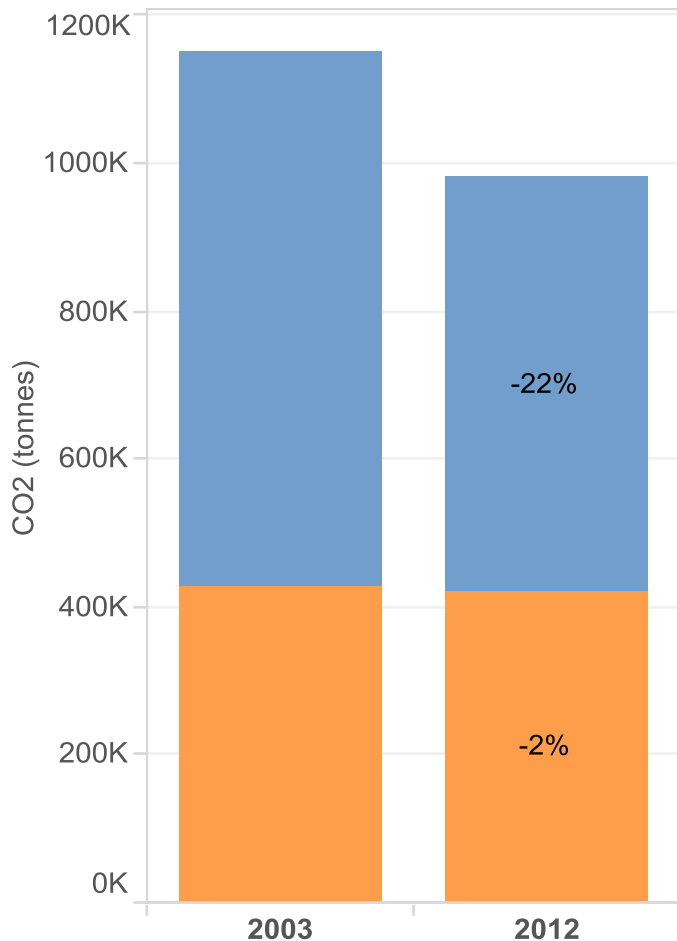


Source: ISO New England, *Final 2013 Energy Efficiency Forecast 2016 – 2022*,
http://www.iso-ne.com/committees/comm_wkgrps/otr/engy_effncy_frctst/2013frctst/index.html

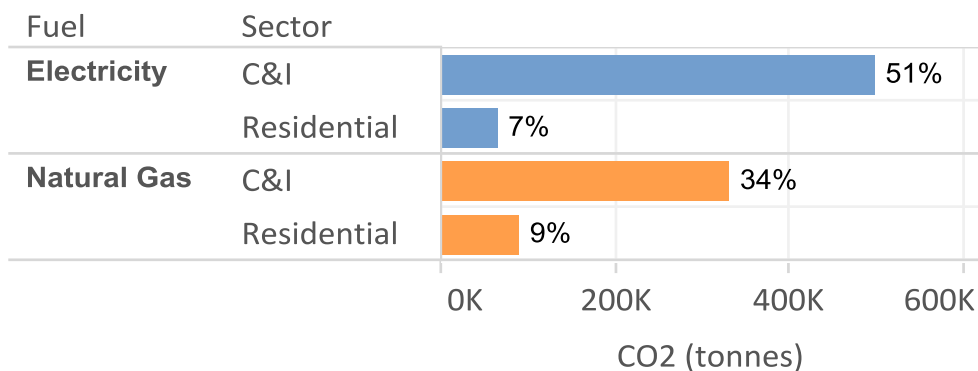


85% of CO2 emissions come from C&I customers. Although use has been flat, emissions have fallen . . .

Change in CO2 Emissions 2003 - 2012



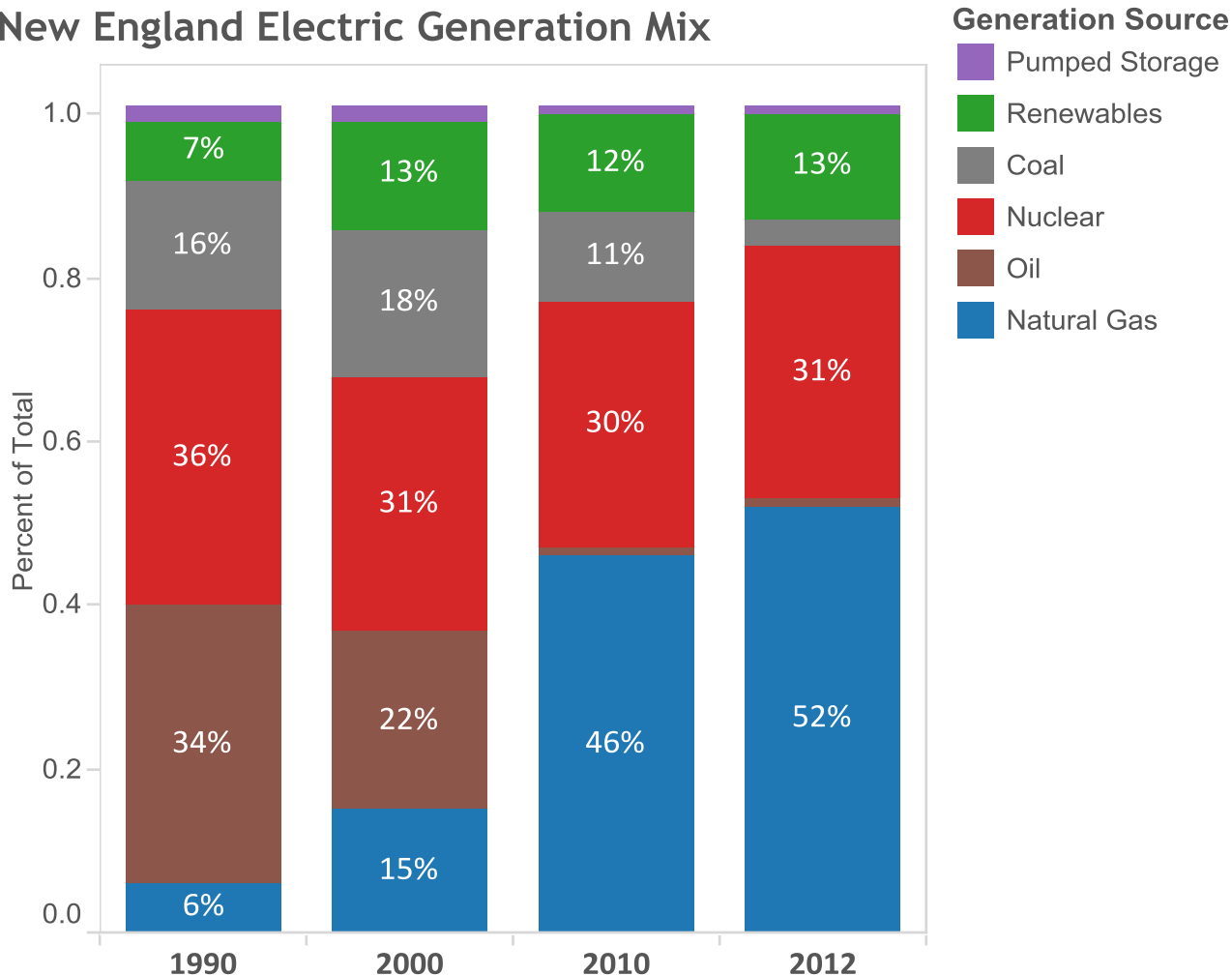
CO2 Emissions by Fuel and Sector - 2012





... because the electric generation fleet has gotten cleaner.

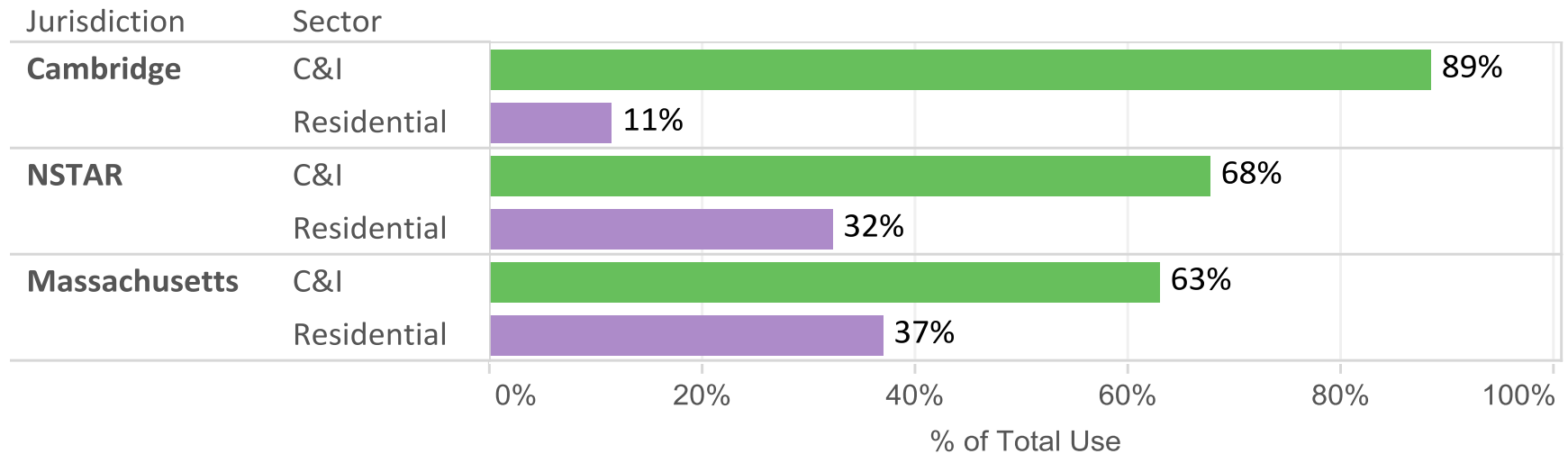
New England Electric Generation Mix





Electricity use in Cambridge is heavily weighted towards C&I.

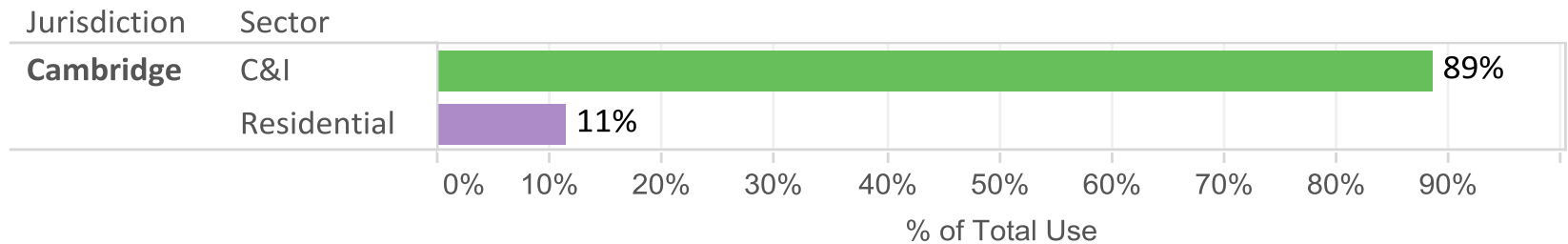
Electricity Use by Customer Sector





Even within C&I, electricity use in Cambridge is concentrated in a small number of accounts.

Electricity Use by Customer Sector



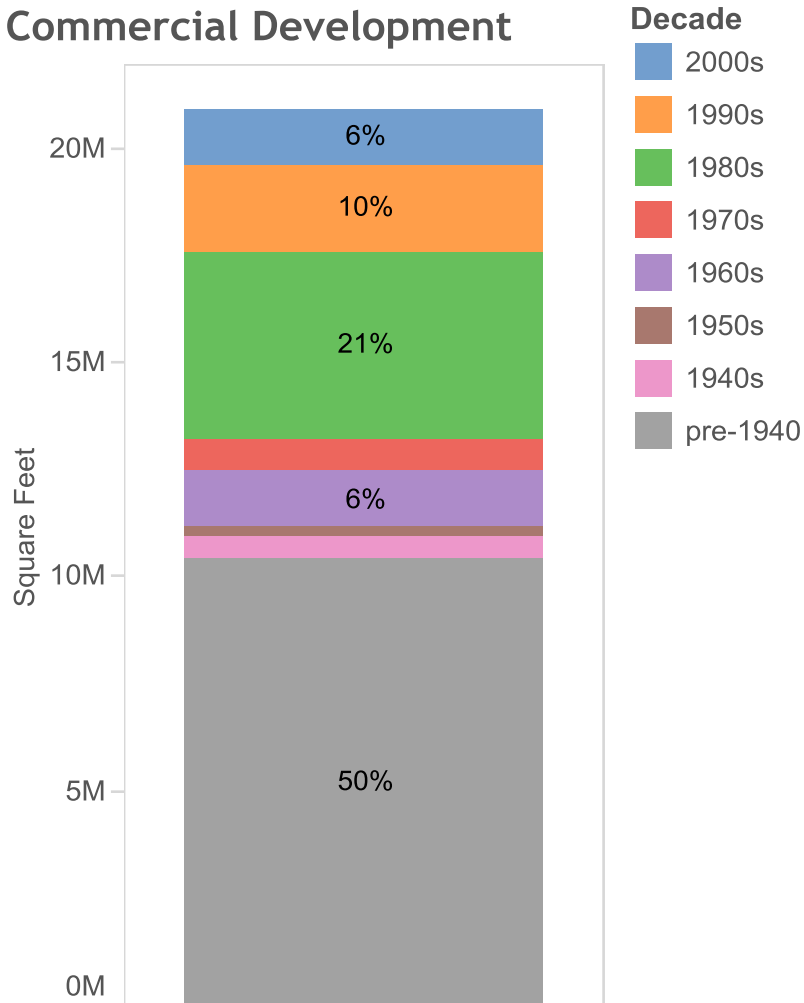
Electricity Use by Customer Category

Customer Sector	Customer Category	% of Total kWh	Accounts
C&I	Large C&I	40%	90
	Medium C&I	33%	421
	Small C&I	13%	2,156
	Very Small C&I	2%	5,108
Residential	Residential	11%	39,669



50% of commercial space in Cambridge was built before 1940.

Commercial Development





Key takeaways

- Energy use in Cambridge has been nearly flat over the last decade.
- Keeping total use flat takes significant effort; reducing total use will require more.
- Annual CO2 emissions have fallen as the electric generation fleet has gotten cleaner. However, that trend is likely to slow considerably.
- Energy use in Cambridge is highly concentrated in a small number of C&I customers.
- The commercial building stock is mature. Energy reductions will need to come from existing buildings and switching to cleaner fuels.