



Sunnyvale

Climate Action Playbook Annual Progress Update

November 18, 2021

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Climate Action Playbook Overview



Sunnyvale's Adopted Targets

56% below
1990 by 2030

80% below
1990 by 2050
(carbon neutrality)

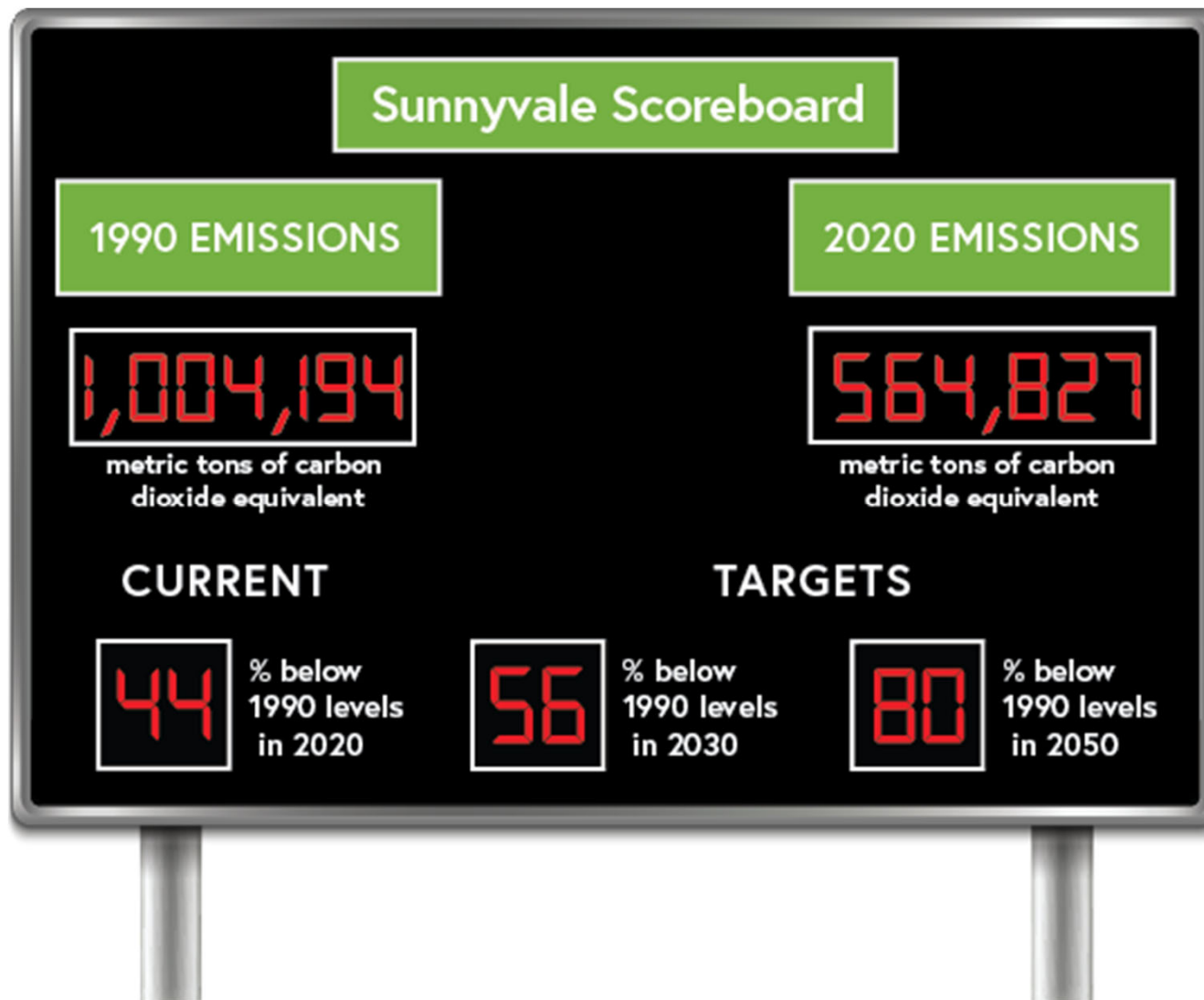
- Includes Game Plan of 46 “Next Moves”(actions) for FY20-FY23.
- Annual reporting of GHG emissions and Game Plan implementation.



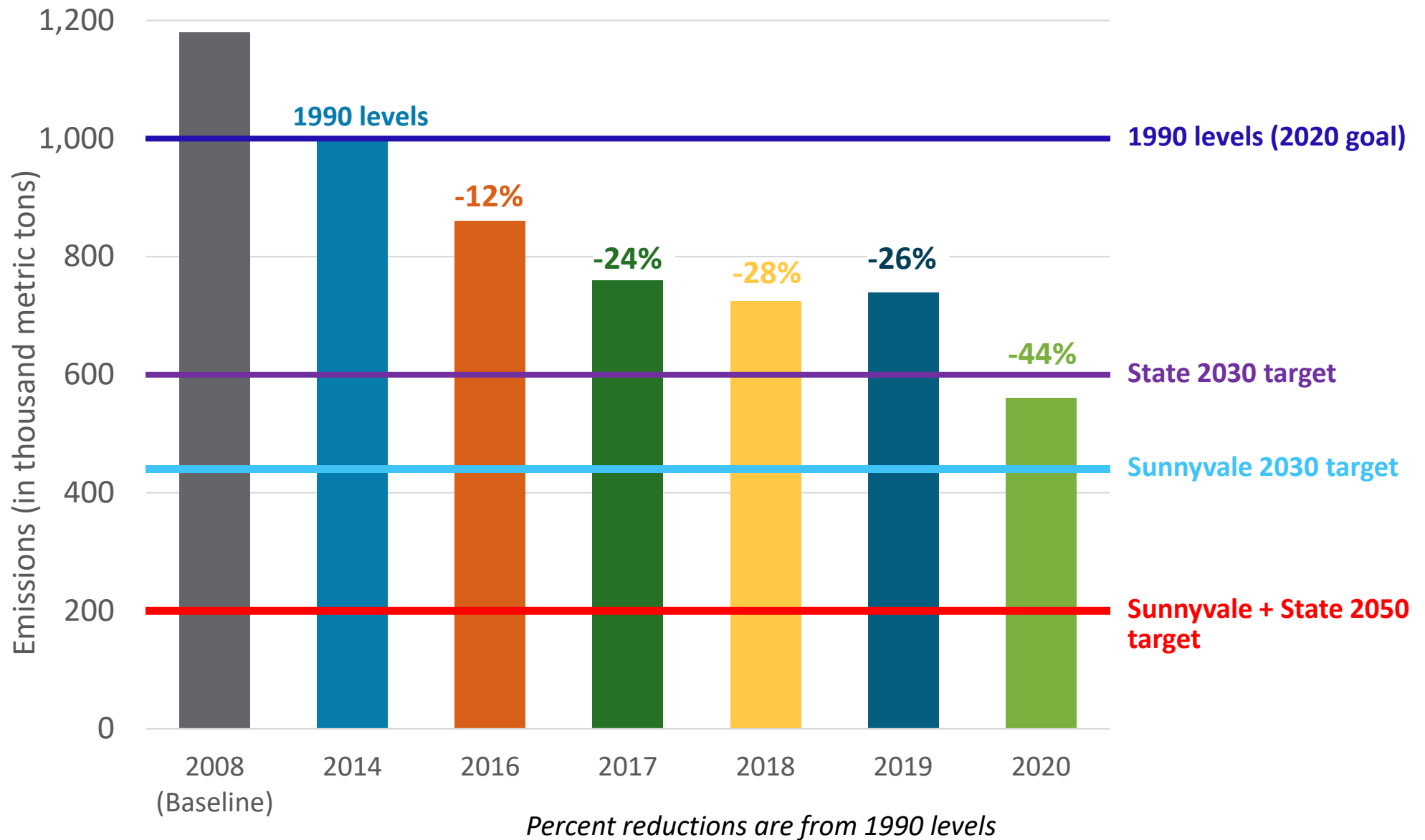
Sunnyvale

2020 Annual Greenhouse Gas Inventory

2020 Climate Action Score



Total Emissions by Year



Demographics

Changes from 2008 levels



Population
+13%



Jobs
+18%

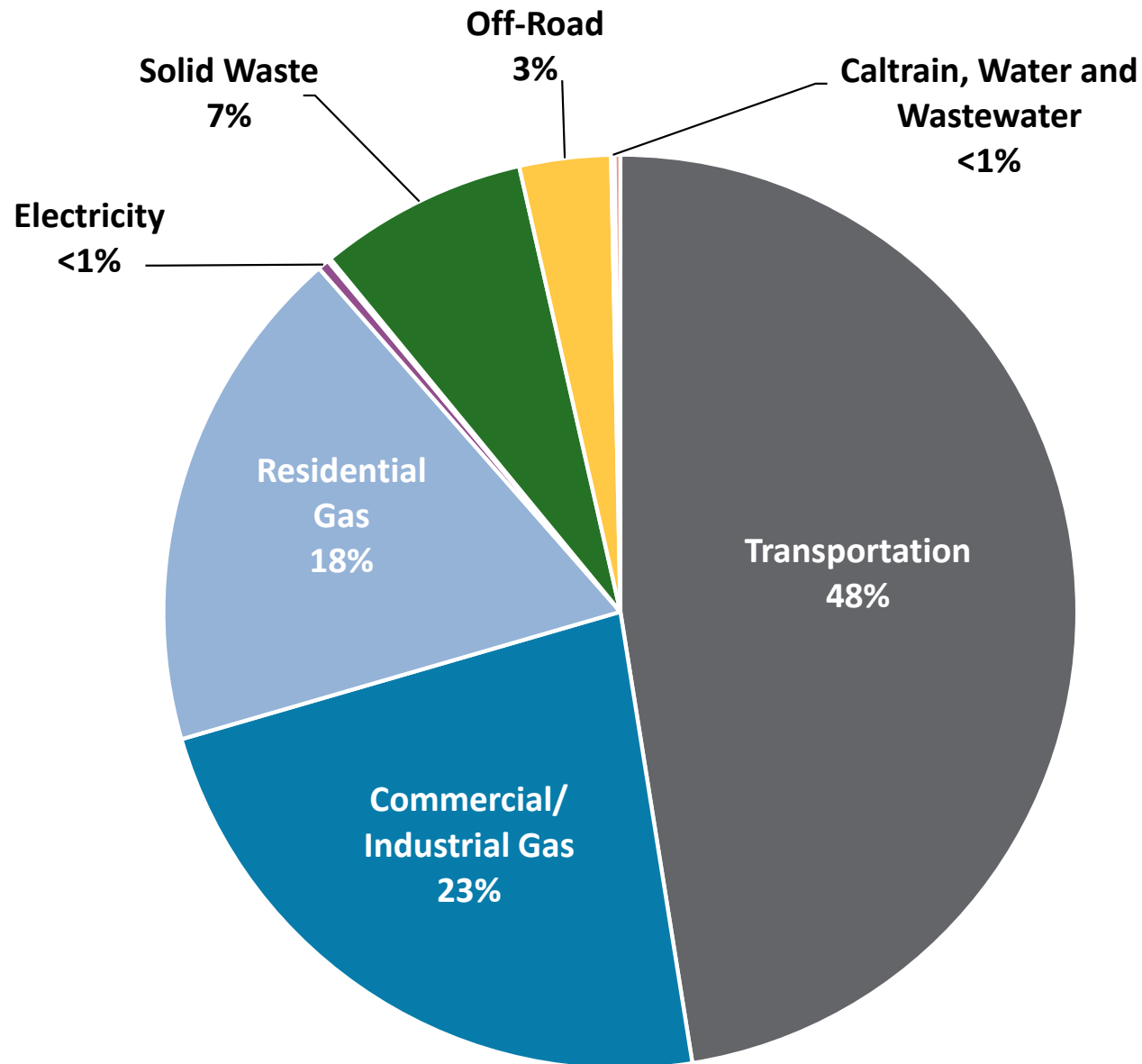


Housing
+8.8%

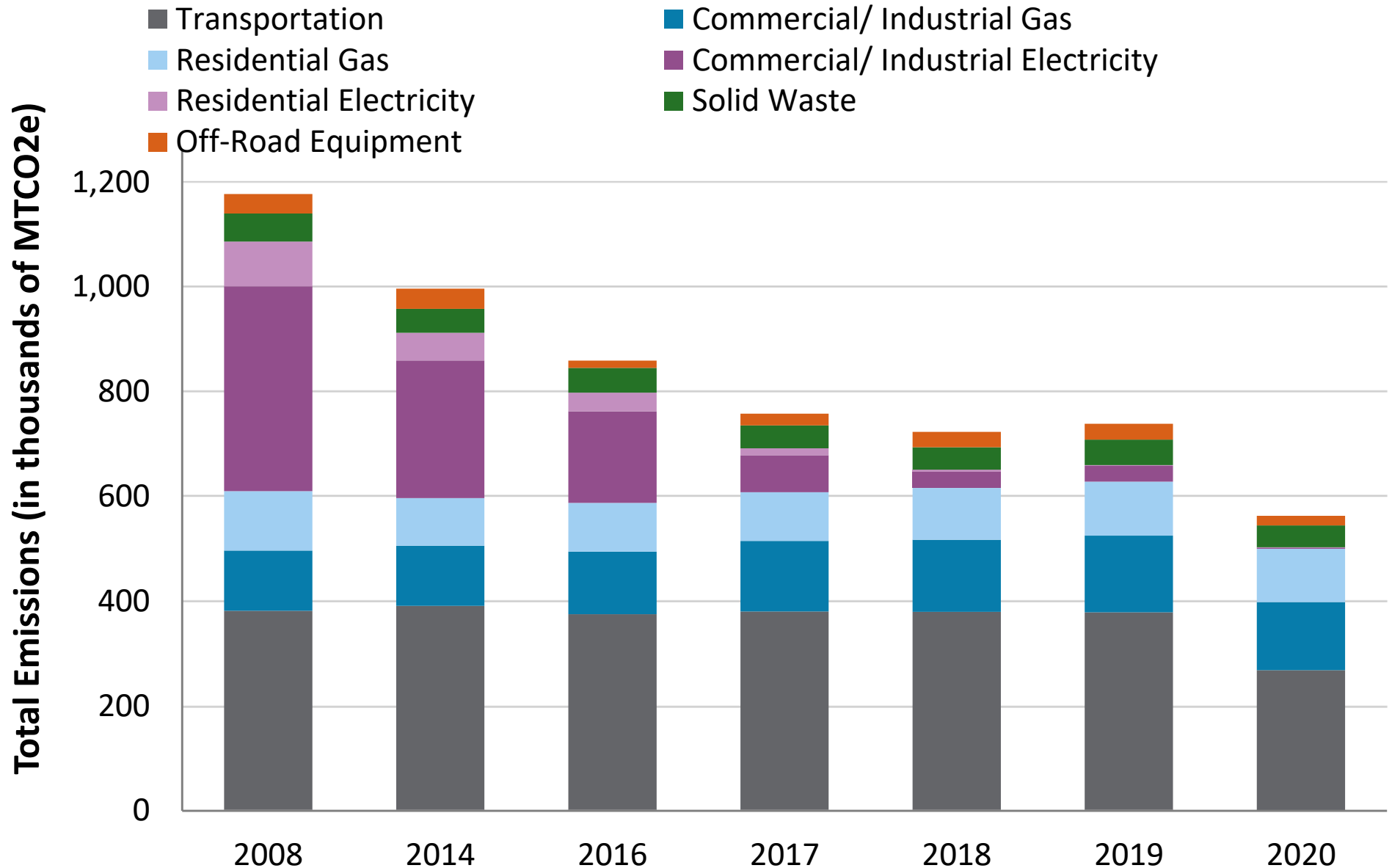


Commercial Space
+10%

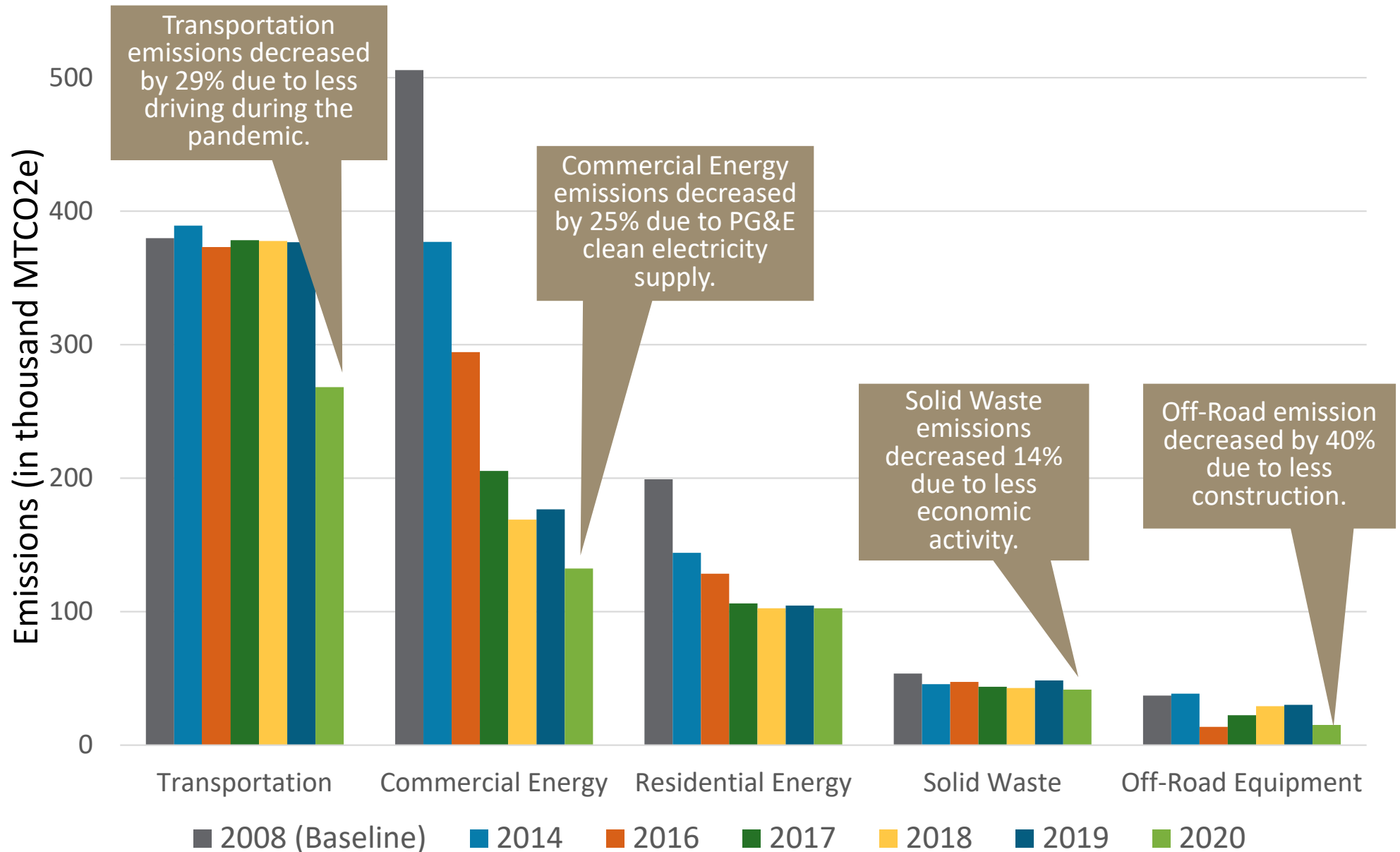
2020 Emissions by Sector



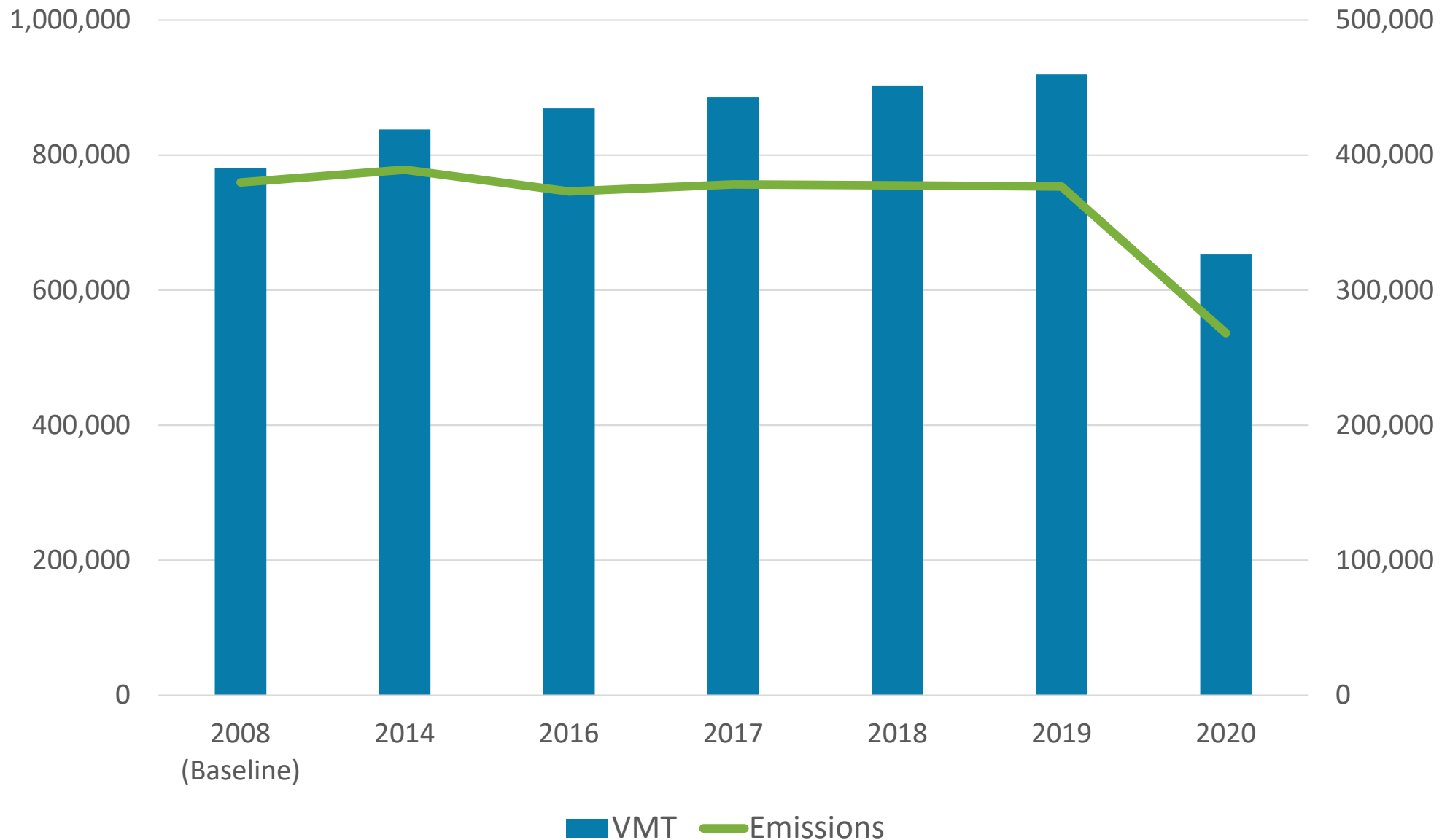
2020 Emissions by Sector



Emissions from 2008-2020 by Sector



Transportation Emission Trends

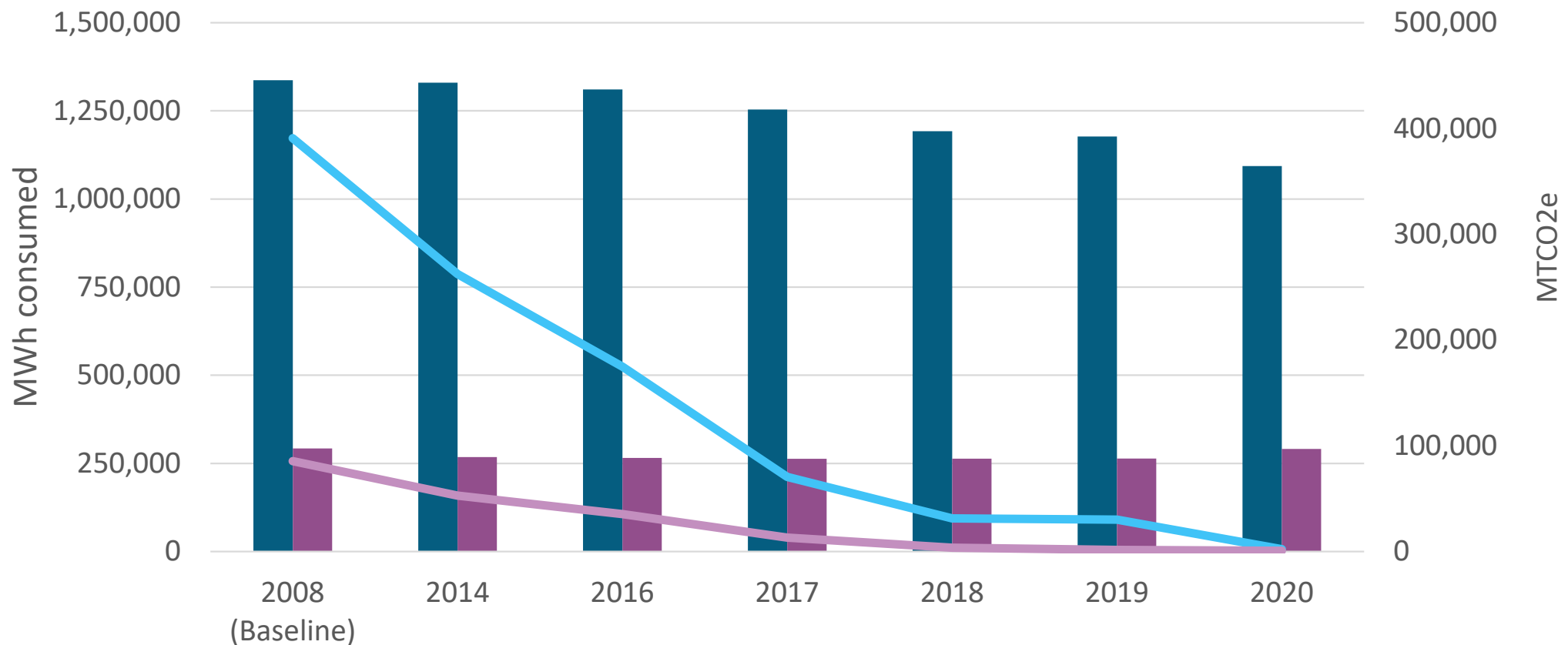


Electricity Sector Emission Trends

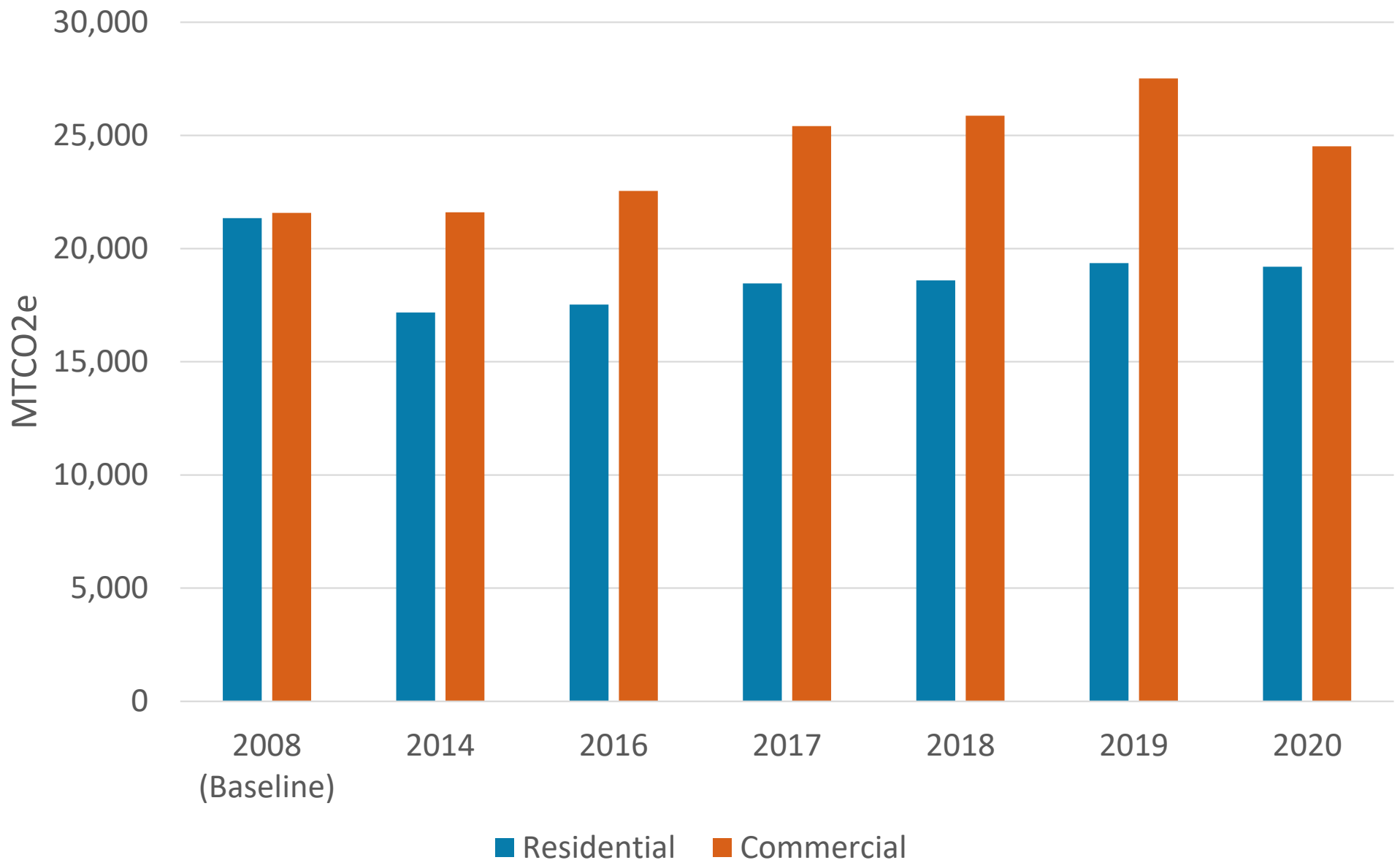
■ Commercial MWh consumed
■ Residential MWh consumed
— Commercial emissions
— Residential emissions

Emissions Factors (lb CO₂/MWh)

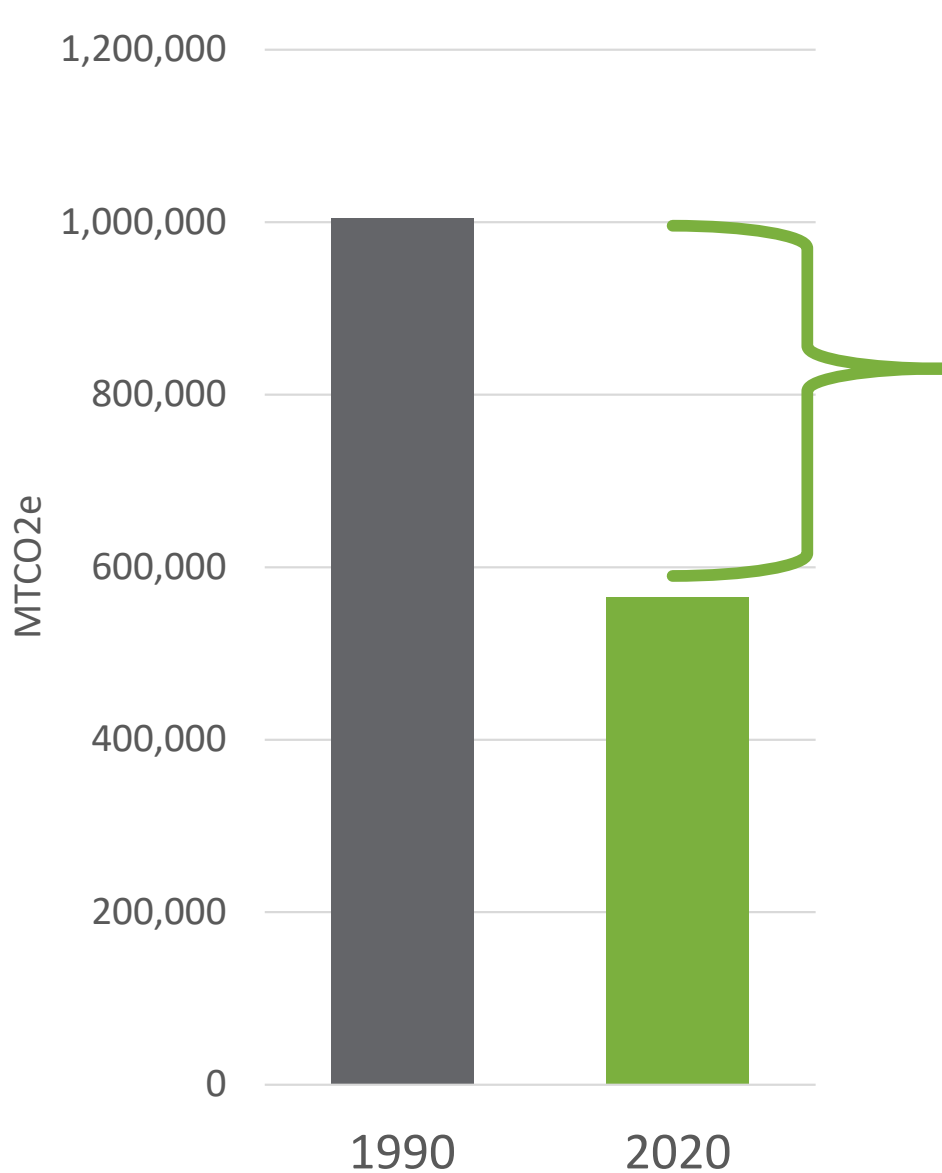
	2019	2020
SVCE	2.34	5.26
PG&E	206	2.68



Natural Gas Sector Emission Trends



Key Emissions Drivers Over Time



44% Decrease
from 1990-2020

	Breakdown of Percent Points
Electricity	-40.0
Transportation	-5.4
Off-Road	-1.3
Solid Waste	-0.38
Natural Gas	+3.8

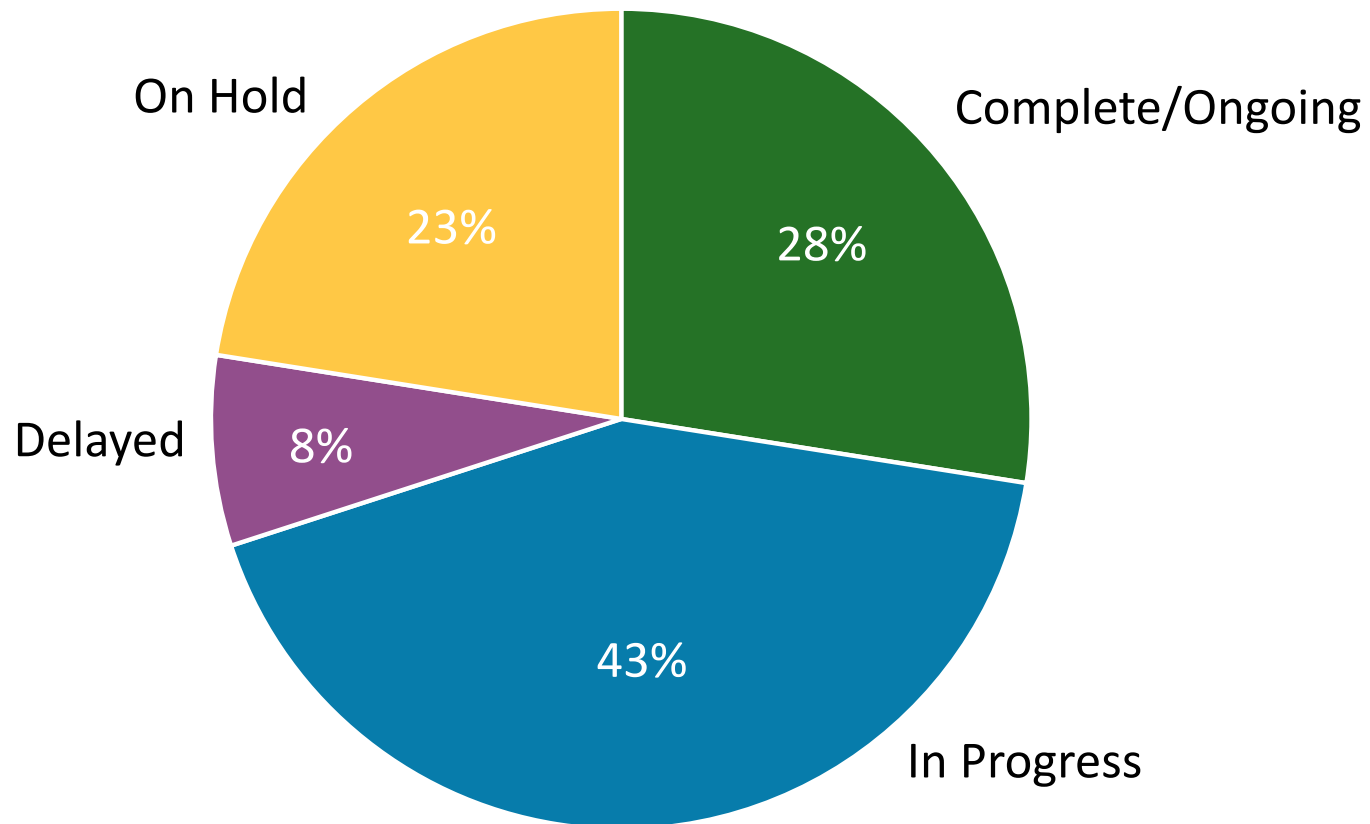


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CAP Implementation Progress Updates

Progress Updates for Scheduled Moves

40 Moves Scheduled for FY 20/21



Progress Updates for Scheduled Moves

Key Accomplishments

Strategy 1

- Move 1.C: Reach Codes require solar on new non-residential buildings.

Strategy 2

- Move 2.C: SVCE FutureFit Heat Pump Rebate program: 30% of overall participation was in Sunnyvale. ESD and Library Services launched the Cool Cooktops program.
- Move 2.D: New Buildings: New City Hall LEED Platinum with solar + storage.
- Move 2.E: Reach Codes were approved late 2020 and implemented starting Jan 2021, requiring all-electric new construction.

Progress Updates for Scheduled Moves

Key Accomplishments

Strategy 3

- Move 3.A: New Housing Strategy adopted by City Council in October 2020.
- Move 3.E: Active Transportation Plan adopted by City Council in August 2020.

Strategy 4

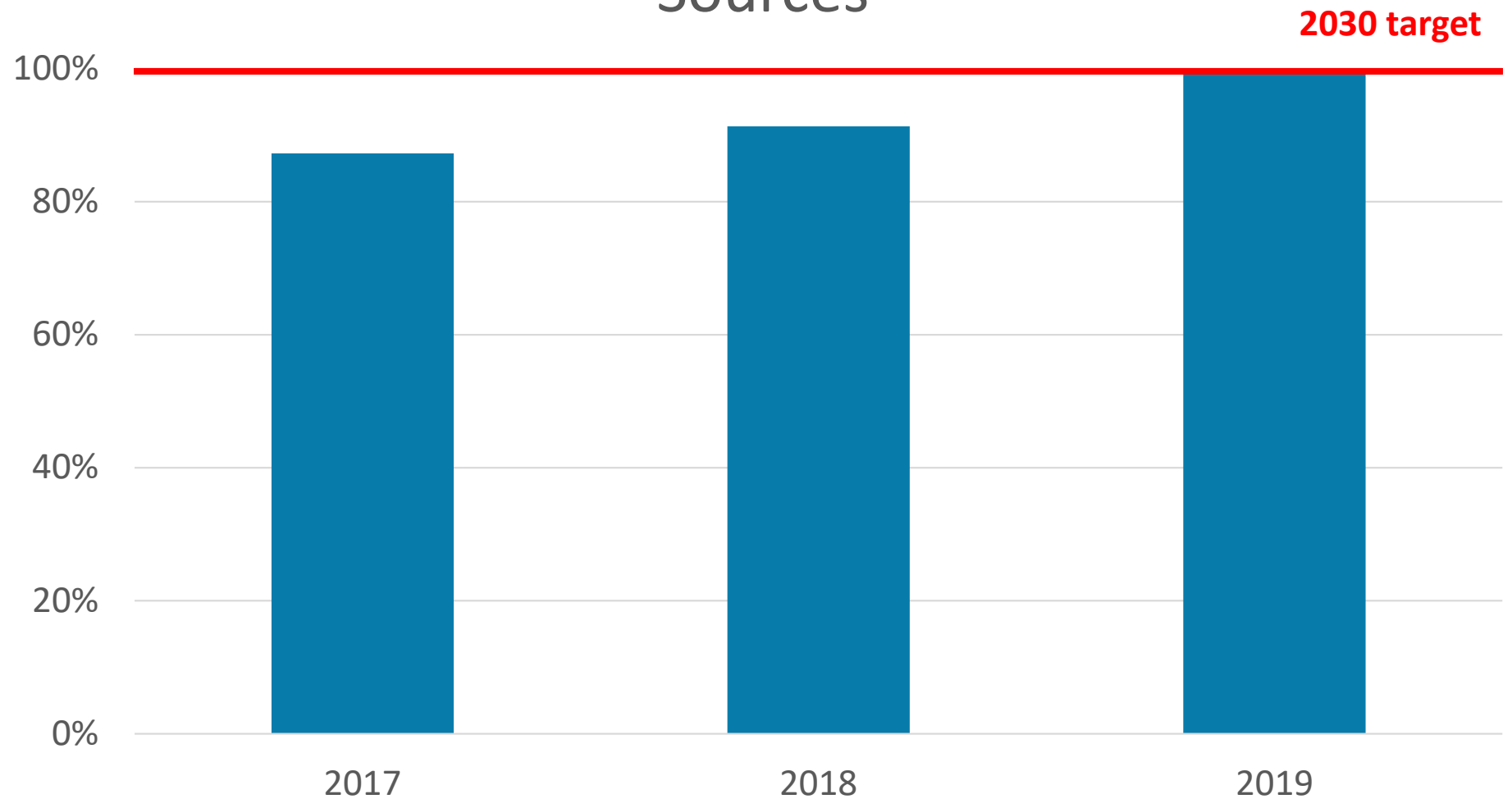
- Move 4.A: City staff conducted surveys and outreach for improving and expanding the FoodCycle program.
- Move 4.B: City entered into new franchise agreement.

Strategy 5

- Move 5.B: SVCE launched eHUB.
- Move 5.G: Launched Climate Action Scoreboard and annual reporting process.

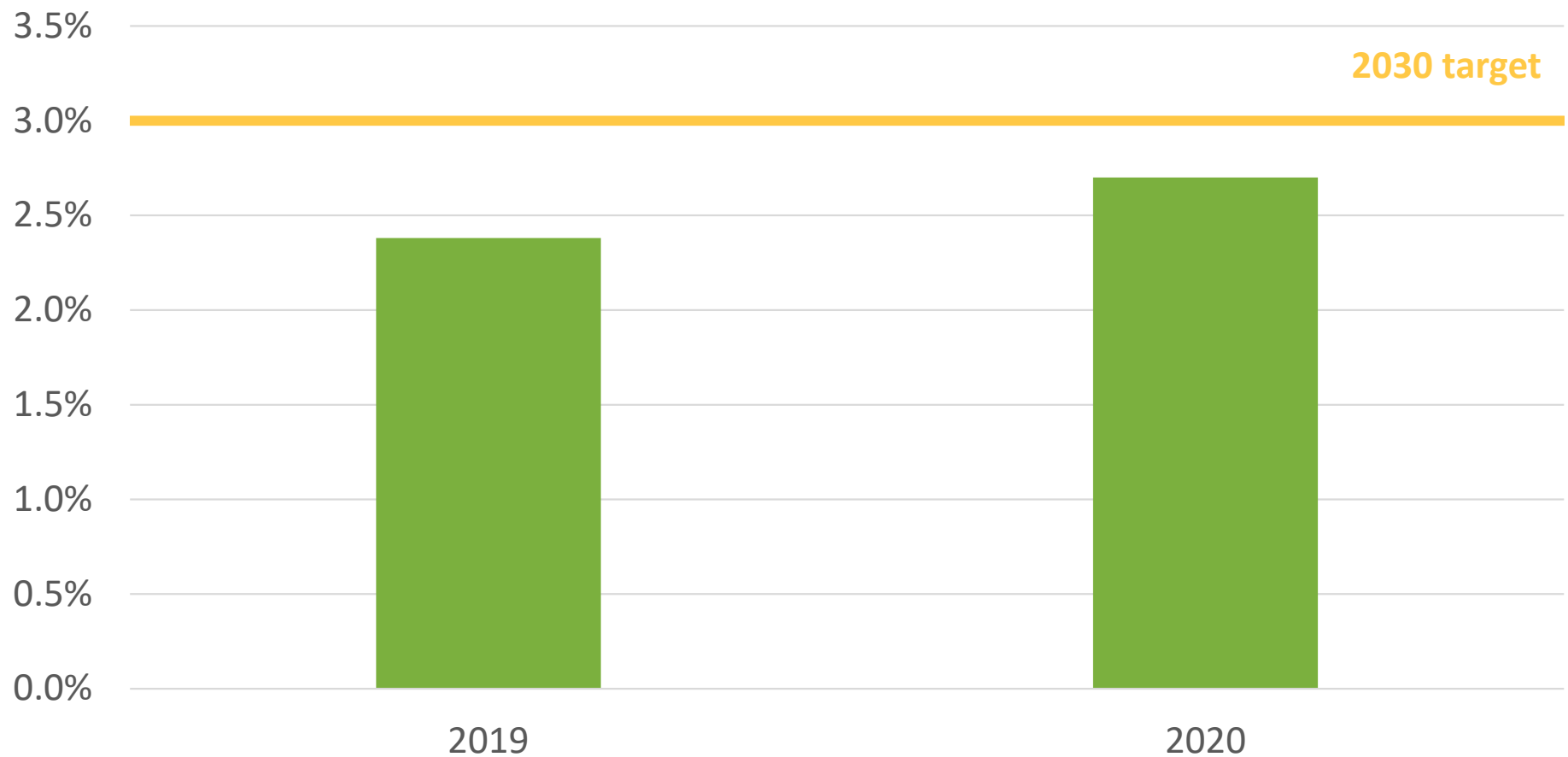
CAP Metric #1

Percent of Electricity from Carbon Free Sources



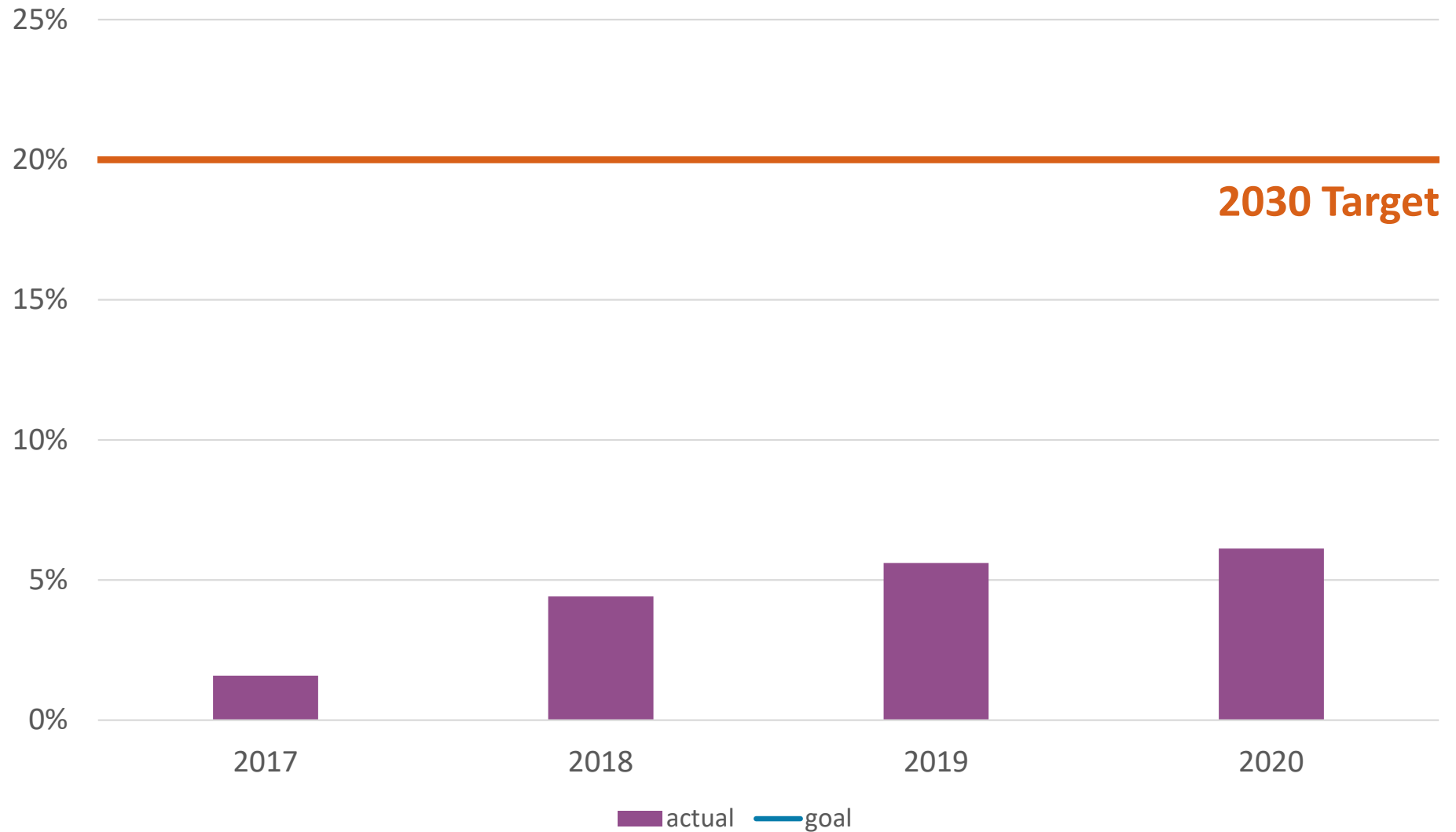
CAP Metric #2

Percent of Sunnyvale Electricity Load Potentially Supplied by Local Solar



CAP Metric #8

Percent of Zero Emission Vehicles in Sunnyvale



CLIMATE ACTION SCOREBOARD

A NEW WAY TO TRACK CLIMATE ACTION EFFORTS AND PROGRESS IN SUNNYVALE



PROMOTING CLEAN
ELECTRICITY



DECARBONIZING
BUILDINGS



DECARBONIZING
TRANSPORTATION &
SUSTAINABLE LAND USE



MANAGING RESOURCES
SUSTAINABLY



EMPOWERING
OUR COMMUNITY



ADAPTING TO A
CHANGING CLIMATE

SunnyvaleClimateAction.org



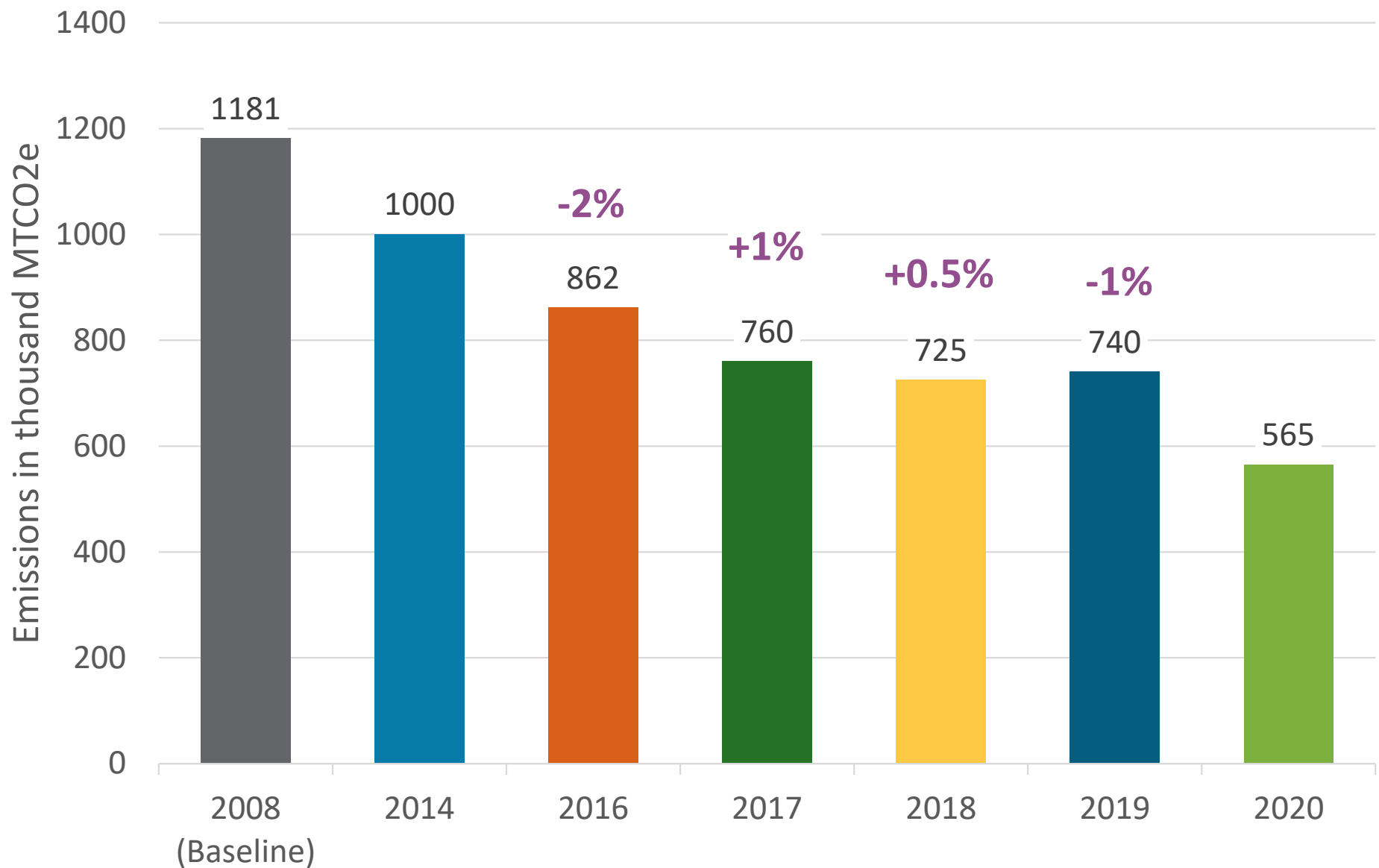
Thank you!

Questions?

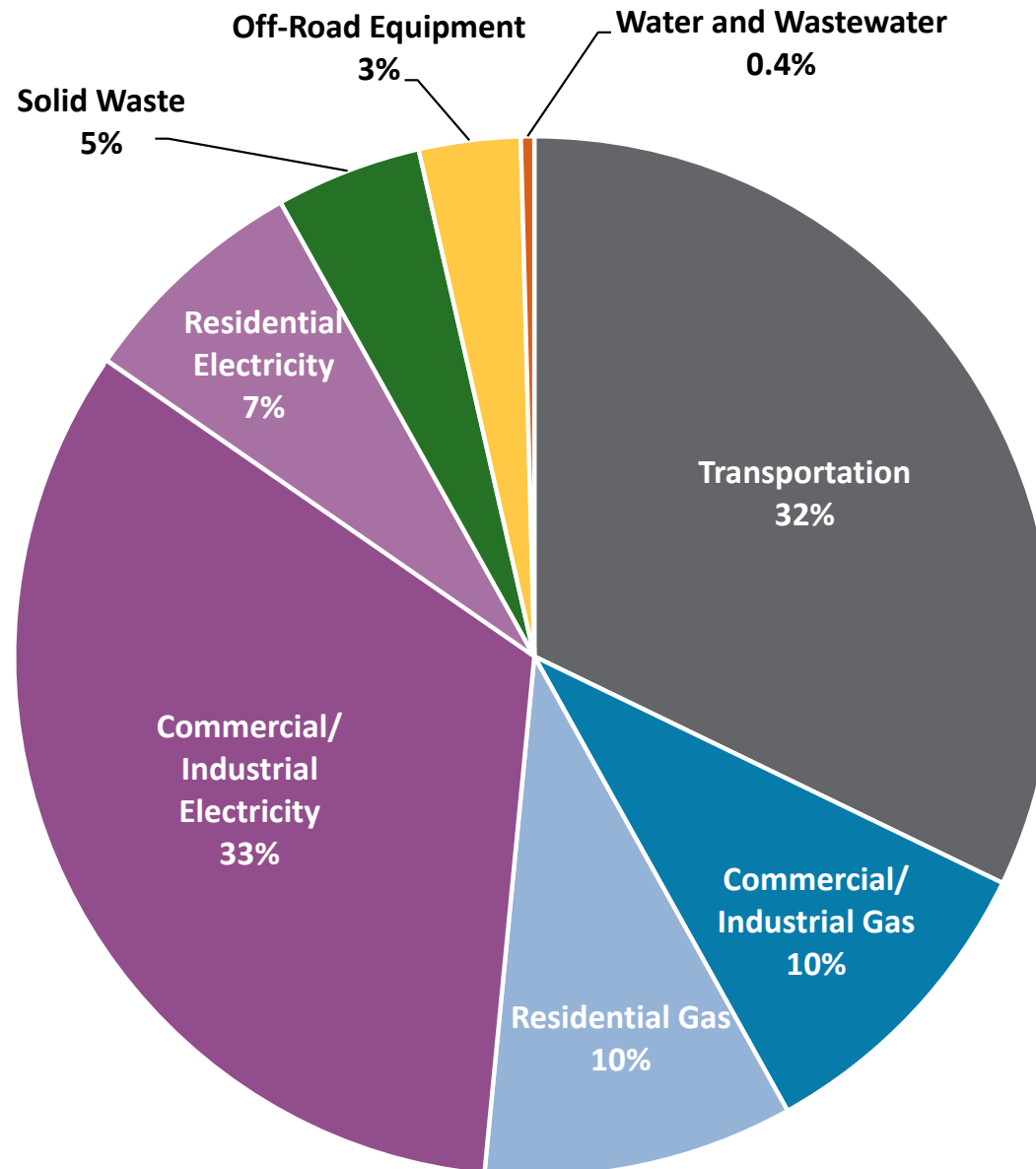


Extra Slides

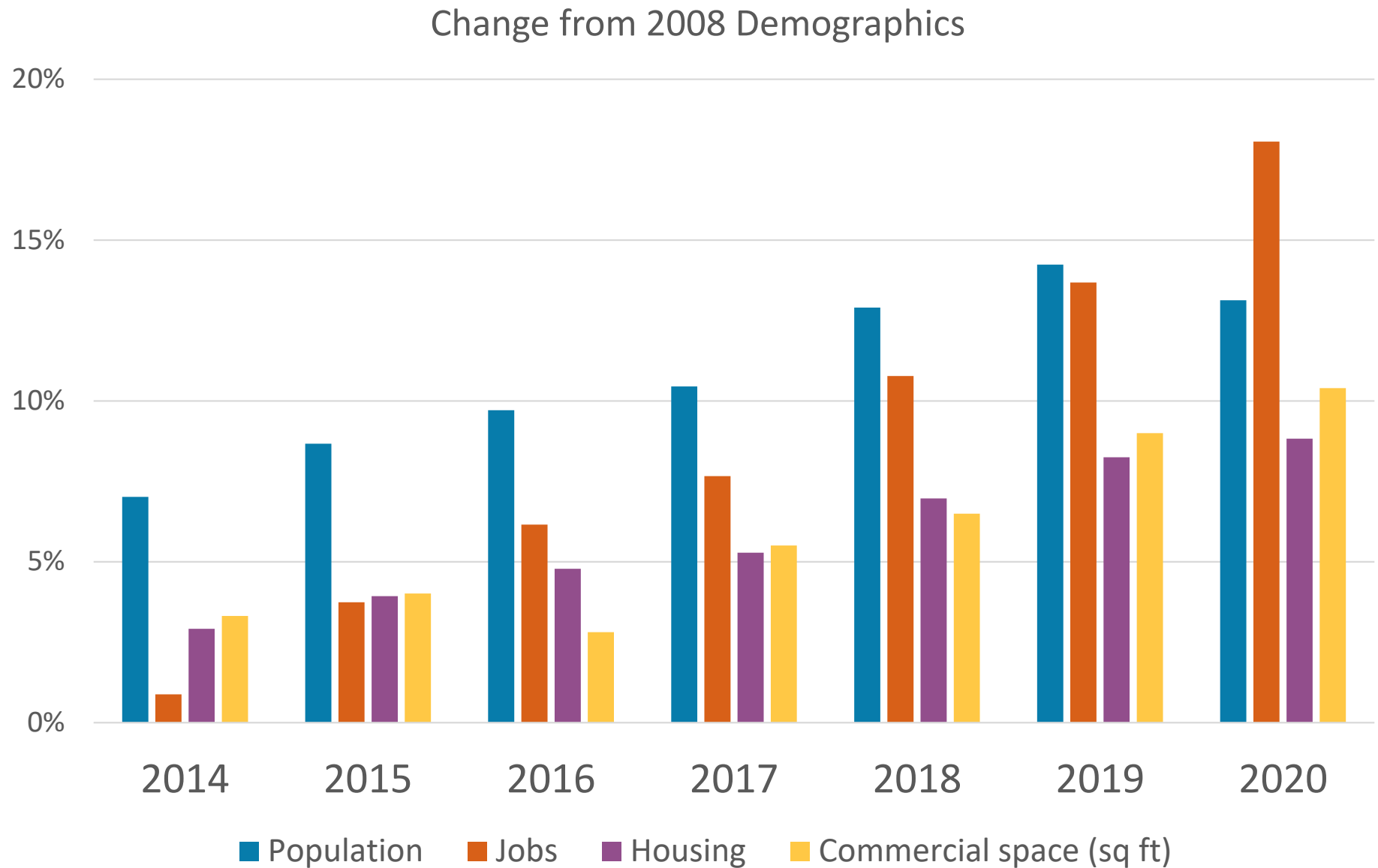
Total Emissions by Year (adjustments from EFMAC)



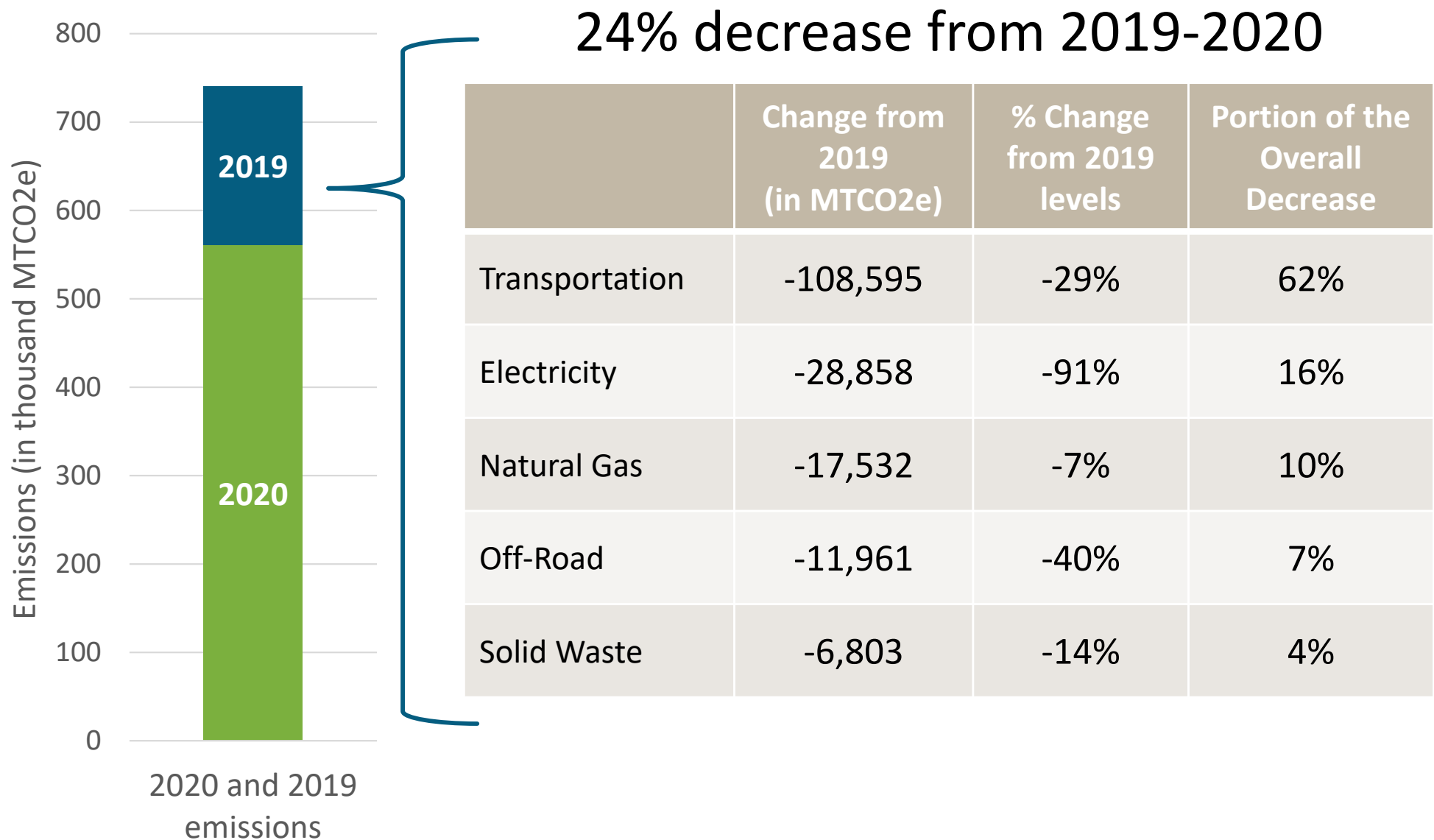
2008 Emissions by Sector



Demographics



Key Emissions Drivers in 2020



Transportation Emissions

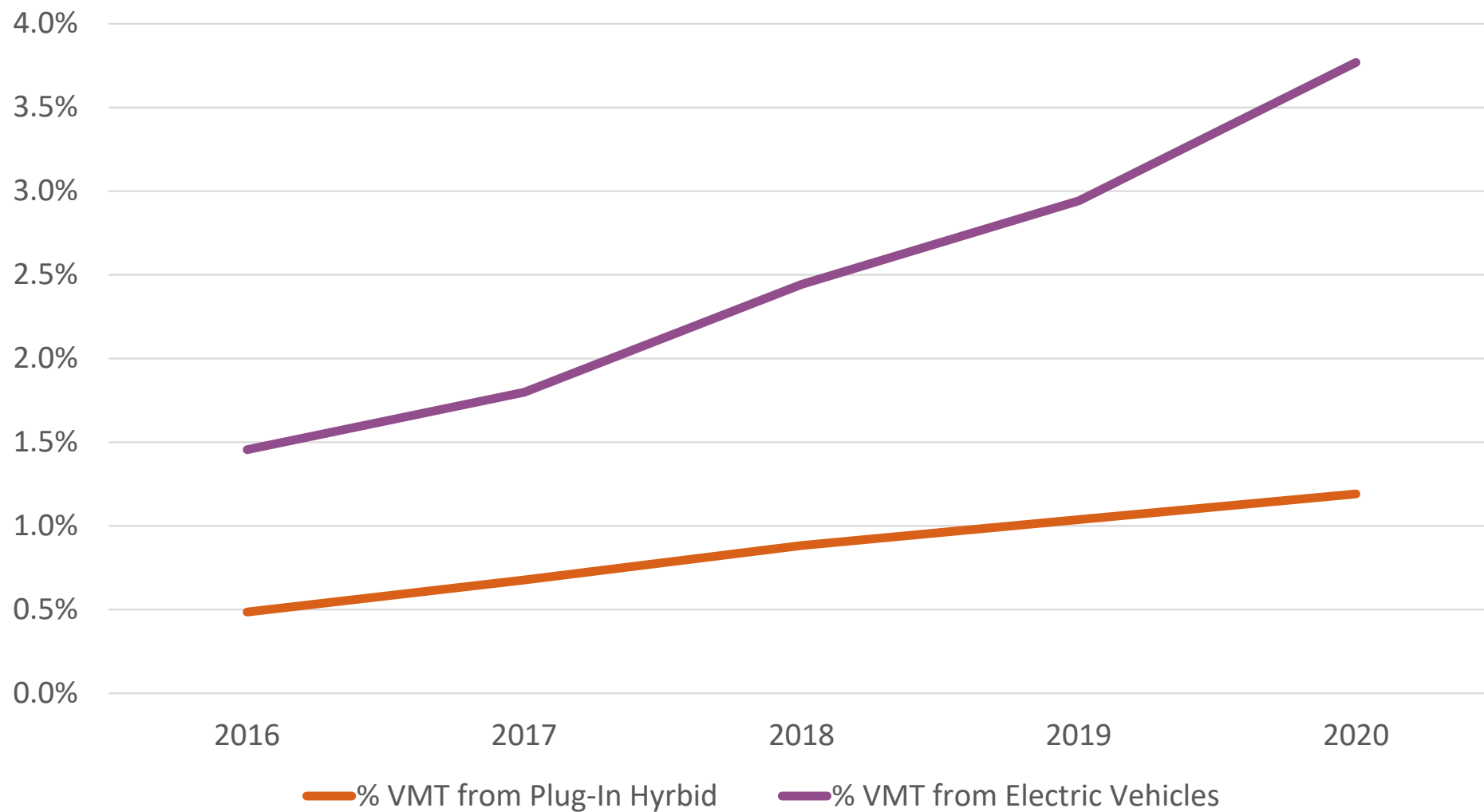
- Percent change from original inventories due to EMFAC model update

	2016	2017	2018	2019
Transportation Emissions	-3%	+4%	+5%	+5%

Fuel Type	2019 (original) Miles per gallon (MPG)	2019 (updated) Miles per gallon (MPG)
Gasoline	25.1	23.6
Diesel	9.2	7.7
Natural Gas	2.9	5.1
Electric	-	-
Plug-in Hybrid	-	55

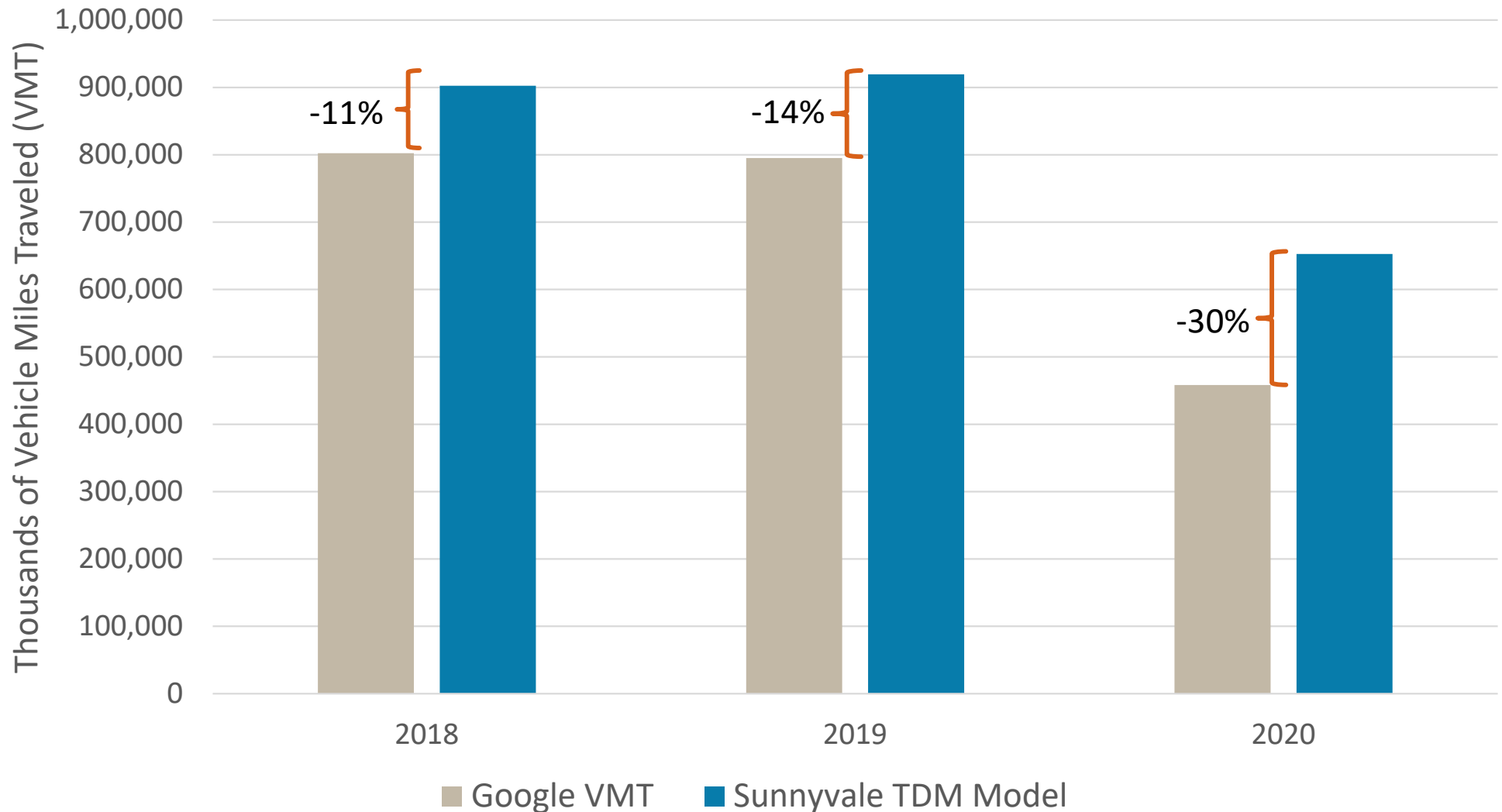
Transportation Emissions

EMFAC 2021 Insights

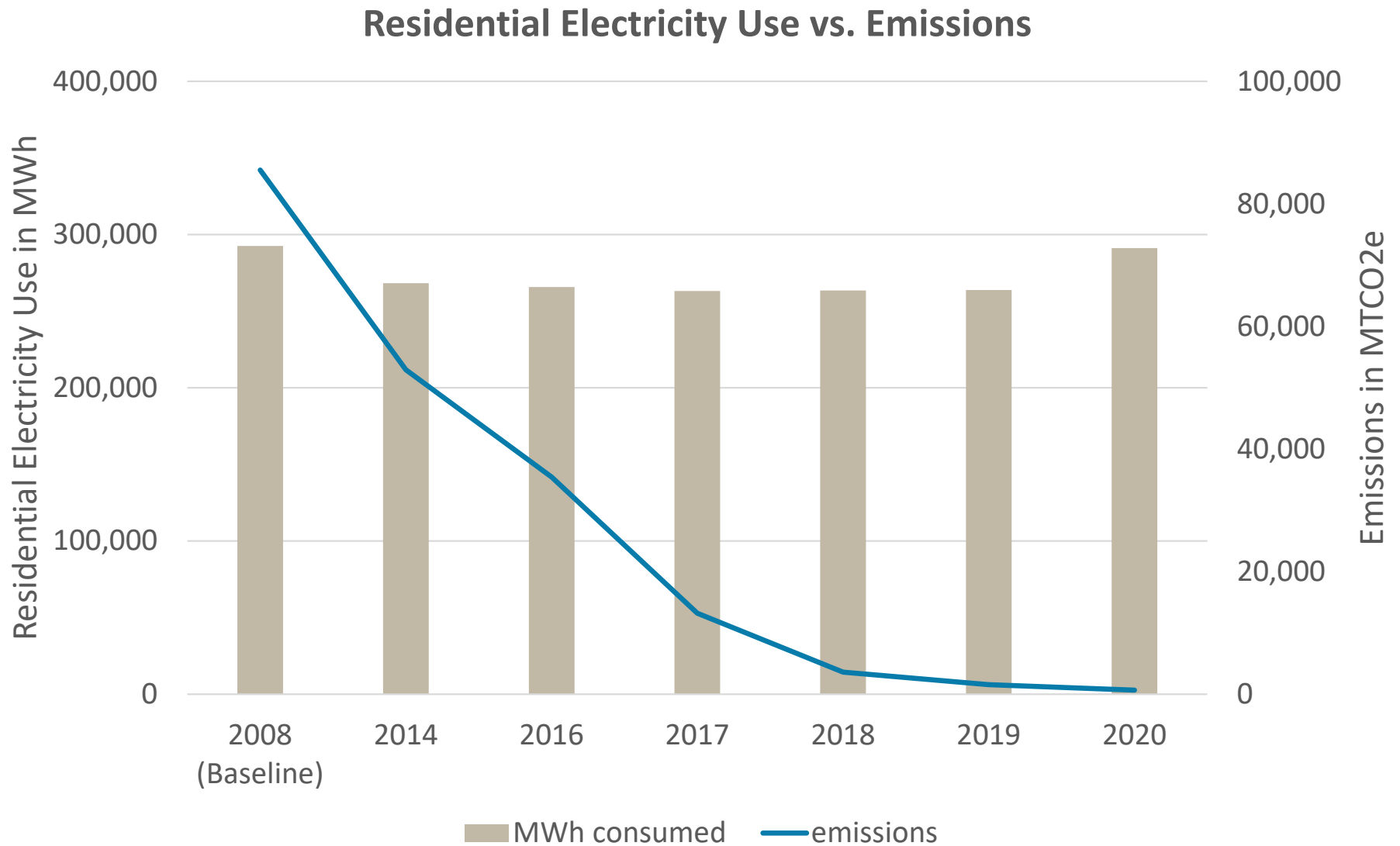


Transportation Emissions

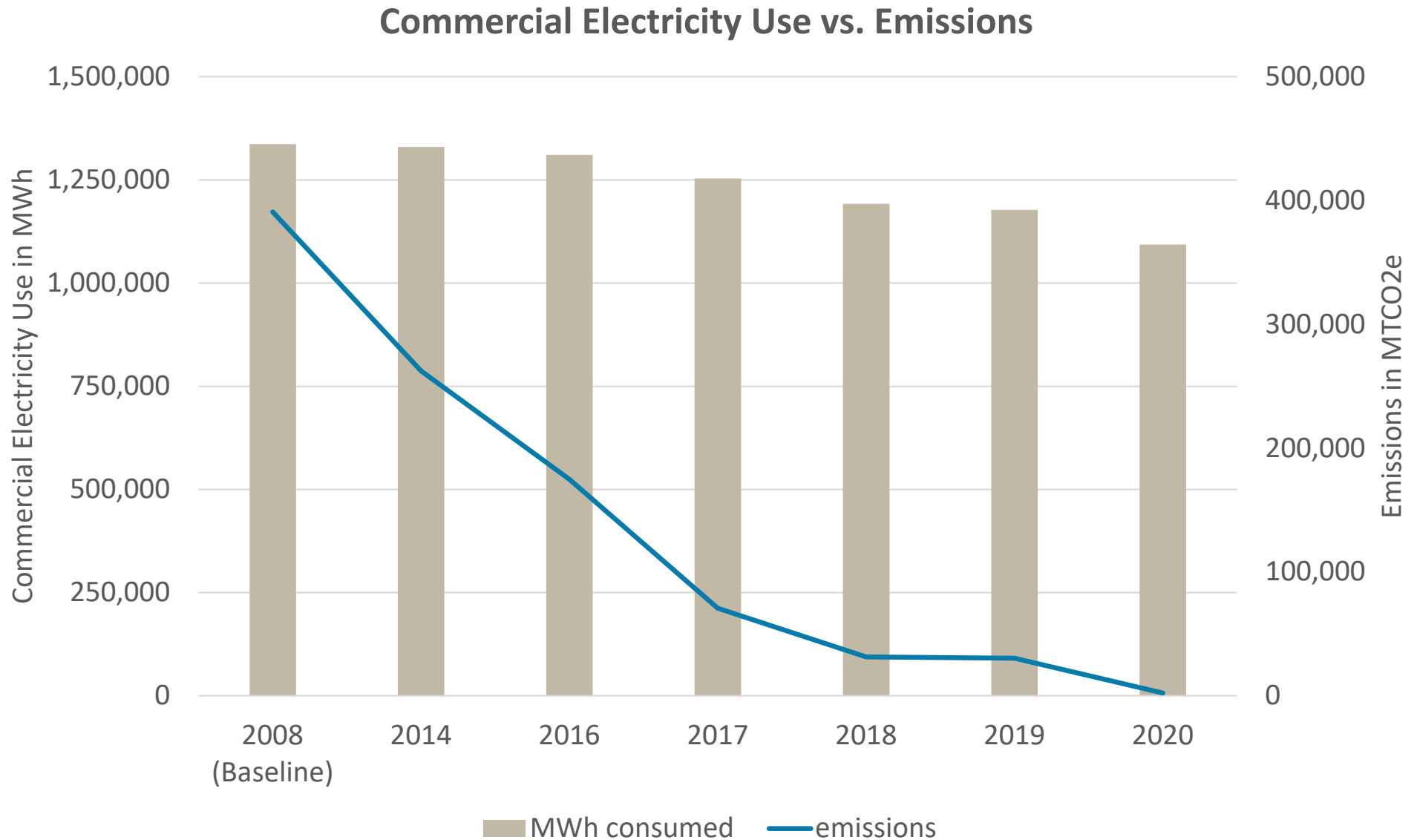
Google Insights vs. Sunnyvale TDM Model



Electricity Sector Emission Trends

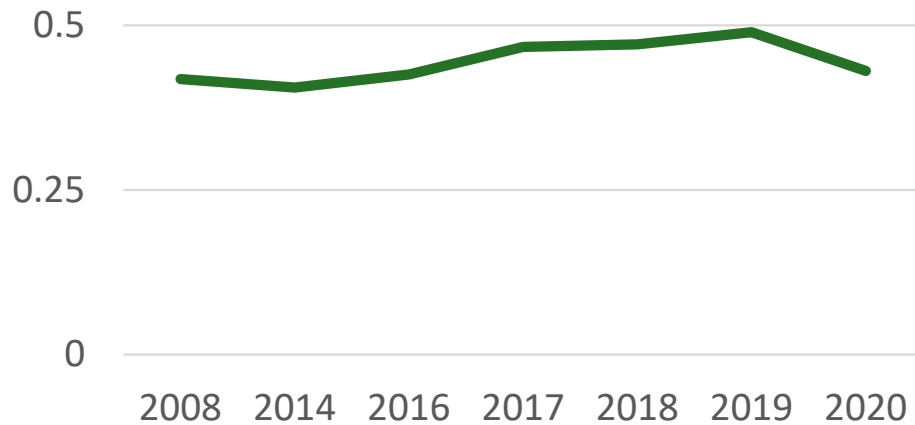


Electricity Sector Emission Trends

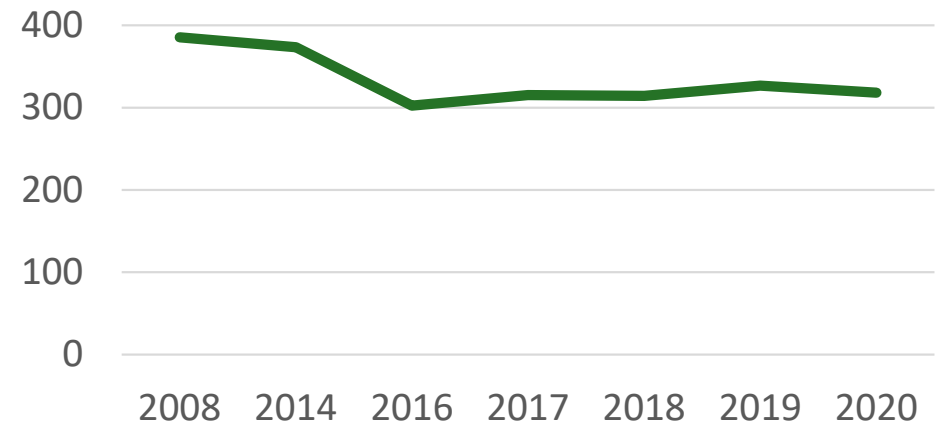


Energy Efficiency

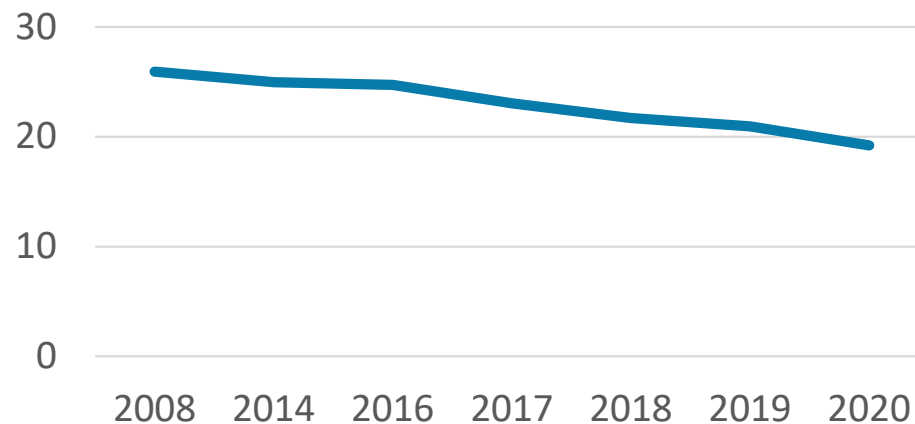
Commercial Space Energy intensity: Natural Gas (therm/sq ft)



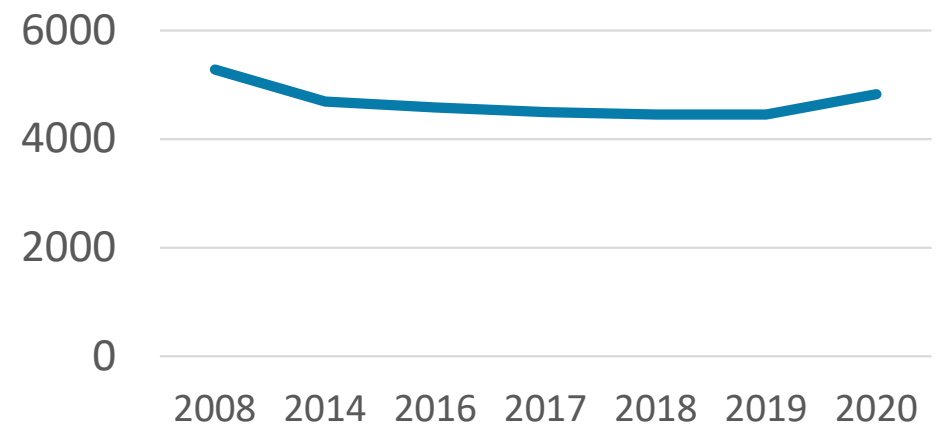
Residential Energy Intensity: Natural Gas (therm/housing unit)



Commercial space energy intensity: Electricity (kWh/sq ft)



Residential Energy Intensity: Electricity (kWh/housing unit)



Off-Road Sector Emissions

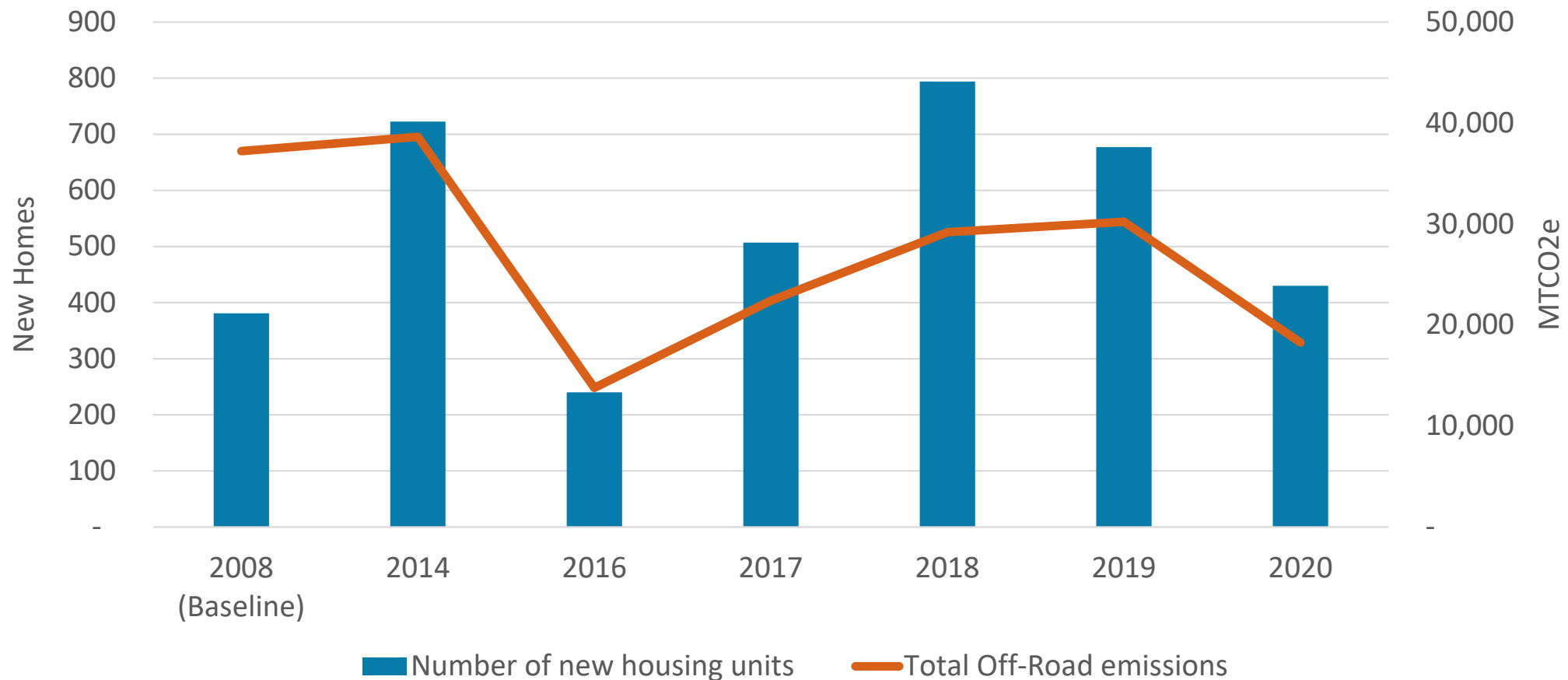
- Change in Emissions from original inventory to updated using the new EMFAC model:

	2016	2017	2018	2019
Change in Emissions from original to updated	-33%	-22%	-35%	-45%

Off-Road Sector Emissions

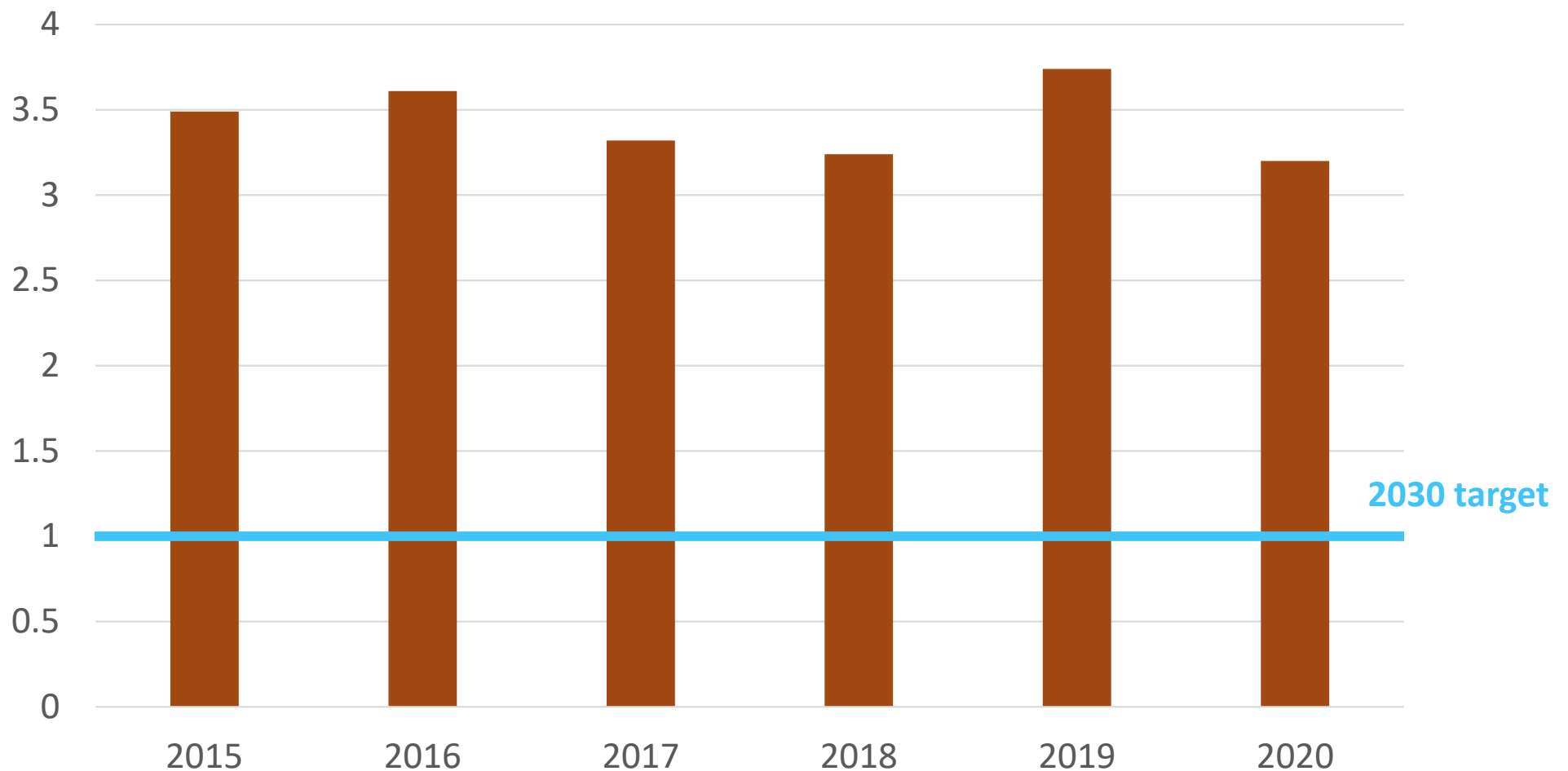
- 2020: material and resource costs were high, so we saw a significant drop in construction activity

OffRoad Emissions vs New Homes Constructed in Sunnyvale



CAP Metric #9

Pounds of Landfilled Garbage per Person per Day



CAP Metric #10

