



Sunnyvale

# Climate Action Playbook Annual Progress Update

*October 18, 2021*

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# Agenda

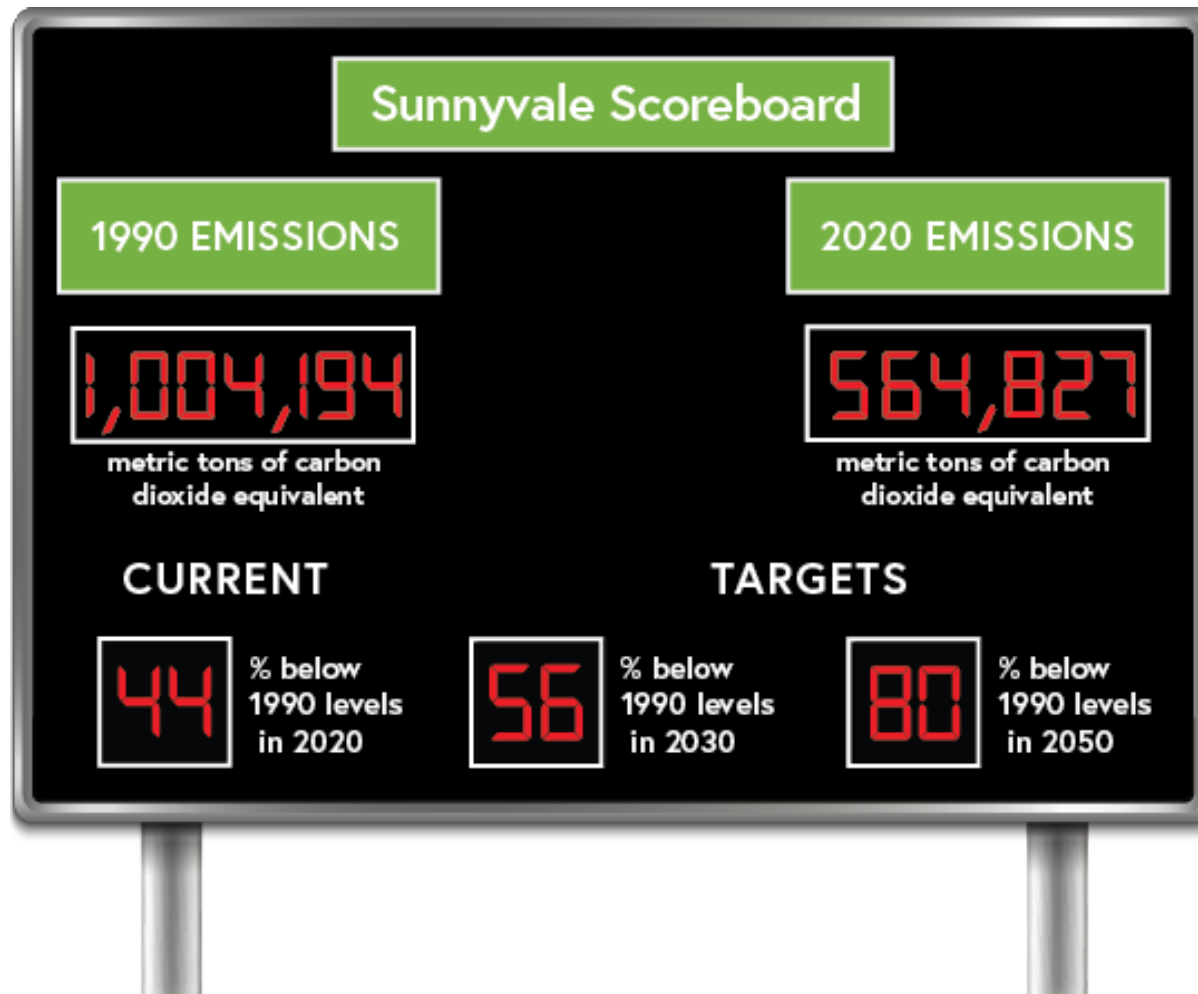
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- 2020 GHG Inventory Update
- CAP Progress Updates

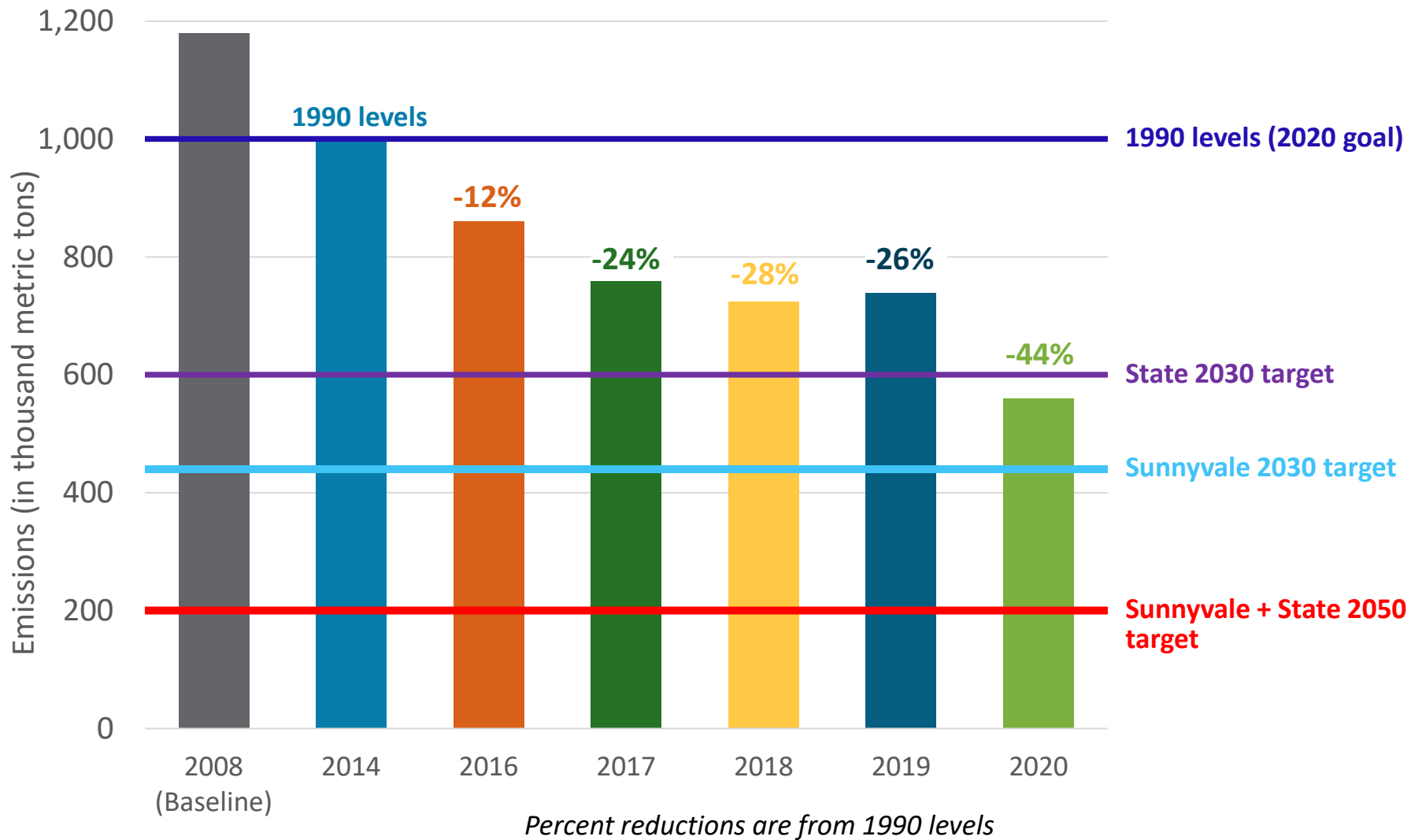


# 2020 Annual Greenhouse Gas Inventory

# 2020 Climate Action Score



# Total Emissions by Year



# Demographics

## Changes from 2008 levels (baseline)



Population  
+13%



Jobs  
+18%

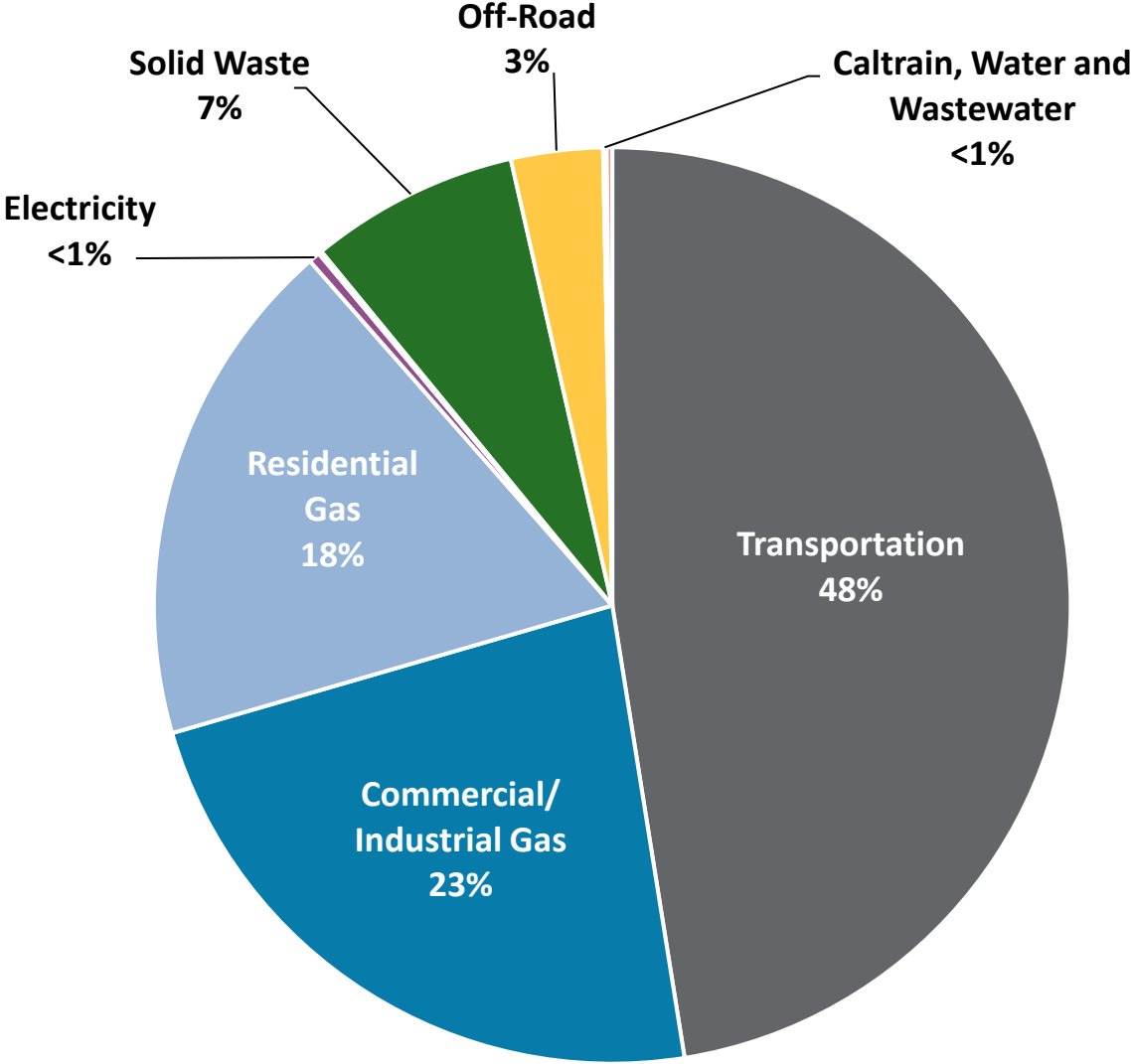


Housing  
+8.8%

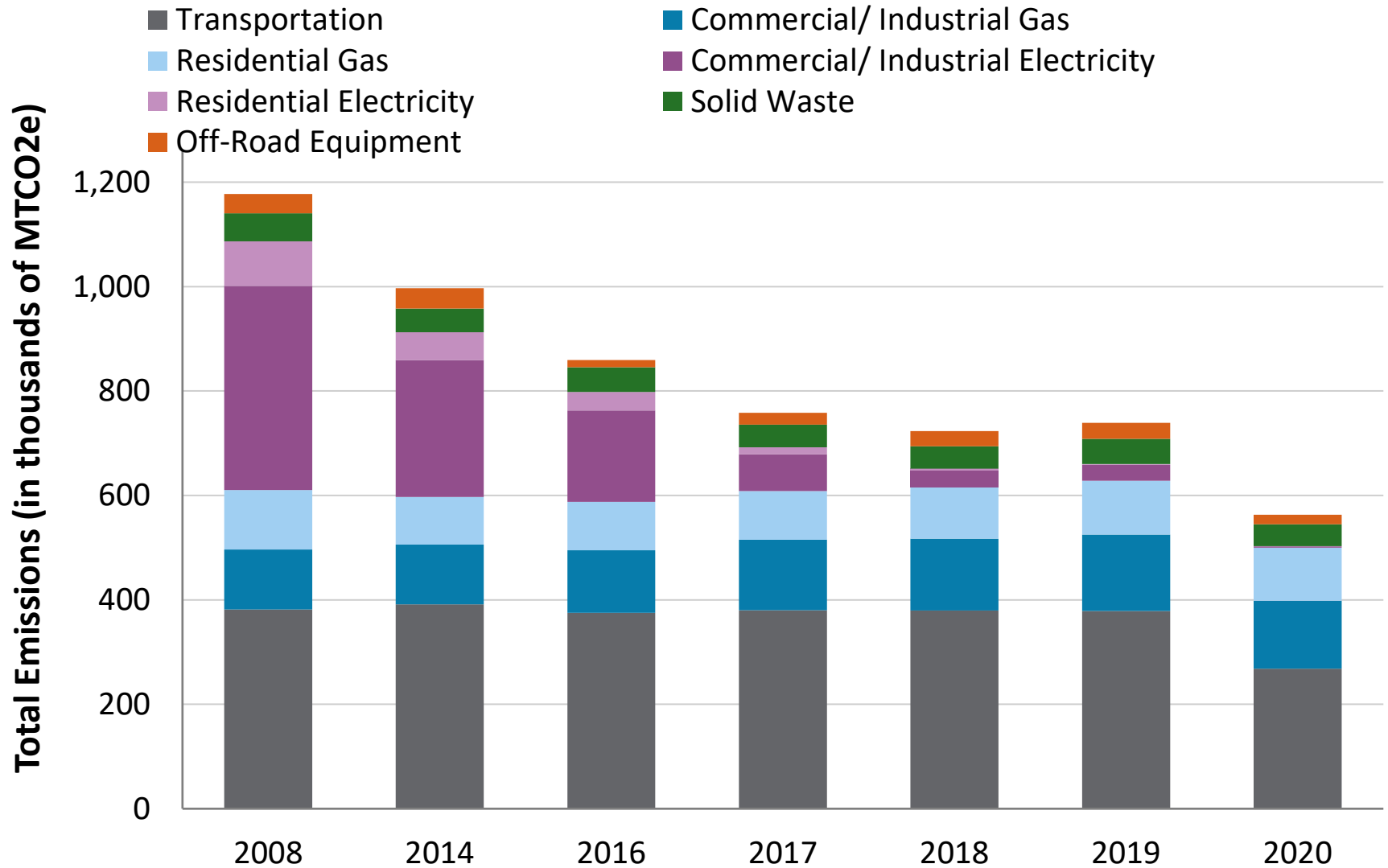


Commercial Space  
+10%

# 2020 Emissions by Sector

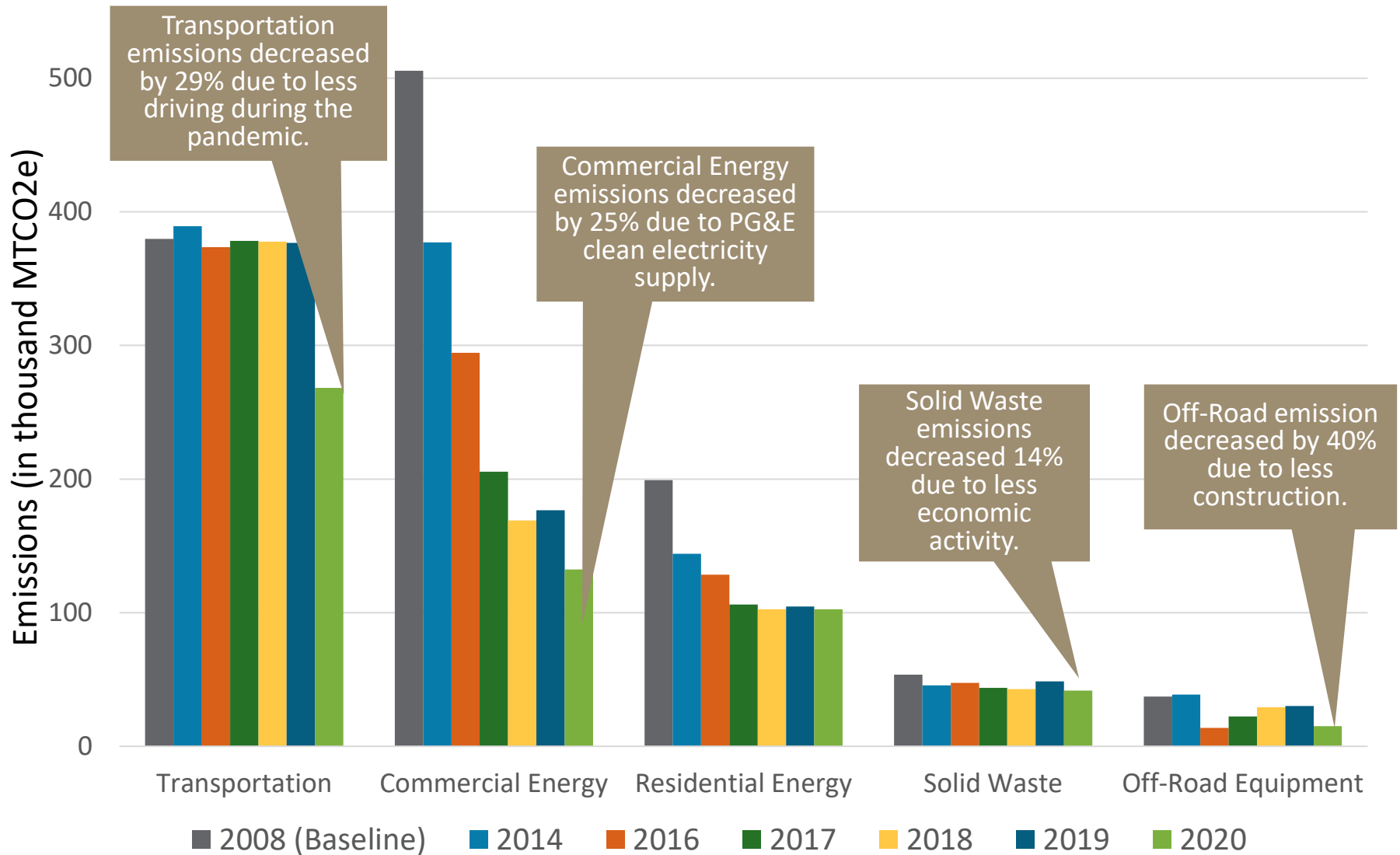


# 2020 Emissions by Sector

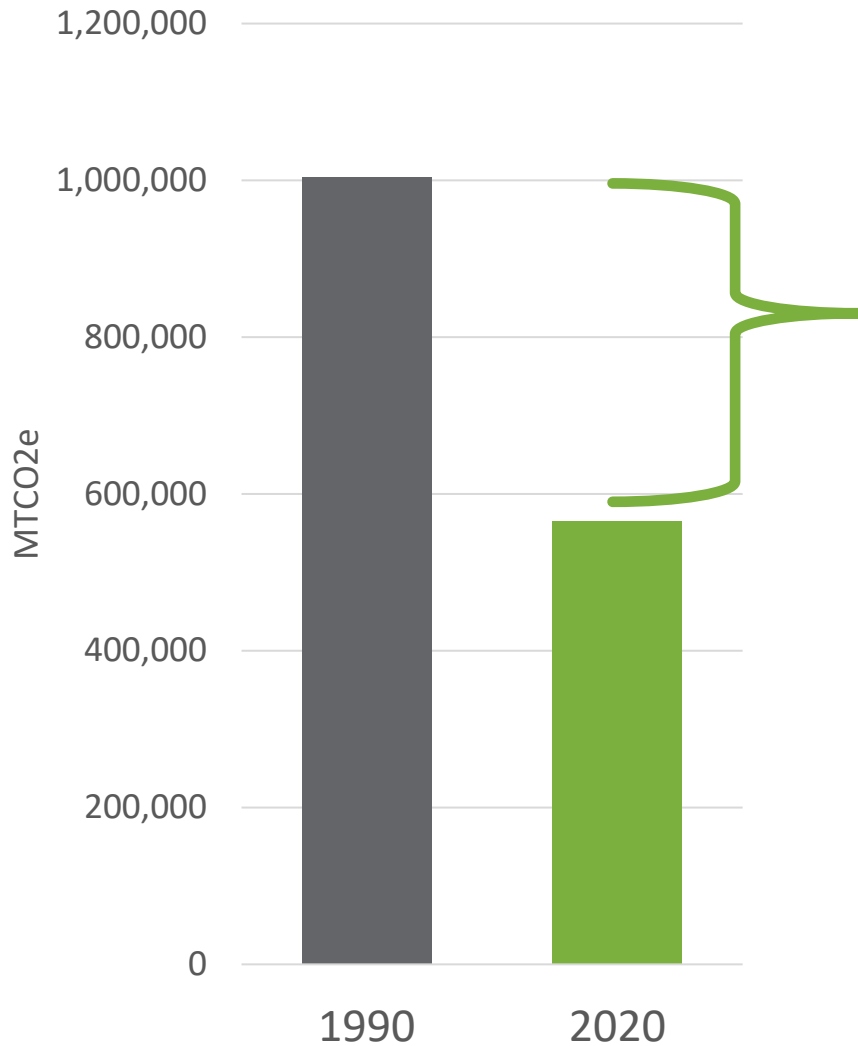




# Emissions from 2008-2020 by Sector



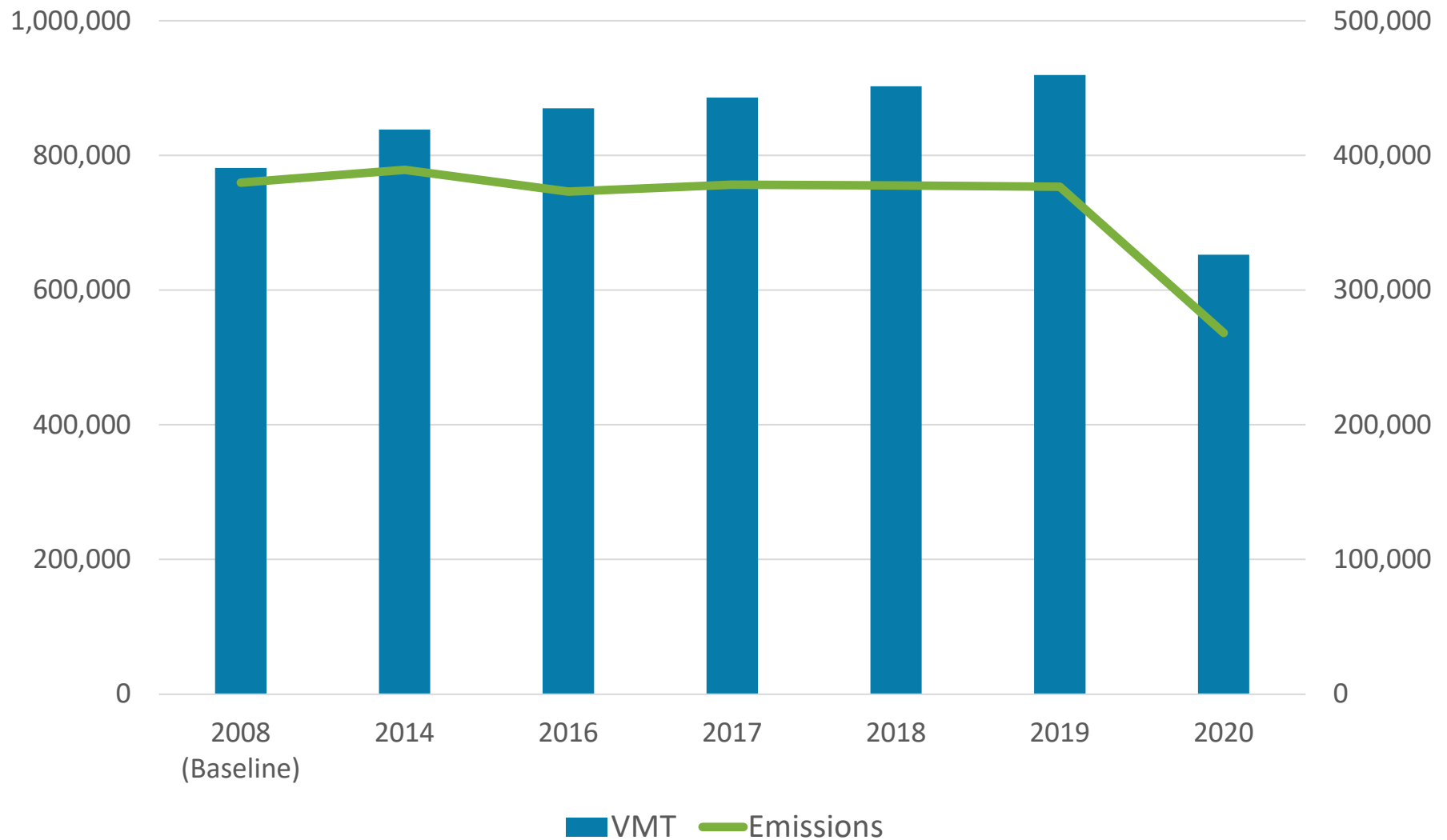
# Key Emissions Drivers Over Time



**44% Decrease  
from 1990-2020**

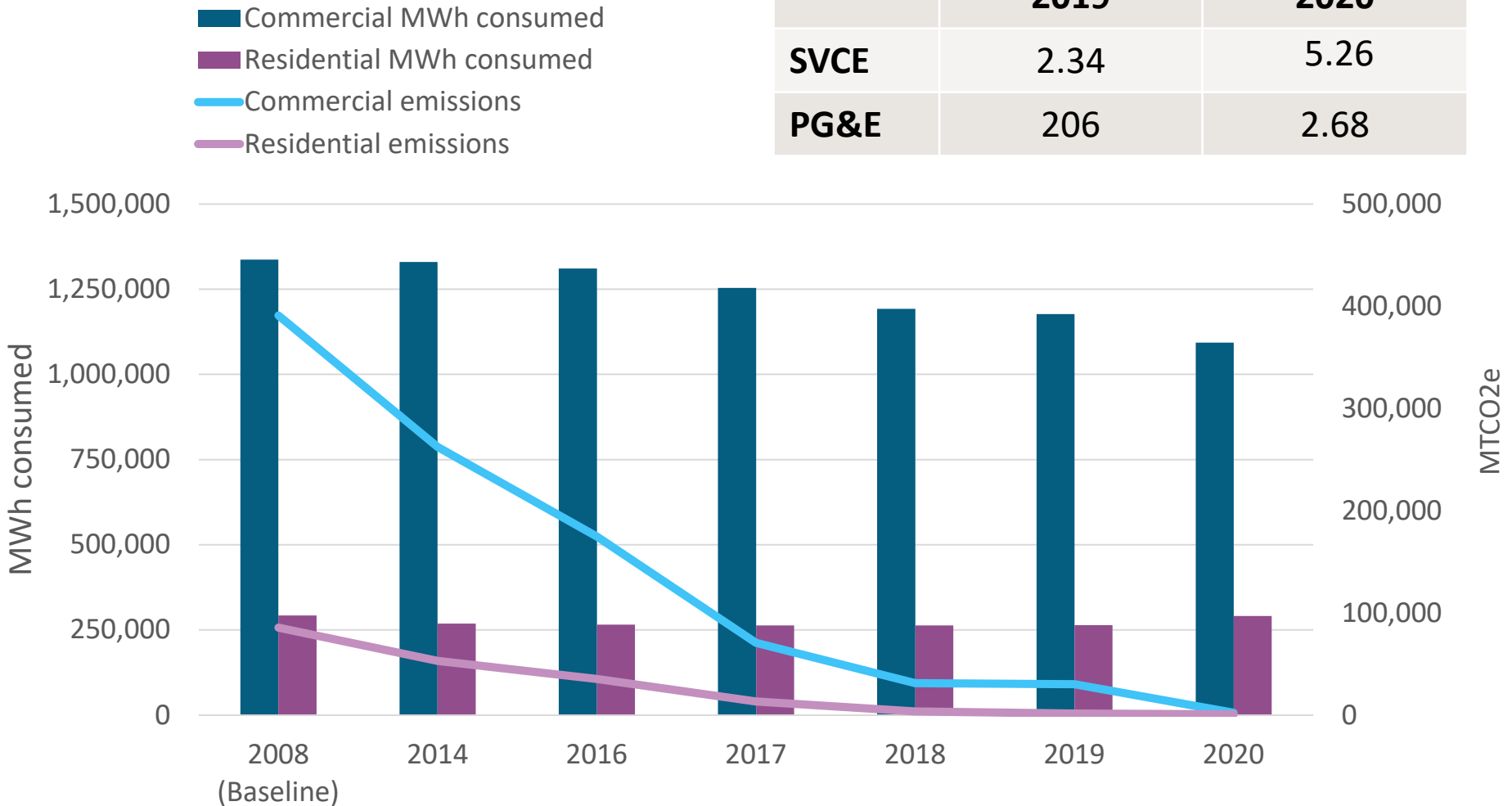
	Breakdown of Percent Points
Electricity	-40.0
Transportation	-5.4
Off-Road	-1.3
Solid Waste	-0.38
Natural Gas	+3.8

# Transportation Emission Trends

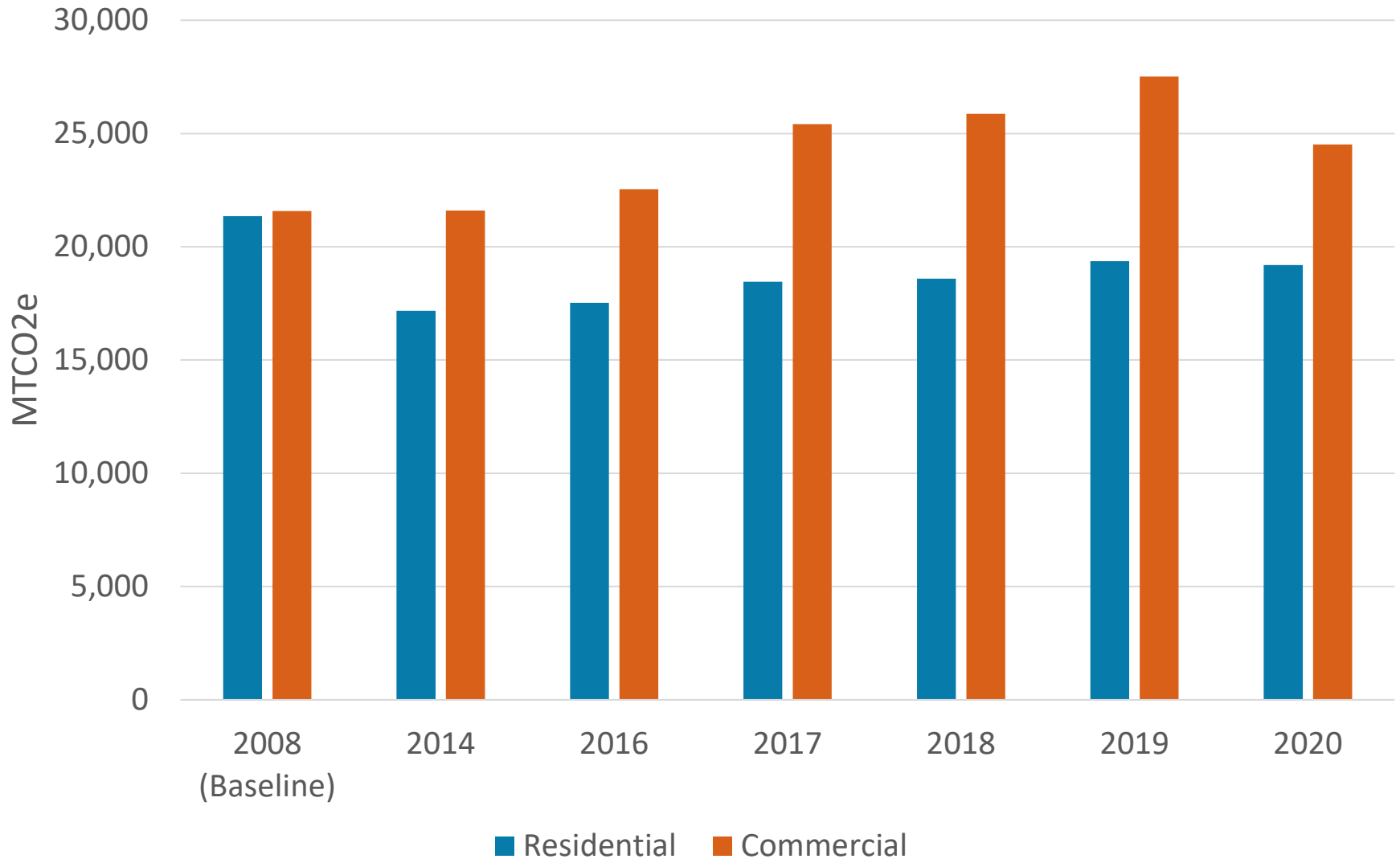


# Electricity Sector Emission Trends

Emissions Factors (lb CO <sub>2</sub> /MWh)		
	2019	2020
<b>SVCE</b>	2.34	5.26
<b>PG&amp;E</b>	206	2.68



# Natural Gas Sector Emission Trends



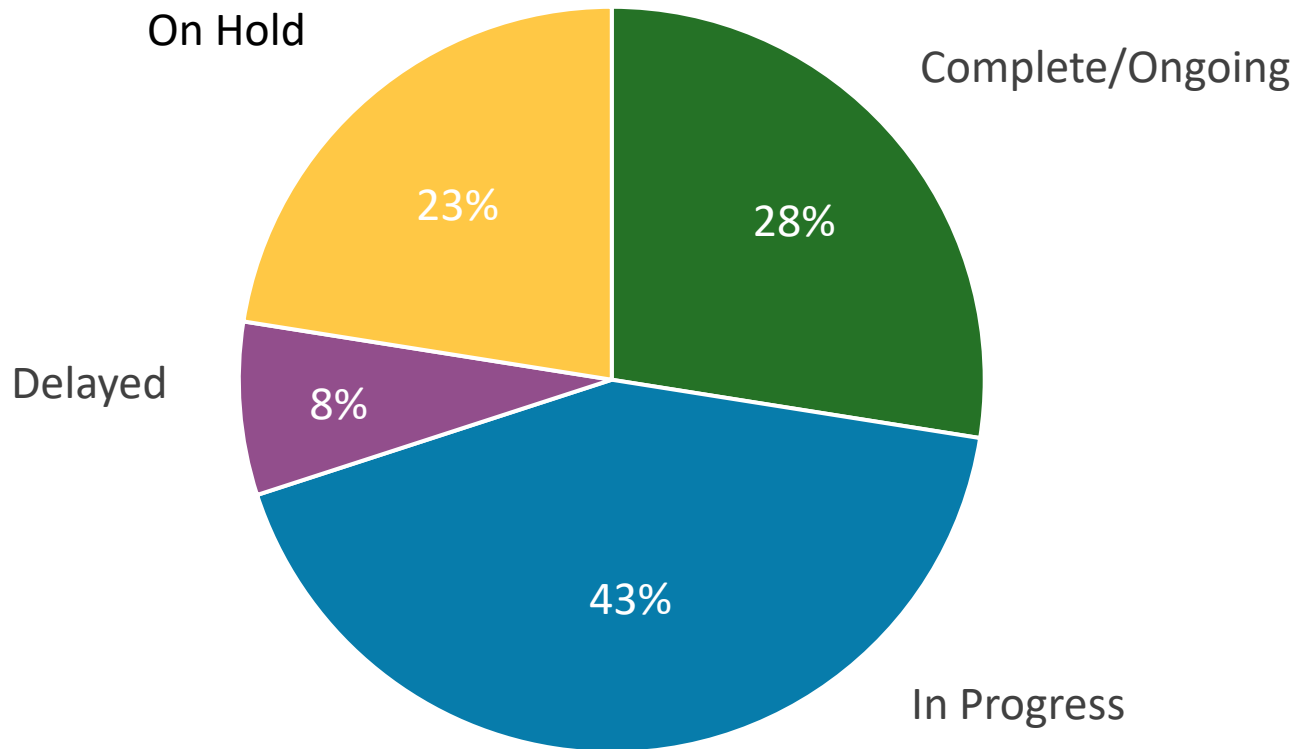


Sunnyvale

## CAP 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 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

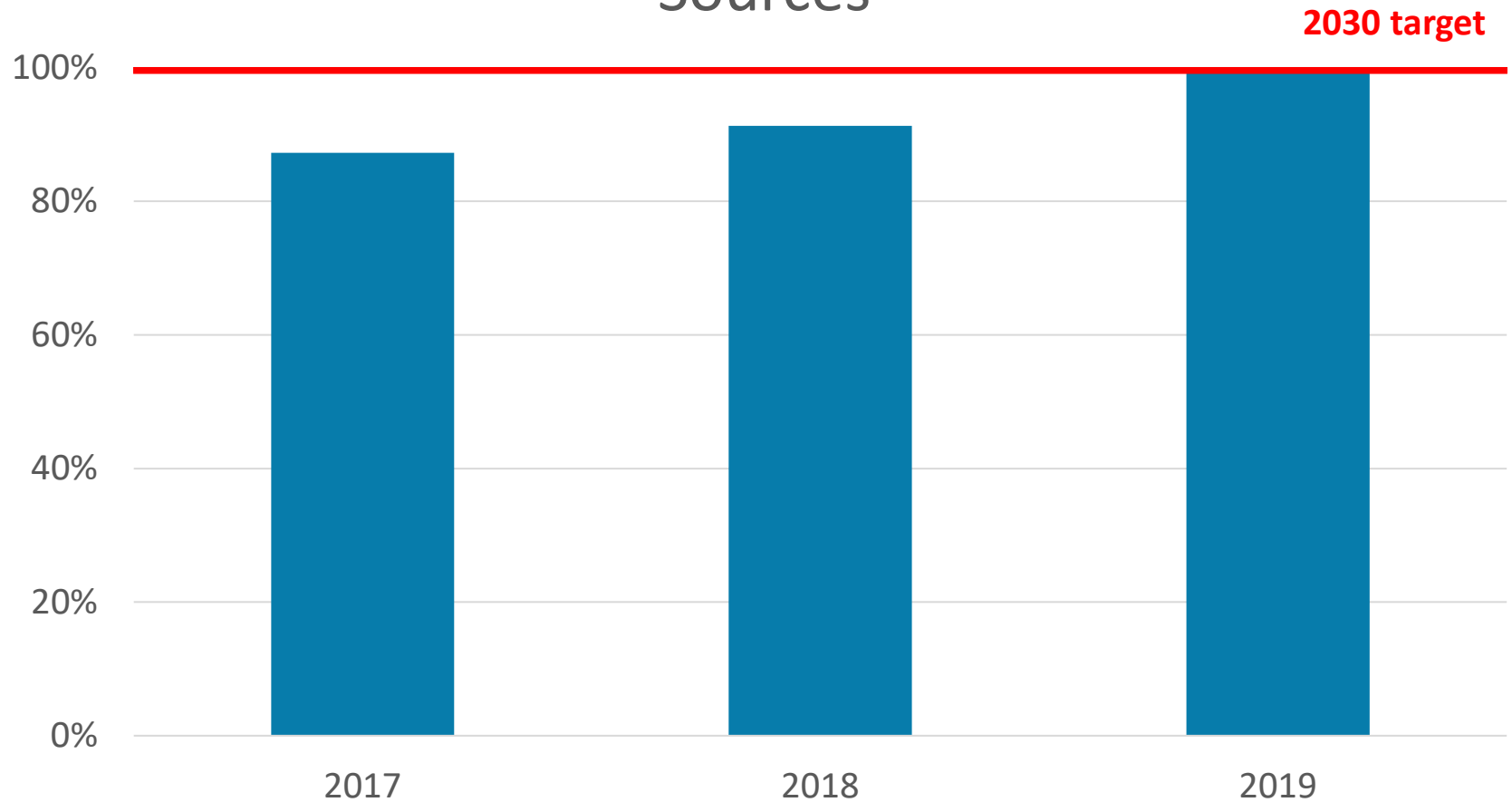
- Move 4.A: City staff conducted surveys and outreach for improving and expanding the FoodCycle program.
- Move 4.B: City entered into new franchise agreement.

### Strategy 5

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

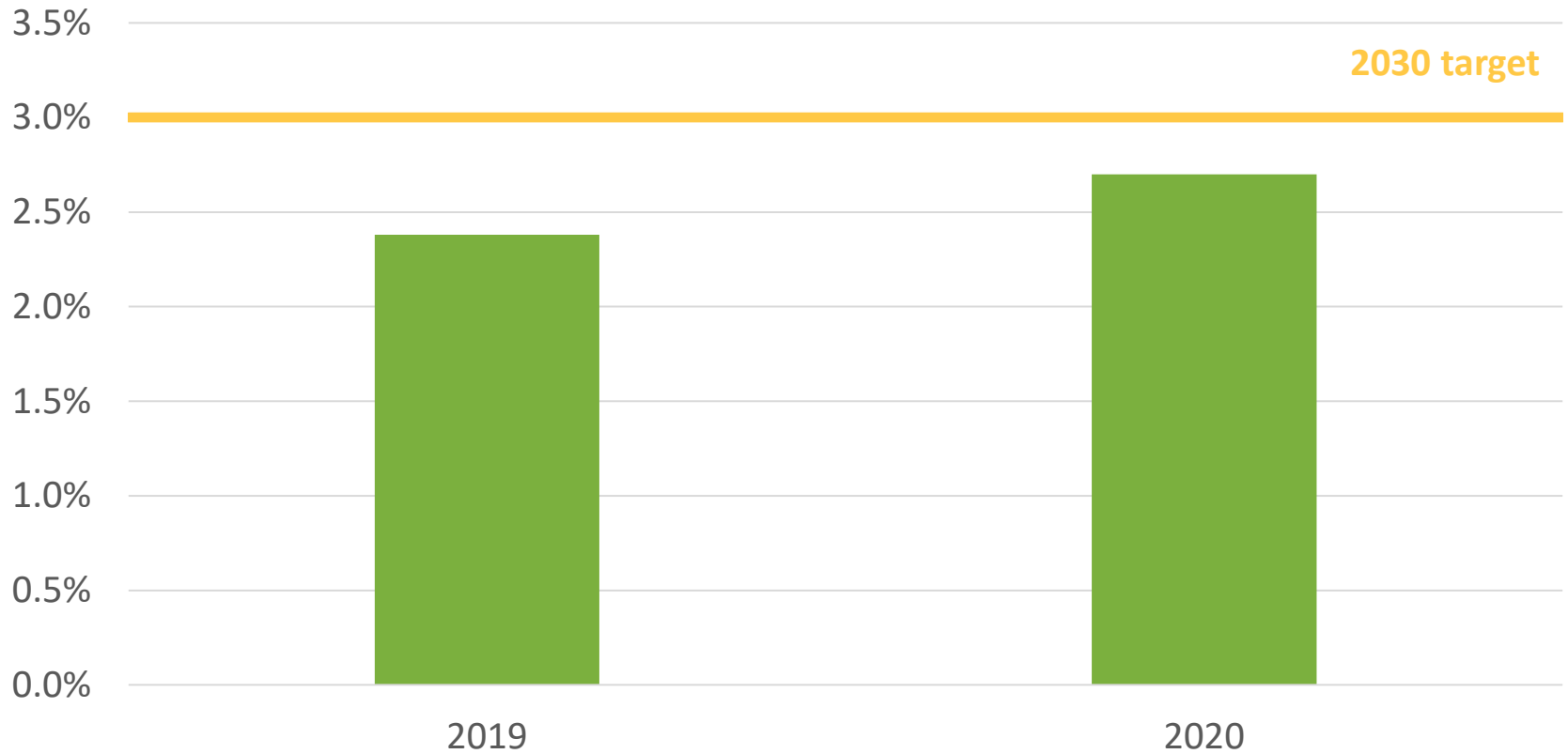
# CAP Metric #1

## Percent of Electricity from Carbon Free Sources



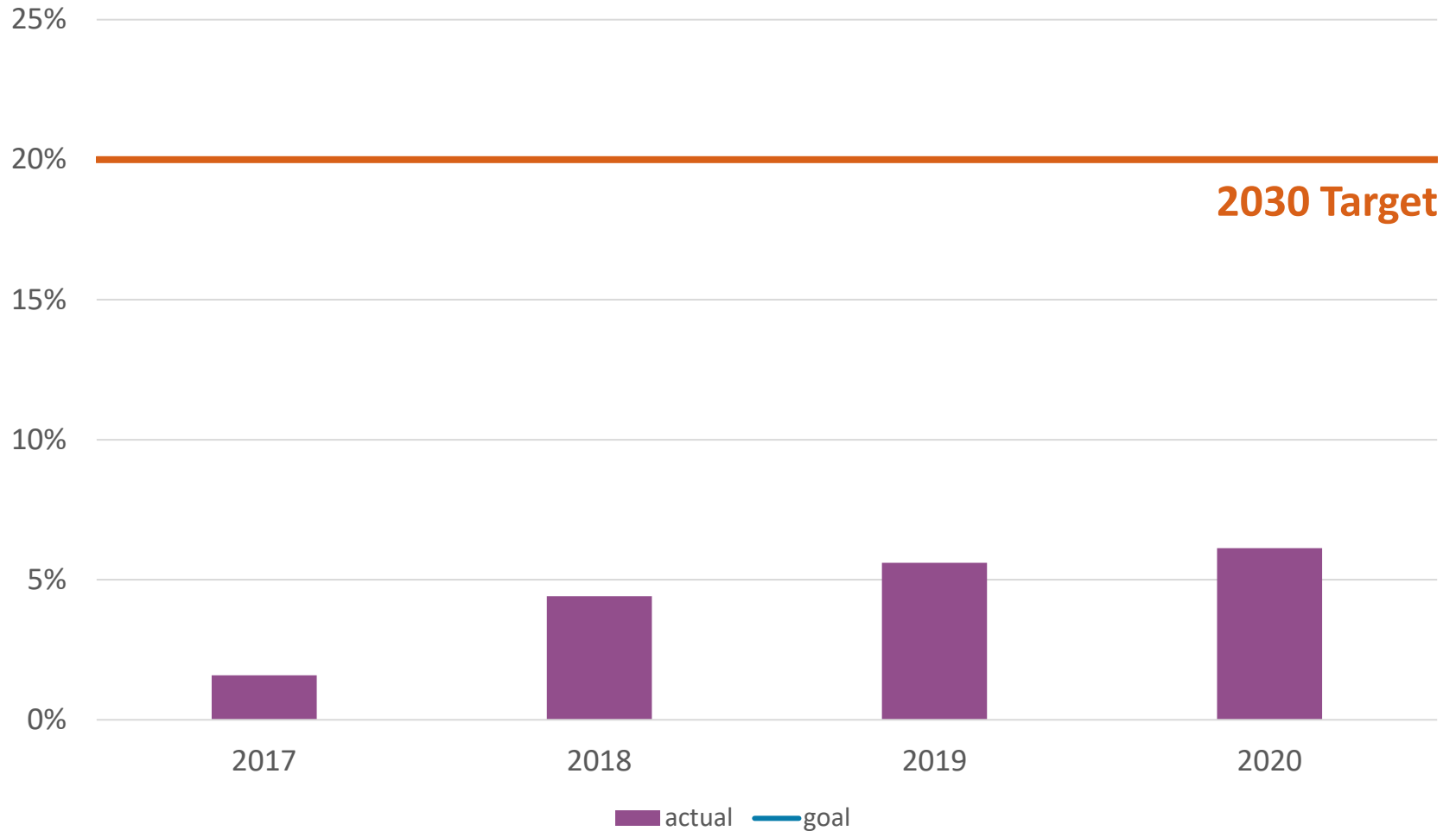
# CAP Metric #2

## Percent of Sunnyvale Electricity Load Potentially Supplied by Local Solar



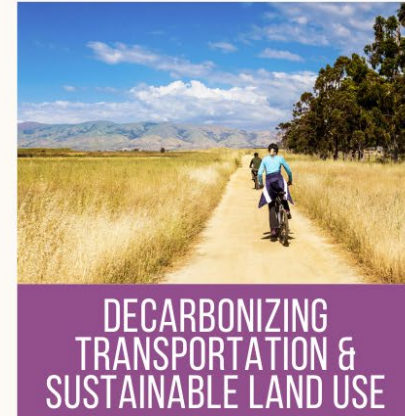
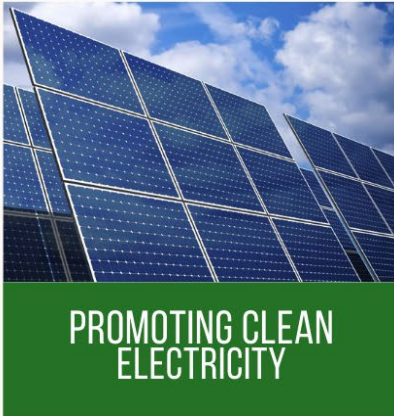
# CAP Metric #8

## Percent of Zero Emission Vehicles in Sunnyvale



# CLIMATE ACTION SCOREBOARD

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



[SunnyvaleClimateAction.org](https://SunnyvaleClimateAction.org)



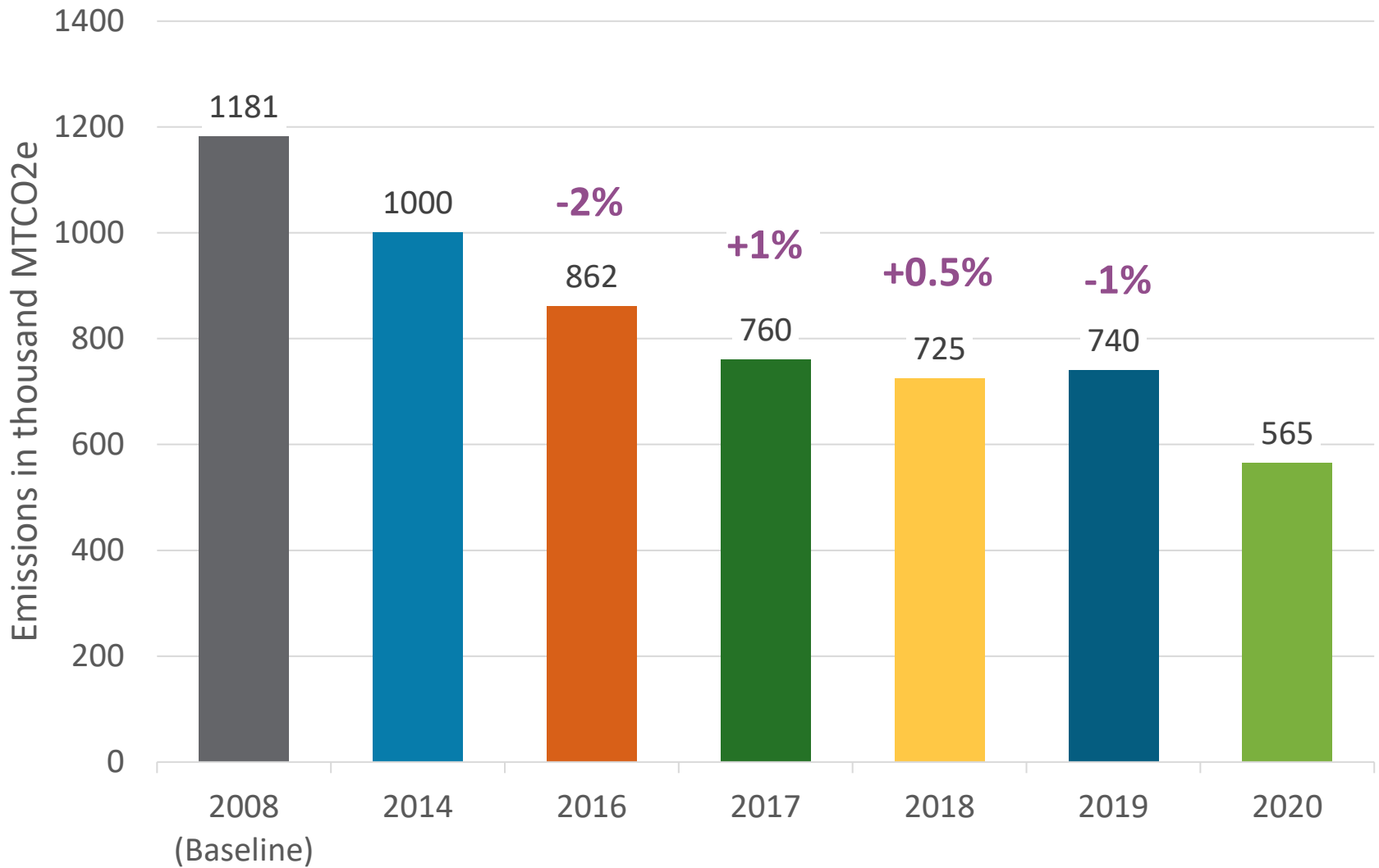
Thank you!

Questions?



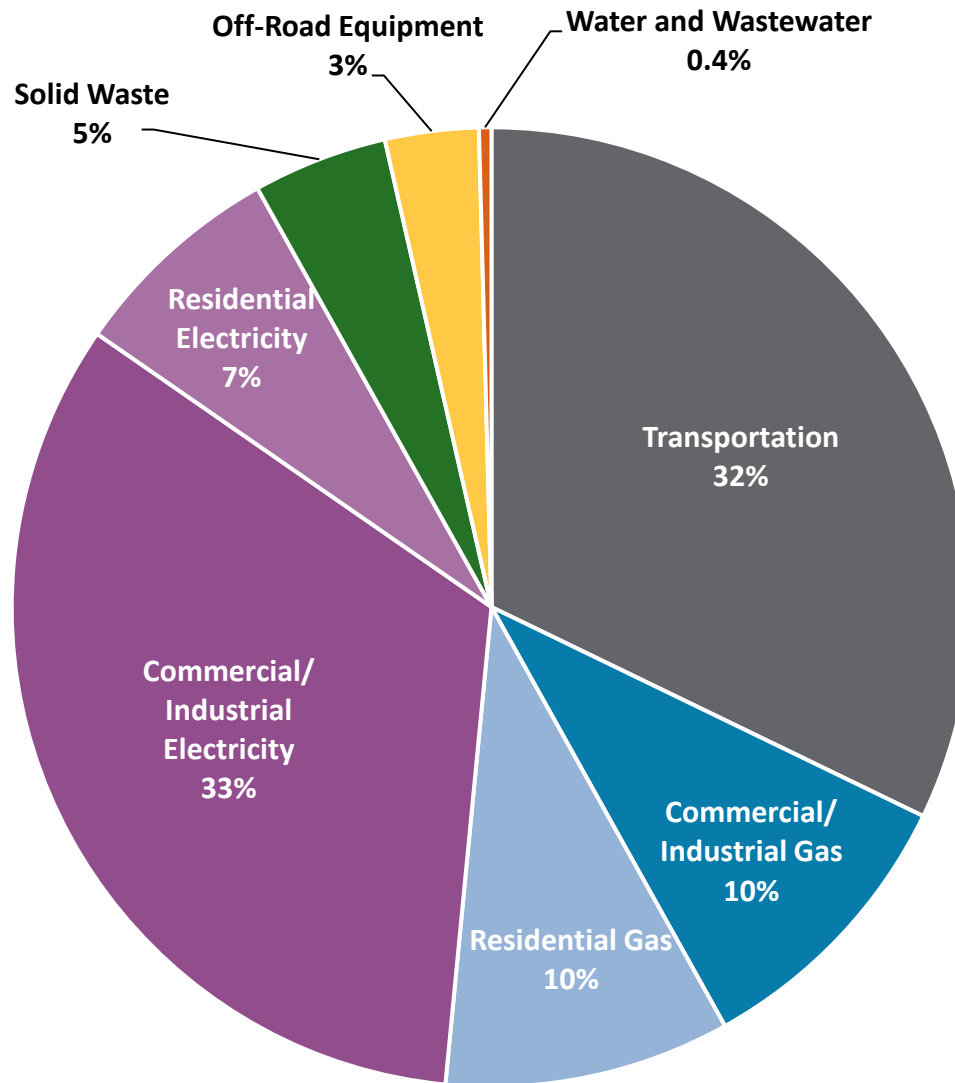
Extra Slides

# Total Emissions by Year (adjustments from EFMAC)



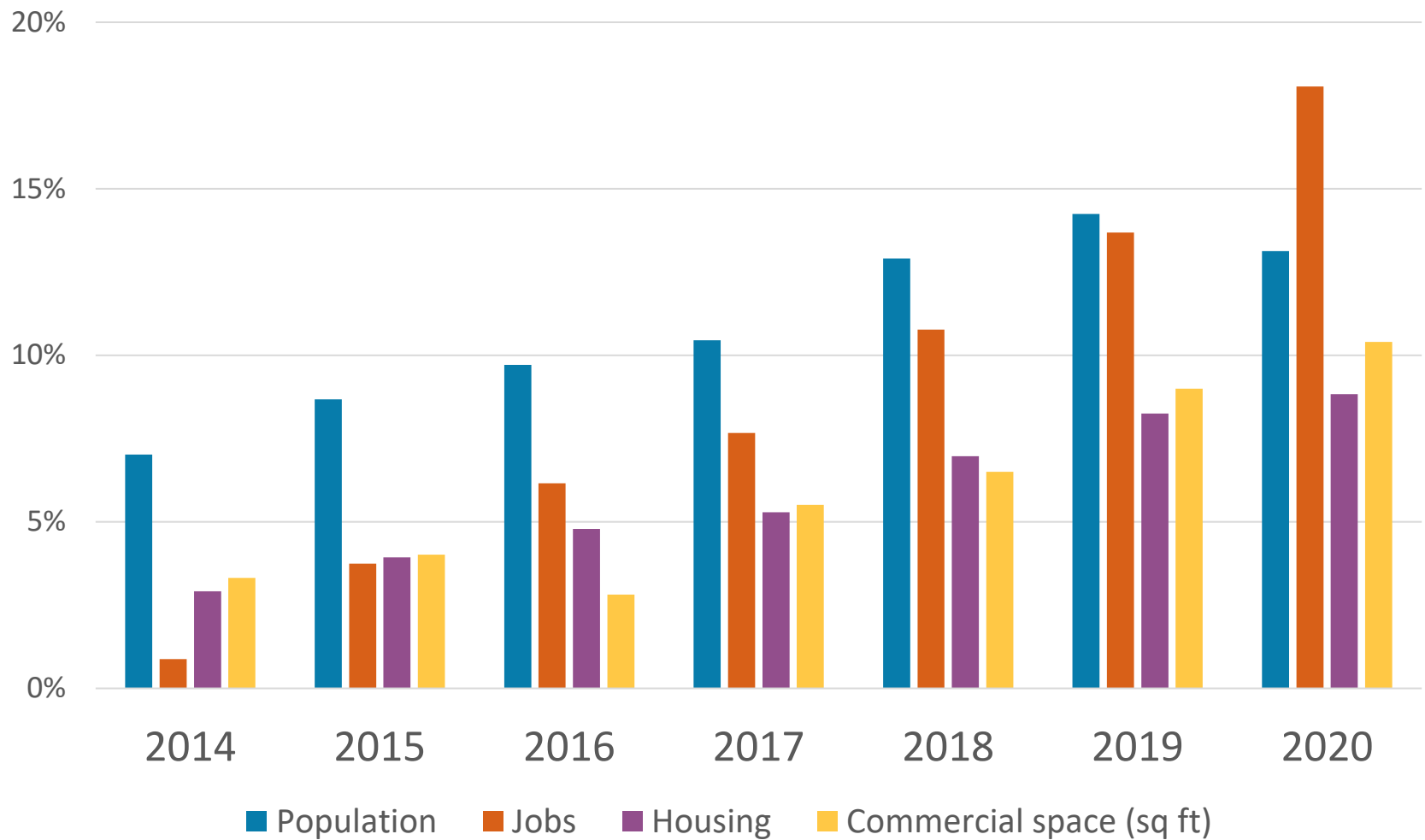


# 2008 Emissions by Sector

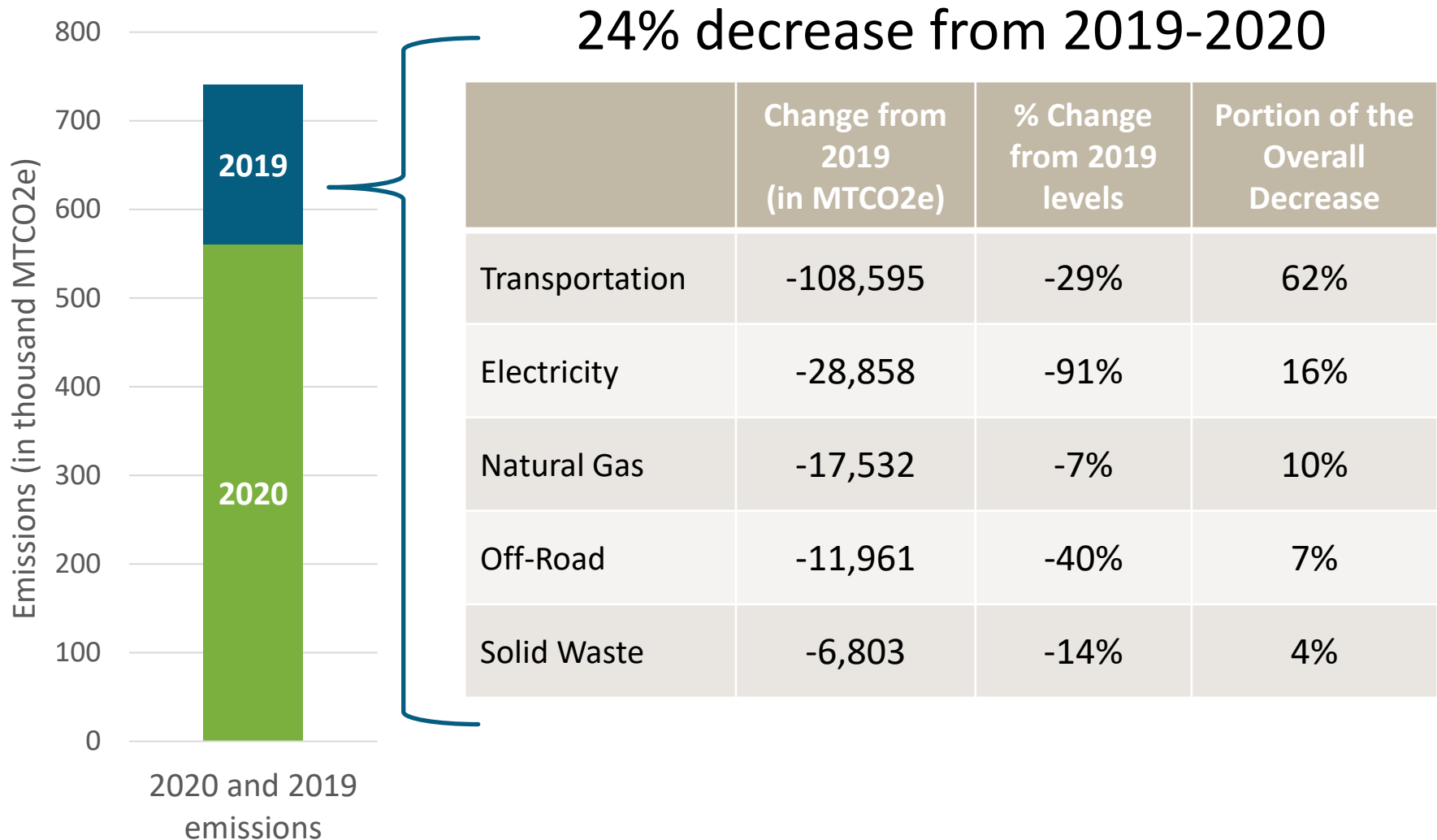


# Demographics

Change from 2008 Demographics



# Key Emissions Drivers in 2020



# Transportation Emissions

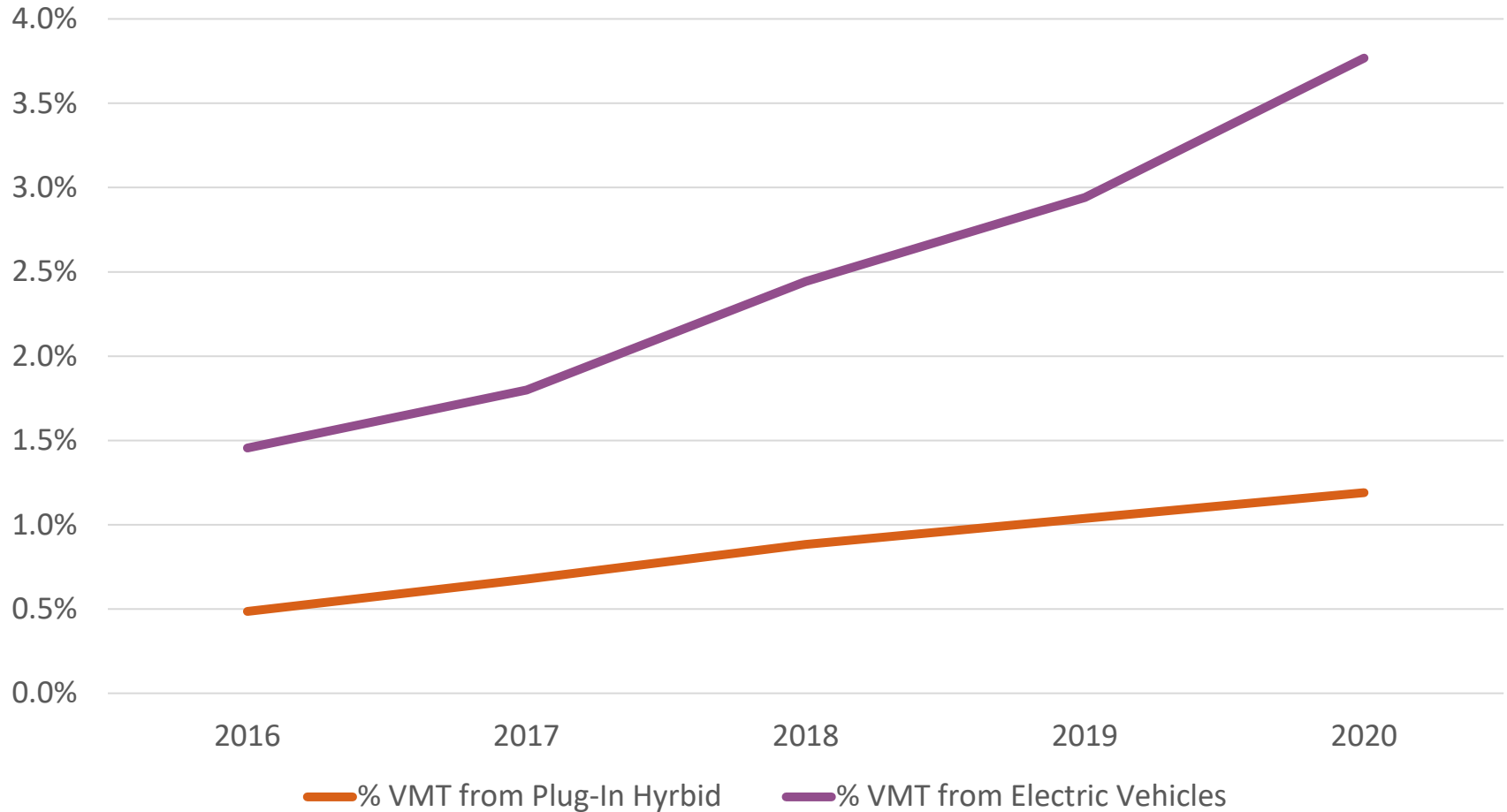
- Percent change from original inventories due to EMFAC model update

	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

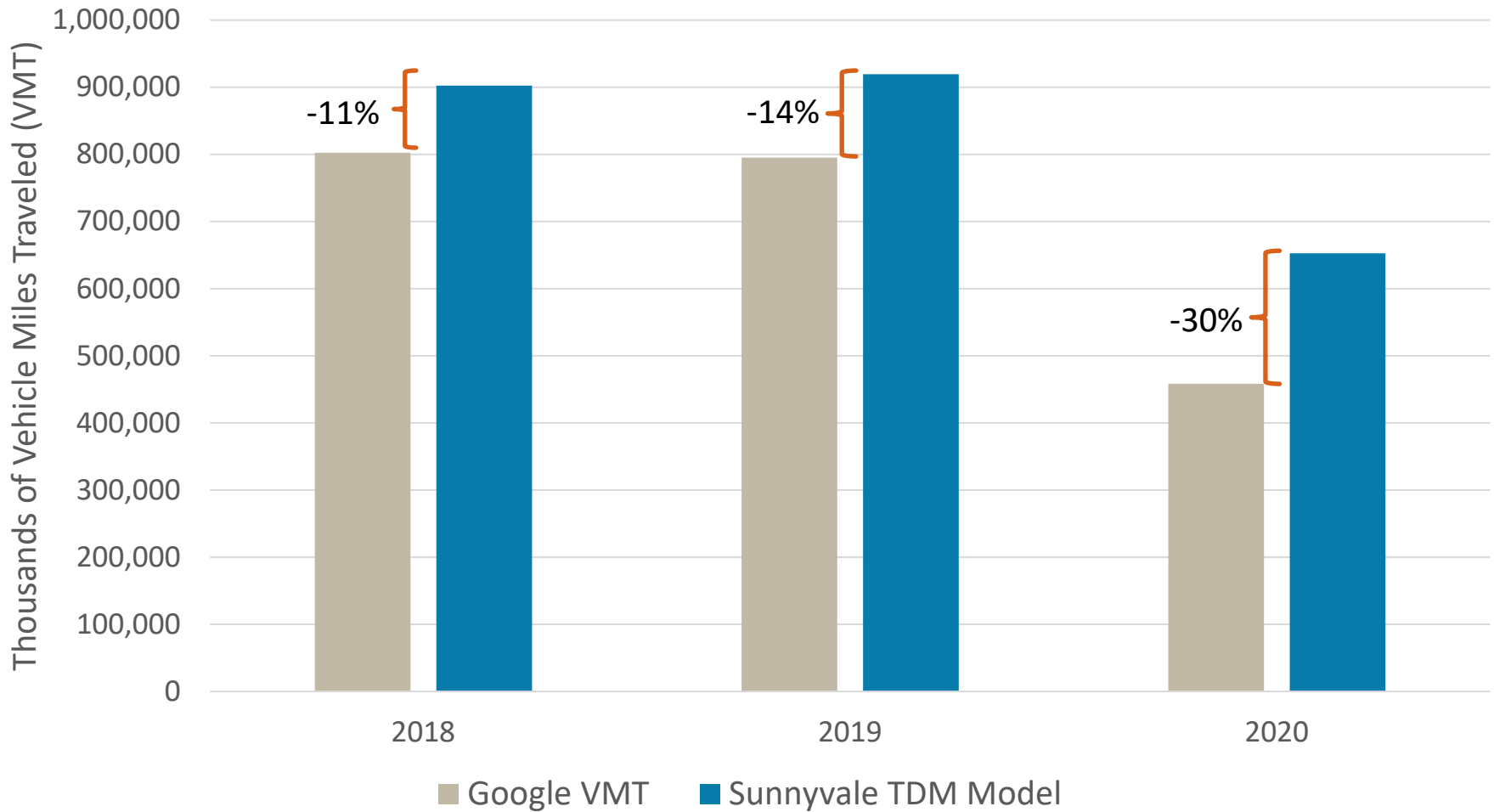
# Transportation Emissions

EMFAC 2021 Insights

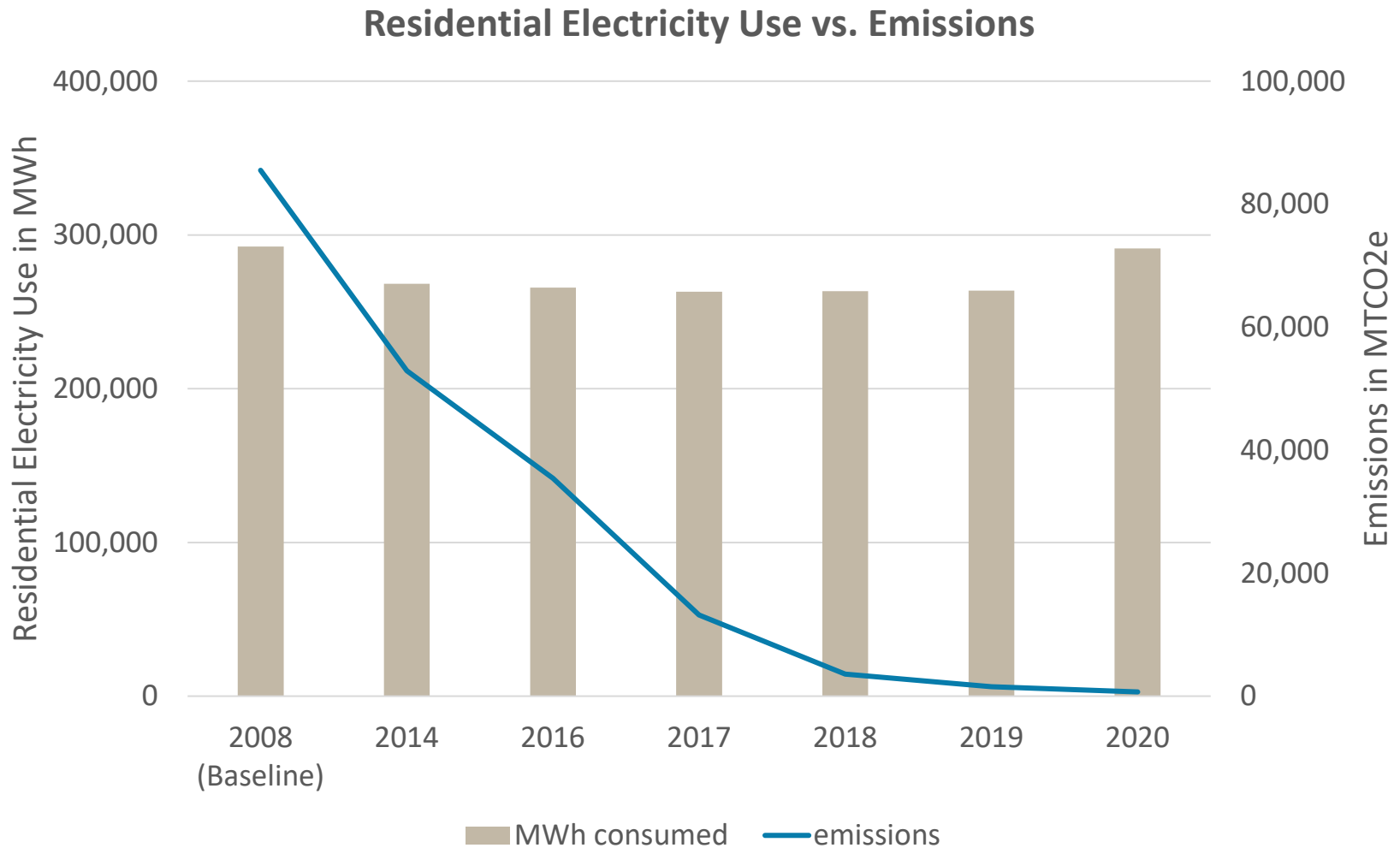


# Transportation Emissions

Google Insights vs. Sunnyvale TDM Model

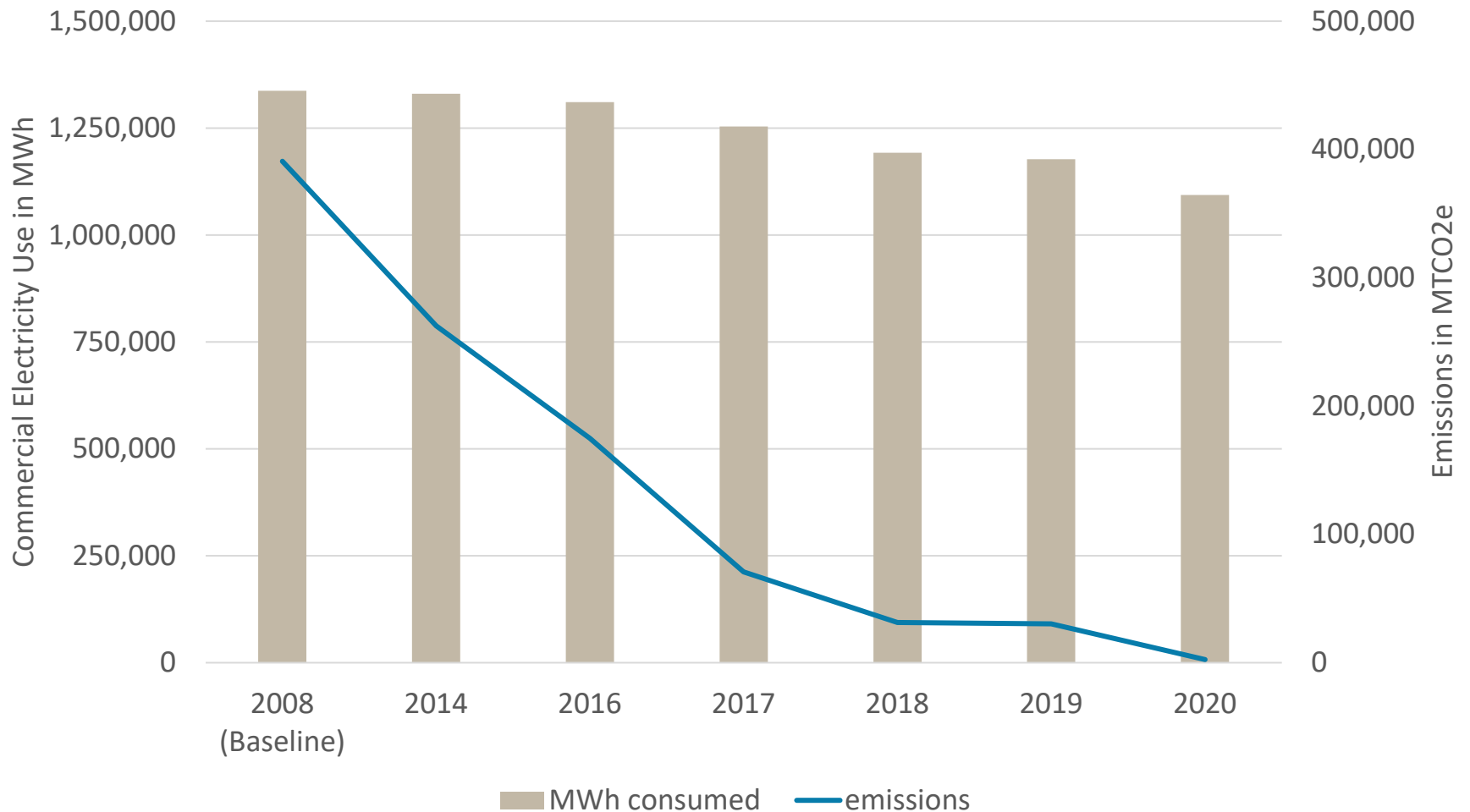


# Electricity Sector Emission Trends



# Electricity Sector Emission Trends

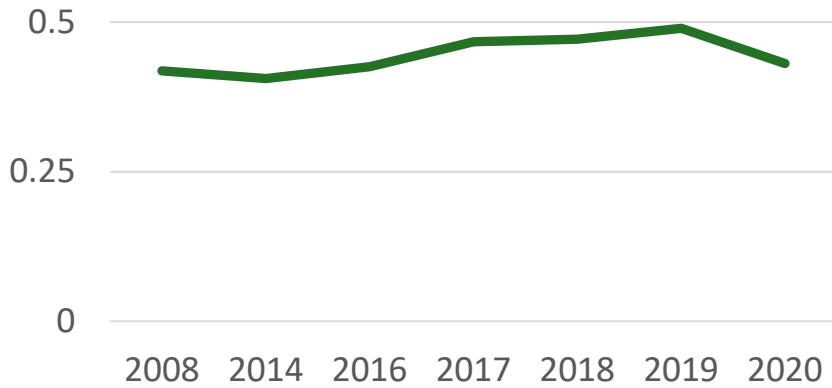
## Commercial Electricity Use vs. Emissions



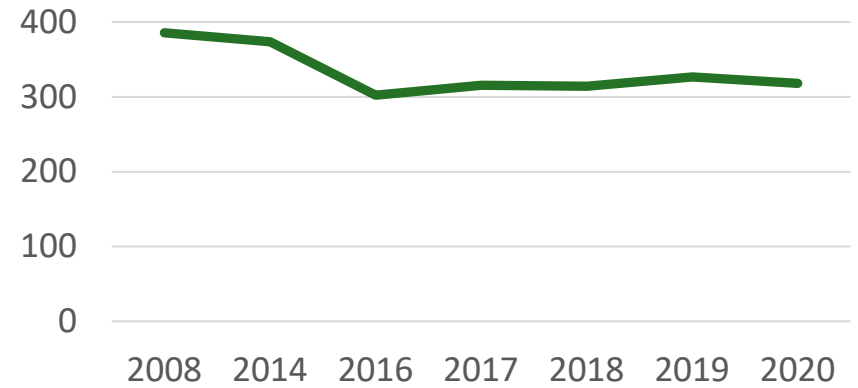


# Energy Efficiency

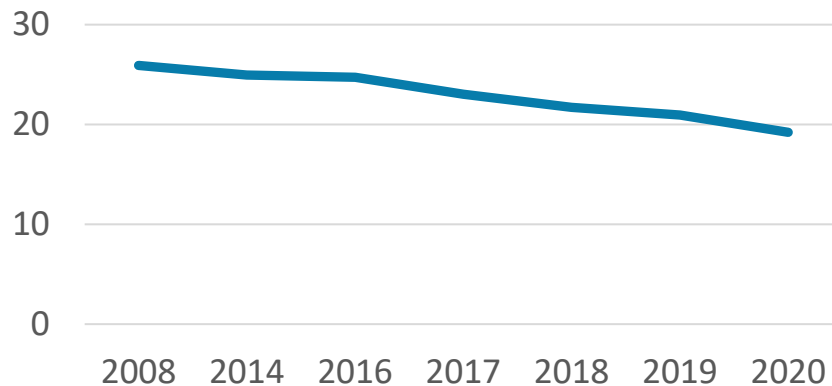
Commercial Space Energy intensity: Natural Gas (therm/sq ft)



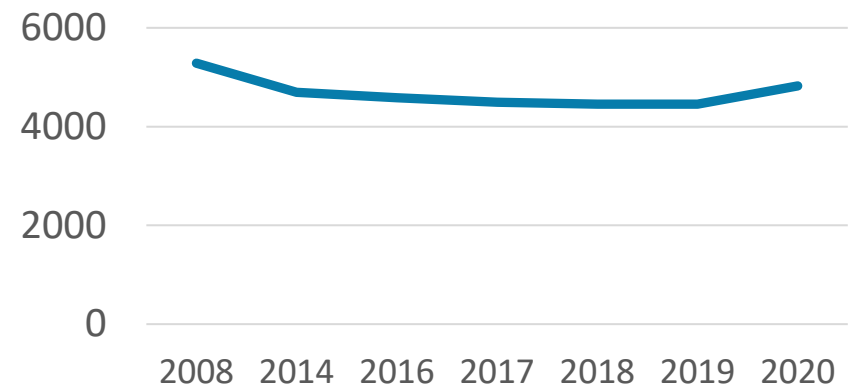
Residential Energy Intensity: Natural Gas (therm/housing unit)



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



Residential Energy Intensity: Electricity (kWh/housing unit)



# Off-Road Sector Emissions

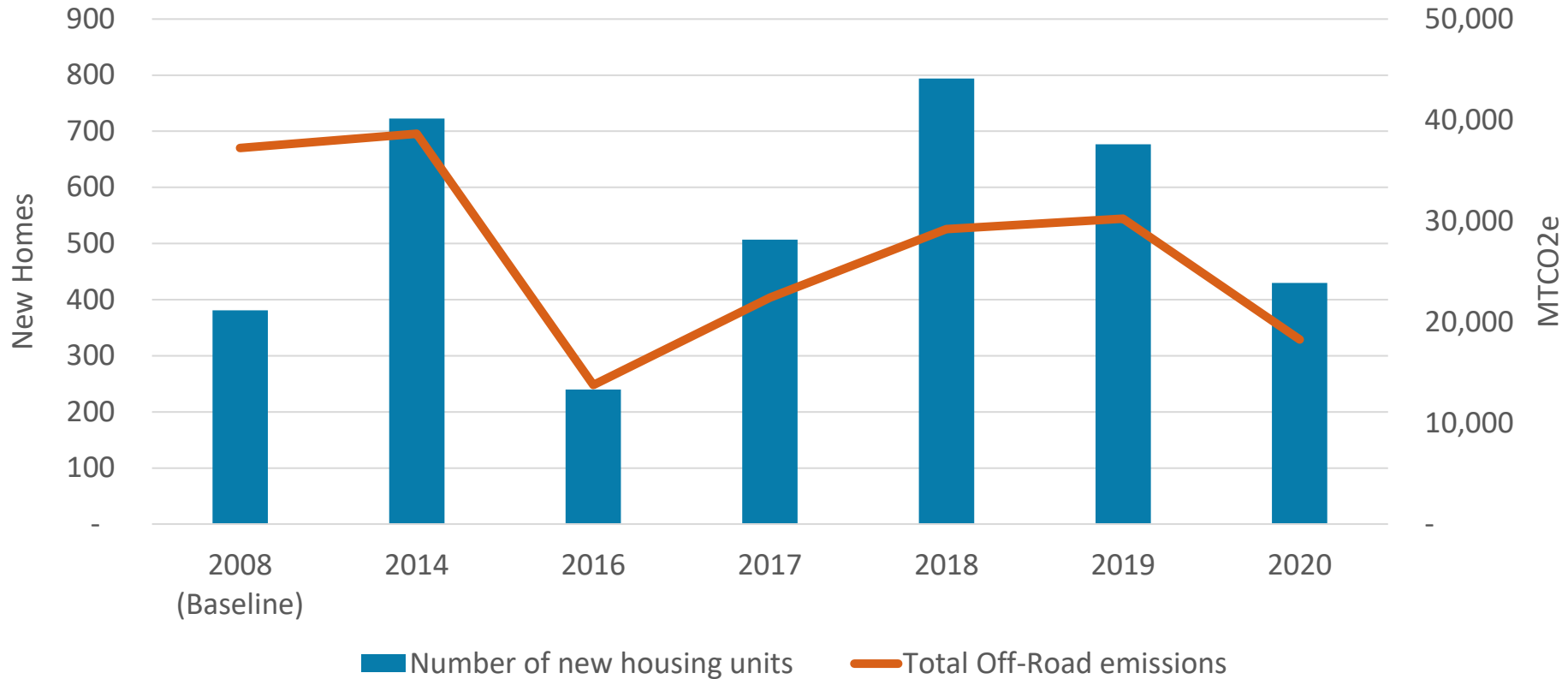
- Change in Emissions from original inventory to updated using the new EMFAC model:

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

# Off-Road Sector Emissions

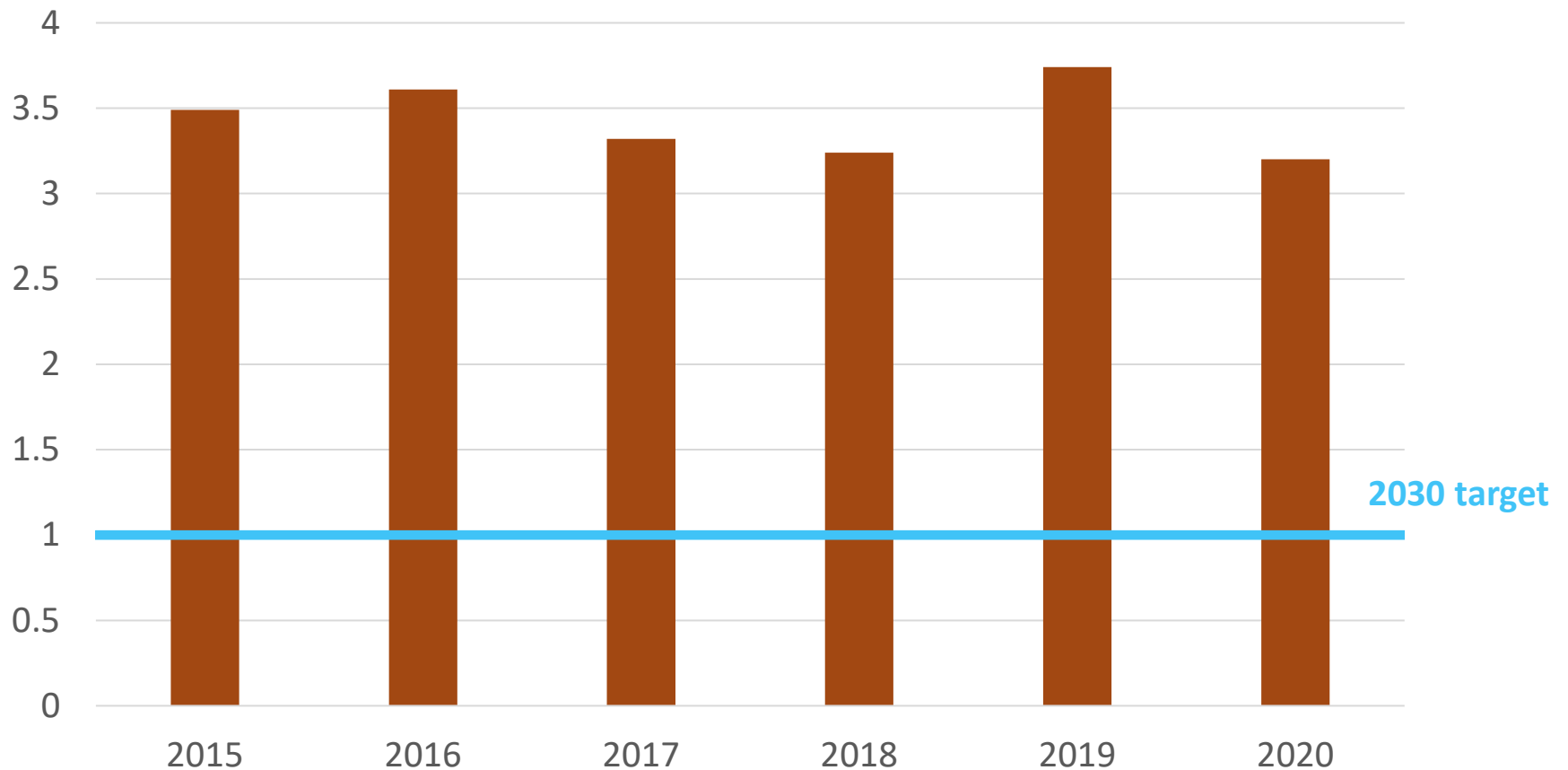
- 2020: material and resource costs were high, so we saw a significant drop in construction activity

OffRoad Emissions vs New Homes Constructed in Sunnyvale



# CAP Metric #9

## Pounds of Landfilled Garbage per Person per Day



# CAP Metric #10

