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# FOSSIL-FREE BAY AREA

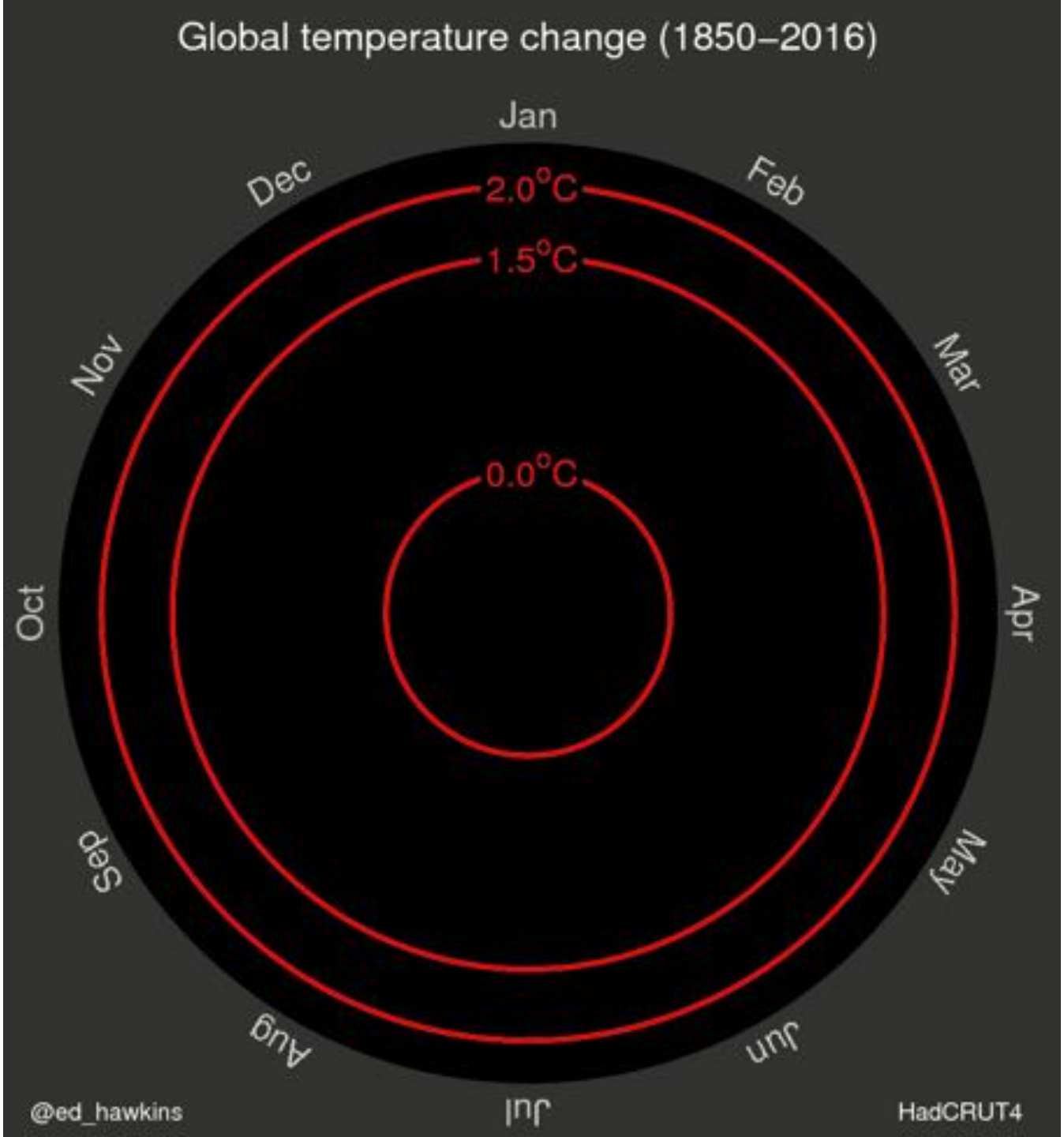
## A cleaner future for the region's energy

September 2016

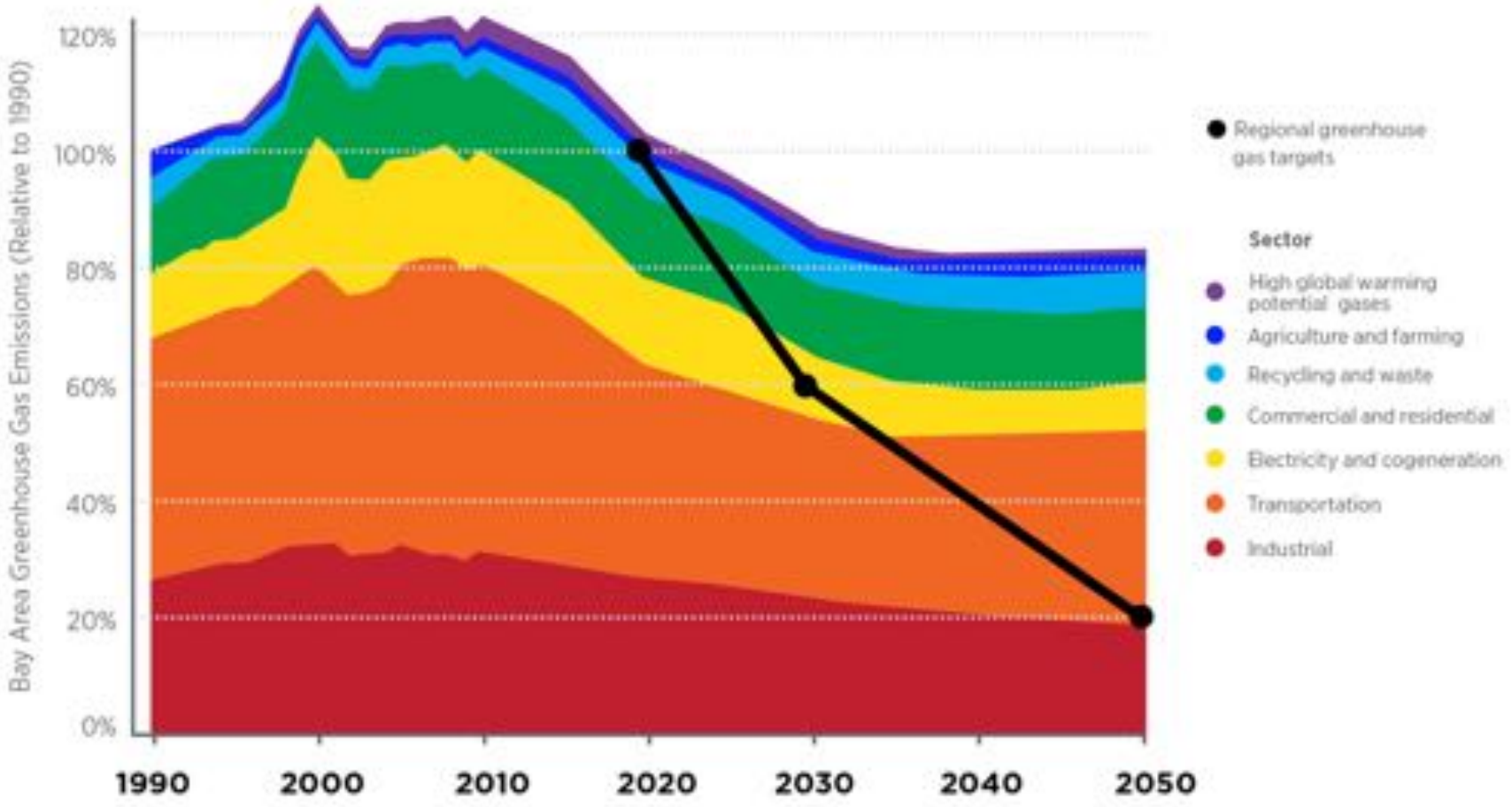
# What can the Bay Area do to end our fossil fuel dependency?

## Three Big Ideas:

1. **Consume less fossil fuel** by eliminating waste and improving efficiency of buildings, the transportation system, and land use
2. **Electrify most energy uses** including vehicles and buildings
3. **Generate renewable electricity** to meet almost all energy needs with 100% renewable sources


Global temperature change (1850–2016)
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec
2.0°C
1.5°C
0.0°C
@ed_hawkins
HadCRUT4

# Reaching the Bay Area's emissions goals requires new policies and programs




Source: BAAQMD, 2015

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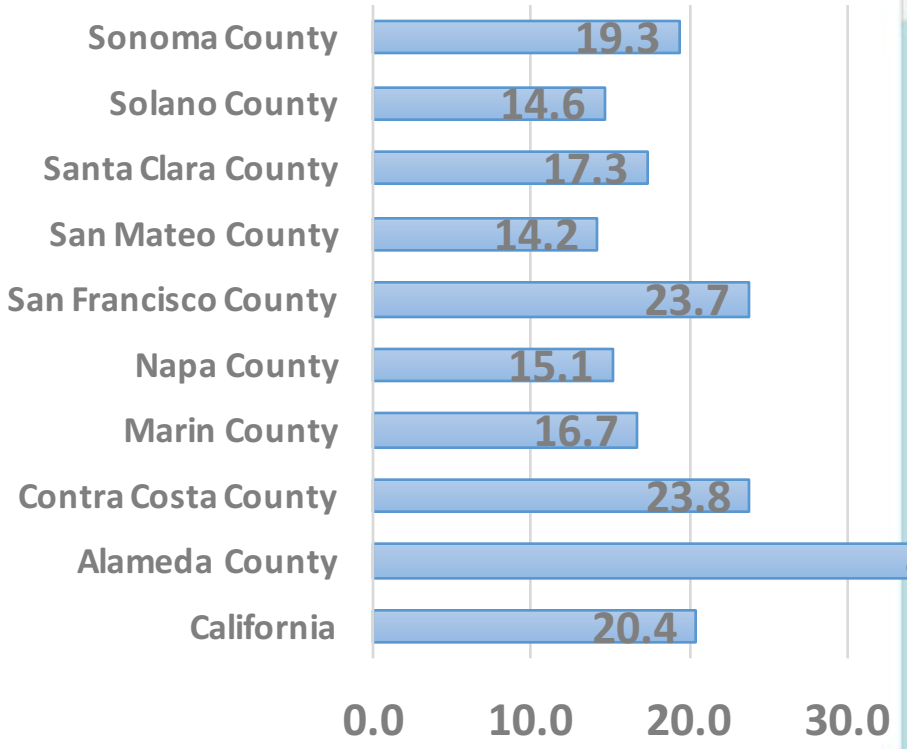
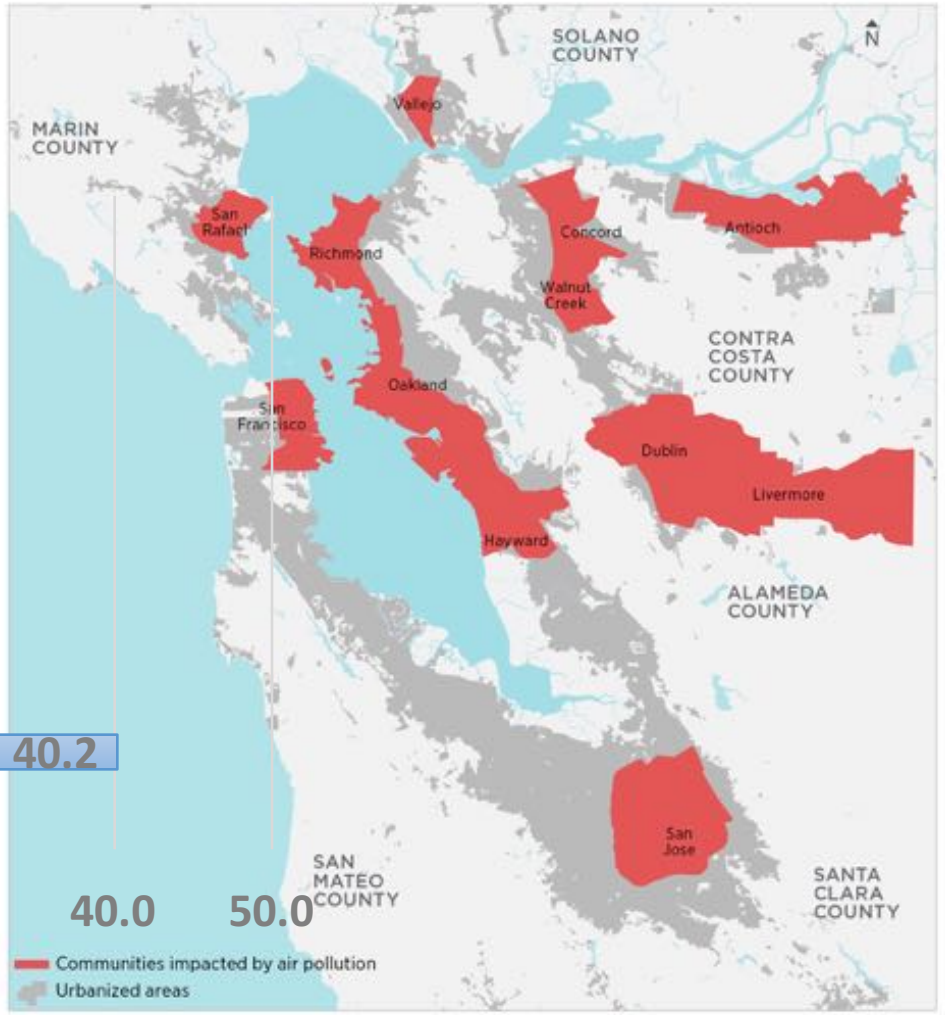
# Cleaner air is a direct local benefit of going fossil-free

**Asthma hospitalization rates by county: 0-4 year olds, per 10,000 (2013)**




Source: Kidsdata.org




Source: BAAQMD, 2015

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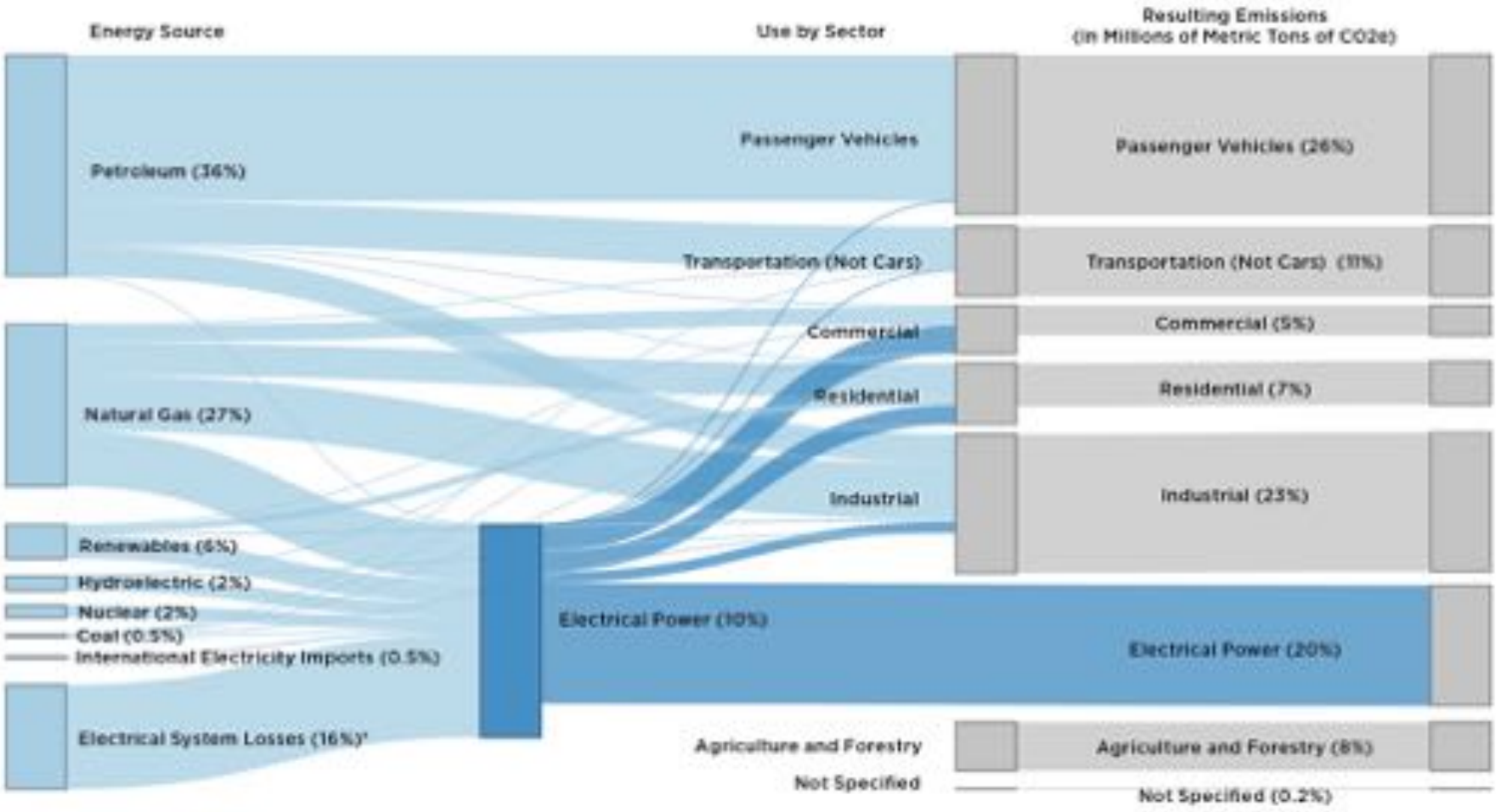
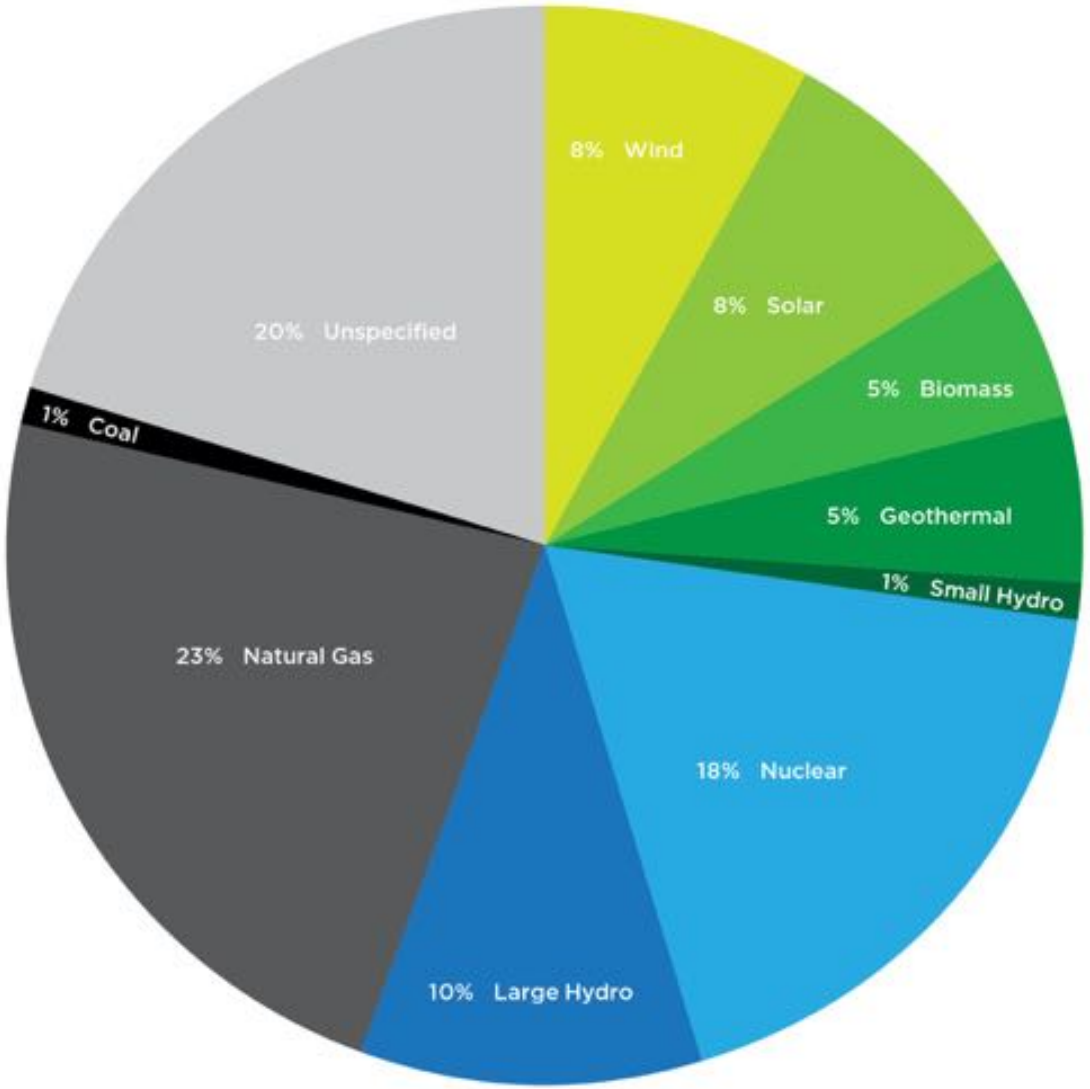
# California consumes more petroleum than any other energy source



## Key observations

- The Bay Area's electricity power portfolio is continually getting cleaner
- Natural gas boilers, heaters, and chillers are the combined 2nd largest source of GHG emissions, with little being done to directly reduce NG use or shift demand to non-fossil sources
- Transportation is the greatest single and fastest-growing source of fossil fuel use across all counties

# More than 50% of Bay Area electricity is fossil-free, and about 27% is renewable

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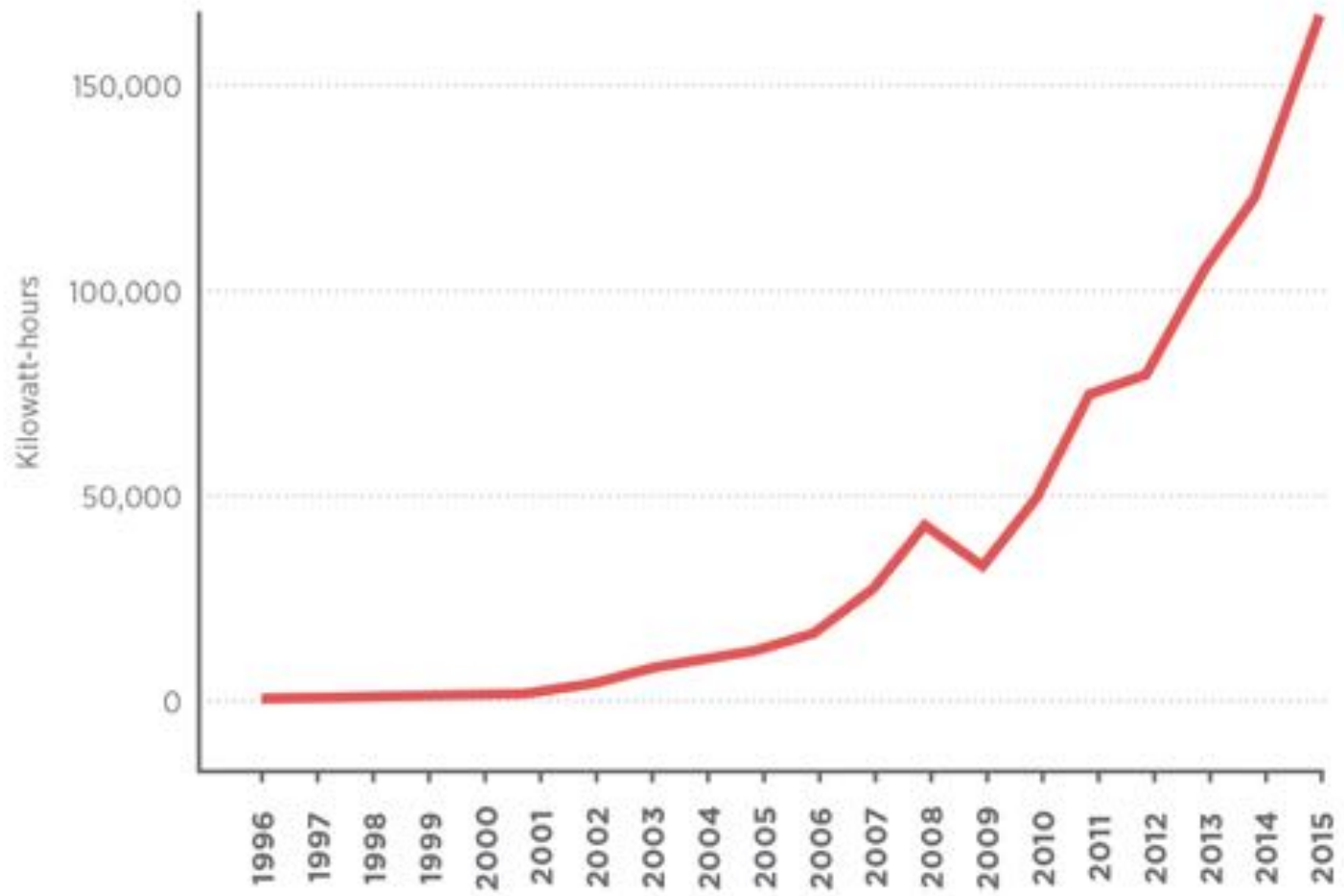
Source: SPUR analysis of 2014 California Energy Commission data

# Rooftop solar is growing exponentially




Source: California Solar Initiative

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# Top sources of Bay Area GHG emissions

| Source | Million Metric Tons of CO2e annually |
|---|---|
| Passenger cars and trucks | 28.5 |
| Oil refineries | 14.2 |
| Electricity generation and co-generation, including imports | 12.1 |
| Commercial natural gas boilers/heaters | 8.4 |
| Residential natural gas | 6.4 |
| Refrigerants/ozone-depleting substances | 4.7 |
| Medium/heavy duty trucks + buses | 4.3 |
| Off-road transportation, including trains, ships, boats and all aviation | 3.4 |
| Waste management | 1.6 |
| Agriculture | 1.3 |
| Off-road equipment | 1.3 |
| *Everything else combined* | 2.4 |

Source: BAAQMD, 2015

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# CA has a very robust climate policy framework

- AB 32 (2006) – Global Warming Solutions Act
- AB 2021 – Utility energy efficiency targets
- Renewable Portfolio Standard – 50% renewable electricity by 2030
- Clean Car Standards – 42.5 mpg fleet avg by 2020
- Title 24/CALGreen – energy codes, new residential must be net-zero by 2030, commercial by 2030
- Low Carbon Fuel Standard
- SB 350 – Double efficiency of existing buildings by 2030
- SB 375 – Regional planning of housing and transportation to reduce auto-related GHG
- SB 32 – extending AB 32 to 2030 and 40% below 1990

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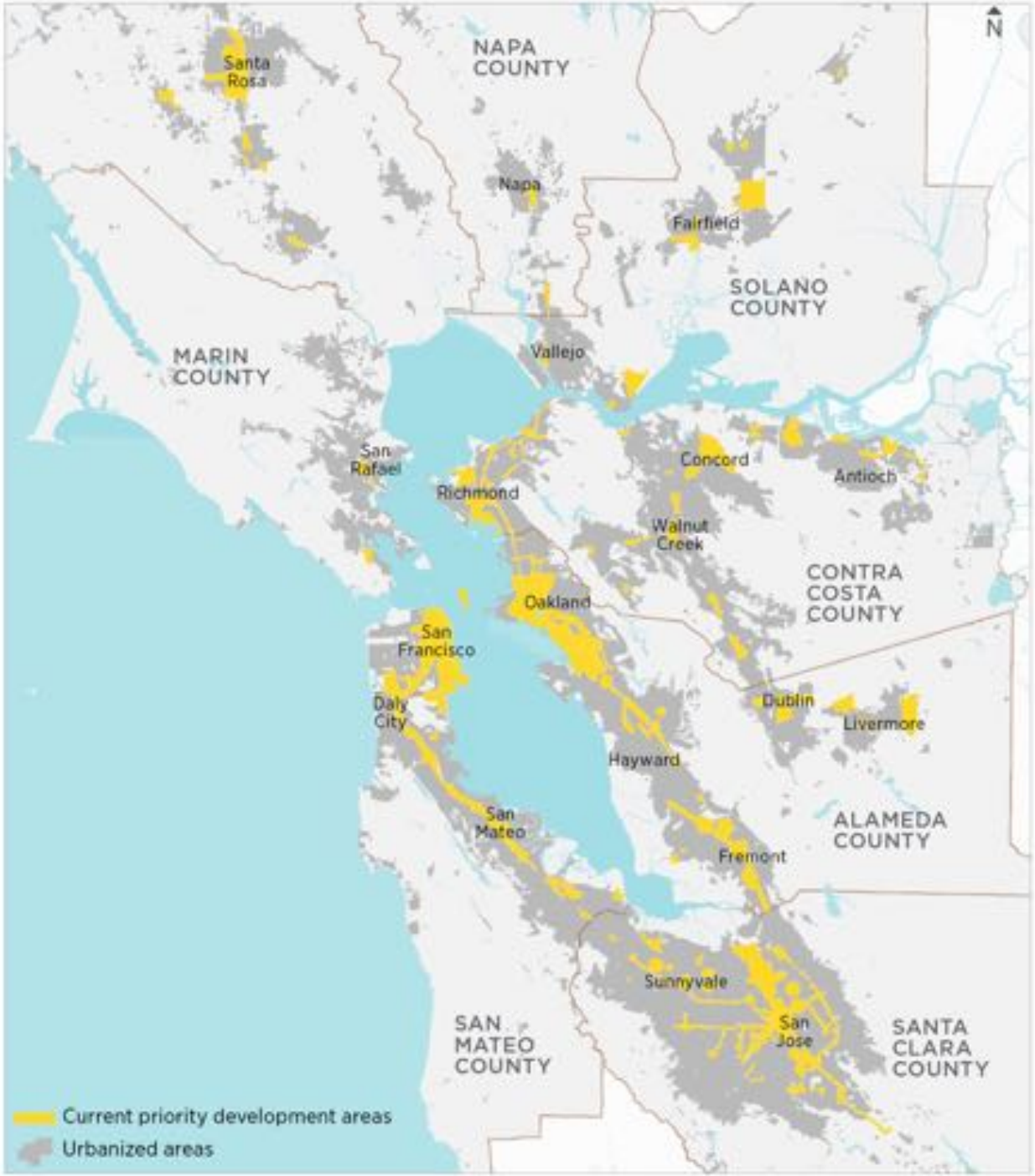
# What can the Bay Area do?

# Big Idea #1.  Consume less fossil fuel

# Increase the energy performance of new buildings, and improve code enforcement

# Require systematic energy retrofits of existing buildings

# Control sprawl by protecting open space, supporting infill development, and increasing density in places served by transit


N
NAPA COUNTY
Santa Rosa
Napa
Fairfield
SOLANO COUNTY
MARIN COUNTY
Vallejo
San Rafael
Concord
Antioch
Richmond
Walnut Creek
CONTRA COSTA COUNTY
Oakland
San Francisco
Daly City
Dublin
Livermore
Hayward
San Mateo
ALAMEDA COUNTY
Fremont
Sunnyvale
San Jose
SAN MATEO COUNTY
SANTA CLARA COUNTY
Current priority development areas
Urbanized areas

# Make communities walkable, bikeable, and transit-accessible

# Use policy and pricing tools to make less carbon-intensive modes of travel easier, safer, and cheaper than driving

# Big Idea #2.  Electrify Most Energy Uses

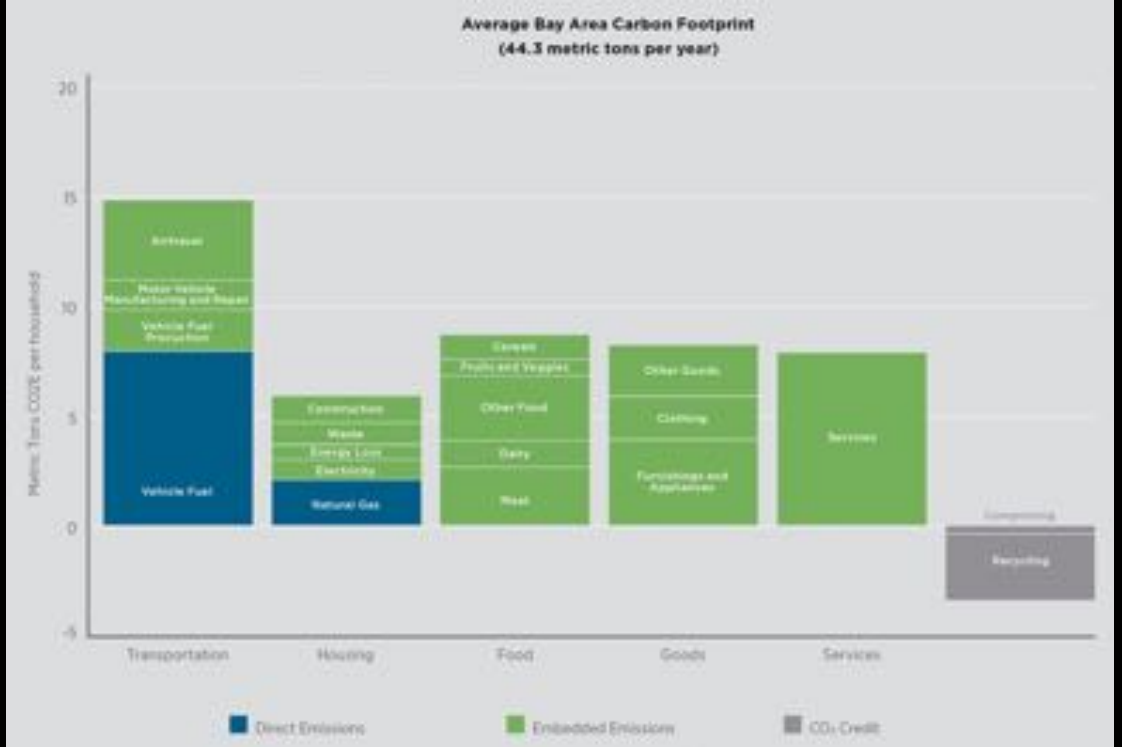
# Electrify passenger vehicles and scale-up infrastructure that supports them

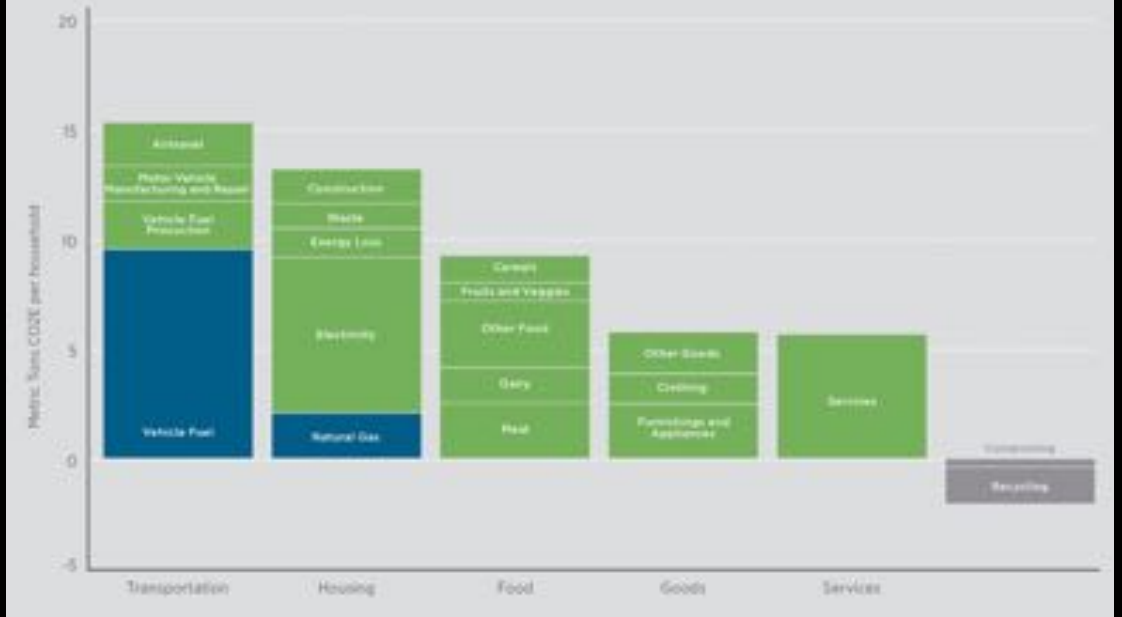
# Electrify buildings

# Big Idea #3.  Decarbonize the electricity grid

**Allow new renewable power facilities to be built quickly by expediting permitting and reviews, providing targeted incentive programs, setting requirements and leading by example**

# Decarbonize fuels that will be hard to electrify in the next 20 years


Average Bay Area Carbon Footprint
(44.3 metric tons per year)
Metric Tons CO2E per household
20
15
10
5
0
-5
Airtravel
Motor Vehicle Manufacturing and Repair
Vehicle Fuel Production
Vehicle Fuel
Construction
Waste
Energy Loss
Electricity
Natural Gas
Cereals
Fruits and Veggies
Other Food
Dairy
Meat
Other Goods
Clothing
Furnishings and Appliances
Services
Composting
Recycling
Transportation
Housing
Food
Goods
Services
Direct Emissions
Embedded Emissions
CO2 Credit


Average American Carbon Footprint
(49.8 metric tons per year)
Metric Tons CO2E per household
20
15
10
5
0
-5
Airtravel
Motor Vehicle Manufacturing and Repair
Vehicle Fuel Production
Vehicle Fuel
Construction
Waste
Energy Loss
Electricity
Natural Gas
Cereals
Fruits and Veggies
Other Food
Dairy
Meat
Other Goods
Clothing
Furnishings and Appliances
Services
Composting
Recycling
Transportation
Housing
Food
Goods
Services


Thank you

# San José Environmental Services Department (ESD)

# Energy Program Update
# February 2017

CITY OF SAN JOSE
CAPITAL OF SILICON VALLEY
*Environmental Services*

*Delivering world class utility services and programs to improve our health, environment and economy*

# Environmental Sustainability Plan

- Focus on GHG emissions reductions, energy usage reduction, and a sustainable water supply
- Selected *PricewaterhouseCoopers* (PwC)
- Plan expected to be completed in September 2017


# Community Choice Aggregation


*San José Clean Energy (SJCE)*

# City Energy Project

# Silicon Valley Energy Watch

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Environmental Services

PG&E Pacific Gas and Electric Company®

Ecology Action | Helping people act now.

# SVEW Programs

- Schools/Prop 39 Energy Assistance Program
- Municipal Energy Assistance Program
- Business Audits/ Rebates
- Do-it-Yourself (DIY) Home Energy Savings Toolkit
- Energy Innovation Grants
- Trainings

# Step Up Power Down


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*Environmental Services*

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# Property Assessed Clean Energy (PACE)

# Questions?

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