



BAY AREA  
AIR QUALITY  
MANAGEMENT  
DISTRICT

AGENDA: 4

# Legislative History of the Advisory Council and Role of Officers

Advisory Council Meeting  
October 25, 2021

Greg Nudd  
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# Previous Advisory Council defined by California Health and Safety Code



- Council consisted of 20 members who are skilled in a variety of fields
- Required at least one member from colleges and universities, health agencies, agriculture, industry, community planning, transportation, professional engineers, general contractors, architects and organized labor

# Current Advisory Council defined by California Health and Safety Code



- California Health and Safety Code, Sections 40260-40268:
- Council shall consist of:
  - Air District Board of Directors Chair, who shall serve as an ex- officio member
  - Seven members who shall be skilled and experienced in the fields of air pollution, climate change, or the health impacts of air pollution
  - Members shall be selected to include a diversity of perspectives, expertise, and backgrounds

# Role of the Advisory Council



- Air District seeks input and expertise on a variety of air quality topics
- Advisory Council has previously explored:
  - Energy sector/greenhouse gas emissions
  - Ultrafine Particulates
  - Black Carbon
- Most recently the Advisory Council researched and developed a Particulate Matter Reduction Strategy Report (December 2020)

# Role of Chair and Vice Chair



- Chair has helped determine meeting schedule, develop agenda, reviewed meeting materials/presentations
- Chairs the meeting and facilitates Advisory Councilmember feedback and public comment
- Provides reports to the Board of Directors on the work of the Council
- Guides development of reports/work products of the Council
- Vice-Chair supports Chair in their role, including Chairing a meeting, if needed

# Advisory Council and Boards of the Air District



- Advisory Council works together with other Councils/Committees to gather input and provide guidance
- Advisory Council:
  - attends Board of Directors meetings quarterly to provide update on the work of the Advisory Council
  - provides guidance to Board of Directors on various scientific topics related to air quality
  - participates in community meetings to listen and gather input
  - may meet with Community Advisory Council (CAC), once seated, or join meetings of the CAC, to discuss air quality topics/receive feedback



# Questions?



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**AGENDA: 5**

# **Air District Climate Protection Program**

**Advisory Council Meeting  
October 25, 2021**

**Greg Nudd**  
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# Overview



- Previous meeting provided background on the Air District, our mission, vision and path forward
- Over the next several meetings staff will review key areas of focus including:
  - October 25, 2021: Climate Protection
  - November 8, 2021: Community Health and Equity Initiatives
  - December 13, 2021: Particulate Matter Report

# Advisory Council Input and Guidance



- Air District staff seek the Advisory Council's input and guidance on:
  - Program design; particularly when it comes to Climate Protection, Community Health and Equity Initiatives, Particulate Matter (PM)
  - Evaluation of program effectiveness
  - Framework for prioritization and where the Air District should focus
  - Support in identifying co-benefits or win-win next steps



Source: <https://news.yahoo.com/water-cascades-york-city-subway-050812621.html>

*“There’s really one key message that emerges from this report: **We are out of time.**”*

– Kim Cobb, Ph.D.  
Professor of Earth and Atmospheric Sciences,  
Georgia Institute of Technology

# Growing Urgency: Impacts



Source: <https://earthobservatory.nasa.gov/images/148731/california-burning>

*“The IPCC Report is a ‘code red’ for humanity.”*

– U.N. Secretary-General António Guterres



Source: <https://www.ksla.com/2021/08/30/hurricane-ida-how-its-impacting-mississippi/>



Source: <https://www.forbes.com/advisor/personal-finance/apply-for-fema-assistance-hurricane-ida/>



Source: <https://www.independent.co.uk/climate-change/news/heatwave-us-pacific-northwest-deaths-b1880913.html>

# Growing Urgency: Equity



**“Calls for change after 11 people in NYC basement apartments died during catastrophic floods”**



Source: ABC News



Source: <https://aging.com/disaster-preparedness-for-seniors/>

**“Across all climate risks, children, older adults, low-income communities, some communities of color, and those experiencing discrimination are disproportionately affected by extreme weather and climate events”**

– U.S. 4<sup>th</sup> National Climate Assessment (2018)

Low-income residents are less able to evacuate due to lack of resources (e.g., money for gas or lodging).

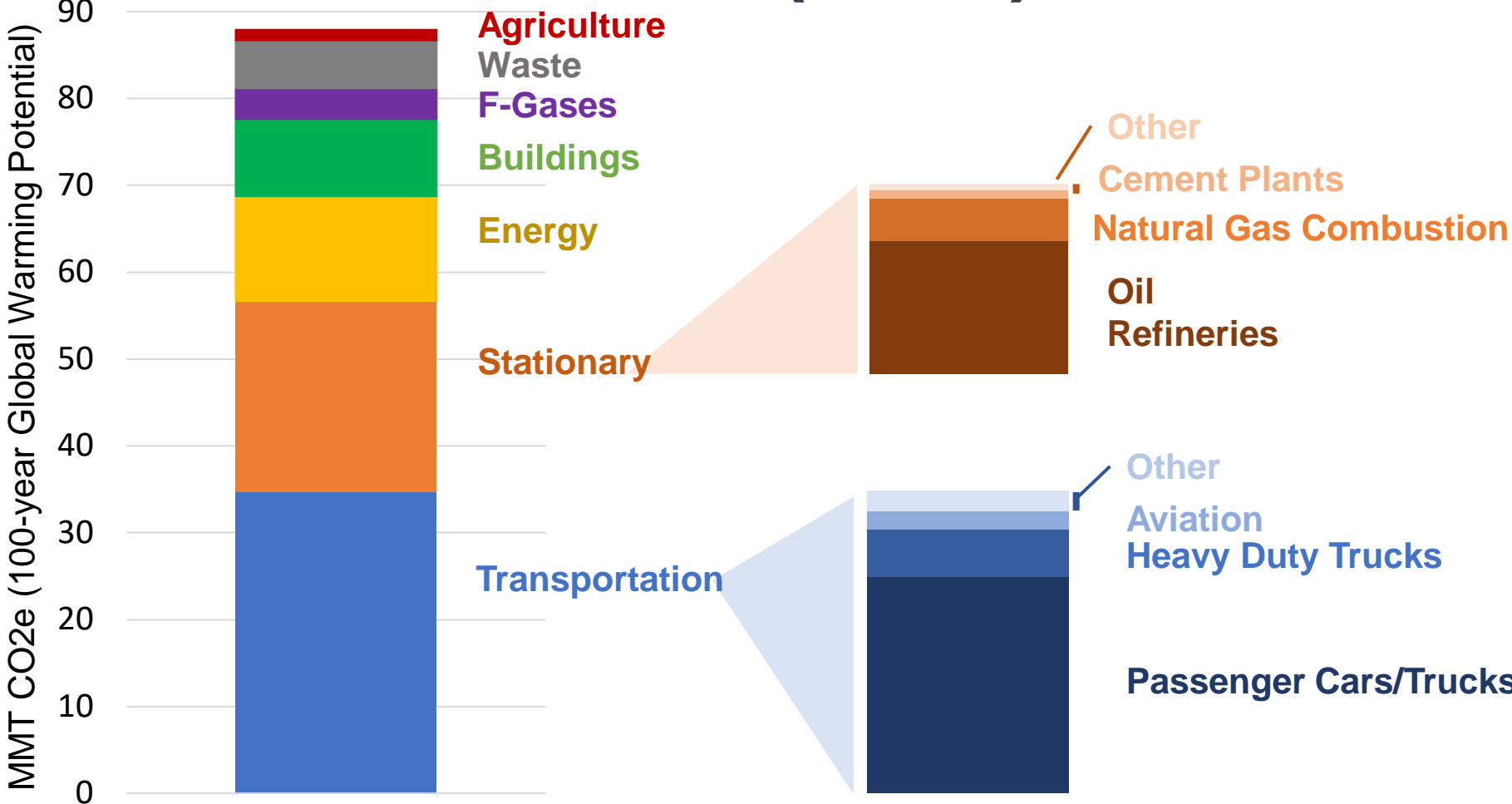
**“WE KNEW WHO WAS GOING TO DIE”:  
WARNINGS ABOUT LOWER-INCOME  
HEAT RISK WENT UNHEEDED**

**The  
Intercept**

Source: The Intercept



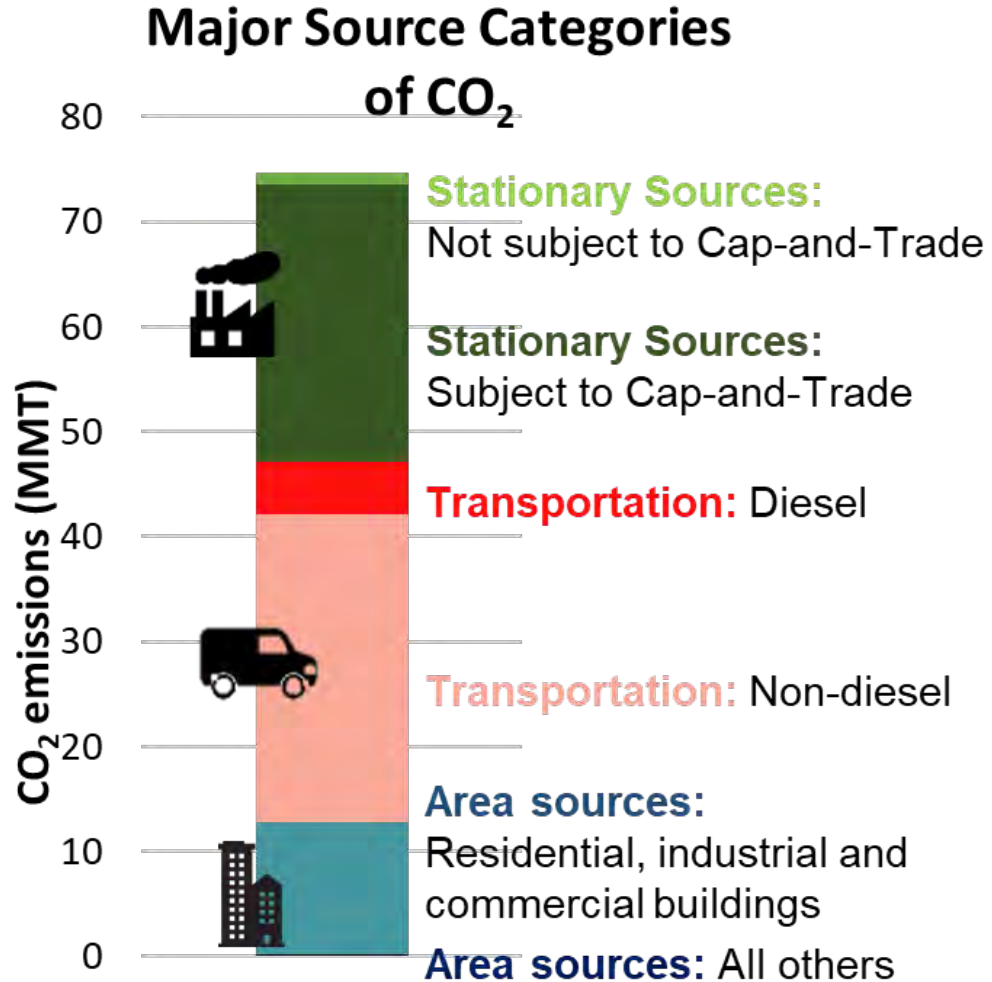
# Bay Area Greenhouse Gas (GHG) Emissions



**2017 GHG Emissions Inventory**  
*(with measurements-based revisions to methane estimates)*

Source: Bay Area Air Quality Management District

# Bay Area GHG Emissions: CO<sub>2</sub>



Source: Bay Area Air Quality Management District

## Key Campaigns



Building Decarbonization Program



Zero Emission Vehicle Acceleration Plan



Diesel Free By '33



Walk. Bike. Ride.

Work with MTC and local governments to overcome barriers to VMT reduction

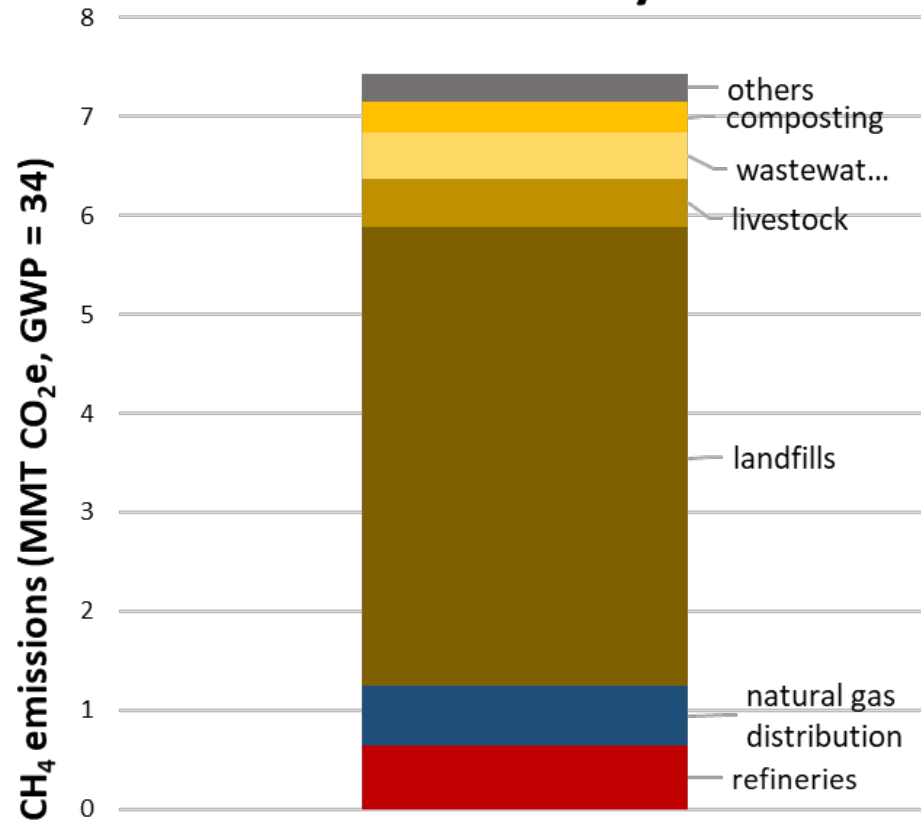


Transition back-up power off fossil fuels

# Bay Area GHG Emissions: Methane



## Updated Methane Emissions Inventory



Source: Bay Area Air Quality Management District

## Key Campaigns



Rule development: hydrogen plants; landfills



Scientific studies

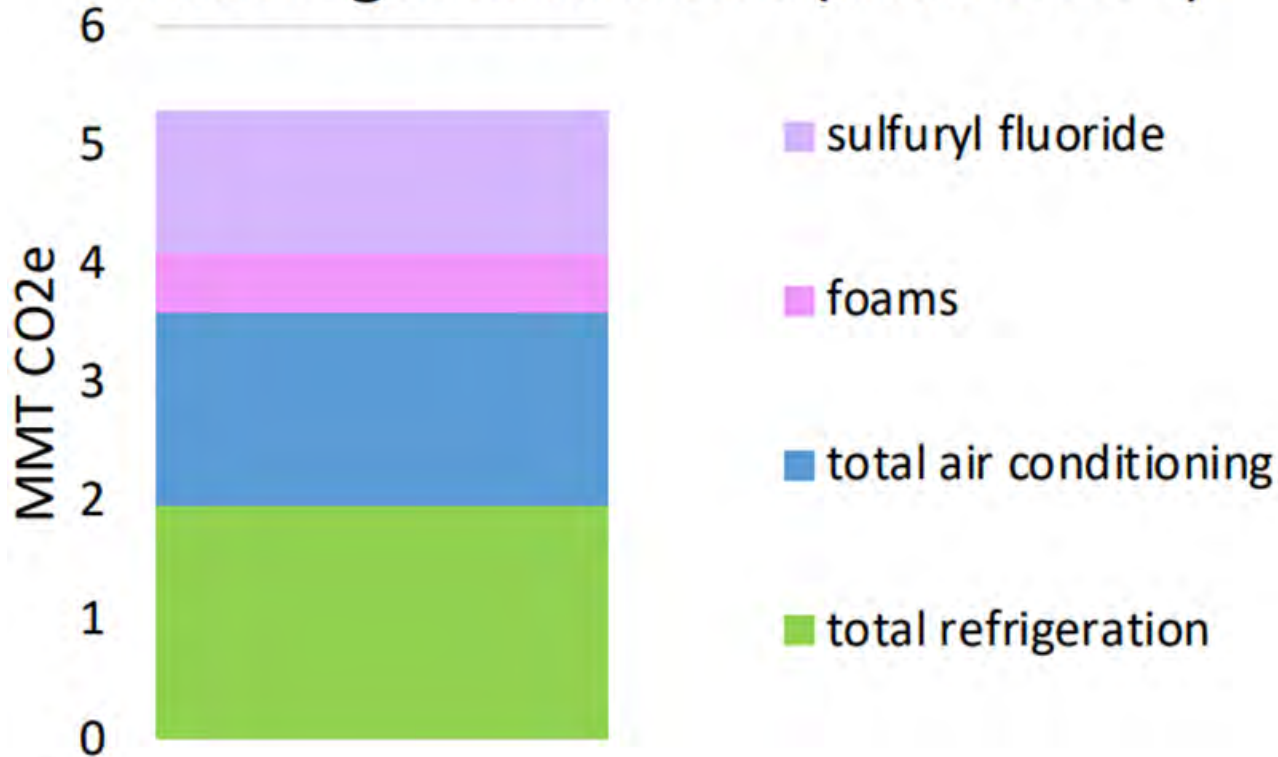


Assisting local governments with organic waste diversion mandates

# Bay Area GHG Emissions: F-Gases



## Total F-gas Emissions (MMT CO<sub>2</sub>e)



Source: Bay Area Air Quality Management District

## Key Campaigns:

- Region-wide expansion of Residential Appliance Recycling Program
- Policy and technical support through Clean Building Compass
- Public education and outreach campaign
- Explore potential rule-making for hydrofluorocarbons (HFCs), sulfuryl fluoride



# Climate Protection Program



## Local Government

- Climate Action Plans
- Policy & technical support
- Bay Area Healthy Homes Initiative
- Communications



## Incentives

- Climate Tech Finance
- Electric Vehicle (EV) funding
- TFCA grants
- Moyer grants



## Rules

- Hydrogen plants
- Landfill Rule amendment



## Policy & Legislative

- Commuter Benefit Program
- Climate bill advocacy



## Permitting

- Diesel backup generators (BUG) permitting



## Inventory & Measurements

- Methane inventory improvement



## Enforcement

- Landfill inspections

# Where Do We Go From Here?



## Local Government Support

Key Opportunity – Cities and Counties are:

- Laboratories of innovation
  - Community choice energy programs
  - Innovative financing solutions
- Critical players in reducing GHGs
- Eager to continue to be leaders in climate protection
  - Building energy reach codes
  - Climate Action Plans



Following Berkeley's Natural Gas Ban, More California Cities Look to All-Electric Future

Source: [Inside Climate News](#)

# Where Do We Go From Here? (cont.)



## Local Government Support

### Accelerating transformational change at the local level

- Continue & enhance support for building decarbonization programs
- Replicate the success of the building decarbonization initiative to additional sectors, e.g., provide resources and guidance related to F gases, Diesel Free by '33, etc.
- Support the critical role of local governments in achieving state targets and mandates:
  - Divert 75% of organic waste by 2025
  - Increase energy efficiency in existing buildings by 50% by 2030

# Where Do We Go From Here? (cont.)



## Local Government Support

### Accelerating transformational change at the local level (cont.)

- Policy support, information exchange and convenings
  - Model ordinances, best practices
  - Clean Building Compass
  - Local government newsletter, webinars
- Provide key technical and planning support to long-range planning
  - GHG inventories and climate action plans
  - California Environmental Quality Act (CEQA) thresholds, guidance and review

# Where Do We Go From Here? (cont.)



## Rule Development

We have some constraints:

- Limited authority under Assembly Bill (AB) 398 – cannot regulate sources of CO<sub>2</sub> covered by Cap & Trade
- Cannot regulate transportation sources
- Authority over building codes and energy efficiency is limited to federal, state and local governments
- Technical challenges

# Where Do We Go From Here? (cont.)



## Rule Development (cont.)

But we also have opportunities:

- Regulate non-CO<sub>2</sub> GHGs (methane, F-gases)
  - 13-5: Hydrogen Plants, Board hearing Q4 2021
  - Landfills?
- Achieve GHG co-benefits from regulating traditional air pollutants

# Where Do We Go From Here? (cont.)

## Transportation



Address the largest sources of GHGs

- EV Acceleration Plan and Charge!
- Moyer, etc. – grants for zero and near-zero emission equipment
- Transportation Fund for Clear Air (TFCA) – local transportation demand management programs
- Calendar Year (CY) 2020 TFCA and Moyer reduced approx. 62,000 tons per year CO<sub>2</sub>
- Commuter Benefit Program
- Flex Your Commute
- Support Plan Bay Area implementation

# Where Do We Go From Here? (cont.)



## Climate and Equity

- Incentive programs
  - Clean Cars for All
  - Expanding EV programs in multi-family sector
- Policy initiatives
  - Diesel Free By '33
  - Promoting clean alternatives for back-up power
- Integrate GHG reduction with AB 617 work
  - Bay Area Healthy Homes Initiative

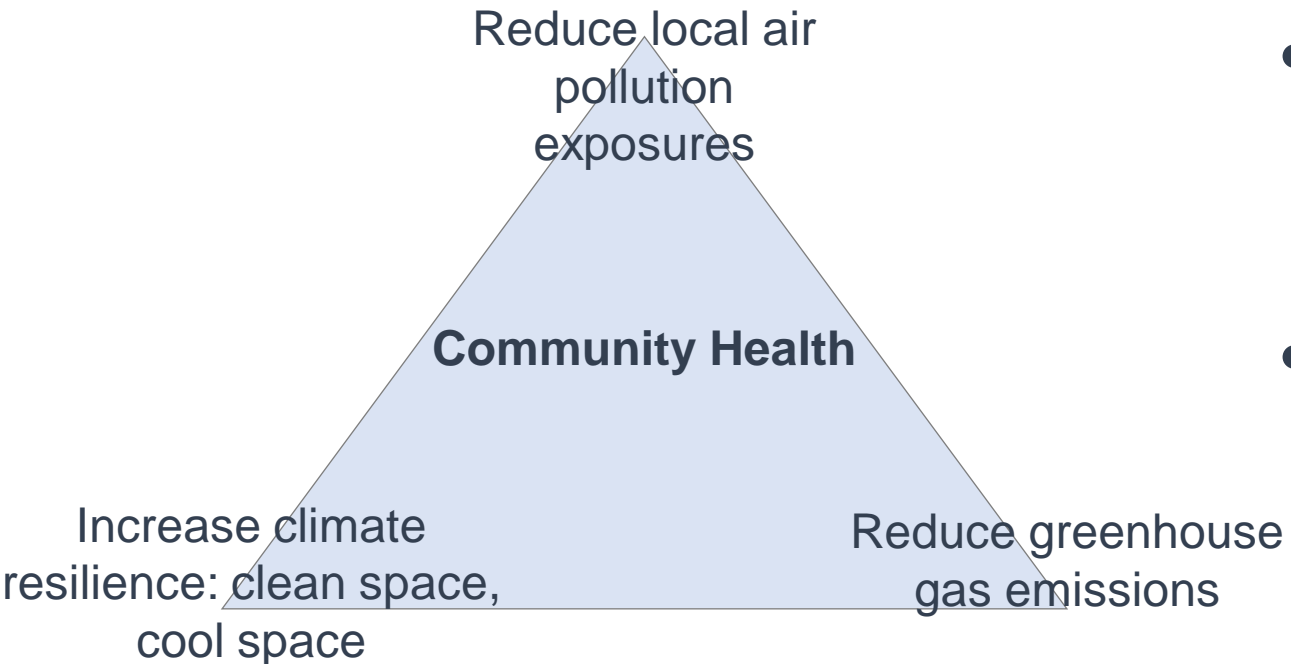


Green & Healthy  
Homes Initiative

Source: Bay Area Air Quality Management District



# Potential Win-Win Solutions



Source: Bay Area Air Quality Management District

- Bay Area Healthy Homes Initiative
- Wildfire AQ Response Program/Clean Air Filtration Program
- Rules on residential furnaces and gas-fired heaters

# Transportation: Incentives for EVs



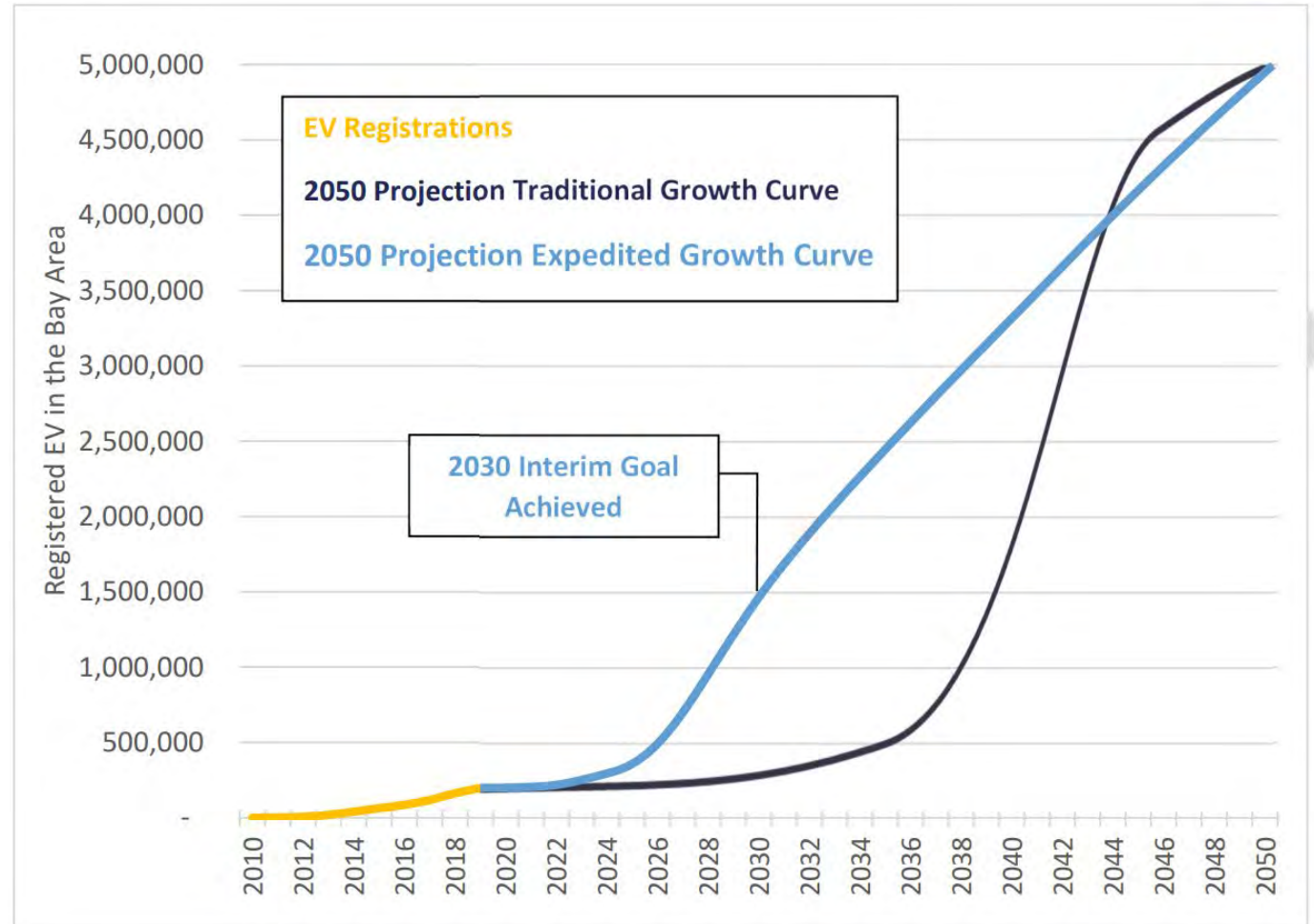
California  
**W** Mitigation  
Trust

*Grants for publicly accessible electric vehicle infrastructure*



**CLEAN CARS FOR ALL**

*Grants for low-income residents to trade in cars for cleaner transportation*



Source: [Bay Area Air Quality Management District](#)

# Innovative Financing for Innovative Technologies



Source: Bay Area Air Quality Management District

*Reducing greenhouse gases by increasing access to capital to accelerate climate technology commercialization*

## **Working Capital for Business Growth**

*Loan guarantees of up to \$2.5M or 90%*

## **Loans for Buying Climate Tech**

*Low-interest loans of up to \$30M over 30 years*



## Partnership



## Commercial lender



## Entrepreneur




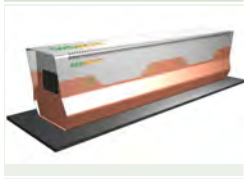


**Guarantee**  
up to 90% or  
\$2.5M  
up to 7 yrs

**Loan**  
up to  
\$20M  
rates vary

Source: [Bay Area Air Quality Management District](#)

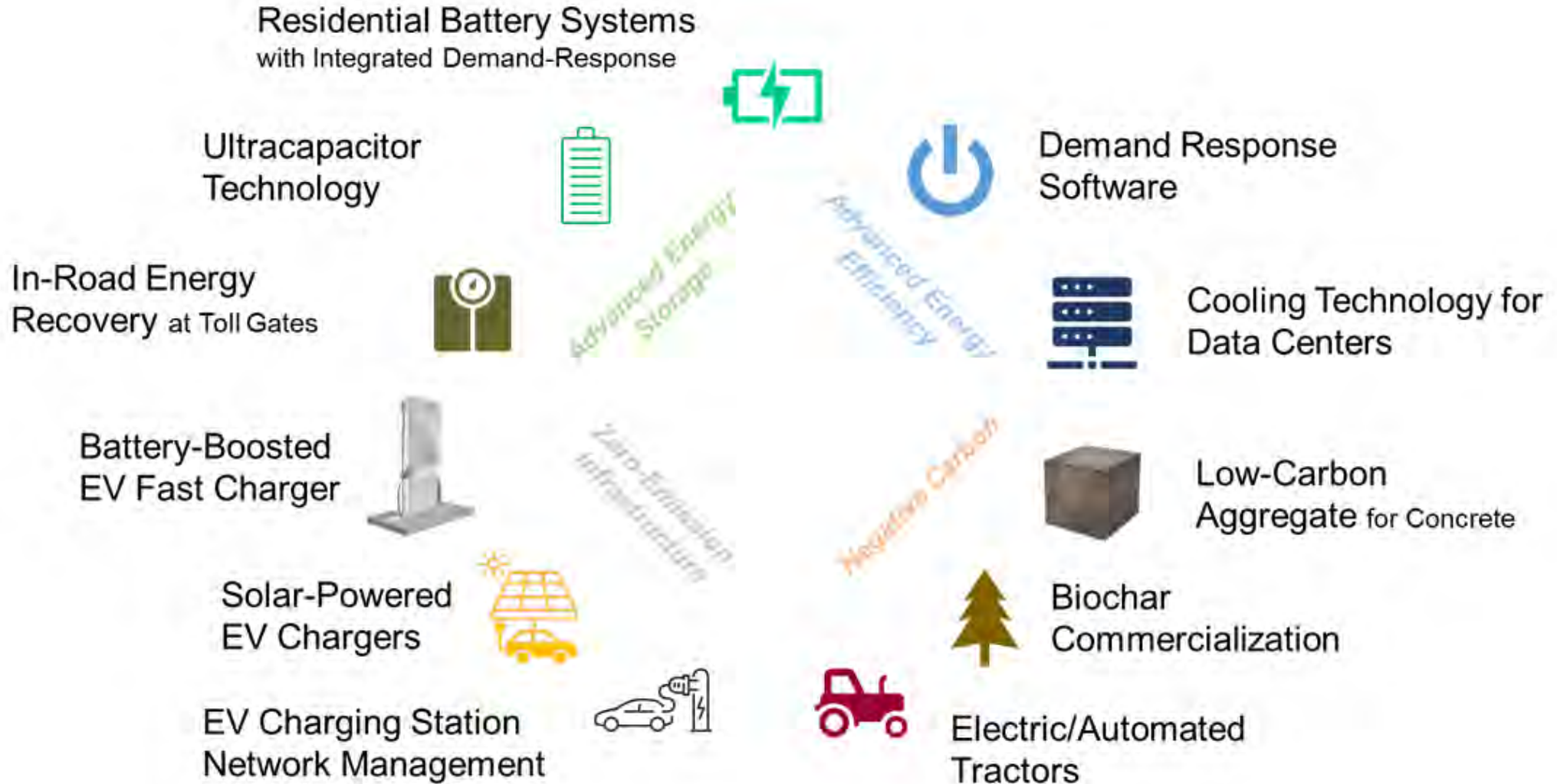
# Funded Projects



	Technology	Total Loan Amount
	<i>SW/TCH Maritime:</i> Hydrogen fuel cell ferry	<b>\$5,000,000</b> over 5 years
	<i>Gridscape Solutions:</i> Renewable microgrids as a service	<b>\$1,000,000</b> over 1 year
	<i>Imperial Eclectic Service:</i> EV charging stations and solar installations	<b>\$350,000</b> over 7 years
	<i>The Climate Center:</i> Accelerating climate solutions non-profit	<b>\$200,000</b> over 2 years

Total Air District Commitment	<b>\$350,000</b>
Total Loan Amount Supported	<b>\$6,550,000</b>

# Qualified Projects



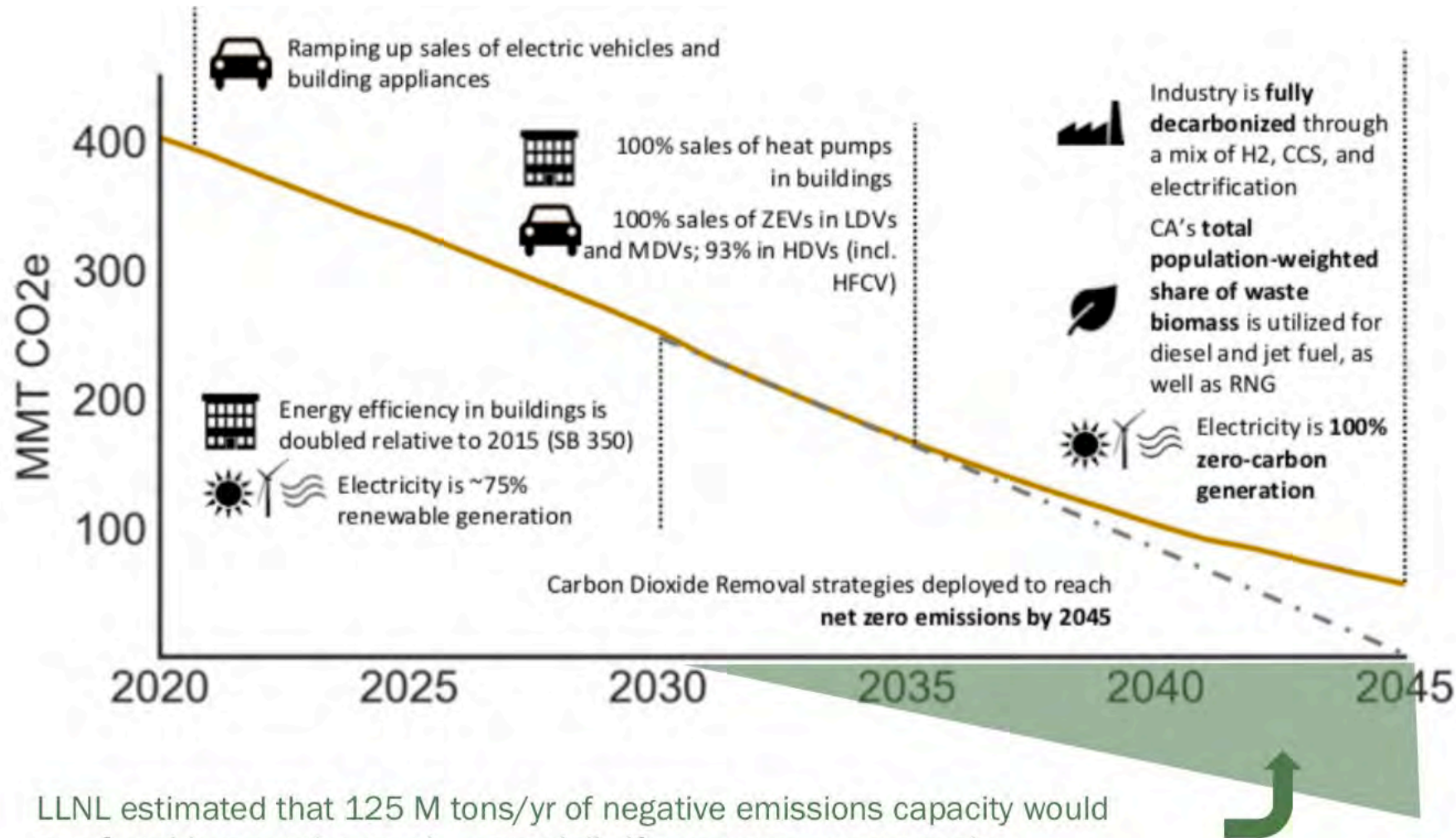


# Carbon Dioxide Removal (CDR) / Carbon Capture and Storage (CCS)



- What is CDR? (IPCC's 1.5°C Report)
  - Anthropogenic activities removing CO<sub>2</sub> from the atmosphere and durably storing it in geological, terrestrial, or ocean reservoirs
  - CDR – remove CO<sub>2</sub> from ambient air;  
Carbon capture – from more concentrated emissions sources
- Is CDR required to meet climate goals?
  - Existing cumulative CO<sub>2</sub> emissions
  - No clear alternative path to getting to net-zero GHG emissions

# Path to Carbon Removal



LLNL estimated that 125 M tons/yr of negative emissions capacity would comfortably meet the need – especially if some measures are slow

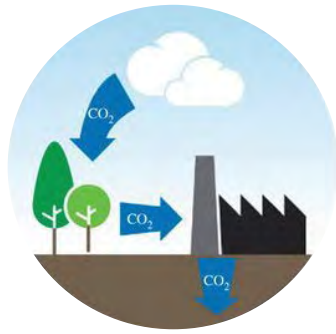
Source: Lawrence Livermore National Laboratory



# General Types of Carbon Capture



Land-based



Bioenergy with  
CCS (BECCS)



Direct air capture



Biochar



Ocean-based



Enhanced  
weathering

Source: [Mercator Research Institute](#)

# Arguments Against CDR



- Environmental justice (EJ) issues
  - Less incentive to reduce/eliminate emissions
  - Continues operation of the fossil fuel industry and their disproportionate impacts
  - Possible additional air contaminant emissions that impact EJ communities
  - Cost of developing technology can divert funds from emissions reduction
  - Storage may affect EJ communities and be unsafe
- Other
  - Overall process might not be effective – use life cycle analysis
  - Unintended consequences to environment or society

# Moving Forward



## Moving Forward with Meaningful Leadership

- Strengthen and support local action toward achieving statewide goals
- Integrate equity into all climate initiatives
- Seek authority from Legislature to regulate CO<sub>2</sub>
- Work with California Air Resources Board (CARB), Dept. of Pesticide Regulation, others to reduce sulfuryl fluoride (high Global Warming Potential (GWP) fumigant)
- Leverage all Air District tools to maximize impact



Source: Bay Area Air Quality Management District

# Discussion Questions



- Is there anything that we've missed? What more could we be doing with the tools we have?
- Is there a pressing need for carbon capture technology? Should the state/region encourage/require carbon capture where feasible?
- When prioritizing policy interventions, how should we account for climate benefits/dis-benefits?
- What metrics should the Air District use to track progress and prioritize climate actions?



# Questions / Discussion