What's **unique** about Oil Refineries, and why do we need a **Phaseout Plan**?

Julia May, Senior Scientist, CBE

3/19/2024 Climate Conference

COMMUNITIES FOR A BETTER ENVIRONMENT
established 1978

Bottom line - DIRTY ENERGY

Oil Refineries regularly explode.

They continuously emit Benzene, NOx, SOx, PM2.5, & much more into communities.

OIL REFINERIES are responsible for 4 big Fossil fuel subsectors that together cause about HALF California's Greenhouse Gases.

29% Transportation – **Passenger Vehicles (Gasoline)**

8% Trans. – **Heavy Duty Trucks (Diesel)**

7%. – **Oil Refinery Direct**

4%. – Oil Extraction In State

You can't solve the climate crisis without phasing out Refineries and these hydrocarbon-based sectors *(whether fossil fuel or biofuel),* ***nor can you solve the smog crisis.***

California is a Major Oil Refining State

Refining of almost 2 million barrels per day of crude oil into gasoline, diesel, jet fuel, coke, etc.

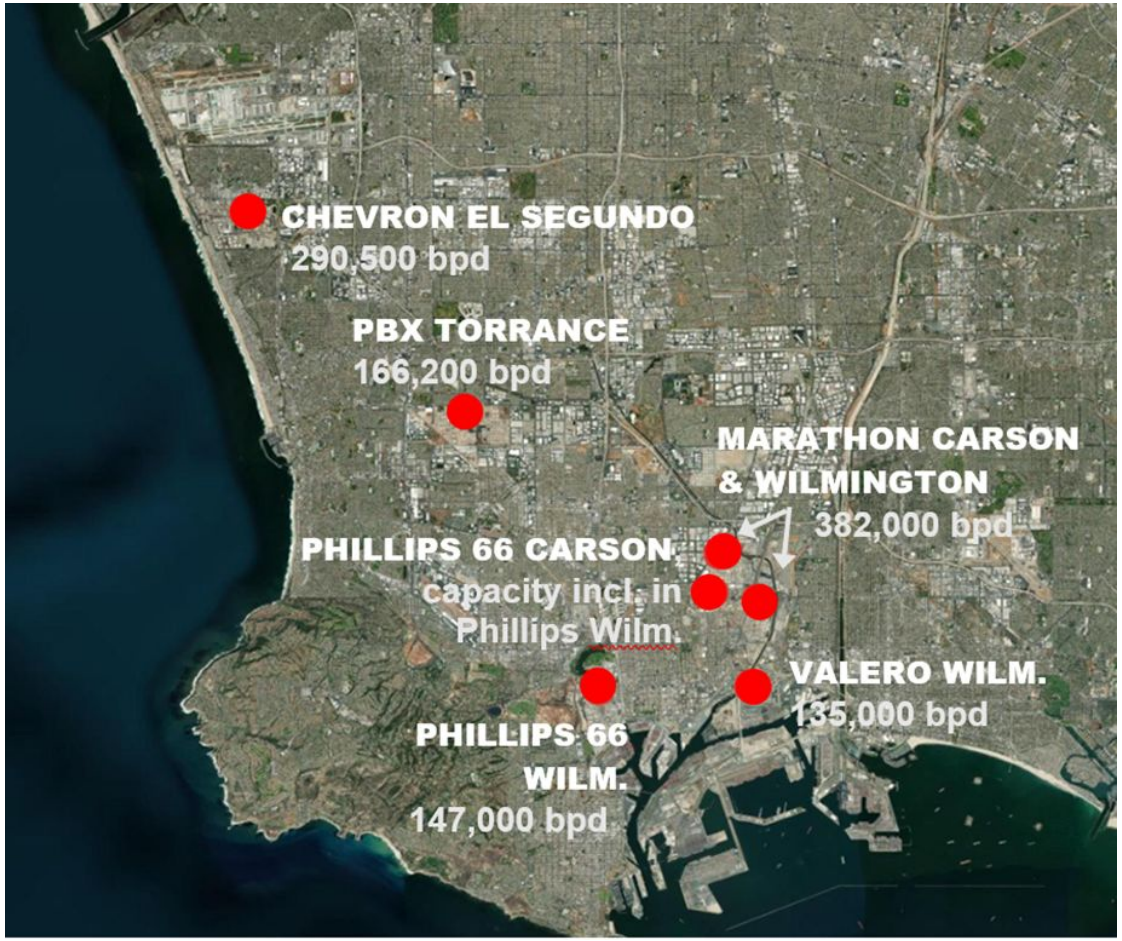
2019

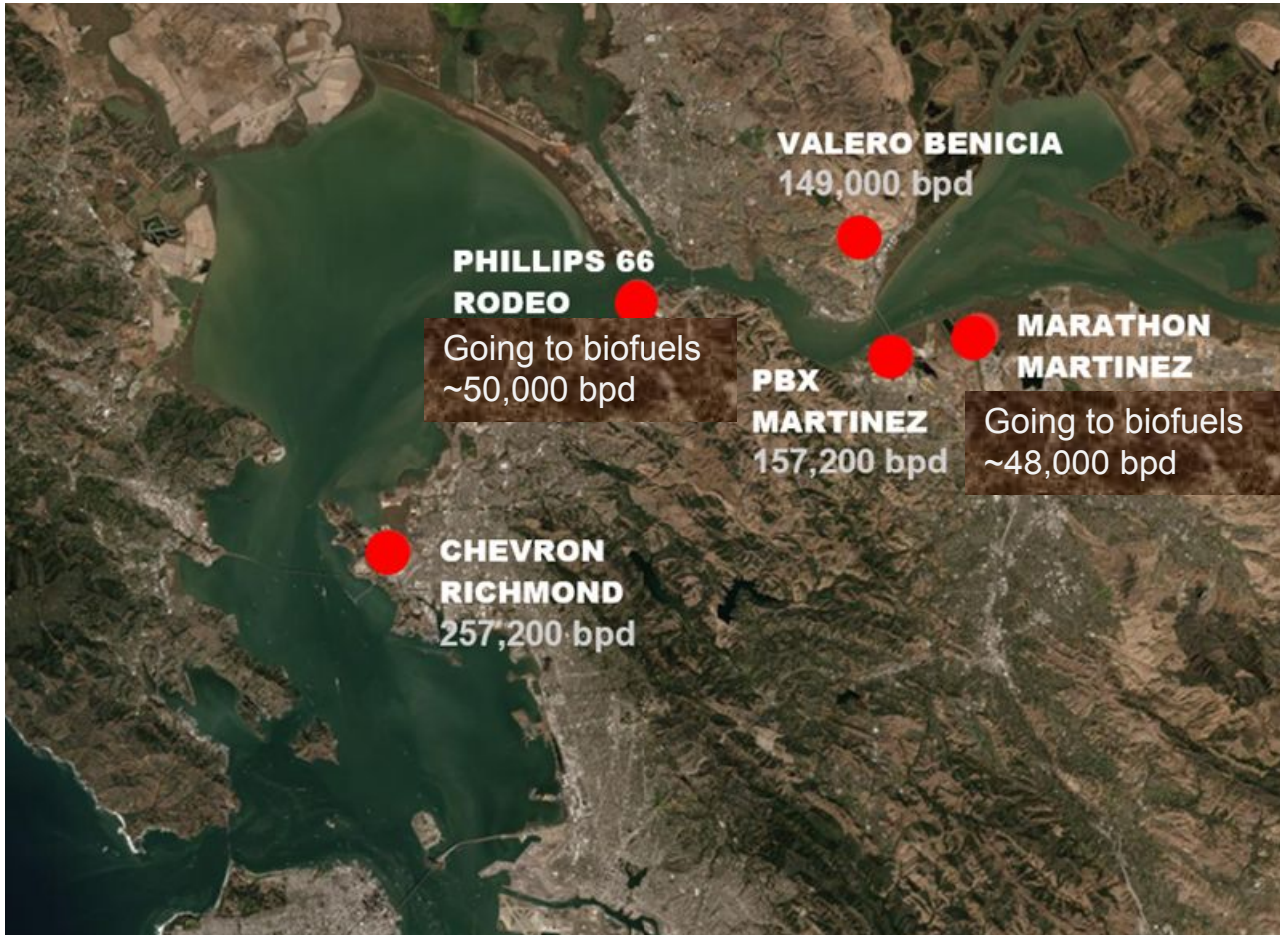
BAY AREA: ~784,000 bpd
- Chevron Richmond
- Marathon Martinez (going bio)
- Phillips 66 Rodeo (going bio)
- PBF Martinez
- Valero Benicia

BAKERSFIELD: ~41,000 bpd
- Kern
- San Joaquin

SANTA MARIA: 54,000 bpd
- Phillips 66 (closing 2023)
- Greka Energy Santa Maria

LA AREA: >1,000,000 bpd
- Marathon (Tesoro) Wilmington/Carson
- Phillips 66 Wilmington/Carson
- Valero Wilmington
- PBF Torrance
- Chevron El Segundo
- Lunday Thagard
- Paramount (going bio)





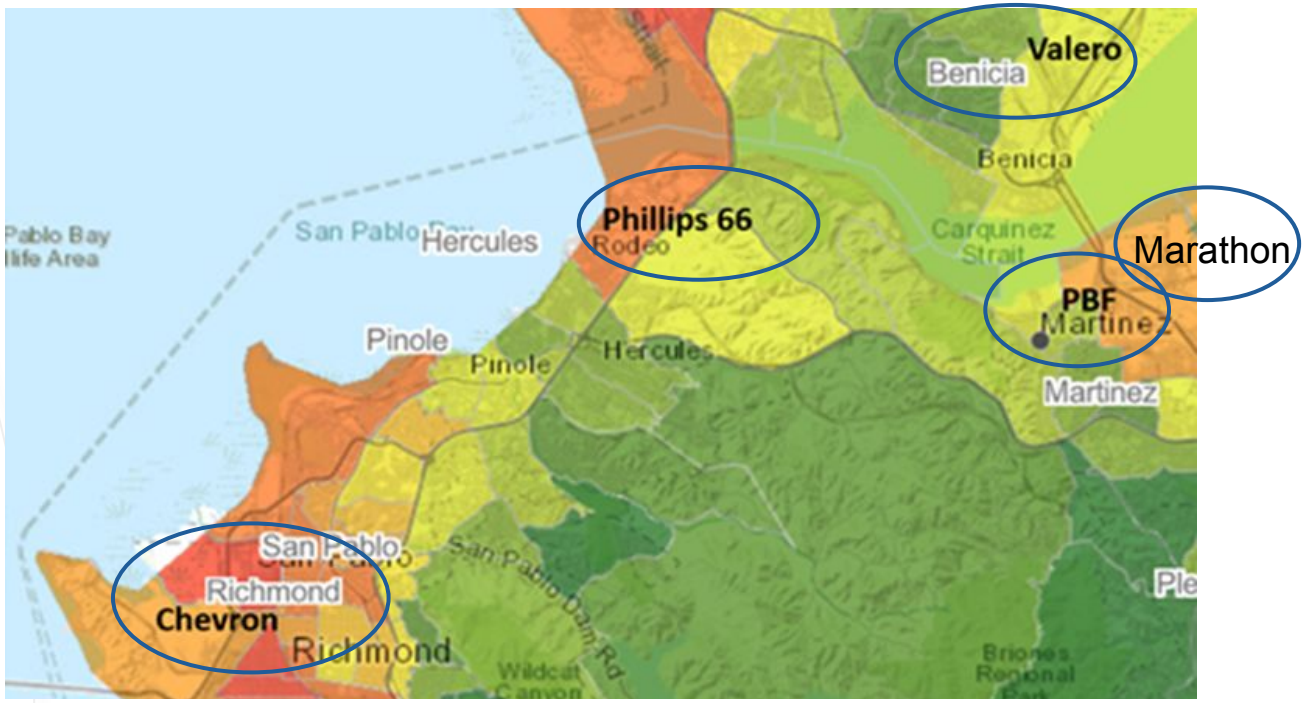
bpd = barrels per day

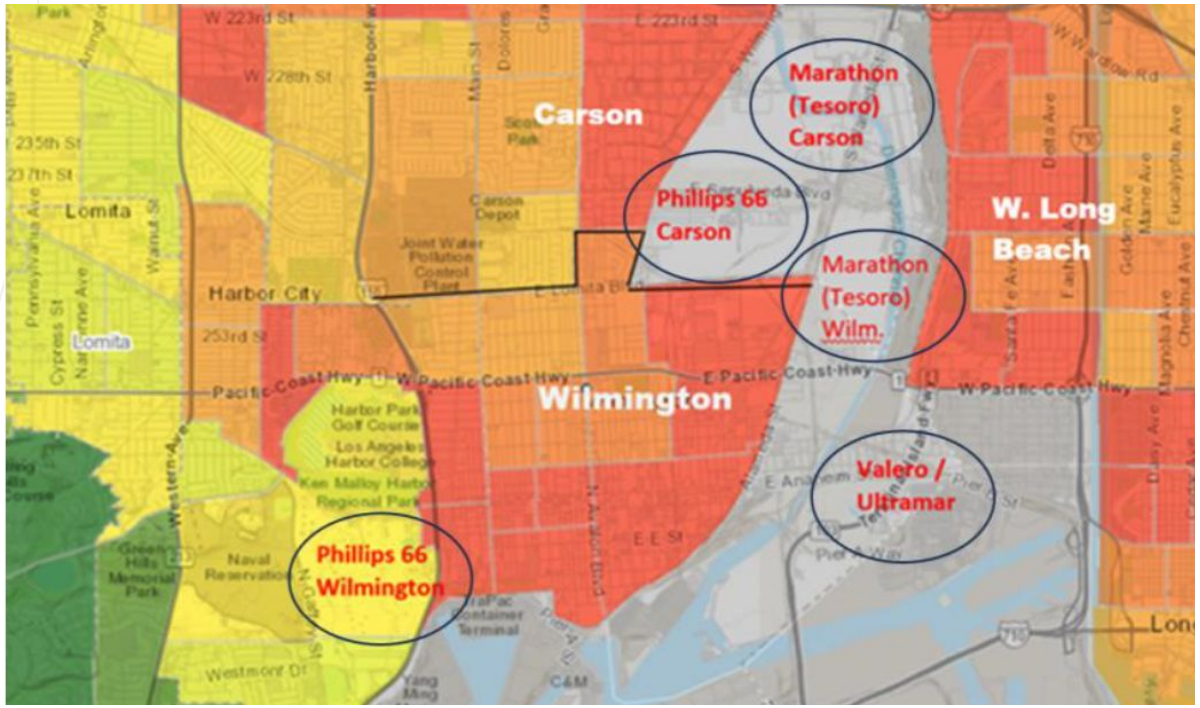
No surprise - Refinery communities endure Environmental Racism

CalEnviroScreen shows:

Most census tracts near refineries are communities of color, low income, and have **highest percentile exposures to Toxic Releases and Overall vulnerability (most over 90th percentile worst in state).**

Black, brown, indigenous communities get the worst impacts.





UNIQUELY LARGE: Just a small part of the thousands of acres of California refinery system shows ***high density and complexity* – refineries are not like other industries.**

COMMUNITIES FOR A BETTER ENVIRONMENT
established 1978


What does it look like *on a good day?*
Emissions are invisible, but large & continuous

On bad days it gets visible (just a few examples).

April 23, 2001- Tosco Refinery explosion & fire, Carson – another coker fire

9/25/2009 - Tesoro Wilmington Coker fire - **required >200 firefighters.** School children and neighbors were advised to stay indoors.

3-9-2010 Tesoro Wilm. Power Outage caused Flaring, billowing smoke, neighbors reported explosions, AQMD told us they had no equipment for air samples that night

Community responses online:
“You announced this event like it happened and now it's over. The truth is, ***it's now 9:11 p.m. and the flare is still blazing and black soot continues to fill the air, and our lungs, and our childrens lungs.*** *What's the deal?”*

9/15/2012 - ConocoPhillips Wilmington Power Outage

Southern California -- this just in - Black smoke from refinery is non-emergency, officials say L.A. NOW - http://latimesblogs.latimes.com/lanow/2012/09/black-smoke-spr ewing-from-refinery-is-non-emer gency-officials-say.html

“I am NOT happy that the morning DB newspaper stated, "A LAFD spokesman said the flare was a planned activity and there was no emergency". We watch the thick, black smoke traveling over our home for hours, and hours! . . . May explain my skepticism when you published that it was "a planned activity".
http://www.dailybreeze.com/latestnews/ci_21552891/wilmington-refinery-flare-causes-black-plume-south-bay

Oil Refineries emit hundreds of Chemicals that Harm Health including:

NEUROTOXINS / SMELLS / ASTHMA

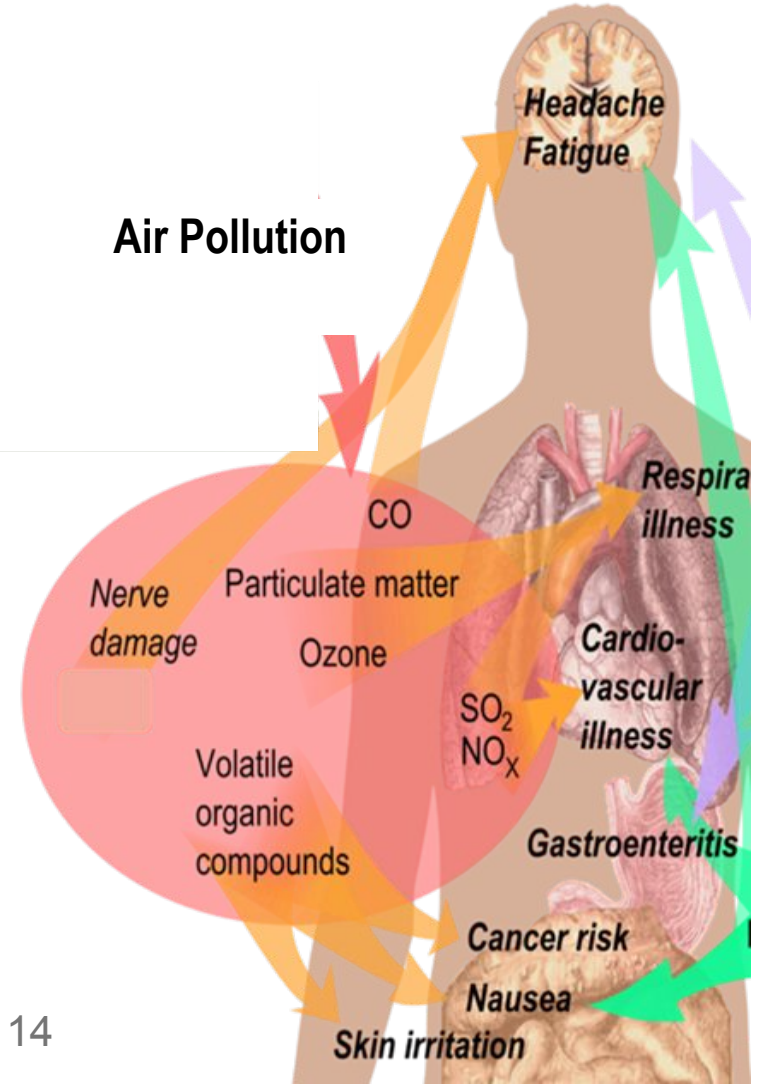
"Individuals living in close proximity to oil refineries may be at risk of chronic exposure to hydrogen sulfide." OEHHA, p. A-17.

SMOG & TOXICS

Refineries are the largest sources of VOCs in the Wilmington, Carson, W. Long Beach refinery neighborhood (SCAQMD AB617 plan, p.3b-6).

CARCINOGENS:

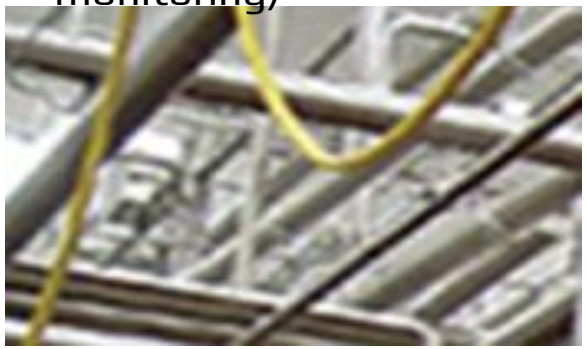
Refinery benzene emissions were grossly underestimated at every refinery (34 times higher than reported on average, South Coast Refinery Fluxsense study p. 94, CBE Decoder here, similar results in Texas).



Have we tried to make Oil Refineries cleaner? Yes - For decades we've won major cuts in pollutants, one regulation at a time, cutting many tons per day through the Clean Air Act:

STORAGE TANKS VOCs, Benzene, more (domes, seal & leak standards, vapor recovery, monitoring, more

FUGITIVES (tight leak standards, monitoring)



BOILERS & HEATERS (NOx) - Selective Catalytic Reduction

MARINE LOADING (vapor recovery for tankers)

FLARES (SOx & VOCs) compressors, accident prevention, more

It's not nearly enough.

Oil Refineries are inherently polluting, hydrocarbon-processors – about as far from Zero Emission as you can get, even with emission controls.

- **DIRTY INPUTS:** Refineries are *designed* to process HYDROCARBON feedstocks (crude oil, also biofeed)

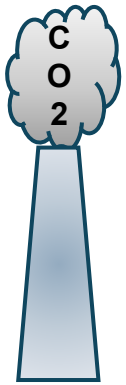
- **DIRTY ENERGY USE:** Hydrocarbons are the energy source refinery heaters and boilers are designed to burn, emitting toxics, smog precursors & GHGs when combusted.

- **DIRTY OUTPUTS:** Refineries are *designed* to produce HYDROCARBON fuels like gasoline & diesel as their output.

Even storing gasoline and diesel causes evaporation of toxic VOCs.

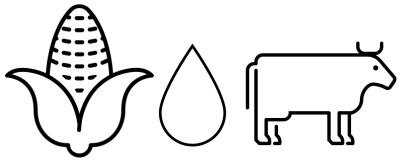
Distractions from necessary Phaseout:

Cap & Trade didn't work and neither do these:



CARBON CAPTURE

Even DOE found CCS is "not the solution" for refineries because it's not economic or feasible for most refinery stacks, and introduces major new dangers.

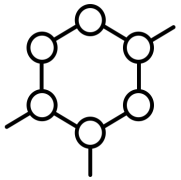


BIOFUEL TRANSITION

Not zero emission, using biofuels creates smog and GHGs, not enough sustainable bio-feed,

EXPANDING REFINERY HYDROGEN PRODUCTION

Over 95% of H2 is dirty - made from fossil fuels at refineries, to strip sulfur. This expanding polluting production is used to greenwash refineries.



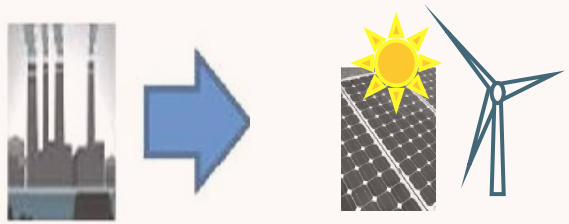
PETROCHEMICAL OR PLASTICS FEEDSTOCK TRANSITION

Mainly happening in Gulf Coast.

The solution to California's GHG emissions is well-known and straightforward:

1) Energy Efficiency

2) Replace Fossil Fueled Electricity



3) Electrify Transportation

* *The Technology Path to Deep Greenhouse Gas Emissions Cuts by 2050: The Pivotal Role of Electricity*, Williams et al, Science, 2011

But while the Governor's Executive Order and clean fuels regulations require no new sales of gasoline vehicles after 2035 . . .

Oil Refineries and their emissions will *not* automatically disappear as California transportation is electrified. . .

Refineries already export significant amounts of finished product (gasoline & diesel) *out of the country,* and this is increasing. .

EJ communities are left holding the bag of polluting fuels.

*EJ organizations won **unprecedented** new Refinery Phaseout policies, but just starting . . .*

2022 Scoping Plan set a goal to plan Refinery Phaseout:

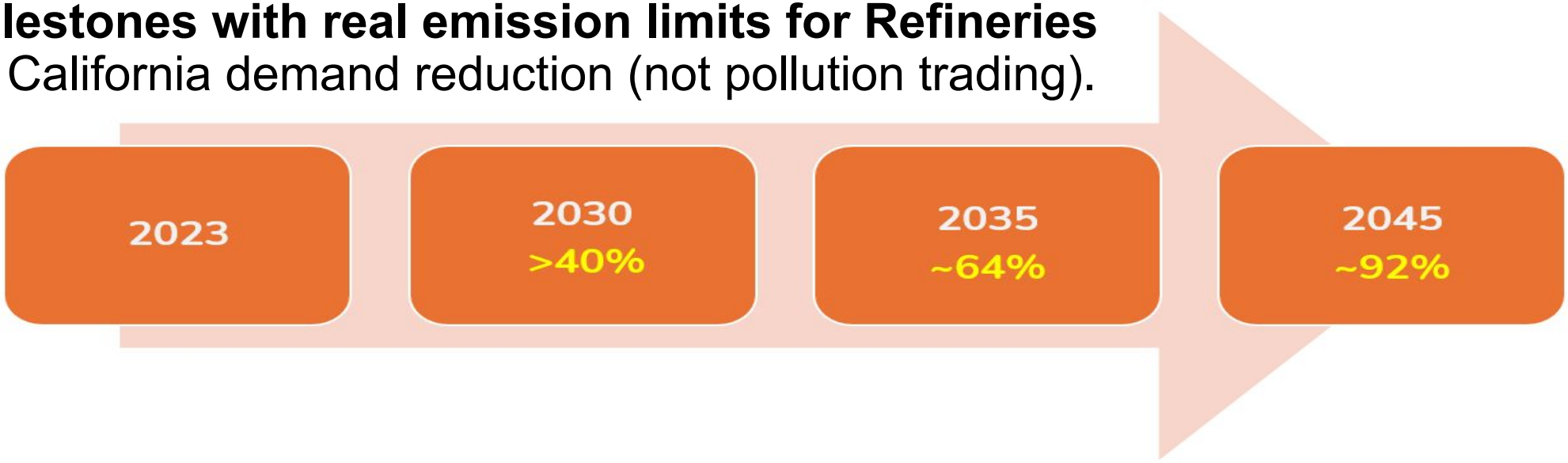
> **"To manage the phasedown of oil and gas extraction and petroleum refining in California,** exports of finished fuels must be considered and factored into that process, in addition to the declining in-state demand. . . . If supply of fossil fuels is to decline along with demand, **a multi-agency discussion is needed to systematically evaluate and plan** for the transition to ensure that it is equitable." (p. 101)

SBX1-2 (Gov. Newsom's gasoline price-gouging bill) puts this goal into law but plan is delayed

> For example: ". . . the commission [CEC] and the State Air Resources Board [CARB] . . . **shall prepare a Transportation Fuels Transition Plan**. . . to identify mechanisms to **plan** for and **monitor progress** toward the state's reliable, safe, equitable, and affordable **transition away** from petroleum fuels in line with **declining** in-state petroleum demand." [25371.3]

Need detailed planning:

- **New modeling of local, regional, & state Refinery production and emissions** over the next 25 years, matching California's lowering demand.
- **Setting milestones with real emission limits for Refineries** in line with California demand reduction (not pollution trading).



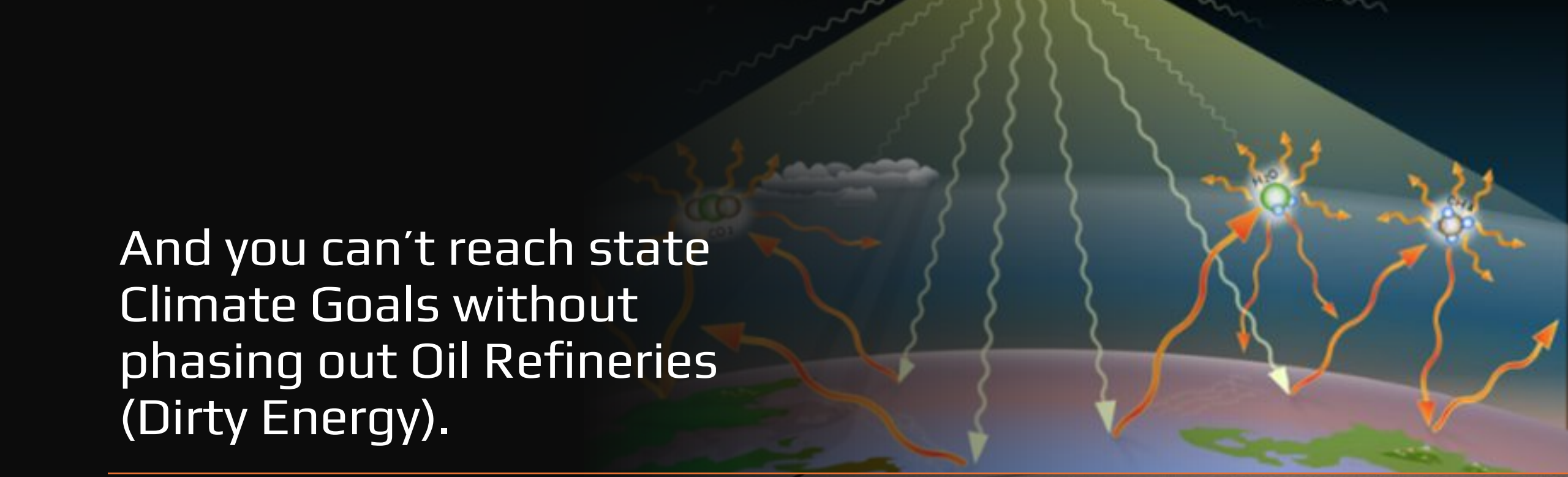
- **A Just Transition plan for frontline Communities & Workers (who work hard for safety).** Many studies show it's economically doable to plan this transition and support worker retraining and communities. (See for example PERI Report, R. Pollin, et al, U. of Mass with Steelworkers, 2019) It's also dangerous *not to* plan – worker layoffs & community superfund sites can be the legacy if we don't plan this step by step.

You can’t establish Environmental Justice without Phasing Out Oil Refineries – **Dirty Energy has to go.**

You can’t meet Clean Air Act smog standards without Phaseout of Oil Refineries and the fuels they produce, according to the South Coast District,

“The only way to achieve the required NOx reductions is through extensive use of zero emission technologies across all stationary and mobile sources.” -- 2022 S Coast AQMP Ex. Summ.

And you can’t reach state Climate Goals without phasing out Oil Refineries (Dirty Energy).



Communities for a Better Environment
–www.cbecal.org

Huntington Park, Wilmington, Richmond, East Oakland

COMMUNITIES FOR A BETTER ENVIRONMENT
established 1978

QUESTIONS?