

7/23/2018  
California Air Resources Board (CARB)  
Submitted online at:  
<https://www.arb.ca.gov/lispub/comm/bclist.php>



**Re: CBE Comments on Draft Community Air Protection Blueprint pursuant to AB 617; Need Strong State Mandated Refinery, Transportation, and Small Cumulative Source Cuts**

Honorable Air Resources Board Boardmembers and Staff,

CBE is a statewide Environmental Justice (EJ) organization based in Southern and Northern California urban communities heavily impacted by fossil fuel air pollution sources, including **Wilmington** (Oil Refineries, drilling, Ports/trucking), **Richmond/Rodeo** (oil refineries, superfund sites), **Southeast Los Angeles (Huntington Park** and surrounding areas, with heavy transportation and stationary sources), and **East Oakland** (Port/trucking, and stationary sources). All these communities have high CalEnviroScreen scores for disproportionate impacts, and were previously nominated for high priority by CBE and many others. CBE is also a member of CEJA (the California Environmental Justice Alliance), with impacted communities throughout both urban and rural California deserving strong pollution prevention measures.

We opposed AB617 adoption, as it was used to justify extending pollution trading, which harms our communities. Because of this, many EJ communities are frankly disengaged from AB617, and without confidence in the ongoing process. Nevertheless, CBE is working through implementation to secure improvements, which are achievable. We need strong state-mandated emissions cuts in the Blueprint that are *additional* to existing Air District measures; otherwise AB617 would be without purpose. Currently the Draft Blueprint is over-generalized and leaves out major sources (including oil refineries).

We understand AB617 added tough deadlines to staff responsibilities. But CARB must correct the perverse outcome that AB617 has been used to *delay* emission cuts previously poised for adoption regionally (such as the Bay Area regional Refinery PM Cap). **Adding administrative burdens without mandating emission cuts leaves communities worse off, but CARB can correct this by adding state-mandated emissions cuts in the Final Blueprint.** Monitoring is also important, but not as a barrier or replacement for cutting emissions. Our comments on Refineries, Transportation, and Cumulative Smaller Sources are summarized immediately below; also see our full letter below for additional comments and recommendations:

#### **OIL REFINERIES:**

- **The 617 Blueprint has no emission cuts for refineries – the largest, and expanding industrial sources.** (This is despite AB 617 being adopted to address co-pollutants of Cap & Trade sources).
- Refineries receive sweetheart deals from Air Districts; communities need recourse.
- **Communities need state mandates for measures to cut pollution which are *additional* to regional regulations,** including state mandated refinery Boiler and Heater replacements, Best Catalytic Cracking Unit PM2.5 and SOx controls, and ensuring no emission increases (see below).
- **The state must recognize it needs a long-term Just Transition Plan to phase down Oil Refineries and Oil extraction in favor of clean renewable transportation, instead of continuing expansion.** Without a plan, state clean air and greenhouse goals will never be met.

**TRANSPORTATION:** In addition to large industrial sources, pollution from transportation of people and goods are a major source of pollution in most low-income communities of color.

- **ARB must use the mandate of AB 617 for setting aggressive targets in transportation electrification and enhancing clean mobility.** We applaud ARB's work in proposing Innovative Clean Transit.
- **ARB needs to replicate similar and technology forcing programs in other transportation categories related to movement of goods.**
- **Additionally, CARB needs to issue clear guidance documents for agencies such as Caltrans that undertake expansion of freeways such as I-710.** For years community leaders, public health experts and environmental advocates have asked Caltrans to create a zero emission lane as part of I-710 expansion project. CARB has the obligation to show how this massive infrastructure project could advance the zero emission programs in California and help California and the South Coast region achieve some of its climate and air quality targets.
- Furthermore, CARB needs to provide similar guidance documents for the Ports of LA, Long Beach and Oakland. If Air Districts fail to create sufficient emission reduction regulation, CARB needs to fulfill its responsibilities in compliance with the intent of AB 617.
- On access to clean mobility, EJ organizations have worked extensively with CARB under the SB 350 study to identify the obstacles that DACs (Disadvantaged Communities) are facing. **Many of these programs require a more robust commitment on the part of CARB and more dedicated funding.** Creating meaningful incentives, programs and projects that are centered around the needs of DACs and responsive to those needs are key in reducing pollution and enhancing access from mobile sources in low income communities of color.
- Also note the need for the fossil fuel Phasedown Plan described above, for transportation, Oil Refining, and Oil Extraction.

#### **CUMULATIVE IMPACTS INCLUDING SMALL, AND ALL SOURCES:**

- Any serious attempt at reducing emissions in EJ communities must look at the cumulative impacts of a communities under consideration for priority action.
- It is clear that multiple sources of pollution impacting a community cannot be regulated in the same manner as one source impacting the community if each facility creates similar exposure.
- The obvious but unaddressed question EJ advocates have asked for years is: why each of multiple sources of pollution in DACs are treated without regard for other sources?
- ARB and Air Districts have so far refused to create regulation from the point of view of impacted and vulnerable community members, and they have designed their program from the perspective of industry. The intent of 617 has been to address this great flaw in the regulatory system. We need ARB and Air Districts to stop pointing fingers at each other, and get to work creating a serious cumulative impacts regulatory regime in permitting, rule-making and enforcement.

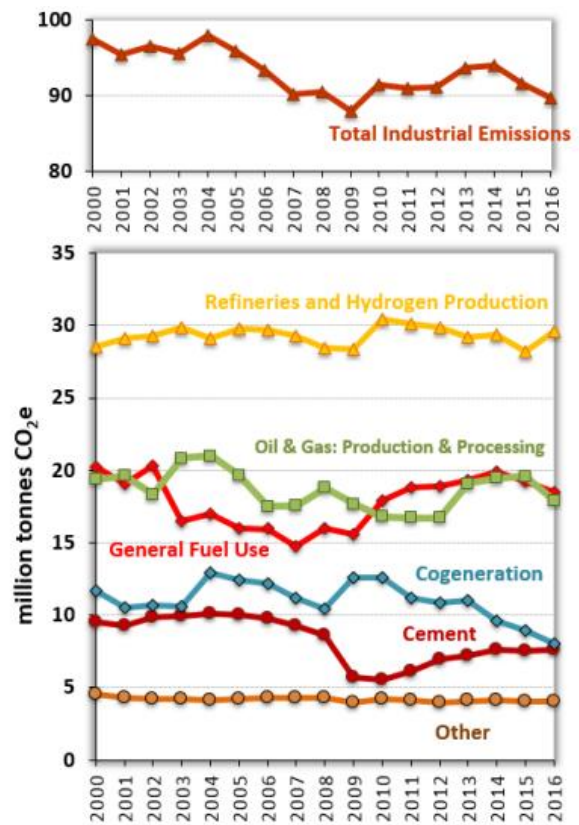
**ADD RIGHT TO PETITION CARB TO CORRECT AQMD ERRORS** -- a mechanism for public petition for a second-opinion review of emission inventories and permitting errors.

**I. Refinery neighborhoods are disproportionately impacted by the largest stationary sources of emissions under Cap & Trade, and available refinery emission cut requirements are missing from the draft Blueprint**

Oil Refineries (with their associated hydrogen production and use) are the largest industrial sources under Cap and Trade. Industrial and refinery emissions, which disproportionately impact communities of color, have stagnated or gone up under Cap and Trade since 2009.<sup>1,2</sup> (See charts at right.) Greenhouse gases are not emitted by themselves, but along with co-pollutant smog-forming and toxic chemicals that severely harm these communities.

**We were dismayed the Draft Blueprint included no emission reduction measures for Oil Refineries.** AB 617 was purportedly designed to address Cap & Trade gaps, by cutting co-pollutant smog precursors and toxics emitted at the same time as Greenhouse Gases (GHGs) for sources covered by Cap & Trade (of which refineries and their associated hydrogen production and use are the largest stationary sources).

**At the Wilmington workshop in June, CARB staff responded to such community comments, and committed to add specific refinery measures to the Blueprint.** We look forward to strong state-mandated requirements (not relying on the Air Districts, which have failed our communities).



CARB / Figure 2. Trends in California GHG Emissions. Emissions are organized by the categories in the AB 32 Scoping Plan.

<sup>1</sup> California Greenhouse Gas Emissions for 2000 to 2016 Trends of Emissions and Other Indicators, p. 10, [https://www.arb.ca.gov/cc/inventory/pubs/reports/2000\\_2016/ghg\\_inventory\\_trends\\_00-16.pdf](https://www.arb.ca.gov/cc/inventory/pubs/reports/2000_2016/ghg_inventory_trends_00-16.pdf)

<sup>2</sup> Cushing L, Blaustein-Rejto D, Wander M, Pastor M, Sadd J, Zhu A, et al. (2018) Carbon trading, co-pollutants, and environmental equity: Evidence from California's cap-and-trade program (2011–2015). PLoS Med 15(7): e1002604. <https://doi.org/10.1371/journal.pmed.1002604> [Facilities regulated under California's cap-and-trade program are disproportionately located in disadvantaged neighborhoods. Statistical analysis found that co-pollutant emissions from regulated facilities were temporally correlated with GHG emissions, and most regulated facilities (52%) reported higher annual average local (in-state) GHG emissions after the initiation of trading, even though total emissions remained well under the cap established by the program.] [California's cap-and-trade air quality benefits go mostly out of state](https://www.berkeleynews.com/news/2018/07/10/california-cap-and-trade-air-quality-benefits-go-mostly-out-of-state/) -- July 10, 2018, Berkeley News, UC Berkeley, **During the first three years of California's 5-year-old cap-and-trade program, the bulk of the greenhouse gas reductions occurred out of state, which means that state residents did not see the benefits of improved air quality from presumed reductions in harmful co-pollutants.**

In summary, we urge CARB to add to the Blueprint, State Refinery Regulations:

- **Mandate replacement of Refinery Boilers & Heaters, in addition to retrofitting and maintenance measures** (cutting smog precursors, toxics, and greenhouse gases).
- **Mandate that air districts require wet scrubbing or equivalent PM2.5 and SOx emission cuts from Refinery Catalytic Cracking units**, which will result in large reductions in deadly particulate matter disproportionately threatening EJ communities
- **Set requirements prohibiting refinery-level emission increases**
- **Prohibit air districts from granting (in-basin) particulate matter (PM) pollution trading credits** instead of limiting and reducing PM emissions
- **Start a plan for at least 80% phasedown of Oil Refineries by 2050**, consistent with AB 32 requirements for 80% GHG cuts by 2050, and consistent with Clean Air Act health standards. California will not be able to meet overall GHG reductions without a plan to phase down fossil fuel production and use – pollution trading will not achieve the 80% cuts, and it leaves heavy polluting sources in our communities. California will not be able to meet Clean Air Act health standards without a phasedown of fossil fueled transportation.

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**A. Oil refinery neighborhoods throughout the state face severe pollution and health risks, and should be high-priority in AB617 implementation for emission cuts**

California Oil Refineries are not only major smog, toxic, and greenhouse gas sources, they also regularly explode, catch fire, flare, and smoke. These episodic emissions are very poorly quantified, but heavily impact refinery neighbors throughout the state regularly. Below are a small fraction of the examples.



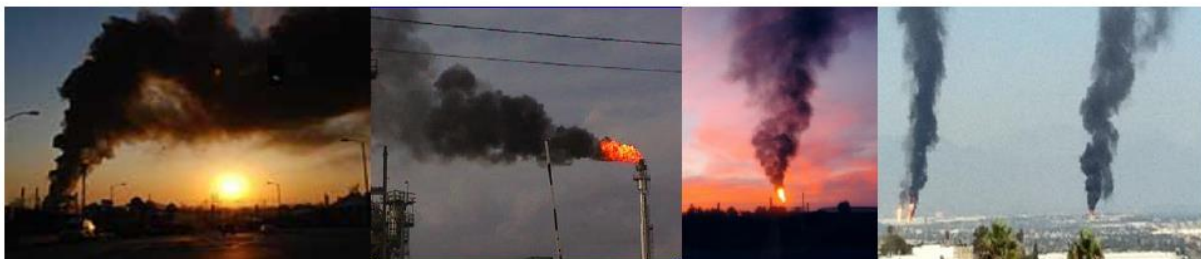
August 2016, Tesoro LA sulfur tank explosion.



2009 Tesoro LA Coker Fire



2012 Chevron Richmond Explosion



Various California refinery smoking flaring events below, and accidents above are small fraction of numbers of hazardous events

Ongoing emissions from California refinery have also been shown to be grossly underestimated. **For example, a recent study of Swedish Scientists with the South Coast Air Quality Management District (SCAQMD) on refineries in greater Los Angeles found they are emitting on average 34**

times higher benzene compared to the SCAQMD inventory.<sup>3</sup>

### Wilmington Impacts:

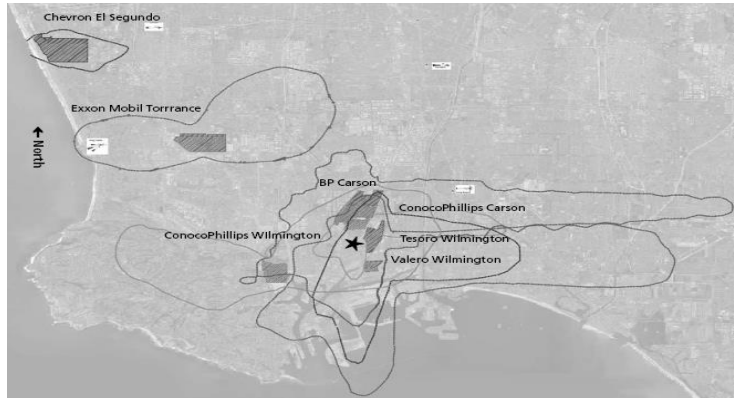
CBE members living here face some of the worst fossil fuel-impacts in the state. This community is over 90% people of color, with many children attending school within a mile of a refinery, and **five oil refineries within, or on, the city's borders. Major diesel trucking and the Ports of LA and Long Beach increase cumulative impacts.**

The massive refinery complex bordered by neighbors in Wilmington, Carson, and W. Long Beach includes Tesoro Wilmington and Carson (recently bought by Marathon, formerly two refineries owned by Tesoro and BP), plus the Phillips 66 Wilmington and Carson refineries, and Valero Wilmington.

**Wilmington also contains the largest urban oil field with wells literally next door to houses.** Although separate from the Oil Refineries, these are part of the broader Oil Industry impacting Wilmington air quality and adding to methane climate impacts.

**Use of dozens of toxic and hazardous chemicals in the hundreds of oil wells in the area went undisclosed for years until the SCAQMD adopted its Rule 1148.2, an important step forward.**

See Attachment B, CBE, listing these chemicals and many drilling sites, including the following and dozens of others: Ethylbenzene, Hydrogen Chloride, Hydrogen Fluoride, Methanol, Naphtha, Heavy Aromatics, Toluene, Xylene, Aromatic Amines, Halides, Naphthalene Sulfonate, Formaldehyde Condensate, PAHs, Wood Chemicals, and many more, some listed specifically, others only provided as "Trade Secret" general categories of chemicals.



**Wilmington/Carson/W. Long Beach is Ground-Zero to five California refinery air plumes** (map from SCAQMD Refinery Pilot Study, 2007) See more in [More in CalEnviroScreen](#).



[After 10 years, neighbors of a Wilmington oil drilling operation still complain of health, environmental issues](#), Bettina Boxall and Joe Mozingo, photo, Rick Loomis / Los Angeles Times, Feb. 20, 2016

<sup>3</sup> *Emission Measurements of VOCs, NO2 and SO2 from the Refineries in the South Coast Air Basin Using Solar Occultation Flux and Other Optical Remote Sensing Methods*, Final Report, FluxSense Inc, 11 April 2017, Authors: Johan Mellqvist, Jerker Samuelsson, Oscar Isoz, Samuel Brohede, Pontus Andersson, Marianne Ericsson, John Johansson, available at: <https://www.courthousenews.com/wp-content/uploads/2017/06/FluxSense-Study.pdf>

**Richmond** and nearby **Rodeo** impacts:

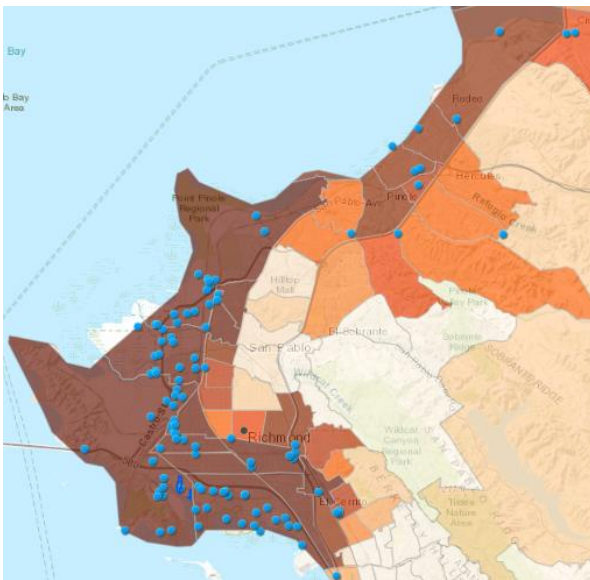
**Richmond** is home to the 2,900-acre Chevron Richmond Refinery, one of the largest stationary sources of greenhouse gas (GHG) emissions in California, the most egregious polluter in Richmond, and previously the largest refinery in California.

The city of **Rodeo** nearby is home of the Phillips 66 Refinery which has proposed a marine terminal expansion at its Crockett-Rodeo facility. Phillips 66 seeks to more than double its annual tankers traffic from 59 to 129, threatening air and water quality and increasing oil spill risk, significantly affecting low-income people of color.

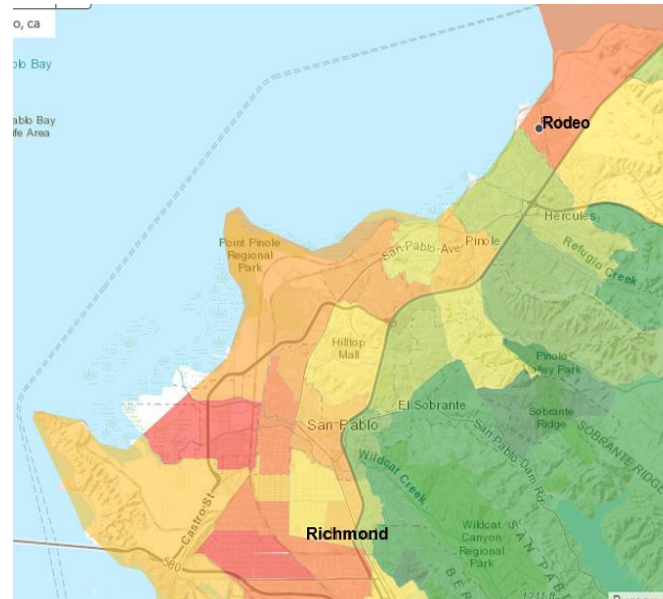
In addition to the major ongoing emissions and repeated explosions and fires at the refineries, CalEnviroScreen shows Richmond and Rodeo both at risk from very high asthma, diesel impacts, hazardous waste, and toxic chemical cleanup sites (Richmond is top 97<sup>th</sup>, Rodeo top 87<sup>th</sup> worst, mapped below).<sup>4</sup>



Above: Commuters step out of their cars to take pictures of the fire raging within the Chevron oil refinery on Aug. 6, 2012, found by the US Chemical Safety Board to be the result of repeated failures of Chevron to fix known metal thinning, and due to increases in corrosive sulfur in crude oil (which Chevron had tried to discount during environmental review of an expansion). This explosion narrowly missed killing 19 workers, and sent thousands of residents fleeing the black clouds.



<http://oehha.maps.arcgis.com/apps/webappviewer/index.html?id=9d54eccc28264c2da6495d64ce053913>



Richmond and Rodeo refinery neighbors in Cal EnviroScreen red & orange impact zones, neighboring communities get green zone benefits not enjoyed in Richmond / Rodeo

<sup>4</sup> <https://oehha.maps.arcgis.com/apps/webappviewer/index.html?id=4560cfbce7c745c299b2d0cbb07044f5>

## **B. Refinery Boiler and Heater co-pollutant emissions are large, and replacement and retrofit regulations can yield concentrated emission cuts – CARB should begin a state regulation**

In 2008, the California Air Resources Board staff<sup>5</sup> supported our advocacy for direct refinery emission controls. CARB proposed a statewide regulation of Refinery Boiler and Heater control measures in discussion with CBE and other community advocates, to cut both greenhouse gas and co-pollutant emissions in the first state Scoping Plan under AB32. **Unfortunately, a decision was made to sweep all CARB refinery controls into Cap and Trade** (except for a very weak and ineffective version of our proposed industrial energy efficiency measure). **Thus a well-founded state regulation to cut Boiler and Heater emissions disappeared. CARB can now rectify this problem by requiring such a statewide measure under AB617 for these large, polluting, and old refinery units.**

In (2010) CARB published data within the Cap and Trade arena, showing available methods to cut emissions by replacing and retrofitting Oil Refinery Boilers and Heaters (although these methods were never required, but only listed as potential compliance pathways).<sup>6</sup> CARB analyzed Department of Energy data to identify how much energy would be saved, and quantifying CO2 reductions (due to combustion avoided) for the measures listed below, in million British Thermal Units (MMBTU). CARB provided two spreadsheets calculating emissions reductions, applying the following listed controls. (Note that additional sectors' boilers and heaters were included, such as industrial food, wood product, and chemical industries in CARB's analysis, but by far the larger emissions reductions came from Oil Refineries, which we excerpted below. Oil and gas facilities (presumably referring to extraction) also showed substantial emission reduction opportunities for boilers, and we included those as well.)

Emission reduction measures included (for 282 Refinery Boilers, 293 Oil and Gas Boilers, and 524 Refinery Process Heaters):

1. Replacing low and medium efficiency Boilers (Categories 1 and 2)
2. Optimizing boilers by reducing excess air
3. Retrofitting feedwater economizers
4. Retrofitting with air preheaters
5. Blowdown Reduction with controls and with feedwater cleanup
6. Blowdown heat recovery
7. Optimizing steam quality
8. Optimizing condensate recovery
9. Minimizing vented steam
10. Boiler insulation maintenance
11. Steam trap maintenance
12. Steam leak maintenance
13. Replacing low and medium efficiency heaters

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<sup>5</sup> Dean Simeroth, Criteria Pollutant Branch Chief at that time

<sup>6</sup> CARB, Cap and Trade 2010 webpage, at: <https://www.arb.ca.gov/regact/2010/capandtrade10/capandtrade10.htm> , including CARB's methodologies and assumptions in APPENDIX F COMPLIANCE PATHWAYS: <https://www.arb.ca.gov/regact/2010/capandtrade10/capv3appf.pdf> , and two CARB spreadsheets -- Compliance Pathways Analysis – Boilers: <http://www.arb.ca.gov/cc/capandtrade/capandtrade/compathboiler.xls> Compliance Pathways Analysis - Process Heaters: <http://www.arb.ca.gov/cc/capandtrade/capandtrade/compathprocessheat.xls>

14. Optimizing heaters
15. Recovering flue gas heat
16. Replacing refractory brick
17. Heater insulation maintenance

CBE also submitted comments about this in 2010, advocating that CARB take advantage of these options through a direct emission reduction regulation for Oil Refineries, in order to address the co-pollutants smog precursors and toxics in refinery communities, as well as cutting greenhouse gases. CARB however decided to continue pollution trading in lieu of direct emission reductions. Since then CARB has acknowledged in many proceedings the need to directly cut co-pollutants in EJ communities, and AB617 proceedings acknowledge and state they will address this need. Consequently, we are resubmitting data which are still relevant, and since no statewide regulation was ever enacted. Hundreds of oil refinery boilers and heaters are in operation statewide, and continue as major polluters, many operating for decades. And in the SCAQMD, the RECLAIM program (now sunseting), has long replaced direct regulation of NOx and SOx with pollution trading. Now is the time to return to direct regulation in EJ communities.

Below we show the reductions in combustion of fuels in the heaters and boilers which CARB calculated for each of the measures identified. CARB used this information not only to identify the fuel use reduction, but also the reductions in Greenhouse Gases (GHGs). CBE submitted calculations in 2010 to show avoided NOx and CO emissions associated with this fuel reduction, using AP 42 emissions factors. Since ten years have passed, it is unknown exactly what controls are in place or not in place for each boiler and heater, and since EPA emission factors vary in accuracy, we are presenting the data in the original CARB form, as *fuel use avoided*.

We now urge CARB to carry out an updated statewide assessment of Refinery and Oil and Gas Boilers and Heaters to characterize each one in a public database, and begin the process for a statewide regulation requiring replacing antiquated heaters and boilers and other emission reductions. **These should not wait until the CARB BACT/BARCT Clearinghouse is developed.** These Measures to avoid burning fuels, result in reductions in GHGs, smog-forming chemicals, and toxics.

**TABLE 1: BOILERS-Refinery and Oil & Gas facilities–Fuel Reduction Measures, MMBTUs/year**

	1. REPLACE BOILERS		2. OPTIMIZE BOILERS		3. FEEDWATER ECONOMIZ.	
	Cat. 1	Cat. 2	Cat. 1	Cat. 2	Cat. 1	Cat. 2
Refineries	3,339,654	3,258,199	1,500,618	900,371	667,931	400,758
Oil and Gas	3,035,370	2,072,935	954,725	572,835	743,666	446,199
<b>Total</b>	<b>7,334,421</b>	<b>6,293,435</b>	<b>2,921,920</b>	<b>1,753,152</b>	<b>1,701,004</b>	<b>1,020,602</b>
	4. AIR PREHEATER		5. BLOWDOWN PRCTC		6. BLOWDWN HEAT RECOV	
Refineries	166,983	100,190	189,247	567,741	333,965	200,379
Oil and Gas	127,486	76,491	174,230	522,691	212,476	127,486
<b>Total</b>	<b>358,416</b>	<b>215,049</b>	<b>436,122</b>	<b>1,308,367</b>	<b>650,279</b>	<b>390,167</b>



	7. OPT STEAM QUAL		8. OPT CONDENS. REC		9. MINIM. VENTD STEAM	
Refineries	129,133	77,480	178,115	106,869	228,210	136,926
Oil and Gas	160,065	96,039	113,320	67,992	216,017	129,610
<b>Total</b>	<b>289,198</b>	<b>173,519</b>	<b>291,435</b>	<b>174,861</b>	<b>444,227</b>	<b>266,536</b>
	10. INSUL. MAINT.		11. STEAM TRAP MAINT.		12. STEAM LEAK MAINT.	
Refineries	3,117,011	834,914	3,339,654	3,339,654	1,113,218	667,931
Oil and Gas	1,983,108	531,190	2,124,759	2,124,759	708,253	424,952
<b>Total</b>	<b>5,100,119</b>	<b>1,366,103</b>	<b>5,464,413</b>	<b>5,464,413</b>	<b>1,821,471</b>	<b>1,092,883</b>

**TABLE 2: HEATERS - Refineries -- Fuel Reduction (MMBTUs/year)**

	1. REPLACE HEATERS		2. OPTIMIZE HEATERS		3. RECOV. FLUE GAS HEAT	
	Cat. 1	Cat. 2	Cat. 1	Cat. 2	Cat. 1	Cat. 2
Refineries	8,052,390	5,040,927	2,786,020	1,671,612	1,240,068	744,041
	4. REPL. BRICK		5. INSUL. MAINT.			
Refineries	165,342	99,205	189,247	567,741		

Many of these emission reduction measures are additive, others may not be, but an updated inventory and regulatory process can identify the highest priority and most effective pollution reduction measures.

- **CARB’s data above estimated that replacing both low and medium efficiency Boilers and Heaters alone accounted for more than 26,000,000 MMBTU/year in avoided fuel combustion (26x10<sup>12</sup> BTUs),** which would be concentrated in heavily impacted communities.
- CARB-calculated GHG reductions associated with these two measures alone was 1.3 million metric tons per year.<sup>7</sup> CBE calculated associated NOx, CO, and other co-pollutant reductions in 2010 using AP42 emission factors associated with this reduction in fuel combustion, which resulted in many tons per day in emissions reductions.<sup>8</sup> We are not reproducing our original submittal for these pollutants, since almost a decade has passed.
- Instead, we are urging CARB to produce an updated public statewide inventory of Refinery and Oil and Gas Boilers and Heaters as soon as possible, since these are known major polluters. (We ask for fuel type, volumes used, controls, permit, monitoring conditions, age, etc.).
- Although valuable, our communities do not want to wait years for the BARCT/BACT Clearinghouse to be completed, while AQMDs continue to permit refinery and pollution expansions, with hidden emissions.
- Additional reductions from ongoing requirements for insulation and leak maintenance, as well as optimizing combustion requirements could be achieved, and additional pollutants including particulate matter, sulfur oxides, and more, would also be eliminated through these energy-saving measures, but were not calculated.

<sup>7</sup> *Id.* Compliance Pathways Analysis – Boilers, and Compliance Pathways Analysis – Process Heaters -- CARB spreadsheets

<sup>8</sup> *CBE Comments on Draft Cap and Trade Regulation: Draft Cap & Trade Regulation Misses California GHG and Pollution Reduction Opportunities, Job Opportunities, and Contains Egregious Errors*, submitted to CARB, Dec. 14, 2010

While we expect that some refinery boiler and heater emissions may have improved, we know for a fact that some have been allowed to *increase*. (See the case of the Tesoro Los Angeles Refinery below.)

**Finally beginning the regulatory process originally proposed a decade ago by CARB's own Criteria Pollutant Branch Chief (before the Cap and Trade program undermined such direct refinery emissions cuts)** can achieve the following -- updated data, identifying the worst polluting boilers and heaters in the state, requiring replacement, maintenance, and combustion optimizing, setting BACT emission standards and CEMS requirements (Continuous Emission Monitoring Systems) for properly calculating both baselines and emissions, and setting other requirements should be put in place.

Note that we are not proposing that this should be subsumed only into the state's BACT/BARCT clearinghouse for new and modified sources, but instead should be a high priority stand-alone regulation on existing refinery Boilers and Heaters, which are already known major pollution sources with known fixes (especially replacement).

**One example AQMD sweetheart deal for a Refinery Coker Heater permitting change (at the Tesoro Los Angeles Refinery), indicates emissions may be grossly underestimated for other Heaters and Boilers:**

While grandfathered oil refinery Boilers and Heaters throughout the state need replacement, we have found that Air Districts regularly let them off the hook. An example is the H-100 Coker heater at Wilmington Tesoro (now Marathon). This heater was constructed in 1968<sup>9</sup> (50 years old). It was allowed an increased firing rate from 252 to 302 million British Thermal Units per hour (MMBTU), a 20% increase in combustion of fuels, without SCAQMD counting any emission increase. Incredibly, the SCAQMD allowed Tesoro to count this increased burning of fuel as an emission *decrease*, despite this being physically impossible. This supposed decrease was based on comparison to a chosen baseline period of extremely high emissions, over a short timeframe, under unusual conditions. No physical improvements were made to this heater.

This supposed emission decrease was justified by a statement that Tesoro believed they could reduce emissions, and by a flimsy permit condition allowing Tesoro to calculate emissions, choosing averaging periods as it wishes.<sup>10</sup> Stated pre-project emissions were 352.47 lbs/day of NOx,<sup>11</sup> which if accurate,

<sup>9</sup> Heater H-100, Tesoro Los Angeles Refinery Title V permit 272<sup>th</sup> page of pdf,

<sup>10</sup> H-100 daily permit limit. 293<sup>rd</sup> page of PDF, Title V. [*The operator shall calculate the daily emissions for NOx and SOx using the SCAQMD certified CEMS.*] Tesoro was previously allowed by the SCAQMD to set the very high baseline for this heater during environmental review, based on unusual conditions during the 15 highest emitting days out of a 2-year period (also from CEMS data), making it appear that emissions were not increasing despite being allowed a 20% increase in fuel combustion (from 252 to 302MMBTU/hr). This was contrary to a California Supreme Court decision stating this method is not legal for setting baselines, when the SCAQMD used the same method at the Phillips 66 refinery. SCAQMD ignored this decision and allowed the same method to be used for Tesoro's LARIC project including the H-100 heat rate increase. Then SCAQMD's permit allowed Tesoro to calculate compliance with a supposed daily permit limit of 181 lbs/day, again based on Tesoro's choice of averaging period. This allows Tesoro to choose the most favorable conditions (in this case, the lowest emissions period of its choice). On the other hand, the *hourly* limit for this heater of 18.4 lbs/hour, which allows emissions up to 442 lbs/day, is consistent with the 20% increase in fuel use allowed, and a 20% increase in emissions above the pre-project 352.47 lbs/day. This indicates the real daily emissions limit is 442 lbs/day.

<sup>11</sup> Tesoro LARIC (Los Angeles Refinery Integration and Compliance project) FEIR (Table A-3), <http://www.aqmd.gov/home/research/documents-reports/lead-agency-permit-projects>

would increase to 422 lbs/day of NO<sub>x</sub> (20% higher due to burning 20% more fuel) from this single heater. Instead it was shockingly allowed to show an emission decrease down to 181 lbs/day.

If this heater had been required to meet BACT (Best Available Control Technology), it would have to reduce down to at least 72 lbs/day<sup>12</sup> and perhaps lower, instead of allowing hidden emissions of 422 lbs/day for this single heater.

Because there are so many refinery Boilers and Heaters throughout the state, examples like the Tesoro coker heater deal in addition to CARB's data, show that emissions reduction potentials are large. While the Bay Area and South Coast have regulated refinery boilers and heaters in the past, and the South Coast is planning new regulations to replace its RECLAIM pollution trading program for NO<sub>x</sub> and SO<sub>x</sub>, our experience is that these are underregulated major sources of pollution concentrated in communities of color receiving permitting and regulatory decisions highly favorable to the polluters.

### **ACTIONS:**

-- **CARB should immediately require reporting to a new public statewide database all Oil Refinery Boilers and Heaters in the state**, including vintage, emissions controls, fuel type, fuel combustion, location, monitoring, permit conditions, etc.

-- **CARB should begin a regulatory process to replace old refinery boilers and heaters**, require meeting BACT standards, increase maintenance, and require other measures listed in the tables above.

Because these are very large combustion sources located in communities of color, because these sources emit NO<sub>x</sub>, CO, other criteria pollutants and toxics, because these also emit greenhouse gases while Air District have allowed these to go without replacement for decades, **these sources are excellent candidates for statewide mandated regulation.**

### **C. Mandate that air districts require wet scrubbing or equivalent PM<sub>2.5</sub> and SO<sub>x</sub> emission cuts from oil refining catalytic cracking units (CCUs)**

Nine oil refineries operate catalytic cracking units (CCUs) with a collective capacity of 642,000 barrels/day in Avon, Benicia, Carson, El Segundo, Martinez, Richmond, Torrance and Wilmington, CA.<sup>13</sup> CCUs are exceptionally high-emitting sources of air pollution that causes environmental injustice and premature deaths unnecessarily because air districts have failed to require proven control technology

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<sup>12</sup> For example, a cursory review of coker heater BACT determinations found the *State of WA Refinery Coker Heater BACT Determination at Cherry Point*: Ultra Low NO<sub>x</sub> Burners with Good Combustion Practice and Selective Catalytic Reduction (ULNBs w/GCPs and SCR) meets 0.01 lb/MMBtu, p. 40, May 23, 2017,

[https://fortress.wa.gov/ecy/ezshare/AQ/PSD/PSD\\_PDFS/BP\\_Blaine\\_TSD.pdf](https://fortress.wa.gov/ecy/ezshare/AQ/PSD/PSD_PDFS/BP_Blaine_TSD.pdf)

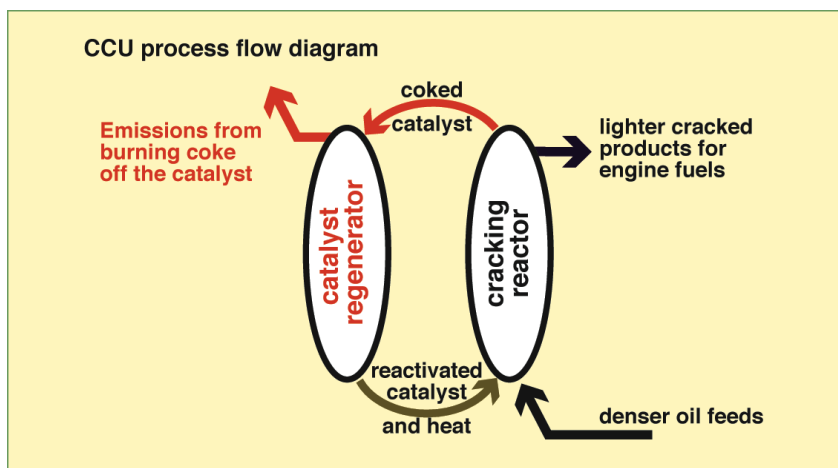
This would result in Tesoro's H-100 Heater at a limit of 72 lbs/day (302 MMBtu/hr x 0.01 lb/MMBTU = 3.02 lb/hr x 24 hrs)

<sup>13</sup> *OGJ surveys downloads*; PennWell: Tulsa, OK. 2018. 2018 Worldwide Refining Survey, *Oil & Gas Journal*. Web site: <http://www.ogj.com/index/ogj-survey-downloads.html> (accessed February 15, 2018.)

that can cut CCU emissions. We ask CARB to stop this injustice and protect our health by mandating CCU PM<sub>2.5</sub> and SO<sub>x</sub> cuts consistent with this proven wet scrubbing technology now.

### **Catalytic cracking is an exceptionally polluting refining process.**

Catalytic cracking units (CCUs) are exceptionally—and inherently—polluting because burning a form of petroleum coke, the dirtiest-burning fuel used in refineries, is intrinsic to their process design. *See* Diagram.



The CCU process continuously reactivates its process catalyst by burning off coke that forms on the catalyst during the process reaction (diagram right) in a catalyst regenerator vessel (diagram left). Burning the coke supplies most of the heat for the process reaction (diagram bottom). One CCU alone thus burns 650–900 tons of coke daily.<sup>14</sup> Despite the partial capture of the pollution dumped from the regenerator (diagram top left), burning all that coke emits huge amounts of air pollutants.

Without wet scrubbing CCUs can dominate refinery-wide PM<sub>2.5</sub> emissions. For example, CCUs are the largest source of PM<sub>2.5</sub> at the Shell Martinez and Chevron Richmond refineries, emitting 127 tons/year (21% of refinery-wide PM<sub>2.5</sub>) at Shell in 2014 and 274 t/y (58 % of refinery-wide PM<sub>2.5</sub>) at Chevron from 2010–2014. These examples are from air district inventory data for years when CCU estimates were based on source tests measuring condensable as well as filterable PM.<sup>15</sup> Wet scrubbing has proven able to cut CCU emissions dramatically. It can capture substantial portions of filterable PM<sub>2.5</sub> and sulfur compounds before they emit. That sulfur can otherwise react with ammonia to form condensable ammonium sulfate PM<sub>2.5</sub> in the CCU emission stack and plume.

### **CCU PM and SO<sub>x</sub> emissions are deadly and cause environmental *injustice*.**

A massive collection of scientific evidence indicates that PM<sub>2.5</sub> is the deadliest criteria air pollutant in California, as ARB well knows. In the Bay Area, PM<sub>2.5</sub> exposures account for more than 90% of

<sup>14</sup> Bay Area Air Quality Management District, various dates. *Emissions Inventory abated and unabated emissions, Chevron Richmond refinery*; District data reported by the City of Richmond, CA in EIR SCH #2011062042, Appendix 4.3–EI.

<sup>15</sup> Source-specific BAAQMD Emission Inventory data reviewed by CBE pursuant to the Public Records Act and vetted with District staff during development of proposed “caps” Rule 12-16.

premature deaths associated with air pollution<sup>16</sup> and kill an estimated 2,000–2,500 people each year.<sup>17</sup> Statewide, and especially in the Los Angeles and San Joaquin basins, the impacts are even worse—and the impacts are worse still in low income communities of color near the refineries.

Disparately severe health risk from ‘hot spot’ exposures near this exceptionally high-emitting source is obvious—and has long been documented by clear scientific evidence. Peer reviewed research, in which CBE members participated, documented disparately severe outdoor *and* indoor PM<sub>2.5</sub> exposures linked to refinery emissions in 2009.<sup>18</sup> In 2010, ARB’s former environmental justice advisors showed that “refineries account for the largest portion (93%) of the state-wide PM<sub>10</sub> pollution disparity score, or difference between the emissions burdens of people of color and non-Hispanic whites” among all major GHG emitting facilities under ARB’s cap-and-trade scheme.<sup>19</sup> More recently, a prestigious group of independent health experts estimated in 2017 that communities within 2.5 miles of refineries face a disparately severe PM<sub>2.5</sub> mortality risk from refinery emissions as much as 8–12 *times* that of the Bay Area population as a whole.<sup>20</sup> (See Attachment C)

### **Wet scrubbing is proven technology that should have been required long ago.**

A more effective CCU emission capture technology, wet scrubbing, has been demonstrated in practice. Wet scrubbing has been installed to control PM<sub>2.5</sub> and SO<sub>x</sub> emissions from the CCU at the Valero Benicia refinery and has operated there since 2011.<sup>21</sup> The scrubber controls its CCU, fluid coker, and crude unit furnace emissions.

Air District Emission Inventory data show that wet scrubbing brought combined CCU, fluid coking and crude furnace PM<sub>2.5</sub> emissions it controls at Benicia down to an average of 0.72 tons/year during 2011–2014.<sup>22</sup> That emission rate (0.72 t/y) is 99% less PM<sub>2.5</sub> than either the Shell Martinez CCU (at 127 t/y) or the Chevron Richmond CCU (at 274 t/y) emit now.<sup>23</sup> CCU SO<sub>x</sub> emissions at the Benicia refinery itself were cut by roughly 99%, from 1,158 t/y in 2010, before the scrubber began operating, to an

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<sup>16</sup> *Understanding Particulate Matter*; BAAQMD public report; 2012. *See esp.* page 26.

<sup>17</sup> *See* Fairly and Burch, 2016. *Multi-Pollutant Evaluation Method Technical Document 2016 Update*; documentation for the State Implementation Plan for the Bay Area Air District on 19 April 2017. San Francisco Bay Area Air Quality Management District: San Francisco, CA.

<sup>18</sup> Brody, J. G., Morello-Frosch, R., Zota, A., Brown, P., Pérez, C., and Rudel, R. A. Linking Exposure Assessment Science with Policy Objectives for Environmental Justice and Breast Cancer Advocacy: The Northern California Household Exposure Study. *American Journal of Public Health* **2009**;99:S600–S609. DOI: 10.2105/AJPH.2008.149088.

<sup>19</sup> Pastor, M., Morello-Frosch, R., Sadd, J. and Scoggins, M. S. *Minding the Climate Gap: What’s at Stake if California’s Climate Law isn’t Done Right and Right Away*; **2010**. College of Natural Resources, U.C. Berkeley, Department of Environmental Science, Policy and Management, U.C. Berkeley, and Program for Environmental and Regional Equity, University of Southern California.

<sup>20</sup> Kuiper, H., Broome, C. V., Brunner, W., Gould, R. M., Heller, J., Jackson, R. J., Kirsch, J. L., Neutra, R., Newman, T. B., Ostro, B., Rudolph, L., Shonkoff, S. BC., and Sutton, P. *Health impacts and implications should be included in the No Project and alternative scenarios and the environmental and regulatory settings section of the EIR for BAAQMD Rule 12-16*; 8 May 2017 health experts report to BAAQMD including discussion, appendices and references.

<sup>21</sup> The scrubbing was implemented as proposed to offset impacts of a proposed refinery expansion; *see* Valero’s November 2007 Application for Authority to Construct and Permit to Operate Valero Improvement Project Amendments (BAAQMD Application 016937) at page 2-1.

<sup>22</sup> Source-specific BAAQMD Emission Inventory data reviewed by CBE pursuant to the Public Records Act and vetted with District staff during development of proposed “caps” Rule 12-16.

<sup>23</sup> *Id.*

average of 4.6 t/y from 2011–2014.<sup>24</sup> Pre-scrubber PM<sub>2.5</sub> was measured less well than SO<sub>x</sub> at the CCU, but the scrubber cut Benicia CCU PM<sub>2.5</sub> emissions more than 90% based on available data.<sup>25</sup> This huge reduction in deadly pollution should have been required at all refiners' CCUs as soon as it was proven at the Benicia refinery CCU.

Instead, failures to require wet scrubbing make things worse. Refiners dump ammonia into less efficient and undersized electrostatic precipitators (ESPs) on their CCUs to meet PM<sub>10</sub> limits. That *increases* CCU PM<sub>2.5</sub> emissions by boosting formation of condensable ammonium sulfate PM<sub>2.5</sub>. Condensable PM<sub>2.5</sub> is up to 94–95% of the total PM<sub>10</sub> mass emitted from CCUs with ESPs using ammonia injection, such as the Chevron Richmond CCU.<sup>26</sup> And ESPs create a hazard wet scrubbing does not: sparking in startup conditions that ignites explosive gases in pollution incidents like the 2015 Torrance ESP explosion. Allowing refiners to avoid replacing ESPs with wet scrubbers risks another explosion.

**ARB action is needed. In the years since it was proven at Benicia, no California air district has required wet scrubbing at all the other refinery CCUs in its jurisdiction.** One district has stalled a CCU wet scrubbing measure planned in 2014 despite its own board's direction in 2014<sup>27</sup> for maximum feasible refinery emission cuts to be made before 2020. A district's senior staff has testified *against* a local government measure to require PM<sub>2.5</sub> emission reduction at a refinery CCU.<sup>28</sup> Now some district staff say AB 617 is another reason why they plan to further delay this proven emission-cutting measure at the biggest source of the worst air pollutant in low-income communities of color like Richmond.

AB617's Draft Blueprint Appendix C (p. C-5) affirms the priority of reducing PM emissions as one of its top objectives:

To address disproportionate localized air quality impacts, community emissions reduction programs will focus on two objectives:

- Reducing exposure caused by local sources to achieve healthful levels of PM<sub>2.5</sub> within the community.

For all of these reasons CBE asks that CARB include a requirement under AB 617 for air districts to implement wet scrubbing or equivalent reductions in PM<sub>2.5</sub> and SO<sub>x</sub> emissions from oil refinery catalytic cracking units forthwith.

## **ACTION**

- Mandate that air districts require wet scrubbing or equivalent PM<sub>2.5</sub> and SO<sub>x</sub> emission cuts from catalytic cracking units (CCUs) at oil refineries forthwith.

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<sup>24</sup> Id.

<sup>25</sup> Id.

<sup>26</sup> BAAQMD Chevron Richmond refinery Source Test Reports 10021 and 11076.

<sup>27</sup> BAAQMD Resolution 2014–07, adopted unanimously on 15 October 2014.

<sup>28</sup> See Hearing Transcript, Richmond City Council hearing in the matter of Chevron's Appeal of the Conditions of Approval of the Chevron Richmond Refinery Modernization Project, PLN11-089, EIR SCH #2011062042; July 2014.

#### D. Begin a plan for Oil Refinery phasedown by 2050:

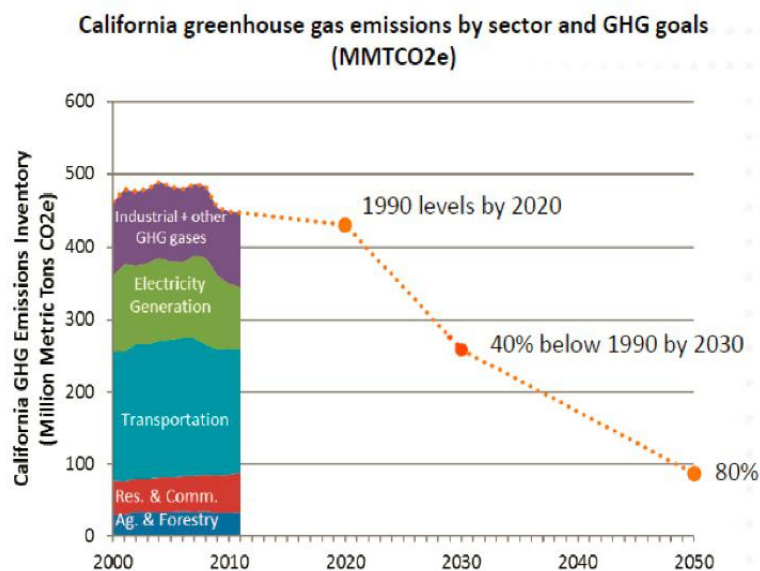
- California cannot meet urgent GHG, Smog, and Toxics goals without a phasedown Plan
- Start with a moratorium on refinery expansions,
- Also ban harmful pollution trading (such as PM2.5) within air basins that replaces emissions cuts and expansion limits

California has set goals which by their nature require replacement of fossil fuels with clean renewable energy, including goals for 80% GHG cuts by 2050, and 40% by 2030. California has made progress on the electricity sector due to substantial changes toward clean renewable electricity (about 30% now, and 50% renewables required on the grid by 2030), but not so in other big sectors. California is also required by the Clean Air Act to meet health-based standards for criteria pollutants as expeditiously as practicable, yet decade after decade, fails to do so. Furthermore, AB617 requirements will not be met for addressing disproportionate pollution impacts in communities of color, unless California begins to replace fossil fueled transportation sources, including vehicles, Oil Refinery production, and oil extraction. None of these local or global air pollution reduction goals will be met without clean energy.

While California has publicized reductions in GHG emissions in its most recent inventory, most of these emissions cuts come from renewable electricity gains, while transportation and refining emissions either made no progress or emissions went *up*, since 2009.<sup>29</sup> While little progress has been made replacing fossil-fueled transportation and associated oil refining, and oil extraction, they make up more than half of greenhouse gases and an even larger percentage of smog-precursors. The State has instead deferred to local permitting that allows Business-As-Usual expansions of these fossil fuel sources. While important state programs such as Charge Ahead for vehicle electrification exist, only a bit more than 1% is now electric.

**California must make much deeper cuts in emissions from 2020 to 2030 and beyond to 2050, compared to cuts needed to meet much milder 2020 requirements.** (CARB's chart at right)

Note that even if the entire electricity generation sector emissions were eliminated, this would still not be enough to meet 2030 goals. Goals cannot be reached without substantial cuts in transportation and transportation fuel production, especially to reach 80% 2050 goals. (Chart from ARB and originally from E3)



<sup>29</sup> California Greenhouse Gas Inventory for 2000-2016 — by Category as Defined in the 2008 Scoping Plan, [https://www.arb.ca.gov/cc/inventory/data/tables/ghg\\_inventory\\_scopingplan\\_sum\\_2000-16.pdf](https://www.arb.ca.gov/cc/inventory/data/tables/ghg_inventory_scopingplan_sum_2000-16.pdf)

**Rather than *simply starting to plan a long-term phasedown of transportation fossil fuel production at Oil Refineries, regulators rely on mitigation*, pollution trading, and allow new fossil fuel infrastructure that will be in place for decades. *Regulators seem not to be able to imagine requiring phasing down of Oil Refineries.*** But California will not be able to meet its long-term goals without doing so.

With communities of color overflowing with asthma and other health harms and most at-risk from impending climate disasters, and with the entire planet at risk, we must at least *begin* a serious plan for oil production and oil refining phase down. AB 617 planning is an appropriate place to include this planning.

We can start by allowing no increase in emissions, and no expansions of fossil fuel production and infrastructure. As highlighted in CEJA's comments<sup>30</sup> on the Draft Blueprint, CBE supports the call for:

- **Substantial, quantifiable annual reductions and no net increase in emissions, and that these must be additional to existing requirements**

**For starters, CBE urges requirements setting prohibitions on new fossil fuel infrastructure.** Other jurisdictions have begun setting such bans on fossil fuel infrastructure. For example, the City of Portland Oregon's ban on expansion of certain fossil fuel terminals was upheld in court earlier this year:<sup>31</sup>

The Oregon Court of Appeals set the stage Thursday for the City of Portland to reinstate its ban on the expansion of bulk fossil fuel terminals. The Court reversed a decision by the state Land Use Board of Appeals, concluding that the city could ban major expansions of bulk fuel terminals without violating the "dormant" commerce clause of the U.S. Constitution.

We also urgently need prohibitions on trading harmful pollutants such as PM2.5 in air basins (as the Bay Area Air District allows), which allows further concentration of such deadly pollutants in communities of color.

**Other Oil Infrastructure Needs Regarding Oil Extraction – 2500 ft Buffer Zone:** Also please note that our AB617 comments do not include our regional oil extraction goals and concerns, because we are addressing these within the City and County of Los Angeles process at this time. CBE is working to win a 2500 foot buffer zone in the City and County of LA for all existing and new extraction sites, in concert with our STAND LA (Stand Together Against Neighborhood Drilling) coalition. CBE also supports a statewide requirement at least as stringent as this, and supports CEJA, CRPE, and others who are working toward a statewide buffer requirement.

Please also see CBE's 2017 Scoping Plan comments.<sup>32</sup>

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<sup>30</sup> 7/23/2018, CEJA Comments on Draft Community Air Protection Blueprint, p. 5-6 and elsewhere

<sup>31</sup> For example, this report Jan. 4, 2018,

[https://www.oregonlive.com/portland/index.ssf/2018/01/appeals\\_court\\_upholds\\_portland.html](https://www.oregonlive.com/portland/index.ssf/2018/01/appeals_court_upholds_portland.html)

<sup>32</sup> 4/10/2017, *CBE Scoping Comments-Just Transition to Zero Carbon and Equity: Ramp up EVs, Stop expanding Power plants, Refineries & Dirty Crudes, Replace Trading with Direct Cuts*



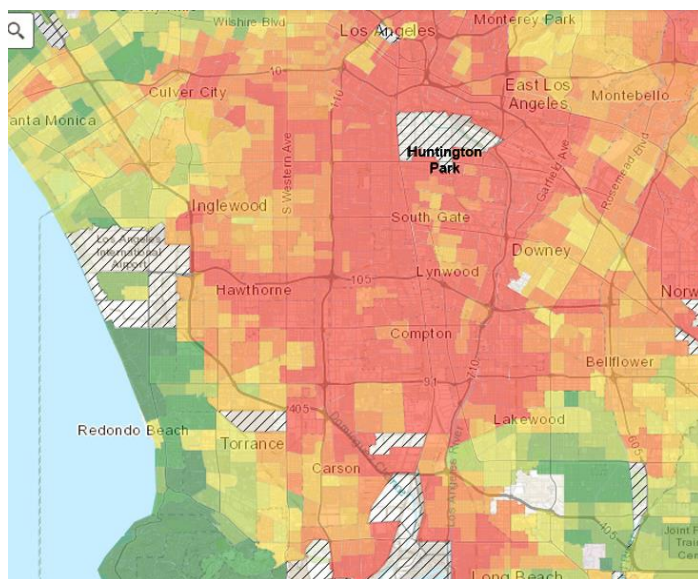
## II. Many Areas of the State *without Oil Refineries* such as Southeast LA and East Oakland are severely cumulatively impacted by heavy transportation and smaller stationary sources

CBE also represents heavily impacted community members in Southeast Los Angeles and East Oakland, outside the refinery zones (of Wilmington and Richmond/Rodeo). These areas require customized approaches to clean up transportation and cumulative impacts of local stationary sources, and should be treated as high priority disadvantaged communities pursuant to AB617. Impacts may be somewhat less visible than in refinery towns, but are nevertheless harsh, as shown in CalEnviroScreen scores and other demographic data and evidence.

### A. Characterizing South East Los Angeles (SELA) impacts

**This area is the heart of LA's "Red Zone" in CalEnviroScreen** (most disadvantaged due to pollution, low income, & other indicators, with heavy impacts unfairly burdening communities of color,). Huntington Park is 97% latino, with a median age of 29, and median income for workers of \$19,000<sup>33</sup>.

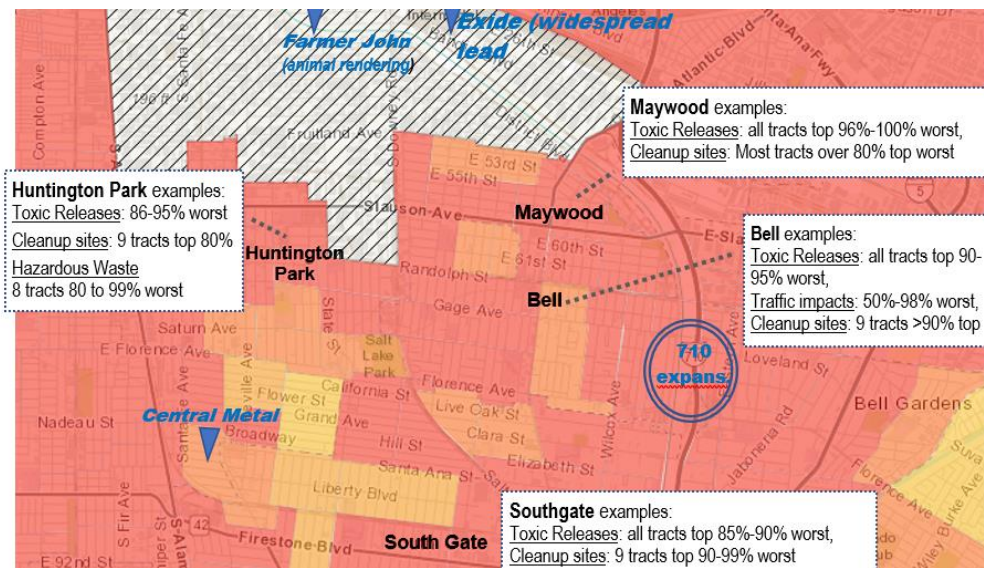
Cumulative Impacts include PM2.5, toxic releases, traffic, diesel, ground-level ozone (smog), cleanup sites, hazardous waste, plus educational, and economic disadvantages, and asthma, cardiovascular, and other health disadvantages. Most census tracts (48 out of 66) for CBE SELA members and partners, including Huntington Park, Maywood, Bell, & Southgate, are in the 91-100% overall most disadvantaged. Total population is 269,281.<sup>34</sup> We added markers below relating to four sources of major concern to community members (Exide lead emissions cleanup, which still does not have sufficient funding to clean up all known contaminated residences, Central Metal (closed, but proposing re-opening), Farmer John rendering plant, and the expanding 710 freeway). Also note Alameda Corridor - (transportation impacts).



<sup>33</sup> CalEnviroScreen:

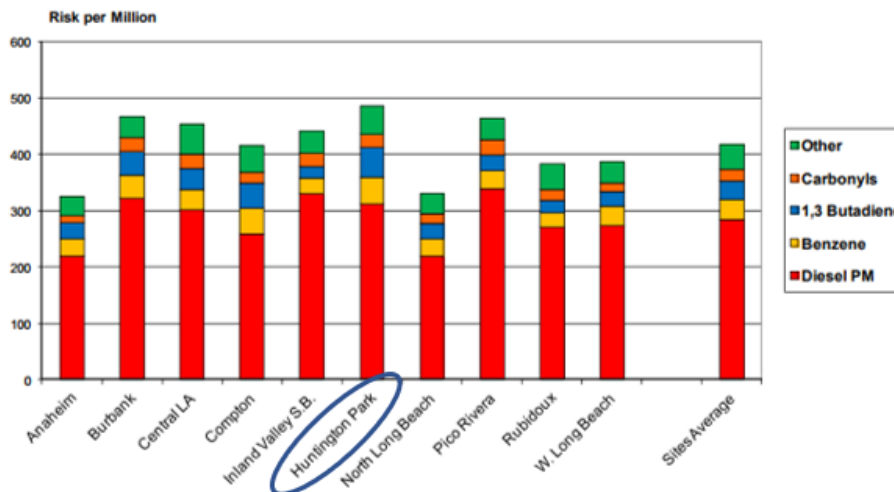
<https://oehha.maps.arcgis.com/apps/webappviewer/index.html?id=4560cfbce7c745c299b2d0cbb07044f5> and Census: [Social Characteristics 2010 Census](#) and [Economic Characteristics 2010 Census](#)

<sup>34</sup> [CES3results.xlsx](#)



**Additional indicators of health & environmental impacts from various sources:**

- The SCAQMD MATES study (Multiple Air Toxics Exposure Study)<sup>35</sup> found: “. . . emissions from railroads and goods movement are likely to contribute to the elevated study average UFP [Ultra-Fine Particulate] concentration observed at the Huntington Park site”. The MATES IV Air Toxics Risk chart showed **Huntington Park had the highest risk per million exposed to mobil source air toxics** including diesel PM, benzene, butadiene, and carbonyls.



- **The TRI (US Toxic Release Inventory) 2015<sup>36</sup>** included **Huntington Park 90255** (362,476 lbs. including chromium, nickel, nitric acid, zinc, and copper from Los Angeles Galvanizing, Aircraft X-Ray Laboratories, Los Angeles Pump & Valves, and West Coast Foundry); **South Gate 90280** (932,653 lbs including PAHs, Chromium, Nickel, Benzene, Cobalt, from Technic-Cast, Tesoro Vinvale Terminal, Brenntag N.A. Inc., Parker Hannifin Corp., and World Oil.); **Bell 90201** (22,811 lbs released, including zinc, nickel, glycol ethers, lithium carbonate, and cyanide compounds, from RPM International, Custom Building Products, and Metal Surfaces.), and **Maywood 90270** (none listed despite having the Exide facility nearby).

<sup>35</sup> [MATES IV Final Report](#) Figure 5-2, p. 5-3

<sup>36</sup> 2015 TRI data for: [Huntington Park 90255](#), [South Gate 90280](#), [Bell 90201](#), and [Maywood 90270](#)

## B. Characterizing East Oakland impacts

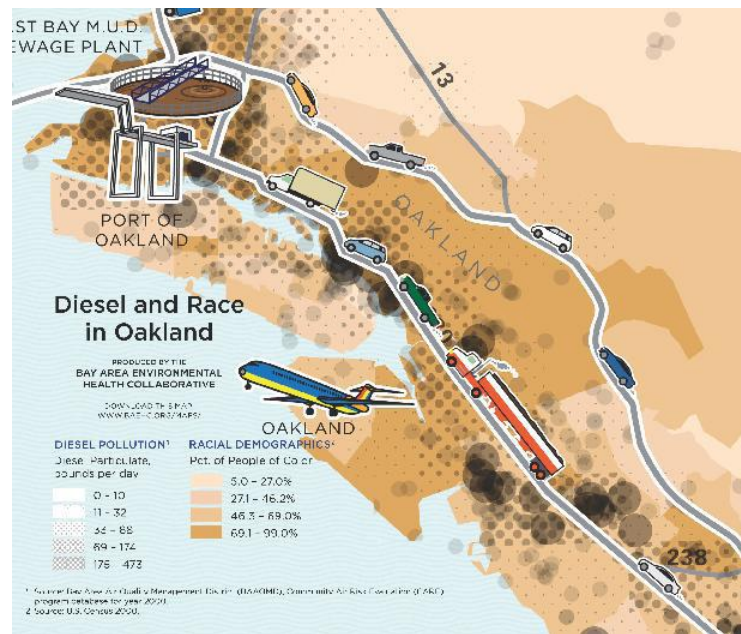
**East Oakland's Hegenberger Corridor (roughly 1.5 miles by 0.8 miles) is a largely black and latino community in the heart of the Elmhurst neighborhood, with a history of industrial pollution, with heavy diesel, asthma, hazardous waste, and housing impacts.<sup>37</sup>**

It is home to the Oakland Coliseum, the 100-year-old American Brass & Iron Foundry, and major transportation and freeways serving the Port of Oakland, the Oakland International Airport, and the Bay Area in general.

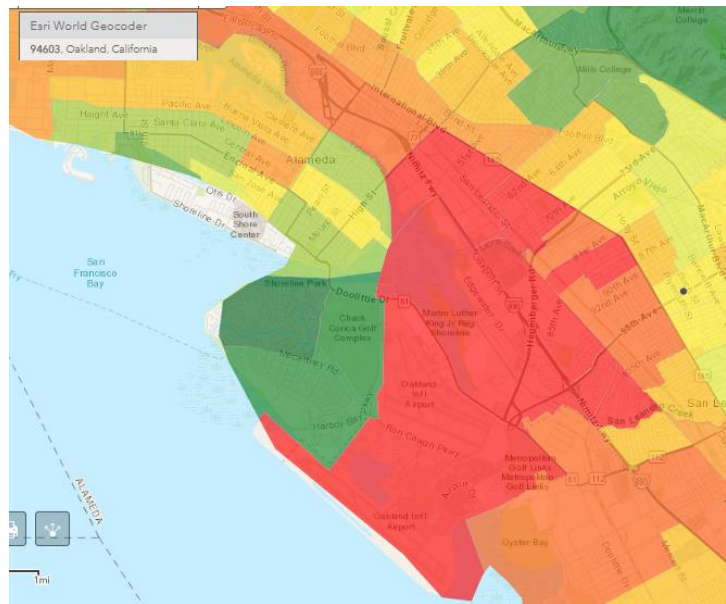
After World War II, the flight of the white middle-class and discriminatory practices by financial institutions contributed to disinvestment in East Oakland. The community is burdened by poor schools, inadequate health care and social services, and employment opportunities largely limited to low-paying stressful jobs.<sup>38</sup>

CBE's East Oakland Particulate Matter 2.5, Community-based Air Monitoring Research Report found:<sup>39</sup>

East Oakland has a childhood asthma hospitalization rate 150 to 200% higher than Alameda County as a whole, and life expectancy in East Oakland for the years 2000 to 2003 was 72.0 years, which was 6.9 years lower than Alameda County. Air pollution from busy roadways, which is made up of many compounds and chemicals, including particulate matter, are linked both to increased childhood asthma, impaired lung function, allergies,



East Oakland Diesel Truck Survey Report, CBE, 2010, <http://www.cbecal.org/resources/our-research/#cumulative>



CalEnviroScreen 2018 East Oakland shows 95-100<sup>th</sup> percentile worst scores for disproportionate impacts, including the 92<sup>th</sup> highest percentile for Diesel impacts

<sup>37</sup> Oakland, CA, 94621 CalEnviroScreen: <https://oehha.ca.gov/calenviroscreen/maps-data>

<sup>38</sup> Cumulative Impacts in East Oakland, CBE, 2008, <http://www.cbecal.org/resources/our-research/#cumulative>

<sup>39</sup> CBE, Sept. 2010, <http://www.cbecal.org/wp-content/uploads/2013/01/East-Oakland-PM-Monitoring-Report-FINAL-2010.pdf>

heart disease and mortality. East Oakland residents have been shown to be heavily impacted by industrial stationary and mobile sources of air pollution located near homes, schools, recreation centers, and churches.<sup>40</sup>

**And in the recent years an industrial-sized crematorium was permitted in already heavily-impacted East Oakland,** without sufficient public review and protections. Human cremation is linked to mercury, dioxin, and other harmful emissions. Last year, Air District officials were reported in an East Bay Express article, as pointing to AB617 to solve cumulative impacts from this and other East Oakland sources.<sup>41</sup>

### C. What does Southeast LA and East Oakland need, to reduce all these impacts?

Like other communities, South East LA, and East Oakland need:

- **Clean and equitable Energy** (access and development of Zero Emission transportation and infrastructure (such as charging), public transit, a solar grid, etc.);
- **Accountability and Funding for toxic site cleanup** (e.g. Exide in SELA)
- **Better permitting, enforcement, no rubber-stamping expansions, and real evaluation of alternatives by regulators** (e.g. Industrial Crematorium in East Oakland, 710 Freeway expansion in SELA)
- **Stop permitting that continues to increase Cumulative Impacts of toxic sources in these communities**
- **Just Transition to a green, equitable economy**

### III. Clean Transportation needs are a statewide need in all EJ communities

In addition to large industrial sources, pollution from transportation of people and goods are a major source of pollution in most low-income communities of color. Much more can be said on developing and mandating Zero Emission Transportation measures, which are key to meeting state goals, as described earlier. In summary:

- **ARB must use the mandate of AB 617 for setting aggressive targets in transportation electrification and enhancing clean mobility.** We applaud ARB's work in proposing Innovative Clean Transit.

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<sup>40</sup> Addition details on East Oakland asthma, 94621: Asthma Emergency Department (ED) visits is > twice Alameda County's, & 2nd highest in county. Asthma ED visits is 1,257 per 100,000 residents compared to Alameda County rate of 553/100,000. Asthma ED visit rate for children is 2,350/100,000 (0-4 year-olds) compared to county 1,301/100,000. Asthma inpatient hospitalization rate is 364/100,000 residents (2.5 times the county rate of 147/100,000. The childhood asthma hospitalization rate is 1048 / 100,000 (over twice the county rate of 477 / 100,000). (Source: ACPHD CAPE Unit with 2008-2010 data from California Office of Statewide Health Planning and Development (OSHDP).)

<sup>41</sup> As described in East Bay Express Article, November 15, 2017, <https://www.eastbayexpress.com/oakland/the-return-of-the-crematorium/Content?oid=10841726>

- **ARB needs to replicate similar and technology forcing programs in other transportation categories related to movement of goods.**
- **Additionally, ARB needs to issue clear guidance documents for agencies such as Caltrans that undertake expansion of freeways such as I-710.** For years community leaders, public health experts and environmental advocates have asked Caltrans to create a zero emission lane as part of I-710 expansion project. CARB has the obligation to show how this massive infrastructure project could advance the zero emission programs in California and help California and the South Coast region achieve some of its climate and air quality targets.
- Furthermore, ARB needs to provide similar guidance documents for the Ports of LA, Long Beach and Oakland. If Districts fail to create emission reduction regulation, CARB needs to fulfill its responsibilities in compliance with the intent of AB 617.
- On access to clean mobility, EJ organizations including CBE have worked extensively with CARB under the SB 350 study to identify the obstacles that DACs face. **Many of these programs require a more robust commitment on the part of CARB and more dedicated funding.** Creating meaningful incentives, programs and projects that are centered around the needs of DACs and responsive to those needs, are key in reducing pollution and enhancing access from mobile sources in low income communities of color.

#### **IV. Addressing Cumulatively large impacts from Smaller Stationary Sources in EJ communities**

Any serious attempt at reducing emissions in EJ communities must look at the cumulative impacts of a communities under consideration for priority action. It is clear that multiple sources of pollution impacting a community, cannot be regulated in the same manner as one source impacting the community, if each facility creates similar exposure. The obvious but unaddressed question EJ advocates have asked for years is: why each of multiple sources of pollution in DACs are treated without regard for other sources?

CARB and Air Districts have so far refused to create regulation from the point of view of impacted and vulnerable community members, and have designed programs from the perspective of industry. The intent of 617 has been to address this great flaw in the regulatory system. We need ARB and Air Districts to stop pointing fingers at each other, and get to work in creating a serious cumulative impacts regulatory regime in permitting, rule-making and enforcement.

#### **V. Communities need options for recourse through the State, to correct regional agency errors and bias**

AB617 requires addressing cumulative impacts, and AB32 requires ARB to design its programs to *prevent* any increase in emissions of toxic air contaminants or criteria pollutants.<sup>42</sup> It also requires it to consider the overall societal benefits of reducing other air pollutants and benefits to the environment and public health.<sup>43</sup> California has not fulfilled these requirements, but does have options to do so.

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<sup>42</sup> H&S Code § 38570(b)(2).

<sup>43</sup> H&S Code § 38562(b)(6).

Meantime, communities throughout the state have had to fight their local Air Districts (in the South Coast District, in the Bay Area, in the Central Valley, and more), to receive a fair shake about obvious errors in emissions inventories, permitting, etc. **An important part of fairness in addressing cumulative impacts, is recourse through the state to address bias inside regional agencies such as the Air Districts.**

This problem has been recognized widely. For example, the SCAQMD was found a captive agency of the Oil Industry, as described in the LA Times report below describes the 2016 furor over this agency's favor of oil refiners, recognized by CARB, Senator De Leon, and others:<sup>44</sup>

### **How the refineries came to own our air pollution regulators**

Refineries account for 60% of nitrogen oxide emissions in the Southland. Above, the Phillips 66 refinery looms over a Wilmington neighborhood. . . . "Regulatory capture" is the term for what happens when an agency overseeing an industry begins to see things the industry's way. Consider the most recent illustration: the South Coast Air Quality Management District board and the refinery industry.

The refineries are among the worst-polluting facilities in the Southland, which has the dirtiest air in the United States. But that didn't stop the board from rejecting on Dec. 4 a clean-air plan worked out by its staff over 37 months and substituting a plan made public that very morning, developed by the Western States Petroleum Assn., a refinery lobbying group.

Given a chance to reconsider its action at a meeting earlier this month, the board voted to stand pat. At the same meeting it fired its executive officer, Barry Wallerstein, who had supported the staff proposal.

These actions have landed the AQMD board in a world of hurt. The board, which is composed of 13 local politicians and business leaders representing Los Angeles, Orange, San Bernardino and Riverside counties, has been upbraided by the California Air Resources Board's executive officer, Richard Corey. He says the clean-air program would be so lax it might well violate state and federal regulations.

State Senate President Pro Tem Kevin de León (D-Los Angeles) has launched an effort to remake the board so its pollution-tolerant majority can be outvoted. On Wednesday, the Sierra Club and three other environmental organizations sued in state court to force the board to reverse its vote. . . . (Full article is attached)

**ACTION: We urge CARB to set up a process whereby communities can petition CARB to weigh in and correct errors and bias in permitting, regulation, etc.** (For example, see earlier, with the Tesoro H-100 coker heater example.)

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<sup>44</sup> 3/11/16, full article attached as Attachment A

Much more could be said about the breadth and depth of toxic sources impacting our communities, but we urge CARB to begin with the recommendations herein. Thank you for your consideration.

Sincerely;

Julia May, Senior Scientist, CBE, Southern California  
(Communities for a Better Environment)

Greg Karras, Senior Scientist, CBE, Northern California

Bahram Fazeli, Research and Policy Director, CBE

-- Attachments A, B included below, Attachment C as separate attachment

## ATTACHMENT A

[How the refineries came to own our air pollution regulators](#), by Michael Hiltzik, 3/11/16



Refineries account for 60% of nitrogen oxide emissions in the Southland. Above, the Phillips 66 refinery looms over a Wilmington neighborhood. (Rick Loomis / Los Angeles Times)

"Regulatory capture" is the term for what happens when an agency overseeing an industry begins to see things the industry's way. Consider the most recent illustration: the South Coast Air Quality Management District board and the refinery industry.

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State Senate President Pro Tem Kevin de León (D-Los Angeles) has launched an effort to remake the board so its pollution-tolerant majority can be outvoted. On Wednesday, the Sierra Club and three other environmental organizations [sued in state court](#) to force the board to reverse its vote.

In response, the board majority and its industry overlords have offered some of the most fatuous defenses heard from a public body in years.

Board member Mike Antonovich, a Los Angeles County supervisor, informed me in an emailed statement that the AQMD board "is not simply a rubber stamp for District staff." That's true, but it doesn't explain why it should be a rubber stamp for the refinery industry.

Orange County Supervisor Shawn Nelson, who sponsored the initial Dec. 4 motion to accept the industry proposal, argued that the plan does reduce emissions, just not as much as the staff proposal. He observed that the AQMD has no control over cars and trucks, the major source of air pollution. "If we put every company we regulate out of business tomorrow, we still wouldn't meet the clean air mandate," he said. That's hardly an excuse for falling short on the sources it does regulate, which are stationary facilities.

As for the refinery group, its president, Catherine Reheis-Boyd, claimed in an email that the plan adopted by the board amounted to "90% of what was proposed by staff" and that the rejected proposal would have cost the industry more than \$1 billion. Both figures are exaggerations, and even on the surface not especially relevant to the task of reducing emissions to levels that save lives and reduce the cost of dirty air to society.

Nor are those costs evenly distributed. Wilmington and West Long Beach, which are bordered by refineries and the ports of Los Angeles and Long Beach, have some of the highest rates of childhood asthma in the region or state. [Some 15% of Long Beach children suffer](#) from the condition, compared with 8% in the county overall. Nitrogen oxides, an asthma trigger, is among the pollutants at issue in the clean air plan.

Refineries, which account for 60% of nitrogen oxide emissions in the Southland, have managed to game air-quality standards.

The debate at the AQMD concerns the RECLAIM program (for "Regional Clean Air Incentive Market,"), a cap-and-trade system the AQMD created in 1993. Instead of directly ordering every pollution-emitter to install clean-air equipment,



RECLAIM established a market in pollution credits; a power plant, cement plant or refinery that met or exceeded its clean-air goals could defray its costs by selling its excess pollution allowances to facilities that hadn't met their goal, and could use the purchased credits to buy time. RECLAIM wasn't supposed to give polluters a break on meeting clean-air standards, just more flexibility in how they did so.

Things haven't worked out that way. "What we've seen over time is that RECLAIM has deep, deep flaws," says Evan Gillespie of the Sierra Club. The biggest flaw is that the market is flooded with excess credits. They're so cheap that it's much more economical for a polluter to buy credits than to install clean-air equipment. That has slowed the pace of environmental improvement.

The refineries are the principal offenders. Electrical generating plants, which also were big players in RECLAIM, have largely been forced by their own regulators to install the necessary equipment. California Portland Cement's Colton plant, which had been the largest single source of nitrogen oxides, shut down in 2013. That could have had a big impact on the air, but its pollution credits remained in the market, allowing other polluters to use them to avoid cutting their own emissions.

The AQMD staff calculated in 2005 that refineries would have to install 51 catalytic reduction units by 2011 to meet clean-air standards. Thanks to RECLAIM, however, only four were installed — and those as a result of orders from the federal Environmental Protection Agency. Avoiding the other 47 installations saved the refinery industry \$205 million, the AQMD staff estimated.

Under RECLAIM, industries were expected to reduce their nitrogen oxide emissions by 7.7 tons per day in 2007-11. By 2012, the reduction had come to only 4 tons — mostly because of industry shutdowns, "not measures taken to reduce actual emissions," the staff reported.

To bring the available credits more in line with emissions, the AQMD staff proposed at the December meeting to "shave" the total credits by 14 tons per day through 2022. The hope is that the price of credits would rise, making them more expensive than installing clean-air equipment.

The staff also recommended front-loading the shave, starting with 4 tons per day this year, followed by 2 tons more each year from 2018 through 2022. The staff chose this schedule because the 2016 reduction could be achieved simply by cutting excess credits out of the market. No installation of equipment would be needed — another pro-industry step. Most important, the staff proposed that credits attached to shutdown facilities be extinguished.

But the refinery group wouldn't have it. The Western States Petroleum Assn. proposed instead a shave of only 12 tons per day, back-loaded so that the most substantial reductions wouldn't kick in until after 2020. The industry also persuaded the AQMD board to refer the elimination of credits from closed facilities to a "working group," which as everyone knows is where such proposals go to die.

Let's be clear: Only one plan is based on analysis of the past and the potential to meet future clean-air mandates. The other plan achieves nothing but relief for the industry, at the expense of everyone in the Los Angeles Basin.

Supervisor Nelson says the board's decision has been misrepresented as a sop to the refineries. "This narrative that we're giving 'olly-olly-oxen-free' to polluters is just fiction," he told me.

But the proof is in the results. RECLAIM has failed, and the AQMD should be replaced with a body that serves the public interest, not just one industry's interest.

## ATTACHMENT B



# Oil Drilling near You!



Warren E&P [googlemap2](#)



E&B Resources [googlemap3](#)



E&B Resources [googlemap4](#)



E&B Resources [googlemap5](#)



Tidelands [googlemap5](#)

### Wilmington neighborhoods are at risk from toxic Oil Drilling in residential neighborhoods!

- CBE is part of the STAND LA coalition (Stand Together Against Neighborhood Drilling). We have been fighting for protections for communities burdened by oil extraction & production, right next to homes. Wilmington is just one impacted community in the region.
- Last year we won stronger notification measures for oil drilling, maintenance, acidizing, and other operations that are happening throughout the LA region.
- For example, the South Coast Air Quality Management District (AQMD) strengthened regulations 1148.1 and 1148.2 to add standards, and increase public notification.
- These rules are still very weak, and pollution controls, monitoring, etc, are primitive compared to other industries.
- We summarized data reported for Wilmington CA. See the back for dozens of toxic chemicals used at these sites, right next to houses (or waterways), including cancer-causing or extremely hazardous chemicals such as Hydrogen Fluoride, and an astonishingly long list of many others.

**What Can You Do?** ▶ If you experience bad odors or oil eruptions from these operators, report them to the AQMD at 1-800-288-7664 (1-800-CUT-SMOG), which may send an inspector if there are multiple complaints. Some facilities operate better than others, but we believe no site should be near to houses.

▶ You can sign up for notices of "events" at these sites such as drilling, rework, maintenance, well acidizing, etc., or search for information about a site near you, through the SCAQMD, at <http://www.aqmd.gov/home/regulations/compliance/1148-2> ▶ Contact CBE for more info: Julia May, Senior Scientist ([julia@cbeal.org](mailto:julia@cbeal.org)), or Alicia Rivera, Wilmington Community Organizer ([alicia@cbeal.org](mailto:alicia@cbeal.org)).

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**Drilling uses many hazardous chemicals including those below:** We only found out these were used in Wilmington because of new regulations requiring public reporting. Previously, companies did not even have to report. We still don't know how much is emitted to the air, but many chemicals are volatile. This toxic chemical use should be eliminated. We also oppose contaminating underground areas with toxics, and transporting toxics through neighborhoods.

**Warren E&P: 44 Events, 6/8/13-4/22/16, (Most pre 9/15), Well Drilling, Completion, & Rework:** Maintenance Acidizing for some events, Gravel Packing some events. Chemicals Reported: 2-Hydroxy-1,2,3-Propanetricarboxylic Acid, 2-Propyn-1-ol, Ethylbenzene, Ethyl Octynol, Glycolic Acid, Hydrogen Chloride, Hydroxyacetic Acid, Isoquinoline, Methanol, Phosphoric Acid, Quinaldine, Solvent Naphtha (Petroleum) – Heavy Aromatic, Terpene Hydrocarbon, Toluene, Xylene. “Trade Secrets” Chemicals Family Name: Aldehyde, Aliphatic Alcohol, Aliphatic Sulfonates, Alkyl Benzene Sulfonic Acid, Alkylaryl Sulfonates, Alkyne Alcohol, Aromatic Amine - TOFA Salt, Aromatic Amines, Aromatic Compound, Aromatic Compound (1), (2), (3), (4), (5), and (6), Non-hazardous ingredients, Ester, Fatty Acid, Fatty Acid Esters, Halides, Inorganic Compound, Inorganic Potassium Compound / Alkali Hydroxide, Inorganic Salt of an Acid, Ionic Compound, Ionic Surfactants, Lubricant, Mixture, Modified Sulfonate, Modified Thiourea Polymer, Naphthalene Sulfonate-Formaldehyde Condensate, Nonylphenol Ethoxylate, Olefin, Organosulfur Compound (1), (2), Oxyalkylated Alkylphenol, Oxyalkylated Polyamine, Phosphonate Salt, Polyacrylate, Polycyclic Aromatic Hydrocarbon, Polycyclic Compound, Polyester, Polyoxoalkylenes, Polysaccharide, Powervis, Proprietary Blend, Quaternary Ammonium Compound (1), (2), (3), Salt Compound, Salt of Organic Acid, Sulfur Compound, Thrurol, Vegetable and Polymer Fibers, Viscosifier, Wood Chemicals

**Tideland: 34 Events, 9/9/13-5/26/16, (Most pre 9/15), Well Drilling, Completion, Maintenance, & Rework:** Acidizing & Maintenance Acidizing for some events, Gravel Packing some events. Chemicals Reported: 1,2,4-Trimethylbenzene, Acetic Acid Ethyl Ester-Polymer with Ethanol, Acetone, Acrylic Polymer, Alkylbenzene Mixture, Aluminum, Aluminum Oxide, Ammonium Chloride, Amorphous Silica, Amorphous Silica Fume, Anionic Acrylamide Copolymer, Aromatic Barite, Barium Sulfate, Bentonite, Calcium Bromide, Calcium Carbonate, Calcium Chloride, Calcium Oxide, Carbon, Carboxy methylcellulose Sodium Salt, Cellulose, Cellulose, Citric Acid, Citrus Terpenes, Crystalline Silica, Cumene, Cyclohexanamine-Sulfate (1-1), Disopropylphthalene, Disodium Metasilicate, Erythorbic Acid, Ethylbenzene, Ethylene Glycol Monobutyl Ether, Ethyl Octynol, Ferrus Sulfate, Formaldehyde, Glutaral, Glyoxal, Gypsum, Heavy Aromatic Naphtha, Hydrochloric Acid, Hydrogen Fluoride, Isoquinoline, Light Aromatic Naphtha, Magnesium, Magnesium Oxide, Methanol, Methyl Amyl Alcohol, Methyl Ester of Sulfonated Tannin, Mica, Mineral Fiber, Naphthalene, Nitrotriacetic Acid, Oxyalkylated Amine Quat, Oxyalkylated Alkylphenol Resin, Oxyalkylated Alkylphenol Resin, Petroleum Naphtha, Petroleum Resins, Polymer, Portland Cement, Potassium Chloride, Propargyl Alcohol, Proprietary, Quinaldine, Quinaldine, Saponite, Silica, Silica Crystalline Quartz, Sodium Bicarbonate, Sodium Carbonate, Sodium Chloride, Sodium Gluconate, Sodium Lignosulfate, Stearic Acid, Sulfonate, Synthetic Red Iron Oxide, Terpene Hydrocarbon, Thiourea Polymer, Toluene, Welan Gum, Wood Dust-Soft Wood, Xanthan Gum, Xylene. “Trade Secrets” Chemicals Family Name: Acetic Acid, Aliphatic Alcohol, Alkylaryl Amine Sulfonate, Alkylaryl Sulfonates, Amide Surfactant Phosphate Acid Salt, Amide Surfactant Phosphate Ester Salt, Amide Surfactant, Aromatic Amine TOFA Salt, Aromatic Amines, Aromatic Compound, Aromatic Hydrocarbons, Aromatic Petroleum Distillates, Cinnamic Inhibitor, Copolymer, Crosslinked Polyol Ester, Detergent, D-Limonene, Diol Compound, Ester, Fatty Acids, Fatty Acids Ester, Halides-Inorganic Salt, Inorganic Compound, Inorganic Potassium Compound/Alkali Hydroxide, Inorganic Solvent, Ionic Surfactants, Ketone, Linear Alkylbenzene, Lubricant, Mixture, Modified Starch, Modified Sulfonate, Modified Thiourea Polymer, Naphthalenesulfonate-Formaldehyde Condensate – Sodium Salt, Non-hazardous ingredients, Nonylphenol Ethoxylate, Olefin, Organophosphonic Acid Salt, Oxyalkylated Alkylphenol, Oxyalkylated Alkylphenol Resin, Oxyalkylated Amin Quat, Petroleum Resins, Polycyclic Compound, Polyglycol Ester, Polyoxoalkylenes, Polysaccharide, Salt Compound, Salt of Inorganic Acid, Salt of Organic Acid, Sulfur Compound, Unsaturated Alcohol, Viscosifier, Wood Chemicals

**E&B Natural Resources, 4 Events, 5/21/14 – 7/28/15, Well Rework:** Maintenance Acidizing for some events, Gravel Packing some events. Chemicals Reported: 2-Butoxy Ethanol, 2-Hydroxy-1,2,3-Propanetricarboxylic Acid, 2-Propyn-1-ol, Alumina, Ammonium Chloride (NH<sub>4</sub>Cl), Calcium Oxide, (CaO), Citric Acid, Ethylbenzene, Ethyl Octynol, Hydrochloric Acid, Hydrogen Fluoride (Hydrofluoric Acid), Iron Oxide (Fe<sub>2</sub>O<sub>3</sub>), Isoquinoline, Methanol, Pine Oil, Potassium Chloride, Potassium Oxide, Propyn-1-ol, Quartz (SiO<sub>2</sub>), Quinaldine, Sodium Chloride, Solvent Naphtha (Petroleum) - Heavy Arom., Terpene Hydrocarbon, Toluene, Xylene. “Trade Secrets” Chemicals Family Name: Amide Surfactant Phosphate Acid Salt, Amide Surfactant Phosphate Ester Salt, Amide Surfactant, Aromatic Amine TOFA Salt, Aromatic Amines, Ionic Surfactants, Nonylphenol Ethoxylate.

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