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PBF Comment Letter

Additional submitted attachment is included below.

December 20, 2022
Honorable David Hochschild
Chair, California Energy Commission
1516 9th Street
Sacramento, CA 95814

Via Docket No. 22-IEPR-05

Subject: Comments on "California Gas Price Spikes, Refinery Operations and Transitioning to a Clean Transportation Fuels Future" Commissioner Hearing

Dear Chair Hochschild,

PBF Energy Inc. (PBF) appreciates the opportunity to comment on the California Energy Commission's (CEC) "*Information Hearing on California Gasoline Price Spikes, Refinery Operations and Transitioning to a Clean Transportation Fuels Future*."

PBF is an independent refining company whose primary mission is to safely and reliably manufacture the essential liquid fuels required by most of the 29 million vehicles registered in California that residents, businesses, and governments rely on to get to where they are going and back again, every day of the year. In addition, PBF supplies the diesel and jet fuel critical for moving people and the products needed to maintain our quality of life through California's ports of entry to destinations in California, the United States of America and throughout the World. As an independent refiner, we purchase crude oil on the open market, refine the crude oil into gasoline, diesel, and jet fuel, then sell our products to others, including wholesalers, on the open market.

PBF's two refining subsidiaries in California are the largest processors of in-state crude oil production. They also own and operate about 25% of California's refining capacity, and employ more than one thousand Californians, with about 70% represented by labor unions. In addition, we hire contractors whose teams are primarily skilled Building Trade union members who work on maintenance, projects, and turnarounds.

While we understand your desire for us to attend the Hearing in-person, we chose to participate via these written comments in lieu of attending for several reasons.

- **Antitrust Concerns.** The State of California, including the CEC, is well aware the oil and gas industry is one of the most highly regulated sectors in America and California, subject under penalty of law to stringent federal antitrust rules that prohibit competitors from discussing pricing, operations and/or maintenance planning, and other topics discussed at the hearing, which prohibited us from attending or we could have been accused of colluding and prosecuted.

- **Industry-Related Hearing – Upstream and Downstream.** PBF only represents the refining and logistics sectors, which is why we asked the CEC to allow the Western States Petroleum Association (WSPA), our industry's trade association, to participate on our behalf. WSPA represents the entire oil sector and was well-suited to address the range of topics covered at the hearing.
- **Governor Newsom's Politicization of the Hearing.** As noted in our letter declining the invitation, the Governor chose to politicize the Hearing with a misleading news release and press conference under the headline "*California Holding Oil Companies Accountable for Gas Price Hikes and Record Profits, Hosting Hearing to Get Answers*." Clearly, this title implies the Governor had already decided to baselessly blame oil companies for recent gas price spikes rather than admit the fuel supply shortages resulted from the success of state laws, regulations, policies, and political initiatives targeting our industry and products.

As noted in our letter declining the invitation, we proactively reached out to the Newsom Administration in November 2021 to express our concerns about California's short-term gasoline supply and the state's economy over the longer term. We subsequently met on January 27 and March 22, 2022, with the Governor's senior staff, led by Secretary of Natural Resources Wade Crowfoot.

We reviewed the attached presentation, "Growing Concerns for California's Economy" with Governor Newsom's senior staff during our January meeting. Our concern was that state mandates and regulations were severely impacting the fuel supply chain, which could lead to a near-term fuel supply crisis with potentially significant economic impacts, which came to fruition earlier this year. Below are some of the highlights from our presentation:

- California is facing a gasoline supply shortage that could become a near-term crisis with potential for significant harm due to refinery closures, a challenge that will worsen as additional, announced shutdowns occur in 2023.
    - Remaining California refineries are unable to meet instate demand throughout the year.
- Refining is an extremely capital-intensive business, and California's policy and regulatory environment is putting future investment in refining and fuel manufacturing at risk in the state.
    - California's regulatory costs were cited as a factor by Marathon when idling Martinez refinery in 2020.
- The impending fuel supply/demand balance would heighten the state's vulnerability to in-state refinery outages and significantly increase California's reliance on finished fuel and blendstock imports from overseas sources
- We asked for the state to create an energy transition plan to prevent premature refinery closures, which could lead to supply shortages and impact Californians who can least afford higher pump prices.

Building on our January 2022 presentation and discussion, we then provided Governor Newsom's senior staff with additional data and analysis in a presentation supporting our projections in March and followed that with a summary letter in April 2022 – all documents are attached. That letter summarizes our concerns about near-term fuel supply shortages, plainly stating, "By 2023, California could lose nearly 20% of its 2019 gasoline production from in-state refineries, while gasoline demand is only expected to shrink by 8%, leaving the state with a gasoline supply challenge."

This letter also noted the Russian invasion of Ukraine further exacerbated the situation, which would continue to deteriorate if the state failed to create a workable fuels transition plan while pursuing its energy transition goals.

Considering the substantive and proactive communication PBF had with Governor Newsom's senior staff earlier this year on this very topic, we were disappointed we were unable to participate in the Hearing because of the reasons given above. However, we plan to work with you and the Commission on a transition plan in a constructive setting that avoids anti-trust violations.

With all this said, PBF offers the following comments to the questions posed by the CEC to panelists during the Hearing.

CEC Question #1: Why did gasoline prices rise so dramatically and suddenly over the summer despite a sharp downturn in global crude prices, no significant unplanned refinery outages in the state, and no increases in state taxes or fees?

Overall, we believe that information contained in the CEC staff presentations provides the Commission with a sufficient explanation as to why California has experienced significant gasoline price volatility and spikes.

To start, the CEC staff explained well why California's gasoline prices are volatile and the highest in the nation on a base-case. These factors included (Schremp, slide 14):

- **Greater tax burden**: California has the highest fuel taxes in the country at 86 cents per gallon (Schremp, slide 48).
- **Environmental program costs**: California's Low Carbon Fuel Standard and Cap-and-Trade program add ~50 cents per gallon to the prices Californians pay at the pump
- **Higher gasoline production costs**: Per CARB, "cleaner-burning gasoline costs from 5 to 15 cents more per gallon to produce than conventional gasoline."
- **California is an isolated market**: The California market is separated by time and distance from alternative global sources (Schremp, slide 10).
- **Higher crude costs for California refiners**: In-state crude production has steadily fallen since the 1980's, declining at a more rapid rate over the past few years because of Governor Newsom's de facto ban on in-state production, leaving California refineries more reliant on foreign and Alaskan imports, which are more expensive.
    - Increased costs are driven by shipping, storage, and handling, along with quality challenges that require increased refining processes.
- **Increasing retail margins for more expensive gasoline brands**: Retail prices are set downstream of the refining process, after refiners have already sold their products in the wholesale market to entities that can blend and offer finished fuel to consumers at gas stations. Retailer owners or large marketing firms with gas station chains set retail prices.

Further, the CEC staff correctly summarized the fundamental factors leading to the September 2022 gasoline price spike as: "…*(the) spike in September was due to declining refinery capacity, refineries under planned and unplanned maintenance, decreased production, low imports, and low inventory*." This explanation is in line with Governor Newsom's description in his letter to CARB this past fall in which he wrote, "*California is temporarily experiencing tight*

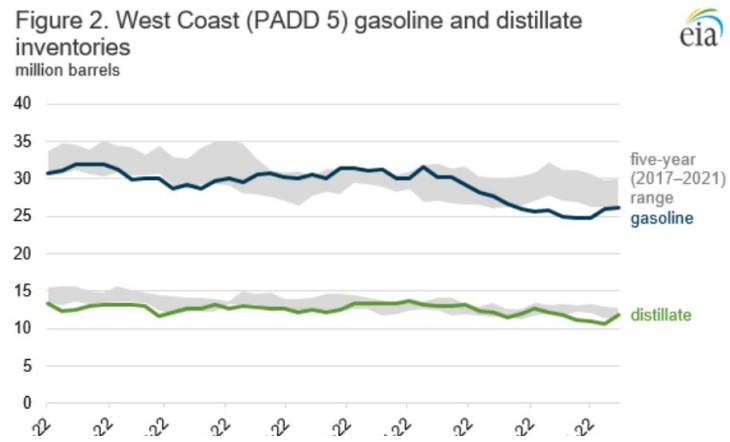
gasoline supplies that are causing dramatic spikes in the price consumers must pay to fuel their gas-powered vehicles."

Another factor CEC points to is California's refining capacity has shrunk by ~30% since the 1980's, while refining capacity nationwide has grown during the same period. And most recently, the state lost twice as much pre-pandemic refining capacity as that of the rest of the Country in percentage terms (Schremp, slide 30). As the CEC presented, *"(gasoline) production (in California) is falling faster than consumption—one refinery has closed—the gap between California production and consumption has grown—another refinery will soon close* (van der Werf, slide 18)."

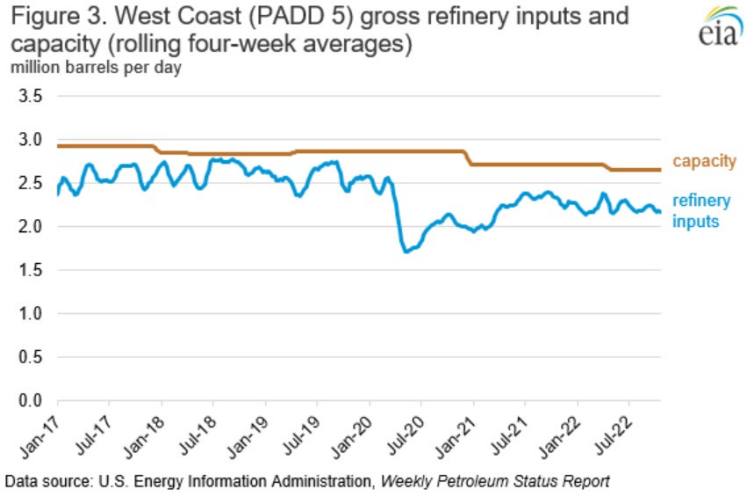
This lost in-state supply went relatively unnoticed during the pandemic years when gasoline demand plummeted due to government mandated lockdowns. However, as demand returned to close to pre-pandemic levels in 2022, Californian's gasoline demand outpaced declining supply and reduced inventories, leaving the market vulnerable to unplanned refinery outages, and more reliant on fuel imports that were few, far between, and expensive.

In "This Week in Petroleum" on October 26, 2022, the United States Energy Information Agency (EIA), repeated some of CEC's themes while providing more details on fuel market dynamics in California – *PBF added emphasis with italics*:

> Unique characteristics on the West Coast, and in *California in particular*, influence the supply of petroleum products, and *may be causing the region to be more susceptible to wide price swings*. The West Coast is isolated by geography and a lack of petroleum infrastructure connections to the rest of the United States. In addition, California state regulators require different gasoline and diesel specifications than the rest of the country.
>
> Consequently, the West Coast generally *must maintain steady refinery runs* to ensure regional supply meets demand, and *any refinery outages can disrupt this balance*. Furthermore, when refinery outages occur, West Coast markets must draw down local inventories or *import product and/or blend stocks from refineries in Asia* to meet demand because of the different fuel specifications.
>
> West Coast gasoline inventories decreased from the beginning of August to the end of September and fell below their five-year (2017–2021) range at the beginning of September (Figure 2).



Distillate inventories remained within their five-year range for much of September but were generally decreasing in the month before falling to below their five-year range briefly from September 30 to October 14. *These low inventories may also have contributed to West Coast market conditions in which prices react strongly to relatively small changes in supply*.



Decreased refining capacity may have also made West Coast spot prices more sensitive to supply changes. Since 2020, West Coast refinery capacity decreased due to the conversion of the 166,000 barrel per day (b/d) Tesoro (Marathon) refinery in Martinez, California, to renewable diesel. Following this closure, refining capacity on the West Coast fell below 2.7 million b/d, down 9% from the end of 2017 (Figure 3).

Although these charts represent PADD 5, the impact of decreased product inventory and refining capacity is critically important to understanding market dynamics in California during this period when low inventories in September caused wholesale and retail buyers to bid gasoline prices up to ensure they could continue to supply product to serve their customers, rather than have their tanks run dry. Simple commodity supply and demand dynamics.

With various factors driving fuel demand, backfilling California's short CARB gasoline supply is difficult and perhaps impossible for various reasons, including:

- The shutdown of Marathon Martinez Refinery, due in part to pending capital and regulatory costs, eliminated approximately 166,000 barrels per day of instate production/supply
- Very few refineries outside California can make cleaner-burning CARB gasoline, which requires special investments and is more expensive to make
    - CARB created an isolated, islanded boutique fuels market
- Import barrels are sold on global markets to the highest bidder
    - California's gasoline bid must be high enough to attract imports to the state or the barrels will go elsewhere
- Imports are subject to geopolitical events that can reduce availability

    - Russia's war on the Ukraine has reshaped the world's fuel markets
    - China's exports of gasoline, diesel, and jet fuel during the first nine months of 2022 were reportedly 45% lower than in 2021
    - Other countries with export refineries limited outflows
- Imported fuels and components are shipped over great distances
    - Cargoes can take up to 30 days to arrive (Stillwater, slide 18)
    - Time/distance create risk because prices in California can fall while in transit
- Freight costs have risen dramatically, creating another barrier for imports (Stillwater, slide 19)
- Imports are vulnerable to availability of vessels, weather that can disrupt transit routes, and other logistical challenges

Fundamentally, California's policies and regulations have caused the state to lose refining capacity at a rate faster than gasoline demand decreased, made California an isolated market that is difficult to backfill with imports, reduced competition in the retail gasoline sector, and created conditions that leave Californians vulnerable to gasoline shortages, price volatility, and price spikes such as what the state experienced in September 2022.

Examples include:

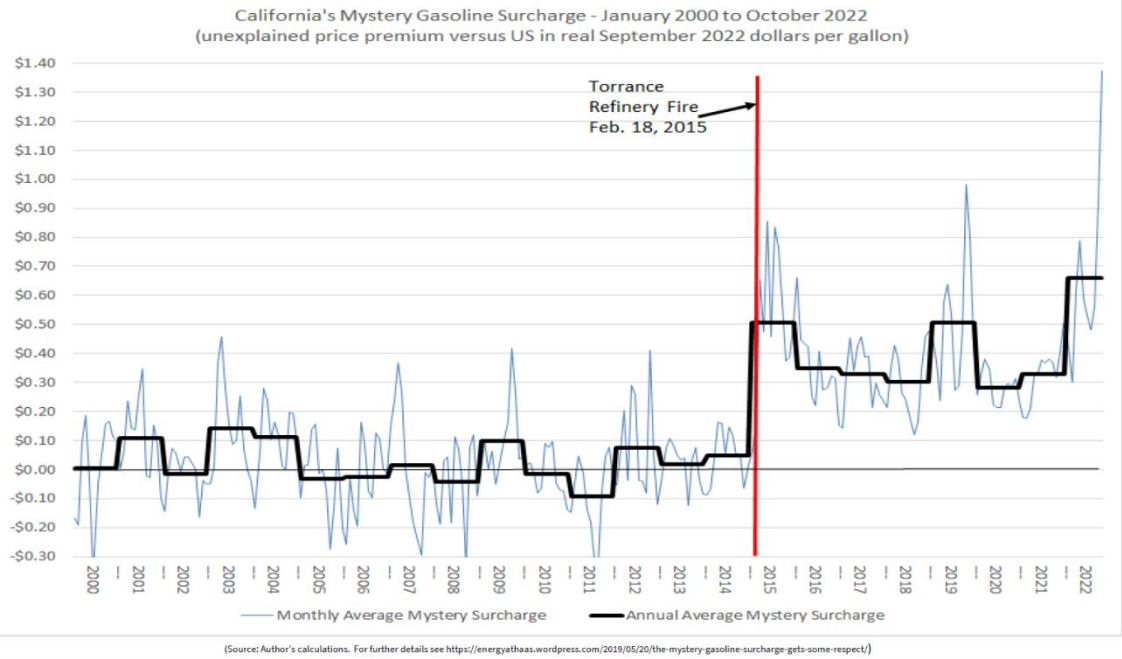
- California's California Reformulated Gasoline regulations limit options for importing gasoline because few refineries outside California are equipped to make CARB gasoline on a sustained basis
- California's Low Carbon Fuel Standard incentivizes refiners to convert to renewable diesel facilities
    - Two bay area refineries are converting to renewable diesel production and will cease CARB gasoline production. Once converted, they will make about 70 percent less physical fuel with only about one third of the workforce.
- California Reformulated Gasoline regulations require California refineries to make the more expensive "summer-blend" gasoline longer than the national standard requires, further isolating California's fuel market and reducing potential suppliers.
- The state's Scoping Plan calls for petroleum demand to decline by 50% by 2035 and 83% by 2045 in attempt to achieve California's goal of carbon neutrality.
    - This sends extremely negative investment signals to instate refiners who must decide in the near-term whether to keep making long-term investments in their California refineries.
        - Similarly, state policies and political initiatives forced natural gas and nuclear generating plants to close; now the state is spending Billion$ subsidizing four natural gas plants and one nuclear generating facility.
        - Perhaps foreshadowing California, Australia is subsidizing operations at the country's two remaining oil refineries, following plant closures there.
- California's recently adopted Internal Combustion Engine (ICE) Ban (Advanced Clean Cars II regulations) will eventually end refining in the state if the driving public is willing and can afford to purchase EVs
    - Advancing the ICE ban policy alone threatens refining sector investors with the specter of stranding assets.
- Local air district regulations impose near-term, multi-million-dollar capital requirements on refiners that take years to implement and pay off, at the same time the state is signaling it does not want refiners around long enough to justify making near-term capital investments.

- California refiners' operating costs are the highest in the nation due in large part to the state's overall business climate.
    - Public Policy Institute of California: "California's business climate ranks favorably on measures of productivity but poorly in terms of taxes and costs."
    - Refineries are capital intensive, so they are unfavorably impacted by high operating costs, productivity is less of a factor.
- The demise of California crude production due to state policies and initiatives, leaves instate refiners reliant on more expensive crude oil imports, including from countries with lower to non-existent environmental and labor standards.
    - Although a petition for a referendum has been submitted, SB 1137 seeks to essentially ban in-state crude oil production.
    - Governor Newsom continues his push to phase-out California oil production
        - In-state crude production has steadily fallen since the 1980's, but has declined at a more rapid rate over the last few years because of Governor Newsom's de facto ban on in-state production.
- Local governments continue banning new gas stations from being built
    - California has twice as many drivers per gas station than the rest of the country (Stillwater, slide 25)
        - "There's less competition for drivers who have fewer choices in their buying experience in California than they do in other parts of the country," David Hackett, energy expert, Chairman of Stillwater Associates

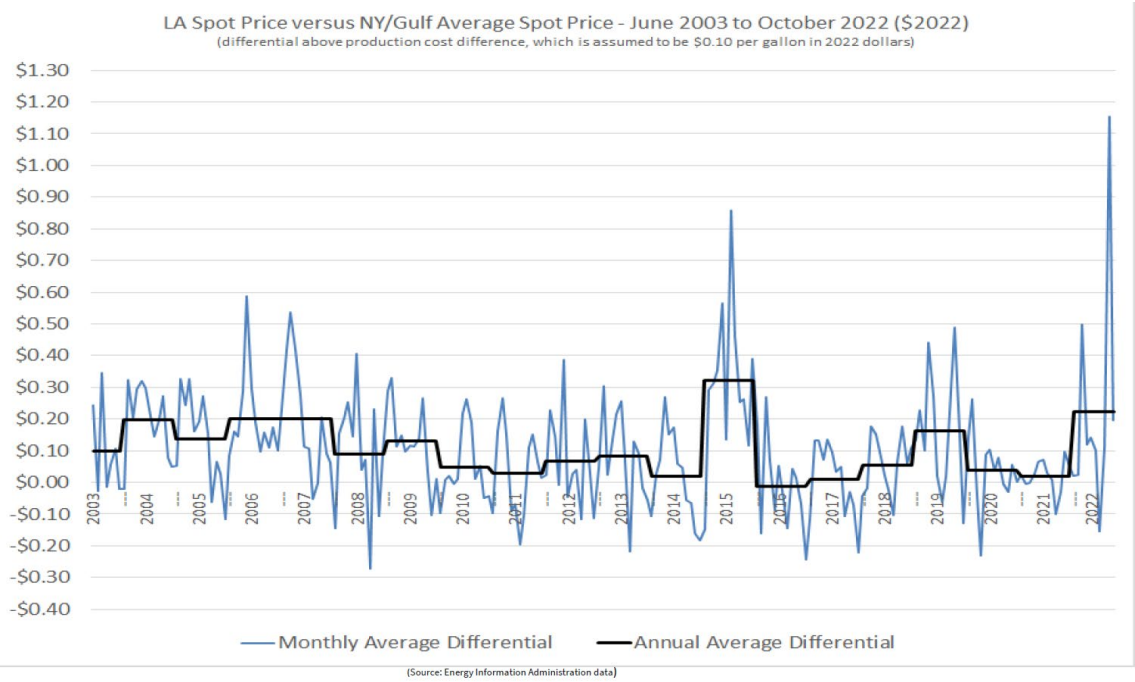
CEC Question #2: Is the price increase, despite these factors that typically cause a decrease in price, the reason for the record profits that have been reported, or were other factors driving the price increase and record profits?

First, we would like to highlight comments during the Hearing from Dr. Severin Borenstein who stated that he was *"…very concerned that this Hearing is focused primarily on the refining sector, because I think the data made clear that's not where the problem is*." Rather, he indicated that the focus should be on "*the marketing, distribution and retailing sectors*."

According to Dr. Borenstein, what he calls the "mystery gasoline surcharge" *is "California's retail price difference from the rest of the country*." Reviewing the data, and removing California's, higher taxes, environmental fees, Cap-and-Trade, Low Carbon Fuel Standard, and underground storage tank, he states that "*it's pretty clear that there was a real break in February 2015…prior to that, this differential between California and the rest of the country had been pretty much completely explained*." He stated that the cost difference is about a sustained 30 cents per gallon.



Dr. Borenstein's presentation on California's Mystery Gasoline Surcharge, California Energy Commission, November 29, 2022



Dr. Bornestein's presentation on California's Mystery Gasoline Surcharge, California Energy Commission, November 29, 2022

In the figures above, Dr. Borenstein shows that California price spikes over time are in line with the rest of the country. His comments are similar to CEC's 2019 analysis on California gasoline prices, which stated:

- "With the exception of these outage-driven spikes, there has been little to no growth in the difference between the United States and California refiner margin, ruling out refinery price margins as the cause of the residual price increase."

- “The CEC has concluded that the primary cause of the residual price increase is simply that California’s retail gasoline outlets are charging higher prices than those in other states.”

Notably, CEC staff provided data during the Hearing indicating that most gas stations are not owned by oil companies but by independent companies. Further, PBF Energy does not own any retail gasoline stations because we are an independent refining company. Therefore, this question would be more appropriately posed to the retail sector of our industry, of which we are not part.

With all this said, our response to CEC Question #1 also answers elements of Question #2, based in part on previously referenced CEC presentations reviewed at the Hearing.

For review purposes, "supply and demand” is the *relationship between the quantity of a commodity that producers wish to sell at various prices and the quantity that consumers wish to buy.* This is the main model of price determination used in economic theory.

In other words, the price of a commodity is determined by the interaction of supply and demand in a marketplace. If government tampers with the free flow of commodities in that “marketplace” through laws, regulations, policies, and political initiatives designed to restrict and restrain supply, prices will go up, as California experienced in 2022 – a theme repeated and reinforced throughout the Hearing.

Despite California’s legal, regulatory, policy and political initiatives creating various conditions that made the state vulnerable to gasoline shortages, these same factors create conditions for improved profitability; again, based on simple supply and demand dynamics.

Profitability is important; however, before we get into profitability, we need to discuss the impact of the 2020 COVID-19 pandemic that brought record-breaking losses in the oil sector, primarily due to demand destruction for our products caused by government lockdowns.

For example, PBF’s loss from operations was $1.4 Billion for the pandemic year ending December 31, 2020, excluding special items. To raise cash to blunt the unprecedented loss in demand and profitability, PBF took out $1.5 Billion in loans and sold five hydrogen units in 2Q2020.

At PBF’s stock lowest point that year, several months later our company was worth less than we paid for our Martinez, CA Refinery on February 1, 2020. Putting these numbers in perspective, the company’s stock price has since risen to levels among the highest in its history, and at the existing share price, the market currently values the entire company – including all six refineries PBF owns in five states, along with all its logistical assets – at around $5 Billion. In other words, our 2020 loss was equivalent to more than a quarter of today’s valuation of the entire company.

Throughout 2020, PBF’s essential employees continued manufacturing essential products that make modern life possible, fueling the delivery trucks that were sustaining shut-in Californians the entire year and into 2021. PBF’s loss from operations was $42.8 million for the following year ending December 31, 2021, excluding special items, as compared to loss from operations of $1.4 Billion for the year ended December 31, 2020, for a combined loss of $1.9 Billion.

In 2022, we returned to profitable operations due to factors covered in detail in our response to CEC Q1. We have used the recent increases in revenues to retire our debt and strengthen the

financial viability of all our facilities. However, the profitability question and related indictments are still front and center.

Governor Newsom repeatedly singled out PBF during press conferences and news releases related to profitability, despite the fact that we had proactively reached out to and met twice with his senior staff to voice our concerns about the potential for a fuel supply and demand imbalance in the state. Rather than work on solutions, the Governor attacked the company's profitability without putting current earnings in the context of recent and historic losses.

Additionally, the Governor emphasized "Gross Refining Margin," or GRM, in his documents, which is typically calculated per barrel of crude oil processed, representing *the difference between the cost of crude oil and other feedstocks (COF) and the value of the refined products produced (RPP). In mathematical terms,* COF – *RPP* = Gross Refining Margin. GRM fails to account for operating and other costs, including energy, chemicals/catalysts, labor, materials, fixed costs, taxes, etc.

In the Hearing, Consumer Watchdog also incorrectly used GRM by equating it to profit. This is a fundamental error that appears to be propagating. In fact, recently adopted SB1322 requires us to report GRM without the term being adequately defined. We encourage CEC to carefully define what the term does and does not represent. In addition, the Governor's effort to pass a "windfall profits tax" on oil companies references GRM. We stress, again, that GRM does not equate to profit.

GRM can be a metric useful for assessing the direct effect of market conditions on refinery economics, ***separate from the effects of operational performance and costs***. GRM inordinately inflates profitability, especially in California, where operating costs are the highest in the nation, according to a 2021 study by CNBC.

Taking industry profitability out of historic context is unfortunately not limited to misleading statements regarding PBF. For example, in 2020, the five integrated supermajors: ExxonMobil, BP, Shell, Chevron, and Total (France), lost a combined approximately $76 Billion, as reported by Forbes magazine. The first three companies are routinely demonized by Governor Newsom and Mr. Court, despite the fact that these companies have divested most of their California assets over the past seven years, proof of the impact of the state's laws, regulations, policies, and political initiatives that incentivized them to depart, which led to the rise of independent oil companies.
As noted above, in that same Forbes article, the author explains that major oil and gas companies suffered tremendous losses in 2014 and 2015, as well as in 2020, raising the obvious question: *If Oil Companies Control Prices as Some Say or Imply, Why Would They Ever Lose Money?*

On the other hand, consistent year-in and year-out record profitability is ignored by the state for other sectors, some of which export manufacturing jobs, emissions, and technology by manufacturing their products primarily in countries with little-to-no environmental or labor laws or regulations.

For instance, at the same time the Big Five supermajors were losing a total of approximately $78 Billion in 2020, one major Silicon Valley company had $57.4 Billion in net income, or pure profit: Its second-highest earnings ever, a $135.4 Billion differential. Unabashedly, that company went on to increase its net income in 2021 to $94.68 Billion and $99.8 during its fiscal year that just ended, almost doubling its 2020 earnings.

Of note, the Silicon Valley company's main suppliers' factory in China, which employs approximately 200,000 workers whose jobs could be in America like ours, has been the scene of well-document labor issues for several years.

Another example is the food industry, which has reportedly instituted major percentage increases in its prices this year:

- Dairy and related products: +16.2%
- Cereals and bakery: +16.4%%
- Flour: +23.3%
- Butter and margarine: Up 29.3%
- Eggs: +39.8%

In relation to the debate over fuel prices, the point of highlighting profit margin increases for consumer staples across the board is the fact that state policies promote scarcity across a number of products throughout the state. When coupled with record inflation, the result is higher profits for the producers of all products that chose to remain in the state, in spite of its policies that limit supplies of core consumer staples.

In relation to transportation specifically, this brings the focus back to the product most owners of the 29 million registered vehicles on the road in California rely on every day – transportation fuels to get to work and home, take students to school, go shopping, deliver goods and materials, patrol a neighborhood, fight a fire, or go on vacation. Policies that seek to promote and enhance scarcity in transportation fuels, without viable alternatives, are why we contacted the Newsom Administration last November – the state has a supply/demand issue and needs an energy transition plan to address these trends.

As previously noted, California stands out as the most expensive state in which to operate, hence the departure of iconic companies such as Toyota in 2014; Hewlett Packard, which spawned Silicon Valley and left the state in 2020, along with Tesla, the first company to make the electric cars that may be the biggest beneficiaries of government largesse in U.S. history. All three companies moved to Texas, which has the lowest operating costs in the country, according to the same CNBC study.

Unfortunately, we are seeing similar trends in fuel markets downstream of the refining sector. Gas stations owners are finding the cost of doing business in California is too high, so one option is to sell their corner properties, leaving the market with fewer competitors. In fact, most of the state's programs limit supply and competition, while as previously mentioned, the 29 million vehicles registered in the state and transient vehicles, continue to require motor fuels.

Conversely, PBF chose to invest in the California fuels market in 2015 and expand in 2020, and we continue investing in our assets. We proactively chose to contact the Newsom Administration in November 2021 to express concerns in advance of what happened to prices this year, based in part on CEC projections. Yet we are now threatened with a massive new tax, currently being disguised as a penalty, which consumers will bear the brunt of the most.

In addition to the state's regulatory environment, global dynamics enhanced the price increases that occurred in California during 2022, including an energy crisis in the UK and Europe due to increasing reliance on intermittent, unreliable wind and solar energy, that extends back to August 2021; sanctions related to the Russia/Ukraine war that interrupted the flow of oil and

natural gas from Russia, which had been one of the world's largest exporters of crude oil, partially-refined oil, products, and natural gas; China shutting down fuel exports at a time when the state's policies made California more reliant on foreign fuel imports to meet demand; and other market factors. Most were mentioned during the hearing by CEC staff, Mr. Hackett with Stillwater; or Dr. Severin Borenstein.

Residents of the state need to be aware that price increases (i.e., "price signal" and "market signal") are the stated, intended result of various programs the state of California has implemented in its well-publicized efforts to shut down the oil industry in the state, which are working as planned.

- CARB quotes:
  - 'Remember the conceptual goal of cap-and-trade…establish an economy-wide "carbon price signal."' (D-601)
  - "A declining cap can send the right price signals to shape the behavior of consumers when purchasing products and services." (page 18)
  - "Together, LCFS and Cap-and-Trade provide a structure to ensure that necessary emission reductions are achieved and provide an effective market signal to accelerate innovation and development of cleaner fuels." (page 48)

Despite the success of certain legislation, regulations, policies, political initiatives, and CARB's agenda, these ICE vehicles are going to be on the road for quite some time and in need of fuel. Although the state is attempting to force car manufacturers to make EVs, these vehicles still face significant roadblocks, including the need for acceptance by more motorists; hidden costs like chargers and electrical service upgrades; range anxiety, poor reliability as noted in Consumer Reports, supply chain issues; domination of the rare earth market by a single country, opposition to extractive industries in the USA that are necessary for producing rare earths, etc. To date, many drivers are unwilling and/or unable to afford EVs, which are dependent on industries that are more extractive than oil and natural gas, taking the tops off mountains and deepening valleys, with cobalt reliant to some extent on child labor in mines.

Additionally, the state is seeking to require that the only vehicles allowed for sale in the state are EVs. Such a policy does not ensure the auto industry has to deliver enough vehicles in the state to meet consumer demand for vehicles. Current and announced EV offerings are predominately in the luxury segment. As with high fuel prices, the likely net result of California's EV mandate is that, as with the state's other scarcity-prompting policies, vehicle consumers will be priced out of the market except those with the most means; ensuring that only the vehicles for sale are those for the wealthiest citizens and resulting in some to hold on to older vehicles long after their intended lifecycle due to lack of cost-effective alternatives.

Despite EVs sales increasing in part due to being subsidized by governments, the vast majority of the 29 million registered vehicles on the road today in California are going to continue using traditional motor fuels, primarily augmented by crop-based biofuels. These quotes show CARB officials recognize the need for traditional liquid fuels will last for decades, as well as highlighting some of CARB's failures:

- "Unless we can move the world's fifth largest economy, 40 million residents over to (all-electric), it's unlikely that we are going to start turning off the energy that we're using today. And so, this all begins and ends with what we need to build out for. And it's unclear, sitting here today…if we can actually do it." – Rajinder Sahota, CARB Scoping Plan Lead

- "We can shut down…fossil fuel production and distribution, only if we're successful in moving away from it." – Rajinder Sahota, CARB Scoping Plan Lead
- "The problem is we've modeled very aggressive VMT targets in almost every Scoping Plan we've done. We've delivered on none of those." – Rajinder Sahota, CARB Scoping Plan Lead
- "…the (new) 22% (VMT) reduction, that's just fairyland territory…we come up with targets, and every time we don't even come close." – Dr. Daniel Sperling, CARB Board Member

Their welcome, candid remarks are central to the discussion on why the state needs an energy transition plan and stand among the reasons we reached out to the Newsom Administration in November 2021. Yet another East Bay refinery is scheduled to shut down in 2023, and others are likely to follow, rather than continue investing in a state that repeatedly tells the industry we are targets for extinction. This will further constrain supply quicker than projected demand destruction, well before sufficient electric alternatives become available, if they come available in sufficient quantities at all.

CEC Question #3: What are your immediate and long-term recommendations on measures California should consider to avoid sudden spikes in state gasoline prices versus national prices?

California's policy, regulatory, and political environment has created conditions that make the state vulnerable to gasoline shortages, price volatility, and price spikes. Thus, the state has levers it can leverage to reverse these conditions. In fact, Governor Newsom employed such a lever successfully when he rolled back California Reformulated Gasoline regulations by requesting an early transition to winter-blend gasoline production in late September. This led to an immediate increase in gasoline supply, which began pushing prices down. Governor Newsom's action is a timely, real-word case study showing that state environmental regulations were restricting gasoline supply, and when they were lifted, gasoline supply increased, resulting in lower gasoline prices.

The following are other actions the state could take to address its gasoline shortages and price volatility:

- **Pick One Fuel Greenhouse House Gas Program and Stick with It.** Having fuels covered under both Cap-and-Trade and the Low Carbon Fuel Standard (LCFS) is duplicative and overly costly for motorists. Of the two, the LCFS has done the most to foster alternative fuel innovation in concert with federal policies. As a result, California should remove fuels from being covered in the cap-and-trade program and stick with its LCFS program. This will save consumers approximately 25 cents per gallon without adversely impacting California's climate goals.
- **Allow the LCFS, coupled with other State and Federal Incentives, to Work in Lieu of Banning the Internal Combustion Engine (ICE).** The state has shown it can continue achieving carbon reductions without banning internal combustion engines. With an LCFS and the ample federal and state incentives for electric vehicles, the state can help prevent more premature refinery closures, while continuing to reduce emissions by allowing other existing laws and the marketplace to work, rather than instituting premature vehicle bans. In fact, the state should look to incentivize domestic production of the petrochemicals and other petroleum products that are necessary to build any renewable energy machine, whether they be windmills or electric cars.

- **Instruct CalGEM to Issue the Permits Upstream Companies Need to Produce More Instate Crude Oil.** California crude production is among the cleanest in the world. Importing crude oil increases pollution, outsources jobs, and worsens the nation's balance of payments. Refining more oil produced in the state will reduce emissions associated with massive increases in tanker shipments and foreign production in less environmentally conscious areas of the world that have little to no labor laws protecting workers. In fact, the state's position conflicts with the Biden Administration's repeated calls for increasing crude oil production in the United States.
- **Develop a Definitive Energy Transition Plan:** The state must provide details to residents and work with industry on achieving its carbon neutrality targets based on the current pace of electric vehicle acceptance and infrastructure development. Studies need to be done to determine how the state's electric grid can be modernized to become more reliable and capable of handling an all-electric future. There must be a factual component that determines whether these goals can be accomplished given the massive mineral and manufacturing requirements for such an enormous expansion of unreliable, intermittent, alternative energy at an unprecedented scale and pace.

CEC Question #4: What are key questions policymakers should consider when evaluating remedies and price spike-prevention strategies?

State policymakers must first recognize that California's fuel supply shortage could get even worse, reaching potential crisis-levels in the near-term

- To keep refineries operating safely, reliably, and in an environmentally responsible way, companies need to invest hundreds of millions of dollars annually in significant planned maintenance projects called "turnarounds"
    - These investments are made to maintain refinery operations for a period of 3 – 5 years
- California's energy transition goals, combined with significant existing and anticipated regulatory costs, are making justifying capital expenditures difficult for the remaining refiners and their investors to justify upcoming necessary capital expenditures, and risk creating stranded assets in the near-term
    - Business decisions are being made today as to whether companies will fund 2025 and 2028 turnarounds
    - Without these capital expenditures, refineries could be forced to cease operations
        - Marathon cited regulatory costs as contributing factors to shutting down its Martinez Refinery

State policymakers should take action to ensure California's fuel supply shortage is relieved, rather than worsened, reinforcing the need for a rational energy transition plan

- Without a plan to properly manage the state's desired energy transition, California's goals could lead to near-term, premature closures of, or significant reductions in fuel production from, instate refineries, exacerbating the potential for gasoline shortages and price spikes.
- State policymakers should ensure California has a rational energy transition plan that manages fuel supply and demand dynamics on its path to carbon neutrality by 2045.
- The state continues to support laws, policies, and regulations to drastically reduce demand for liquid fuels (e.g., ICE sales ban, Advanced Clean Fleets, etc.), while

assuming an adequate in-state fuel supply will decline harmoniously along the way, yet fails to provide substantive details as to how this ideal balance will be possible.
    - Given the market signals these policies and regulations send to refiners, the capital-intensity of the refining industry, and the lack of an energy transition plan refiners can rely on to make long-term investment decisions, instate refiners could decide to cease investing in California far sooner than the state might have thought, and in an entirely different pattern than the seamless fuel supply-side transition the state assumes will occur.

State policymakers should be aware that Californians will likely need conventional gasoline for the foreseeable future

- California hopes that its policies will significantly reduce demand for gasoline via Zero Emission Vehicle (ZEV) penetration; however, ZEV penetration is lagging. Further, recent research from UC Davis shows that ZEV vehicles are not driven nearly as much by their owners as conventional vehicles, meaning the ZEV registration metric the state relies on to measure ZEV penetration is likely significantly overestimating the amount of gasoline demand reduced, as well as emission reductions associated with ZEV penetration.
- Policymakers should be aware of California's first failed ZEV mandate
    - 1990: CARB adopts 1st ZEV mandate, requiring 2% of vehicles produced for sale in California had to be ZEVs by 1998, increasing to 5% in 2001 /10% in 2003
    - When targets went unmet, the state changed the regulation's scope, targets, and the deadlines
    - "The ZEV program's history illustrates the challenge of using technology mandates as environmental policy tools. CARB's overestimation of the potential for advanced technology led to significant changes in the program after the potential went unrealized. These changes resulted in an extremely complex program and a weakened demand signal for ZEVs." - *Public Policy Institute of California*
- Jeopardizing refining capacity without significant reductions in gasoline demand could increase social instability, job losses, emissions, fuel costs, and the state's vulnerability to shortages.

State policymakers need to understand that refiners must manufacture a suite of fuels, including gasoline, jet fuel, and diesel, or nothing at all

- ZEV penetration is often the focus of the state's energy transition; however, technology to electrify economically critical transportation sources such as planes, heavy duty trucks, trains, and ships is likely far from being viable, if ever.
- Even if ZEV penetration picks up pace, California will still need refiners to make liquid fuels for these harder-to-electrify mobile sources.
- For refiners to make jet and diesel fuel for these economically critical transportation sources, they must make gasoline due to the chemistry and physics of crude oil and how oil refineries work.
    - California will need refiners as long as the state needs to run its economy with planes, trucks, ships, and trains.

State policymakers need to understand that a failed energy transition in California will discourage others from adopting California's policies

- California's leaders know the state represents about one percent of global GHG emissions, and that the state must motivate other governments to follow its lead to have any impact on global GHG emissions and climate change.
- Without a rational energy transition plan, the state puts itself at great risk of an economic crises that will deter others from adopting California's policies.
- UC Berkely economist Severin Borenstein put it well when he said, "The stakes are high. If we screw this up (energy transition), whether it's gasoline prices or an electrical load (from ZEVs) that exceeds supply, it's going to put a black eye on all of the energy transition."

State policymakers must consider that the pace and scale of California's desired energy transition may be infeasible and that state policies are reducing existing energy supply faster than they are reducing energy demand

- CARB quotes:
  - "Unless we can move the world's fifth largest economy, 40 million residents over to (all-electric), it's unlikely that we are going to start turning off the energy that we're using today. And so, this all begins and ends with what we need to build out for. And it's unclear, sitting here today…if we can actually do it." – Rajinder Sahota, CARB Scoping Plan Lead
  - "We can shut down…fossil fuel production and distribution, only if we're successful in moving away from it." – Rajinder Sahota, CARB Scoping Plan Lead
  - "The problem is we've modeled very aggressive VMT targets in almost every Scoping Plan we've done. We've delivered on none of those." – Rajinder Sahota, CARB Scoping Plan Lead
  - "…the (new) 22% (VMT) reduction, that's just fairyland territory…we come up with targets, and every time we don't even come close." – Dr. Daniel Sperling, CARB Board Member
- A true energy transition can only occur when alternatives are cheaper than and as reliable as the energy we need today. The world is decades away from such a goal.
  - Given this reality, California should look to streamline regulations of existing energy sources to allow for continuing emission reductions, with lower costs, protecting union jobs in the process.
  - For example, as stated above, California should pick one GHG control program for fuels, specifically the LCFS, because overlapping regulations only add significant costs with little benefit.

State policymakers should recognize that many of California's policies have intentionally sought to make fossil fuels and gasoline more expensive (i.e., "price signals" and "market signals")

- CARB quotes:
  - 'Remember the conceptual goal of Cap-and-Trade…establish an economy-wide "carbon price signal."' (D-601)
  - "A declining cap can send the right price signals to shape the behavior of consumers when purchasing products and services." (page 18)
  - "Together, LCFS and Cap-and-Trade provide a structure to ensure that necessary emission reductions are achieved and provide an effective market signal to accelerate innovation and development of cleaner fuels." (page 48)

State policymakers should value energy independence as part of its energy transition goals

- California's labor and environmental regulations are the most stringent in the world. Crude oil and fuels produced in California adhere to these standards, whereas imports often come from countries with human rights violations and abhorrent labor and environmental standards.
- Giving up energy independence means giving up regulatory control of the state's energy suppliers.

CEC Question #5: The CEC is proposing a Fuels Transition Study to examine how California can successfully and economically transition to a clean transportation fuels energy future. What are your thoughts on what the scope of the study should be, what are the barriers to consider for shifting the industry to cleaner fuels, and how can the CEC ensure it provides a full and accurate assessment of the coming changes for policy makers?

PBF commends the CEC for undertaking this effort, which is in line with our on-going ask of the state to develop a rational energy transition plan that includes forms of energy needed to keep the economy stable. We look forward to engaging with CEC staff in the public process related to this study.

Historically, CEC fuel demand forecasts were very valuable tools to our industry and others. Compared to EIA forecasts, CEC data was more granular because the focus was strictly on California, whereas EIA data focused on PADD V overall. Unfortunately, CEC demand forecasts have diminished in value recently because baseline scenarios now incorporate the state's environmental goals as "facts," rather than aspirational targets, instead of developing the forecast from realistic trajectories of new fuel and ZEV penetration rates. We are interested to know if this study will be based on past assumptions that the state's goals are a "given," or will the forecast be based upon a pragmatic, informed, and realistic demand scenario? We encourage the latter.

Specific elements PBF recommends incorporating into the study include:

- An examination and review of the full life-cycle analysis of EV production, including mineral mining for battery production
- Analysis and commentary on mineral availability for the needed EV batteries, including mineral resource location, human rights and national security issues, existing mineral mining capacity, and mineral processing capacity
- Analysis of the availability and feasibility of charging infrastructure, including specific commentary on charging infrastructure for lower income households – many of which are in apartment buildings or multi-family dwellings
- Analysis of the state's grid and charging infrastructure to ensure that enough power can be ratably generated and reliably delivered to power EV's
- Analysis of the loss of state and local revenue as petroleum fuel demand declines.
- Analysis of the economic impact of the loss of petroleum industry jobs as demand declines
- Analysis of the impact of streamlining climate change fuel regulations, including selecting one program for fuels as opposed to dual programs, dual regulation; for example, LCFS vs. LCFS plus Cap-and-Trade
- Analysis of forecasted Vehicle Miles Travelled per year over the study timeframe

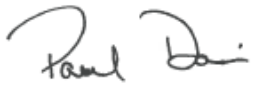
Conclusion

As the largest in-state consumer of indigenous California crude oil and one of the largest refiners in the state, the future of energy use in California is critically important to our employees, business partners, customers, and other stakeholders. We reached out to Governor Newson's senior staff in November 2021 due to our concerns that the state was heading for a supply shortage affecting gasoline in particular, although we had also seen spot shortages for diesel and jet fuel over the past two years.

Given our stake in these proceedings, we appreciate the opportunity to provide our comments to the CEC on this matter and look forward to engaging constructively with the Commission and staff to address California's gasoline supply shortage and energy transition.

Please contact me directly if you have any questions or comments.

Sincerely,



Paul Davis
SVP, Supply, Trading & Optimization

Attachments

1. PBF letter to the Newsom Administration with the subject "Near-Term Gasoline Supply Shortages," dated April 25, 2022
2. PBF presentation to the Newsom Administration entitled, "*Follow-Up Response: Growing Concerns for California's Economy,*" dated March 22, 2022
3. PBF presentation to the Newsom Administration entitled, "*Growing Concerns for California's Economy: State mandates and regulations are severely impacting California's fuel supply chain and could lead to a near-term fuel supply crisis with potentially significant economic impacts,*" dated January 27, 2022

April 25, 2022 *Letter submitted via email*

Wade Crowfoot
Secretary, California Natural Resources Agency
Lauren Sanchez
Senior Climate Advisor, Office of California Governor Gavin Newsom

Subject: Near-Term Gasoline Supply Shortages

Dear Secretary Crowfoot and Ms. Sanchez,

PBF Energy Inc. (PBF) appreciates the robust discussions we have had regarding our perspective on near-term gasoline supply shortages. The purpose of this letter is to provide additional information on the topics discussed during our March 22nd meeting:

1) Heightened evidence of near-term gasoline shortages
2) The need for a "Fuels Transition" plan (not the Scoping Plan) to prevent premature refinery closures

California Faces a Considerable Gasoline Shortage

By 2023, California could lose nearly 20% of its 2019 gasoline production from instate refineries, while gasoline demand is only expected to shrink by 8%[1], leaving the state with a gasoline supply challenge. The primary factors driving reductions in California's gasoline production are:

1) Marathon ceasing production at its Martinez Refinery in 2020
2) Phillips 66 plans to cease CARB gasoline production at its Rodeo Refinery
3) Federal ban on Russian petroleum imports related to the Russia-Ukraine war will soon cause feedstock shortages for instate refiners, forcing reduced production

The Marathon Martinez refinery closure in 2020 left California even shorter on gasoline supply and more reliant on imports, a situation that will worsen in 2023 when Phillips 66 permanently shutters its Santa Maria facility and converts its Rodeo Refinery to renewable diesel production, ceasing CARB gasoline production. As a result, California is conservatively forecasted to experience a daily gasoline shortage of nearly 3,000,000 gallons by 2023[2].

[1] These percentage calculations are based on data found on page 28 of the Stillwater Analysis that PBF Energy sent to the Newsom Administration on March 22, 2022, as well as on PBF's opinion of the effects that a ban on Russian petroleum imports could have on CA gasoline production
[2] See PBF's information submittal sent to the Newsom Administration on March 22, 2022, titled, "Follow-Up Response: 'Growing Concerns for California's Economy' Newsom Administration Staff."

In addition, the state is expected to lose incremental gasoline production by Summer 2022 due to the federal ban on Russian crude oil and vacuum gas oil (VGO) imports. VGO is a critical, intermediate feedstock used by instate refineries to produce additional CARB gasoline, diesel, and jet fuel. We had previously projected California's gasoline shortage potentially reaching crisis levels by 2025. However, there is now a possibility of a crisis even sooner, given the likely further losses of instate fuel production this summer due to the ban on Russian feedstocks, which is likely to extend beyond 2022.

The extended ban could occur concurrently with unexpected, premature refinery closure(s) caused by investment uncertainty. This latter threat is a real possibility due to negative investment signals from the state related to its aspirational environmental goals (e.g., Internal Combustion Engine Ban, Carbon Neutrality by 2035/2045, etc.) coupled with the absence of a detailed plan to achieve these goals. This potential for further loss of gasoline production could significantly impact California's economy, as outlined in PBF's information submittal to the Newsom Administration on January 27, 2022, "*Growing Concerns for California's Economy*."

Scoping Plan: A Conceptual Roadmap Versus a Data-Driven Fuels Transition Plan

PBF has analyzed the E3 presentation, "*CARB Draft Scoping Plan: AB32 Source Emissions Initial Modeling Results*." We understand the intention of E3's Scoping Plan modeling is to lay out a technology deployment timeline at a high-level focused on scope and scale that would be required to achieve California's GHG reduction targets and goal to achieve carbon neutrality by 2045. In our view, E3's modeling fails to consider the potential for fuel shortages, consumer acceptance of the state's favored technologies, and potential barriers to technology implementation. The modeling also lacks details on how the state will manage fuel supply and demand dynamics in the interim.

For example, E3's modeling shows that in-state fuel supply will decline harmoniously with demand while leaving out substantive details as to how this ideal balance will be struck. A significant decrease in fuel demand is also projected across E3's four Scoping Plan Alternative Scenarios. Given the modeling results, capital-intensity of the refining industry, and the general need to invest in five-year turnaround cycles, instate refiners could decide to cease investing in California far sooner than the state might have thought, and in an entirely different pattern than the seamless transition the modeling assumes.

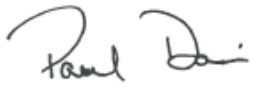
This begs the question as to whether the state has considered, funded, or reviewed an independent forecast of California's transportation fuel supply/demand dynamics through 2035/2045? Without a specific planning basis, the state puts its residents, businesses, and other government entities at a distinct disadvantage, and should therefore engage a qualified firm to provide a real-world

analysis of California's fuel strategy relative to the potential for additional instate refinery closures, as well as the impact of the anticipated shortfall in Russian feedstocks.

Ultimately, PBF views E3's Scoping Plan modeling as a conceptual roadmap, rather than a data-driven fuels transition plan that both government and refiners can agree to as alleviating investment uncertainty or ensuring adequate supplies of fuels given the state's actions to date. However, if the state intends the Scoping Plan to serve as California's fuels transition plan, then the state's energy policy leaders need to be aware that E3's modeled Scoping Plan Alternative Scenarios send extremely negative investment signals to the refining industry and could lead to additional refinery closures much sooner than the state may think.

In closing, PBF appreciates our on-going, constructive dialogue on these important topics. We are committed to continuing the conversation in hopes of providing the state with information to assist in its evaluation of these critical issues.

Sincerely,



Paul Davis
SVP, Supply, Trading & Optimization

Follow-Up Response:

“Growing Concerns for California’s Economy”

Newsom Administration Staff

March 22, 2022

PBF Energy Safe Harbor Statements

This presentation contains forward-looking statements made by PBF Energy Inc. (“PBF Energy”), the indirect parent of PBF Logistics LP (“PBFX,” or “Partnership,” and together with PBF Energy, the “Companies,” or “PBF”), and their management teams. Such statements are based on current expectations, forecasts and projections, including, but not limited to, anticipated financial and operating results, plans, objectives, expectations and intentions that are not historical in nature. Forward-looking statements should not be read as a guarantee of future performance or results and may not necessarily be accurate indications of the times at, or by which, such performance or results will be achieved.

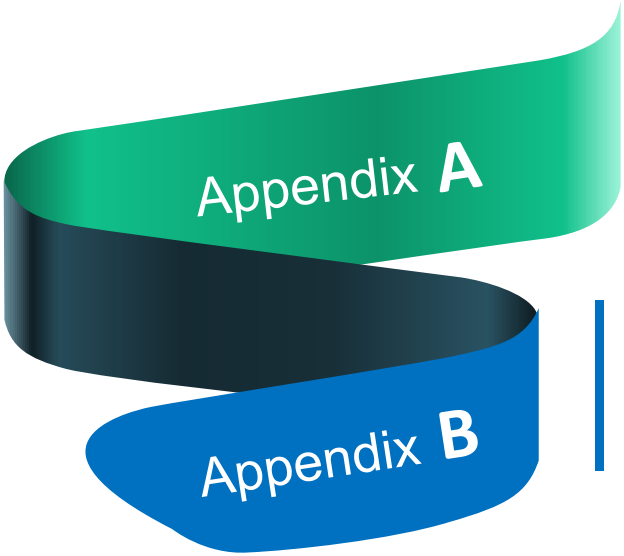
Forward-looking statements are based on information available at the time and are subject to various risks and uncertainties that could cause the Companies’ actual performance or results to differ materially from those expressed in such statements. Factors that could impact such differences include, but are not limited to, changes in general economic conditions; volatility of crude oil and other feedstock prices; fluctuations in the prices of refined products; the impact of disruptions to crude or feedstock supply to any of our refineries, including disruptions due to problems with third party logistics infrastructure; effects of litigation and government investigations; the timing and announcement of any potential acquisitions and subsequent impact of any future acquisitions on our capital structure, financial condition or results of operations; changes or proposed changes in laws or regulations or differing interpretations or enforcement thereof affecting our business or industry; actions taken or non-performance by third parties, including suppliers, contractors, operators, transporters and customers; adequacy, availability and cost of capital; work stoppages or other labor interruptions; operating hazards, natural disasters, weather-related delays, casualty losses and other matters beyond our control; inability to complete capital expenditures, or construction projects that exceed anticipated or budgeted amounts; ability to consummate potential acquisitions, the timing for the closing of any such acquisition and our plans for financing any acquisition; unforeseen liabilities associated with any potential acquisition; inability to successfully integrate acquired refineries or other acquired businesses or operations; effects of existing and future laws and governmental regulations, including environmental, health and safety regulations; and, various other factors. Forward-looking statements reflect information, facts and circumstances only as of the date they are made. The Companies assume no responsibility or obligation to update forward-looking statements to reflect actual results, changes in assumptions or changes in other factors affecting forward-looking information after such date.

January 27th Meeting Recap

- **PBF Energy shared concerns that state mandates and regulations are severely impacting California's fuel supply chain**
  - Potential for near-term fuel supply crisis with significant economic impacts
  - Catalysts: Executive Order, proposed legislation, regulations, permit issues
- **Summary of PBF Energy's presentation**
  - PBF's assets and economic benefits to California
  - CA needs a rational, ratable energy transition plan that companies in all sectors can use to make near-term and long-term investment decisions
  - In-state crude production has been decreasing at higher rates in recent years leading to increasing reliance on imports
- **PBF Energy agreed to provide follow-up information requested by the Newsom Administration**

Submittal Outline

The requested information is provided in the Appendices



- **California Fuel Supply / Demand Reports**
  - Stillwater Associates and California Energy Commission
  - Includes an Executive Summary from PBF Energy
- **Stillwater Associates Commentary on CA Crude Supply**

Appendix A

Supporting Data: California Fuel Supply and Demand Dynamics

These recent presentations provide similar outlooks on California fuel supply and demand dynamics:

- **California Energy Commission (CEC) Report: "*Transportation Fuels Trend, Jet Fuel Overview, Fuel Market Changes & Potential Refinery Closure Impacts*"** (May 2021)
  - Presented to the Bay Area Air Quality Management District (BAAQMD) Board by Mr. Gordon Schremp, CEC.
- **Stillwater Associates: "*California Refined Products Outlook*"** (June 2021)
  - Commissioned by PBF Energy

Supporting Data: California Fuel Supply and Demand Dynamics

Executive Summary

The Stillwater presentation forecasts gasoline production by instate refineries will decrease 12% by 2023. The primary reason is the planned conversions from gasoline to renewable diesel production of both the Phillips 66 Rodeo Refinery and Marathon Martinez Refinery, which was shut down in August 2020. Additionally, Stillwater forecasts gasoline demand will decrease by 8% during the same period.

Based on these projected trends, the result would be a California gasoline supply shortage of between two and three million gallons per day by 2023, as illustrated in the gasoline data on page 12 of Stillwater's presentation. Stillwater's findings were qualitatively similar to those from the CEC report.

In addition to examining transportation fuel supply and demand trends, the Stillwater and CEC reports analyzed the potential negative impacts that the premature closing of two Bay Area refineries could have on that region, as well as statewide.

Overall, both reports' analyses support the growing fuel supply and economic concerns that PBF presented to the Newsom Administration on January 27th. However, PBF believes both reports are conservative in their forecasts because they rely on overly optimistic Zero Emission Vehicle penetration assumptions that cause gasoline demand to erode substantively more than what PBF believes will occur, based on ZEV adoption trends.

Therefore, the negative consequences of reduced gasoline supply in California are likely to be worse in the near-term than these reports forecast. Despite this, both studies provide helpful insights into potential supply and demand pressures on California's gasoline market and the risks of premature refinery closures to the state's residents, economy, and government.

Both these reports are included in the following pages of this submittal and are hyperlinked on the previous slide.

Transportation Fuels Trends, Jet Fuel Overview, Fuel Market Changes & Potential Refinery Closure Impacts

BAAQMD Board of Directors Special Meeting

Via Zoom

May 5, 2021

Gordon Schremp

Energy Assessments Division

California Energy Commission

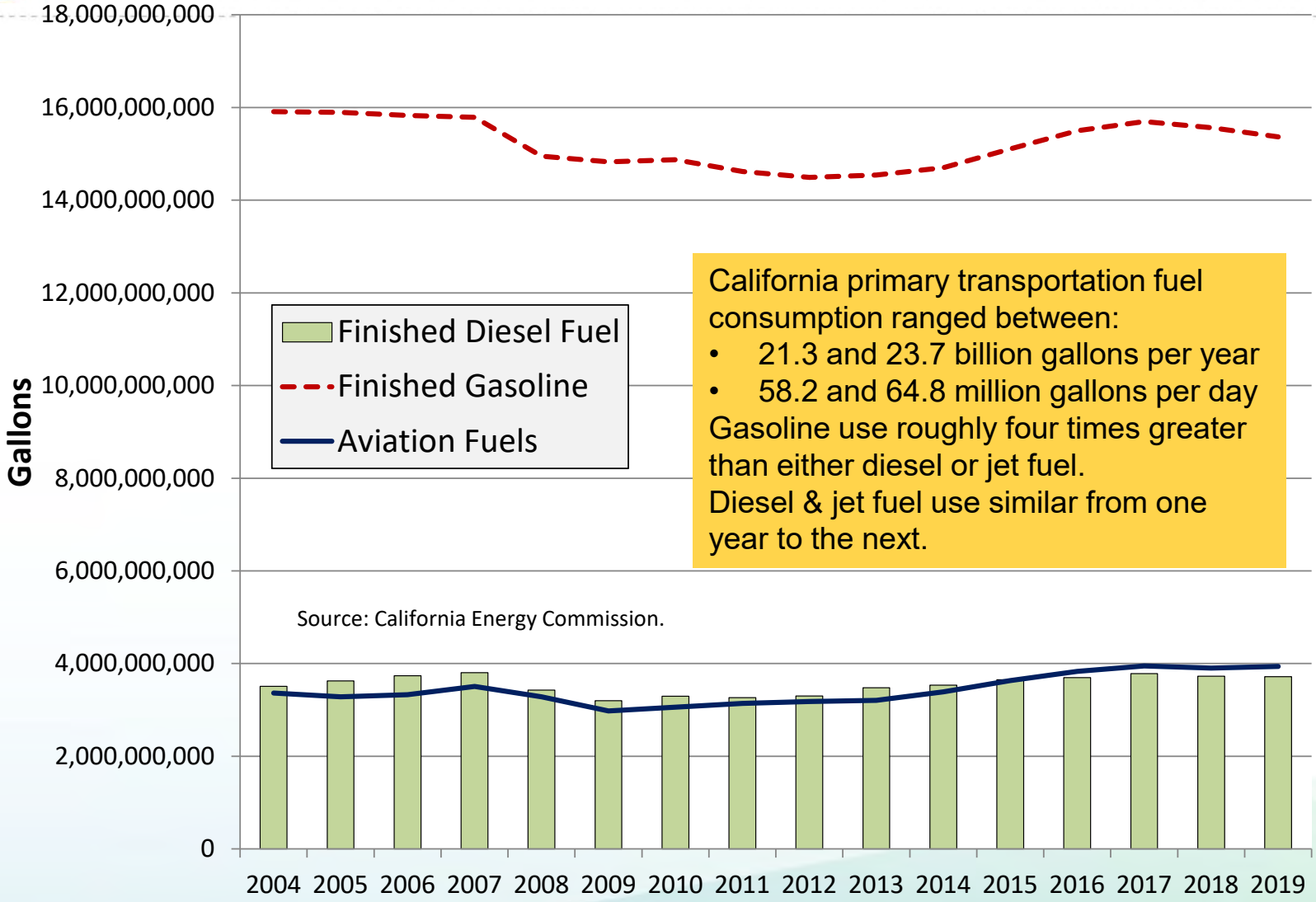
gordon.schremp@energy.ca.gov

Overview

- Transportation Fuel Demand
  - California historical & pandemic demand impacts
  - Forecast trends
- California Jet Fuel Market & Infrastructure
  - SF Bay Area airport supply
- Refinery Closures & Potential Market Impacts
  - Decisions based on changing fuel demand & types
    - Consolidation & conversions
  - Decisions based on facility operational costs
    - Premature refinery closure

Transportation Fuel Demand - California

California Primary Transportation Fuels



California primary transportation fuel consumption ranged between:

- 21.3 and 23.7 billion gallons per year
- 58.2 and 64.8 million gallons per day

Gasoline use roughly four times greater than either diesel or jet fuel.

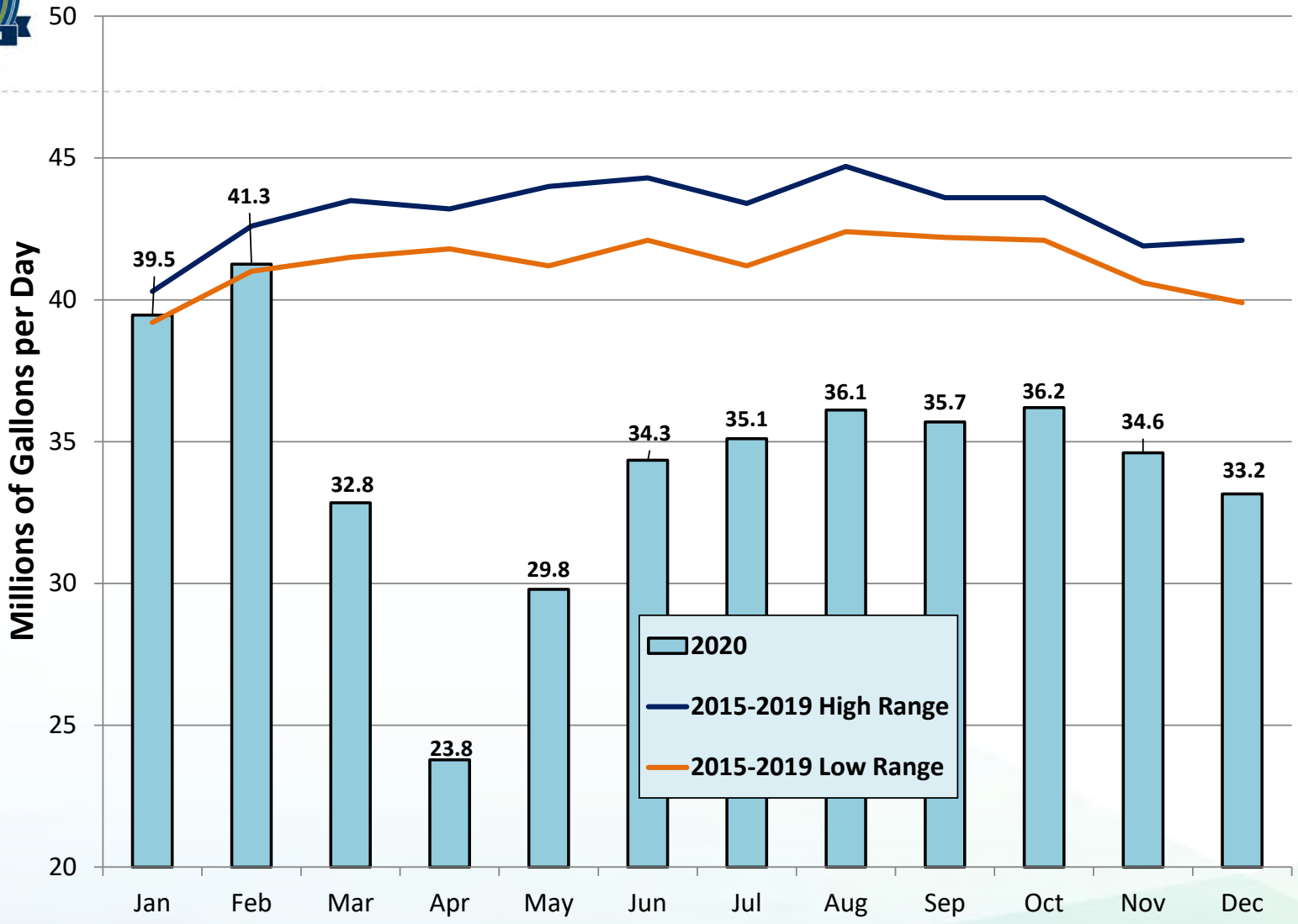
Diesel & jet fuel use similar from one year to the next.

Source: California Energy Commission.

Pandemic Impacts & Outlook - Gasoline

- Gasoline demand declined 18.2 percent in 2020
  - 12.58 billion gallons - lowest level since 1987
- Continues to recover
  - Still not back to pre-pandemic levels
  - Most recent estimate – still down 8.0 percent compared to April 2019
    - 4-week average demand (through week ending April 16)
  - Traffic counts still lag 2019 levels, despite much lower transit ridership
  - Varying degrees of remote work continues for private sector & government
- Forecast to continue declining over the next several years
  - Increasing percentage of ZEV light-duty vehicle sales
  - California gasoline demand peaked in 2017
  - By 2026, drop in demand (statewide) could exceed 1.0 billion gallons per year compared to current levels

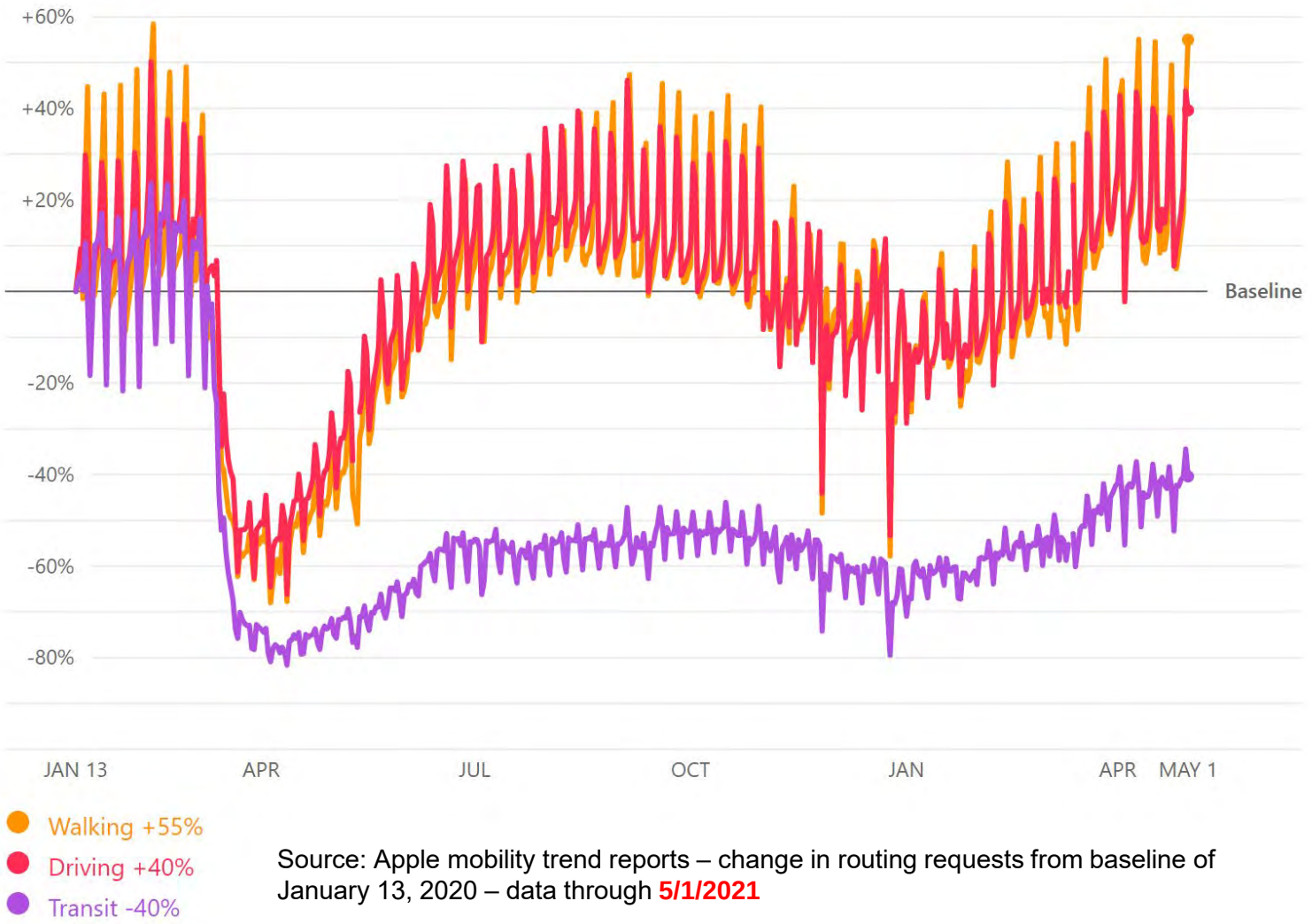
California Gasoline Demand - 2020



Data includes ethanol.

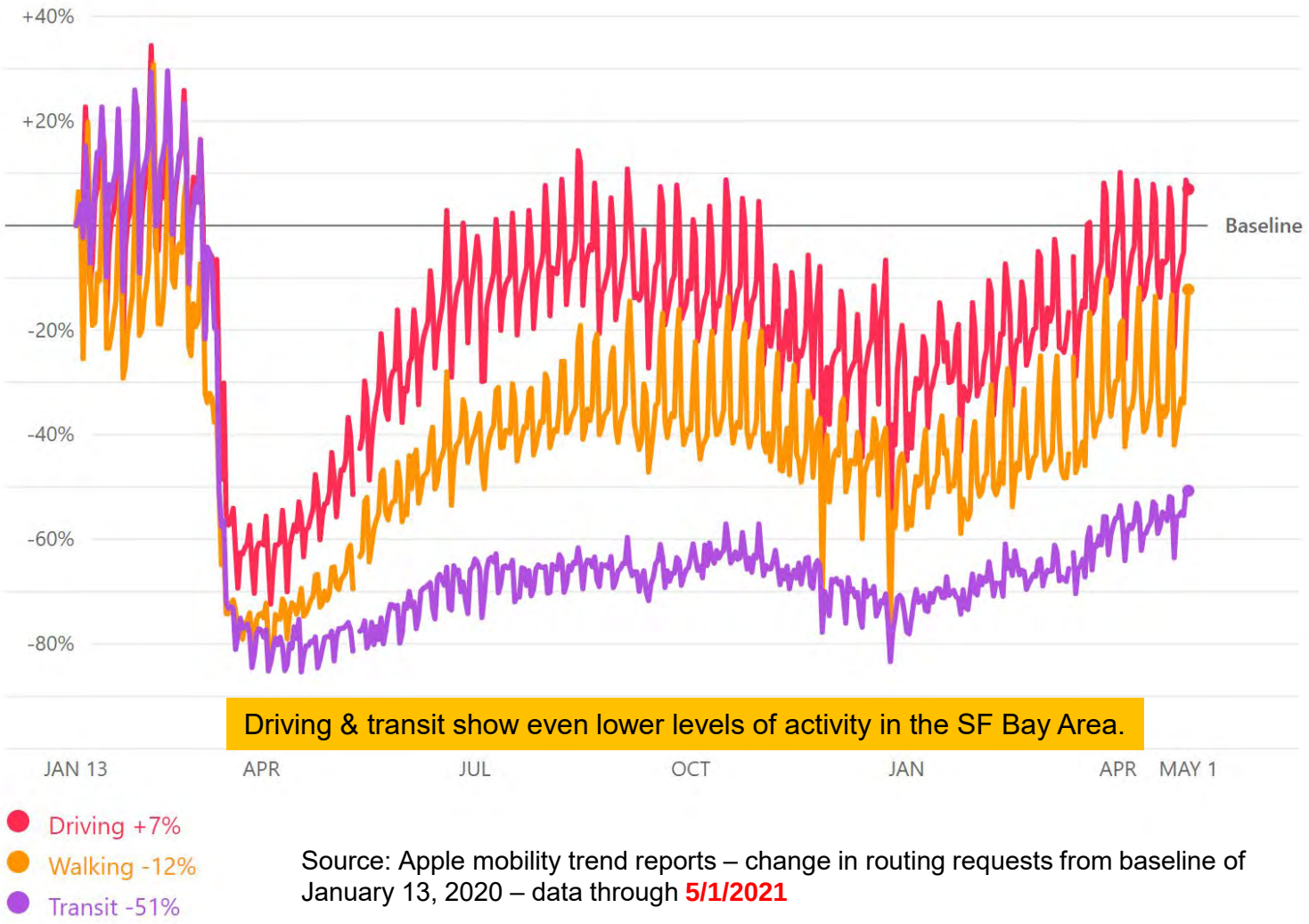
Source: California Energy Commission analysis of CDTFA data through December 2020.

Mobility Trends – California



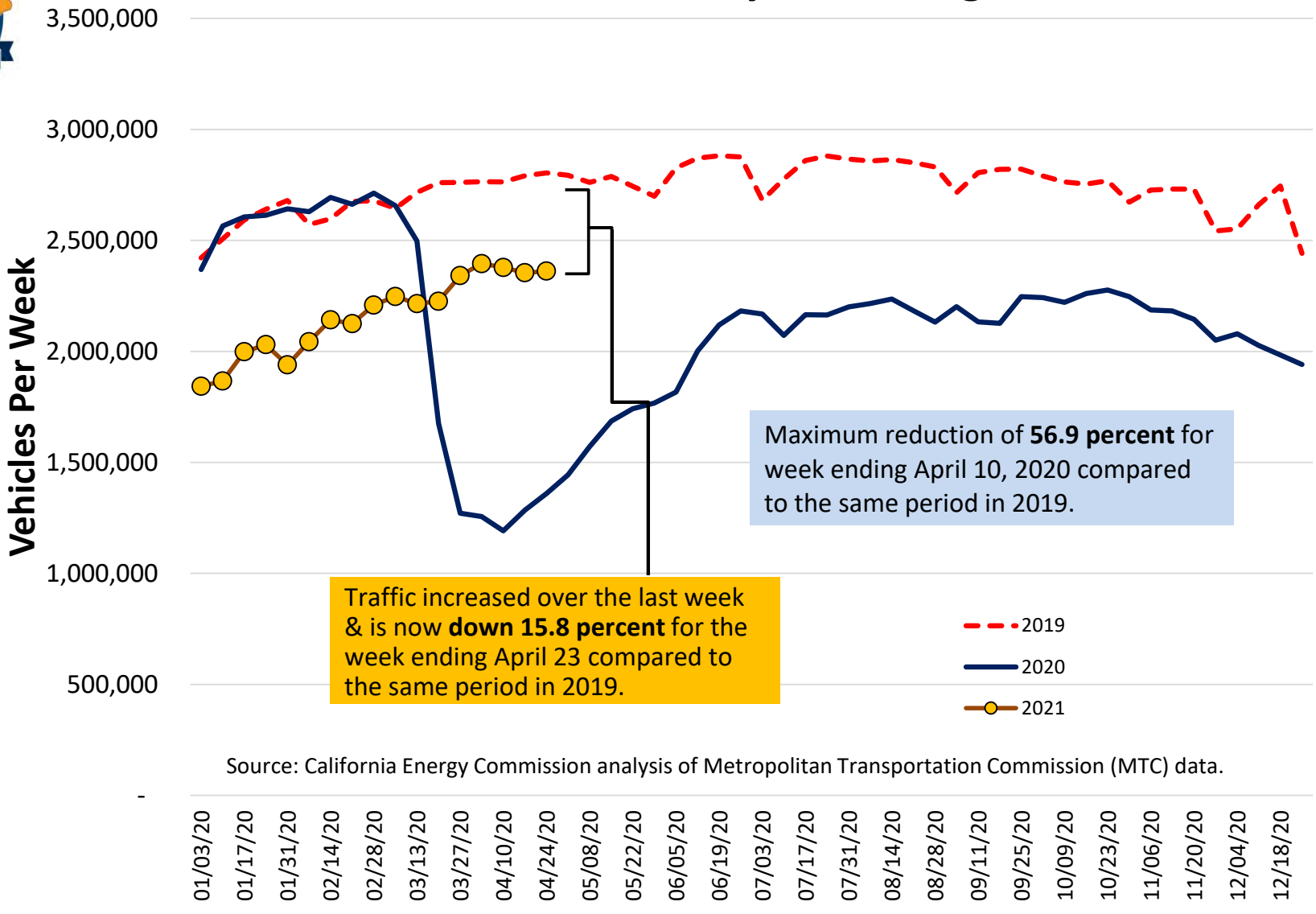
Source: Apple mobility trend reports – change in routing requests from baseline of January 13, 2020 – data through **5/1/2021**

Mobility Trends – SF Bay Area



Source: Apple mobility trend reports – change in routing requests from baseline of January 13, 2020 – data through **5/1/2021**

Vehicle Counts - SF Bay Area Bridges

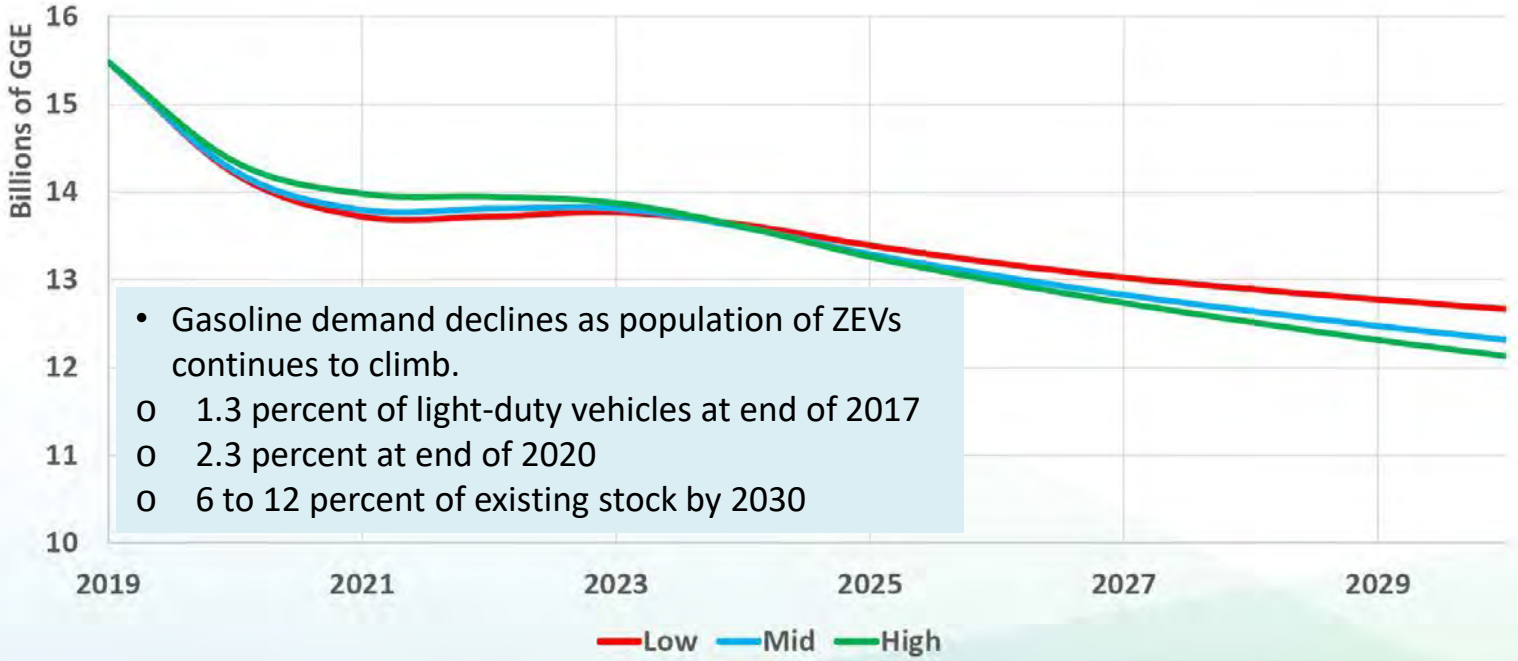


Source: California Energy Commission analysis of Metropolitan Transportation Commission (MTC) data.

Gasoline Demand Forecast

ZEV POPULATION		
Total Light-Duty Vehicles end of 2020		
635,602		
Battery Electric (BEV)	Plug-in Hybrid (PHEV)	Fuel Cell (FCEV)
1.289%	0.904%	0.025%
369,364	259,109	7,129

NON-ZEV POPULATION						
Total Light-Duty Vehicles end of 2020						
28,030,332						
Bio Diesel	Diesel	Flex Fuel	Gasoline	Gasoline Hybrid	Natural Gas	Propane
0.470%	1.973%	3.993%	87.286%	4.031%	0.027%	0.003%
134,834	565,532	1,144,536	25,021,380	1,155,477	7,676	897



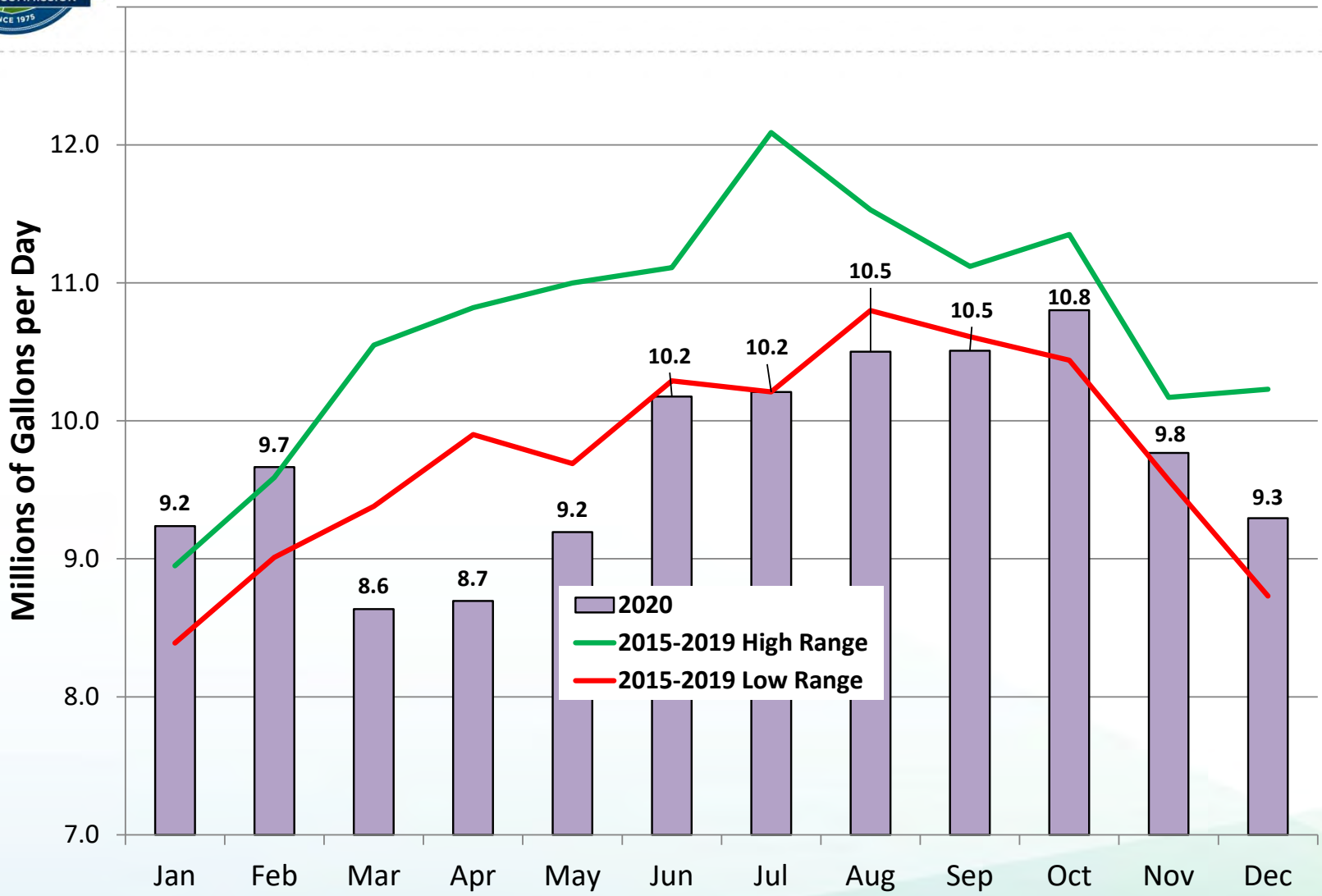
- Gasoline demand declines as population of ZEVs continues to climb.
  - 1.3 percent of light-duty vehicles at end of 2017
  - 2.3 percent at end of 2020
  - 6 to 12 percent of existing stock by 2030

Source: California Energy Commission, 2020 IEPR Workshop, December 3, 2020, Transportation Energy Demand Forecast, slide 14.

Pandemic Impacts & Outlook - Diesel

- Diesel fuel demand declined 4.3 percent in 2020
  - 3.56 billion gallons - lowest level since 2014
- Fully recovered
  - Higher than pre-pandemic levels
  - Most recent estimate – *up 12.6 percent* compared to April 2019
    - 4-week average demand (through week ending April 16)
  - Strong demand for goods movement – container imports & rail
- Forecast to continue rising over the next several years
  - However, recently adopted CARB standards for MD & HD vehicles will begin to erode those projections

California Diesel Demand - 2020



Data includes renewable diesel and biodiesel.

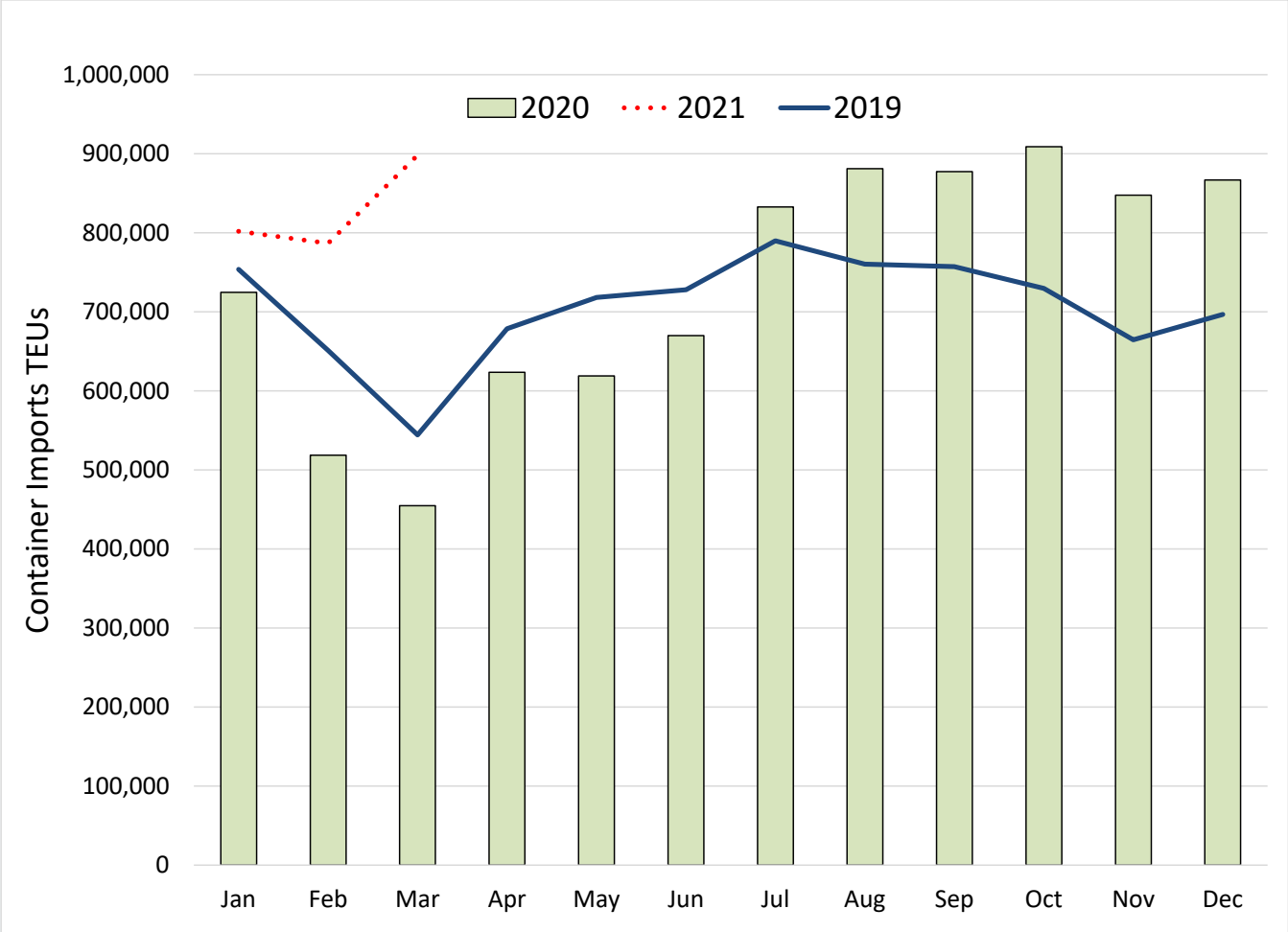
Source: California Energy Commission analysis of CDTFA data through December 2020.

Rail Activity – United States

- Intermodal rail activity is reflective of goods movement and includes railcars transporting shipping containers and truck trailers. According to AAR, more than 90 percent of the rail activity originating in California is intermodal, while nearly 80 percent of the rail activity with California as the destination was intermodal.
- Intermodal rail activity recovered last summer to pre-covid levels and has continued to improve over 2019 volumes.

2021 Y-T-D **up 4.9 percent** for intermodal rail activity versus 2019 Y-T-D.

Ports of LA & LB – Container Imports



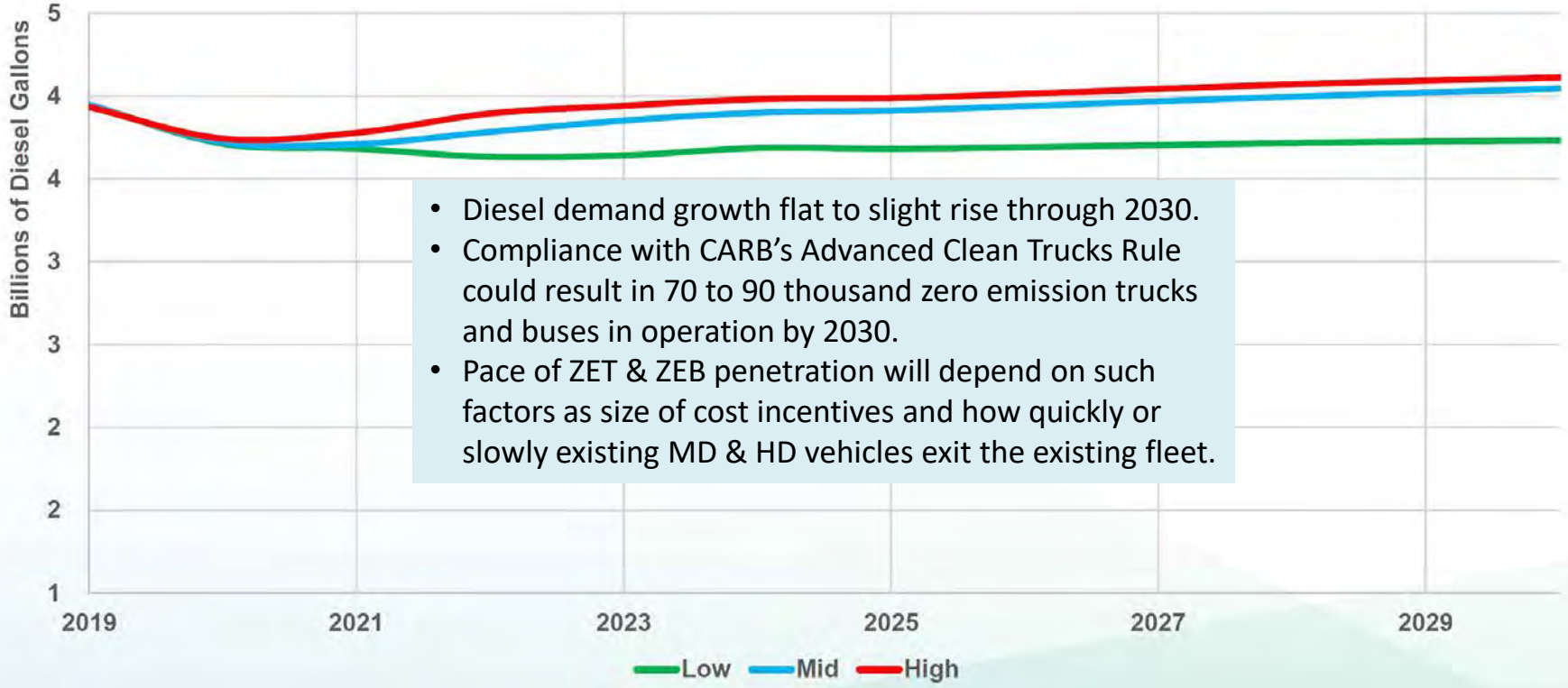
- Container imports recovery similar to rail recovery – summer of 2020
- 2021 Y-T-D through March ***up 27.6 percent*** versus same period in 2019
- 56 percent of all U.S. container imports went through the Ports of LA & LB during March 2021

Diesel Demand Forecast

Regulations designed to replace existing medium duty (MD), heavy-duty (HD), and transit buses with zero emission makes and models (electric & hydrogen) will begin to push down diesel demand during the later portions of the forecast period.

- SCAQMD regulations – refuse and transit vehicles
- CARB Advanced Clean Trucks rule – MD & HD vehicles

Projections do not illustrate the commingled trends of ***decreasing*** fossil diesel demand & ***increasing*** renewable diesel demand



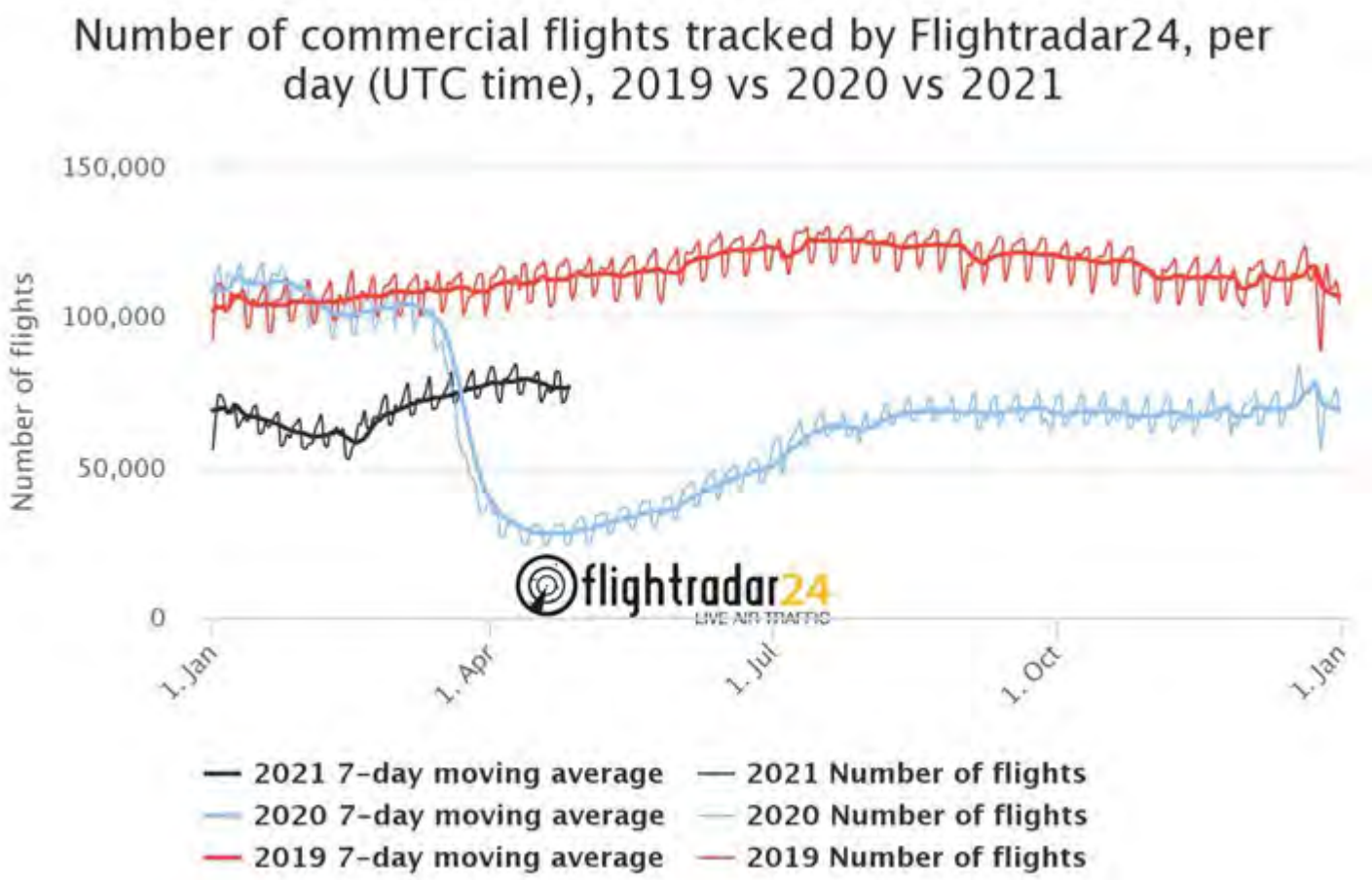
- Diesel demand growth flat to slight rise through 2030.
- Compliance with CARB's Advanced Clean Trucks Rule could result in 70 to 90 thousand zero emission trucks and buses in operation by 2030.
- Pace of ZET & ZEB penetration will depend on such factors as size of cost incentives and how quickly or slowly existing MD & HD vehicles exit the existing fleet.

Source: California Energy Commission, 2020 IEPR Workshop, December 3, 2020, Transportation Energy Demand Forecast, slide 15.

Pandemic Impacts & Outlook – Jet Fuel

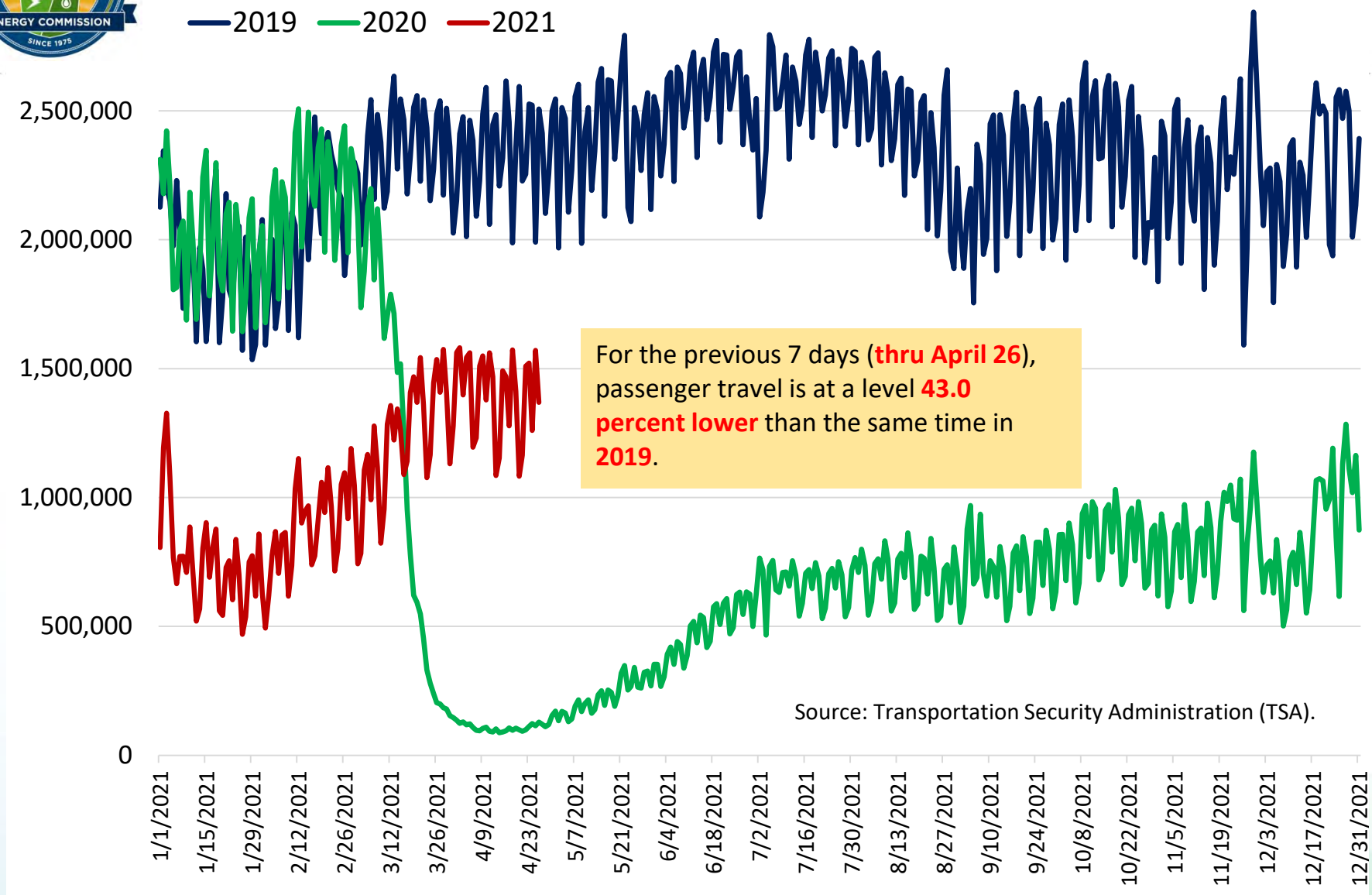
- Jet fuel demand for West Coast declined 36.1 percent in 2020 compared to 2019
  - 348 thousand barrels per day - lowest level since 1989
- Fuel type hardest hit by pandemic
  - Much lower than pre-pandemic levels
  - Most recent California estimate – *down 31.9 percent* compared to April 2019
    - 4-week average demand (through week ending April 16)
  - Decreased international travel & business flying
- Forecast to slowly continue to recover over the next couple of years
  - However, recent Covid variant spikes around the world (Brazil, India, and parts of the European Union) could continue to depress international aviation activity longer than current forecasts

Global Flight Activity Still Down



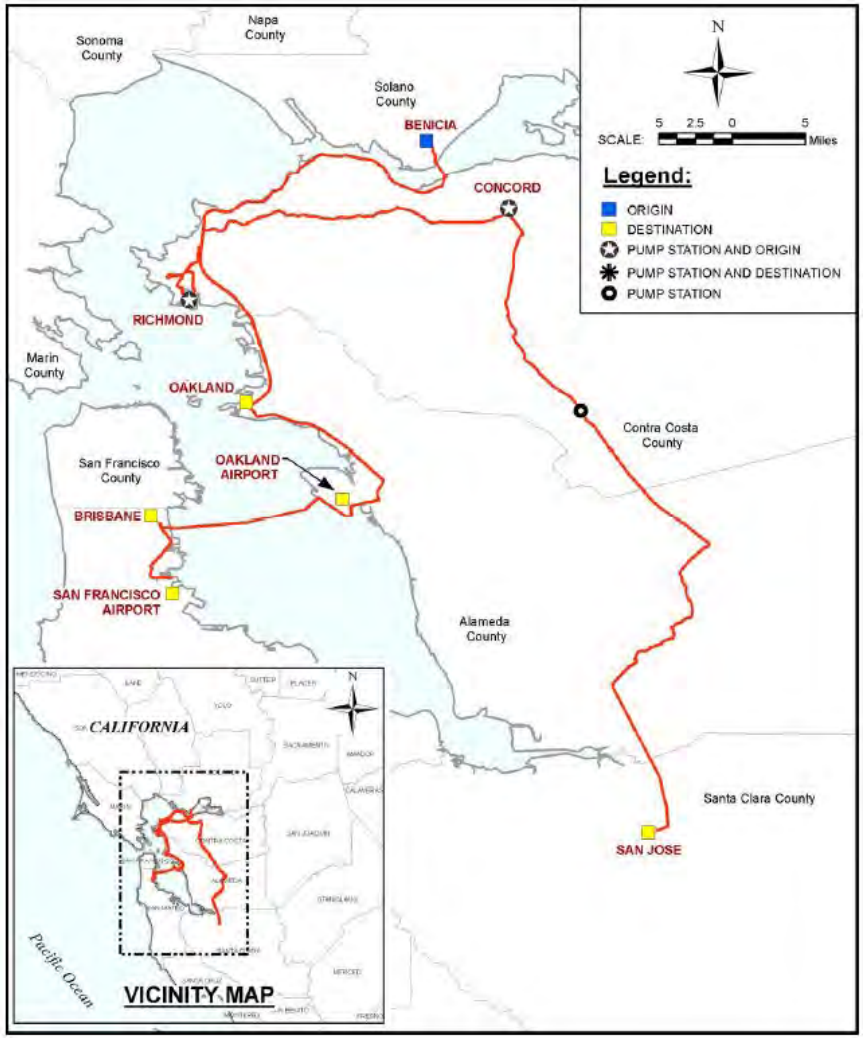
- China & Hong Kong saw earliest impacts from coronavirus
- China showing nearly complete signs of recovery
- U.S. scheduled flights down by 50.2 percent for the week ending September 14

United States Airport Passenger Counts 2019 thru 2021



Jet Fuel Overview

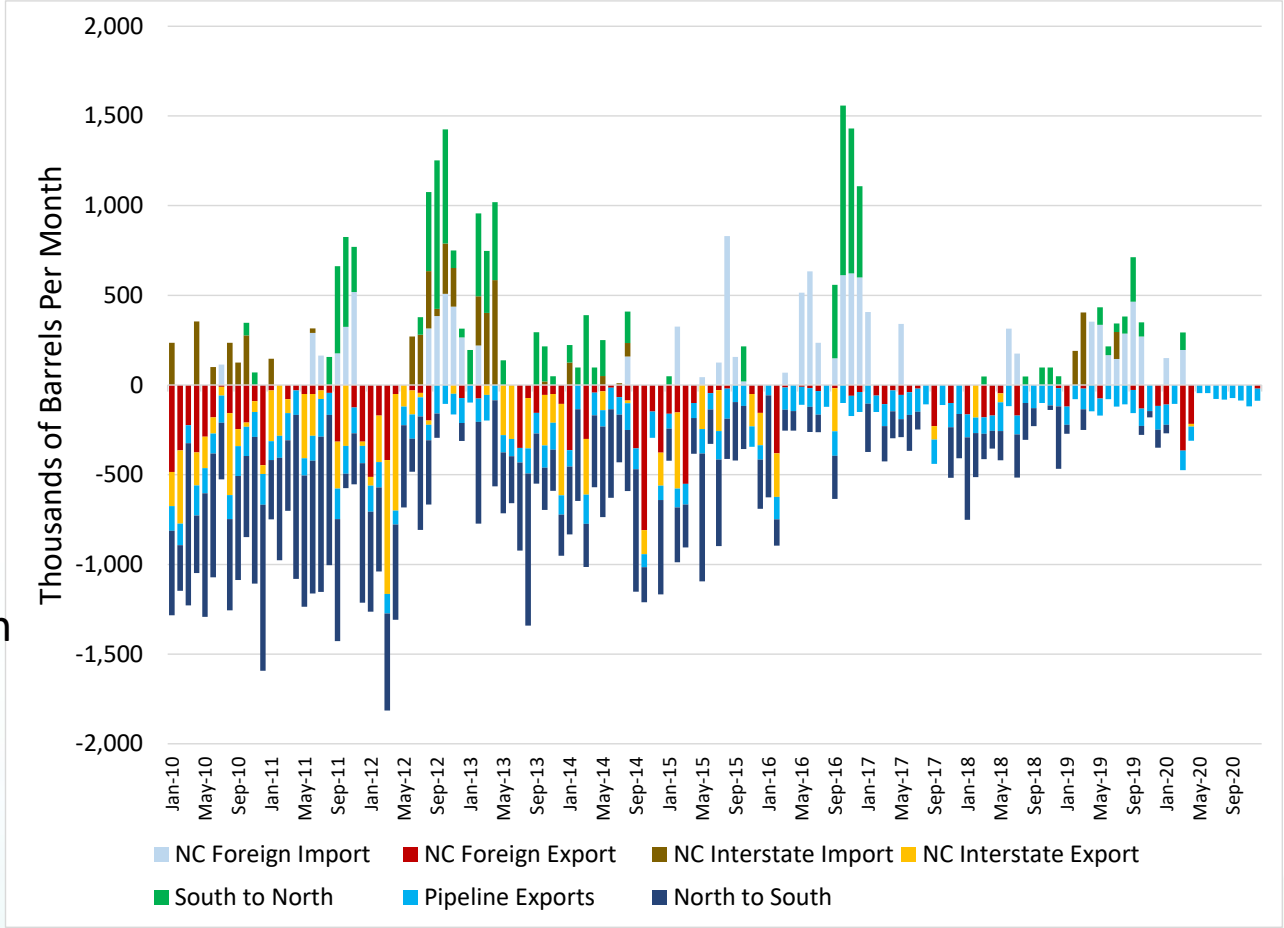
SF Bay Area – Kinder Morgan Lines



- The primary source of fuels for SF Bay Area airports is production from local refineries
  - Including supplies for Sacramento, Travis AFB, Fresno & Reno
- Trans-bay crossing to Brisbane & SFO
- Northern California refinery production periodically augmented with waterborne deliveries
  - Usually related to unplanned refinery outages
- At times, these imports have been as much as a third of average refinery production for a short period of time
- Marine terminals and pipeline connections not configured to transition to sustained marine importer of jet fuel

Jet Flows – Northern California

- Net exporter
- Imports intermittent – refinery outages
- Pipeline exports to Reno
- Domestic exports to PNW declined – replaced by WA refiners
- Exports to S. Calif. Have become a declining portion of their supply – recent volumes fluctuate based on refinery outages

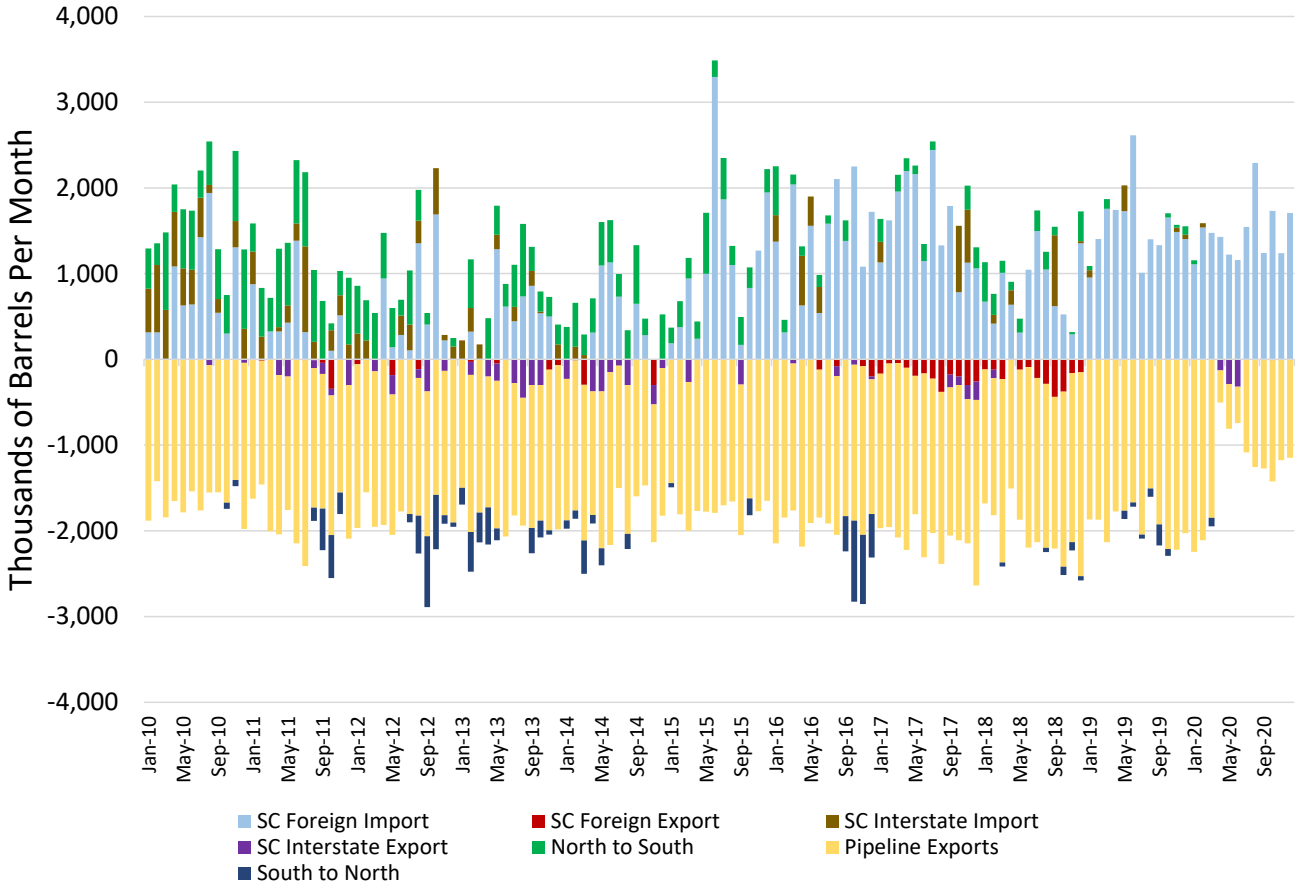


Local refinery production of jet fuel averaged 3.6 million barrels per month from 2017-2019

Source: California Energy Commission.

Jet Flows – Southern California

- Balanced imports & exports
- Foreign imports steady
- Other waterborne imports not needed
- Pipeline exports to AZ & NV
- Waterborne exports intermittent
- Exports to N. Calif. unusual

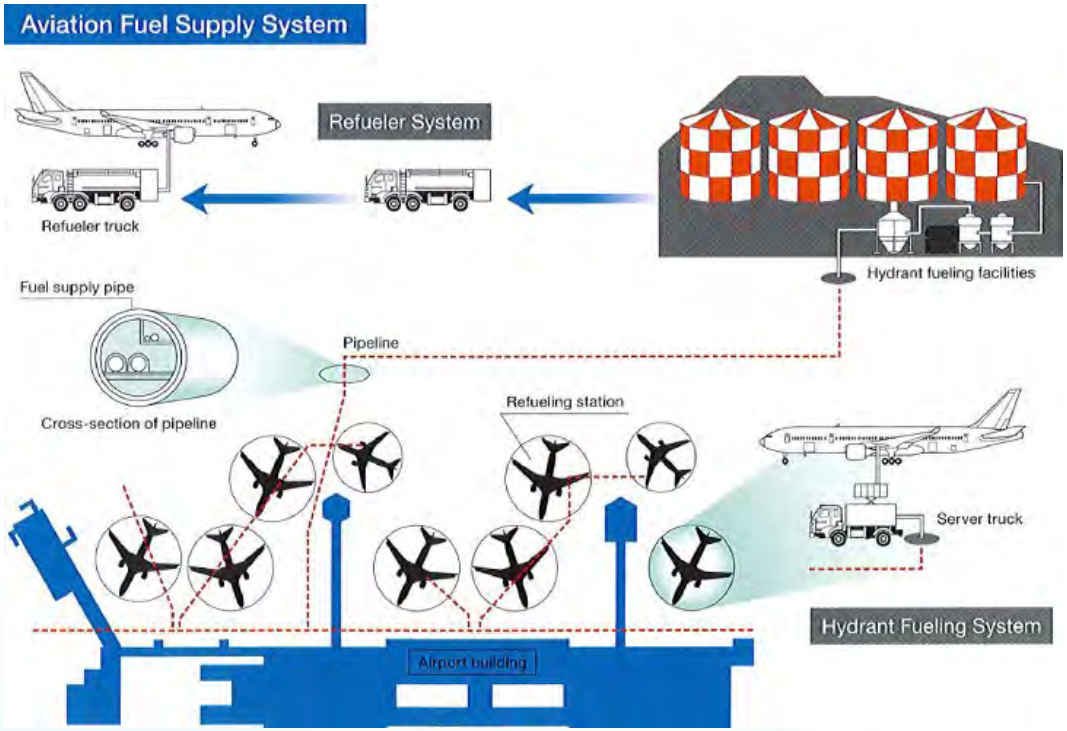


Local refinery production of jet fuel averaged 5.8 million barrels per month from 2017-2019

Source: California Energy Commission.

Jet Fuel - Logistics

- Nearly all commercial airports receive jet fuel via pipeline, not tanker truck
  - Very limited capability to unload tanker trucks
- Jet A dispensed into aircraft from:
  - Mobile refueling trucks sourcing fuel from onsite storage tanks
  - Server trucks sourcing from hydrant system
  - Both types of vehicles are specialized



Refinery Closures & Potential Impacts

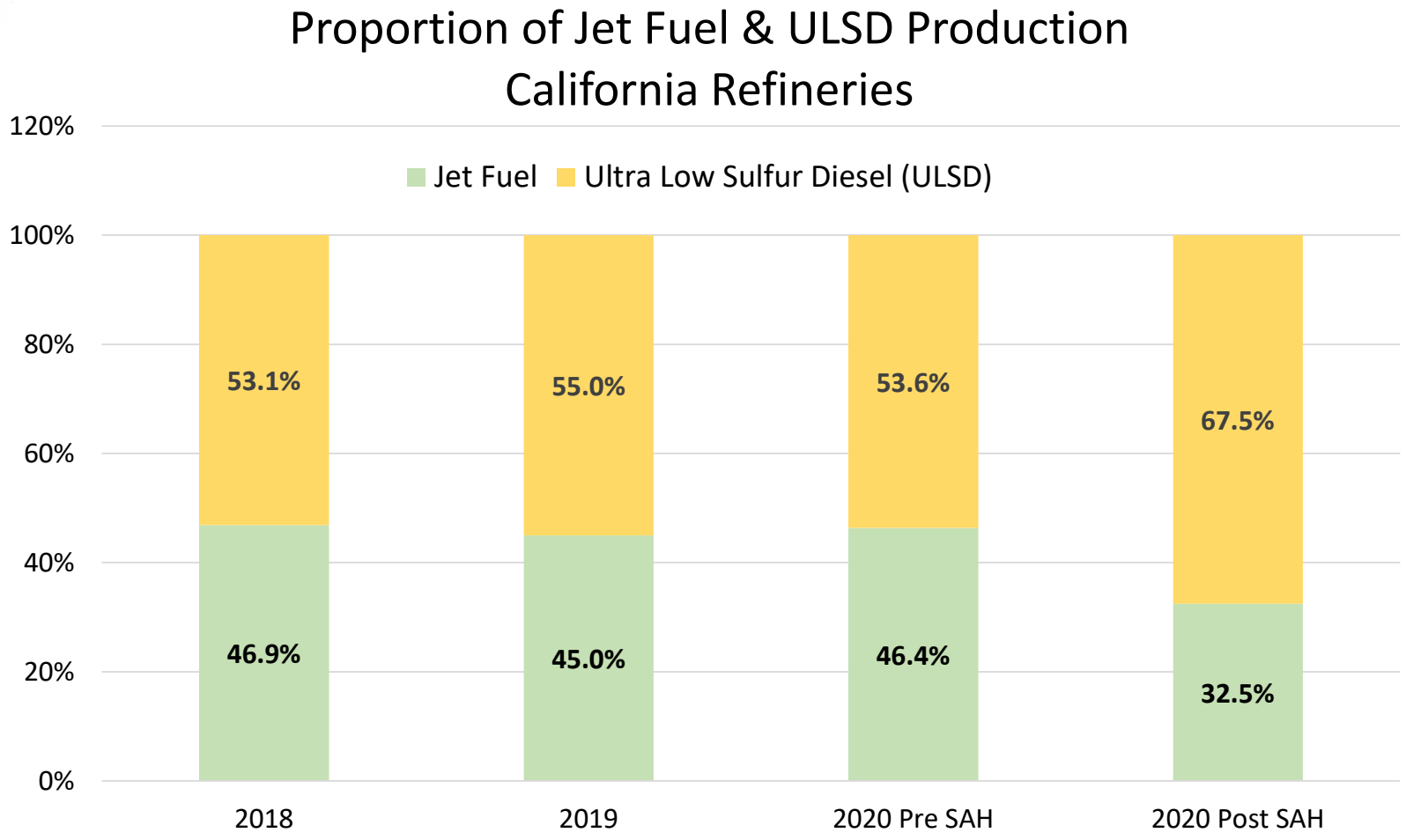
Recent Refinery Closures

- Refinery closures can occur when conditions of oversupply develop in a regional market due to Covid-19 fuel demand destruction
  - Marathon Martinez and Gallup refinery permanent idling – April 2020
  - Royal Dutch Shell Convent, Louisiana refinery – November 2020
- Closures tend to improve market conditions for other refiners in the region, diminishing degree of oversupply
  - Adequate supplies of transportation fuels still available for consumers and businesses
  - Usually a shift in source of supply through existing logistical infrastructure adequate to handle the changes
    - Marine terminals, pipeline connections/capacity & spare storage tank capacities

Recent Refinery Closures (cont.)

- Permanent idling of Marathon's Martinez refinery during late April 2020 did not result in any supply shortfall for transportation fuels due to:
- Decreased gasoline demand related to pandemic
  - Full recovery of gasoline demand to pre-pandemic levels uncertain
  - Influenced by size of workforce that maintains remote working, along with pace of transit ridership recovery
- Refinery operational changes to maximize diesel production at expense of jet fuel production
  - Diesel supplies still adequate since jet fuel demand remains depressed and renewable diesel imports and local production expected to grow over the near-term
- The Martinez refinery closure has decreased spare refinery production capacity in the state
  - As demand continues to recover for gasoline and jet fuel, future significant unplanned refinery outages could result in more severe and prolonged price spikes

Refiners Adjust Ratio of Jet Production

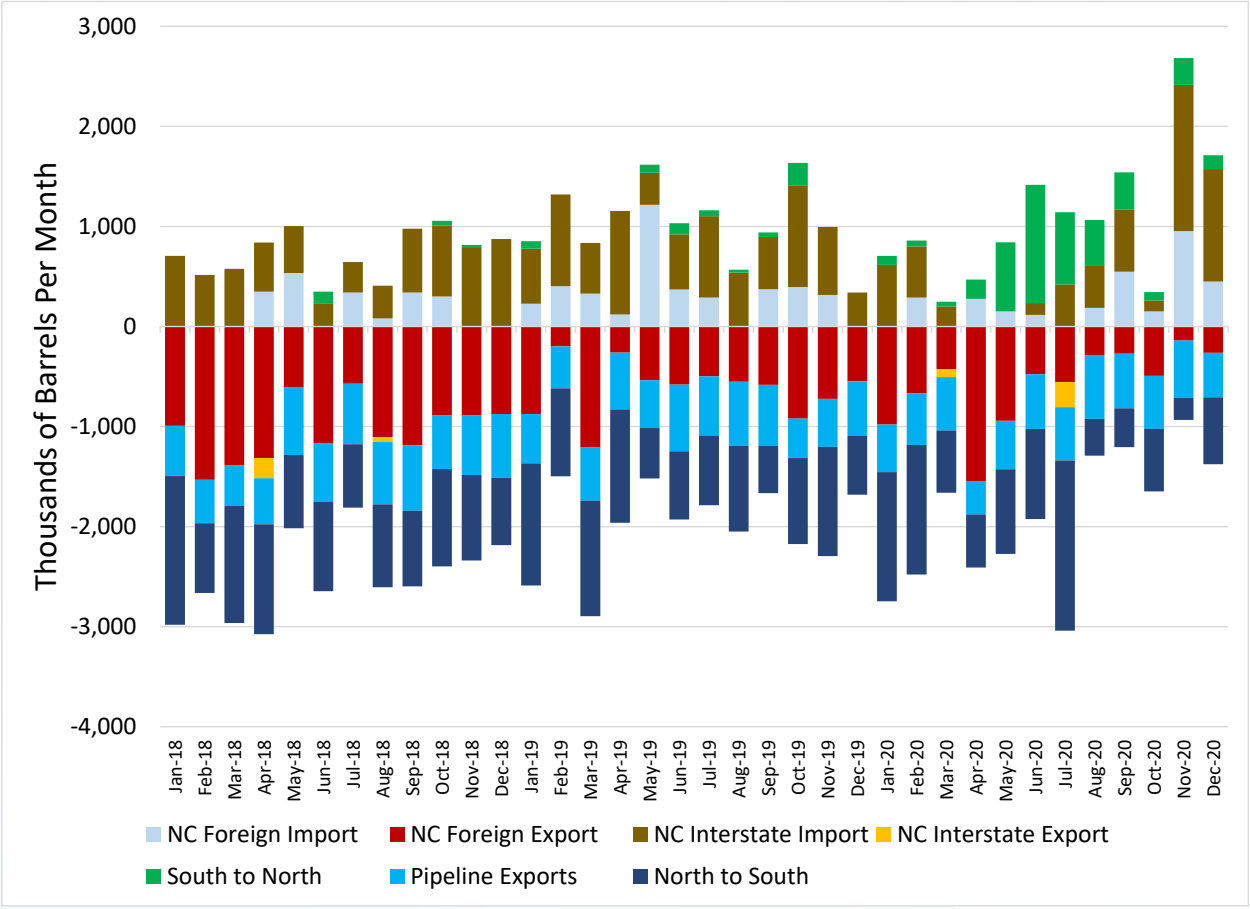


Source: Energy Commission analysis of Petroleum Industry Information Reporting Act data.

Note: 2020 Pre-Stay-at-Home (SAH) is average of data through week ending 3/13/20. Post SAH is average of data from week ending 3/20/2020 through week ending 4/23/2021.

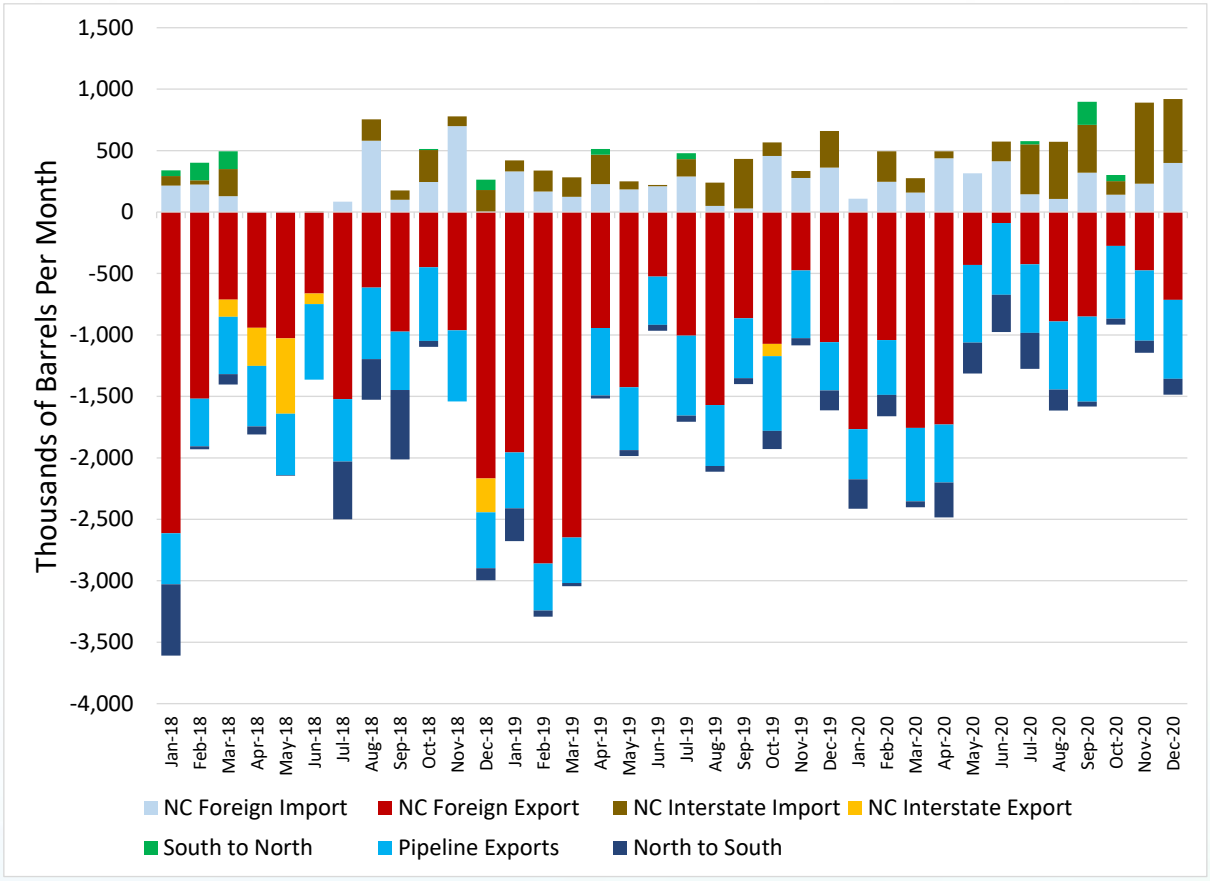
Gasolines Flows – Northern California

- Post closure of Martinez refinery – market rebalanced
- Marine exports declined
- Marine imports increased
- Most pronounced shift was increased reliance on supply from Southern California & the Pacific Northwest
- All of this change was manageable because demand was lower-than-normal due to the pandemic & incremental supply was readily available from nearby sources



Source: California Energy Commission.

Diesel Flows – Northern California



Source: California Energy Commission

- Similar change for diesel
- Post closure of Martinez refinery – market rebalanced
- Marine exports declined
- Marine imports increased
- Most pronounced shift was increased reliance on supply from Southern California & the Pacific Northwest
- All of this change was manageable, despite rebounding demand
  - Incremental supply was readily available from nearby sources
  - Higher ratio of diesel output from local refiners due to low jet fuel demand

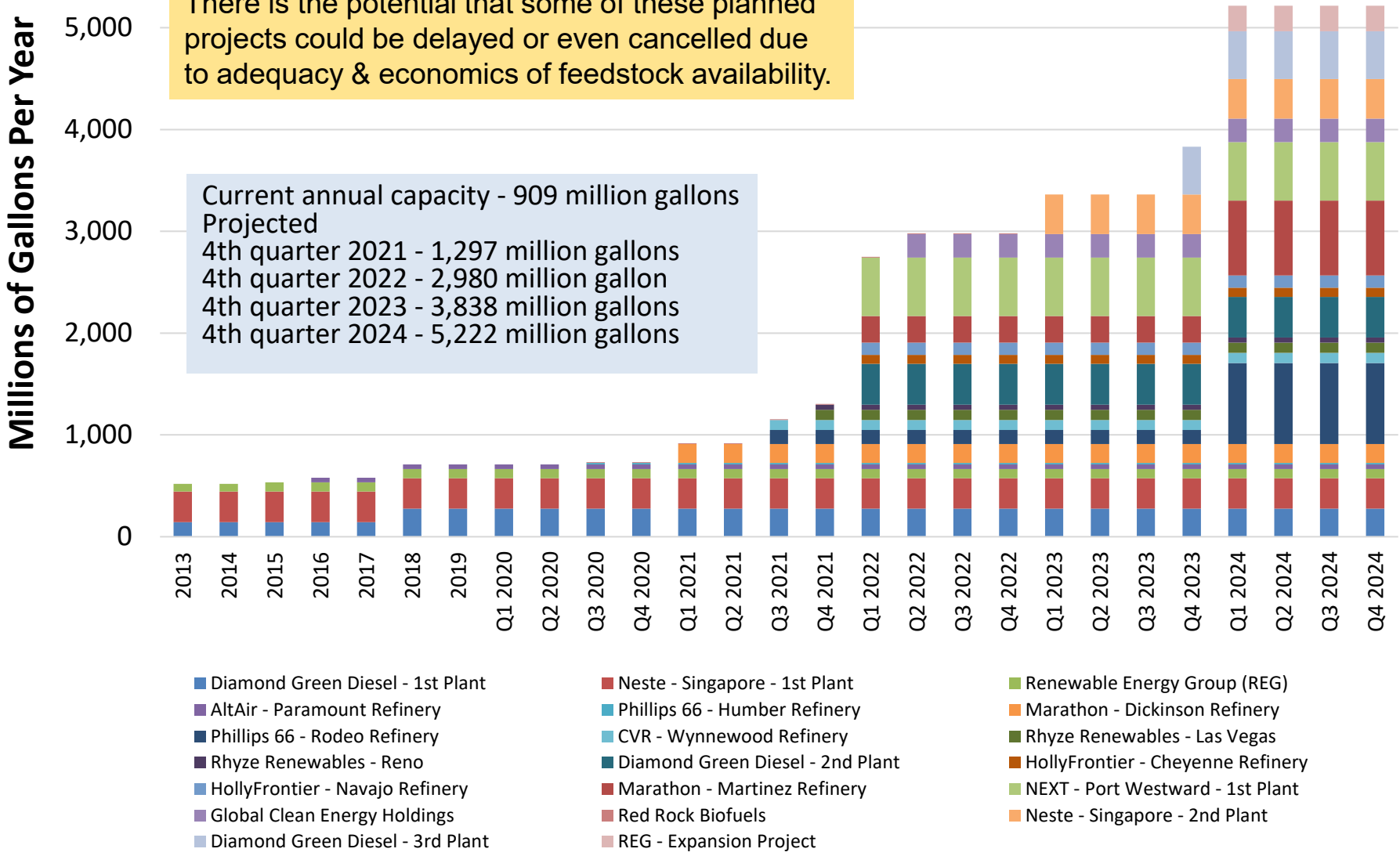
Refinery Conversion Projects

- A refinery closure due to oversupply can also be accompanied by plans to cease traditional refining operations but convert some existing process equipment to produce different types of transportation fuels to meet new trends
  - Marathon – Martinez & Phillips 66 – Rodeo renewable fuel projects reflect such changes in operational plans
- Both companies see strong demand growth for renewable diesel fuel & sustainable aviation fuels
  - California Low Carbon Fuels Standard (LCFS), as well as other West Coast LCFS current (Oregon & British Colombia) and expected (Washington) regulations
  - Increasing demand for renewable diesel & jet fuel will displace additional volumes of fossil diesel and jet fuel over time, placing increased pressure on local refiners that continue producing fossil diesel
  - Decreased fossil diesel production and increased production/imports of renewable diesel help to better align with these growing trends

Increasing Renewable Diesel Availability

There is the potential that some of these planned projects could be delayed or even cancelled due to adequacy & economics of feedstock availability.

Current annual capacity - 909 million gallons
Projected
4th quarter 2021 - 1,297 million gallons
4th quarter 2022 - 2,980 million gallon
4th quarter 2023 - 3,838 million gallons
4th quarter 2024 - 5,222 million gallons

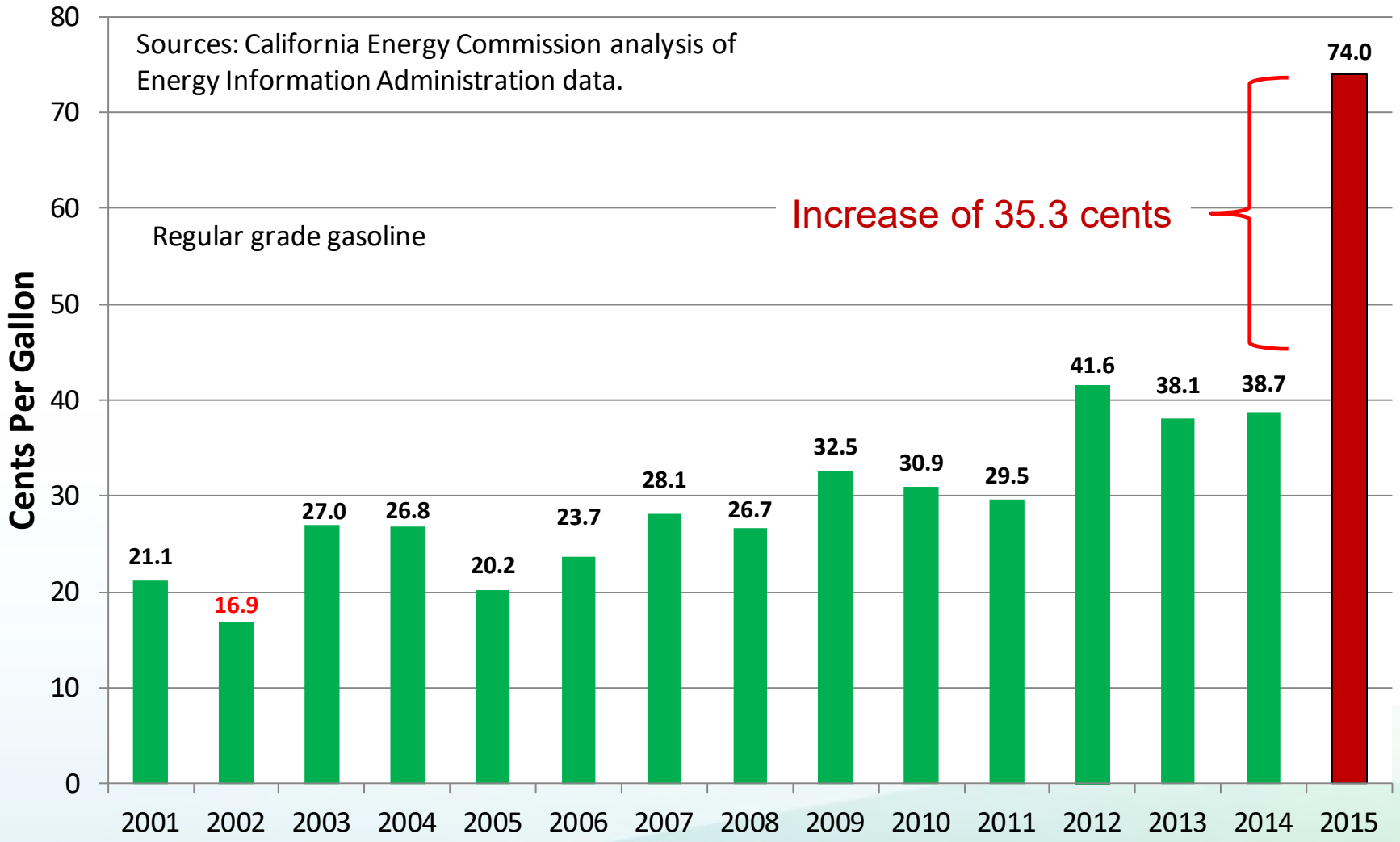


Source: California Energy Commission analysis of multiple reports and announcements.

Potential Impacts of Refinery Closures

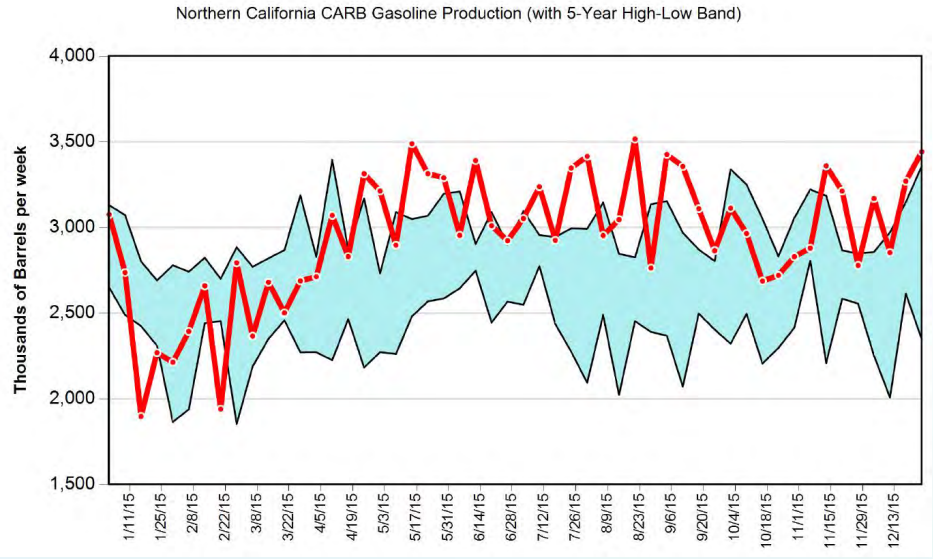
- Refinery closures can also occur when proposed refinery modification requirements exceed a company capital expenditure threshold that compels a premature refinery consolidation unrelated to changing fuel market trends
  - PBF Energy's letter & stated position to close facility if more stringent proposed standard is adopted
- A premature refinery closure could result in temporary fuel supply constraints that increase costs
  - Recent history illustrates the potential for fuel price increases
  - Torrance ESP explosion in 2015 & subsequent idling of gasoline producing equipment for 17 months
  - Statewide gasoline prices increased an average of 35 cents per gallon for drivers and businesses during 2015

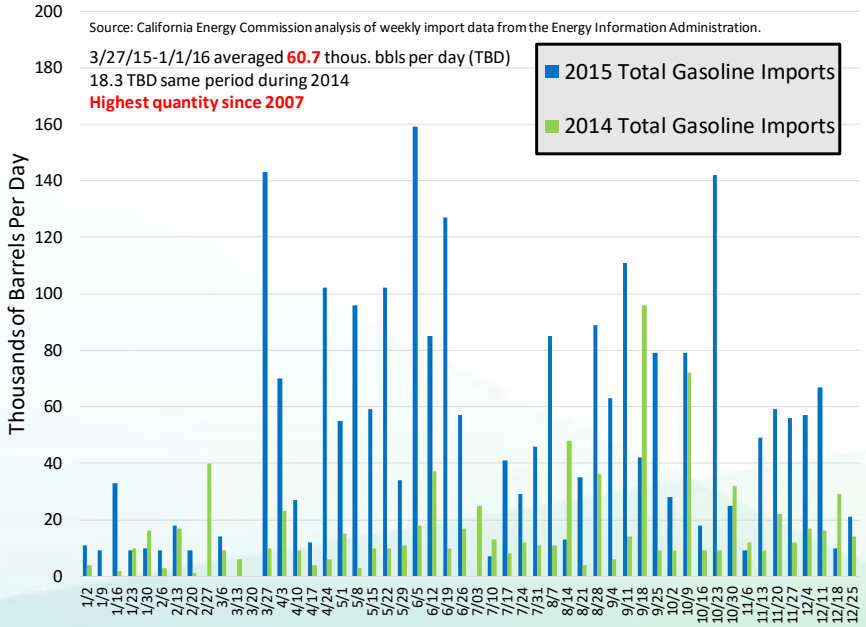
Retail Gasoline Price Differences
California Less U.S. Average



Torrance Refinery Outage – Market Changes

- The loss of gasoline supply from the Torrance refinery resulted in a price spike of sufficient magnitude to incentivize:
  - Other California refiners to consistently over-produce gasoline during the higher demand season
  - Increased imports of more expensive gasoline and blending components at a higher level for a sustained period of time





Potential Impacts of Refinery Closures (cont.)

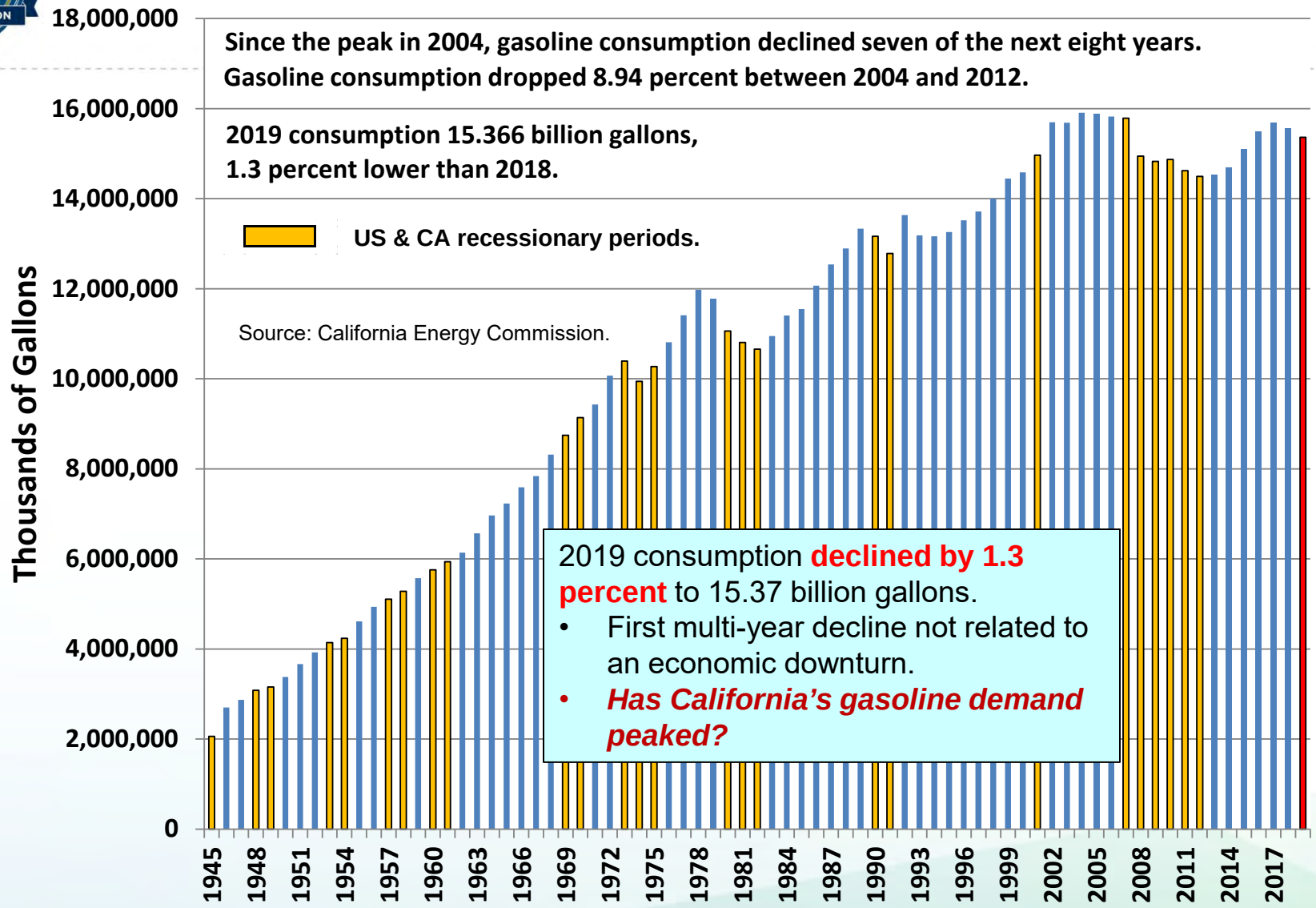
- A premature refinery closure over the near-term could result in even greater market impacts compared to the Torrance refinery outage in 2015-2016:
  - Could be worse due to decreased refinery spare production capacity in the state that has been diminished due to the permanent idling of the Marathon – Martinez refinery
  - Gasoline & diesel fuel supply/demand balances have been tightening with strong diesel fuel demand growth & continued gradual rebound in gasoline consumption
  - A return to higher jet fuel demand levels will remove additional flexibility from the marketplace
- However, over the longer-term, continued demand declines for gasoline & the continued erosion of fossil diesel fuel demand can create conditions of oversupply that could result in additional refinery consolidation due to these trends

Additional Questions

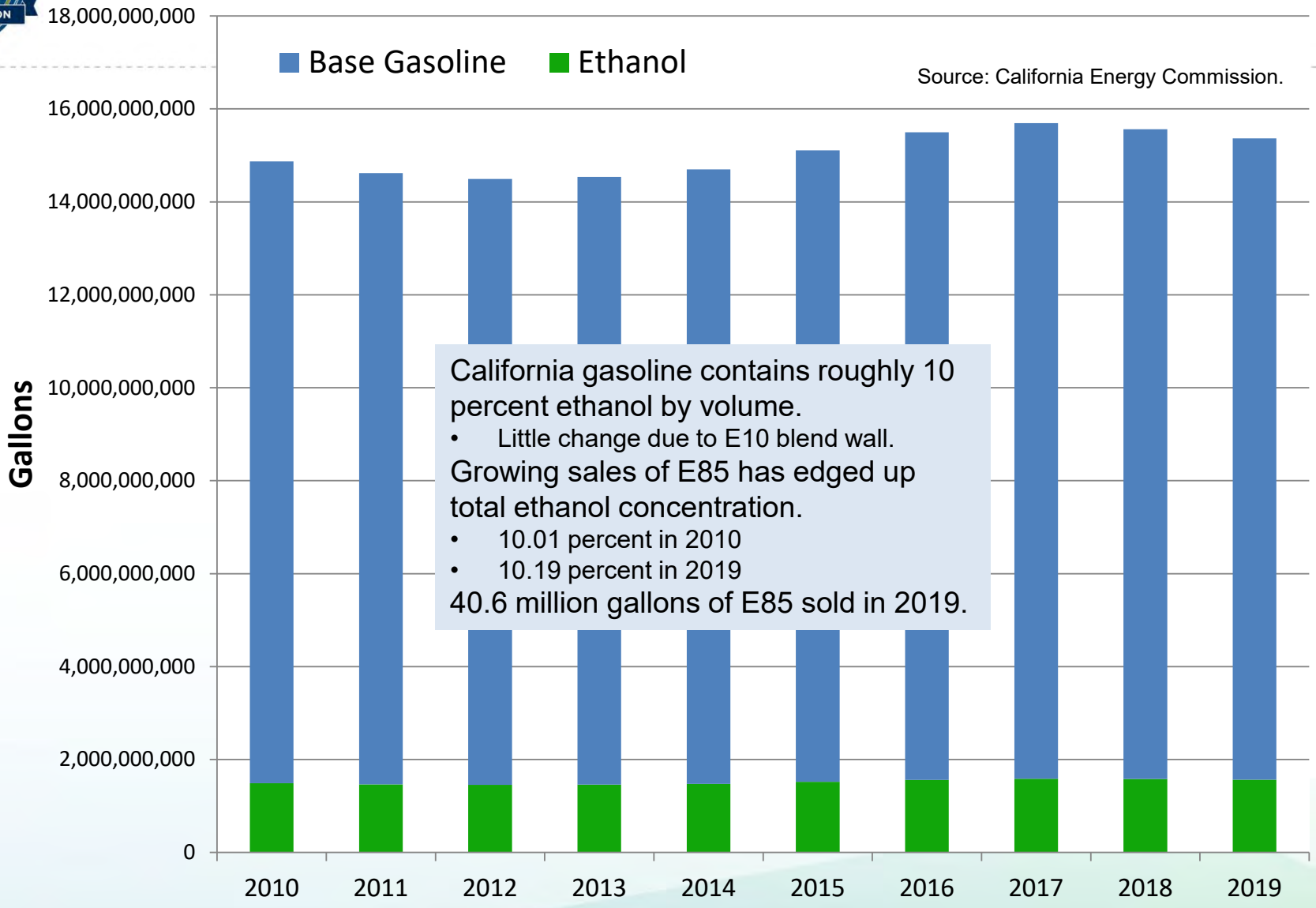
Scott's Oriole (male), Cat Creek, Palm Desert, CA - March 31, 2021.

Additional Information

California Gasoline Use 1945-2019



Gasoline & Ethanol



California gasoline contains roughly 10 percent ethanol by volume.

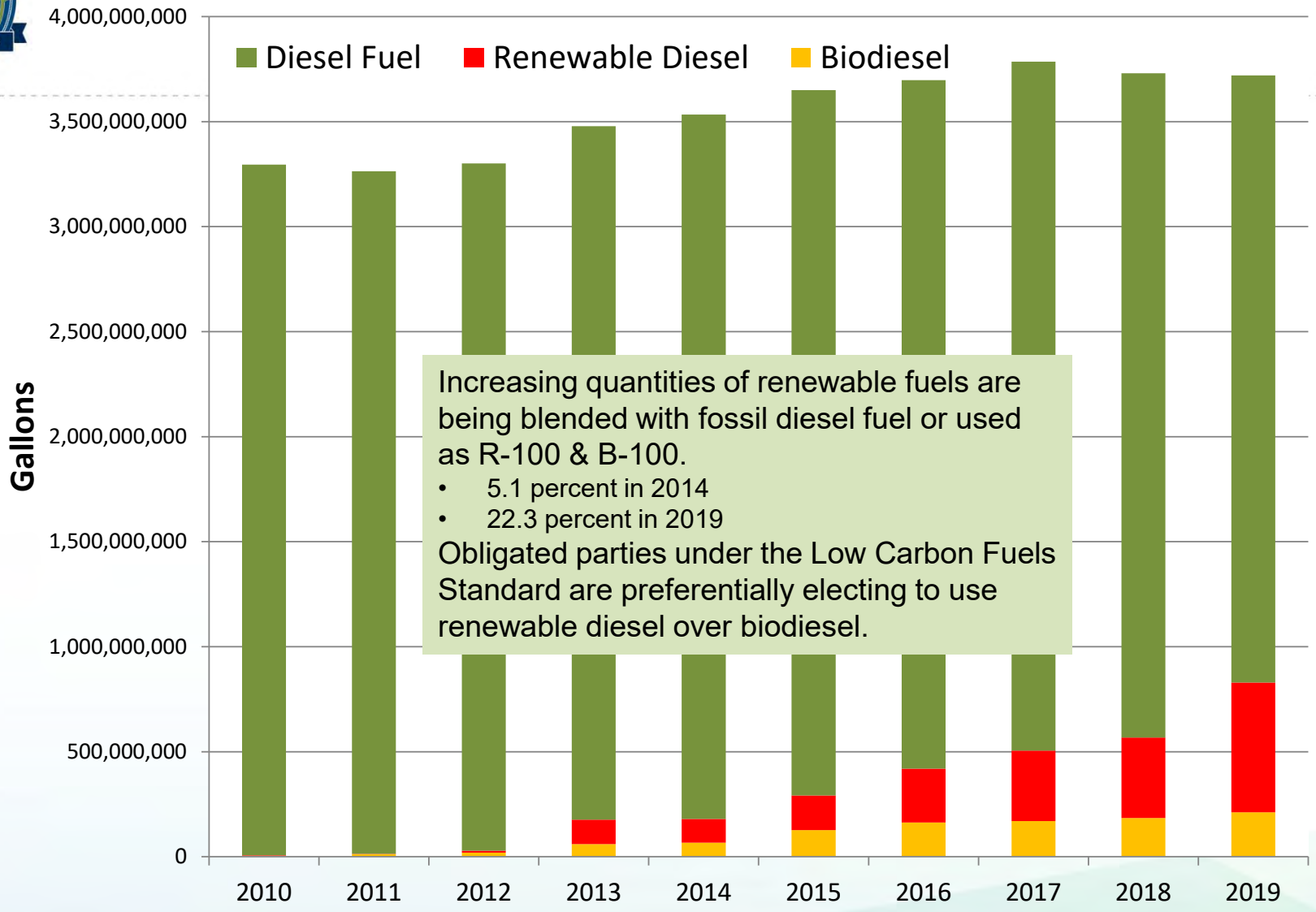
- Little change due to E10 blend wall.

Growing sales of E85 has edged up total ethanol concentration.

- 10.01 percent in 2010
- 10.19 percent in 2019

40.6 million gallons of E85 sold in 2019.

Diesel & Renewables

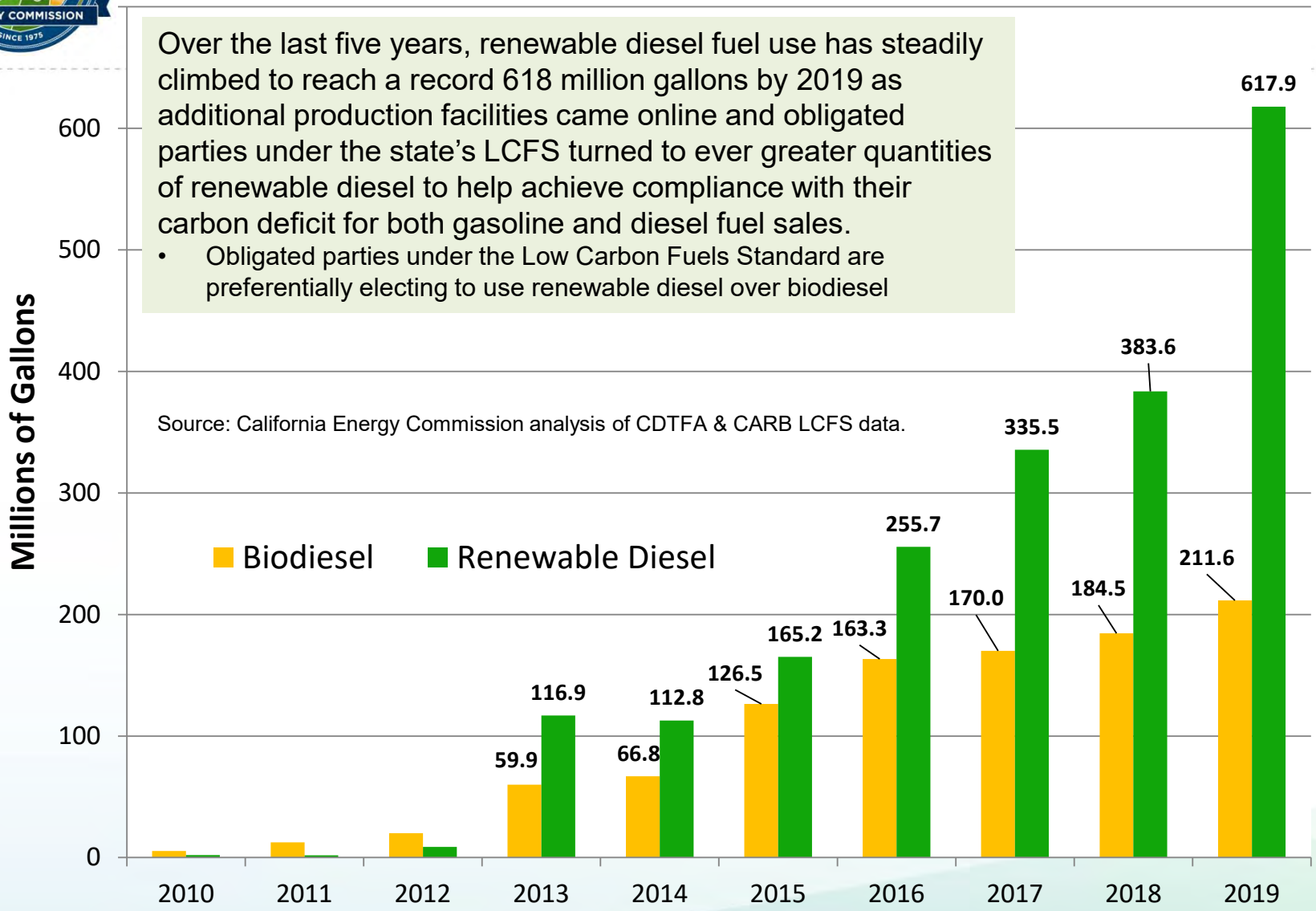


Source: California Energy Commission analysis of CDTFA & CARB LCFS data.

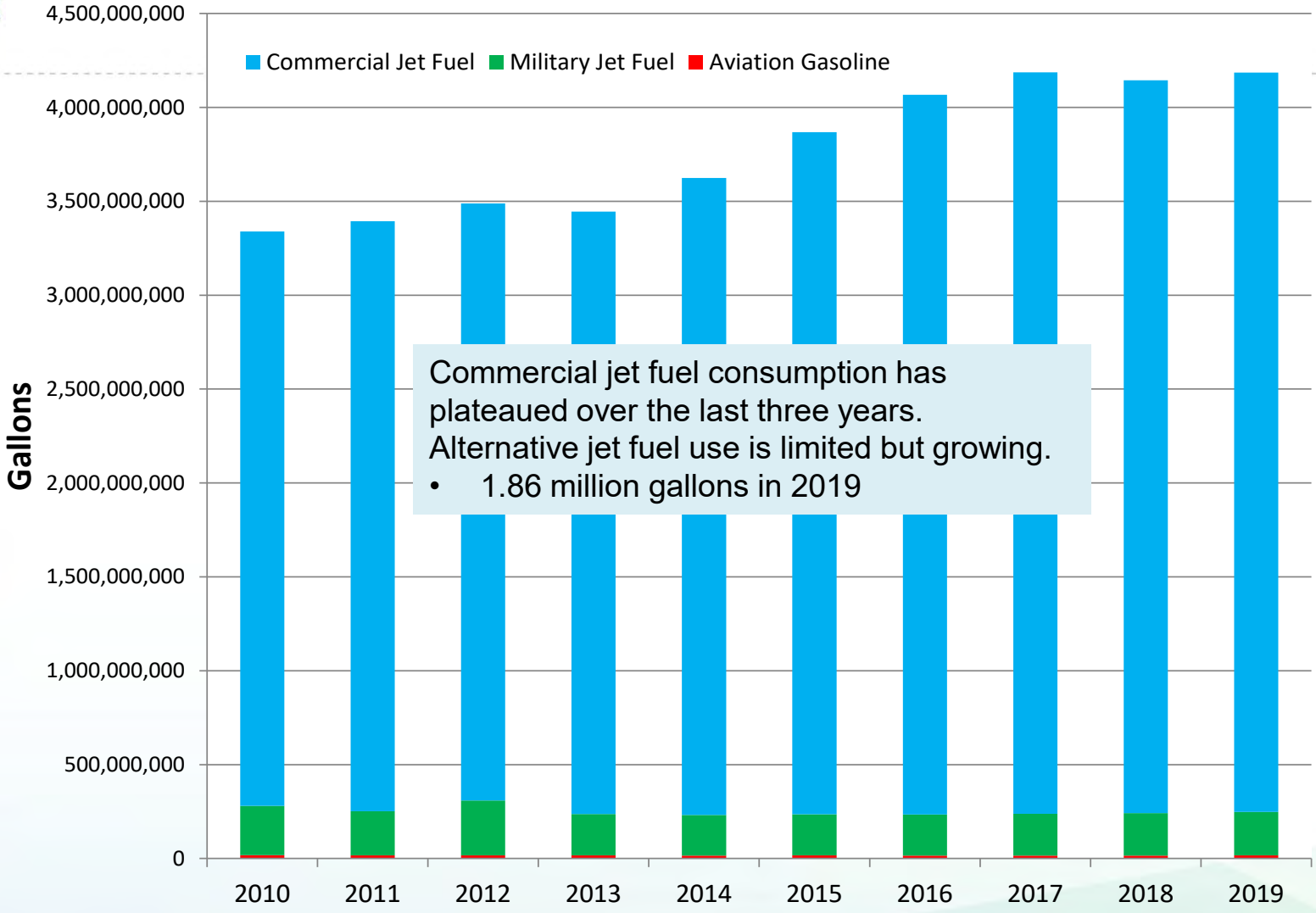
California Bio & Renewable Diesel Use

Over the last five years, renewable diesel fuel use has steadily climbed to reach a record 618 million gallons by 2019 as additional production facilities came online and obligated parties under the state's LCFS turned to ever greater quantities of renewable diesel to help achieve compliance with their carbon deficit for both gasoline and diesel fuel sales.

- Obligated parties under the Low Carbon Fuels Standard are preferentially electing to use renewable diesel over biodiesel

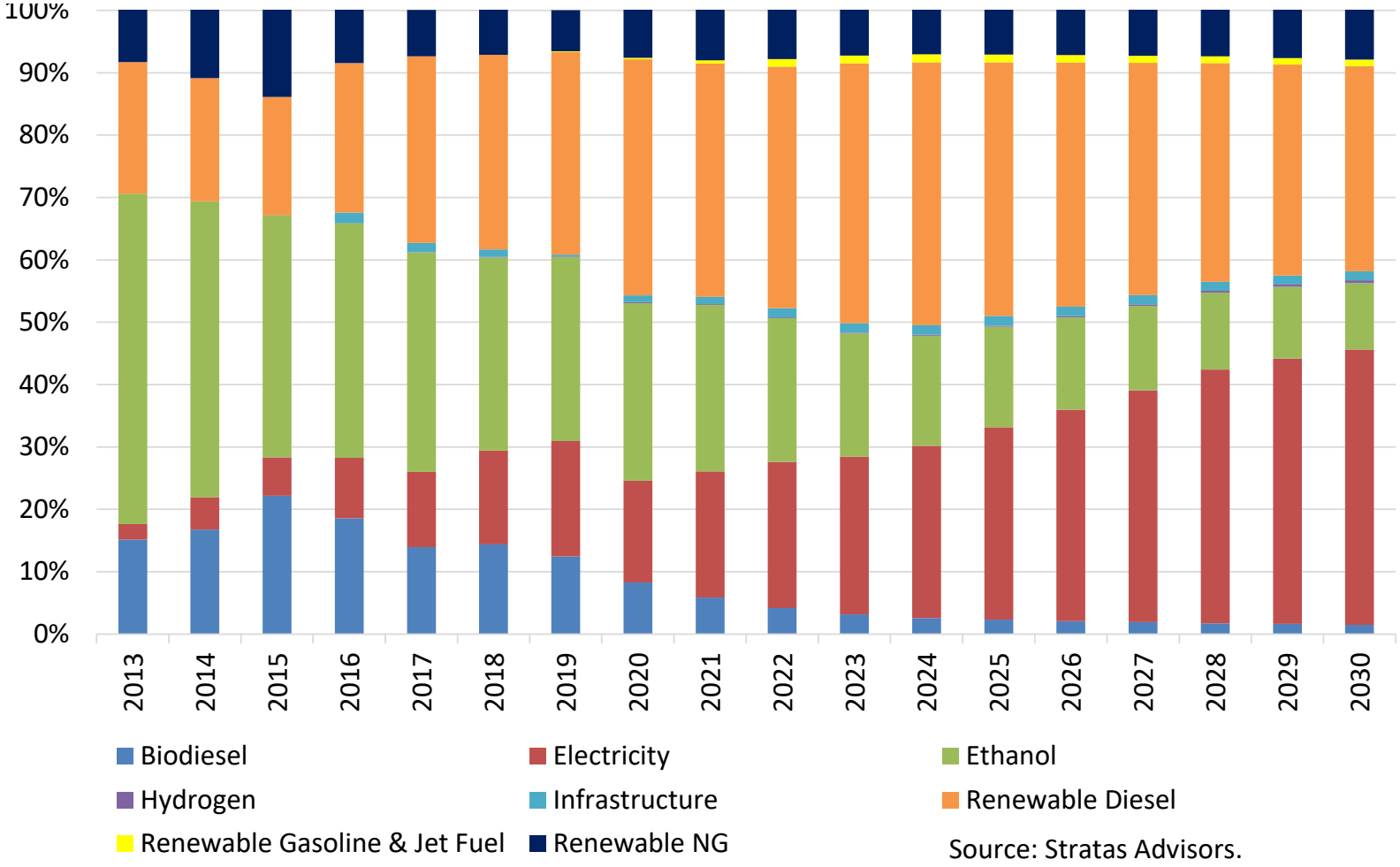


Aviation Fuels



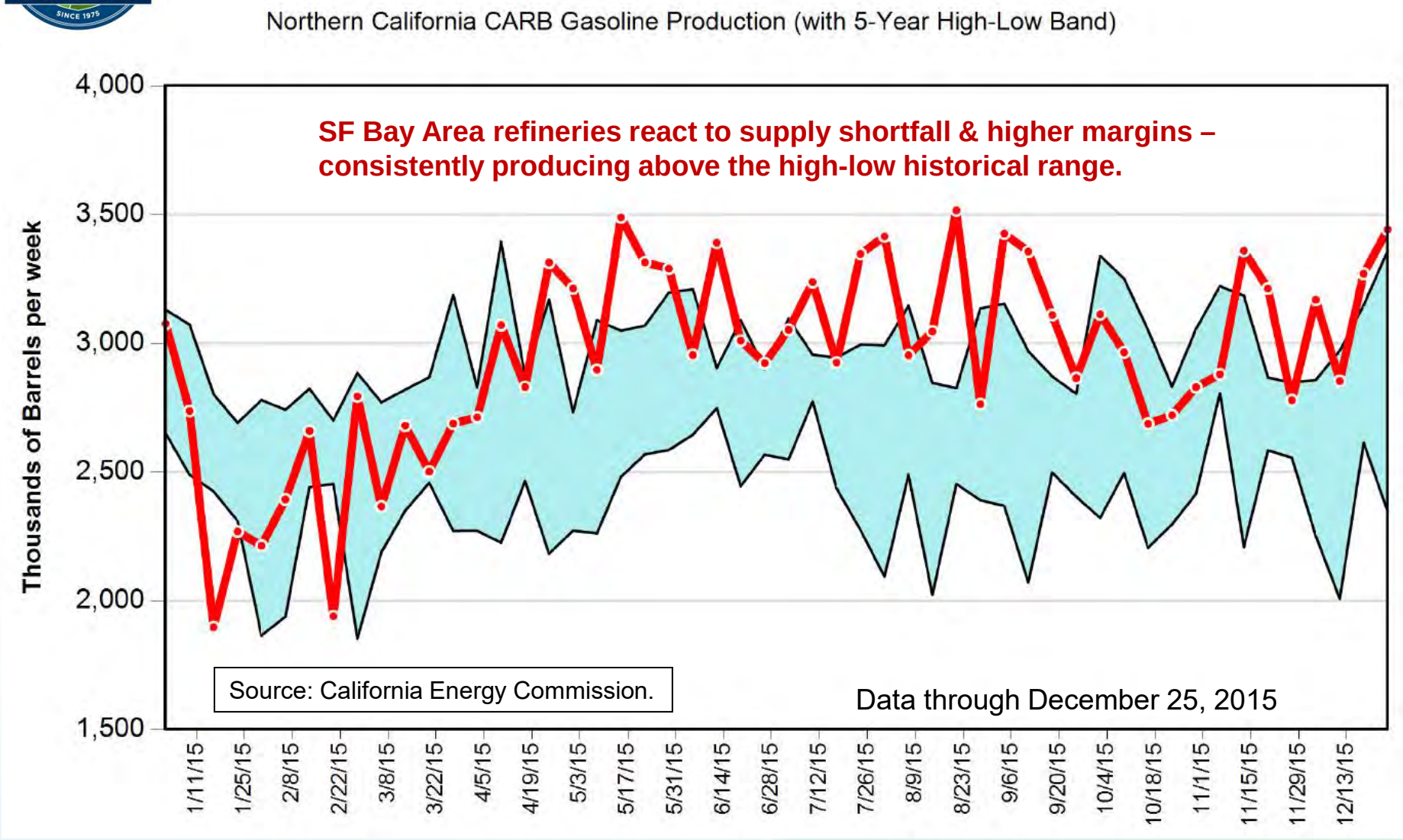
Sources: California Energy Commission analysis of Petroleum Industry Information Reporting Act (PIIRA) & Energy Information Administration (EIA) data.

Low Carbon Fuels Standard
Historical & Projected Credit Useage



Importance of renewable diesel for LCFS compliance forecast to grow and remain strong through 2030.

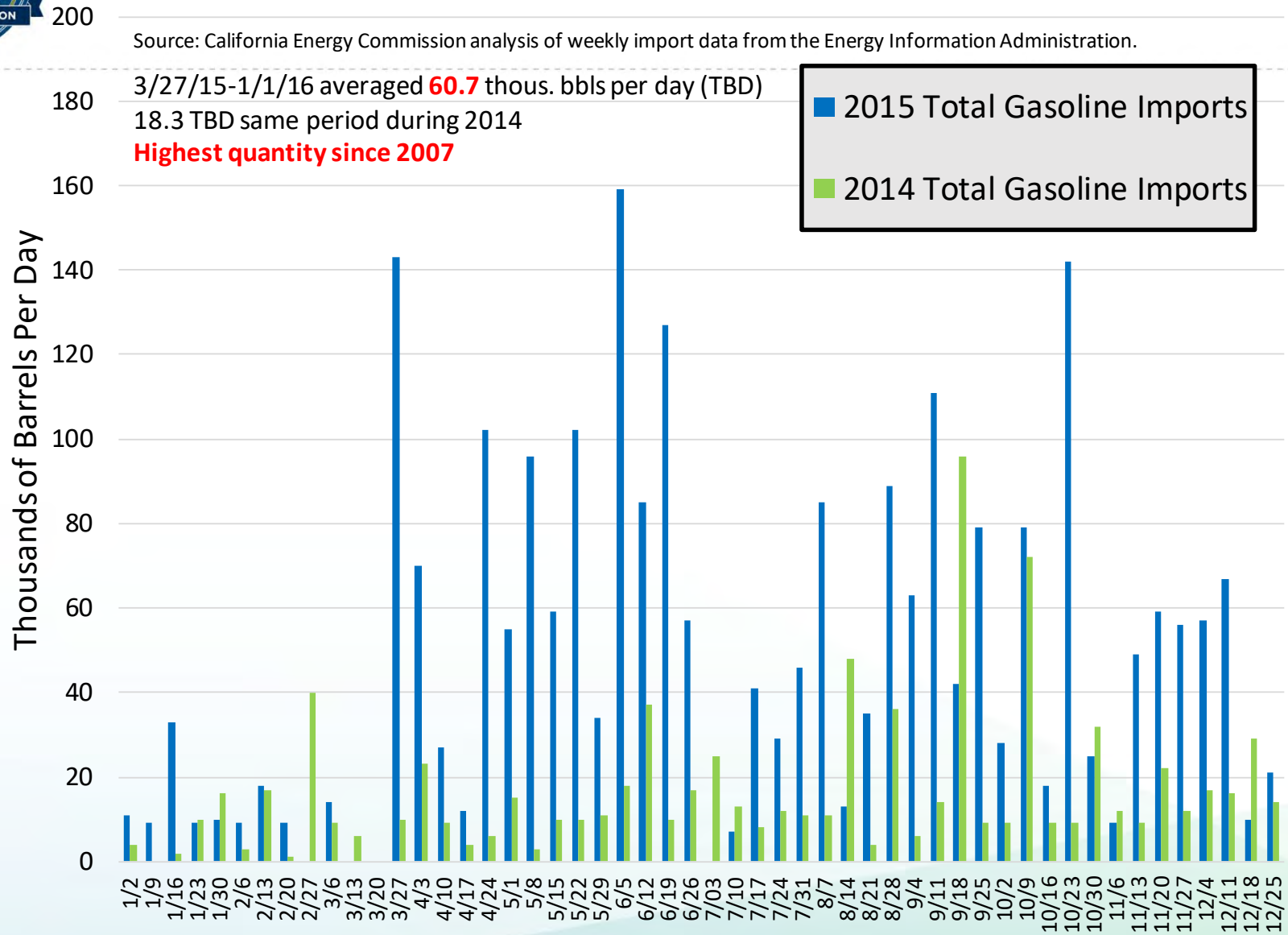
Gasoline Production - North



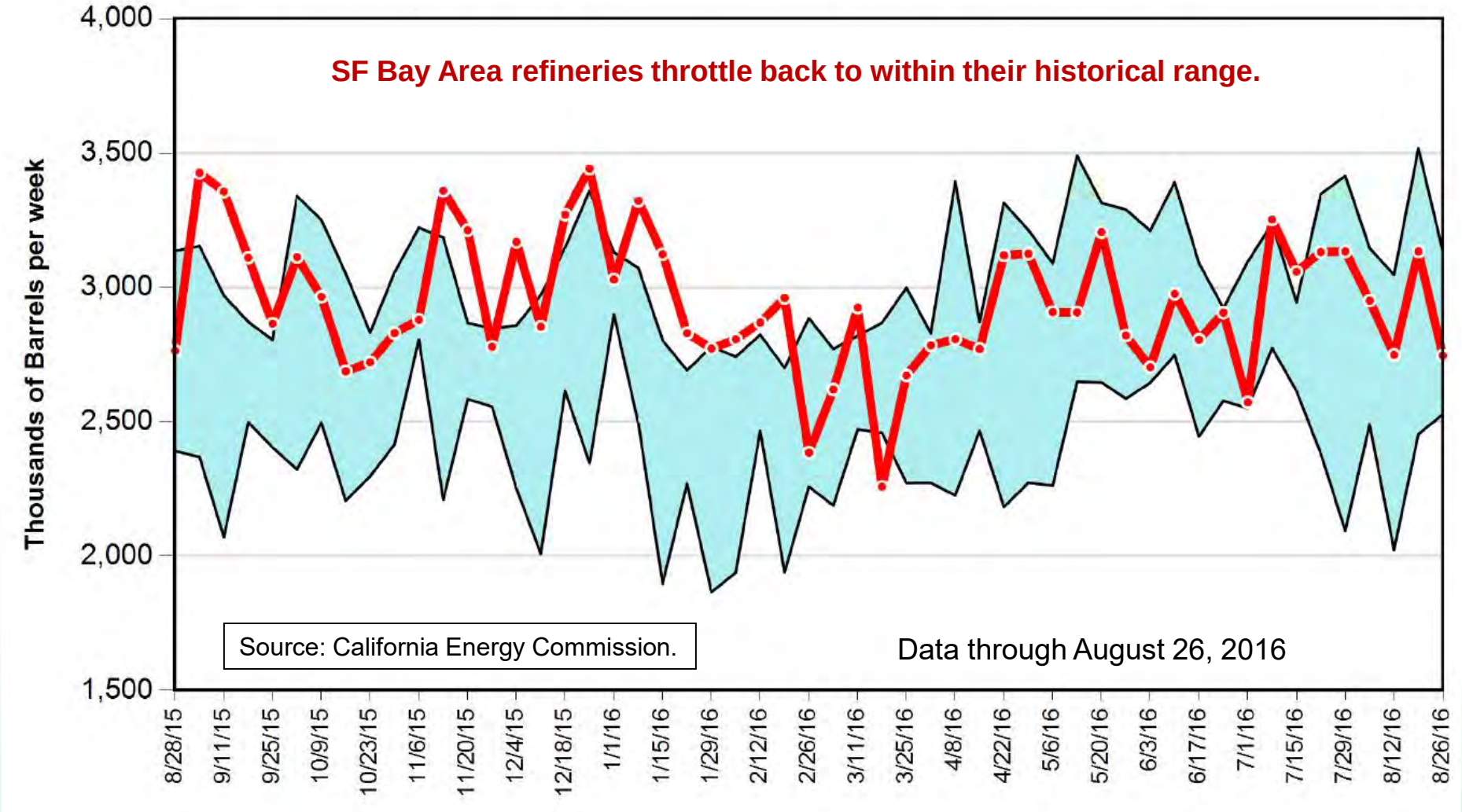
West Coast Foreign Gasoline Imports

Source: California Energy Commission analysis of weekly import data from the Energy Information Administration.

3/27/15-1/1/16 averaged **60.7** thous. bbls per day (TBD)
18.3 TBD same period during 2014
Highest quantity since 2007

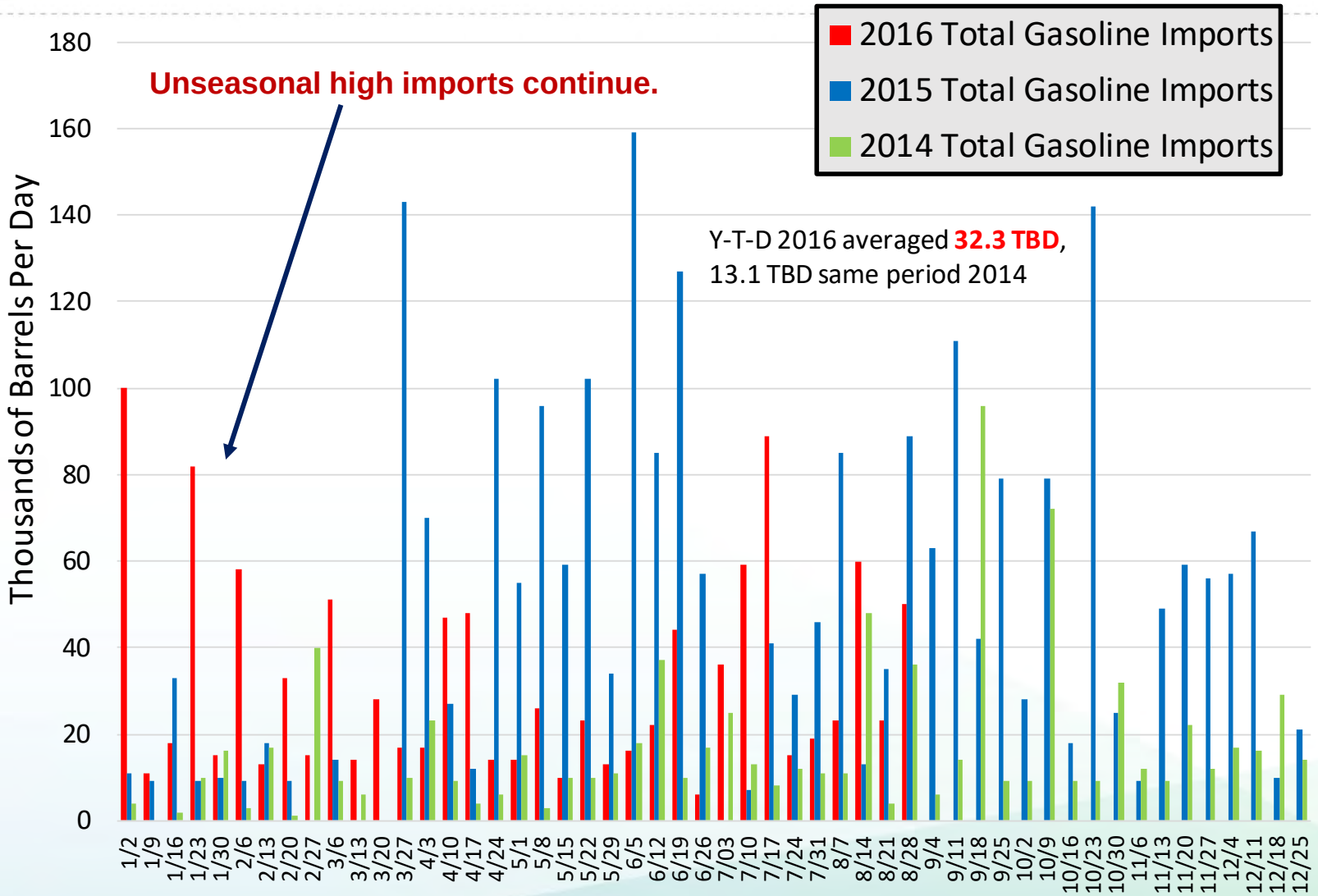


Gasoline Production - North

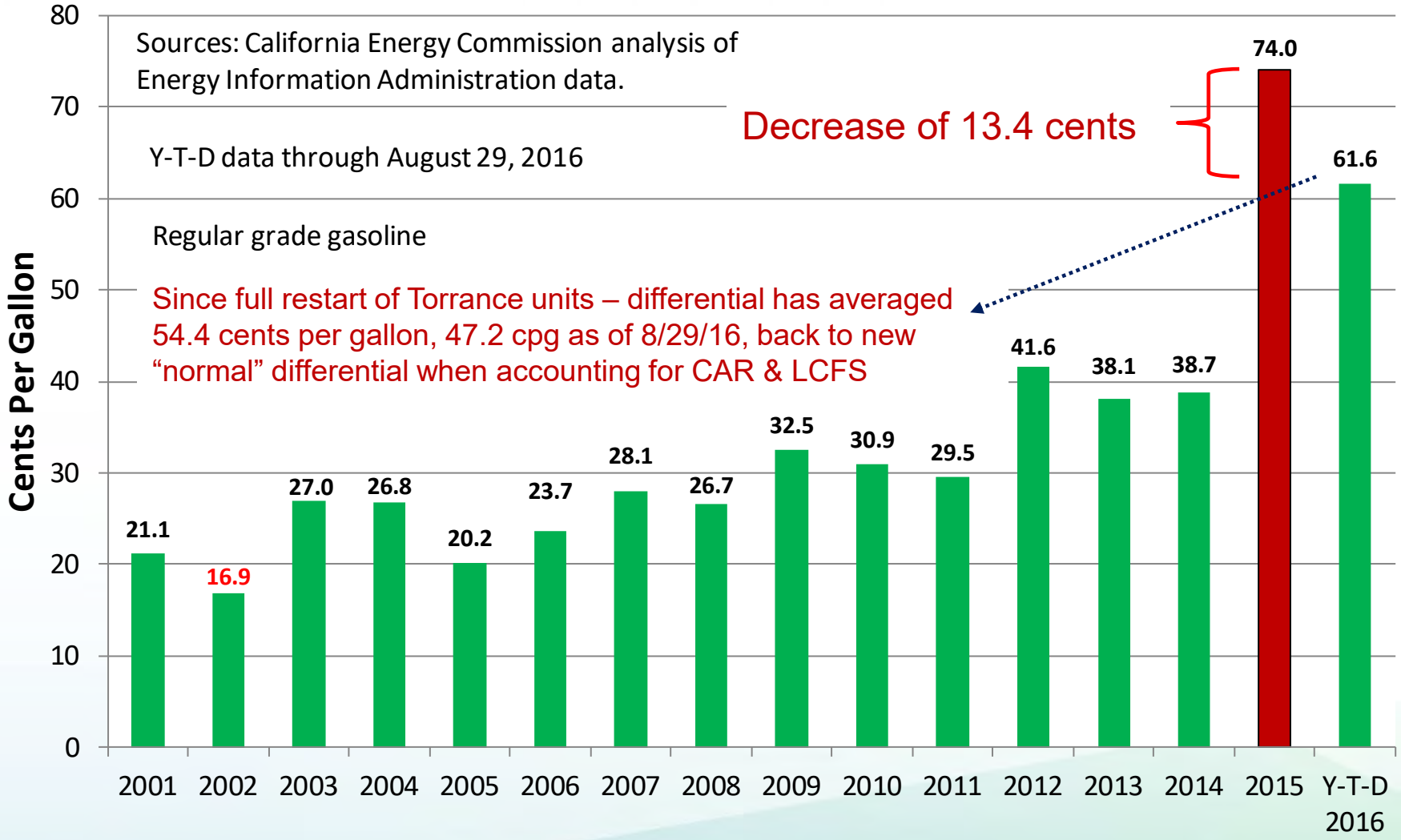


West Coast Foreign Gasoline Imports

Source: California Energy Commission analysis of weekly import data from the Energy Information Administration.



Retail Gasoline Price Differences California Less U.S. Average



California Refined Products Outlook

Prepared for PBF Energy, Inc.

June 1, 2021

Disclaimer

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3. Leading experts on the supply and demand fundamentals that drive the West Coast transportation fuels markets.

Table of Contents

Introduction & Purpose

California refined products demand is recovering from COVID-19 but is anticipated to decline due to a number of factors. New Bay Area Air Quality Management District (BAAQMD) rulemaking in the San Francisco Bay would reduce the level of particulate emissions for area fluid catalytic cracking (FCC) units, that would require sizable investment in required control technology, that could have a significant impact on the SF Bay, California and all of the West Coast product supply

Stillwater is hereby providing an assessment of the outlook for California transport fuel, how implementation of Rule 6-5 could affect supply and demand and impact state consumers.

Summary & Highlights – Refined Products

1. Demand for California transportation fuels was decimated by COVID.
2. While demand for transportation fuels has been recovering, several factors will combine to put pressure on refined product demand and, ergo, financial performance.
3. With closure of Marathon Martinez (2020) and Phillips Rodeo (2023) SF Bay refineries, the market will be short in 2023, but balanced to long with subsequent demand erosion.
4. The idling of Marathon and Rodeo will reduce PM_{10} by more than contemplated by BAAQMD Rule 6-5.
5. Rule 6-5 will exert additional pressure on the impacted refineries in SF (Chevron and PBF), that will likely close rather than install BACT.
6. With only one remaining operating refinery in SF (Valero Benicia), SF will be significantly short refined products, more than any time ever for any enclave on the West Coast.
7. To balance, supply will shift to an enormous volume of foreign imports from Asia that will increase delivery lead times from a matter of days to weeks or months, and increasing vessel traffic, a serious concern over the past years for BAAQMD.

Summary & Highlights – Refined Products (cont'd)

8. The level of imports will shift from crude to products, increasing SF Bay vessel traffic by 358 per year, (+14% vs 2019), straining marine oil terminals (MOT) capacity, and expose the Northern California supply system to outage, particularly during turnarounds or outages of the Valero refinery.
9. By comparison, ExxonMobil's 2015/16 Torrance outage flipped PADD 5 gasoline supply/demand from long to short, increasing foreign imports by only 65 KBD – driving prices up statewide.
10. BAAQMD staff expects that Valero will make a small investment to upgrade its existing wet gas scrubber to comply with new limits contemplated. However, should this not be feasible, it is likely demands may not be met.
11. And the CA consumer will pay the price - to the tune of $6.7 billion annually.

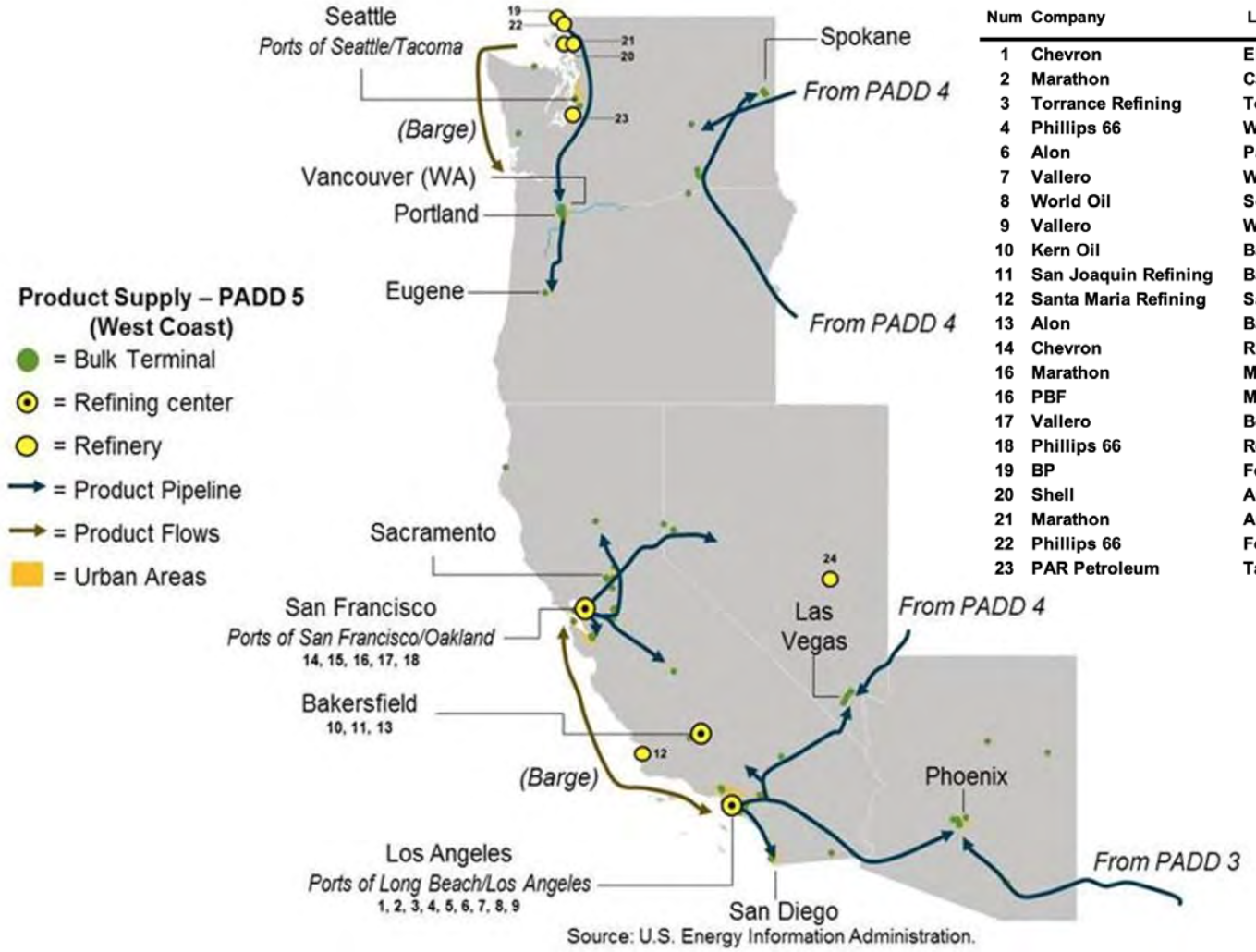
The Marathon (2020) and Phillips (2023) refinery closures will reduce PM emissions by more than that contemplated by Rule 6-5, without an adverse effect on air quality due to increased vessel traffic.

SECTION 1a:

Current status and outlook for supply and demand of California petroleum products

Historically with all refineries running, CA refineries have produced…

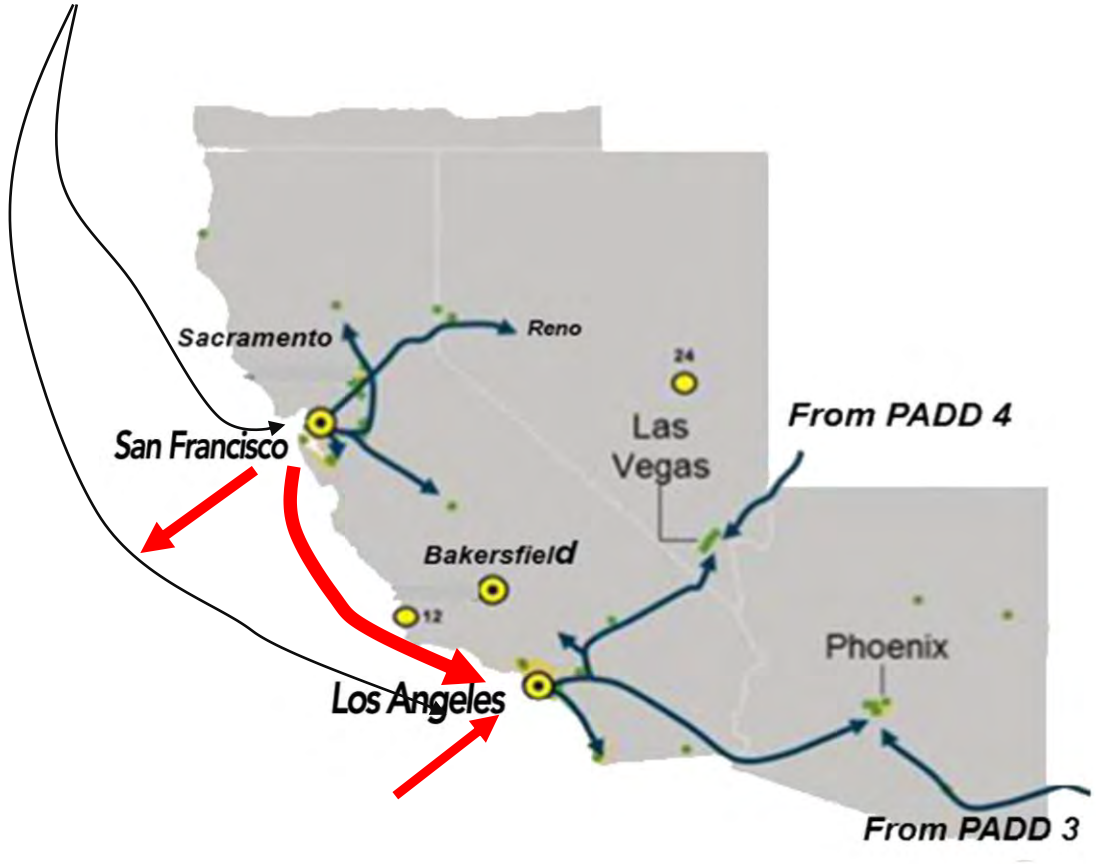
1. An excess of diesel than needed to meet demands (long)
2. But not enough gasoline and jet fuel (short)



Num	Company	Location	Capacity (bbls/day)
1	Chevron	El Segundo	269,000
2	Marathon	Carson	363,000
3	Torrance Refining	Torrance	160,000
4	Phillips 66	Wilmington	139,000
6	Alon	Paramount	idle
7	Vallero	Wilmington	85,000
8	World Oil	South Gate	8,500
9	Vallero	Wilmington	6,300
10	Kern Oil	Bakersfield	26,000
11	San Joaquin Refining	Bakersfield	15,000
12	Santa Maria Refining	Santa Maria	idle
13	Alon	Bakersfield	idle
14	Chevron	Richmond	245,271
16	Marathon	Martinez	idle
16	PBF	Martinez	156,400
17	Vallero	Benecia	145,000
18	Phillips 66	Rodeo	120,200
19	BP	Ferndale	242,000
20	Shell	Anaortes	145,000
21	Marathon	Anaortes	119,000
22	Phillips 66	Ferndale	102,000
23	PAR Petroleum	Tacoma	40,700

SF refineries produce more transportation fuels than NoCal & Reno need; LA refineries do not produce enough for SoCal, AZ & NV.

Product Demand (CA, AZ, NV) in KBD	2019			
	Gas	Jet	Diesel	Total
Northern CA				
Demand	404	102	153	659
Biofuels Supplied	43	0	25	68
Production	410	109	180	699
Net (Long) Short	(49)	(7)	(52)	(108)
Foreign Imports	9	1	1	11
From PNW	8	0	0	8
From SoCA	(20)	(5)	0	(25)
Foreign Exports	(46)	(3)	(53)	(102)
Total (Out) In	(49)	(7)	(52)	(108)
Southern CA				
Demand	684	270	198	1152
Biofuels Supplied	58	0	29	87
Production	544	191	171	906
Net (Long) Short	82	79	(2)	159
Foreign Imports	**43**	**40**	**1**	84
From PNW	20	40	0	60
From NoCA	20	5	0	25
Foreign Exports	(1)	(6)	(3)	(10)
Total (Out) In	82	79	(2)	159



Sources: Stillwater analysis, EIA data, CEC LPP Movements

SF was 108 KBD long product pre-COVID. Refiners export gasoline and diesel to balance supply.

SF Bay marine traffic for ships or barges to load and/or offload crude oil, feedstocks, or products was in excess of 2500.

Facility	Vessel calls	
	Ship	Barge
CHEVRON RICHMOND	420	325
TESORO, AMORCO-MARTINEZ [1]	94	0
TESORO, AVON-MARTINEZ	51	3
VALERO BENICIA	94	73
SHELL MARTINEZ	79	112
PHILLIPS 66 RODEO	84	118
PHILLIPS 66 RICHMOND	171	130
Sub-total Refineries	993	761
TRANSMONTAIGNE -MTZ	61	65
SHORE TERMINALS	48	14
TRANSMONTAIGNE RICH	30	200
IMTT, RICHMOND	3	321
RICHMOND PRODUCTS	15	8
KINDER MORGAN	1	0
Sub-total third party terminals	**158**	**608**
TOTAL	**1151**	**1369**

Source: Stillwater analysis, CA State Lands Commission data.

1. Tesoro Terminals subsequently purchased by Marathon in 2019.

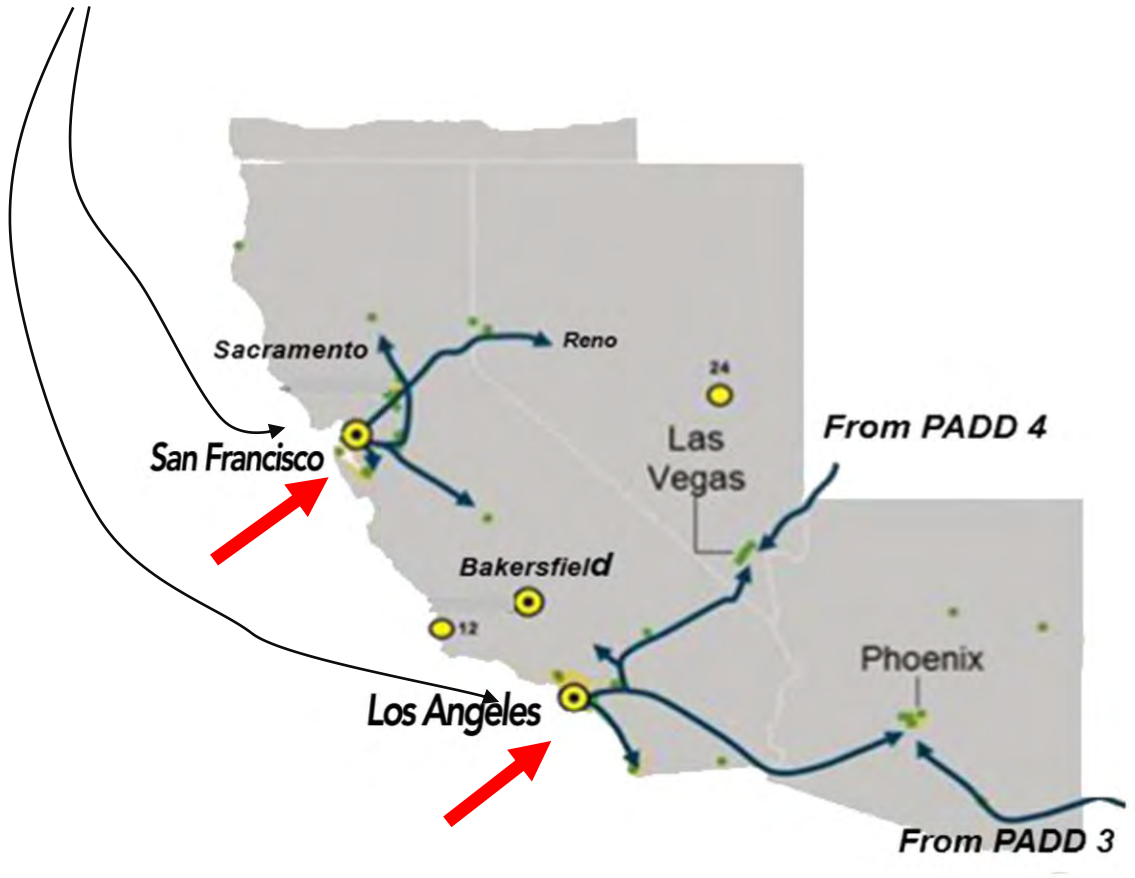
Several factors will impact the future:

1. How long to recover demand lost by the pandemic?
2. Increased displacement of diesel by BD & RD (This is projected to increase from 54 KBD in 2019 to 124 KBD in 2023 to 147 kbd in 2026).
3. How fast do EVs increase penetration into the light and heavy-duty vehicle markets?
4. Does sustainable aviation fuel (SAF) begin to materially displace petroleum jet fuel?
5. What other regulations are implemented impacting refiners and/or product markets?
6. How do consumer's travel habits change? These include commuting, air and road travel.
7. How do consumer's purchasing habits change? Do trips to local stores continue to be displaced by on-line orders that require delivery?

There are many factors that add to uncertainties in the market.

By 2023, loss in production from refinery closures will more than offset demand erosion and biofuels growth, so NoCal will net short products.

Product Demand (CA, AZ, NV) in KBD		2023			
		Gas	Jet	Diesel	Total
Northern CA					
	Demand	371	94	160	625
	Biofuels Supplied	38	0	55	93
	Production	282	98	115	495
	Net (Long) Short	51	(4)	(10)	37
	Foreign Imports	16	0	0	16
	From PNW	32	0	0	32
	From SoCA	5	(2)	0	3
	Foreign Exports	(2)	(2)	(10)	(14)
	Total (Out) In	51	(4)	(10)	37
Southern CA					
	Demand	628	255	195	1079
	Biofuels Supplied	58	0	59	117
	Production	553	214	158	925
	Net (Long) Short	17	41	(22)	37
	Foreign Imports	**12**	**43**	**0**	55
	From PNW	10	2	0	12
	From NoCA	(5)	2	0	(3)
	Foreign Exports	0	(6)	(22)	(28)
	Total (Out) In	17	41	(22)	36



Sources: Stillwater analysis, EIA data, CEC LPP Movements

P66 and Marathon closures make both NoCal and SoCal short after recovery from COVID.

By 2026, continued demand declines cause NoCal to become balanced and SoCal to become less short.

Product Demand (CA, AZ, NV) in KBD		2026			
		Gas	Jet	Diesel	Total
Northern CA					
	Demand	345	104	158	607
	Biofuels Supplied	37	0	73	110
	Production	302	108	85	495
	Net (Long) Short	6	(4)	0	2
	Foreign Imports	0	0	0	0
	From PNW	10	4	10	24
	From SoCA	0	(6)	0	(6)
	Foreign Exports	(4)	(2)	(10)	(16)
	Total (Out) In	6	(4)	0	2
Southern CA					
	Demand	588	272	199	1059
	Biofuels Supplied	56	0	74	130
	Production	530	243	134	907
	Net (Long) Short	2	29	(9)	22
	Foreign Imports	**2**	**37**	**0**	39
	From PNW	10	6	0	16
	From NoCA	0	6	0	6
	Foreign Exports	(10)	(20)	(9)	(39)
	Total (Out) In	2	29	(9)	22

Sources: Stillwater analysis, EIA data, CEC LPP Movements

...pressuring refining cracks and margins.

SECTION 1b

Likely impact of the BAAQMD Rule 6-5 on SF Bay, California and West Coast petroleum products

BAAQMD Rule 6-5 Summary

1. Emissions from petroleum refinery fluidized catalytic cracking units total approximately 825 tons per year of $PM_{10.}$
2. These emissions contribute to approximately 50 percent of all refinery PM_{10} emissions, represent approximately 17 percent of PM_{10} emissions from all inventoried stationary sources at facilities with Air District permits,
3. …but 3 percent of all human-made PM_{10} emissions in the Bay Area.
4. BAAQMD Staff estimate that implanting wet gas scrubbing on the impacted refineries would reduce PM_{10} emissions by 493 tons per year.

Table 1 – Particulate Matter Emissions from Petroleum Refinery Fluidized Catalytic Cracking Units by Facility

Facility	FCCU Fresh Feed Capacity (barrels per day)[26]	PM_{10} (tons per year)	$PM_{2.5}$ (tons per year)
Chevron Products Richmond[a]	80,000	245	229
Marathon Martinez Refinery[b,c]	*70,000*	*190*	*190*
PBF Martinez Refinery[a]	67,400	309	300
Valero Benicia Refinery[d]	72,000	81	81
Total[e]	**289,400**	**825**	**800**

[a] Emissions based on reported 2018 facility emissions inventory for total PM.
[b] Reported 2018 facility emissions inventory only included filterable PM. Emissions shown here are based on average 2020 source test emission rate data for total PM. $PM_{2.5}$ emissions were assumed to be equal to PM_{10} emissions.
[c] The Marathon Martinez Refinery announced the idling of the refinery, including the facility's fluidized catalytic cracking unit, in April 2020. Marathon announced in July 2020 that the facility would remain indefinitely idled with no plans to restart.
[d] Reported 2018 facility emissions inventory only included filterable PM. Emissions shown here are based on average 2016-2019 source test emission rates data for total PM at flue gas scrubber stack, which includes combined emissions from Valero's fluidized catalytic cracking unit and coker unit. $PM_{2.5}$ emissions were assumed to be equal to PM_{10} emissions.
[e] Total figures shown include the Marathon Martinez Refinery, which was idled in April 2020 and remains indefinitely idled.

Source: TAFF REPORT Proposed Amendments to Regulation 6, Rule 5: Particulate Emissions from Petroleum Refinery Fluidized Catalytic Cracking Units, March 2021

BAAQMD Rule 6-5 Summary (cont'd)

5. The two impacted refineries estimate the cost to be $2.2 billion - $1.4 billion for Chevron and $0.8 billion for PBF to achieve a 400 ton per year reduction in PM10.
6. However, PM_{10} emissions in the SF Bay have already been favorably impacted by Marathon's Martinez closure, and will again in 2023 by Phillips' Rodeo closure, both well in advance of the results from Rule 6-5.
7. Based on BAAQMD Staff data that FCCs represent 50% of refinery emissions, it is estimated that Marathon closure reduced PM10 by 2 x 190, or 380 tons per year.
8. Using BAAQMD 2011, it is estimated that the Phillips closure will reduce PM_{10} by an additional 150 tons per year, starting in 2023.

The shutdown of Marathon and planned closure of Phillips 66 will reduce PM_{10} by more than that estimate for Rule 6-5, and years before.

IMPACT OF BAAQMD Rule 6-5 AMENDMENTS

1. If implemented the BAAQMD Rule 6-5 will disadvantage the two impacted refineries vs the sole unaffected SF refinery, and none of the LA or PNW refineries.

2. Impacted refineries have little alternatives - install BACT or close, a partial operation with no FCC/Ally, minimum crude and gas oil sales is unlikely.

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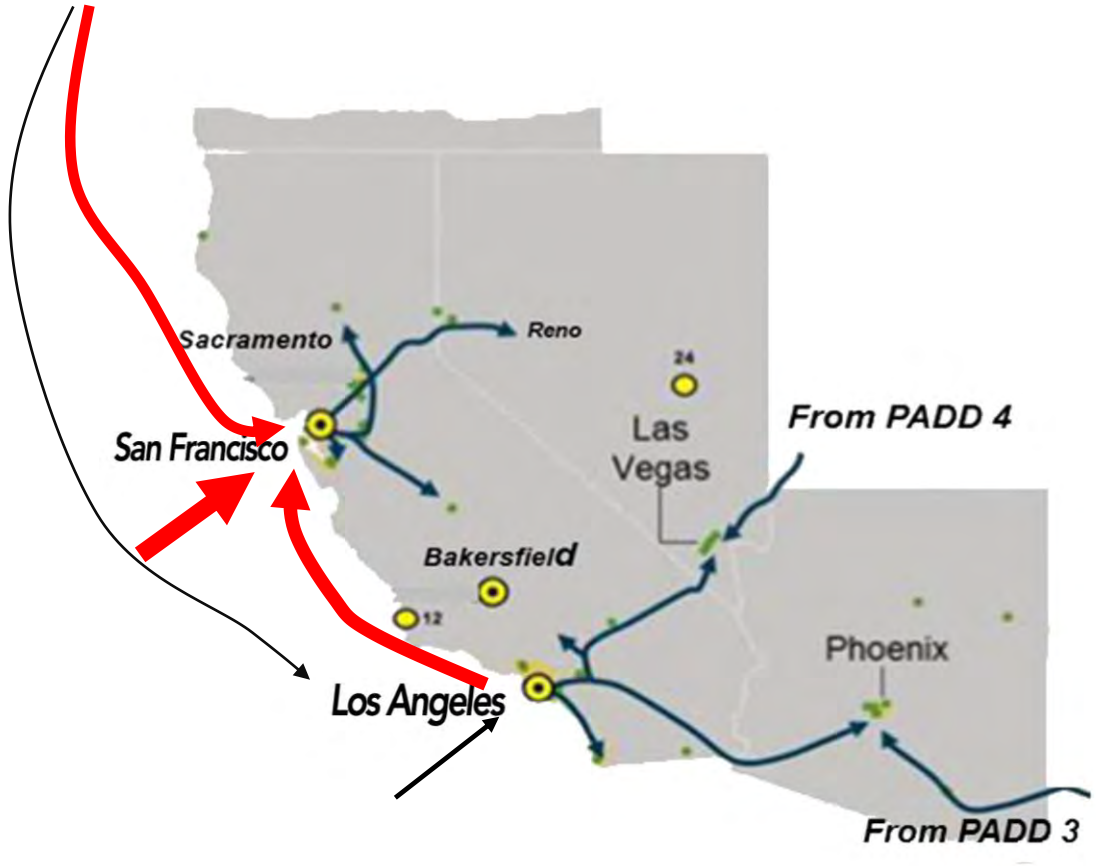
What happens if these refineries close?

PBF & Chevron closures result in the SF Bay and the entire West Coast short products

Product Demand (CA, AZ, NV) in KBD	2026 w/o Chev & PBF			
	Gas	Jet	Diesel	Total
Northern CA				
Demand	345	104	158	607
Biofuels Supplied	37	0	73	110
Production	95	20	25	140
Net (Long) Short	213	84	60	357
Foreign Imports	125	80	30	235
From PNW	38	12	30	80
From SoCA	50	(6)	0	44
Foreign Exports	0	(2)	0	(2)
Total (Out) In	213	84	60	357
Southern CA				
Demand	588	272	199	1059
Biofuels Supplied	56	0	74	130
Production	570	213	134	917
Net (Long) Short	(38)	59	(9)	12
Foreign Imports	**6**	**47**	**0**	53
From PNW	16	6	0	22
From NoCA	(50)	6	0	(44)
Foreign Exports	(10)	0	(9)	(19)
Total (Out) In	(38)	59	(9)	12

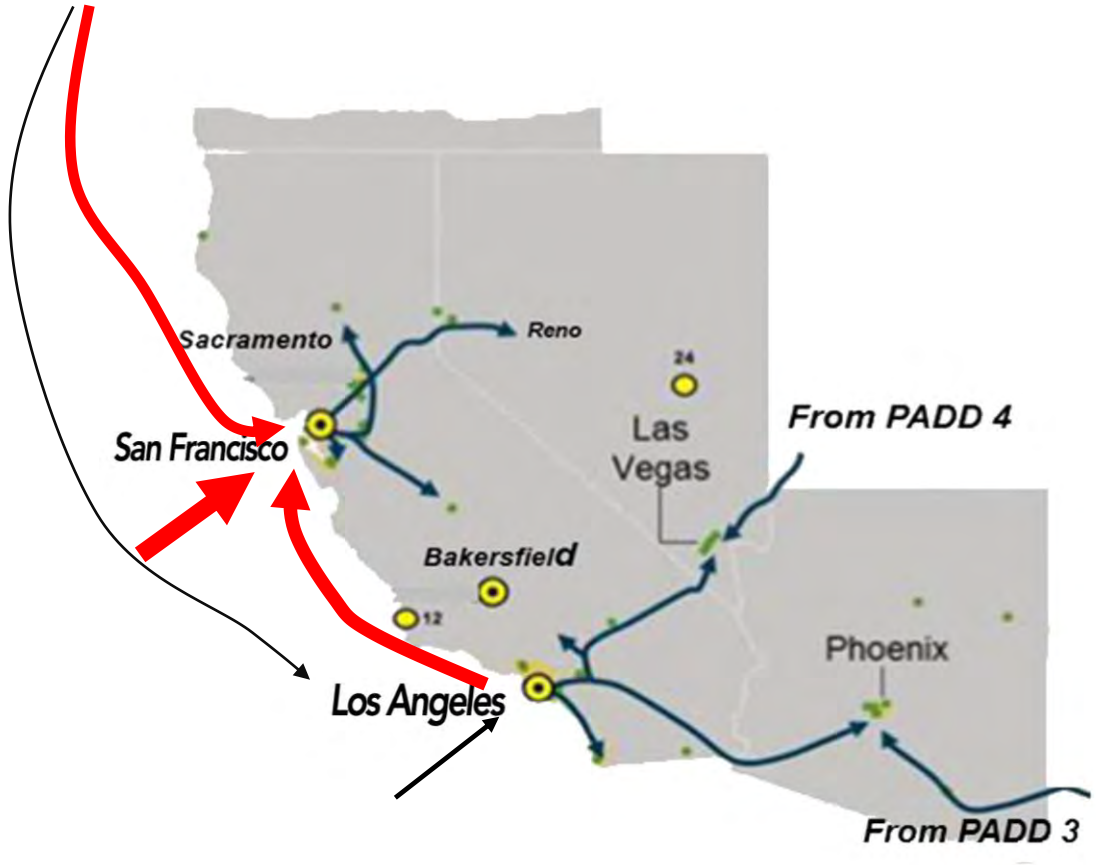
Sources: Stillwater analysis, EIA data, CEC LPP Movements



...requiring a significant increase in foreign product imports.

These shutdowns will increase foreign and domestic products shipped into the SF Bay by 355 KBD

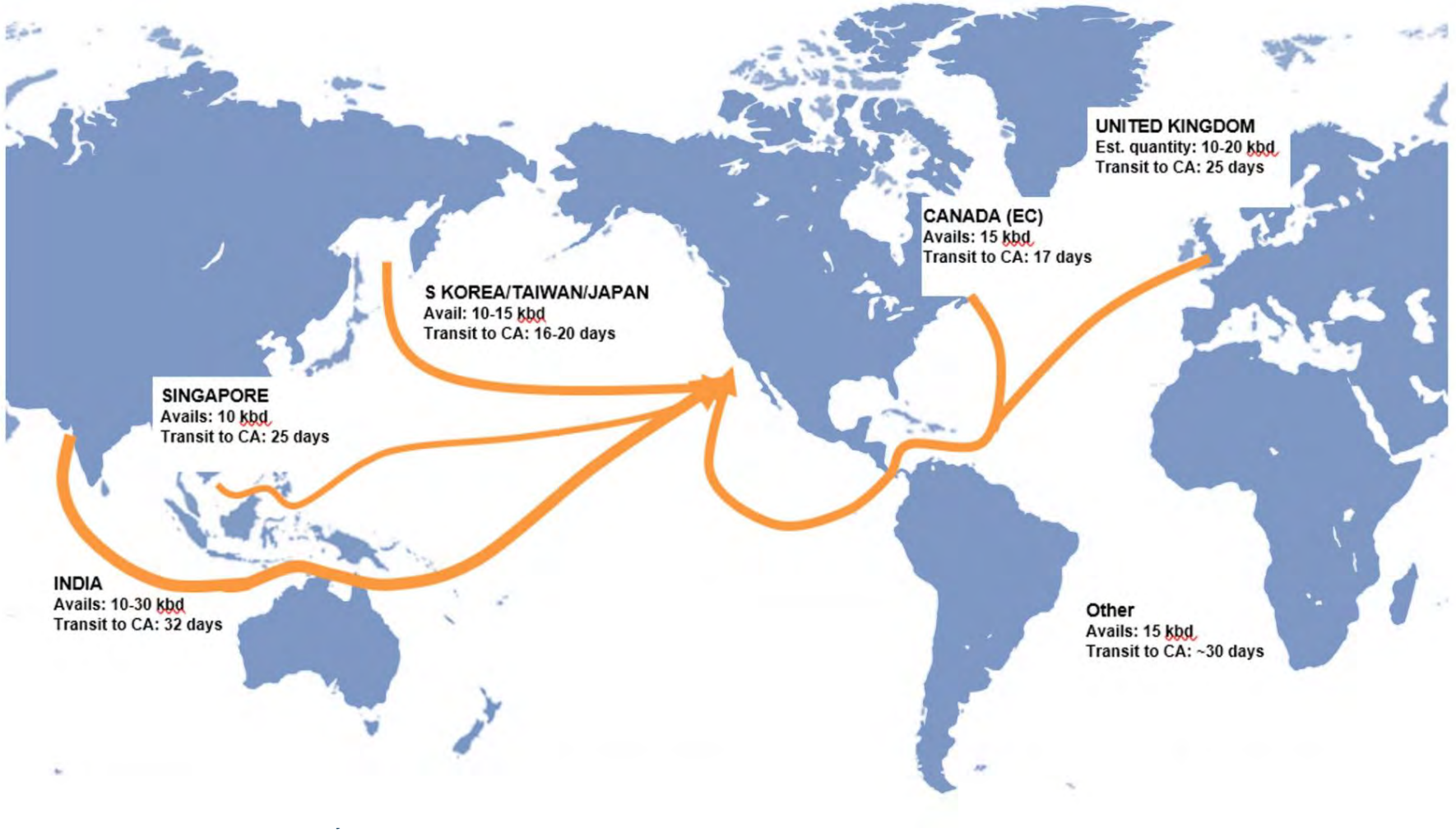
Product Demand (CA, AZ, NV) in KBD		2026 w/o Chev & PBF vs 2026			
		Gas	Jet	Diesel	Total
Northern CA					
	Demand	0	0	0	0
	Biofuels Supplied	0	0	0	0
	Production	(207)	(88)	(60)	(355)
	Net (Long) Short	207	88	60	355
	Foreign Imports	125	80	30	235
	From PNW	28	8	20	56
	From SoCA	50	0	0	50
	Foreign Exports	4	0	10	14
	Total (Out) In	207	88	60	355
Southern CA		0	0	0	0
	Demand	0	0	0	0
	Biofuels Supplied	0	0	0	0
	Production	40	(30)	0	10
	Net (Long) Short	(40)	30	0	(10)
	Foreign Imports	4	10	0	14
	From PNW	6	0	0	6
	From NoCA	(50)	0	0	(50)
	Foreign Exports	0	20	0	20
	Total (Out) In	(40)	30	0	(10)



Sources: Stillwater analysis, EIA data, CEC LPP Movements

…which results in a sizeable increase in both long-haul volumes and SF Bay vessel traffic.

The required supply lines especially for gasoline will move from local to Asia with long in transit time



...exposing the SF Bay to supply disruptions and outages.

Compared to 2026 with Chevron and PBF in operation, SF Bay marine oil traffic will increase significantly - by 358 per year

Volumes in KBD	2026 Crude Input	by Pipeline	by Marine	w/o Chevron & PBF	Change	Vessel Capacity KB	Annual Vessel Calls
CRUDE							
Chevron Richmond	226	0	226	idle	(226)	600	(137)
PBF Martinez	144	70	74	idle	(74)	350	(77)
Total Crude	370	70	300	0	(300)		(214)
REFINED PRODUCT							
Foreign Imparts			0	235	235		
From PNW			24	80	56		
From SoCA			(6)	44	50		
Foreign Exports			(16)	(2)	14		
Total Products (Out) In			2	357	355		
Tankers in			0	235		320	268
Tankers Out			18	2		320	(18)
Barges in			6	132		120	383
Barges out			24	6		120	(55)
Total Products							578
					Increase/(decrease) Vessel Calls		363

Source: Stillwater analysis

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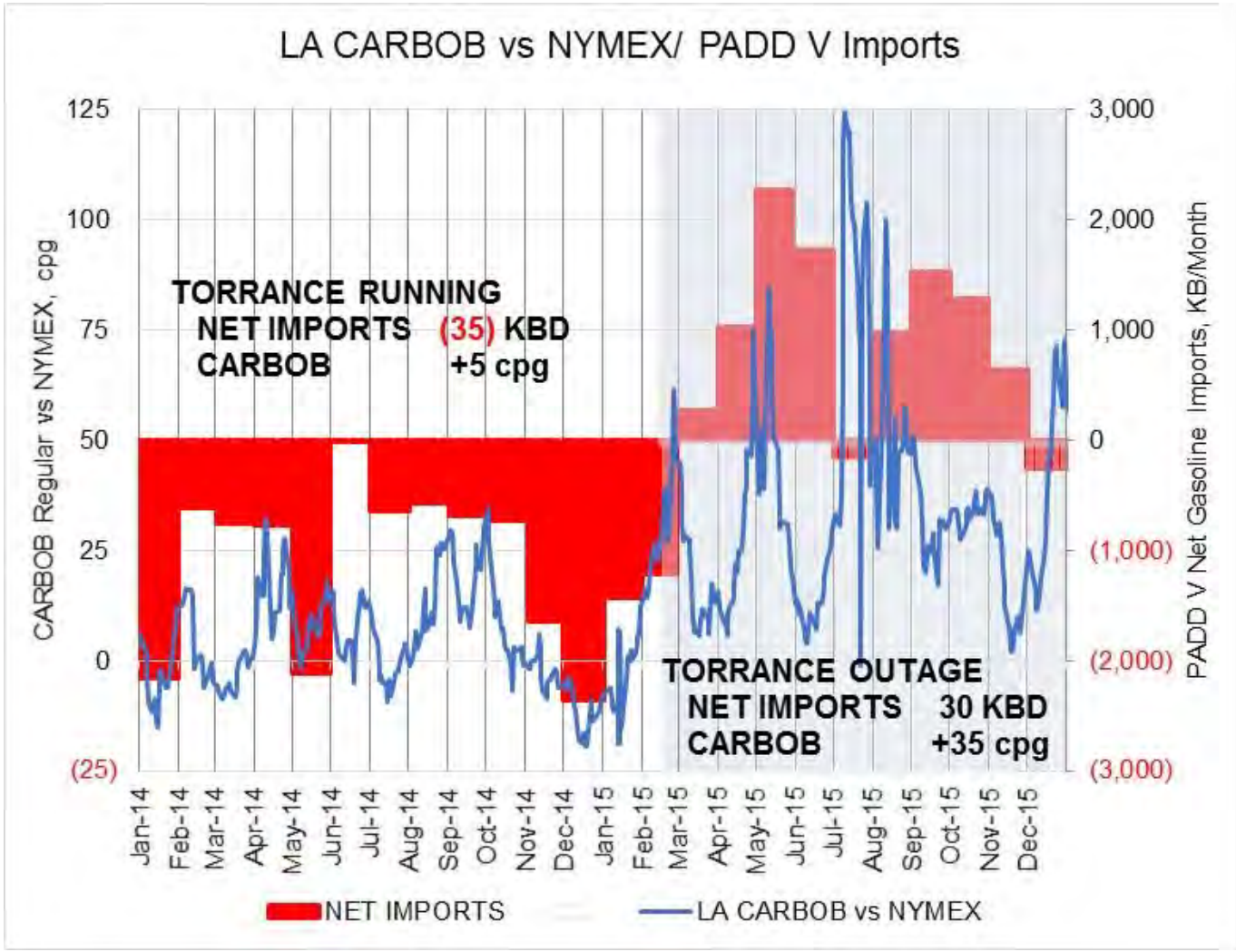
…nearly five times the proposed increase of 76 due to Phillips MOT permit request (on hold).

By comparison, ExxonMobil's 2015/16 Torrance outage flipped PADD 5 gasoline supply/demand from long to short, increasing net imports by only 65 KBD



Source: Stillwater analysis, OPIS, EIA data

78 …increasing spot prices by +30 cpg to attract imports.

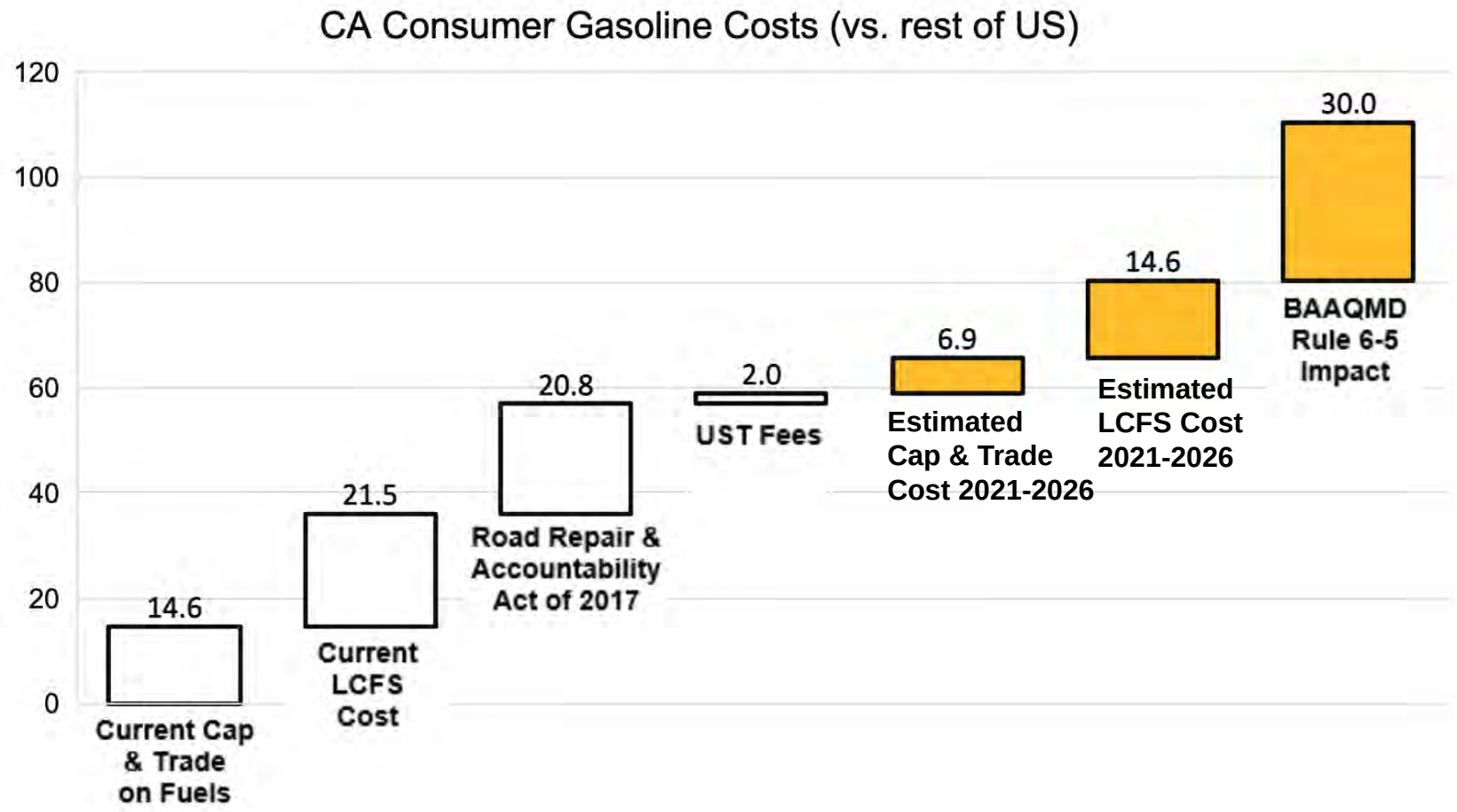
CA consumers will pay the price, to the tune of $6.7B annually

79 …and impact consumers in Washington, Oregon, and Nevada.

SECTION 1c

Other likely or currently contemplated regulations that would significantly worsen the costs to CA consumers

The cost to CA consumers is already considerable (60 cpg) and will increase by an additional 52 cpg with this rule.



SECTION 1d

Summary

Summary & Highlights – Refined Products

1. Demand for California transportation fuels was decimated by COVID.
2. While demand for transportation fuels has been recovering, several factors will combine to put pressure on refined product demand, and ergo financial performance.
3. With the closure of Marathon Martinez (2020) and Phillips Rodeo (2023) SF Bay refineries, the market will be short in 2023, but balanced to long with subsequent demand erosion.
4. The idling of Marathon and Rodeo will reduce PM_{10} by more than contemplated by BAAQMD Rule 6-5.
5. Rule 6-5 will exert additional pressure on the impacted refineries in SF (Chevron and PBF), that will likely close rather than install BACT.

6. With only one remaining operating refinery in SF (Valero Benicia), SF will be significantly short refined products, more than any time ever for any enclave on the West Coast.
7. To balance, supply will shift to an enormous volume of foreign imports from Asia, that will increase delivery lead times from a matter of days, to weeks or months and increasing vessel traffic, a serious concern over the past years for BAAQMD.

Product Demand (CA, AZ, NV) in KBD	2019			2023			2026			2026 w/o CH & PBF		
	Gas	Jet	Diesel	Gas	Jet	Diesel	Gas	Jet	Diesel	Gas	Jet	Diesel
North CA												
Demand	404	102	153	371	94	160	345	104	158	345	104	158
Biofuels Supplied	43	0	25	38	0	55	37	0	73	37	0	73
Production	410	109	180	282	98	115	302	108	85	95	20	25
Net (Long) Short	**(49)**	**(7)**	**(52)**	**51**	**(4)**	**(10)**	**6**	**(4)**	**0**	**213**	**84**	**60**
Southern CA												
Demand	684	270	198	628	255	195	588	272	199	588	272	199
Biofuels Supplied	58	0	29	58	0	59	56	0	74	56	0	74
Production	544	191	171	553	214	158	530	243	134	570	213	134
Net (Long) Short	**82**	**79**	**(2)**	**17**	**41**	**(22)**	**2**	**29**	**(9)**	**(38)**	**59**	**(9)**
Total California												
Demand	1088	372	351	999	350	355	934	376	357	934	376	357
Biofuels Supplied	101	0	54	96	0	114	93	0	147	93	0	147
Production	954	300	351	835	312	273	832	351	219	665	233	159
Net (Long) Short	**33**	**72**	**(54)**	**68**	**38**	**(32)**	**9**	**25**	**(9)**	**176**	**143**	**51**

Summary & Highlights – Refined Products (cont'd)

Summary & Highlights – Refined Products (cont'd)

8. The level of imports will shift from crude to products, increasing SF Bay vessel traffic by 358 per year, (+14% vs 2019), straining marine oil terminals (MOT) capacity, and expose the Northern California supply system to outage, particularly during turnarounds or outages of the Valero refinery.
9. By comparison, ExxonMobil's 2015/16 Torrance outage flipped PADD 5 gasoline supply/demand from long to short, increasing foreign imports by only 65 KBD – driving prices up statewide.
10. BAAQMD staff expects that Valero will make a small investment to upgrade its existing wet gas scrubber to comply with new limits contemplated. However, should this not be feasible, it is likely demands may not be met.
11. And the CA consumer will pay the price - to the tune of $6.7 billion annually.

The Marathon (2020) and Phillips (2023) refinery closures will reduce PM emissions by more than that contemplated by Rule 6-5, without an adverse effect on air quality due to increased vessel traffic.


Stillwater Associates
...experience runs deep

Appendix

SF Bay Marine Oil Terminals (MOTs)

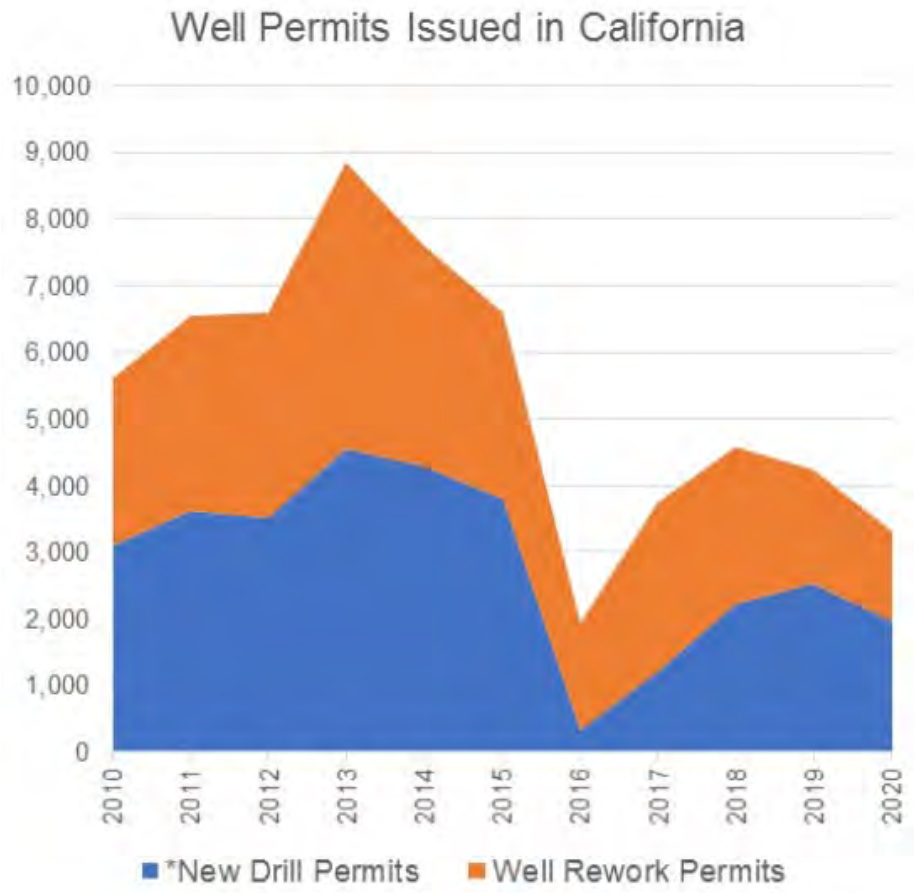
Marine Oil Terminals (MOTs) in the Bay Area					
Location	**Name**	**Berth**	**Products Storage**	**Connections to distribution**	**Utilization**
Pittsburg	Bay Bulk	1	None	Roadways, pipeline, truck rack	PetCoke
Richmond	BP Lubricants	1	None	Roadways, pipeline, truck rack	Petro Lube Oils
Richmond	BP West Coast	1	None	Roadways, pipeline, truck rack	Petro Lube Oils
Richmond	California Oils	1	Yes-Liquid Bulk	Roadways, pipeline, truck rack, rail	Petro Lube Oils
Richmond	Chevron Longwarf	4	None	Roadways, pipeline, truck rack, rail	Petro Lube Oils
Richmond	ConocoPhillips	1	None	Roadways, pipeline, truck rack, rail	Petro Lube Oils
Richmond	IMTT	1	Yes-Liquid Bulk	Roadways, pipeline, truck rack, rail	Bulk Liquid Storage
Richmond	Kinder Morgan	1	Yes-Liquid Bulk	Roadways, pipeline, truck rack, rail	CARB, CARB ULSD, Ehanol
Richmond	Levin Richmond Terminal Corp	1	None	Roadways, pipeline, truck rack, rail	Bulk Liquid Storage, Bauxite, Petcoke, Coal, Scrap Metal, Ores
Martinez	Marathon Amorco	1	Yes-Liquid Bulk	Roadways, truck rack, rail	Auto, Petcoke
Martinez	Marathon Avon	1	None	Roadways, truck rack, rail	Petcoke
Selby	NuStar Energy	1	None	Roadways, truck rack, rail	Gasoline, gasoline blend stocks, jet fuel, aviation gas, MTBE, ethanol, JP-5, JP-8.
Richmond	Pacific Atlantic Terminals	1	None	Roadways, truck rack, rail	Petroleum Products
Martinez	PBF Energy	1	None	Roadways	Petroleum Products
Rodeo	Phillips 66	1	Yes	Roadways, pipeline, truck rack, rail	Gasoline, diesel & aviation fuel, PetCoke, Sulfur
Martinez	Transmontaigne	1	None	Roadways	Crude oil, finished products
Benicia	Valero Dock	1	Yes		Jet, diesel, asphalt, CARB

Source: Morgan Shipping, SFO Marine Oil Terminal Port Listing

Appendix B

Stillwater Commentary on CA Crude Supply

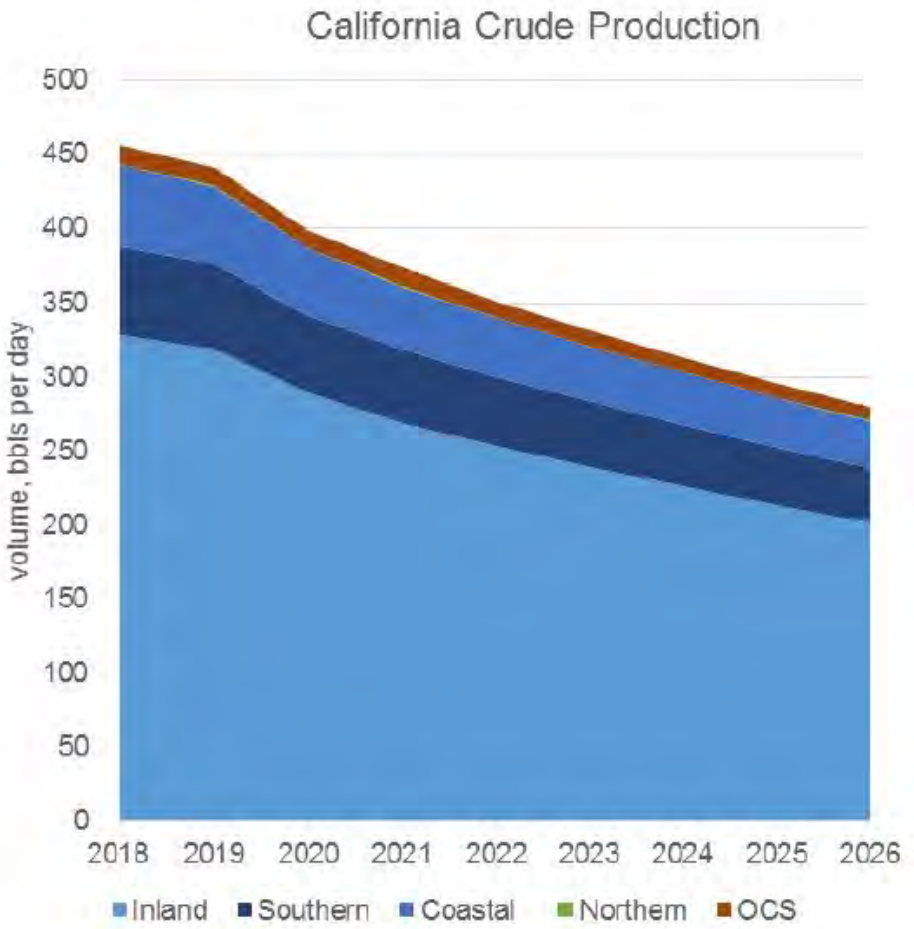
- **Instate crude production peaked in 1985**
  - Since then, reductions have averaged ~3% annually
  - More recent production declines have accelerated to 5.5% and 6%
- **Approval of new well permits has also been declining**
  - Dropped 22% from 2019 to 2020



Source: Stillwater Associates Analysis, FracTracker Alliance, CalGEM data

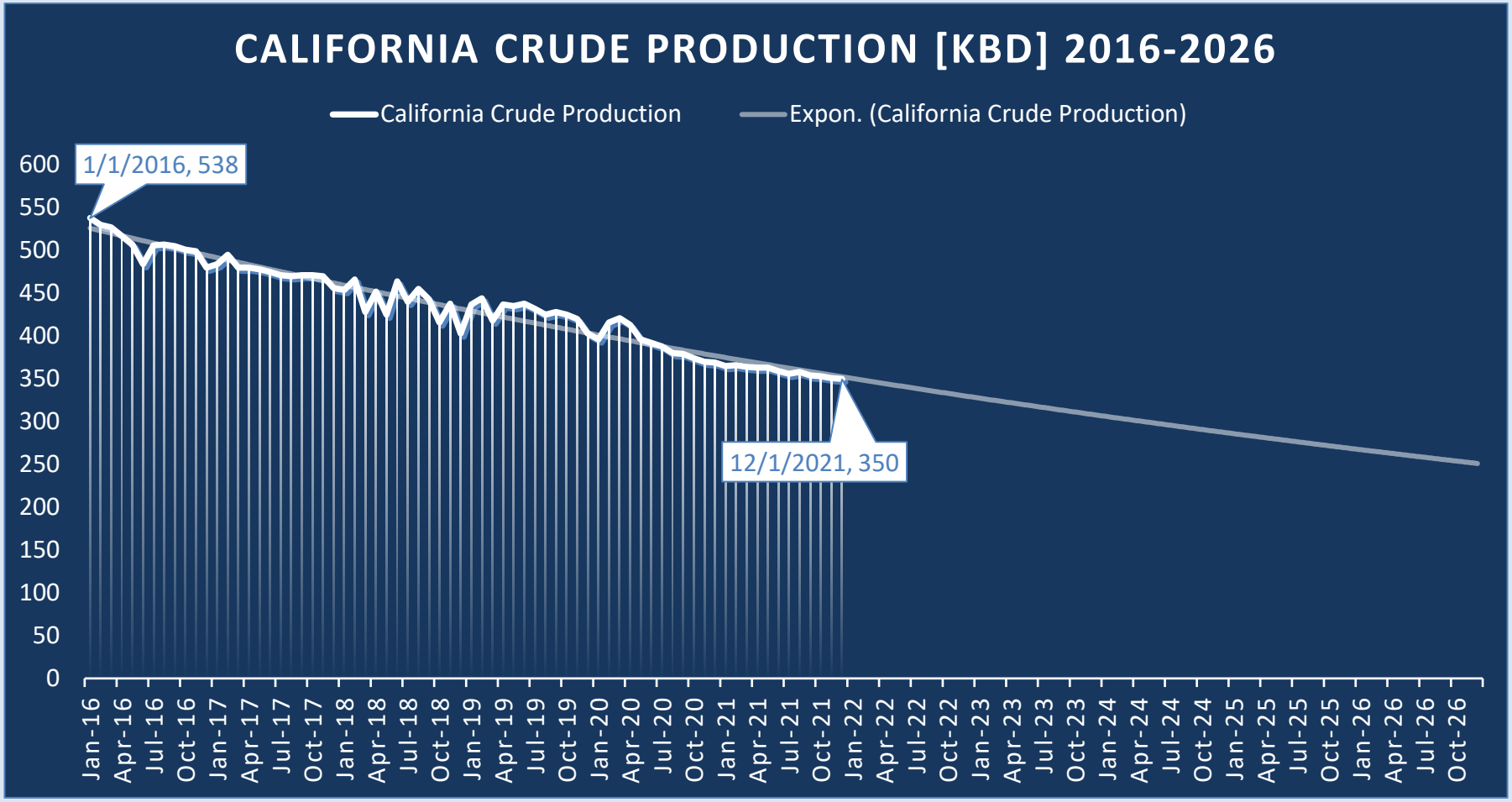
Stillwater Forecast on CA Crude Supply

- **Production will continue to decrease at its recent 5.5% to 6% pace**
  - Forecasting 300 KBD average in 2025



Source: Stillwater analysis, CA Department of Conservation, EIA data

Significant Decline in California Crude Production



Growing Concerns for California's Economy

State mandates and regulations are severely impacting California's fuel supply chain and could lead to a near-term fuel supply crisis with potentially significant economic impacts

Prepared for Governor Newsom's Staff
January 27, 2022

PBF Energy Safe Harbor Statements

This presentation contains forward-looking statements made by PBF Energy Inc. ("PBF Energy"), the indirect parent of PBF Logistics LP ("PBFX," or "Partnership," and together with PBF Energy, the "Companies," or "PBF"), and their management teams. Such statements are based on current expectations, forecasts and projections, including, but not limited to, anticipated financial and operating results, plans, objectives, expectations and intentions that are not historical in nature. Forward-looking statements should not be read as a guarantee of future performance or results and may not necessarily be accurate indications of the times at, or by which, such performance or results will be achieved.

Forward-looking statements are based on information available at the time and are subject to various risks and uncertainties that could cause the Companies' actual performance or results to differ materially from those expressed in such statements. Factors that could impact such differences include, but are not limited to, changes in general economic conditions; volatility of crude oil and other feedstock prices; fluctuations in the prices of refined products; the impact of disruptions to crude or feedstock supply to any of our refineries, including disruptions due to problems with third party logistics infrastructure; effects of litigation and government investigations; the timing and announcement of any potential acquisitions and subsequent impact of any future acquisitions on our capital structure, financial condition or results of operations; changes or proposed changes in laws or regulations or differing interpretations or enforcement thereof affecting our business or industry; actions taken or non-performance by third parties, including suppliers, contractors, operators, transporters and customers; adequacy, availability and cost of capital; work stoppages or other labor interruptions; operating hazards, natural disasters, weather-related delays, casualty losses and other matters beyond our control; inability to complete capital expenditures, or construction projects that exceed anticipated or budgeted amounts; ability to consummate potential acquisitions, the timing for the closing of any such acquisition and our plans for financing any acquisition; unforeseen liabilities associated with any potential acquisition; inability to successfully integrate acquired refineries or other acquired businesses or operations; effects of existing and future laws and governmental regulations, including environmental, health and safety regulations; and, various other factors. Forward-looking statements reflect information, facts and circumstances only as of the date they are made. The Companies assume no responsibility or obligation to update forward-looking statements to reflect actual results, changes in assumptions or changes in other factors affecting forward-looking information after such date.

PBF in California

Major Assets

- Martinez & Torrance Refineries
  - ~25% of California's refining capacity
  - Largest processors of CA crudes
  - Products: gasoline, diesel, marine fuels & jet fuel
- Pipelines & Terminals – HQs in Cerritos
- Commercial Operations – HQs in Long Beach

1,350 Employees

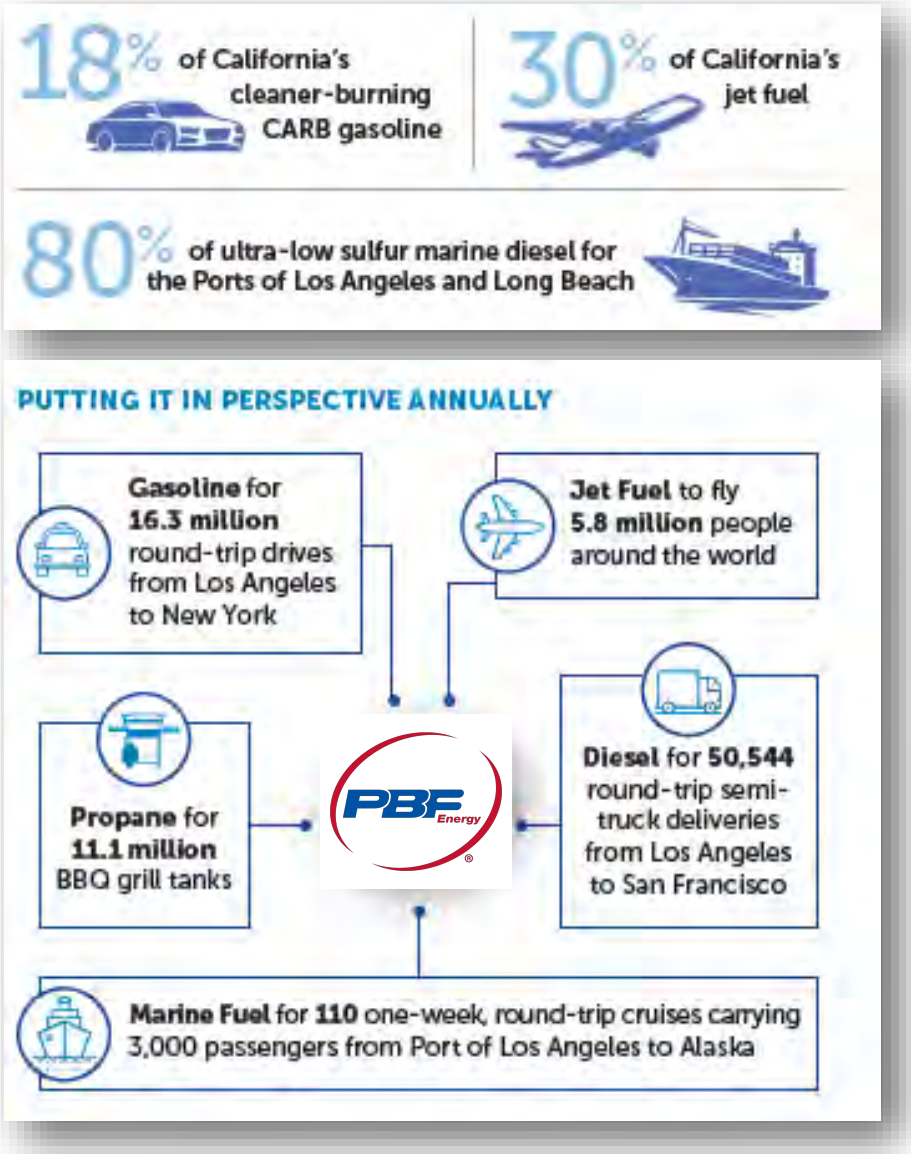
- ~70% represented by Unions

650 Contractors Daily

- Primarily California Building Trades
- Increase to 1,800+/- during turnarounds

~$1.1 Billion Annual Budget

- Operating Expense & Capital Investments
- This amount is exclusive of what is spent on crudes and feeds for processing



Shifting Supply Dynamics

Historically, in-state refining production was sufficient to meet California drivers' needs

- Northern California's five refineries produced a gasoline surplus
- Southern California operates with a supply/demand shortfall
- Gasoline was shipped from Northern California refineries to Southern California ports
  - Supports the persistent regional shortage
- CARB specification gasoline and supply chain challenges limited out-of-state supplies

Today, California has a gasoline supply shortage

- Marathon Martinez refinery closure in 2020 reduced gasoline production
- Northern California refineries must cover their own regional demand
- Southern California market now depends on imports from foreign refineries to meet demand

2023: California's gasoline shortage will worsen

- Phillips 66 Rodeo and Santa Maria are scheduled to shut down
  - Ceasing CARB gasoline and CARB diesel production
  - Converting and re-starting Rodeo to renewable diesel production in 2024
- State will become short ~2,000,000 gallons of gasoline daily *(Stillwater)*

Key Takeaway:

- **California has a fuel supply shortage and is becoming increasingly more reliant on foreign imports to make up for the shortfall of in-state refined fuel, which could cost motorists more at the pump**

California's Fuel Shortage Could Become a Near-Term Crisis

Essential Investments Are At Risk

- To keep refineries operating safely and reliably, companies need to invest hundreds of millions of dollars annually in significant planned maintenance projects called "turnarounds"
  - These investments are made to continue refinery operations for a period of 3 – 5 years

- California's aspirational goals, combined with significant existing and anticipated regulatory costs, is making it difficult for refiners and their investors to justify upcoming necessary capital expenditures, and risk creating stranded assets in the near-term
  - Business decisions are being made today as to whether companies will fund 2025 and 2028 turnarounds
  - Without these capital expenditures, refineries could be forced to cease operations
    - Marathon cited regulatory costs as contributing factors to shutting down its Martinez Refinery

Key Takeaway:

- **Regulatory policies being considered and implemented today are jeopardizing California's energy future because refiners are unable to justify huge investments based on uncertainty and lack of state support**

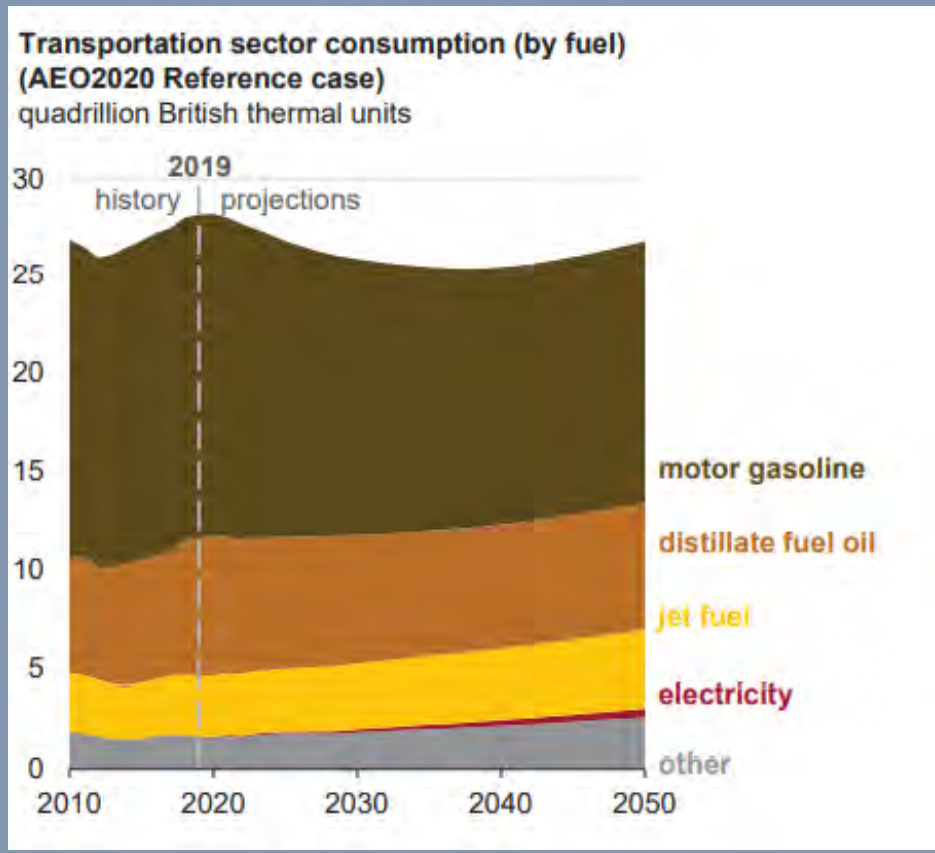
- **Without a plan to properly manage the energy transition, California's aspirations could lead to near-term, premature closures of, or significant reductions in fuel production from, in-state refineries, further increasing the state's exposure to potentially unreliable global supply chains impacting the existing fuel supply shortage, which could become a crisis**

- **This crisis will likely discourage other states/countries from adopting California's goals given the societal damage it could cause**

Californians Will Need Liquid Fuels For The Foreseeable Future

The state believes that reduced fuel demand will balance California's supply shortage; however:

- Gasoline demand has recovered from COVID-19 impacts
  - Above 2019 levels
- Jet fuel demand is normalizing faster than anticipated
  - LAX is ~85% of pre-pandemic levels
- Zero Emission Vehicle (ZEV) penetration is lagging
  - ZEV adoption would have to rapidly escalate to substantially reduce in-state fuel demand and related supply shortages
- Refiners must make gasoline to also make jet fuel and diesel
  - California's demand trajectory could likely mirror the U.S. Energy Information Administration's Reference Case (see chart at right)



U.S. Energy Information Administration

Key Takeaway:

- **Jeopardizing refining capacity without significant reductions in demand could increase social instability, job losses, environmental emissions, and fuel costs**

Near-Term Impacts of California's Emerging Fuel Supply Crisis

- **Consumer costs increase** when California produces less crude oil and gasoline leading to more imports, increasing costs that typically ripple through the supply chain, resulting in higher energy costs

- **Foreign countries benefit** at California's expense, creating jobs overseas in countries with lower labor standards, while transferring wealth and increasing the U.S. balance of trade

- **Emissions increases** because imported fuel is manufactured in countries with less stringent environmental controls (leakage) that must be shipped here (shuffling), often sitting in ports until the fuel can be brought onshore

- **Unreliable fuel supply:** Imported fuels are sold on open markets to the highest bidder and must be shipped to California
  - Shipping products from foreign countries requires 15 to 30 days of transit time
  - Increased reliance on foreign vessels for refined fuels is vulnerable to availability of vessels, weather that can disrupt vessel routes, and other logistical challenges
  - Relying on importing foreign fuels will leave California vulnerable to outside market forces, potential supply disruptions, and extreme price volatility

- **Increased port traffic** as fuel tankers traveling to California will have to wait at loading and discharge at limited terminating facilities, increasing criteria pollutants and worsening impacts to communities

- **Heightened vulnerability to in-state refinery outages**
  - Every refinery outage could make this scenario even worse, impacting those Californians who can least afford higher living costs the most

Averting a Crisis: California Requires a Feasible and Affordable Energy Transition Plan

We are not asking the Newsom Administration to abandon its goals, but to:

- Prevent premature refinery closures to minimize the potential for a near-term fuel supply crisis in California
- Avoid increased energy costs, which will most affect those who can least afford higher prices at the pump to get to work, school, etc.

We are asking for a rational energy transition plan that:

- All companies, including refiners, can use to make near-term and long-term investment decisions
- Is demand-driven and based on well-researched, accepted projections so the results are considered valid by reputable companies around the world