MEETING
STATE OF CALIFORNIA
AIR RESOURCES BOARD

ZOOM PLATFORM

CALIFORNIA ENVIRONMENTAL PROTECTION AGENCY
BYRON SHER AUDITORIUM
1001 I STREET
SACRAMENTO, CALIFORNIA

FRIDAY, NOVEMBER 18, 2022
8:36 A.M.

JAMES F. PETERS, CSR
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APPEARANCES

BOARD MEMBERS:
Liane Randolph, Chair
Sandra Berg, Vice Chair
John Balmes, MD
Hector De La Torre
John Eisenhut
Senator Dean Florez
Davina Hurt
Gideon Kracov
Tania Pacheco-Werner, PhD
Barbara Riordan
Supervisor Phil Serna
Professor Dan Sperling, PhD
Diane Takvorian

STAFF:
Steve Cliff, PhD, Executive Officer
Edie Chang, Deputy Executive Officer, Planning, Freight, and Toxics
Chanell Fletcher, Deputy Executive Officer, Environmental Justice
Annette Hébert, Deputy Executive Officer, Southern California Headquarters and Mobile Source Compliance
APPEARANCES CONTINUED

STAFF:
Edna Murphy, Deputy Executive Officer, Internal Operations
Rajinder Sahota, Deputy Executive Officer, Climate Change and Research
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Ellen Peter, Chief Counsel
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Heather Arias, Chief, TTD
Rhead Enion, Senior Attorney, Legal Office
Layla Gonzalez, Staff Air Pollution Specialist, Freight Activity Branch, TTD
Ajay Mangat, Manager, Freight Systems Section, TTD
Cory Parmer, Mobile Source Analysis Branch, Off-Road Diesel Analysis Section, Air Quality Planning and Science Division

ALSO PRESENT:
Yasmine Agelidis, Earthjustice
Tracy Alves, Modesto and Empire Traction Company
Jan Victor Andasan, East Yard Communities for Environmental Justice
Andrew Antwih, Southern California Regional Rail Authority (Metrolink)
Chuck Baker, American Short Line and Regional Railroad Association
Angie Balderas, Sierra Club
APPEARANCES CONTINUED

ALSO PRESENT:
Daniel Barad, Sierra Club California
William Barrett, American Lung Association
Kennan H. Beard, III, Sierra Northern Railway
Steve Birdlebough
Teresa Bui, Pacific Environment
Christopher Chavez, Coalition for Clean Air
Dave Cook, Rail Propulsion Systems
Eddy Cumins, Sonoma Marin Area Rail Transit
Beverly DesChaux, Electric Vehicle Association of California Central Coast
Oscar Garcia, Neste
Ma Carmen Gonzalez, The People's Collective for Environmental Justice
Mike Hart, Sierra Railroad
Jason Jewell, LOSSAN Rail Corridor Agency
Yassi Kavezade, Sierra Club My Generation
Lena Kent, Burlington Northern Santa Fe Railway Company
Bianca Lopez, Valley Improvement Projects
Marcos Lopez, East Yard Communities for Environmental Justice
Benjamin Luna
Ian MacMillan, South Coast Air Quality Management District
Bill Magavern, Coalition for Clean Air
Mark Mollineaux
APPEARANCES CONTINUED

ALSO PRESENT:

Anthony Molina, California Grain and Feed Association

Gem Montes, The Air I Breathe

Charlotte Mourad, The People's Collective for Environmental Justice

Marven Norman, Center for Community Action and Environmental Justice

Donald Norton, California Short Line Railroad Association

Graham Noyes, Sierra Northern Railway

Chris Orlando, North County Transit District

Cynthia Pinto-Cabrera, Central Valley Air Quality Coalition

Adriana Rizzo, Common Ground California

Matt Robinson, California Transit Association

Michael Rush, Association of American Railroads

Devon Ryan, Caltrain

Mark Twain, Locomotive Emissions Watchdogs

Lupe Valdez, Union Pacific Building America

Andrea Vidaurre, The People's Collective for Environmental Justice

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PROCEEDINGS

CHAIR RANDOLPH: Okay. Good morning, everyone.

The November 18th, 2022 public meeting of the California Air Resources Board will come to order. Board Clerk will you please call the roll.

BOARD CLERK GARCIA: Yes.

Dr. Balmes?

BOARD MEMBER BALMES: Here.

BOARD CLERK ESTABROOK: Mr. De La Torre?

Mr. Eisenhut?

BOARD MEMBER EISENHUT: Here.

BOARD CLERK GARCIA: Senator Florez?

BOARD MEMBER FLOREZ: Florez, here.

BOARD CLERK GARCIA: Assemblymember Garcia?

Ms. Hurt?

BOARD MEMBER HURT: Present.

BOARD CLERK GARCIA: Mr. Kracov?

BOARD MEMBER KRACOV: Here.

BOARD CLERK GARCIA: Senator Leyva?

Dr. Pacheco-Werner?

BOARD MEMBER PACHECO-WERNER: Here.

BOARD CLERK GARCIA: Mrs. Riordan?

BOARD MEMBER RIORDAN: Here.

BOARD CLERK GARCIA: Supervisor Serna?

Professor Sperling?
BOARD MEMBER SPERLING: Here.
BOARD CLERK GARCIA: Ms. Takvorian?
BOARD MEMBER TAKVORIAN: Here.
BOARD CLERK GARCIA: Supervisor Vargas?
Vice Chair Berg?
Vice Chair Berg?
VICE CHAIR BERG: Here.
BOARD CLERK GARCIA: Chair Randolph?
CHAIR RANDOLPH: Here.
BOARD CLERK GARCIA: Madam Chair, we have a quorum.
CHAIR RANDOLPH: All right. Thank you.
And a particular thanks to the Board members who are under the weather who are joining us remotely. I'd like to begin with a few housekeeping items before we get started. We are conducting today's meeting in person as well as offering remote options for public participation both by phone and in Zoom. Anyone who wishes to testify in person should fill a request to speak card available in the lobby outside the Board room. Please turn it into a Board assistant prior to the commencement of the item. If you are participating remotely, you will raise your hand in Zoom or dial star nine if calling in by phone. The Clerk will provide further details regarding how public participation will work in just a moment.
For safety reasons, please note the emergency exit to the rear of the room through the foyer. In the event of a fire alarm, we are required to evacuate this room immediately and go down the stairs to the lobby and out of the building. When the all-clear signal is given, we will return to the auditorium and resume the hearing.

A closed captioning feature is available for those of you joining us in Zoom environment. In order to turn on subtitles, please look for a button labeled "CC" at the bottom of the Zoom window, as shown in the example on the screen now.

I would like to take this opportunity to remind everyone to speak clearly and from a quiet location whether you are joining us in Zoom or calling in by phone.

Interpretation services will be provided today in Spanish. If you are joining us using Zoom, there is a button labeled "Interpretation" on the Zoom screen. Click on that button and select Spanish to hear the meeting in Spanish. If you are joining us here in person and would like to listen to the meeting in Spanish, please notify a Board assistant and they will provide you with further instructions. I want to remind all of our speakers to speak slowly and pause intermittently to allow the interpreters the opportunity to accurately interpret your comments.
(Interpreter translated in Spanish).

CHAIR RANDOLPH: Thank you.

I will now ask the Board clerk to provide more details regarding public participation.

BOARD CLERK GARCIA: Thank you.

Good morning, everyone. My name is Lindsay Garcia. I'm one of the Board clerks here at CARB. I will be providing additional information on how public participation will be organized for today's meeting. We will first be calling on in-person commenters who have turned in a request to speak card. And then I will be calling on commenters who are joining us remotely in Zoom. If you are joining us remotely and wish to make a verbal comment on today's Board item or during the open comment period at the end of today's meeting, you will need to be using Zoom webinar or calling in by telephone. If you are currently watching the webcast on CAL-SPAN, but you wish to comment remotely, please register for the Zoom webinar or call in. Information for both can be found on the public agenda for today's meeting.

To make a verbal comment, we will be using the raise hand feature in Zoom. If you wish to speak on a Board item, please virtually raise your hand as soon as the item has begun to let us know you wish to speak. If you are using a computer or tablet, there is a raise hand
button. And if you are calling in on the telephone, you will need to dial star nine to raise your hand. Even if you previously indicated which item you wish to speak on when you registered, you must still raise your hand at the beginning of the item, so that you can be added to the queue.

If you will be giving your verbal comment today in Spanish and require an interpreter's assistance, please indicate so at the beginning of your testimony and our translator will assist you. During your comment, please pause after each sentence to allow the interpreter to translate your comment into English.

And when the comment period starts, the order of commenters will be determined by who raises their hand first. We will call each commenter by name and will activate each commenter's audio when it is their to turn to speak. For those calling in, we will identify you by the last three digits of your phone number. We will not show a list of remote commenters, however, we will be announcing the next three or so commenters in the queue, so you are ready to testify and know who is coming up next. Please note you will not appear by video during your testimony. I would also like to remind everyone to please state your name for the record before you speak. This is especially important for those calling in by phone.
to testify on an item.

We will have a time limit for each commenter and we will begin the comment period with a three-minute time limit, although this could change at the Chair's discretion. During public testimony, you will see a timer on the screen. For those calling in by phone, we will run the timer and let you know when you have 30 seconds left and when your time is up. If you require Spanish interpretation for your comment, your time will be doubled.

If you wish to submit written comments today, please visit CARB's send-us-your-comments page or look at the public agenda on our webpage for links to send these documents electronically. Written comments will be accepted on each item until the Chair closes the record for that Board item. And if you experience any technical difficulties, please call (805)772-2715, so that an IT person can assist. This number is also noted on the public agenda.

Thank you. I'll turn it back to Chair Randolph now.

CHAIR RANDOLPH: All right. Thank you. The last item on our agenda is Item number 22-15-6, the proposed In-Use Locomotive Regulation. If you are here with us in the room and wish to comment on this item, please fill out
a request to speak card as soon as possible and submit it to a Board assistant. If you are joining us remotely and wish to comment on this item, please click the raise button or dial star nine now. We will call on both in-person and remote commenters when we get to the public comment portion of this item.

This is the first of two planned Board hearings on this proposal. While the Board will not be voting on the final proposal today, we can provide direction to staff.

Meeting all of California's public health air quality and climate goals requires significant emissions reductions beyond those achieved by our current programs. So we know we need to do more. California is a gateway for the nation's freight. As freight volumes continue to increase, it is critical that all vehicles and equipment moving that freight transition to zero-emission operation to protect the health of all Californians.

Just last month, our Board heard the Advanced Clean Fleets Regulation, which will lead to zero-emission truck operation in California. The proposed rule we will hear today will ensure that locomotive operations are not left behind. The rule requires locomotive operators to set aside funds for cleaner locomotive technology and imposing -- imposes increasingly stringent operating
requirements on locomotives in California.

Because rail is also a critically important mode for moving people in California, passenger rail is included in the proposed rule. Community residents living near facilities where locomotives operate are disproportionately exposed to emissions from diesel powered locomotives and experience related negative healthy impacts. Over 60 percent of all California railyards are in areas that have been designated by CalEPA as disadvantaged communities. And almost all AB 617 community emission reduction programs to date have identified air pollution from locomotives as a concern in their communities.

Zero-emission locomotive operations is the only way to eliminate exhaust pollution in communities heavily impacted by locomotive emissions. Just last week, the United States Environmental Protection Agency responded to the locomotive petition sent by CARB in 2017. In their response letter, U.S. EPA acknowledges the need to reduce emissions from locomotives. And I want to particularly acknowledge Senator Padilla's helpful attention to the issue of locomotive emissions.

Today, the Board will hear staff's proposal to reduce toxic air contaminants and greenhouse gas emissions from locomotives operating in California. These
reductions are vital to further protect communities from near-source pollution impacts as well as to help meet health-based ambient air quality standards across California and support the State's climate goals.

Dr. Cliff, would you please introduce the item.

EXECUTIVE OFFICER CLIFF: Thank you, Chair Randolph.

The cleanest locomotive engine standard today is Tier 4. However, over half of the locomotives operating in California still emit approximately 80 percent more pollution than a Tier 4 locomotive. The proposed regulation would apply to all switch, passenger, industrial and line-haul locomotives operated in California to address in-use locomotive pollution.

Staff worked with stakeholders throughout the development process and included provisions that provide compliance flexibility to address concerns related to technology readiness and infrastructure availability. In addition, the proposed regulation includes periodic technology assessments to ensure zero-emission technology and supporting infrastructure are available to meet the proposed requirements.

This proposed regulation will reduce emissions of criteria pollutants and toxic air contaminants in communities near railyards and other facilities where
locomotives are operated. Many of these communities are where Californians are disproportionately burdened by toxics and are recognized as disadvantaged due in part to impacts from locomotive related air pollution.

The proposed 2022 State strategy for the State Implementation Plan approved by this Board last month includes the proposed in-use locomotive regulation as one of the most impactful strategies needed to support attainment for the federal ozone standard. Without this proposed regulation, California will not be able to meet its 2022 SIP Strategy goals in the necessary time frame.

As Chair Randolph mentioned, CARB recently received a response from U.S. EPA on our 2017 petition. In that letter, U.S. EPA committed to develop options and recommendations to address air pollutant emissions from locomotives nationwide. In addition, EPA plans to propose revisions to existing locomotive preemption regulations to ensure they don’t inappropriately limit California’s authority under the Clean Air Act to reduce harmful emissions from locomotives.

We look forward to sharing information we have curated during the development of this proposed regulation with U.S. EPA.

I will now ask Layla Gonzalez of the Transportation and Toxics Division to begin the staff
presentation.

Layla.

(Thereupon a slide presentation).

TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ:

Thank you, Dr. Cliff. And good morning Chair Randolph and members of the Board. Today, I'll present the proposed In-Use Locomotive Regulation, an Air Toxic Control Measure focused on diesel particulate matter, a toxic air contaminant that has no acceptable level of exposure.

We have identified potential impacts in the environmental analysis prepared for this rulemaking, so this is the first of two Board hearings on this item. Staff plan to return with a final proposal for Board consideration in spring of 2023.

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TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ:

Let's begin with a short video.

(Thereupon a video was played).

(NARRATED BY TTD AIR POLLUTION SPECIALIST JENNIFER KOZUMPLIK): This is a California railyard and these are schools, hospitals and care facilities. These are neighborhoods. Here's another California railyard, and schools, hospitals, care facilities, neighborhoods. Rail is a critical engine of economic and activity and
The majority of locomotives run on diesel fuel. Diesel particulate matter and the exhaust from these locomotives is classified as a toxic air contaminant. We know of no safe level of exposure for this substance. Within a railyard, these giant diesel engines move back and forth all day long creating emissions that move out into the surrounding areas.

California is home to 18 major railyards, and to many medium and small railyards, and to thousands of rail spurs and sidings where locomotive activity occurs near communities. Here are the sites where rail operators are proposing to add new facilities or to expand existing facilities to increase throughput.

In California, freight rail is projected to increase by 50 percent within the next seven years. These yards are an important component of California's freight movement system, a system that is currently expanding while its emission technology remains stagnant. Rail is often characterized as the most environmentally friendly way to move freight.

This portrayal focuses on greenhouse gases and disregards community health impacts, because fuel efficiencies that reduce greenhouse gas still do little to address the harmful diesel emissions that directly impact
human health. The average freight line-haul locomotive is now dirtier than the average freight truck in California. And even the GHG advantage is shrinking and will eventually disappear.

So what should we do? Should we move everyone? We can't move every school and every hospital. And many of California's most disadvantaged communities are located near rail activity. Not everyone has the luxury to move away from pollution. The ultimate answer is that we must eliminate emissions from locomotives operating in this state. To accomplish this, we need a plan, one that includes requiring use of the cleanest commercially available locomotives, elimination of unnecessary idling, and a transition to the use of zero-emission fuel when operating in the state.

This plan isn't easy, but it is achievable and it doesn't require vast research into new technology, but rather the application of technologies available today.

(Thereupon the video concluded.)

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TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ: We need to protect community health and support emission reductions in communities most impacted by air pollution such as those we just saw in the video. In fact, eight community emission reduction programs approved by CARB
include strategies to reduce locomotive and railyard emissions.

We also have federally mandated air quality standards that we must meet through the State Implementation Plan. In addition to reductions in diesel PM, the proposed regulation would provide the largest NOx reduction needed by 2037 for the 2022 State strategy for the State Implementation Plan. Again, this is the largest NOx emission reduction measure.

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TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ: As directed by the Governor's Executive Order, N-79-20, much of the equipment at California's railyards will begin to operate without harmful emissions, with the notable exception of locomotives.

--o0o--

TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ: Recent estimates show that rail contributes roughly 11 percent of the PM2.5 and 15 percent of the NOx emissions from freight in California. Rail will become a larger contributor of emissions in the future, if left unregulated. On-road emissions from trucks have been a large focus of many of CARB's freight regulations over the years. And as you know, staff are working to transition trucks to zero-emission.
From the Advanced Clean Fleets Regulation and others like it, on-road emissions will be shrinking, making rail and other freight category contributions grow. CARB needs to ensure the rail industry and other freight categories also operate in California without emitting harmful pollutants.

--o0o--

TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ:

Now, let's go over what a locomotive is. Locomotives contain powerful engines that are used to push or pull railcars. The image you see here is of a typical diesel electric line-haul locomotive. One or more of these locomotives would be attached to railcars to create a train. You may be surprised to hear that locomotives are already electrically driven. Diesel fuel is combusted with -- within the locomotive to create electricity. As we move towards our zero-emission goals, it is the source of power for the electric motors that will need to change.

--o0o--

TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ: The proposed regulation includes the following types of locomotives.

First line-haul locomotives. Usually, several of these high-powered locomotives are used to power a train. Line-haul locomotives are found operating nationwide or on
local routes, and are used by freight railroads, Class 1 being the largest freight railroads and Class 3 being the smallest freight railroads.

Switch locomotives, also called switchers, are smaller than line hauls. Switchers perform their daily operation moving railcars within railyards, industrial facilities, or maintenance yards. They work and idle throughout long periods of the day and their emissions impact nearby communities.

Passenger locomotives are designed to pull lighter loads at higher speeds. Unlike switchers or line-haul locomotives, these locomotives must provide continuous power to connected passenger cars for comfort such as lights and air conditioning. While stopped, many passenger locomotives are equipped to connect to wayside power, enabling them to draw electricity from the grid rather than their diesel engines.

And finally, we have historic locomotives, which are used by historical railroads for preservation and for educational experiences.

--o0o--

TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ:

Engine manufacturers must meet emission standards set by the United States Environmental Protection Agency at the time of manufacture. The different emission
standards that have existed over time are referred to as tiers. The higher the tier, the more recent and cleaner the manufacturing standard. This graph provides an example of how the federal PM and NOx emission standards have been reduced over time. As shown here, the emissions levels mandated by the current Tier 4 have been reduced by over 80 percent, since emissions standards began in the year 2000.

Unfortunately, even though Tier 4 standards came into effect in 2015, over half of the locomotive emissions in California are emitted by Tier 1 or older locomotives. Even more shockingly, almost two-thirds of all Class 3 and industrial locomotives in California are pre-Tier 0, meaning that they do not have any emission limits on their engine. You might be wondering how these decades-old dirty locomotives are still operating in California rather than being replaced by newer cleaner technologies available today? It is because of the common industry practice of remanufacturing.

--o0o--

TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ: A very simplified description of remanufacturing is that rather than buying new, an old locomotive has its parts replaced as needed. This results in fewer new cleaner locomotives being purchased and operated. Let's look at
an example of the remanufacturing process. In this scenario, a locomotive operator has 100 Tier 0 locomotives originally built over 20 years ago. There are two options to upgrade them. The first option is to remanufacture and include limited -- limited efficiency and emissions improvements or the other option is to replace them with Tier 4 locomotives, which, as you saw in the previous slide, are over 80 percent cleaner than Tier 0. Both options will result in fuel cost savings. However, remanufacturing only costs about half as much as purchasing new locomotives.

For most operators, this is where the calculation ends. But if we factor in the cost to California residents from operating these dirty old locomotives, remanufacture will cost over 200 more premature deaths and result in two billion more in health costs than the purchase and use of Tier 4 locomotives. There is no right to pollute in California. Yet, while rail operators profit from the choice to operate old dirty locomotives, California communities pay with the negative impacts to their health.

--oo0o--

TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ:

Now, let's look at the fleet Class 1s operate in the state. As part of a Memorandum of Understanding CARB
has with the Class 1 railroad operating in California, the railroads annually report the tiers of their locomotives and how much they're operated in the South Coast Air Basin.

This graphic shows that over half of all the activity is carried out by remanufactured Tier 0, Tier 1, and Tier 2 locomotives. It also shows how little the railroads have operated Tier 4 locomotives represented here as the very small clean portions of the bars.

--o0o--

TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ:

California's locomotive operators have made varying progress on cleaning up their fleets. Class Is line-haul locomotives have an average of Tier 2 emissions, but Class I switchers are typically dirtier and on average have Tier 0 plus emissions. Class III and industrial locomotives use the oldest populations of locomotives, mostly pre-Tier 0 locomotives.

Although Class I line-haul locomotives make up the majority of California's locomotive activity, the typical age of the Class I switchers, and Class III, and Industrial locomotives is of particular concern. This is because these locomotives perform all their work within relatively localized areas, and their emissions impact the same nearby communities every day.
Until now, we have focused on how little operators used Tier 4 locomotives. However, passenger agencies use by far the most Tier 4 locomotives. We want to acknowledge the progress the passenger agencies are making at cleaning up their fleets, but California's passenger locomotives must also operate more cleanly and eventually operate without harmful emissions to protect communities and riders exposed to harmful diesel emissions. This proposal would require all locomotive types to eventually operate in a zero-emission configuration while in California.

--o0o--

TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ:
Let's now go through the main components of the proposed regulation.

The spending account is designed to increase the development and use of cleaner locomotive technologies and support -- supporting infrastructure. The in-use operational requirements would decrease the use of the oldest and highest polluting locomotives unless they're retrofitted to operate without emissions. Idling requirements reduce avoidable idling and provide CARB with the ability to directly enforce. And the recordkeeping and reporting requirements would help our understanding of locomotive emissions and their impacts throughout the
TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ: The spending account would require locomotive operators to set aside funds annually based on the California emissions from the prior year. The dirtier the locomotive, the more that would need to be put into an internally held trust account. The spending account calculation and annual funding requirement reflect the estimated health cost burden to Californians from locomotive emissions. Funds can be used for Tier 4 technology until 2030, and could always be used for ZE locomotives and supporting infrastructure, including demonstrations.

TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ: To incentivize early adoption of locomotives and rail equipment capable of zero-emission operation and to maximize the use of connecting to wayside power while idling, the proposal includes a zero-emission credit as part of the spending account calculation until 2030. To encourage ZE technologies to be used in the most disadvantaged communities first, the ZE credit is doubled in areas designated as disadvantaged by CalEnviroScreen. The credits would be used towards offsetting the spending account funding requirement.
TTC STAFF AIR POLLUTION SPECIALIST GONZALEZ:

Beginning in 2030, only locomotives less than 23 years of age would be able to operate in California. This requirement begins later than other requirements in the proposal to allow locomotive operators time to plan and to purchase newer current tier locomotives, if needed, for the in-use operational requirements.

Additionally, in 2030, all passenger, switch, and industrial locomotives with engine build dates of 2030 or newer will need to operate in a zero-emission configuration while in California. We anticipate that zero-emission operations for line-haul locomotives will require a longer technology development period because of their long distances and higher power needs. Therefore, starting in 2035, line-haul locomotives with engine build dates of 2034 or newer will need to operate in a zero-emission configuration while in California.

As a precaution, staff has included technology assessments to be conducted in 2027 and 2032. These assessments will include the status of ZE technologies and support infrastructure. If either of the evaluations show the 2030 or 2035 zero-emission dates to be too ambitious, staff may propose to develop regulatory amendments.
TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ:

Various ZE technologies will likely be used for different locomotive types. Operators are free to choose the ZE technology that is best suited for their operations. Electricity stored in batteries may be good for railyards in areas where locomotives have easier access to charging infrastructure. Battery electric locomotives are currently available for purchase and California's Class 1 operators have already made commitments to purchase several battery electric switchers to reduce their environmental impact and to further develop the technology.

Hydrogen converted by fuel cells may be better suited for locomotives traveling longer distances, such as line-haul and some passenger locomotives. Hydrogen fuel cell technology has been successfully used in passenger rail services in other countries for a few years now. In California, one fuel cell passenger train is scheduled to be in service in 2024, and four more hydrogen passenger trains were ordered earlier this year, making California the first in the U.S. with fuel cell passenger rail service.

Other fuel cell locomotives are also currently being demonstrated. Just last year, the California Energy Commission provided funding for a Class 3 railroad to
build and test a hydrogen switcher.

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TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ: We are encouraged to see that interest and investment in zero-emission locomotive operators have increased remarkably in the last couple years. The headlines shown on this slide represent just some of the progress that Class 1, Class 3, and passenger railroads in California and other states are making in integrating zero-emission locomotives into their operations. Many of these locomotives will be tested and will be ready for operation before 2027.

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TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ: The projects shown on the previous slide may be in response to many of the zero-emission plans that have been announced by California's locomotive operators. Many California passenger agencies have published future plans that include strong growth in both Tier 4 and ZE purchases.

Additionally, all Class 1 railroads and some Class 2 railroads have committed to greenhouse gas reductions targets and the Federal Railroad Administration has announced a climate challenge for the rail industry to meet net zero greenhouse gas by 2050. To get to net zero, all locomotives will need to operate without greenhouse
gas emissions. The proposed regulation will be a huge stepping stone got getting all railroads to their net zero goals.

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TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ: Two more important components of the proposed regulation remain, the next being a restriction on excess idling. The requirements are similar to U.S. EPA's 30-minute idling limit. By including the idling requirements in the proposed regulation, CARB would be able to enforce locomotive idling.

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TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ: And finally, the proposed regulation includes registration and reporting requirements that will create a complete picture of the emissions created by all locomotives operating in California and would insist -- assist with enforcement efforts as needed. Each locomotive that operates in California will be required to register one time. Then, annually, each registered locomotive would need to report all California activity by air district. Air District level reporting is critical to understand where emissions are happening, to better understand the connection between diesel locomotive emissions and health effects. Each locomotive that's reported to CARB would be required to
pay $175 annual administrative charge to cover the
enforcement and implementation activities for the proposed
regulation.

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TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ:

From our extensive outreach efforts, we have
learned that certain flexibilities would be needed. The
temporary operating waiver would allow operators to
request an emergency provision to use a locomotive that
would otherwise be banned through the in-use operational
requirements. The small business hardship extension would
allow small businesses with an average gross revenue of
less than $5 million annually to delay compliance with the
spending account and/or the in-use operational
requirements for up to three years at a time.

The historic low use exemption would recognize
the special work of operators such as museums, whose
mission is to educate the public and exhibit and operate
locomotives in original condition with some limitations.
Again, the 2027 and 2032 technology assessments will
evaluate the readiness of zero-emission locomotive
technologies and infrastructure and provide an opportunity
to adjust compliance deadlines, if necessary.

Finally, we've included an alternative compliance
plan option.
Similar to what the Board has previously approved for other regulations, such as the Commercial Harbor Craft Regulation, the alternative compliance plan would allow operators to reduce emissions through a plan of their own design. For a plan to be approved, it would need to reduce equivalent emissions as would have been achieved under the spending account and in-use operational requirements. And the reductions would need to be within three miles of rail activities. These plans can be renewed every five years if requirements are met and provide opportunity for adjustments due to delivery, safety approval, and infrastructure delays outside an operator's control.

Next, let's discuss the benefits from the proposal we just reviewed.

Compared to the business-as-usual scenario, the proposed regulation is estimated to reduce over 7,400 tons of PM2.5 and about 389,000 tons of NOx through 2050. As was mentioned previously, the proposed regulation is a toxic control measure focused on the reduction of diesel particulate emissions and is the largest NOx reduction
measure in the State SIP strategy. However, because of zero-emission locomotive operations, there would also be a co-benefit of 21.9 million metric tons greenhouse gas benefits.

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TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ:
Staff characterized cancer risk within one mile of two representative California railyards, one in Northern California and one in Southern California. The study compared baseline conditions to what would happen if locomotives operating at those railyards were all Tier 4. The results showed that cancer risk from exposure to diesel locomotive PM emissions would be decreased by over 90 percent. Use of ZE locomotives would reduce cancer risk even further. Eventually, with all ZE operations in California, cancer risk from locomotive emissions could be reduced completely.

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TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ:
From 2023 to 2050, staff estimates the total net cost of the proposed regulation to be 13.8 billion and have a health cost savings of approximately 32 billion. Health cost savings are realized through the reductions of PM and NOx emissions and are estimated to result in fewer deaths, fewer hospital stays, and fewer trips to the ER.
If the cost of the proposed regulation were fully passed on to consumers, it is estimated that each California household could pay approximately $32 annually and passenger fares could increase by $0.39 for local routes and little over $2 for longer routes. But if we do nothing, it is California's low-income and communities of color that will continue to bear the majority of the health costs.

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TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ: While the benefits of the proposed regulation are over two times more than the cost, we realize the transformation of California's locomotive fleets to cleaner operations will be costly, and some operators may need funding assistance. In fiscal year 2022, there is as much as $40 billion in incentives available for locomotives and Z -- zero-emission infrastructure. This funding comes from many government programs such as the Inflation Reduction Act, Consolidated Rail Infrastructure and Safety Improvements Program, and the Clean Transportation Incentives and more.

The Federal Railroad Administration's CRISI Program currently has an open solicitation offering $1.4 billion in incentives to move from older tier technology to Tier 4 and zero-emission locomotives. This could go a
long way to help Class 3 and industrial locomotive operators to make the leap to newer technology.

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TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ: In accordance with California Environmental Quality Act guidelines, staff prepared a draft Environmental Analysis for the proposed regulation and released it for public comment. We will present the final environmental analysis and written response to comments received at the second Board hearing planned for spring of 2023.

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TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ: The next steps are to: make any changes in response to Board direction, including clarifications to improve implementation, since the publication of the proposed regulation; clarify our intent in the proposed regulation to collaborate with transit agencies as the State increases ridership on rail and transitions to zero emission; incorporate federal safety approvals for rail as part of the technology assessment; evaluate comments that have come in during the comment period, including requests to strengthen and accelerate the proposal, and then return with a final proposal for adoption in spring of 2023.

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TTD STAFF AIR POLLUTION SPECIALIST GONZALEZ: And
that brings us to the end of the presentation. So to summarize, there is no safe level of exposure for diesel particulate matter, a toxic air contaminant. And CARB's efforts to reduce community exposure to diesel PM, all other equipment at railyards, and many other categories have been regulated and are transitioning to zero emission, including trucks, leaving locomotives as the primary source of harmful emissions at railyards throughout California.

Communities surrounding railyards and areas where locomotives operate are often some of the most heavily burdened by pollution. For years, many of these communities have come to us with their concerns about locomotive emissions and asked us to act.

In giving the clear signal to locomotive operators that zero-emission operation -- operations will be required, the proposed regulation provides California railroads the opportunity to lead the nation in adopting cleaner locomotive technologies and protect communities directly impacted by the diesel emissions from their locomotives.

Cleaner locomotive technology is already here. And as we've shown you, zero-emission technology is available and more options are on the way. To help with the purchase of these new technologies, billions of
dollars of funding is available from the federal
government and the State of California. The use of
cleaner technology means healthier people. Today, we are
asking you to please support the proposed in-use
locomotive regulation. Thank you for your consideration.

CHAIR RANDOLPH: All right. Thank you very
much. We will now hear from the public who signed up to
speak on this item, either by submitting a
request-to-speak card, or by raising their hand in Zoom.
I will ask the Board clerks to begin calling the public
commenters.

BOARD CLERK HARRINGTON: Thank you. I would also
like to announce that we will be closing the speaker
sign-ups for this item at 9:45.

Our first speaker is Mike Hart.

MIKE HART: We're good. Good morning. Thank you
all very much. I appreciate the opportunity to speak this
morning. For starters, by way of introduction, I'm the
CEO Sierra Railroad Company. And we're a parent company
that have a number of subsidiaries, one of which is Sierra
Energy.

But I'd just like to remind folks from the
excellent presentation that's been made, that there's a
very high correlation between public funding and Tier 4
locomotives. Passenger railroads are run by public
agencies, which have a lot of public money and that's why there's so many Tier 4 locomotives coming in. So do bear in mind that we operate Class 3 railroads which are very small and very limited resources.

Obviously, we care a lot about the environment. I'd sort of like to remind you just some of the things that we've been doing in this space. In 2001, we were named an environmental hero for the work we've done with the U.S. EPA to be the first railroad in the world to run at 100 percent biodiesel.

After that, we worked with Bill Gates Breakthrough Energy Ventures with our Sierra Energy Division, and the idea there is to create carbon negative fuel for locomotives. And the idea was to take garbage and turn that into hydrogen. Now, we've gone a long way with demonstrating that and we can show that we take one ton of garbage and make 100 kilograms of hydrogen from trash.

Our first facility is built and operating in Monterey, California by a partnership with the U.S. Army and the California Energy Commission. And the idea is to create fuel for locomotives from garbage. And as you know with CARB, you did the joint study with NASA and JPL showing that in 2019 that just 30 landfills in California are creating over 40 percent of our point source emissions.
from methane. And so the idea is why not solve both problems and that is take waste from our landfills and turn it into hydrogen for zero-emission fuel for railroads.

Towards that direction, our Sierra Northern Division, we've already done two locomotives under the Carl Moyer Program doing rebuilds. And working with the Cal -- Sierra Energy Commission -- I'm sorry, California Energy Commission, they've funded us to build our first hydrogen locomotive conversion, which is underway right now in West Sacramento. So that's underway now for what we're doing.

And the process that we're proposing, and we would love to get an engagement with CARB about, is we see the transition for Tier -- Class 3 locomotives -- I'm sorry, Class 3 railroads to transition from Tier 0, in other words high emission locomotives, to transition to Tier 3 locomotives, which are very inexpensive relative to these Class -- Tier 4 locomotives. We've already acquired 34 of these engines for making that transition to dramatically reduce emissions. It's called the Sierra Plan. You guys have received a copy of it. They'll be more discussion -- does that mean I'm done?

Okay. I'm sorry. But our plan is to transition to low-emission locomotives through this step and then
zero with the work that we're doing now.

Thank you very much.

BOARD CLERK HARRINGTON: Next up is Graham Noyes.

GRAHAM NOYES: Thank you, Chair Randolph, members of the governing board. Glad to be hear today. Graham Noyes, Noyes Law Corporation on behalf of Sierra Northern Railway. I'm going to try and reserve time for any questions or feedback on this.

We have been engaged with the -- with the staff, and management, and the governing Board since well before the rulemaking speaking about the Tier 3 strategy specifically. And as my Mike Hart pointed out, the Sierra companies have a long history of both innovation and practicality.

The core of the Tier 3 strategy is really taking advantage of the very low cost availability of Tier 3s, which are obviously much cleaner from a PM and NOx perspective than of the dominant fleet now which is pre-Tier 0. There's an opportunity to have a fully refurbished Tier 3 locomotive online for about $350,000. That's about one-tenth of the cost of where a zero-emission locomotive is likely to be.

Rapid deployment of Tier 3s allows immediate reductions. The Sierra Plan looks at a deployment in 2024 as opposed to a CARB plan that starts mainly in 2031.
It's 84 percent more cost effective from a -- using the Carl Moyer Program methodology or about six times more cost effective per ton looked at another way. So if you implemented their 2024 versus 2031, and these are all shared in written comments as well, you could achieve 60 tons additional PM10 reduction during those first seven years and 1,600 tons of NOx reduction.

The other thing I'd point out, which Mike Hart also emphasized is the importance of funding in this sector. And several of the passenger and public agencies raised the disconnect between the 23-year useful life rule and the requirements under some of the federal grant and loan requirements, which can range from 25 to 39 years. Obviously, a California rule that does not align with the minimum use requirements and could put either an agency or a company in position of having to forgo these massive federal funds that are now available or refund back funds that have been received would be extremely problematic.

And we look forward to further engagement. Glad to take any questions or feedback at this time.

CHAIR RANDOLPH: I don't think we have anything. Thank you though.

GRAHAM NOYES: Thank you.

BOARD CLERK HARRINGTON: Thank you.

Next is Eddy Cumins.
EDDY CUMINS: Thank you, Madam Chair and members of the Board. I'm Eddy Cumins, General Manager for Sonoma Marine Area Rail Transit District, also known as SMART. SMART is unique as we operate both commuter rail and freight.

To begin, I want the Board to know that SMART is dedicated to getting to zero emissions, and I appreciate all the conversations that we've had with staff. However, I have some serious concerns about the proposed timeline due to market availability of zero-emission locomotives, FRA approval, federal useful life, and Buy America requirements.

The Board should know that the proposed regulation rests on assumptions about the market availability and technology readiness of zero-emission locomotives in the United States that are not sound. Although this technology has been demonstrated in Europe, it has not been introduced into passenger service in the United States. Before that could happen, we would need the FRA to provide safety clearance for the use of these technologies for passenger service, and we would need the manufacturers to demonstrate that they meet Buy America requirements.

To address our concerns, we urge CARB to work with us to conduct a market assessment before implementing
the regulation. This exercise would help identify and address the obstacles rail agencies would face in deploying zero-emission locomotives. More specifically, the market assessment would analyze Federal transit and railroad requirements, technology availability of zero-emission locomotives, infrastructure requirements to support charging capability, overall cost of operation, funding capability, and the financial impact associated with not running vehicles to the end of their useful lives.

We anticipate the results of this market assessment would identify weak points in the regulatory approach, which could be used to inform the development of a more workable framework. To be clear, we are in full support of expanding zero-emission technologies. However, and again, we urge CARB to work with us to conduct a market assessment before implementing the proposed regulation.

Thank you for your time.

BOARD CLERK HARRINGTON: Thank you.

Next is Michael J. Rush.

MICHAEL RUSH: Good morning, Chair Randolph and members of the Board. My name is Michael Rush, I'm representing the Association of American Railroads and its member railroads. There could be no doubt that the staff
proposals are preempted under federal law. The railroads have discussed the proposals with staff and explained why they are preempted. Were the Board to adopt these proposals, the inevitable result will be litigation and judicial decisions prohibiting the Board from proceeding. This is disappointing, given the long collaborative relationship the railroads have had with the Board.

The railroads are committed to doing their part to reducing emissions. Railroads have been conducting demonstration projects on battery electric locomotives and hydrogen fuel cell powered locomotives. Every Class 1 railroad is participating in the science-based targets initiative.

Railroads have also undertaken other initiatives to reduce their environmental footprint, including reducing emissions from railyard equipment, such as cranes and hostlers, and using lower emitting fuels. While the railroads are investing ways of reducing emissions, including zero-emission locomotives, there should be no illusion that the zero-emission locomotives will be ready for wide-spread use for the foreseeable future.

Switcher locomotives may be the first to reach commercial readiness, but line-haul locomotives will take significantly longer given the demands placed on those engines. Furthermore, CARB must not overlook the
infrastructure that will be necessary should a viable alternative to the diesel locomotive be developed. Whether it be charging stations or locations for supplying locomotives with an alternative fuel, a nationwide network must be deployed for any technology that is proven to be an effective alternative to the diesel engine. Any timeline must take infrastructure needs into account.

As discussed in AAR's written comments, the staff proposal would create havoc within the railroad industry and the North American supply chain. Given that railroads are three to four times more fuel efficient than trucks, that should be unacceptable to the Board.

Unlike the efforts of the railroad industry, the staff proposals will not result in reduced emissions. The only result will be litigation. Instead of adopting these proposals, AAR urges the Board to instruct staff to work with the railroads to achieve a win-win result as we have in the past.

Thank you. I would be happy to answer any questions.

Thank you Chair Randolph.

BOARD CLERK HARRINGTON: Thank you.

Next, is Lean Kent.

LENA KENT: Good morning. My name is Lena Kent and I represent BNSF railway. Thank you for the
opportunity to speak with you all today.

The rail industry, as noted in staff presentation, has been investing significantly in the next generation of zero and near-zero technologies to help accelerate the commercial viability. However, generally, the technology simply isn't ready for commercial deployment.

As a result, staff's framework for zero-emission locomotives is simply not realistic. The locomotive manufacturers note they currently produce an 8 megawatt-hour battery electric locomotive. And they project they could potentially reach 15 megawatts by 2030. That's likely enough energy for yard and local rail service, but insufficient for line-haul locomotives.

Even with the inherent efficiencies associated with battery electric technology, you would still need more than 100 megawatt hours of battery storage in a line-haul application. Battery charging is still a major obstacle for battery electric locomotives requiring a hundred times the amount of time currently spent on refueling operations. Hydrogen technology is still very early in development. It's far too soon to predict how this technology will evolve. The first demonstration project for hydrogen is not planned until 2025. A more achievable path to reducing emissions in the time frame...
CARB proposes is using low carbon fuels and combustion engines.

Thank you for your time today.

BOARD CLERK HARRINGTON: Lupe Valdez.

LUPE VALDEZ: Good morning. Chair and other members of the Board. It's a pleasure to be here with you this morning. Union Pacific supports CARB's efforts to improve California's air quality as demonstrated in our efforts to upgrade locomotive fleets and pilot new electric locomotive technologies. However, the infrastructure required to meet the energy demand for these new electric technologies does not exist today. As long-haul locomotives operate continuously across all states nationwide, infrastructure is required to ensure railroads can continue to meet the demands of the global supply chain.

And it is well documented that the current electricity demand on California's grid surpasses what the existing grid is able to support, and as seen as are rolling brownouts. CARB has, from our perspective, not adequately addressed how the energy infrastructure needed for this regulation to be successful will be met. The nation's rail network cannot rely on battery electric technologies if forced to depend on inadequate supply of energy, forced brownouts, and demands to refrain from
charging electric vehicles as we saw this past summer.

California must make significant investments in their infrastructure before industry is able to rely on it as a stable source of electricity to power locomotives and other equipment. Hydrogen technology, also imagined as a near-term solution by CARB requires a massive multi-billion dollar public investment in infrastructure on a national basis to produce and transport hydrogen safely.

Zero-emission hydrogen fuel cells technology also requires a significant amount of infrastructure that also does not exist and will need to be developed, permitted, and installed before any significant investment is made in that technology. As published in our climate action plan, UP has been a proactive leader by stating our goal of net zero by 2050. This announcement preceded the federal government's goal of 2050, which is based on science-driven expectations for technology and infrastructure. UP's commitment to ZE technology, zero-emission technology, is broader than just locomotives. We are continuing to pilot, test, and invest in alternatives to internal combustion engines across all fleets.

Thank you very much for this opportunity to address the Board this morning. Thank you.
BOARD CLERK HARRINGTON: Thank you.

Chuck Baker.

CHUCK BAKER: Good morning. My name is Chuck Baker. As President of the National Short Line Association, I'm here to speak to the alarming impact of this proposed rule on a critical part of the nation's and California's freight rail system, the 27 small business shortline railroads that serve hundreds of crucial agricultural, industrial, and manufacturing customers here in California.

If this rule is enacted without an exemption for shortlines, it would threaten the very viability of shortlines in California. We request an exemption of shortlines from this rule. Shortlines provide first and last mile service to rail shippers typically in small towns and rural areas. These lines are basically the old unprofitable branch lines of the larger Class I railroads. And shortlines largely came into existence to save these lines from abandonment.

In the decades since, shortlines have rehabilitated much of their infrastructure, scraped and clawed for new customers, built tremendous relationships with their local communities, and developed a reputation for providing flexible and responsive service. They allow their customers to stay connected to the national freight
rail network and maintain their competitiveness in the global marketplace. They've managed to keep and grow these lines to the benefit of California and the nation.

Shortlines are committed to lowering their environmental impact. In addition to upgrading locomotives to higher tier levels when they can afford it, shortlines are exploring hydrogen and battery electric powered locomotives with government funding, installing fuel optimization software and anti-idling technology, testing biodiesel -- biodiesel and renewable diesel, and exploring fuel additives to lower emissions. We do this with our own funds when possible and also work through programs like CRISI, DRI, and Carl Moyer.

We are committed to environmental sustainability and, in fact, share many of CARB's goals. We are, however, extremely concerned that this rule is too draconian and would lead to the elimination of many shortlines in California.

The rule itself states, and I'm quoting, "If Class 3 locomotive operators are unable to pass on the cost of the proposed regulation to customers, it is possible some of these businesses would be eliminated". I can tell you unequivocally that shortlines will not, in fact, be able to pass on these costs to our customers and that some of them would, in fact, be eliminated by this
rule. If shortlines were eliminated, it would result in higher greenhouse gas emissions nationally, and here in California shippers would either need to move their freight by truck -- by truck instead of rail or pack up and abandon California.

If the freight moves by truck instead of rail, the will result in more fatalities and injuries, more congestion on California's roads, more burden on the California taxpayer to pay for road damage, and more microplastic from shredded truck tires in the environment. The better option would be to entirely exempt shortlines from this proposal and then partner with us through CRISI, DRI, and Carl Moyer to help accelerate our efforts to get cleaner.

Thank you.

BOARD CLERK HARRINGTON: Thank you.

DONALD NORTON: Good morning. I'm Donald Norton, Executive Director of the California Short Line Railroad Situation, which represents small railroads in California. These small businesses who are shortline railroads connect hundreds of California companies to the national rail network. Shortlines are a critical piece of the supply chain in California. And many of our members have been leaders in the transition to lower emission locomotives,
including Pacific Harbor Line, Sierra Northern Railway, and the Modesto and Empire Traction Company just to name a few.

However, the proposed In-Use Locomotive Regulation is financially impossible for most small railroads. Using the notional small business shortline described in your SRIA document, if you run the calculations, this business's available funds would be $321,269 short of its required spending account contribution for 2023. The three-year hardship delay allowed in this regulation will not make this situation workable. The alternative compliance plan won't help a small company's available cash problem and the prescribed regulation review in 2027 will come too late to save small railroads from bankruptcy. Meanwhile, adopting this regulation will also end the use of our most successful grant program for upgrading shortline locomotives, which has been the Carl Moyer Program.

Discontinued rail service by small railroads will cost significant job losses. It will also cause plant closures by customers that can no longer compete in their markets. And a massive modal shift by cargo that is able to change from rail to truck. This modal shift will cause additional damage to roads and bridges, greatly increase roadway congestion, and cause a significant rise in
highway deaths and injuries. And to put a number on it.
Caltrans estimated in 2019 that there were 9.3 million
truck trips per year in California that were avoided by
use of rail and a significant portion of those are on
shortlines.

Bottom line, don't cause all this financial
disaster and supply chain disruption in pursuit of only
two percent of the locomotive emissions in California that
are attributable to shortlines. Instead, exempt shortline
railroads from the regulation.

Thank you.

Any questions?

Thank you.

BOARD CLERK HARRINGTON: Thank you.

KENNAN BEARD: Good morning. My name is Ken
Beard and I'm the President of the Sierra Northern
Railway. I urge you to exempt the shortlines from this
regulation. Many shortlines in California have
voluntarily stepped up and changed a portion of their
fleet to Tier 3 and Tier 4 locomotives. Most of these
were done using Carl Moyer funds over the last few years.

While we would love to change the rest of our
fleet over, it's financially impossible without Carl Moyer
fund or some other sort of fund process, and the Carl
Moyer rules make it almost impossible with the lower use locomotives. We still need them, but we can't get them funded. What would save the problem there is if there was more money in Carl Moyer and there was less restrictions on how the money was spent.

This regulation all man -- also mandates the move to zero-emission locomotive technology. This technology just does not exist today. My company, Sierra Northern Railway, is building the first-of-its-kind hybrid hydrogen fuel cell electric switcher locomotive in partnership with the California Energy Commission. This locomotive under construction today will not be going under test until the end of 2023 or middle of 2024 at the earliest. Commercialization of this technology will be many years behind that assuming it works as planned.

Battery powered electric locomotives and that technology trails the hydrogen even further. The cost to upgrade to these new zero-emission locomotives in today's dollars is estimated to be between five and six million dollars per locomotive.

Even given grant programs like the CRISI grant, that costs to us is going to be huge. A competitive CRISI grant still requires a 50 percent match on locomotives. That's going to be two and a half to three million per locomotive to each of these small businesses. This alone
will kill the shortline railroad industry. We just can't afford it.

Again, I urge you to exempt the Short Line Railroad Association -- members from this regulation.

Thank you.

BOARD CLERK HARRINGTON: Thank you.

Andrew Antwih.

MR. ANTWIH: Thank you, Board members. And kudos to staff for the correct pronunciation of my last name. Andrew Antwih on behalf of Southern California Regional Rail Authority otherwise known as Metrolink, the largest passenger rail operator in the state, serving six Southern California counties.

Metrolink has the largest Tier 4 fleet in California. Transitioning to 100 percent renewable fuel this year, they've already done that, and supports the goals of zero-emission locomotives. CARB staff proposes a rule that forces passenger rail to divert funds to spending accounts. Diverting funds desperately needed to recover ridership will devastate agencies facing fiscal cliffs with federal rescue funds having been exhausted.

Metrolink and CARB staff work together on alternatives to the spending accounts, but the alternative plans proposed could result in negative fiscal impacts similar to a spending account. And our appeals for safety
valves, such as if locomotive funding is not available have been rejected to date.

Your staff this week verbally offered a third alternative, commit to a fully Tier 4 fleet by 2035 and to a fully zero-emission fleet by 2045. We find this offer promising, but have some concerns. Metrolink anticipates a fully Tier 4 fleet by 2035. We could accede to a mandate start date for zero-emission purchases, but ask for a financially and operationally sustainable transition to zero emissions. It would be unconscionable to commit to a fully zero-emission fleet by 2045, given the immature state of the technology, limiting funding available for new purchase, age of the fleet, and requiring the place -- replacement of Tier 4 locomotives well in advance of their end of useful life.

Finally, staff has insisted on a requirement that locomotives be retired in 23 years, despite being in direct conflict with federal grant repayment requirements when locomotives are retired earlier than 25 years.

We urge the Board to direct staff to continue negotiating on a more reasonable rule modifications that will allow our sector to recover while achieving shared greenhouse gas goals. And I just point out that the ridership in Metrolink, they're choice riders. These are folks that have the option to drive. Any rule that has
the effect of diverting operating dollars actually removes
the larger goal of having this mode shift option be
available. And so it's worth it to take additional time
to get this regulation right, because passenger rail is a
partner in achieving the Board's goals.

BOARD CLERK HARRINGTON: Matt Robinson.

MATT ROBINSON: Thank you, Chair Randolph and
members. My name is Matt Robinson and I represent the
California Transit Association.

As you are aware, we submitted a letter to the
Board outlining in detail our concerns with the proposed
draft regulation, as well as our commitment to
zero-emission rail in California. We appreciate the Board
members and the staff that have engaged with us over the
last several weeks to hear our concerns and work towards a
path forward. Many of the Association's member rail
agencies are working to pilot zero-emission locomotives or
are actually building zero-emission rail facilities.

However, as stated in our letter, we have
significant concerns with the spending account and
alternative compliance plan provisions of the draft
regulation. We appreciate that in responding to our
concerns, CARB staff presented us with the conceptual
alternative for compliance under the regulation, which
would establish stringent fleet requirements for 2035 and
We engaged with CARB on this conceptual alternative in earnest and offered several modifications to it that would address the real constraints we face relative to the commercial availability of zero-emission locomotives and federal requirements for useful life.

CARB staff has not yet agreed to the requested modifications and our justification for them. And so we must continue working to find agreement on staff's conceptual alternative. As currently proposed, this conceptual alternative would force the retirement of locomotives before their federally mandated useful life and lead agencies to violating federal law and grant terms and returning funding to the federal government. This may include locomotives recently purchased with State Cap-and-Trade funds and reflect limited operations -- oh, I'm sorry -- redirect limited operations funding away from service, potentially contradicting CARB's recently passed draft Scoping Plan, which calls for an emphasis on transit operations.

The compliance -- Or, I'm sorry, the comp -- this complication has been central to our message, to CARB staff, and was the basis for our proposed modification. We are committed to working with CARB staff on an alternative compliance path, but request that the Board
direct staff to continue to engage with us with the necessary sensitivity to federal law and grant terms and review and greed upon path forward at a future meeting. Thank you for the time today and I appreciate you hearing my comments.

BOARD CLERK HARRINGTON: Thank you.
And just a reminder that speaker sign-ups are now closed for this item.
Next up is Chris Orlando.

CHRIS ORLANDO: Thank you very much. I am Chris Orlando, Chief Planning and Communications Officer for North County Transit District. I want to start by thanking the CARB staff for working with us over the last several weeks on this proposed rule. The staff has been very collaborative with our industry as we've worked to understand, shape if we can, and implement this rule.

Next, I would like to say that we share your goal. We want to move our fleet to zero emissions. And I can tell you I've been on more than a dozen calls about the rule with my colleagues in the public transit industry and not once has there not been a wholehearted commitment to make the transition to zero emissions. We are there with you.

We do have some concerns. I want to start by telling you a little bit about our service. So we operate
over a thousand square miles. We have bus, paratransit, light rail, commuter rail, and we also operate the railroad from the San Diego Orange County line down into San Diego with freight, Metrolink, LOSSAN Rail Line, and our COASTER train. These rules would not only impact our rail operations, but also our other public transit services.

So you've heard a number of concerns about it -- about the rule, so I won't repeat those. What I will do is ask the Board for a couple of things. We've had a very good collaborative relationship with staff to this point. I would encourage you to give us more time to let those discussions come to fruition. I think we're on a good path and we can get there.

The second request is to allow more time for the implementation of the spending account. I know that all of the agencies are committed to and would like to work towards an alternative compliance plan, but that will take time. And the moment the spending account goes into effect, we have to encumber that money, which affect all of our operations, not just our rail operations, and negatively impact public transit.

The third is to align the useful life requirements to match our federal obligations. As public transit operators, we have federal public -- we have
federal useful life obligations that we need to meet. So we want to make sure we align those operate -- obligations.

I will say our agency has been proactive in transitioning. Our fleet, I am proud to say, by the end of next year will be a hundred percent Tier 4 and we want to get to zero, but we need some help in getting there.

So thank you very much for your time and I hope you will consider our perspective as you consider this rule.

Thank you.

BOARD CLERK HARRINGTON: Thank you.

Next is Jan Victor Andasan.


Good morning, Chair, Board members, and those in the audience. My name is Jan Victor Andasan -- no H -- a resident of Carson and a community organizer and member with East Yard Communities for Environmental Justice here to advocate for a stronger locomotive rule.

I was born in the Philippines and had the privilege to immigrate to the U.S. Where I grew up in West Long Beach. Our apartment was located right next to the Union Pacific Intermodal Container Transfer Facility, ICTF. I thought it was normal growing up next to these
sites. I could go out of my house and see the railyard. Walk to school, and I would have to walk through rail tracks. Going out on the playground in my elementary school, you could see the trains right across our playground.

I did not know the health impacts that these sites were ravaging on my body, my family, and my community. My brother was conceived and born when we were living next to this railyard. Growing up, I was fascinated and anxious every night, because he would have to get on his nebulizer so he could breathe. I didn't understand why he needed this machine. I was eight years old and this was normal to us. Every night for his young life, he continued to rely on a machine just to breathe. I didn't understand back then goods movement, trains, ports, railyards.

But what I know now is that the poor air quality that we were exposed to was not normal. It was responsible for why we couldn't breathe. It doesn't have to be a struggle for a child when they are just born into this world to simply breathe. But my brother and I grew up with asthma and it's become normal for many families and communities adjacent to railyards and rail lines have some type of respiratory issues.

At the beginning of the pandemic in 2020, my mom
was also diagnosed, on the 65 years she's been on the planet, with adult asthma. We can prevent this. Our communities can breathe cleaner air. We deserve to breathe cleaner air. I came to the U.S. in '97. My brother was born in '98. As much as the air has improved in our state, and we have passed policies for cleaner air, it's 2022 and we are still behind the curve. We deserved cleaner air decades ago. And this is why we need you to adopt this rule to make it stronger, to invest in technology so that my body, my brother, and those will not have to be collateral damage for profit.

We ask the Board to strengthen the rule in three ways. Accelerate the zero-emission requirements up to three years to 2027. The cost of doing business should not be at the expense of my body and my community's. We need to invest in technology. They exist. We need to put the down payment for people that have been paying the rice.

We include interim timelines for zero emissions, because what is a plan without actual benchmarks to see that it's happening, because we've been waiting way too long.

And finally, reduce the idling limit to 15 minutes, because this is something that's become normal in the communities and it should not.
Pass a stronger locomotive rule now. We cannot wait any longer and you have the ability to do something. Thank you.

BOARD CLERK HARRINGTON: Thank you.

Next is an Andrea Vidaurre.


Hi, Board members. My name is Andrea Vidaurre. I am with The People's Collective for Environmental Justice out of the Inland Empire of Southern California. I feel actually pretty honored to be commenting on this rule, because I've been hearing about railyards and railyard pollution for many, many years. And I have met many people that have fought I'm sure at this place years ago for regulations on locomotives that are not here right now. But I feel honored that I hope that they're seeing this now from wherever they are.

I was here last month when we were discussing the need to strengthen the Advanced Clean Fleet Rule. And during my testimony, I touched on that although it's great to see great goals on drayage, I wish that was the only thing we had to worry about, but it's not. We've got thousands of regional trucks, major freeways, mega warehouses, and the worst actor in my opinion, the trains, that travel everywhere around the Inland Empire poisoning the entire region.
The graphs that you guys showed me about what tiers are being used right now by the freight companies anger me. They anger me, because we know the technology exists. We know these companies have the money. We know it's being done around the world. And most importantly, we know verbatim from CARB that there is no safe level of exposure to diesel.

So if there's no safe level exposure to diesel, then why do we live, breathe, eat, and play in it? Why don't -- do we let kids play with toxic materials? Then why do we let them live in it?

There was a study done 10 years ago by the San Bernardino BNSF yard that show that there are cancer clusters in the region, cancer clusters next to day cares, elementary schools, and homes. And it's not just a statistic. Families have to go celebrate Mother's Day at cemeteries. They carry round oxygen tanks. And the kids grow up getting diagnosed with industrial allergies by the age of three.

And this reality is -- and with this reality, the railyards are growing, proposed railyards and tracks in both Colton and San Bernardino and more throughout the State. When do the millions of people living by these rail yards throughout the State finally stop being taken advantage of, finally get to close -- open their window...
and not have soot cover their entire kitchen.

I want to go back to the Inland Empire to our communities in San Bernardino and Colton and tell them that we finally have and end date for diesel use on all of these trains; that we're going to accelerate zero-emission requirements for switcher locomotives by 2027; that we're going to include interim timelines for zero-emission locomotives and we're going to reduce the idling limit to 15 minutes, which by the way 30 minutes never gets followed in these communities.

All railyard commute -- all railroad companies provide a public service, and they have an equal responsibility, as the State does, to the public to not infringe on our right to breathe clean air. And I really appreciate the presentation and the way that it was presented, and I thank you for capturing it. Now, we just need the Board members to push this forward for our communities.

Railroad companies have been threatening to sue for years, for decades, and it's nothing new. But what's also isn't new is that our communities have been suffering and that we have to exhaust all actions to fight climate change. So no more time wasted. Thank you.

BOARD CLERK HARRINGTON: Thank you.

Ma Carmen Gonzalez.
MA CARMEN GONZALEZ (through interpreter): Good morning, Board. My name is a Ma Carmen Gonzalez. I'm the organizer for the Collective for Environmental Justice, and I've been a resident of San Bernardino, California for 17 years. And for this entire time, I've been a witness to how bad air pollution and contamination has been taking lives. As many of you know, we've had the worst air pollution in our area in the Inland Empire. And that's why I'm here today. I'm here and this is my objective today is to ask you, CARB, please to accelerate the requirements for zero-emissions for locomotives to change the requirement year from 2030 to 2027.

And I say this because there's no -- there's no limit or date on illnesses. Many people in our communities continue having these health problems. We are seeing asthma. We're seeing respiratory problems. And it's happening more and more, even premature deaths. And so I ask you, please for provisions -- provisional timelines for locomotives, 50 percent for all new zero-emission vehicles -- excuse me, locomotives, by 2025. And also establish a requirement -- or rather a rule that locomotives cannot be idling for any more than 15 minutes.

And that's why we're asking CARB to do this. You have the authority and the power to do this and we ask please that financial gain not be more important than
human life. My son is starting to show the beginning
signs of asthma. And what can I tell him? I can't tell
him wait, because CARB's rules aren't strong enough right
now. What can I say? And I repeat it, health -- or
excuse me, illnesses have no date. They come when they
come. And so I think if other countries already have
zero-emission trains, why can't we? We're a first world
country. Why are we so behind?

Please no more deaths caused by contamination and
pollution. I ask CARB please more strict guidelines and
rules.

Thank you.

BOARD CLERK HARRINGTON: Thank you.

Next is Yasmine Agelidis.

YASMINE AGELIDIS: Good morning, Chair Randolph
and Board members. My name is Yasmine Agelidis and I'm an
attorney with Earthjustice. I'm here today with a caravan
of 15 community members from Southern California. We
wanted to be here in person, because we need to urgently
communicate to you just how Desperately we need to clean
up rail pollution in our state.

Diesel pollution is diesel pollution. It is
deadly whether it comes from freight trains or passenger
trains. All of these trains need to be cleaned up. To be
frank, the situation with rail pollution in California is
dire. It's been 14 years since there have been any new regulations for rail at any level federal, State or local. So we are really, really grateful that the time has come for rule here now.

Staff have done a really great job and I really want to commend them for building a strong rule, meeting with community members, and updating advocates throughout this process. This has been a model for how to develop a strong regulation.

The benefits from this rule are truly staggering. This locomotive rule will have the single largest NOx emission reduction benefits in the entire State SIP Strategy, and it's by a lot. It will be 63 tons per day of emission reductions from NOx, even greater than the Advanced Clean Fleet Rule.

This plus the $32 billion in health benefits means we absolutely cannot afford to delay adopting a strong rule. Now, even with all these benefits, we urge the Board to strengthen this rule to clean up diesel pollution from all trains and that's because we're really long overdue for any regulation.

First -- so I've got three asks. First, accelerate the timeline for switcher trains to go to zero emission. Now switchers are the oldest and the dirtiest trains, and they're the ones that operate in railyards,
which are closest to communities. You know, these trains traveled very short distances within the boundaries of a railyard, just, you know, a few miles back and forth, so they're really perfectly suited to connect to overhead power lines that have a constant source of power or to be powered -- or to be charged easily within the railyard.

Now second, set interim timelines for transitioning locomotives to zero emission. Interim timelines are going to be important to send signals to the market and to create a smoother shift to zero emissions.

And then finally, reduce idling limits to 15 minutes. Pollution from idling diesel trains, whether again from freight, or passenger, or industrial trains is so harmful. I've heard stories of schools that are just, you know, right in front of them, there's these trains idling for a really long time and it's really shocking to hear. It's one of the community's top concerns.

You know, there's no safe level of exposure to diesel, period, so we're asking you to direct staff to include these three targeted changes in the 15-day changes to this rule. And again, we hope that EPA's response issued last week that, you know, Chair Randolph you mentioned at the start of this, we hope it gives you a renewed sense of the need for California's leadership here in cleaning up our air pollution, not only for our state,
but really to be a leader across the country. We need you. Community is relying on you. Thank you so much.

BOARD CLERK HARRINGTON: Thank you.

Next is Yassi Kavezade.

YASSI KAVEZADE: Good morning. My name is Yassi. And thank you so much for your attention today. I'm with Sierra Club National and of course with the caravan traveling from the Inland Empire and all over Southern California here today. And I'm also here representing the work that many community members before me worked on to clean up rail and hold rail companies accountable for their business practices.

In the South Coast Basin, we have over 18 intermodal freight facilities and that largest port complex in the country, the San Pedro Bay. Locomotives are novel technologies that need major upgrades to zero emissions yesterday. I'm excited to see this rule growing the market for zero emissions, more jobs, more grid integration. And we cannot afford any more delays. We've been working on this rule for years, so please keep it timely.

Thank you, CARB staff, for capturing the effects of locomotives. I think that was the first time I've seen a video like being presented a part of the rulemaking process. And that was such a incredible way of describing
our stories and putting us in -- and giving a face to the regulation. So I hope that can be an ongoing trend.

This year alone, we've had experience over 120 dirty air days in the South Coast Basin for smog. So I'm urging that CARB, EPA, and the air districts can also help smaller rail companies transition soon with funding and innovation technologies.

The Class 1 railyards have no excuse and can afford using zero-emission locomotives in California now. Our communities living near these intermodal facilities in the greater state cannot stand idling, plumes of emissions, around the clock noise, and ancient workings of older technology. We are working hard for stronger emission caps and zero-emission's infrastructure, and the South Coast Air Quality Management District's Indirect Source Rule. And we can help -- and we hope that CARB can support zero emissions sooner rather than later.

As early as 2027, idling limit reductions from 30 minutes to 15 minutes and interim report backs from rail operators on their progress towards zero emissions. Today, you can see that we are a tiny but mighty group and we hope to continue to working with you all on innovative progress like this. We will continue to show up at EPA and our local air districts do the right thing and grow solutions for our communities that can be proud of us in
the next generation.

So I encourage you all to lean into your courage, away from fear. No one is going anywhere. California is the fourth largest economy in the world and we can continue to do business and towards a better future. So thank you so much for your time today.

BOARD CLERK HARRINGTON: Thank you.

Next, is Marcos Lopez.

MARCOS LOPEZ: Good morning. My name is Marcos Lopez, a community member with East Yards Communities for Environmental Justice. I live in Long Beach, California, ground zero for dirty air from one of the largest ports in California. I live on Loma Vista Drive. If you look that up on a map, you'll see that behind my bike yard is the 710 freeway, followed by the Port of Long Beach, and several other giant infrastructure projects that affect the health of my community. This includes a railyard leading to and from the Port of Long Beach.

I grew up in South Gate, California. My elementary school, Independence Elementary, was next to a Union Pacific Railroad. My middle school and high school were next to the Alameda freight corridor. The emissions these trains are releasing have followed me my entire life in Southern California.

Your online purchases are killing me and my
community. This is not normal. I'm tired. I'm tired of breathing in thick dirty air. I'm tired of my days being wasted from allergy attacks. I'm tired of knowing that my community will live significantly less years than the affluent side of Long Beach. And I'm tired of having to remind you all that my health and my community's health is more important than the wants of a large corporation.

Thank you, staff, for developing the zero-emission locomotive rule, but it needs to be stronger. To ensure that community health comes first, set a strong example and ensure that we have clean air. I urge you to accelerate CE requirements for switcher locomotives up to three years, provide interim timelines for zero-emission trains, and most importantly, you all need to reduce idling for locomotives to be limited to 15 minutes. Again, thank you.

BOARD CLERK HARRINGTON: Thank you.

Gem Montes.

GEM MONTES: I can't read off little -- the little tiny phone, so I have to bring my whole iPad out here. I've got the senior eyes going on.

(Laughter).

GEM MONTES: Gem Montes from Colton, California, located in the Inland Empire in Southern California. I'm also with this amazing caravan of people. I'm here as an
advocate, a citizen scientist, but most importantly as a mother. I was previously diagnosed with breast cancer and I live with chronic asthma and eczema. Additionally, five of my six children are plagued with asthma and eczema. This health history is common in the Inland Empire and I'm one of the luckier ones.

Studies have shown that PM2.5 has been found lodged in mother's placenta. It contributes to premature births and low birth weights. And these toxins have been found to contribute to high rates of ADHD in surrounding areas. This is in addition to asthma, COPD, heart disease, and more, and all of you are aware of that.

Our children are immersed in this toxic air. Some schools are surrounded by active train tracks. They go to school, play sports, engage in extracurricular activities and simply hang out with friends in this solution. Their young lives are threatened on a daily basis. As a child with asthma, you often have asthma attacks at night when 2.5 concentrations are high and you miss school the next day, parents miss work, you struggle in school for missing so much time, and probably will not continue on to college. And ultimately, you'll be forced to take a job that will continue to harm your health and the cycle continues.

We need your help. We need this rule to be put
into place sooner than later. We can't hold our breath until the air is safe enough to breathe. Waiting for the railroads to do their part is not an option or we wouldn't be meeting here today. As I'm listening to railroad representatives say that the technology is not available, and submit as a viable excuse, I have to laugh.

We all know that when there's a demand for something, incentives, and the desire to make money propels people to action, and they figure out a way. I mean, this is California. How much more time do we need to make this transition? We all knew this was coming and it's not okay for people to live with ill-health and even die, while they see how long they can prolong the transition to cleaner options.

This connectivity they are speaking of is far from what type of connectivity we as people need to see. Being connected for our communities at its bare minimum is being able to breathe and to go outside, to walk in the grass, and take your dog out. It's having parties at the park. It's planting gardens. It's hiking in clean air. Most days, we can't do that in the Inland Empire. We're trapped inside our homes, while our homes shake by nearby trains and soot invades our homes, our land, and our bodies.

We should not bear the burden for the companies
who have no respect for the lives of my community and
other marginalized communities. All I've heard today are
excuses and to not save lives. Why are we making excuses
to not save lives. Is this really what we're debating
here? History has shown that these same railroads were
literally built by people of color.

This blatant disregard for life is disgusting. I
truly appreciate the opportunity to be heard and to
elevate community voices. Railroads let's stop the
whining. That's what I've heard. We need more money. We
need more time. We need more negotiations.

BOARD CLERK HARRINGTON: Thank you. That
concludes your time.

GEM MONTES: You know what, our communities need
clean air.

Thank you.

BOARD CLERK HARRINGTON: Next is Benjamin Luna.

BENJAMIN LUNA(through interpreter): As I arrived
here this morning in the hallways, I greeted someone. I
could feel the warmth in their hands. They even gave me a
hug, as if they were telling me welcome. Thank you for
coming. I'm going to look after you. And then I come
into the room and I her name right up there, Diane
Takvorian. Thank you so much for your love.

I'm so excited to be here in front of you, all of
you, because of your humanity, your desire to protect us, but I also feel sad, sad and even disillusioned because of those big, big companies that for their want of money, they poison the air. They hurt us. And to them, we are just numbers. I've been living next to the train tracks for four years. And in those four years, my wife, my children, now all of them suffer from allergies. We have to deal with the sound, the noise, 24 hours a day. We feel our house shake, as these tremendous machines go by us. Just a few weeks ago, we had a meeting with representatives of this company. They have three rails already and they say we're going to build one more. They didn't consult with us to ask if it was okay. They just tell us we're going to do this.

And I tell them that pollution is horrible in our area. And they say, no, we're within the limits that we're allowed. I remember the name, Sandra. Can you send me personally a study, something that shows the quality of the air that I'm breathing? She said give me your email and I'll send it to you. Weeks went by, nothing arrived. The second meeting, she didn't come, but others did. Again, give us your email, we'll send it to you, and again nothing.

So then a company, a private company comes, does the study and tells us, you're dying, little by little.
They're killing you little by little. To those companies, we're nothing but numbers. And hence my emotion being here in front of you. You are going to protect us. But what I do tell my family, do we have to wait another eight years, pray to God that we have good health and we don't die during that time. I've seen friends die of lung cancer and they don't even smoke. I am full of emotion being here.

And interpreter correction, I'm excited to be here, but I also feel sad thinking that when I go home, thinking of all those people who are still being affected by what's going on that we're just numbers. We trust you. We put all our hopes in you. I am a citizen of this country. I work and I fight every day to better my community. May God bless you and bless this great country.

Thank you for listening.

BOARD CLERK HARRINGTON: Thank you.

Next is Charlotte Mourad.

CHARLOTTE MOURAD: Hello, all. My name is Charlotte Mourad. And I'm a student and academic researcher at UC Berkeley at the air quality modeling exposure lab. I'm here with The People's Collective for Environmental Justice. And before coming to school in Berkeley, my family and I are long-time residents of
Riverside when it was primarily rural.

Now, with the boom of E-commerce over the last 10 years, our Inland Empire region has become the shopping cart of the America filled with warehousing, diesel trucking, and rail to transport goods from the port to the rest of the county. Due to this, my family and I personally have over the years developed a slough of symptoms due to high air pollution.

Currently, at my lab, I'm one of the lead researchers conducting a study on PM2.5 exposure in the community of West Side San Bernardino around the BNSF railyard. It's a cancer cluster in that neighborhood, as demonstrated by a Loma Linda study. Our participants have the railyard in their backyard. And we know that PM2.5 causes the most harm to those living directly next to the source and close by. Our preliminary results are showing us that alarmingly high average concentrations in participants' homes, as well as hot spots near the railyard.

And you heard Layla Gonzalez earlier, there is no safe PM2.5 exposure. Our participants are exposed to extremely high levels of PM2.5 in their homes 24/7. And despite this, BNSF was granted an expansion on their San Bernardino railyard when they know though that there are high concentrations of lung cancer right next to the yard.
I'm asking you to listen to the community members that have come out here and that live next to these railyards and to support a strong locomotive rule. We need to electrify these dirty switchers and we need zero emissions now. Peoples live are at stake and we need to avoid these preventable deaths. We need a faster timeline with 27 -- 2027 deadline for zero emissions instead of 2030. We should have had this a long time ago. We cannot delay. The air is already toxic. Thank you.

BOARD CLERK HARRINGTON: Thank you.

Next is William Barrett.

WILL BARRETT: Hi. Good morning and thank you for the opportunity to speak today. Will Barrett with the American Lung Association.

And first, I want to say what an excellent presentation that was, excellent framing of the health, imperative of this process. I would say slide 9 was one of the most impressive slide discussions I've seen in quite a long time here. So thank you for that. It really framed the fact that this is a health issue at its core. There is widespread health support for moving forward with this rule as quickly as possible. Asthma experts from the San Joaquin Valley, health experts from Southern California, physicians from Sacramento and the Bay Area all voiced their support for this important rule. We
support it. We would also encourage you to take looks at ways to strengthen the rule as have been outlined by several speakers already, in terms of any opportunities for timeline to adjust or the idling limits.

This proposal is really a necessary step to address the immense harm caused by locomotive pollution in California. We encourage you to move forward with it. We encourage you to come back early next year to adopt the rule. And ultimately, we're talking about reducing idling, establishing trust accounts that support healthier technologies and phasing in zero-emission technologies. These are all critical public health interventions. Given that we haven't seen strong effort to date from the federal government on this, the fact that we still have near -- or, I'm sorry, zero and pre-zero engines running in California is outrageous. This needs to change. This policy can do that.

The strength of the rule really is that all locomotives are included. For more health protective operations, we would oppose any delays or exemptions, and again support any strengthen that the Board can do between now and adoption.

As was discussed in the -- in the discus -- in the presentation, this is the largest chunk of the SIP. This is critically important to get these NOx reduction
benefits, but it's also a critical cancer reduction opportunity. We saw 90 percent or more reduction in cancer risk near the railroads -- railyards. This is huge. This is exactly what CARB's job is to do protect community health.

The locomotives -- or I should say, the Lung Association's Annual Lung Cancer Report came out this year -- this week, and basically what we saw is that there's a huge disparity still in who's getting lung cancer and the negative health outcomes. This policy really gets to the core of that. We see it in the AB 617 communities calling for more attention to the locomotives. It's a -- (coughing) -- excuse me -- and environmental justice issue. It's something that needs to be moved forward quickly.

I spoke for about two minutes. Every two and a half minutes in the United States, somebody is diagnosed with lung cancer. This policy can really get to the heart of that and really help to make a dent in it. So thank you very much. Move forward, adopt a strong rule.

BOARD CLERK HARRINGTON: Thank you.

Next is Angie Balderas.

ANGIE BALDERAS: Good morning, Board and community. My name is Angie Balderas. I'm here on behalf of the Sierra Club and I'm also here with the caravan. I
am here to encourage the Board to adopt a strong Locomotive Rule. This rule, if adopted, will save many communities and residents. We need zero emissions now. I just can't help but get so pissed off and just mad just listening from the speak -- to the speakers from one through 12. All they talked about with their little scare tactics and talking about we're going to leave California, and -- they're so -- and everything they said and all their points, not once did they give a dam about the lives that are being -- they care more about money.

And they're so disconnected from community, and you could -- I'm more than sure that most of them don't even live in communities like the ones that I lived in, and most of the folks here, and San Bernardino, and Colton, because you're so disconnected that the whole time they've been stuck on their phones, glued on it, instead of listening to the community. If you really gave a damn and you're willing to do whatever it takes to bring clean air and get to zero emissions, where there's a will, there's a way.

And, you know, what's more important -- what's more alarming, it's not money, it's the lives of the residents in the communities that I grew up in and worked in, like Bloomington, like Colton, the west side of San Bernardino. I lived by the railyards in Bloomington. I,
too, have a sibling with asthma. I also have respiratory concerns. I worked in the west side of San Bernardino, where I saw kids with asthma every day bloody noses, co-workers dealing with respiratory concerns, and who are no longer here today, and didn't even smoke at all in their lives.

While working at -- I worked Alessandro elementary. I lost all these co-workers who worked at Alessandro Elementary and the Ruben Campos Center, which is a park that's right in between the San Bernardino Intermodal Hub. And you see this park, it's so sad. Everything is dying all around. It's just a space where the kids could go and play. But right along all these polluted -- I mean, all this pollution, this heavy pollution that they have to -- it's just a cluster -- excuse my language, but a cluster fuck of pollution that these kids every day -- like there's no safe haven. Like they go to school, they go home, it's pollution everywhere.

And you know what CARB? We need you to do better and be better. I'll tired of being in this toxic relationship with them. If they want to go, let them go. If they really love us, we could have both. We could have zero emissions and healthy communities, we could have both. So if they don't want to commit, if they don't want
to be, if they don't really love us, let them go. Get
your stuff and get on packing.

Thank you.

BOARD CLERK HARRINGTON: That concludes your
time.

Next is Bill Magavern

BILL MAGAVERN: Good morning, Board members.

Bill Magavern with the Coalition for Clean Air. We have
an air pollution crisis in California and we need to
address it with the kind of urgency that that requires.
And that means especially cleaning up the freight sector.
And I think there's a perception among many that moving
freight by rail is actually cleaner than moving it by
truck. And unfortunately, as your excellent staff
presentation showed, that is not true, as long as the
railroads are using old dirty diesel locomotives, which is
what too many of them are doing.

And, you know, we supported CARB's petition to
U.S. EPA in 2017 and we will continue to urge the federal
government to take action against rail pollution. But the
very fact that it took them five years just to send you a
response to the petition, not actually doing anything, but
actually sending you a response, shows that we cannot
afford to wait for the federal government to act. And we
also can't rely on the railroad industry to voluntarily
clean up their act, because we've seen that what happens is that many of them will actually bring in some of the oldest dirtiest engines and use them in California spewing toxic diesel exhaust on our communities.

As you've heard, this measure is by far the biggest item in your State Implementation Plan approved two months ago, when it comes to reducing NOx. And it's essential for cleaning up the air, both at the regional level, to meet those national air quality standards, and at the level of community air protection, as we've seen so many of the AB 617 communities have been calling for a measure like this.

It's important that the rule includes all sectors that use locomotives. It will save thousands of lives and so we urge you to come back early next year considering the strengthening amendments that have been proposed by the community members who came up in the caravan, who you've heard from this morning, and to take strong and effective action early next year.

Thank you.

BOARD CLERK HARRINGTON: Thank you.

Daniel Barad.

DANIEL BARAD: Bill is so tall, it stinks going after him.

(Laughter).
DANIEL BARAD: Daniel -- whatever, it's fine. I'm -- okay. Well, this is now embarrassing.

(Laughter).

DANIEL BARAD: Good morning, Chair and members. Daniel Barad on behalf of Sierra Club California and our 500,000 members and supporters throughout the state. We strongly support CARB's efforts to curb locomotive emissions through this proposed regulation and we appreciate all the work that staff has put into this rule and for the excellent presentation this morning. We have heard this a lot today, but it bears repeating that this rule is the single greatest source of NOx reductions in the SIP that the Board adopted a couple of months ago.

Without this regulation, California will not be able to comply with federal air quality standards and millions of California -- Californians will continue to breathe toxic air. We appreciate that this rule includes a spending account which will transition locomotives to zero emission. And as the spending account works to get cleaner locomotives on the tracks, in-use requirement is critical to making sure that the oldest and dirtiest ones can no longer pollute California communities.

Finally, the idling requirement is a no-brainer as it will reduce emissions that are often completely unnecessary in the first place. For this regulation to
deliver its maximum benefits and give California a chance of meeting its SIP commitments, all the measures in this regulation must remain and they must apply to all locomotives operating in California.

We also think that this proposal could be strengthened by moving up zero-emission switcher requirement by three years, setting interim zero-emission sales targets, and reducing the idling limit from 30 to 15 minutes. These changes would further reduce emissions and accelerate zero-emission deployment. But overall, we strongly support this long overdue effort to reduce locomotive emissions in California. We urge you to move forward today with the most stringent rule possible and then adopt this rule as early in 2023 as possible.

Thank you.

BOARD CLERK HARRINGTON: Thank you.

That concludes our in-person speakers for this item. We will now hear from our Zoom commenters.

BOARD CLERK GARCIA: Thank you. And we currently have 18 commenters in Zoom with their hand raised. And just a reminder, the speaker sign-ups have been caught off for this item.

So first, we will hear from Ian MacMillan, Adriana Rizzo, Cynthia Pinto-Cabrera, Teresa Bui, and Tracy Alves.
So Ian, I have activated your microphone. Please unmute and begin.

IAN MACMILLAN: Good morning. Can you hear me?
BOARD CLERK GARCIA: Yes, we can.
IAN MACMILLAN: Great. Thank you so much. Good morning. My name is Ian MacMillan and I'm an Assistant Deputy Executive Officer for Planning at South Coast Air Quality Management District. Thank you for the opportunity to comment today.

We support CARB's overall proposed approach to regulate in-use locomotive emissions. We recognize, of course, that no single regulation can achieve all of the emission reductions needed from railroad operations. The partnership between local agencies, such as ourselves, CARB, and the federal government is therefore critical to achieve our legal requirements. We are encouraged to see EPA's announcement that they plan to pursue new actions on locomotive emission standards. We look forward to continuing to partner with CARB in advocating for the federal government to do more to reduce emissions from sources like locomotives, as well as other sources primarily regulated at the federal level.

We will continue to push for additional emission reductions given the pressing need for achieving State and federal air quality standards and the persistent air
quality impacts in our environmental justice communities. As part of our effort to achieve the necessary emission reductions, South Coast AQMD is working on proposed -- pardon me, proposed Indirect Source Rules for new and existing railyards as well as marine ports.

We believe our proposed ISRs can be built to work together with the regulatory framework in CARB's proposed In-Use Locomotive Rule. We look forward to continuing to work with CARB staff as both agencies work to finalize our rules in parallel.

Thank you.

BOARD CLERK GARCIA: Thank you.

Adrian -- oh, I'm sorry, it's Adriana.

Apologies. I have activated your microphone. Please unmute and begin.

ADRIANA RIZZO: Hi, everyone. Thank you for having me here today. My name is Adriana Rizzo. I am a member of Common Ground California and also -- I am a resident of Riverside -- live in Riverside, California. It's really -- I'm really grateful to all my neighbors who have come out from the environmental justice community today to speak about the impacts of rail pollution on their communities. I used to live within two blocks of one of the heaviest BN -- BNSF rail line -- freight lines, one of the heaviest in the country. I currently live two
blocks away from a passenger rail line. And I highly
support CARB's efforts to reduce emissions from -- from
freight and passenger rail. The Inland Empire is the
nexus of the company -- of the country's logistics --
logistics industry and consistently has the worst air
quality in the country and action is urgently needed to
make a difference on this problem, as we've seen from so
many speakers already.

I want to point out -- highlight -- so I support
a shorter timeline for implementation of zero-emissions
technology. I also want to highlight a particular
zero-emissions technology that is -- already has been
available for decades, is available off the shelf and is
widely used for freight -- both freight and passenger rail
in other parts of the United States as well as widely in
use internationally. That technology is overhead electric
catenary -- catenary lines. This is -- this is technology
that could be purchased today, if there is the motivation
to. We have no need to wait for other speculative lighter
duty technologies like hydrogen when this -- when this
technology is available today. And I would like to see
greater emphasis for catenary electrification in these
standards, as well as support for the implementation of
this infrastructure.

This is -- this is not only -- not only is it
available and easily -- and easily implemented, it also
has many advantages over existing diesel, such as faster
acceleration that would allow -- particularly for
passenger rail for us to have better service, which would
get -- which would addition -- provide additional
reductions to air pollution and greenhouse gas emissions
by enabling shorter travel times on rail that would get
people out of their cars, reducing vehicle miles traveled
from automobiles in addition to freight and logistics.

We really need to see changes made today. Our
lungs cannot wait and neither can the planet.

Thanks.

BOARD CLERK GARCIA: Thank you.

Cynthia, I have activated your microphone.

Please unmute and begin.

CYNTHIA PINTO-CABRERA: Thank you. Hello. Good
morning Chair Randolph and Board members. Cynthia
Pinto-Cabrera, Policy Coordinator with the Central Valley
Air Quality Coalition, or CVAQ, as CVAQ has worked as a
broad and adverse coalition unified in our advocacy to
restore clean air in the San Joaquin Valley for 20 years.
And as an asthmatic and somebody who has lived next to
train trucks for half their life, thank you for taking
action on a major source of pollution that has significant
impacts on the health of valley residents and for being a
leader on this issue.

This is a much needed regulation as the valley continues to struggle to meet our clean air standards. We support CARB adopting this regulation. And again as many have stated, ask you to strengthen the rule with the accelerated zero-emission requirements, the interim timelines -- include interim timelines for new zero-emission locomotives, and a 15-minute idling requirement.

The valley is home to one of the railyards with the highest diesel particulate matter emissions, Union Pacific Railroad in Stockton. They’ve played a role in contributing to Stockton asthma problems with the community facing some of the highest asthma rates in the State. And this is a similar situation for communities across the valley with major railyards located in Fresno and Bakersfield. And as the valley faces a growing goods movement industry, this will likely just mean more train traffic and more pollution for our health. We need regulations like the In-Use Locomotive Regulation to reduce dangerous emissions, emissions from locomotives that severely impact the health of the communities in the valley, especially those living in close proximity with children and people of color being the most impacted by the source of pollution, according to the CARB staff.
health analysis.

They're being exposed to dangerous pollution that has been directly linked to increased asthma visits, ER visits, and especially in children and Black residents. You know, CARB has the authority to regulate locomotives pursuant to its duty to meet ambient air quality standards under the Clean Air Act. And adopting the rule will result in significant emission standards for a region -- for the San Joaquin Valley region and will help prevent hundreds of hospitalizations and even early death. The valley urgently needs regulations like this to protect their health and well-being.

And again, thank you, staff, for all the hard work on this. And we look forward to continuing on this path of strong regulations.

Thank you.

BOARD CLERK GARCIA: Thank you.

Teresa, I have activated your microphone. Please unmute and begin.

TERESA BUI: Great. Thank you. Good morning, everyone. My name is Teresa Bui with the environmental organization Pacific Environment. Thank you so much to staff for all their hard work on this and thank you to the leadership taken by the CARB Board in developing the Zero-Emission Locomotive Rule. We are in strong support
of the rule. As was directed by the Governor in his July
letter, he was calling CARB to urgently move away from
fossil fuel especially in the electricity and
transportation sector. And this rule would definitely get
us moving in the right direction. The opportunity to
reduce NOx is huge. Staff's proposed Locomotive Rule
would result in a 63.2 tons per day and statewide NOx
gemission reduction. And the health benefits from this
rule is also massive. It will be a reduction in about
3,200 fewer premature death and almost $32 billion in
health benefits.

And second to ocean-going vessels, this rule
offers the single largest reduction of any other rules
included in CARB's State SIP strategy. So California
cannot afford to forgo any of these reduction. And with
that, we also ask the Board to strengthen the rule in
three ways. One is to accelerate the zero-emission
requirements for switcher locomotives up three years to
2027, instead of 2030. And then include interim timelines
for zero-emission locomotives, such as 50 percent of all
new switchers are zero emission by 2025 and 50 percent of
all new line hauls are zero-emission by 2030. And reduce
the idling limit to 15 minutes.

It has taken a decade to get this rule on the
books, so we're asking the Board not to delay any adoption
of the rule, and CARB has the authority to regulate rail
in this way, which U.S. EPA has confirmed in a response
filed last week.

So thank you so much for your consideration.

BOARD CLERK GARCIA: Thank you.

And I just wanted to note for our Zoom
commenters, if you have raised your hand after the cutoff,
which was 9:45, I'm going to lower your hand and ask that
you submit written comments to the docket. Now, the
docket will remain open until the conclusion of public
comment. And the website is shown on the screen, also on
the public agenda.

So after Teresa[SIC], we will hear from Mark
Mollineaux, Anthony Molina, Jason Jewell, Mark Twain, and
Christopher Chavez.

So Tracy, I have activated your microphone.

Please unmute and begin.

TRACY ALVES: Good morning. Can you guys hear
me?

BOARD CLERK GARCIA: Yes, we can.

TRACY ALVES: Okay. Perfect. Okay. So my name
is Tracy Alves. I am the Vice President of sales and
marketing for the Modesto and Empire Traction Company, or
MET. We are located in Modesto, California and are a
private family-owned business. We are a Class 3 railroad
serving approximately 30 rail customers. We connect to
two Class 1 railroads, Union Pacific and Burlington
Northern Santa Fe.

Our company utilizes nine 3 Tier locomotives.
These locomotives were upgraded to a Tier 3 in 2008 and
2011. All of our locomotives were Tier 0 at that time.
Our company wanted to be aggressive in reducing emissions
and were able to secure grants to become an early adopter.
In addition, we have two 1500 switch engines which are
Tier 0s and are rarely used. Our company has applied for
a CRISI grant to upgrade these two Tier 4 locomotives.
This is another proactive effort by the MET to further
reduce our greenhouse gas emissions.

Our company is not opposed to working towards
improved air quality in California, as is illustrated by
our previous efforts. However, we do have concerns with
the approach CARB has outlined in the rulemaking,
specifically with the useful life restrictions placed on
locomotives and the required spending account.

The CARB limitations on locomotives useful life
is a significant concern with this proposed regulation.
The Federal Railroad Reg -- Administration has established
a longer life of 30 plus years, which more accurately
matches the locomotive's performance. The cost to upgrade
these two Tier 1500 engines is approximately $4 million.
Limiting a locomotive's useful life will force railroads to start over again possibly before zero emissions are available.

The required spending account will be detrimental to our cash flow, as we operate under very slim margins. We are a private company and we do not rely on taxpayer funds to assist with safety, infrastructure, maintenance, or human capital needs. This investment, coupled with additional mandates to a spending account for future improvements has long-term business impacts. Our railroad proves the first mile and last mile service to our customers. MET is fortunate to have Class -- access to Class 1 railroads, providing our customers with competitive options.

However, our customers do face the daunting task of funding an alternative mode of transportation. Many customers are set up to accommodate a mix of rail and truck traffic. However, few, if any, have the footprint to shift completely to truck transportation.

The typical railcar holds three and a half to four truckloads and the average train is 100 railcars. Without railroad service, California highway systems will see additional tens of thousands of trucks per month in the Modesto Area alone, which only causes more congestion and safety concerns on the highway systems.
In closing, I'm thankful for your time today. Our railroad, along many others, remains optimistic that we can work together to reduce our emissions and still allow businesses in California to thrive.

Thank you.

BOARD CLERK GARCIA: Thank you.

Mark, I have activated your microphone. Please unmute and begin.

MARK MOLLINEAUX: Hi, there. My name is Mark Mollineaux. I'm a member of Common Ground California as well as several other organizations. I'd like to thank all the environmental justice groups as well as everyone else who came here. We have a very urgent issue here and we're at a very important juncture. I think, at this time, it's important we look at previous mistakes we've made in other fields. There's a consensus at this point that we've wasted a generation of rail projects by looking at vaporware, such as -- such as the Hyperloop. This was never a serious solution to our rail projects, but people who didn't want to do things right, said, oh, we'll solve it with this novel technology.

We're seeing that same mistake here in the -- in the line of hydrogen and battery use, which is simply not a serious electrification solution for main lines.

I think it's very important to look at harm
reduction in the short term, in the immediate term, which is to say, even without zero emissions, we need to have much cleaner trains in our railyards and so on. But we can do both. We can make it cleaner and go all the way to zero emissions now without novel technology. This is a solved issue. Electrification running overhead wires, possibly batteries in shorter distance places that can recharge more frequently. But for main lines, overhead wires, catenary's, are the only real way.

We can see this in projects, you know, established passenger trains in the U.S. Northeast corridor where we're seeing electrification for Caltrain here. Even new projects such as the Denver commuter rail is using electrification. To go internationally, look at freight rail internationally in Japan, they run on passenger rail and the Japan freight and national railway is almost entirely electrified through overhead catenary.

And I think it's very interesting that the rail industry lobbyists agree with this. They say that the timetable for using hydrogen and/or batteries is simply unrealistic. They're correct. We cannot use that as our zero-emissions policy. We need to use what is shown to work, electrification through overhead catenaries.

The way we approach this is up -- is up in the air. Should we have subsidies? I think that's fair.
My -- the preferred solution I would have is to actually look at making public the right of way and making this basically a public infrastructure project. And that's I think a fairly realistic option, but let's look at all the things on the -- on the table.

The main thread here is we have no excuses for not going to zero emissions at a much more just serious and fast timetable than we're proposing here, which will clean up our cities and just lead to a future that we need desperately. So thanks for your time.

BOARD CLERK GARCIA: Thank you.

ANTHONY MOLINA: Good morning, Madam Chair, CARB Board members, and staff. Anthony Molina on behalf of the California Grain and Feed Association. I will keep my comments brief and would like to (inaudible) several meetings of the grain and feed industry and taking the time to come out and tour two feed facilities in the San Joaquin Valley.

We appreciate our communication on the proposed In-Use Locomotive Regulation and look forward to continued negotiations on the regulations related to locomotive reliability for feed operations, the spending account, the small business hardship exemption and zero-emission
Thank you.

BOARD CLERK GARCIA: Thank you.

Jason, I have activated your microphone. Please unmute and begin.

JASON JEWELL: Good morning, Chair Randolph and members. My name is Jason Jewell, Managing Director for the Los Angeles, San Diego, San Luis Obispo Rail Corridor Agency, otherwise known and the LOSSAN Rail Corridor Agency. And I'm here today representing the three California Join Powers Authorities that oversee and manage Amtrak Pacific Intercity Passenger Rail Service. The two other JPAs include the Capital Corridor JPA and the San Joaquin JPA. As you all may be aware, the State of California hosts three State supported intercity rail corridors, the Pacific Surfliner Capital Corridor, and San Joaquin's. These three corridors represent approximately 30 percent of the total national state supported intercity passenger rail ridership and are all in the top five of the most successful state support corridors in the nation.

We collectively support and share the goal to reduce and eventually eliminate locomotive emissions and have and will continue to work with Caltrans and other operators in the State to take steps toward achieving these goals. While we appreciate that CARB staff
presented a conceptual alternative to compliance under the regulation, we continue to have concerns regarding the commercial availability of zero-emission locomotives and the federal requirements for useful life.

The CARB imposed useful life requirement for locomotives is significantly shorter than federal useful life standards that can last as long as 39 years for some FTA locomotive grant programs and could force agencies to repay federal funds if locomotives are retired early. There are agencies who have procured Tier 4 locomotives that have been in use only since 2018, which will affect agency's ability to retire these vehicles within the regulation. The JPAs are working with Caltrans to fully convert the remaining intercity fleet to Tier 4 by 2026.

We appreciate CARB's willingness to conduct an analysis and reevaluate in 2027 and 2032. But we request that a neutral independent market analysis be completed by an informed third party before a rule is adopted by the CARB Board. This analysis will help to better inform the timelines, the funding, incentives, and technologies that may be necessary to meet the needs of operators across the state.

As the Board is aware, the California State Transportation Agency and Caltrans are moving toward the procurement of several zero-emission multiple vehicle
units to help kick-start the testing and transition to zero emission, but the first for transits are not planned to be available for operational testing until 2024 and do not provide the range or seating capacity necessary for intercity rail corridors. This highlights the need for the technology to be developed which is capable of operating the distances that will be required on our corridors. Thank you for the opportunity to speak before you today. And on behalf of the three California JPAs, we are committed to working with CARB staff and request that the Board direct staff to continue to engage with rail stakeholders on this regulation prior to adoption.

BOARD CLERK GARCIA: Thank you.

MARK TWAIN: Good morning, Chair Randolph and members of the Board. I'm Mark Twain. I represent the Locomotive Emissions Watchdogs, a new national advocacy group for practical public policy and incentives to stimulate the rapid improvement of air quality around freight railyards, passenger train stations, and urban rail corridors.

Like many speakers in this forum today, we are encouraged by the way the proposed In-Use Locomotive Rule attempts to put a proportional user fee on the toxic air
pollution that the current locomotive fleet carries. And then let the technology experts in the rail industry just decide how to spend those funds to get the most emissions reductions at the lowest cost. But we feel that the new rule falls short in two ways.

First, the rule does not allow spending account funds to be spent on the most promising ways to quickly and cost effectively reduce emissions in the short term, which is after-treatment retrofits and hybridization.

Further, it continues to rely on the faulty emissions certification duty cycle that EPA came up with and will undercount emissions from Tier 4 line-haul locomotives used as switchers, and Tier 4 passenger locomotives.

We request that the Board consider adding emissions retrofits to the spending accounts, promote hybridization of locomotives, and most importantly fix the certification loopholes that certain Tier 4 switcher and passenger locomotives are abusing.

We have submitted a detailed public comment attachment as Item 37 that details these recommendations and EPA certification loopholes.

Thank you for your time.

BOARD CLERK GARCIA: Thank you.

And after Christopher, we will hear from Steve
Birdlebough, Marven Norman, Beverly DesChaux, Brian Yanity, and Oscar Garcia.

So Christopher, I have activated your microphone. Please unmute and begin.

CHRISTOPHER CHAVEZ: Yes. Good morning, Board members. This is Chris Chavez, Deputy Policy Director, at Coalition for Clean Air. We have -- Bill Magavern already mentioned that we are supportive of this rule, but wanted to also chime in.

You know, I grew up near the ICTF facility and currently live near the proposed SCIG site, which, if built, will be adjacent to two schools, a park, and hundreds, if not thousands, of residents. Like many of the people who grew up in this region, I have asthma. And I can tell you from experience, there isn't anything much more terrifying than being woken up because you can't breathe.

But as others have also noted, breathing problems aren't the only threat to our communities. People in this area and people in areas near goods movement hubs and corridors suffer from elevated cancer risk. Just this week, there was a funeral for a young person, a new father actually in my community who died from a rare cancer. And there's growing evidence that diesel particulate matter increases the risk for the type of cancer he had. In
considering that diesel particulate matter is the number one air toxic contaminant in our air, it makes you wonder if he'd still be here if our air were cleaner.

We're well aware of California's failure to attain air quality standards. Just yesterday, this Board approved a redesignation of the Coachella Valley as being in extreme non-attainment bringing it in the rest -- in line with the rest of the South Coast Air Basin.

California needs to get every ounce of emission reductions it can. And as we -- and as we've seen, the transition to cleaner locomotives won't happen on their own. Despite the commercial availability of higher EPA tier engines, the vast majority of locomotives are still from the dirtiest tiers and will continue to be so absent action from CARB.

Furthermore, there are two proposed railyard projects into the South Coast Air Basin alone. One, the SCIG project I mentioned is in the middle of Wilmington-Carson-West Long Beach AB 617 community. The other, in Colton, is right next to the San Bernardino-Muscoy AB 617 community. Additionally, a third proposed facility in Barstow will likely increase traffic, both rail and truck traffic, in the harbor region.

Through this rule, CARB has the opportunity to achieve the largest NOx reductions identified in the SIP.
It also has the ability to protect the health of its most vulnerable communities. For those reasons, we strongly urge the CARB Board to approve of this rule and to make sure that it is strong and not watered down between now and when it comes back up before you all.

Thank you for your time.

BOARD CLERK GARCIA: Thank you.

Steve, I have activated your microphone. Please unmute and begin.

STEVE BIRDLEBOUGH: Thank you for this opportunity to speak on this issue. As you've heard from many of the speakers, there are many, many problems that affect the shift of locomotives. One of them is that you can end up shifting some of the freight to less efficient trucks. The second one is that you can shift the locomotives to other states. The railroads are not simply going to scrap these locomotives. They're going to use them elsewhere. And so nationally, we're not having a big effect on the reduction of GHG emissions.

The last one is that you can shift riders to cars if you reduce the availability of trains. Several speakers have suggested that we have to focus more on catenary. Other countries are far ahead of us in that and we need to catch up. I hope that you'll begin to put as much effort into electrification of the rail system as
you're putting into this project.

Thank you.

BOARD CLERK GARCIA: Thank you.

Marven, I have activated your microphone. Please unmute and begin.

MARVEN NORMAN: Hello. Yes. Good morning. My name is Marven Norman. I am a resident of San Bernardino and policy specialist with CCAEJ.

And in general, we are supportive of CARB and the push to do more. And so we support the move to -- for example, to put in idling limits. That would be very useful for like our railyard here in San Bernardino, which as a commenter mentioned earlier, studies were done. It's the most polluting railyard in the state. And generally is -- doing grave harm to the community in San Bernardino and surrounded.

And we know some of the harm is happening to other communities throughout the region. And so I think we need to maybe step back and take a look at what's going on. There are two issues that are being addressed really, one is the impact of diesel pollution and the other one is the overall climate change issue, carbon issue.

And so we -- we have the technology to solve the diesel issue tomorrow by -- as others have mentioned, stringing up wires above the trains and transitioning them...
out of using diesel. And while it's true that they might use the grid, they would be at least not polluting the diesel pollution directly into the communities any more. And then as we know, the grid is already scheduled to become cleaner. They would become -- transition to zero emissions that direction. And so we -- it would be good to have CARB do more to help encourage that solution, both because it is questionable if the technology of the development of other technologies will allow this time frame to be met, and also because we know those other technologies are not as efficient as just running straight from wire.

You know, there's talk about we need places to charge battery locomotives. We could just charge them like the whole time they're driving and that would just be the same.

So it would great if CARB would start putting funding into, as others mentioned, the -- a public corridor essentially of electrification, and especially salient with the addition of -- of new railyards. And like -- for places like Barstow, for example, which are supposed to be extensions of the port, where it sounds like they would just running up and down from the port to Barstow. You could put wires and run them the whole way. A hundred percent no new impacts in our communities and
the transition to zero as the grid cleans up.

And finally, we support -- it also mentioned that if the rule incentivizes -- punish passenger railroads for getting increasing service out to get cars off the road, that is also a step backwards. So hopefully that can be fixed. Thank you for your time.

BOARD CLERK GARCIA: Than you.

Beverly, I have activated your microphone.

Please unmute and begin.

Beverly, are you there? It looks like you've unmuted.

BEVERLY DESCHAUX: Yes, I'm here. I'm here. Can you hear me?

Excuse me, one second

BOARD CLERK GARCIA: There's a --

BEVERLY DESCHAUX: I'm sorry. I had to disconnect my other device. Beverly DesChaux, Electric Vehicle Association of the Central Coast. I grew up outside of Philadelphia, a block away from rail lines. The smell was always there with these trains just passing by. So that you state that there's no safe level of diesel -- locomotive diesel. Why would you allow for 30-minute idling time?

I mean, just passing by, you could smell them. I have asthma. I have allergies. They don't get worse when
you move away either. Once it's affected you, it's there for your life. I have -- I'm -- I'm allergic to more and more things all the time, even the gas heater in high home I'm allergic to.

So, okay, there's that.

What I want to speak to also is biodiesel. While the biodiesel may be solving some issue with the landfill, taking the garbage, it's still burning. You're still burning and still producing emissions, so I don't think to replace it with that is a good idea.

We are -- someone stated it takes a hundred times longer to charge it up -- charge up the vehicles. No, we could have wireless technology and/or the over-the-head wires, but right now, we are simultaneously needing to decarbonize transportation and the grid, so they could be working together. Solar panels along the entire rail line could be the answer. You could charging up as you go by with wireless technology. It would solve everything as far as The emissions go.

The longer that you wait and postpone these targets, the worst our issues become with the environment. We are hitting tipping points that have no return. We must address it as quickly as possible. The waiting around is not -- is not an option. And I appreciate all the work that you've done. You've done a tremendous
amount of work. And I admire you for that and I thank you.

BOARD CLERK GARCIA: Thank you.

Brian, I have activated your microphone. Please unmute and begin.

BRIAN YANITY: Good morning and thank you, Madam Chair and Board members. My name is Brian Yanity. And I live in Fullerton, about a block from the mainline railroad tracks.

Rail transportation is the most energy efficient form of powered land transportation. Diesel powered trains emit only a third of the greenhouse gas emissions of petroleum powered auto and truck transportation per passenger mile or ton mile due to the low friction of steel wheels on rails.

CARB needs to support a holistic strategy that recognizes the greenhouse gas emission benefits of rail transportation in general by working with Caltrans and other agencies to encourage mode shift from road transportation to rail whenever possible, but we need to push for rail electrification at the same time. CARB also needs to encourage decision-makers and government agencies to stop wasteful highway expansion, which diverts riders from transit and rail and increases greenhouse gas emissions, vehicle miles traveled, and fossil fuel use.
I am very concerned by CARB staff's presentate -- prescription for zero-emissions rail being entirely based on two unproven technologies with serious limitations, battery and hydrogen powered trains with no con -- serious consideration given to the technology proven to work for mainline rail, overhead wire electrification.

The CARB staff report states that zero-emission line-haul interstate locomotive operation may be feasible by the year 2035. They're off by about 120 years. The first zero-emissions line-haul long distance electric freight trains in this country were running on the Milwaukee road back in 1914. It is off-the-shelf technology proven to be economical for many different types of rail operations all over the world. It is also well established with many decades of experience and a large diverse pool of vendors and equipment providers worldwide.

It is unfortunate that Caltrain is our only rail electrification cost benchmark in the U.S. and California of late, because it's probably the most expensive rail electrification project in the history of the world. It's largely due to poor planning and construction project management, and not really due to the overhead wire electrification technology itself.

Recent rail electrification projects in Germany,
Denmark, and elsewhere have cost about $1 million per track mile or less than one-tenth of Caltrain's cost. And these places have very similar material and labor costs and stringent environmental requirements as California.

Battery and hydrogen rail propulsion is likely to be practical only for specialized applications, such as freight yard switching or lightly used branch passenger lines, not mainlines with frequent trains. It is implied by the CARB staff report that conventional overhead wire electrification is too expensive to pursue and that battery and hydrogen will be cheaper. However, battery, and especially hydrogen, require very expensive supporting infrastructure as well.

The laws of physics and the energy density of hydrogen batteries also severely limit their range. They can only go a small fraction the distance of diesel powered train using the same size fuel tank. The rolling stock up-front costs, capital costs of battery hydrogen trains are much higher than for all electric trains. The same is true for operating and maintenance costs.

Thank you.

BOARD CLERK GARCIA: Thank you.

And after Oscar, we will hear from Devon Ryan, Tom Helme, And Dave Cook.

So Oscar, I have activated your microphone.
Please unmute and begin.

OSCAR GARCIA: Hi. Good morning. My name is Oscar Garcia. And I represent Neste, the world's largest producer of renewable diesel and sustainable aviation fuel.

Neste applauds CARB's commitment to being the world leader in addressing climate change and air pollution in disadvantaged communities. We would like for CARB to consider adding renewable diesel as a compliance option in the in-use locomotive regulation. So that significant emission reductions can be achieved more quickly and without the need for new infrastructure.

Locomotive manufacturers are on track to release renewable diesel locomotives that are shown to reduce PM by up to 80 percent and NOx by 13 percent. The rail sector has also expressed a strong interest in using renewable diesel. And this regulation could create the necessary incentives. So please consider adding renewable diesel as a compliance option in the In-Use Locomotive Regulation.

Thank you.

BOARD CLERK GARCIA: Thank you.

Devon, I have activated your microphone. Please unmute and begin.

DEVON RYAN: Good morning, members. I'm Devon
Ryan, Government and Community Affairs Office with Caltrain. Caltrain is extremely committed to the State's vision of a zero-emission future. Our agency is currently engaged in a $2.44 billion electrification project that will replace 75 percent of our diesel fleet with new high performance zero-emission electric trains running service from San Francisco to San Jose with revenue service expected in fall of 2024.

However, our corridor south of San Jose to Gilroy is owned by UP and that line will not be electrified for sometime. Thus, we will still need to run diesel service to those communities until we have the funding, testing, and FRA approval for battery equipped electric trains, which are currently not federally vetted for passenger service in the U.S.

Caltrain also faces a funding gap with its electrification project of $410 million and a fiscal cliff in terms of cash flow in June of 2023, given the impacts of the pandemic.

The regulation as proposed is not in keeping with federal requirements around useful life and replacement for real vehicles, which is one of several issues we detailed in our comment letter. It also requires the Z -- credits for zero-emission vehicles expire in 2030, which means that after spending billions of dollars to electrify
as much as possible, Caltrain would still be subject to
the encumbrance of tens of millions of dollars in needed
operations funding.

While we appreciate that CARB staff did offer an
alternative proposal yesterday afternoon, that proposal is
still not consistent with federal requirements, meaning
the loss of millions of repayment and replacement costs,
the ineligibility for federal funding programs and a host
of other issues.

We and other agencies offered changes that would
help address these issues and we would like the
opportunity to continue -- to continue to work with staff
to pursue those changes. We understand that rail vehicle
procurement procedures, federal funding, and safety
regulations are different for passenger rail agencies and
that CARB staff was unaware of these requirements when the
proposed regulation was released. Caltrain and other
passenger rail agencies, which take cars off the road, and
are a net reduction of emissions in the State, have
reached out to CARB staff and offered to be a resource to
develop a regulation that could work for passenger rail
operators.

We really want to be -- to comply with this
regulation. We are doing everything we can to get to zero
emission, but we cannot get there with this regulation as
written, because we can't go against federal requirements. And we do not have the funding or the federal approval to move forward with replacing our remaining fleet. And so we are asking the Board to direct staff to continue to work with us and allow us the opportunity and time to reach a path forward, so that we can be in compliance and reach a point where this regulation can be successful.

Thank you so much for your time and consideration and happy to answer any questions.

BOARD CLERK GARCIA: Thank you.

Tom, I have activated your microphone. Please unmute and begin.

BIANCA LOPEZ: Good morning. My name is actually Bianca Lopez. I'm not sure how Tom's name came up here. That is my husband.

But I live in Stanislaus County. I am a resident here and been here for a little over a decade. I was raised in LA near the 710. My mom lived in the Exide cleanup site in Maywood Huntington Park area and passed away from cancer. I have two little boys and one of them is coughing now. He is a five-year old with asthma, which I transferred my asthmatic genes on to. And so I think I'm here today to, you know, learn. I appreciate the parti -- the presentation that you made. It was very clear in one of the slides that you understand that our
health is at cost. It has the highest cost here.

And for many years, we've seen agencies fail to implement and enforce laws that protect our communities and our families.

My child has actually been missing school for over two weeks because of his asthma. We live in Riverbank, where the railroad is our backyard. And when we first moved here, we called CARB to file a complaint about the stench here, which gave us a headache after smelling it for just a few seconds.

So that is my reality here and I am -- I'm here in support of the rule to improve the railroad business and also to call bullshit on the comments made by some of these big corporations, like the Sierra Railroad Company who claims that these are financial disasters. We can no longer put profits ahead of people's health and lives.

I am also in a community where shortline exemptions are not going to be acceptable. Shortline companies who provide services to local and small businesses may be should have some more incentives to be cleaner, but they should not be exempt from this rule.

It is those shortline companies who are polluting my communities here in Stanislaus County, Riverbank, Empire, Modesto. And I understand that small businesses will have a hardship to comply and maybe I am also in
support for, you know, support to them. I'd like to, you know, just add that a 30-minute idling limit is ridiculous. I can -- you know, I get reactions to the smell within seconds of smelling what is happening in my backyard. Thirty minutes is too much and maybe even is 15 minutes. But please continue to educate us on what you're doing for infrastructure and setting milestone to reach the goals that you are proposing in this rule.

Thank you.

BOARD CLERK GARCIA: Thank you. And can you please state your name for the record one more time.

BIANCA LOPEZ: Bianca Lopez.

BOARD CLERK GARCIA: Okay. Thank you.

Alrighty. Next, we -- lastly, we will hear from Dave Cook. So Dave, we are pulling up your slides and I have activated your microphone. You can unmute and begin, and it looks like your slides are up.

(Thereupon a slide presentation).

BOARD CLERK GARCIA: Are you there, Dave?

DAVID COOK: Yes. Sorry. Mute button got stuck.

Good morning, Madam Chair and fellow Board members. My name is David cook and I am the CTO of Rail Propulsion Systems. We are encouraged to see the Board working on ways to put an externalized cost on toxic locomotive emissions, while allowing the commercial market
to determine how to best spend those funds to lower emissions.

Next slide, please.

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DAVID COOK: One of the rail industry applications that will be hardest hit by these regulations are the Class 3 industrial facilities that operate very old equipment sorting railcars at small railyards, like the picture below. These are not only some of the dirtiest locomotives, they typically operate in urban disadvantaged communities.

Next slide, please

--o0o--

DAVID COOK: On the positive side, these small railyards and industrial facilities would capture switching locomotives or promising applications for battery powered locomotives. RPS has been operating a zero-emissions locomotive intermittently in the LA Basin for over two years now. With incentive funding under the CORE Program, this locomotive could go into regular daily a service and be an example for other small railyards and industrial customers. We are also working on an Energy Commission funded project to wirelessly charge battery locomotives.

Next slide, please
DAVID COOK: Like other public commenters, we support the in-use rule, but believe the spending accounts are too restrictive and overlook practical solutions. We are also starting the process to apply for multiple CORE vouchers in hope that CARB leadership staff move that process forward quickly to put this zero-emissions locomotive into regular daily service before the end of the year.

Thank you for your time and I'd be happy to answer any questions.

BOARD CLERK GARCIA: Thank you. And that concludes the commenters for this item.

CHAIR RANDOLPH: All right. Thank you much very much. Unless there are any factual issues that staff needs to address, I will go ahead and close the record on this item.

So this is the first of two Board hearings, so I'm closing the record on the agenda item now. However, if it is determined that additional conforming modifications are appropriate, the record will be reopened and a 15-day notice of public availability will be issued. If the record is reopened for a 15-day comment period, the public may submit written comments on the proposed changes, which will be considered and responded to in the
Final Statement of Reasons for the regulation.

Written or oral comments received after this hearing date, but before a 15-day notice is issued, will not be accepted as part of the official record on this agenda item.

Okay. I think we are ready for our Board discussion. Board Member Riordan.

BOARD MEMBER RIOR DAN: Thank you, Madam Chair.

First, let me just say to the staff, a very fine report.

And I would say that I'm very pleased with the recommendations that you've made, particularly as it relates to our transit agencies or our passenger locomotives. The -- I have some concerns as you well know, because I've talked to you about it, about working with them to understand some of the difficulties of requirements that are made upon them by, one, the federal government, and just other -- other issues that make them rather unique from any of the freight lines.

In thinking about some of these issues, useful life is one of their issues that they've raised today. And I'm thinking that we need to work that out. And it may not be that we change our thinking, but ask the federal government is there any opportunity for understanding what we are requesting and not penalizing the transit agencies for the useful of like a locomotive
purchased in the past.

   Many of them, as they testified today, are running almost totally Tier 4, and so I think we need to the work with them and try to figure that ought, as well as the other unique category that I think needs some work on behalf of yourselves and the transit agencies is the spending account issue, because if it does affect their operations, and we want and encourage them to operate as efficiently as possible, so that they can gather more passengers, which makes it all work better for everybody, we may need to make some adjustments. So I'm hopeful that you will do that.

   Otherwise, I'm very impressed with the suggestion of the technology assessments. Those should be done, you know, with real -- you know, complete. And when I say complete, I think those studies need to interview all of the stakeholders that are involved, and -- but those are critical, I think, for the success of this regulation.

   With that, I'll close and say thank you for working with the transit agencies in California.

   CHAIR RANDOLPH: Thank you. Dr. Sperling.

   BOARD MEMBER SPERLING: Thank you very much.

   So I've got three questions. The first one is -- it really is a question, is that we've heard a lot of testimony today or some testimony today questioning our
authority. And if staff can explain what do we clearly
have authority over, what do we maybe have authority over,
I mean, with respect to like switcher locomotives, for
instance, shortline rail? That's my first question. Do
you want me to do all three or...

Did I freeze?

CHIEF COUNSEL PETER: So, Dan, why don't you do
all three. The first question was do we have -- what is
the limitations of our legal authority?

BOARD MEMBER SPERLING: Exactly, especially with
respect to --

CHIEF COUNSEL PETER: Everything we're proposing,
we think we have legal authority to. We have obviously a
disagreement with the railroads on how we're approaching
it, but we think that everything we have is totally
appropriate.

Thanks.

BOARD MEMBER SPERLING: Okay. You know, kind of
a question on that is how come we didn't move sooner on
some of these pieces, if we clearly had authority over it,
because, you know, we've been hearing about this for a
long time. And I remember -- I have these vague memories
of MOUs and so on.

CHIEF COUNSEL PETER: Right. There have been, in
my view -- let me -- unless. Okay. Let me just continue
on. I got involved in this actually a number of years ago. And we've had different MOUs, as you're correct. And the last ones were not finalized, because by the time there were so many changes -- this is my personal perspective from back, you know eight, ten years ago, that the problem was that by the time the MOU was acceptable to the railroads, that it really didn't move the needle at all. And so the last set was not actually finalized. And then since then, we've been looking at different kinds of approaches.

And I want to give credit to the TTD staff and to one of my lawyers Rhead Enion, who's sitting behind me, for coming up with some really interesting spending accounts and other kinds of approaches. And I think those save the legal problems. Now, obviously the railroads disagree, but I do think that part of the reason of these proposals is that we have been looking at different options, including asking the federal government to do more.

So anyway, that's a longer answer than you probably wanted, but I think, A, everything is authorized. Undoubtedly, we'll get sued. Maybe they will decide not to do that, but that's their choice. And I think over time we've come up with some very innovative ideas that solve the legal problems.
Thanks.

BOARD MEMBER SPERLING: Okay. So thank you.

That was useful. Actually, I would have enjoyed even a longer one, but thanks.

The second question is about it's related to this. It's -- these Class 1 railroads that are national railroads, and they're running these trains, these locomotives across the country, if we regulate them in California, how does this work? I presume, you know, that means there has to be charging stations everywhere outside California or hydrogen stations. Am I missing something here?

TTD FREIGHT SYSTEMS SECTION MANAGER MANGAT:

Professor Sperling, this is Ajay Mangat, Manager of the Freight Systems Section, and the SRIA, as we've put it together, assumes Hydrogen stations and hydrogen locomotives for Class 1 line-haul locomotives. That's the current understanding, but that's also subject to change, as technology develops.

BOARD MEMBER SPERLING: So that means -- so if we adopt this rule, it means that hydrogen stations will have to be created across the country for -- at all the terminals and for the freight railroads, is that what you're saying?

TTD FREIGHT SYSTEMS SECTION MANAGER MANGAT:
Although we are focused on operations just in California for this rulemaking, the SRIA does acknowledge that there would be potential for locomotives to operate in zero-emission configuration outside of California, but we also don't cost that and we also don't include the benefits from the health benefits outside of California.

BOARD MEMBER SPERLING: Okay. Okay. My last one is really just re -- just supporting what Barbara -- Board Member Riordan just said, and I'll just add a little color to that. So I agree with everything she said and I really strongly encourage staff to work with -- staff to work with the transit operators. And I just add a little color to that, that is, you know, this -- these are public -- you know, these are government public entities providing a public service. Their ridership is down 50 percent, you know, 25 to 70 percent across different operators. Their revenue is much lower. They have been getting federal support, but that's probably going to run out and especially now with house -- with a Republican controlling the House, even more likely that -- not to get any more funding. They're providing a public service. And at the end of the day, they've made much more progress than the freight railroads.

And, you know, they're -- and all -- but everything they've done is because they've gotten special
funding, you know, such as Caltrain. And Caltrain, as an example is the leader, most of the locomotives -- electric locomotives that have been bought were by Caltrain. And even Caltrain, which is a service between Silicon Valley and San Francisco, even Caltrain says they can't comply. And, you know, given their precarious situation, it just adds more weight to the -- to the, you know, concern that Barbara -- Board Member Riordan has suggested and that I support.

Thanks.

I guess -- I guess we should let -- before this is over, it would real -- be really good to hear staff response to this. I know others are going to raise this as well. But sometime before this is over, I would like to hear a staff response to this concern about the -- about the public -- the passenger rail systems.

Thank you.

CHAIR RANDOLPH: Board Member Eisenhut.

BOARD MEMBER EISENHUT: Thanks, Chair.

First, I need to hear from staff some -- I heard testimony today regarding the potential conflict between the funding -- the spending account -- the reserve account and the qualifications for Carl Moyer. Is there a conflict there between those two concepts, and if so, what does it look like?
TTD FREIGHT SYSTEMS SECTION MANAGER MANGAT:

Thanks for the question. I believe you're referring to whether Carl Moyer grants could be included. When -- if someone -- if a railroad is following the spending account, the money that's being -- so they would be on the hook for the emissions they created in the years past -- or the year past. If they meet that obligation beyond that, Carl Moyer funding could be provided. Does that make sense?

BOARD MEMBER EISENHUT: Okay. I think I got it.

Thank you.

So I'd like to -- I'd like to -- first of all, I'll just indicate, I am supportive of this -- of this -- of -- it's not a resolution yet, of the process. I have a specific current -- concern about a very small tranche in the industry, and that is the grain elevator operators. And there are about two dozen in the state. I believe staff has visited at least one of those facilities to have a look, but they're a very specific use. They are small in number but critical to the logistics of California agriculture and food product. They pretty much move everything coming in to the state and exiting the state. And so it's a choke point.

They have a very specific and I think unique operating methodology, where a unit train, a whole hundred
car train would show up at their facility. They have a limited amount of time to unload that train, and that -- and then it goes back onto the mainline track. So they've got to stop and start the whole hundred-car train with -- to unload each individual car. There's a lot of energy requirement in that process and a specific amount of time.

And the reason I go through this is it's a -- it's a very specific locomotive need. And while these folks are small in number, they're important. They handle a high value of commodity, so they can't be classified as a small business. And in the exemption process, they would be large businesses, even though they're limited in number.

And I highlight this, so that when we reach the point in the -- in the exemptions, and which I remember as 27 and 32, and we're doing the technology assessment, that we pay specific attention to the needs of these operators, because I think they're unique and specific to this one -- one use.

And in that same context, when we -- when we do have influence on funding, since they are large businesses, its -- you can't make an argument that they're small businesses, because they are significant, but when compared to the two dominant railroads, they're minuscule. And I would hope that our funding processes would take
account some tranches and their ability to access funding for subsidy -- for incentivizing or for specific unique programs.

So those are my comments. Thank you.

TTD FREIGHT SYSTEMS SECTION MANAGER MANGAT: And we absolutely appreciate that. If I could just have a second. We did go visit two of those grain and feed operations. And you'd be happy to hear that one of the two, while we were there, had already been approved for a grant and their Tier 4 locomotive was on the way. So it was very encouraging for us on the team to see that.

Another thing is we have this open solicitation currently with the federal government, with the Federal Railroad Administration, $1.4 billion solicitation closing at the end of this month. But that funding amount is also going to be around in subsequent years. So that's also very encouraging for -- especially for smaller operators that operate Tier 0, Tier 1, and Tier 2 locomotives to move to clean technology.

CHAIR RANDOLPH: All right. Thank you.

Board Member Kracov.

BOARD MEMBER KRACOV: Okay. Thank you, Chair. Thank you to staff. Thank you to all the stakeholders, all the folks that caravanned up from the South Coast that have been dealing with pollution from the railyards all
these years.

There is no doubt that we have to take action today, if you look at the emissions inventories, for example, in the South Coast. I mean, if we do nothing, the locomotives alone are going to be a quarter or more of our entire NOx carrying capacity in the south coast in 2037. In other words, the locomotives themselves, if we do nothing - we don't get better here - are going to be 25 percent or more of what we're allowed to have for our NOx inventory. Putting aside all the stationary sources, all the cars and trucks, the aircraft, the ocean-going vessels, I mean, we have a series issue here with the locomotives.

How bad is it? This measure is estimated in our SIP and today to address 63 tons a day of NOx statewide, 11 tons a day in the South Coast, 11 tons a day in the San Joaquin. I mean, those numbers are just absolutely enormous. The data shows what a problem this is and that more certainly has to be done. We see this as a cornerstone strategy perhaps in our statewide SIP. We see it as one of the key parts of the forthcoming South Coast AQMP, which is going to include a proposed indirect source rail[SIC] for new railyards. We're going to see it in the San Joaquin SIP that Dr. Pacheco-Werner is working on.

We also saw some encouraging news on this
recognizing the extent of the problem and how we're never going to get to attainment unless we address this from the federal government with the correspond the wrote last week with regard to the locomotive petitions and request for rulemaking, which I think is very encouraging.

You know, as for the Class 1 railroads, Union Pacific made more than $6.5 billion in net income last year. BNSF made almost $6 billion in profit last year. Yet, we look, and there's more or less close to no Tier 4 locomotives in the fleet in the South Coast. Almost really nothing, maybe 5 to 10 percent of Tier 4 locomotives running in the South Coast in these Class 1 fleets.

There's so many adjectives that come to mind about this situation. BNSF's SCIG project did not gain community support down in the San Pedro harbor and hasn't got off the ground.

Union Pacific's ICTF modernization went nowhere. BNSF now has expansion plans in Colton and in Barstow. I just do not understand why the railroads leadership cannot see that the goods movement industry, their continued success in California, needs far cleaner, far more sustainable equipment in order to be successful. We need you to grow. You will be able to grow. But you cannot continue to have these kind of significant impacts. Can't
we see that cleaner locomotives, finding a new paradigm here, getting out of court and working better together is the only solution to your continued business success in California. And that if we can do that, it's going to put us on a much more sustainable foundation to grow our economy and grow your businesses here in California.

All I can say is I would like to work constructively with the American Association of Railroads, with UP and BNSF, as a member of this body and at AQMD. I've know Lupe Valdez from UP for 20 years. You know where to find me. But I can tell you that in the two and a half years I've served on South Coast, you folks haven't reached out one time. In the two years I've been working at CARB, working on this rule, which I'm so happy to see today, you haven't reached out one time.

The Chair, the Mobile Source Committee at South Coast that's considering the Indirect Source Rule, you haven't reached out one time. And I'm just so hopeful that we can change that paradigm working together to make this intolerable situation improved.

As for Metrolink, very much appreciate the extensive Tier 4 investments that Metrolink has made. I've met wet Metrolink probably 10 times about this rule. I would have liked a little bit of acknowledgement today from Metrolink about the extensive effort that this Board
member and our staff have put to work with them. I thought that the negativity that they spoke to today was a little bit unfair and not acknowledging all the work that has been done.

We've spent a lot of time trying to figure out with them because of the Tier 4 investments, and this was available to everybody in the rule, the alternative compliance plan. We got assurance to them this week that what does the alternative compliance plan mean for Metrolink? It means that by 2028, they have to turn over their remaining Tier 4 and -- Tier 2 engines, there are 15 of them, to Tier 4. So 15 locomotives would have to turned over to Tier 4 by 2028. And the ACP means that there would be no additional turnover until 2040. That does not sound like an extreme rule to me, especially since we're helping to fund the turnover to Tier 4 and there are billions of dollars out there.

So I think there's some exaggeration frankly coming from Metrolink and some of the others about what the alternative compliance plan means for them. In addition, we have put in there manufacturer delay provisions. We've put in there a strong off-ramp, which we usually don't do for this 2027 tech assessment. Read it. It's a very strong off-ramp if the technology is not available. We've even now offered to push the date for
full ZE into 2045. I mean, 23 years from now, well past the Governor's Executive Order.

So I'm confident that with our staff working with Metrolink and CTA and others, that we're going to come to a good accommodation that treats everyone fairly, but including the passenger rail and those that have made these investments in Tier 4, that are making investments in zero emissions, and that this alternative compliance plan will work for them and frankly anybody else who can apply, including the Tier 1s -- the Class 1s, but of course they're so far from getting anywhere near where the passenger folks are, that they're a different category self-created.

So I'm confident, Chair, that we can work this out. Happy to continue meeting with Metrolink. Board Member Larry McCallon, Mayor from Highland, on the South Coast and Metrolink Board is certainly making sure that we are listening to Metrolinks' concerns. Happy to continue to participate with them. And I, too, like Board Member Sterling -- Sperling would hike to hear, and maybe now is a good time, what staff thinks about our approach with the passenger rails. But for all these reasons, I very much appreciate listening to all this today and look forward to trying to finalize these rules as soon as possible.

CHAIR RANDOLPH: Okay. I think we'll do a few
more Board Members comments and then kind of dig into some of the discussion. So let's go with Board Member Hurt.

BOARD MEMBER HURT: Thank you, chair. Coming off the heels of this historic vote day for 2.6 billion in incentive funding, I think that was a vote that was a strong statement of our values. And this is another regulation where we have to live our values of doing all we can to clean up the air. Doing nothing in this sector sooner than later is not acceptable, especially when you look at the chart of dirty diesel and the engines used in and around highly impacted communities.

I'd like to thank staff for bringing this reg forward and being really thoughtful about this initial draft and timing. I want to also thank all the public commenters for sharing your lived experiences and just how this regulation impacts you.

But with that said, I don't want to pile on too much with Board Member Riordan and Dr. Sperling, but I, too, have strong concerns around our public passenger rail fleets. They're already at financial cliffs. They have reduction of ridership, some of which these folks are trying to do electric zero-emission, but already struggling in funding. Folks know that I'm a big supporter of mass public transit and I am also very much interested in making sure we clean up air in the most
impacted communities. But in that -- in that same breath, if there's a reduction or, worst yet, elimination of service or a great increase in price, this is also negatively impacting those highly impacted communities who rely on passenger rail to get to jobs, et cetera.

So I'm hoping staff can meet with the stakeholders some more to find more precision in the regulations to keep these folks afloat and move us to cleaner engines. We heard from Caltrain, folks in my backyard. I know we celebrated the kick-off of their electric project of I think it's 410 million and that's not even the entire line. And there's still more funding needed. And now we're fast forwarding other requirements on them. So just again, I'd like to see the staff work with the public transit space.

I also am curious from staff if they could talk a little bit more around the idling and how they arrive to the regulation section on idling, and maybe speak a little bit to the public on why that piece is in the regulation. And then also if staff could talk about market availability and this concept of the Feds requiring different laws and -- with passenger rails that it needs to be United States purchased, and there aren't that many manufacturers of trains. And the timing would make it difficult to meet the regulation. So if staff could talk
about those things, that would be great. Otherwise, those are -- those are all my comments. Thanks.

CHAIR RANDOLPH: Okay. Thank you. I'm making a list of questions to follow up on.

Supervisor Serna.

BOARD MEMBER SERNA: Thank you, Chair. And first, let me thank staff for the presentation. I want to apologize for missing the first part of it. I also want to thank everyone who took time to address the Board this morning, especially the caravan of folks who traveled a great distance to be here to impress upon us in person their concerns. And again I've said this in the past about other matters before us, hearing the personal testimonies of people that either themselves suffer from acute respiratory issues related to their local environments where they work, live, and play is always to me some of the most -- it's some of the most real and convincing testimony to hear. It resonates with me, especially having lost a number of family members to disease. And so I want to thank you for being here.

I have a few questions to add to the Chair's list here. The first is -- and again apologize for missing the first part of the presentation. It may have been in there. But having looked at the presentation slide deck myself, I didn't see it. But do we have a comprehensive
cartographic impression of where switching yards are in California relative to disadvantaged communities in particular.

I would be suspect if this agency did not have that, but it seems to me that that would be great to have or at least reference a set of maps that shows us where people are presiding, especially near switching yards. And I say that because probably the most deeply concerning slide of the presentation for me was slide 11. And slide 11, you'll recall, shows that Class 1 switchers, Class 3 industrial still continue to use substantial numbers of Tier 0 and below locomotives. And so if there is low-hanging fruit, so to speak, to be addressed, it seems to me based on at least anecdotally suggesting that the communities that live, work, and play round switching yards in particular are really kind of dealing with almost a source of pollution, a source of health compromising air quality defects that, you know, we should be especially focused on. And I know we are, but it would be helpful to kind of understand again the geography of that, that is involved.

Relative to the switchers, and the yards, and how they really function as a non -- almost a non-mobile source of pollution, I'd like to also add to what Board Member Hurt mentioned in terms of better understanding the
idling section of the regulation, especially what is magic about 30 minutes? We heard testimony and suggestions about lowering that time frame. And I just don't know the technology of locomotives well enough to understand that they perhaps need time to warm up or what -- you know, what's behind that figure. So that's another question, specific question.

And then Ms. Agelidis brought up the issue of the time frame for implementation again specifically relative to switching yards. So I'd like to understand that if we have some general agreement that because of the amount of older diesel technology that is being used, especially in switching yard applications, why we would not be even more aggressive when it comes to that aspect of the -- of the rule.

So those are my questions. Thank you, Chair.

CHAIR RANDOLPH: Okay. I can answer your first one, which is before you came in, staff had a really impressive video with maps showing the location and the impact. So staff you guys make sure and get Supervisor Serna the Video. It was -- it was very good.

Yeah, for sure.

And I have the idling on the list and then the implementation timeline on the list.

Vice Chair Berg.
VICE CHAIR BERG: Good morning. I think -- oh, we're almost at good afternoon. Just a second, we're -- okay. Okay. Thanks, I had some background noise.

I would like to add to the list. First of all, I really want to thank everyone, including staff. Staff has been extremely diligent in trying to really not only understand, but come as -- well, actually, I'll use one of Board Member Hurt's favorite savings that I like, and she says often how are we going to thread this needle? And if there's ever a needle in a haystack, and thread that needs to go through it, the railroad has been number one since I've been on the Board for 18 years.

And I know there's two other Board members that will remember the MOU process to understand that to get people to the table and try to make progress was incredibly painful. And it was painful for the communities, because it felt like we were buddying up with the railroads to allow them to move slower. It was painful for us, because we couldn't quite figure out where the legal authority was. And although we made some progress, it fell apart around 2010. And we have not been really at the table with the railroad since, to my knowledge.

And those are the national railroads. I think again it is critical to under -- to acknowledge that our
transit partners have really stepped up. As we looked at slide 11 and you look at the passenger, they have a significant percentage of Tier 4 engines. And that truly is impressive. They have worked hard diligently without regulation utilizing funding to get those Tier 4 trains. And that -- I want to recognize them for that.

Also, I do want to recognize the communities. Being part of Boyle Heights for my whole working life -- and I went on tours. I saw those communities that are backed right up against the railyards. It is all that they say it is. And I agree that we do have responsibility to address this and as quickly as possible. The problem is it's trains. And quick and trains do not move together. It didn't move when we were doing the MOUs in the early 2000s and it still is complicated.

So with that background, Chair, I am really interested in understanding specifically how getting to Tier 4 in everything as quick as possible, what kind of emissions reductions will we get going full Tier 4 and how does that impact the SIP?

I am very supportive of the technical assessment and the detail which staff has put around not one, as Board Member Kracov pointed out, but two technical assessments. And one before 2030 and one after, and very supportive of that.
I'm also supportive of staff going back and just taking a look at the idling again. We have the same problem with truck idling. And 30 minutes, I agree, is a long time. Fifteen minutes is a long time. But however we can look at the data, as Board Member Serna has pointed out, to be as aggressive as possible, I'd be really interested on some restrictions as to where they can Idle. I agree with Board Member Kracov and my other fellow Board members. It is time for the national rails to become more -- absolutely become community sensitive. And as we as business people have to endure more inconvenience, some more disruption that we have to figure out, that is on us. And that is not the first time I have said this. And I fully agree with Board Member Kracov's statements that the rail -- the national rails have to come to the table and they have to be more willing to do more for these communities.

I also want to join my fellow Board members in my concern for passenger, and specifically transit. I understand I'm not -- I'm not supportive of giving anybody exemptions out of the program. That said, we need to align our useful life to all incentive programs, whether they're national, and if we can get the Feds to change, as Board Member Riordan suggested, that's a great idea, but we need to be aligned on useful life as it pertains to
incentive and grant programs.

And then I am -- I understand the value of putting a stake in the ground for 100 percent electric fleets. I think that there -- for me, I agree with actually all industry and I agree with the industry position, including transit, that we don't know what that looks like yet. And so that's why these technical assessments are going to be critical. But specifically, going on the option three going from Tier 4 at 2035 to 100 percent, you are going to greatly reduce the -- you're going to strand assets. Now, if there are stranded assets on public money, and we're saying that that is worth the stranded assets, that's one thing.

But stranded assets at the dis-benefit of transportation, that especially so many Board members, and -- have stated how important transit is to our Scoping Plan, to our communities, to reduce VMT, we do have to not -- we have to consider this holistically. We cannot create these regulations anywhere in a silo, in a bubble. We have to look at the alignment of what we're doing because we are transforming everything that is possible to a full new energy source, and that is on us.

And when it takes us eight years to figure out what our authority is or in the case of when we're talking about ACF, it's going to take us six months to come up
with an aligned program with our sister agencies that we can, you know, put out there, things take time, and they take time at the other end too.

So I will end with that I was extremely encouraged by the stakeholders, the number of stakeholders that were talking about multi-solutions, and pilot programs, and were excited about our future electrification or options to get us much more reductions along the way. That was really, really exciting to me. And we have heard bits and parts of that, over various public testimony, but this was the first time that so many people came out to testify with ongoing solutions and things that people are working with.

So that to me was -- is the way to end my comments is I am excited about the possibilities and getting to the endgame. We don't have a crystal ball. We can't lay everything out perfectly. I am telling stakeholders you're going to have to work with us. We are going to be here for you, and we have to reduce these emissions for our communities.

Thank you, Chair.

CHAIR RANDOLPH: All right. Thank you.

Dr. Pacheco-Werner.

BOARD MEMBER PACHECO-WERNER: Thank you, Chair.

And, you know, first of all, thank you to staff. This
is -- this is so great. I'm so excited and thank you for meeting me -- with me throughout the last couple months on this, and trying to help me understand this a little bit better.

Also, I want to thank everyone who came and testified and just, you know, thank you for your continued advocacy and use of your voice. Also, thank you to the industry who has engaged our staff and helped them understand your issues a bit better, and helped them refine this regulation in a way that makes sense and is able to be implemented.

I want to -- I had a couple of questions in terms of some of the comments that were made. And so on one of them, in terms of there was -- there was this comment around the disparity between our useful life requirements and then their federal grants. Can you -- can staff speak a little bit more to that? And would there be a scenario where they could sell those vehicles out of state and still continue to be within the -- you know, not have to pay money back as was said many times here today or some other scenario where they could get around this federal State requirement disparity?

My second question is around the technology review, and -- in terms of what are -- what are we looking at in terms of scenarios in the technology review? If
there is -- if some of what we're requiring isn't quite ready by 2030, would it be that we require folks to do -- to purchase Tier 4? Just trying to understand that a little bit better in terms of like what happens next or is there a plan yet into what happens next?

And then the last one is around the public transportation. The transit agencies, which has been talked about a lot today. If staff could speak a little bit about other State investments that are also happening on the public transportation, because I thought we -- when we just had our meeting -- our joint meeting earlier this month, there was already a lot of investment that -- in the updated -- the annual reporting CAPTI was saying that was already underway. So I'm trying to understand where there is a gap or if indeed there are already ongoing opportunities that are helping accelerate this for the public agencies -- transit agencies that take into account all of this ridership and all of that issues.

So yeah, so thank you so much.

CHAIR RANDOLPH: All right. Thank you.

Board Member Takvorian.

BOARD MEMBER TAKVORIAN: Thank you, Chair. I just want to express gratitude to a lot of folks starting with staff. This is long overdue, and really complex, and I think we all get that, not just from your presentation,
but all of the stakeholders. We appreciate -- I appreciate Vice Chair Berg's reminding us of this journey that probably started long be -- anyway before I got here, but not before I got here on the planet.

(Laughter).

BOARD MEMBER TAKVORIAN: I want to express gratitude to everyone who has participated in the last several months, folks who are impacted by these emissions, those who run the trains, and locomotives that we're concerned about, and everyone who traveled here today to be with us. It means a lot. I know we're all used to Zoom and all of that. But to hear your stories in person is, as Supervisor Serna said, I think moving, inspiring, and I want to particularly appreciate Señor Luna's comments, and those of many of you. But it just reminds me, and I think all of us, that we're really entrusted to deliberate and determine the path forward on these critical health issues. And, you know, that's our job and it reminds us how we really need to take this very seriously, because the health impacts of this rule can't be overstated.

We're talking about 400,000 tons of NOx reductions and 3,200 fewer premature deaths. And I think the doc here will tell us that's probably an estimate -- underestimate of -- and again, those are numbers, but
they're people. They're people that are in all of our lives.

And I just -- I want to take just a minute and say my local experience related to rail is typical for many impacted communities, but I think it's smaller. I want to acknowledge Board Member Krakov's discussion. I know that South Coast and San Joaquin have much greater problems. But just in San Diego, a tiny example, is that there's an elementary school that's half a mile from the park where they have to go to play, because there isn't one blade of grass on the school grounds, because it's all concrete and it's all temporary buildings.

So these children have to navigate a half mile route, which means they cross a four lane truck route, where they wait on the sidewalk while the trucks are all going by. Then they have to cross the passenger rail line, and then they have to cross the freight rail line. And then they get to the park, where they're feet from the port, where there are ocean-going vessels that are delivering goods and emitting diesel emissions if they're not plugged in.

So that little microcosm reminds me of what the challenges are, but also what CARB has addressed. So we have addressed ocean-going vessel. We are addressing trucks. We are addressing cargo handling equipment. We
are addressing commercial harbor craft. So trucks -- so
trails, it's your turn. We have to take this seriously, I
think, and that's the next huge challenge that's in front
of us.

At this train yard, the trains are often stopped
and idling and I have questions about the idling. The
switchers are almost always in operation. So I have
questions about both of those. I want to look at what the
health impacts would be of making the switch from 2030 to
2027 for the switchers, and how we could really improve
health in that way, if we were to be able to make that.

I'd like to know about idling, as everyone else
has said, why -- what's magic about 30 minutes, can we
reduce it to 15 minutes, and what's the enforcement
mechanism? I mean, we have our own experience with
trucks, and the idling requirements there, and the lack of
enforcement because it's hard. I mean, because they move.
They idle. Somebody figures it out. They make the call.
Somebody shows up an hour later and they're gone. So
what's that mechanism going to be that will make this real
for our communities?

And then my last question is around alternative
compliance plans and how that -- what's the transparency
in that process and how will community be involved in
looking at those alternative plans, and ensuring that
these aren't off-ramps that leave communities still impacted and exposed?

So those are my questions. And I want to also express that I'm in support of the proposed rule. I want to make it work and I appreciate the importance of rail in our economy, and our ability to move people, and freight in alternative ways. We do support transit, as Board Member Hurt said, and its -- and the use of it. We need it, but we recognize that the impact of these emissions is often for the people who use transit and transportation the most. So they -- they're the ones who are on transit, but they're also sitting right next to the railyards, and they're the ones whose health is compromised by it. So I think we can make it happen. I have a lot of confidence that we can make it work together, so thank you all.

CHAIR RANDOLPH: Thank you.

Dr. Balmes.

BOARD MEMBER BALMES: Thank you, Chair Randolph. And because my fellow Board members have been very eloquent, I think I can keep my comments short.

I did want to correct Vice Chair Berg. There weren't just two other Board members that remember the MOU process. I came on the Board in 2008. I'm a little junior to Vice Chair Berg, Professor Sperling and Ms. Riordan. But I do remember that painful process and I
actually was involved with this issue of idling before I
even came on the Board. As an air pollution physician
scientist, I was asked by LA County District of Attorney
-- District Attorney to weigh in about excessive idling
that was in violation of I think a South Coast Air Quality
Management District rule. I won't mention the railroad,
but it's one of the two big ones. And I, too, think, as
Dr. -- as mr. Kracov said as well as anybody, it's time
that the rail -- the national railroads come to the table.
You say that we should give you more time. We should --
you, that it's too hard. Well, where have you been for
the last two decades.

And so I'm very strongly supportive of putting
it -- our stake in the sand, as somebody said. We have to
move forward. Now, the specifics I think are totally
negotiable in my view, but you need to come to the table
and negotiate with use and not threaten lawsuits. What's
the going to do? It's just going waste money, your money,
and the public's money. So, you know, you probably will
go that route. I think it's really stupid and not helpful
to either the public in terms of health or the State in
terms of how we spend our money.

And I just have to say as -- again as the public
health expert on the Board, the amount of emission
reductions that this rule would put forth in terms of fine
particulate and NOx, as Ms. Takvorian just said, it's huge. It's huge. And it's -- to respond to the eloquent testimony from community members, it's real people that get cancer. We're not just talking about asthma Exacerbations, which is, you know, something that I care deeply call about. Diesel exhaust causes cancer and we have to reduce the risk of cancer for folks in disadvantaged communities who live around these railyards.

And I agree with Supervisor Serna that we should focus on the dirtiest engines, which are often the dirtiest engines that I think are amenable to improved technology, which are the switcher engines. That's what really was involved in the idling issue that I helped the LA County District Attorney about. So I don't even have to go to the total health benefits that have been monetized. Those are huge. But people's health should come before profits. I agree with that. I don't want to destroy the railroad industry. I agree with Ms. Takvorian. We need it. But like really come to the table and not just talk.

And then I would -- the last thing I like to say is I do feel that we need to be -- we need to be as helpful as possible, worked together with public transit, which have the cleaner veh -- engines already. So I don't know anything about Metrolink that Mr. Kracov talked
about, but I take Amtrak California to these meetings, and
I would like to make sure that we don't reduce service
unnecessarily by being too hard on public transit agencies
that are often budget limited.

    You know, one example I would say, again I don't
know details. I may be misspeaking, but SMART, that's in
my neck of the woods, Sonoma, Marin, even thought I live
in Alameda County. And I think SMART has made a big
difference with regard to the passenger side of SMART in
terms of getting people out of their cars coming from
Sonoma and Marin to San Francisco.

    So I think I'll stop there. Thank you.
CHAIR RANDOLPH: All right. Thank you.
Board Member De La Torre, are you able to speak
now?
Okay. He was briefly in transit, so I think he
was unable to speak at the moment.
Okay. I agree with my colleagues that it's time
to move forward on this and make some real progress in the
locomotive sector. And the staff report was incredibly
elloquent and really helpful in providing real data that
kind of helps us understand what are our options here
and -- are here and what some of the challenges are.

So given that, I will now ask the list of
questions that I've been tracking so carefully. Why don't
we start with the useful life issue and the issue of federal grant money and how that plays into all of us.

TTD CHIEF ARIAS: Okay. Thanks, Chair. Heather Arias, Transportation and Toxics Division Chief. I'll start and then staff and legal can add on if they would like.

The first thing that I want to talk about is the useful life, and whether or not we align with the federal government. And the first thing that I want to point out is that we first went to EPA's definition of useful life and how they defined it in their regulation associated with rail. That equates to approximately 18 years. And we already talked about what fleets in California have determined that that is too short, and as such, we put a higher useful life in our rule of 23 years.

As it relates to federal grants, we have asked for and received the information from the transit agencies of the -- how the federal transit agency administers their grants. The lives of those grants can be anywhere from 20 to 39 years. There are provisions in the language that allows for prorated pay back. And as the engine gets older, there's -- the equation is basically less payment. Those engines can be transferred to other passenger agencies. There are opportunities for the agencies.

This issue also came up under the Commercial
Harbor Craft Rule. You may recall that we discussed this with the transit agencies at that time. So this is not something that's new. The agencies have worked with us under several regs on how we process the grants.

We've also had many discussions about the structure of the rules. The alternative compliance plan itself we believe would be a great mechanism for the fleets to come in and work with us to ensure a longer life for any one particular engine, as long as their fleet as a whole is still achieving the reductions we needed for the program.

Anything else that I'm missing?

Nope. Okay. That's it.

CHAIR RANDOLPH: Okay. Thank you.

Then I had a question about -- a few commenters raised the question of renewable diesel and how that might play into this. I think that's probably particularly relevant to the alternative compliance plan, so would -- I'm curious.

TTD FREIGHT SYSTEMS SECTION MANAGER MANGAT:

Absolutely. You did hear about renewable diesel. And it is not disallowed within our regulation within an alternative compliance plan. The -- right now, we have information on one locomotive testing. And it is promising to provide, I believe it's around a 30 percent
PM reduction as a drop-in fuel, and the NOx maybe at a five percent range.

So one, with further testing of more engines, we could get more of a consensus. It also -- if a -- an entity came to us with an alternative compliance plan with renewable diesel and had the testing data, we would definitely encourage that and look towards that data.

CHAIR RANDOLPH: Okay. We have a follow-up on that from Supervisor Serna.

BOARD MEMBER SERNA: Thank you.

So harkening back to yesterday, does that testing include cold weather testing?

TTD FREIGHT SYSTEMS SECTION MANAGER MANGAT: The testing that was performed was at Southwest Research that I'm aware of. And it was done -- I don't think it was under real life -- you know, it was test data, so I -- it very -- I can double check on that one. Why don't I double check on that one for you.

BOARD MEMBER SERNA: Well, I mean, based on the fact we had the -- we had industry kind of clue us in on some of the challenges as it relates to trucks using renewable diesel, we might want to just make sure that that question is asked and answered.

Thanks.

CHAIR RANDOLPH: Okay.
Next, let's talk about the 30 minute idling rule, how that relates to enforcement, and what are the options for a different idling time?

TTD CHIEF ARIAS: Yeah. Heather Arias again. So the proposal --

CHAIR RANDOLPH: Heather, can you pull your mic up a little bit and speak more directly into it.

TTD CHIEF ARIAS: Never been told I'm too quiet. (Laughter).

TTD CHIEF ARIAS: This is the first time ever, Chair. (Laughter).

BOARD MEMBER KRACOV: That's for sure.

TTD CHIEF ARIAS: Yes. A lot of people right now, they're listening are like, what?

Okay. Sorry. So Heather Arias.

And as it relates to the 30-minute idling, we are adopting the federal rule as it stands, so we can implement that. We are also going to be collecting a lot of data once we adopt it and can then start enforcing it, so that we can do further analyses to determine what would be a lower threshold that we would recommend to the Board. But at this point, we do not, ourselves feel like we have possession of enough data to be able to recommend a lower threshold. But what we could recommend and would
recommend at this point is that we include that as part of the 2027 technology assessment, because we will have several years of data that we can analyze and come back and provide a recommendation to you, should we need to amend that portion of the rule.

CHAIR RANDOLPH: Okay. Thank you.

And then I'm going to take a break from the questions, because Board Member De La Torre is now online and wanted to say a few words.

Are you there?

BOARD MEMBER DE LA TORRE: Thank you. I hope I can be heard. I love the questions from my colleagues. I had a few of those myself, so thank you for asking them.

On just overall, I think Board Member Berg hit the nail on the head in terms of our experience. I came in when that MOU -- I came onto the Board when that MOU was being discussed and we were talking about it for a long time, and then we were going to do it. And then it got pulled because there was some analysis being done. And it turned out that basically we were going to get no benefit from that MOU. That was a good faith effort on the part of CARB to interact with the railroads to get a deal done.

We heard today what the good faith got us. It got us a number of threats with this regulation, which was always going to happen. And so I'm very pleased that
we're finally here. There was someone who spoke who said
the grew up in South Gate near the railroad tracks there.
I grew up two doors away from those same train tracks, but
that's not why I want to do this. As a legislator, over
18 years ago, I was looking at issues related to
railyards, because of the commerce railyards that were in
my district and the Hobart Yard that was in my district.

And so all of this time there's been precious
little action regarding locomotives and rail in general.
So I'm very pleased that we're here. I'm very pleased
that the federal administration has voiced their views on
this effort. I think it is absolutely time that we take
action.

In terms of those who are complaining about the
technological feasibility, there are two technology
reviews built into this regulation. Two. Not one, two.

And secondly for the folks from the passenger
rail we met, I told them to keep working with staff. I'm
pleased that that -- those conversations are ongoing for
the 15-day review. But as I told them, compliance is not
an option. There will be some measures that need to be
taken. I think the 2035, 2045 offer that was made by
staff is phenomenal. I think they get a little longer
with their equipment in terms of getting to zero rather
than a polluting vehicle. That's -- I think that's very
fair. I think that's a very generous offer from staff. So I was pleased to see that. I'm not saying that that's the end-all be-all, but I want to see that on the table as an option. And I want staff to continue to work with them to work something out in the 15-day changes.

With everyone else, you know, we will continue to talk. As I mentioned earlier, there are these two technology reviews. We are not the only government entity that is moving in this direction. As with passenger vehicles, as with heavy-duty trucks, there are many other jurisdictions around the planet that are moving in this direction. And zero-emission, whether it's hydrogen, or battery electric, or something else that we don't even know of yet are going to be the answer and are going to get us to zero in the time frames we've laid out here.

So thank you, staff. I know it was very difficult. I know it's been a long time coming and that's why I'm very supportive of this measure.

Thank you.

CHAIR RANDOLPH: Okay. Board Member De La Torre teed up my next question, which is can staff talk a little bit about this initial proposal you all have discussed with the transit agencies? Maybe describe it a little bit and obviously there's going to need to be a lot more
discussion and work around that, but I just wanted to make
sure all the Board members sort of knew kind of what
everyone was speaking about as it relates to this concept.

TTD CHIEF ARIAS: Let me get closer again. Sure,
Chair. Heather Arias again.

And, you know, we've received lots of written
comments and testimony today asking for and additional
option that doesn't require the funds to be deposited into
a spending account, that ensures the full useful life for
an existing engine, that provides consistency for all
fleets in 2035, that provides more certainly for a plan of
15 years or more, that ensures that reductions for the
community, and most certainly regarding zero emissions.

To address these and some other issues that we
had heard, we recommended a third option for compliance.
This option would fall both under the spending account and
the in-use operations of the reg. Currently, the draft
allows for two options, so they would follow the reg or
the alternative compliance plan. This would be a third
option.

The pathway that we were suggesting would require
a fleet to operate only Tier 4 or cleaner engines by 2035
and all zero-emission operations by 2045. The reason that
we recommended this is because we believe this pathway
will ensure that we achieve the reductions necessary for
our SIP by the 2035 timeline as well as help us with our carbon neutrality requirements in 2045.

It will provide the certainty that folks are asking for. It would allow the existing Tier 4 engines to operate for an additional 22 more years from today and it allows time for zero-emission technology to advance before fleets need to buy it to meet the 2045 deadline. It will also allow fleets to take advantage of the unprecedented amount of funding that we talked about yesterday, as well as today, with the federal funds.

And as a reminder, as we've already talked about, it would allow time for us to complete our tech assessments in 2027 and 2032, which gives us the chance to track the technology and come back and recommend changes to this and the other pathways, if necessary.

CHAIR RANDOLPH: Okay. Thank you. And I understand that there have been conversations. The agencies aren't necessarily signing on the dotted line, but you guys will continue to try to address any issues they have and see if you can I reach a resolution.

Okay. Following up on that, a couple of the Board members asked sort of what would be the health benefits from -- if that third path were an option to move Tier -- to Tier 4 by 2035, do you happen to have those numbers handy in terms of what the early emissions
reductions options would be, as it relates to that?

TTD CHIEF ARIAS: As it relates to the third pathway option?

CHAIR RANDOLPH: Right. As it relates to getting to Tier 4 faster.

TTD CHIEF ARIAS: Well, overall, if everybody in the reg were to choose the third option, we would lose some near-term benefits, because if you follow the spending account in the in-use requirement, there would be turnover sooner than what would be required if they all chose the third option and waited until 2035. However, we would make up for that significantly by meeting zero in 2045, because as the rule is currently written, we would not start requiring the zero-emission operation until 2030 and its -- and it phases in over time.

So lose some in the front end, but gain significant towards the 2045 timeline. And it's really hard to give you a range, because we really don't know who would all take this, when they would turnover between now and 2035, but that's the short of it.

CHAIR RANDOLPH: Okay. And I guess that relates to both the technology assessment, right, because we are still sort of trying to understand what the deployment of zero emission is really going to look like. But it also relates to the -- to the question from community about
accelerating the switcher transition to 2027, what are
staff's thought on that?

TTD FREIGHT SYSTEMS SECTION MANAGER MANGAT:

Well, currently, within -- one thing that kind of
gets lost is within the spending account, there are
bonuses to move to zero emissions sooner, that are also
doubled if those zero-emission operation occurs around
disadvantaged communities. So in -- built within the
spending account, if someone were to replace a switcher,
which Supervisor Serna called the low-hanging fruit, you
know, switchers as we mentioned we think are going to be
the technology that are available zero emissions sooner.
So we'd rather have those go to zero emission than Tier 4,
specially for the long term. So if -- if there's -- if
switchers are deployed around our railyards, there'd be
credits within the spending account, which would reduce
the spending account obligation.

So I wanted to make that clear, that it's built
in. Staff thought about it within the design of the
spending account. So zero-emission credit and double
credit within disadvantaged communities.

BOARD MEMBER SERNA: Just a follow-up to that.
Thank you for the response. Do we have any idea how
effective that particular incentive is likely to be in
terms of the -- if I heard you correctly, the enhanced
credit value for switching to zero emissions sooner, correct?

TTD FREIGHT SYSTEMS SECTION MANAGER MANGAT: Loaded question, Supervisor Serna.
   (Laughter).

TTD FREIGHT SYSTEMS SECTION MANAGER MANGAT: But at the same time, keep in mind that the switchers as you saw in that bar chart are pre-Tier 0, Tier 0, a lot of them, right? So those would have the highest charge, because they have the most PM and NOx from -- you know, that's what we're charging in the spending account, so they would require the most obligation, right? So in order -- if they were replaced by -- you would imagine -- naturally you'd want to get rid of the dirtiest and oldest soonest. And this is another drive to move it to zero emission. So in the grand scheme of things, it could be really valuable.

BOARD MEMBER SERNA: Thank you.

CHAIR RANDOLPH: So basically, the way the spend -- the whole spending account is structured, you would want to move those switchers out. You'd want to get -- lower your obligation and get extra credit for transitioning those engines.

Okay. Excellent.

VICE CHAIR BERG: Chair Randolph, this is Board
Member Berg.

CHAIR RANDOLPH: Yes.

VICE CHAIR BERG: Yeah, I'm sorry. I had raised my hand. I would just like an opportunity, when appropriate, to circle back to Ms. Arias's chatting about the Tier 4.

CHAIR RANDOLPH: Okay. Why don't we do that now.

VICE CHAIR BERG: Okay. So my question was really about what are the benefits if we -- if on -- if we were to look at that slide 11 and everyone were to go to Tier 4 as fast as possible, that was my question.

TTD CHIEF ARIAS: Well, I'm sure that all the stakeholders would very much disagree with our assumption on this, but --

VICE CHAIR BERG: (Inaudible).

TTD CHIEF ARIAS: Let's pretend that money was no object --

VICE CHAIR BERG: Right.

TTD CHIEF ARIAS: -- and that the industry representatives went to the OEMs and ordered Tier 4, we have seen the OEMs deliver hundreds of engines within a year's time frame. We have not asked the OEMs though if everybody were to turnover. So it would take probably a few years, but I'm going to look to Ajay and see do we -- if -- I believe if we go all the way to Tier 4, we achieve...
a 90 percent reduction from business as usual today.

VICE CHAIR BERG: Okay. That's really what I'm looking for.

TTD CHIEF ARIAS: Okay.

VICE CHAIR BERG: That Tier 4 can give us a 90 percent reduction.

TTD CHIEF ARIAS: Yep.

VICE CHAIR BERG: The sooner we can do that, the more impact there is to our communities and I think the Board and -- and I think this is an important point. This isn't the near-zero truck discussion. This is about bringing reductions quickly. And nobody is arguing over if the technology is there for Tier 4. And so I really think it's worth a discussion by the Board to look at how fast can we go to Tier 4. Thank you, Chair.

CHAIR RANDOLPH: Okay. Thank you.

Okay. Dr. Pacheco-Werner had asked about the funding opportunities for transit agencies as it relates to our discussion at our joint meeting a few weeks ago. Do you have anything to add in terms of funding for that?

TTD FREIGHT SYSTEMS SECTION MANAGER MANGAT: It's probably discussed a few weeks ago as well, but there is the TIRCP program that has I think it's 3.8 billion or 3.6 billion available for transit agencies. I want to acknowledge that all 3.6 isn't for equipment, right? It's
for existing projects, so it's kind of difficult to
decipher and it's also based on applications. So -- but
we did confirm that locomotive purchases could be eligible
costs for programs like that, so...

CHAIR RANDOLPH: Okay. All right. Thus far our
discussion has focused on the big guys and the transit
agencies. There were a couple of other categories that we
talked about, you know, the grain hauling that Board
Member Eisenhut mentioned, and, you know, some of these
smaller shorter haul operators. So can you talk a little
bit about how you see that transition working for those
kind of companies, and some of the issues that they
raised.

TTD FREIGHT SYSTEMS SECTION MANAGER MANGAT:
Yeah. So we've met with as many of these folks
as we can. We continue to meet with folks. The Class 3 I
think we have -- we're convening a meeting with Sierra
Railroad in a couple weeks. We couldn't fit it in this
week, but we've been in communication. Interested to see
alternative compliance plans potentially also for the
smaller industrial operators as well, and to understand,
you know, the -- when we went out to visit the grain and
feed, we got a little bit better understanding of their
operations.

So we continue to have that -- you know, we're
still under -- trying to understand. At the same time, as we've mentioned, those federal funding opportunities we want to make sure they're aware of it, the funding opportunities as well. We sent out a listserv blast yesterday to make sure the folks that we've been engaging with know that there's a deadline coming up and have a game plan.

So our -- my team is individually outreaching as much as we can as well to understand. And the interesting with these operators, they're also potentially most primed to go to zero emission from a -- amount of operation they do. So it's interest -- I'm interested to continue the conversation and look forward to those.

CHAIR RANDOLPH: Okay.

All right. I think I hit all of the questions everyone raised. Let me just double check.

Yes, I did.

Okay. So as we have discussed, there's a lot of work to do between now and when this item comes back to the Board, a lot of discussion, but I think we have -- you have some really clear guidance from the Board that we really do want to move forward. We want to make this rule as effective and as useful as possible. So I think all of us as Board members stand ready to help in any way we can. Board Member Kracov in particular mentioned, you know,
being willing to engage with some of the transit agencies
and others out there. So please feel free to call on us
if you need any assistance and I appreciate your work on
all this.

Okay. I think that is it for this item.

The next item on the agenda is open comment for
those who wish to provide a comment regarding an item of
interest within the jurisdiction of the Board that is not
on today's agenda. The Clerk will call on those who have
submitted a request to speak card. And if you are joining
us remotely and wish to comment, please click the raise
hand button or dial star nine now.

Clerk, will you please call the commenter.

BOARD CLERK GARCIA: We have no commenters.

CHAIR RANDOLPH: Okay.

Well, with that, we will now adjourn to closed
session. As indicated in the public notice of today's
meeting, the purpose of closed session is for Board
members to confer with or receive legal advice from legal
counsel regarding pending litigation listed on the agenda.
After closes session, the Board will reconvene in the
auditorium to adjourn the meeting.

All right. Thank you very much.

(Off record: 12:41 p.m.)

(Thereupon the meeting recessed

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into closed session.)
(Thereupon the meeting reconvened open session.)
(On record: 2:11 p.m.)

CHAIR RANDOLPH: Please come to order. The November 18th meeting of the California Air Resources Board is now in session.

The Board met in closed session to confer with legal counsel and no reportable action was taken by the Board. The November 18th CARB Board meeting is now adjourned.

Thank you.
(Thereupon the Air Resources Board meeting adjourned at 2:11 p.m.)
CERTIFICATE OF REPORTER

I, JAMES F. PETERS, a Certified Shorthand Reporter of the State of California, do hereby certify:

That I am a disinterested person herein; that the foregoing California Air Resources Board meeting was reported in shorthand by me, James F. Peters, a Certified Shorthand Reporter of the State of California, and was thereafter transcribed, under my direction, by computer-assisted transcription;

I further certify that I am not of counsel or attorney for any of the parties to said meeting nor in any way interested in the outcome of said meeting.

IN WITNESS WHEREOF, I have hereunto set my hand this 6th day of December, 2022.

JAMES F. PETERS, CSR
Certified Shorthand Reporter
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