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BEFORE THE

CALIFORNIA ENERGY COMMISSION

In the matter of,	)	
	)	Docket No. 21-ALT-01
2021-2023 Investment Plan	)	
Update for the Clean	)	
Transportation Program	)	

CLEAN TRANSPORTATION PROGRAM

INVESTMENT PLAN

ADVISORY COMMITTEE MEETING

REMOTE ACCESS ONLY VIA ZOOM

WARREN-ALQUIST STATE ENERGY BUILDING

1516 NINTH STREET

1ST FLOOR, ARTHUR ROSENFELD HEARING ROOM

SACRAMENTO, CALIFORNIA 95814

THURSDAY, APRIL 29, 2021

10:00 A.M.

Reported By:
Martha Nelson

APPEARANCES

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Patricia Monahan, Lead Commissioner

STAFF

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Charles Smith, Office Manager, Transportation, Policy and Analysis Office
Jonathan Bobadilla, Specialist, Fuels and Transportation Division
Tiffany Hoang, Fuels and Transportation Division
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Ben De Alba, Advisor to Commissioner Monahan
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Jimmy O'Dea, Union of Concerned Scientists
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Bill Elrick, California Fuel Cell Partnership
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Micah Mitrosky, IBEW 569
Tracy Stanhoff, AD PRO and American Indian Chamber of Commerce
Daryl Lambert, Rising Sun Center for Opportunity
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APPEARANCES (CONT.)

PUBLIC COMMENT

William Zobel, California Hydrogen Business Council
Lisa McGhee, GreenPower Motor Company
Robert Perry, Synergistic Solutions
Levi Tillemann, Ample, Inc.

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P R O C E E D I N G S

APRIL 29, 2021 9:03 A.M.

MR. BRECHT: Okay, let's begin. Good morning and welcome everyone. My name is Patrick Brecht and I'm the Project Manager for the 2021-2023 Investment Plan for the Clean Transportation Program. I want to thank you all for being here.

I just need to go over a couple of housekeeping items first. This remote meeting is consistent with Executive Orders N-25-20 and N-29-20 in order to slow the spread of COVID-19.

This meeting is being recorded. We ask that you mute yourselves when you're not speaking. And that would be *6 for those on the telephone.

The transcript of this meeting will be made available on the Energy Commission website.

This is our first Advisory Committee meeting for the Investment Plan cycle and we anticipate a second Advisory Committee meeting in July.

There will be an opportunity for public comments at the end of the meeting and written comments submitted to the docket are strongly encouraged.

This slide shows where to submit comments. The location of the docket is 21-ALT-01 and it's also located on this slide.

We ask that Advisory Committee members indicate that they would like to speak and comment by using the raise hand features. We would also like you to identify yourself when you speak.

Telephone participants dial *9 to raise your hand. Be sure to keep your chat box open in case you receive any messages.

We have lots to cover today and we want to hear from everyone. And since the meeting is virtual, we encourage the Advisory Committee members' comments stay within the three-minute window per discussion topic and we ask -- and we may have to limit the public to one minute.

Now, the next slide. Today's agenda will begin with opening remarks from Lead Commissioner Monahan, followed by new introductions by new Advisory Committee members.

We'll then begin staff presentations that will include an update on major Clean Transportation Program funding activities since the last Advisory Committee meeting.

This will be followed by a presentation on how the Clean Transportation has updated its approach by tracking investments into low-income and in disadvantaged communities.

We'll then have presentations on the newly published SB 1000 Electric Vehicle Charging Infrastructure Deployment Assessment which was published in December 2020.

And then, we'll have a presentation on AB 2127, Charging Infrastructure Assessment Staff Report, which was published in January of 2021.

The presentations will conclude with an overview of the 2021-2023 Investment Plan Update. This will be followed by an Advisory Committee discussion headed by Lead Commissioner Monahan.

And with that, I will turn it over to Commissioner Monahan for opening remarks. Thank you.

COMMISSIONER MONAHAN: Thanks Patrick. Well, hi everybody, welcome. Great to see the folks that are on the camera. I can see the names of the folks that are not on camera. I feel super excited to have this conversation with you.

And I want to, you know, first say like this Advisory Committee we've been through -- I feel like we've been through so much in such a short time together. You know, the Advisory Committee was reconstituted. We had our first meeting in person, which was a lot of fun. Then COVID hit and everything changed.

So, we are trying to use the Zoom platform as well as we can and we actually want to reach out to you after this meeting to get your feedback on what we can do better. Because we're trying to, on the one hand, keep this to a manageable time frame so, you know, a manageable number of hours on screen, which is hard for all of us, and get your feedback.

So, as Patrick was saying, you know, three minutes per. And I'm sorry, I feel really bad about that because we do have to kind of make sure -- we want to make sure everybody has a chance to make something. And we are also trying to balance the time that we're on screen together.

So, I would encourage you to think about what you want to say in those three minutes, but also to think about other ways to communicate to us. So, definitely written comments. I'm also happy to meet with folks individually to have conversations. So, please do give us your feedback. Please do help us make these meetings better.

These meetings are really for you and for you to hear about what program adjustments we have made, what investments we are making, to give us feedback on what you think we should be doing, you know, at least through the three-year plan that we have now. We have two years left. And so, we want to just make sure that we're doing all we can to make smart investments, to listen to you and to other stakeholders, and to do the best that we can for the State of California in advancing clean transportation.

So, as Patrick indicated, we have a few new members. I want to just introduce them. I'm not sure if they're all here, yet, but we'll see.

So, we have Micah Mitrosky from IBEW Local 569. We have Neena Mohan from the California Environmental Justice Alliance. We have a replacement member, which is Miles Muller, or Muller, I'm sorry if I mispronounce your name, from NRDC, who's replacing Patricio Portillo. And then, we have Sydney Vergis who is stepping in for the Air Resources Board, since Steve Cliff has left the Air Board to go to the National Highway Traffic Safety Administration.

So, the Advisory Committee members who were part of the first meeting, the in-person meeting will remember that we did an ice breaker. The ice breaker at that time was what's your birth order and what does that mean for how you show up at work?

So, we don't have time to do that kind of long ice breaker because of the time constraint. But I did want Micah, Neena, Miles and Sydney just to say hello and tell us in one sentence who is most likely to Zoom bomb you -- who or what is most likely to disrupt this Zoom meeting or any other Zoom meetings that you've been having.

So, is Micah -- Micah, are you here?

MS. MITROSKY: I am. Good morning, hi everyone. Micah Mitrosky with IBEW 569. And probably my cat. So, let's hope she doesn't make an appearance.

COMMISSIONER MONAHAN: Excellent. Thank you.

All right, Neena?

MS. MOHAN: Good morning everybody, Neena Mohan, California Environmental Justice Alliance. Probably I would say just people who are most likely to zoom bomb.

COMMISSIONER MONAHAN: Thanks Neena.

All right, Myles, are you on?

MR. BRECHT: Commissioner Monahan, Miles will be joining us later in the meeting. He had a conflict.

COMMISSIONER MONAHAN: Great thanks. Thanks Patrick. And Patrick knows this, he's being formal, I actually don't like to go by Commissioner. I like to go by Patty. So, please don't feel like you have to use the title.

All right. Sydney, are you on?

MS. VERGIS: I am. Good morning, nice to see everyone. So, Sydney Vergis, Division Chief for the

Mobile Source Control Division at CARB. The portfolio includes both incentives and heavy duty vehicle regulations.

In terms of Zoom bombing, unfortunately my dog and my cat have teamed up together and often come as a pair to these meetings. So, look forward to seeing both of them.

COMMISSIONER MONAHAN: I've got to say one of the favorite things I've enjoyed about this weird world that we're is seeing people's cats, and dogs, and kids, and loved ones, and just experiencing like our lives in a very different, weirdly more personal way. So, I welcome especially children to come onto the Zoom.

So, a lot has happened since our last meeting. So, we last met in June 2020, the first of this Zoom world. And, you know, let me just lay out a few of the things that have happened since then.

So, the Governor has issued his executive order, right, it came on the heels of all of the terrible wildfires we faced last summer. I've got to say I'm already gearing up for another season of wildfires and that's just hard for all of us.

And he was, you know, inspired to take bold action to stop emissions from transportation, the number one source of global warming pollution in the state. If you count for the full fuel lifecycle tasks of all of the greenhouse gas emissions.

And, you know, he laid out this bold decision, everything needs to be zero emission within the next 15 to 25 years. And, you know, at that time the only car companies that were embracing that goal was the EV manufacturers, themselves.

So, but after he issued that executive order and progress was being made, you know, globally and there was a lot of movement, especially in the EU around electric vehicles, and now we're seeing the auto industry come -- you know, basically aligning with those same goals. So, General Motors has the same goal as California on passenger vehicle electrification. Ford announced in the EU that by 2030 it was going to be electrifying all new passenger vehicles and commercial trucks.

So, I just think, you know, we have a lot of reasons globally for optimism on how fast zero emission transportation can come to California.

You know, in the EU battery electric vehicle sales doubled in 2020. So, despite COVID, despite the economic impacts, despite some contraction generally in the auto industry EVs made up 11 percent of the new vehicles in all of the EU. Of course, some countries like Norway are way ahead of that.

And in California, in 2020, ZEVs made up close to 8 percent of new vehicle sales. And again, that was the highest share ever. Overall new vehicle sales, you know, dropped and so even ZEV sales dropped. But in terms of the market share of ZEV sales, higher than it's ever been. In 2020, EVs were our number one export.

You know, so I think in terms of global progress, but in terms of this opportunity for ZEVs to be part of the economic engine that drives recovery in California we have a stronger narrative I think than we've ever had.

The Governor's Office of Business and Economic Development has pulled together a ZEV Market Development Plan that really is the plan for all of the agencies in California to work together to accelerate the market and to help meet the state's goals.

The governor proposed reauthorization of this program, the Clean Transportation Program, and a billion dollars in front-loaded investments in zero emission vehicle infrastructure. That, as I think many of you are involved in this, you know, we'll see what happens at the end of the day.

We're not at this point accounting for any new dollars coming into the program or reauthorization of the program. Pretty much until this happens, you know, we're not going to plan for it until the legislature adopts something and the governor signs it. That's when we'll plan for -- you know, we'll bring it back to you and say, now, what should we do? But at this point we're just operating with the dollars that we have currently allocated.

And the last issue, I wanted to just acknowledge again which some of you, but not all of you are involved in, is there was a new group that was formed. It's called the EV Charging Infrastructure Strike Force. And it's bringing together public interests and private interests. So, public agencies, nonprofit, you know, nongovernmental agencies, and car companies, charging providers, you know, various interests along the EV ecosystem to advance accessible, equitable, and affordable electric vehicle infrastructure across California.

So, that's being co-chaired by Angelo Logan from the Moving Forward Network, who has a long history of working in the Enviro Logan to accelerate zero emission, particularly goods movement. And Cathy Zoi, who's the CEO of EVgo. they are the co-chairs of this Strike Force. I'm the Chair of the Public Policy Advisory Committee to the Strike Force. So, that Strike Force is also working through a number of issues about what does it mean to have equitable infrastructure for, you know, charging infrastructure.

So, I just wanted to share that that group exists, and if you're interested in the next meeting we can share it with this Advisory Group, so you can listen in and provide public comments if you wanted to.

So, with that I just want to say I really am looking forward to your input. We want to hear your input. We want you to feel like you have a voice in our decision making. And, you know, I am committing to listening to all of you and really taking what you say to heart. And, you know, we want to do the best that we can in allocating public dollars in a way that supports California's goals, supports disadvantaged and low-income communities specifically, and benefits all Californians.

So with that, I think I'm turning it back over to Patrick. Is it Patrick? I don't have my --

MR. BRECHT: It's going to be Raja, actually.

COMMISSIONER MONAHAN: Oh, okay, thank you.

MR. BRECHT: No, I'm sorry it will be Charles. I'm sorry.

MR. SMITH: There we go. Thanks Patty and thank you, Patrick. Good morning everybody. I'm Charles

Smith, Office Manager for the Transportation Policy and Analysis Office.

Before we begin diving into the Investment Plan's contents today, we wanted to start with a brief reintroduction to our program in general, plus recent highlights since our last Advisory Committee meeting last June.

The next slide, please. So, as many of you already heard many times, our program was established by AB 118 in 2007 and provides funding support for projects that reduce greenhouse gas emissions within the transportation sector, which accounts for roughly half of the state's greenhouse gas emissions.

These funded projects also contribute to complementary state goals, including improved air quality, providing investment in the low-income and disadvantaged communities, economic development, and reduce petroleum dependence.

The program is funded through a small surcharge on California vehicle registrations and provides approximately $95 million per year to clean transportation projects.

In 2015, the revenues for this program were extended by Assembly Bill 8 to January 1st, 2024.

The next slide, please. This slide captures a handful of the project activities we've taken pride in over the past 10 years, starting with over 13,000 installed or planned chargers. Relatedly, right now we've established to efficient effective -- efficient and effective grants for deploying zero emission vehicle or ZEV infrastructure. This includes CALeVIP for light duty EV charging, and the recently announced EnergIIze Commercial Vehicles Project for medium and heavy duty ZEV infrastructure.

We've provided funding for 83 new or upgraded, publicly available hydrogen fueling stations. We're also prepared to fund an additional 73 stations with our funds based on deployment progress, funding availability, and Investment Plan funding allocations.

Finally, the CEC has been able to leverage over $700 million in private and other public funds in our investments. This is a conservative accounting that only accounts for contractually obligated match funds. Not all of our partners' project investments, so the actual leveraged amount would be much higher.

The next slide, please. Over the next couple of slides I want to call out the incredible pace at which my colleagues have been drafting solicitations, reviewing proposals, and developing new funding agreements since our previous Advisory Committee meeting last June.

Starting with projects related to medium and heavy duty ZEV infrastructure. Earlier this month we announced 28 proposed awardees who have developed planning blueprints that will identify actions and milestones needed for implementation of medium and heavy duty ZEVS and their related infrastructure. These blueprints will accelerate the planning process for agencies and fleets to help them understand the technology that may work best for their applications, routes, and environments.

Under the second solicitation, $20 million was made available to help cover the infrastructure cost associated with large-scale conversion of truck and bus fleets to ZEV technologies.

In February we announced proposed awards which include two fleets pursuing electrification and microgrid projects and two fleets pursuing hydrogen refueling.

Earlier this month we launched the Energy Infrastructure Incentives for zero emission commercial vehicles, or EnergIIze Commercial Vehicles Projects. Block grants incentive project for zero emission truck and bus infrastructure.

The project will use a concierge-like model, working directly with eligible applicants to help plan and fund the purchase of charging and hydrogen fueling infrastructure.

Also this month we announced awards for the zero emission drayage trucking infrastructure pilot project solicitation, conducted jointly with the California Air Resources Board.

Those awardees include one project in Southern California that will pilot 100 battery electric trucks from two manufacturers, two freight companies.

The other, in Northern California, will operate 30 hydrogen fuel cell trucks with a new hydrogen station to be constructed as well.

These are two really big projects and it shows that Class A trucks will be available for drayage and long haul applications.

The next slide, please. On the light duty side, our flagship CALeVIP project has continued to expand. Totals for CALeVIP are captured at the top of this slide, including $159 million allocated by the CEC, as well as $34 million committed from funding partners. We've been heavily over-subscribed with reservation requests, particularly for DC fast chargers.

Since our last meeting we've expanded into three new project regions, the Sonoma Coast, San Diego County, and in the Peninsula, and Silicon Valley.

Additionally, the next slide, we've also announced plans for future CALeVIP projects, including projects in all of the counties listed here. On the right you can also see some of our proposed adders or re-bid increases for projects that are located in low-income or disadvantaged communities. There are projects that are located at multi-unit dwelling sites, such as apartments.

Finally, I'll point out that we currently have an open, active solicitation for implementers of the second block grant project. CALeVIP began with a $200 million cap in CEC funding and as you saw from the previous slide, we're now approaching that milestone.

The next slide, please. Outside of block grants we've conducted two other solicitations related to light duty charging. The first, in EV-ready communities phase two solicitation offered funding for projects that would implement the blueprints they have developed under phase one. Proposed awardees were selected in three different regions of the state.

The second solicitation, best fit innovative charging solutions, was designed to demonstrate innovative electric vehicle charging solutions and accelerate their successful commercial deployment.

Those awardees include a mix of light duty, and medium and heavy duty charging applications.

Finally, we're preparing to implement the requirements of AB 841 which requires that at least 25 percent of installation crew members of any state-funded electric vehicle charging infrastructure be certified under the Electric Vehicle Infrastructure Training Program, or EVITP.

We conducted a multi-agency workshop on this topic earlier this month and including discussion of whether the EVITP curriculum should be supplemented to include updated or additional topics necessary to ensure safe installation of charging infrastructure.

The next slide. In the area of fuel production, we currently have a pair of open and active solicitations. The first focuses on new or expanding commercial-scale production of ultra-low carbon fuels or related blending infrastructure within the state.

The second focuses on projects to produce hydrogen from renewable resources for use in the transportation sector.

Both of these solicitations require applicants to respond to new evaluation criteria for providing benefits to priority populations. This includes identifying priority populations located with low-income or disadvantaged communities, addressing a community or household need, and including a description of community engagements for input on the project design, and providing a direct and assured benefit that the project will provide to those priority populations.

One footnote here, these solicitation details are accurate as of this past Tuesday. They are subject to change since these are open solicitations. Visit each solicitation website for updates or further details.

The next slide, please. Finally, here are a few last noteworthy investments we've made or are pursuing. A solicitation for hydrogen fuel cell demonstrations in (indiscernible) and marine applications at ports. This one was co-funded with our Natural Gas Research Program.

We're augmenting the funding agreement with the Advanced Transportation and Logistics Initiative with the California Community Colleges to expand availability of advanced technology automotive programs at participating high schools.

And earlier this month we conducted an information-gathering workshop to solicit feedback on priorities for our previous investment plan's Recovery and Reinvestment Funding allocation.

The next slide, please. So, hopefully, that gives you a taste of all that we've been up to over the past ten months or so. For more information on any of these solicitations, recent or active, I encourage you to visit the CEC's Funding Solicitation page.

Next I would like to introduce Jonathan Bobadilla who will be speaking about tracking investments in low-income and disadvantaged communities. Jonathan.

MR. BOBADILLA: Thank you, Charles. Good morning everyone. My name is Jonathan Bobadilla, Energy Commission Specialist for the Fuels and Transportation Division, and I will be presenting on updates to identifying low-income and disadvantaged communities, and mapping the investments made by the Clean Transportation Program.

The next slide. For context, recommendations from this program's Advisory Committee, the Disadvantaged Communities Advisory Group, and the 2016 SB 350 Low-Income Barrier Study called for prioritizing investments in low-income and disadvantaged communities.

In addition to this, the 2020-2021 Investment Plan Update stated the goal of seeking to invest 50 percent of program funds in low-income and disadvantaged communities.

Staff in the Fuels and Transportation Division perform quarterly updates of the Clean Transportation Program Investment Map. The Investment Map is our primary source for identifying and tracking low-income community and disadvantaged community-funded projects.

For this latest update, we also wanted to do an internal review, along with consulting Public Advisor's Office, of the data sources behind how we designate as a LIC or DAC project.

Our total review found that the demographic data used in prior Investment Map results needed updating, that more precise LIC-designated Census tract data was available from SB 1000 Report analysis, and that we were not getting the full benefit of our GIS mapping tools due to the relevant datasets not being properly integrated into our geo-processing models.

The next slide. Specific to the Clean Transportation Program, we defined low-income communities as Census tracts with median household incomes at or below 80 percent of the statewide median income. And Census tracts at or below the low-income threshold.

Resources for this information include the California Department of Housing and Community Development, 2020 State Income Limits Table, and the U.S. Census Bureau's 2014 and 2018 American Community

Survey. This is consistent with the Senate Bill 1000 Report published in December 2020.

We defined disadvantaged communities as those identified in California Air Resources Board's Priority Populations Investments Web Map, which used the top 25 most impacted Census tracts in CalEnviroScreen 3.0, as well as areas not captured by CES 3.0, such as seaports and airports.

This is consistent with California Climate Investment Funding Guidelines developed by CARB. These data sources are imported to ArcGIS Pro and converted to map layer data to be used for geoprocessing.

The next slide. To designate if a Clean Transportation Program-funded project falls within a low-income or disadvantaged community, we take a list of projects with addresses and plug them into an ArcGIS Pro-based geoprocessing model that checks whether a project coordinate falls within a geographic area with a specific location attribute.

Location attributes are assigned to each project, thus creating a new feature. The features are then passed to the next section of the model until all steps are completed and the Clean Transportation Program Investment Map is made.

The next slide. The results of this model found that of the $989 million in Clean Transportation Program-funded spent so far, $484.7 million, or 49 percent has been spent within a disadvantaged community, low-income community, or both. That percentage increases to 69 percent if you remove statewide level projects from the equation.

And I would like to note that the CalEnviroScreen 4.0 is update is under development and is expected to be released by OEHHA soon. There is still no word on if tribal areas will be identified in CEC 4.0 as disadvantaged communities.

CEC staff will update our level of analysis as new authoritative data becomes available.

The next slide. And also, an interactive GIS map of Clean Transportation Program-funded projects with location attributes is accessible through a Cloud-based ArcGIS hub found on the CEC website under Energy Maps of California. The map allows users to not only see program-funded project locations, but also to filter projects by attributes such as county, legislative district, low-income community designation, and disadvantaged community designation, and more.

The next slide. And I'd like to give credit to STEP Division's Gabriel Blossom (phonetic) and Travis David who helped develop the model and GIS web map.

And up next is Tiffany Hoang. Thank you for your time.

MS. HOANG: Thanks Jonathan. Hi everyone, my name is Tiffany Hoang, staff in the Fuels and Transportation Division.

Today, I'll be providing an overview and presenting results from our Senate Bill 1000 analysis. SB 1000 requires us to look at distribution and access of plug-in electric vehicle infrastructure and use what we find to help inform Clean Transportation Program investments on light duty charging infrastructure.

The next slide, please, Ian. Last December we published results showing statewide charger averages across income groups and geographies. We found that low-income communities, on average, have the fewest public level 2 chargers per capita and high income communities have the most. Middle income communities, on average, have the most DC fast chargers per capita and high income communities have the least.

Last year's analysis showing statewide averages was not very useful for informing investments in deploying to improve charging access for priority populations. So, to better inform funding allocations, we're conducting a spatially localized analysis and evaluating neighborhood level public charging access by drive times.

The next slide, please. Our drive time analysis looks at how long it takes to get from a Census tract's population center to the nearest public DC fast charging station. We used roadway data from the Air Resources Board that contains traffic data from metropolitan planning organizations overlaid onto roadway geometry from the Census Bureau.

This map shows two different Census tracts in Los Angeles County and the shortest route, as well as time driven to get to the nearest DC fast charging station.

The next slide, please. Our analysis shows that most high and middle income communities fall within 30 minutes or less of a DC fast charging station, but there's more variation in drive times for low-income communities. Low-income communities have some of the longest drive times across the state.

But showing statewide trends alone doesn't help us make decisions on how to invest to serve low-income communities or other priority populations.

The next slide, please. So, we matched community drive times to better understand where we might need to prioritize funding and deployment to improve charging access for priority populations. This map shows low-incomes that are more than 10 minutes, between 5 and 10 minutes, and less than 5 minutes from the nearest public DC fast charging station. Areas in red that are more than 10 minutes from a fast charger are areas we may want to prioritize for light duty fast charging infrastructure deployment. But more analysis is needed to better understand site suitability.

The next slide, please. New drive time analysis also shows variation in DC fast charging access within communities that are disadvantaged and those that are not. Several disadvantaged communities are more than 10 minutes from a DC fast charging station. Again, statewide results alone do not help us identify general areas where public deployment could serve disadvantaged communities and other priority populations.

The next slide, please. And so, again, we matched drive times to better understand where we might need to prioritize funding to provide better station coverage for disadvantaged communities. More analysis is needed to better understand site suitability, but areas shown in red here, which are more than 10 minutes from the nearest DC fast charging station are areas where more investments in deployments could improve fast charging access and equity.

The next slide, please. Last year’s analysis showed that public level 2 and DC fast chargers tend to be located within neighborhoods with lower population density and more commercial land uses, while higher population density neighborhoods tend to have fewer public chargers. These neighborhoods cover less area and are predominantly residential.

This trend also appears when we evaluate public level 2 and DC fast chargers separately by population density.

The next slide, please. Although higher population density neighborhoods contain fewer chargers, they have shorter drive times to a DC fast charging station. New analysis shows that neighborhoods with lower population densities tend to be further from a DC fast charging station, up to more than 3 hours away, while neighborhoods with higher population densities are closer, generally less than 10 minutes away.

Results indicate that deployment of more DC fast chargers in or near low population density neighborhoods may be needed to expand station coverage across the state and improve access for more rural areas.

The next slide, please. Our new drive time analysis shows where the largest fast charging coverage gaps occur across priority populations. We're currently conducting a granular land use analysis to evaluate site suitability among these communities and are looking to expand that analysis to include density of chargers, and to consider increased demand in high density areas.

We're interested in hearing from you all on whether and how we could use this more detailed analysis to inform Clean Transportation Program funding activities and welcome input throughout the analysis to improve charging access for all Californians.

This brings me to the end of my presentation. Thank you all for tuning in.

And I'd like to introduce Raja, which he'll be giving a presentation on AB 2127. Thank you.

MR. RAMESH: Thanks Tiffany. Good morning. My name is Raja Ramesh, I'm an Air Pollution Specialist in the Fuels and Transportation Division of the Energy Commission, and one of the primary authors of the Assembly Bill 2127.

The next slide. The California Energy Commission was instructed by Assembly Bill 2127 to work in conjunction with sister agencies, utilities, and other stakeholders to assess the electric vehicle charging infrastructure needed for at least 5 million zero emission vehicles, or ZEVs, on California roads by 2030, and of reducing emissions of greenhouse gases to 40 percent below 1990 levels by 2030.

In September 2020, Executive Order N-79-20 further instructed the Energy Commission to update this Biennial Statewide Assessment to support the levels of electric vehicle adoption required by the order for passenger, medium and heavy duty, and other vehicle types.

The next slide, please. This graph shows the recent IEPR 2020 mid case transportation demand forecast in blue, which reflects market conditions and shows that under currently anticipated conditions California will exceed its 2025 goal of 1.5 million ZEVs by 2025, but won't reach its 2030 goal of 5 million ZEVs. Both of these targets, specified in past executive orders are shown as green triangles.

It also shows the CARB mobile source strategy scenario in yellow, which takes a policy achievement approach and shows the level of ZEV adoption needed to meet California's climate and air quality goals reaching nearly 8 million ZEVs by 2030, indicated by the green star.

The next slide, please. Next, I'd like to give you all a brief sense of our timeline. In January we released the inaugural staff report version of the assessment. In February we held a two-day workshop where we received feedback on the report. In May, we hope to release the revised staff report, with June business meeting adoption anticipated.

In 2022, the creation of the next Biennial Assessment will be published.

I'd also like to draw your attention to the docket of comments on report development and when those slides are shown, you'll be able to click the link there.

The next slide, please. The report finds that California needs a massive and rapid increase in charging infrastructure deployment to meet its ZEV adoption, climate change, and air quality goals. Hundreds of thousands of chargers will need to be built, in addition to what has already been planned, and gigawatts of load will be added to the grid.

All of our quantitative models take similar transportation demand approaches considering inputs listed on the slide, among others, to estimate the future demand for charging infrastructure. While the staff version from January detailed 2030 results from these quantitative models, the forthcoming revised staff report will update them and include yearly county level results.

Additionally, it will feature results from a number of alternative future scenarios, including those that vary assumptions around the residential charging access, and drivers' charging behavior.

The next slide, please. Thank you for listening. Next Patrick Brecht will discuss the development of the 2021-2023 Investment Plan Update. thank you.

MR. BRECHT: Great, thank you Raja.

The next slide. Today we will discuss the staff version of the 2021-2023 Investment Plan Update for the Clean Transportation Program.

The funding allocations remain the same, as indicated in last year's multi-year plan. This document, updated annually, serves as the basis for the program's funding opportunities for each fiscal year.

The allocations reflect consideration of state, and federal policies and regulations, as well as coordination with state agencies such as the California Air Resources Board and the California Public Utilities Commission, among others.

The Investment Plan lays how the coming fiscal year's funds will be allocated across different fuels, vehicle sectors, and supporting activities. The document is vetted through a public review process that involves multiple iterations of the document in meetings with our Advisory Committee, one of which we're holding today.

And finally, the Investment Plan sets allocations for various funding categories, not individual projects.

The next slide. In preparing the Investment Plan, the CEC seeks to increase the participation of disadvantaged and unrepresented communities from a diverse range of geographical regions. The CEC also seeks to effectively engage communities who are disproportionally burdened by population -- excuse me, pollution, and improve economic resiliency, including rural and tribal communities.

This effort includes consulting with the Disadvantaged Communities Advisory Group for guidance and recommendations on public effectiveness, as program effectiveness as it relates to disadvantaged communities and other vulnerable and unrepresented groups.

Consulting with the CEC's Tribal Program, and the Tribal Lead Commissioner for the assistance with outreach and promotion of transportation-related funding opportunities to tribes.

Assessing whether electric vehicle charging station infrastructure is disproportionally distributed as examined in the SB 1000 analysis, as presented to you earlier by Tiffany.

In addition to the above actions, the CEC has provided a scoring preference for projects located in or benefitting disadvantaged communities as defined by the California Communities Environmental Health Screening Tool, as mentioned earlier by Jonathan. These preferences have been used in recent Clean Transportation Program solicitations where appropriate, and nearly half of site-specific Clean Transportation Program funding to date has been located within low-income or disadvantaged communities.

The next slide. Let me shift to provide context for developing the Clean Transportation Program Investment Plan.

The allocations and implementation of the Clean Transportation Program reflects the effect of numerous policies and goals by legislation, regulation, and executive order. The net results of these policies have been to steer our program towards zero and near zero emission fuels and technologies.

Such policies include reducing greenhouse gas emissions to 40 percent below 1990 levels by 2030, reducing short-lived climate pollutant emissions, such as methane, to 40 to 50 percent below 2013 levels by 2030, and achieving carbon neutral economy by 2045.

The next slide. Now, setting specific goals to increase the supply of zero emission vehicles, as well as charging fueling infrastructure include by 2045, and you should all be familiar with the goals, by 2045 -- excuse me, 2025 having at least 1.5 ZEVs on the road, installing 200 hydrogen refueling stations, and 250,000 battery electric vehicle chargers, including 10,000 direct current fast chargers by 2025. By 2030, having 5 million ZEVs on the road. By 2035 transitioning 100 percent of new sales of passenger vehicles and trucks to ZEVs. Transitioning 100 percent of drayage trucks. And transitioning 100 percent of operating off road vehicles and equipment to zero emission vehicles, wherever feasible.

And lastly, by 2045 transitioning 100 percent of operating medium and heavy duty trucks and buses to zero emission by 2045 wherever -- everywhere feasible.

The next slide. As discussed in earlier presentations, both the SB 1000 Report and the AB 2127 assessment will inform this and future investments, investment plans, as well as consulting with the Disadvantaged Communities Advisory Group, the CEC Public Advisor’s Office, and the CEC’s Tribal Program, and the Tribal Lead Commissioners for assistance with outreach and promotion of transportation-related funding opportunities to tribes.

The CEC will also establish a loan funding group to help with leveraging private and other public funds.

The next slide. Now, a key piece to informing the 2021-2023 Investment Plan is the progress in charging and hydrogen fueling infrastructure. The next two graphics show some of the progress California has made toward the 2025 goals.

The first slide, staff estimates that some of the existing and expected future charging ports will not be enough to meet the state's goal of 250,000 chargers and 10,000 DC fast chargers by 2025.

As depicted in this graph, the identified investments leave a gap of nearly 57,000 level 2 chargers and 430 DC fast chargers by 2025.

The next slide. In addition to the charging infrastructure gap, there is a need to address the hydrogen infrastructure gap. As shown on this graph, the number of hydrogen fueling stations from existing and allocated funds indicated a gap of 21 hydrogen stations from the state's goal of 200 stations. And actually I believe within the last few days we now have 48 open stations, so it should be updated.

But anyway, the next slide please. Key priorities of the staff of the 2021-2023 Investment Plan Update are as follows. Continue with the multi-year funding plan. Begin with the $95.2 million a year as the baseline funding. As the state budget process proceeds additional funds that become available may be reflected in the revised version of the plan.

Address the electric vehicle charging infrastructure and hydrogen fueling station infrastructure gap by supporting the near term zero emission vehicle infrastructure needs of light duty passenger vehicles, while ramping up investments in medium and heavy duty zero emission vehicles in later years.

The CEC will prioritize funding opportunities that put Californians back to work in good jobs building out infrastructure needs for the clean transportation future, while promoting equitable access to and to benefit those through that clean transportation system.

CEC will seek to provide 50 percent of Clean Transportation Program funds from this Investment Plan toward projects that benefit low-income and disadvantaged communities. Additionally, ensure that all program investments benefit all Californians, including communities of color, rural, Tribal communities, and those living in multi-unit dwellings.

As mentioned, the CEC intends to create a Loan

Working Group to examine the role of loans for, in particular, medium and heavy duty infrastructure deployment.

The next slide. Now, this slide shows how we are proposing to translate the mentioned funding priorities into real funding allocations. Funding allocations have remained the same as the 2020-2023 Investment Plan, as priorities remained relatively the same.

The table shows the proposed funding allocations table for fiscal year 2021-2022, as well as the proposed subsequent funding for the one and a half additional fiscal years.

As mentioned, we continue to contribute toward reducing our light duty charging infrastructure gap with the fiscal years 2021-2022, while funding toward medium and heavy duty ZEVs and infrastructure increases.

We recognize that our light duty ZEV infrastructure investments cannot close the gap through 2025. This table reflects the limitation of our available funding, as well as our intent to rapidly deploy clean air technologies into the medium and heavy duty truck and bus sector.

Allocations for hydrogen refueling or fueling infrastructure, and zero, and near zero fueling production and supply would remain steady over time.

Finally, our allocations for ZEV and ZEV infrastructure, and manufacturing, and workforce development also remain steady in each fiscal year, with the shared aim of supporting in-state economic development and hastening ZEV adoption.

The next slide. Now, here's the schedule for the Investment Plan Update. The CEC released the staff draft on April 26th. The first Advisory Committee meeting is being held today, with nearly full membership attendance.

After reviewing feedback from the Advisory Committee and review of the docket comments, the CEC will release a revised staff draft sometime mid-June. We're tentatively planning a second Advisory Committee meeting in mid-July, with a Lead Commissioner report in September.

Staff will then anticipate presenting the Investment Plan Update to the CEC business meeting for approval in October 2021.

The next slide. Now, this slide shows where you can find more information on the Clean Transportation Program, on its website, as well as where you can submit comments to the docket regarding this staff draft of the 2021-2023 Investment Plan Update.

I want to point out that the deadline to submit comments is May 14th. And you can always contact me for any questions you have with the email address on the screen.

And I will now turn it over to Patty to lead Advisory Committee discussion. Thank you.

COMMISSIONER MONAHAN: You can see how hard it is for Patrick to say Patty in a public setting. He's been trained at the Energy Commission.

So, this has been a lot of information that we have given you. I know there has been at least one question from Jimmy O'Dea about the definition of statewide projects, I believe. So, I think what we could do, since we're slightly ahead of schedule, is rather than have it be open mic three minutes and then you might ask your question in the middle of that, if you have questions specific to the presentations, let's just spend the next 10 minutes seeing if there are questions that will help you frame your comments.

So, Jimmy, do you want to ask your question directly about the statewide projects?

MR. O'DEA: Yeah, good to see everyone. Thanks for this great presentation. Yeah, just a clarification on kind of what is included in that statewide definition of projects. Because, you know, 49 percent to 69 percent, just trying to get a handle on that change in numbers and what that reflects.

MR. SMITH: Yeah. So, this is Charles Smith. I might be able to weigh in on some of that. So, a lot of that just relates to some of the data availability that we have as to site addresses. For a lot of our earlier projects we have, say, vehicles being deployed where our project address on file is like a dealership, but we wouldn't necessarily be able to say that the vehicle is providing benefits at that dealership, for instance. Or, some of our earlier charging incentives that went toward private residences, we wouldn't be comfortable providing those private residence addresses into our investment mapping tools. So, those get sort of bumped into a statewide category as well.

It also includes funding for projects where we don't have a specific site address, even though we have the funds committed for future investment. I think maybe some of our CALeVIP funding that hasn't gone to specific sites yet would call into that statewide or NA category. So, hope that provides a little bit of clarity.

MR. O'DEA: Great. Thank you, that does.

COMMISSIONER MONAHAN: Can I ask if any -- if anybody else has a question specific to the presentation, raise your hand. I see Kevin Hamilton has his hand up.

MR. HAMILTON: Yes. Thanks. Good morning. And again, as Jimmy said, great to see everyone.

Just one quick question. I noticed in the alternative fuel budget, which is going up while we're seeing the light duty infrastructure budget going down, can you give me some examples of where we're moving alternative fuels up? Is this mostly in the methane category there, or natural gas, or CNG's, or what are we talking about here when we say alternative fuel? And the other question is, of course, why? But what are we doing there? Can you elaborate, please?

MR. SMITH: Yeah, so I can maybe touch on that a little bit. In fact, I think the site that I mentioned on the active funding solicitations would include funding eligibility in one solicitation for ultra low carbon fuels and blending infrastructure.

So, we know that there will be some sectors, some elements of the transportation sector that would be tougher to introduce the ZEV technology into. And so, we're still committed to decarbonizing those sectors where we can through investments in either renewable diesel or biomethane, renewable natural gas.

Our funding for the production of renewable hydrogen for transportation sector use would also come out of that category.

MR. HAMILTON: So, I'd like to know where. You know, have you identified these sectors where that fueling source would be preferable to ZEV implementation? I'm trying to think of someplace where that would be and I'm really having a hard time coming up with it. So, a couple of examples would be great.

MR. SMITH: Okay.

MR. HAMILTON: It doesn't have to be right at this moment, if you want to get back to me with that later. By the way, I don't want to put you on the spot for that.

MR. SMITH: Sure, thank you. Yeah, we'll take you up on that opportunity.

MR. HAMILTON: Great, thanks.

COMMISSIONER MONAHAN: All right. So again, folks if you have a question raise your hand and I'll call on you. So, Lucas, you're next.

MR. ZUCKER: Hey, I put my question in the chat there as well. I'm wondering in some of the maps and data analysis, when we're talking about the distribution of charging stations is that only looking at facilities serving light duty, individual vehicles, or is that also charging stations serving heavy duty vehicles? Are there station facilities that are serving both? Thanks.

MS. HOANG: Thanks Lucas, I can answer that question. This is Tiffany. I presented some of the analysis with those maps.

So, our data is coming from the AFDC, so these are public stations, these are the light duty sector.

MR. ZUCKER: Great, thank you. Yeah, I'm just curious about, especially seeing some of the areas that look like gaps where along, you know, major corridors, or near ports, it seemed like, yeah, there's opportunity to maybe have benefits for folks living in those neighborhoods, as well as the kind of corridors there.

MS. HOANG: Definitely.

COMMISSIONER MONAHAN: Great. So, we have Jerome and Leslie, and I think we're going to stop the questions and move on to the discussion piece.

MR. CARMAN: I thank you. I also put my question in the chat box. But I was curious if you're also collecting statistics on the owners. These charging stations, particularly, I think it would be interesting to know how much private and public entities are paying the O&M costs, and how much those are being recouped from users of those stations.

MS. HOANG: So, at the moment our analysis -- oh, sorry, Charles did you want to put in a thought for that?

MR. SMITH: No, go ahead Tiffany. Thank you.

MS. HOANG: Sure. So, at the moment our analysis is looking at the location and whether or not the station's publicly accessible. So, we are sort of limited in terms of what we can assess currently given the data that we have statewide that enables us to do this sort of neighborhood level analysis. So, we're open to suggestions from the stakeholders in terms of, you know, what other data is available that we could analyze to look at charging access. Thanks Jerome.

COMMISSIONER MONAHAN: And Leslie, do you want to ask your question?

MS. AGUAYO: Yeah, hi. Good morning everyone. Thank you for this presentation.

I just wanted to clarify and I apologize if I might have missed this, if there is a specific breakdown or geographic breakdown, or a map of the equity investment to date. I saw that in the update for the disadvantaged communities and low-income it was more of like an aggregated accumulation of the percentage out of the entire portfolio. But I'm wondering if there's a disaggregated breakdown of those equity investments or if there's, you know, a map to show where those investments have gone to date.

MR. SMITH: Jonathan, do you want to answer that? I think it was embedded in your presentation. Oh, Jonathan's not available at the moment.

Yeah, we do have the Investment Map website that we would be happy to direct you to, actually. Maybe we can drop it into the chat so that folks can get to it. And it lets you not just see the points on a map, of course, but download the accompanying dataset as well.

COMMISSIONER MONAHAN: Great. Thanks Charles. So, we'll put that in the chat. We should put it for all panelists and attendees. Just a heads up that the chat has to be -- this is a public meeting and the attendees can't see the chat. We can't have like substantive issues in the chat. We want to make sure that everybody who is watching, as well as the attendees, gets to benefit from it.

So, if you have logistical issues you can do that to all panelists. But if it's really like a substantive issue, make sure that everybody can get access to it.

It looks Bill has a question, so why don't we get Bill Elrick's question and then we're going to move to the public comment period -- or, the discussion period of the Advisory Committee, rather.

Bill, the stage is yours. Obviously the sound's not working and he's going to chime back in.

So, while we're waiting for Bill let's move to the public -- the discussion period for the Advisory Committee. And as I said, you know, we need to make sure -- we want to make sure everybody has a chance to speak. And do, you know, three minutes is the amount of time. Really, if everybody speaks for three minutes, we should be able to get through the entire Advisory Committee in a relatively -- you know, and not be sitting here in front of the computer for all of the entire day. So, we're trying to balance those two.

I am thinking that it would make the most sense for people to raise their hands. I mean I could call on people individually, but I know some people like to sit back and think about it and others like to be, you know, kind of leaning in right away saying their thoughts.

So, what I would ask is that you raise your hand to speak. Everybody should raise their hand once to speak, who's on the Advisory Committee. And then, if we have remaining time, you know, we can have more of a more open discussion. But just in the interest of making sure that everybody gets to speak, I know we all have different comfort levels, tolerances when it comes to public speaking, so I just want to make sure there's space for everybody.

MR. BRECHT: And Ian, if we could go ahead and advance the slide to show the funding table that would be great, thanks.

COMMISSIONER MONAHAN: It looks like -- and Bill is back. Can you -- can we hear you now, Bill? Do you want to try?

MR. ELRICK: I don't know. Let's see, is this better?

COMMISSIONER MONAHAN: Oh, yeah, we can hear you.

MR. ELRICK: Thank you. Sorry. That's some really great info. Just a really quick thing. Everything there was kind of the battery side of the updates, but you should really tout the last GFO for hydrogen and infrastructure from the response of number of stations, the cost reductions that they're showing out of that, and the shift in funding from public to private investment being predominant.

Is that something you can report on in more detail in the next meeting?

MR. SMITH: Yes, it is, absolutely. I think we didn't include it in this slide deck just to focus on catching folks up on new solicitations since last June. But yeah, we're happy to include an update on that as well.

MR. ELRICK: Great. Thanks for letting me get that in and get my sound going again.

MR. SMITH: Thanks Bill.

COMMISSIONER MONAHAN: All right. So, it looks like we have Kevin Hamilton with his hand raised.

MR. HAMILTON: So, yes. Again good morning. So, on the hydrogen refueling infrastructure, last meeting we had a map of where those proposed sites were going. And the valley was suspiciously missing from the expansion on the map.

Do you have that map still? Can you put it up and tell us where the new map is, so we can see where some of this infrastructure is going in?

MR. SMITH: I don't think we have the map on hand at the moment. I can follow up with folks and see if we might be able to find an online version of it that we could drop into the chat.

MR. HAMILTON: So, can you confirm whether or not that was formally backtracked and we are adding stations at least up near Stockton and down in Kern, below the grapevine?

MR. SMITH: I myself am not able to confirm one way or the other. I'll have to check in with the staff from our hydrogen team on that.

MR. HAMILTON: All right.

COMMISSIONER MONAHAN: You know, actually I'm going to use this moment to tout the ZEV dashboard that the Energy Commission has pulled together, which has a map of all the hydrogen stations, as well as charging stations, and it lists the new vehicle population. And it will be updated soon with all the new data on sales in 2020. So, check out that webpage. It's going to be updated pretty much on a quarterly basis with new data. And you can map out EVs, you can map out fuel cells, you can map out stations, so it's a really handy tool for everybody.

MR. HAMILTON: Did you just put that in the chat or is that something else?

COMMISSIONER MONAHAN: Uh-hum, I put it in the chat.

MR. HAMILTON: Thanks Patty.

COMMISSIONER MONAHAN: It's that energy -- yeah.

MR. HAMILTON: Yeah. Thank you.

COMMISSIONER MONAHAN: I use it all the time.

Okay, Bill Magavern.

MR. MAGAVERN: Yes. Thank you very much Patty and staff. This is Bill Magavern with the Coalition for Clean Air. And I think this is really an excellent plan. I wanted to particularly support a couple of the priorities here.

One is the prioritization of infrastructure for medium and heavy duty vehicles. Of course, the zero emission transition in that sector is slower than it is for light duty, not surprisingly given the size of the vehicles. But it's at least as essential from an air quality perspective and an equity perspective that we do rapidly transition our medium and heavy duty vehicles to zero emissions and clean up the toxic diesel exhaust that is plaguing communities, particularly low-income communities of color that are most often downwind from freight hubs and corridors.

So, you know, we obviously need to continue building out the light duty charging and fueling infrastructure, but we do need to put particular priority on medium and heavy duty vehicles, both the battery electric charging and hydrogen fuel cell fueling for those vehicles.

And secondly, we very much agree with your emphasis on embedding equity in the program and appreciate the commitment to at least 50 percent to benefit disadvantaged and low-income communities, and the commitment to continue refining the approach of what should really count as an investment that benefits the people in those communities.

So, I appreciate the chance to participate and will look forward to continuing to work on this.

COMMISSIONER MONAHAN: Great, thanks Bill.

All right, I see Richard has his hand up.

MR. SCHORSKE: Yeah, thank you Patty and staff. I second Bill's overall support for this allocation and I think we all have our fingers crossed with regard to the governor's proposed investment. And certainly, that could help on the light duty side since there's so many unmet needs on the light duty side that I'd like to highlight as we think about both program allocations, and most especially program design as it relates particularly to the nearly half of Californians that are in the multi-unit sector in one way or another, either as renters, condo dwellers, and the like.

And I think we all agree that we have an under-deployment of EVs, even when you look at, you know, equivalent income levels those that are dwelling in rental apartments and condos are adopting electric vehicles at a significantly reduced level compared to single family homeowners. And that's a gap that just has to be overcome if we're going to hit our goals for EV deployment overall.

And a couple of suggestions. One is I know that we have a metric that is really very port focused. In other words, how many EVSEs are deployed as defined by the actual installation of a charger. And one suggestion I'd like to make, particularly for the multi-unit sector, which is going to have lower adoption insofar as income levels are lower for renters overall, is that we have a metric that is more of an EV ready metric. Whereby for a significantly less -- a significantly reduced investment per unit enabled for a purchase and the use of a charger, purchase of an EV and the use of a charger within the building. But we could have, whether it's level 1 or level 2 infrastructure deployed to a high level of readiness, including the power infrastructure. And then, as soon as an apartment dweller is ready to purchase an EV they raise their hand, and at no cost to them or the -- no or low cost to them, and presumably no cost to the apartment owner, because any cost is usually a massive barrier, then the actual EVSE port would be made available and would be installed.

So, the focus here would be on rather than chasing after the very sparse number of EV owners that actually already exist living in MUDs, we enable and particularly for level 1, which is much cheaper of course, a very large number of apartments, especially large or garden apartments that are cheaper to install, a very large number of residents to be enabled for a very quick, you know in a matter of a couple weeks, installation of an EVSE because their building has already been prepped with the power infrastructure.

So, it's kind of a bit of a nuance relative to program design, but it actually could have very substantial consequences in terms of costs per unit enabled, assuming that we use that as a metric, and enable us to reach a much larger -- enable a much larger market of potential purchasers of EVs for the same amount of dollars deployed. So, I just wanted to throw that out there.

And just quickly, a corollary on process design here is I think for both the task force members and certainly for the public at large, and other experts, you know, that follow these proceedings to have draft solicitations, not just plans available for comment prior to the finalization of a plan, of a specific GFO would be a great -- I know that's done episodically, it's done in the EPIC challenge and other areas in CEC. But to do that for the EV area I think would give us all a chance to weigh in with good ideas, and refine those plans, and help the staff, you know, hit it out of the park with each of the GFOs. I'll pause there.

COMMISSIONER MONAHAN: Great, thank you.

I see we have Syd from CARB and Will from ALA.

Thank you.

MS. VERGIS: Great, thank you so much. So, just a few comments, I just wanted -- on a couple of factors. So, I just wanted to say that one of the great overarching things about this plan that I see is that it really reflects the huge growth that we've seen in the market for zero emission vehicles in recent years.

And specifically, this emphasis that CEC has put on medium and heavy duty infrastructure deployment, and workforce development is really great, really critical to see.

As many of you know, CARB and CEC worked recently together on the Zero Emission Drayage Truck and Infrastructure Pilot Project, which is going to be a really excellent proof of concept that widespread deployment of zero emission heavy duty drayage trucks is possible now.

You know, that project is going to be taking this ecosystem approach of supporting the trucks, the infrastructure, and workforce development. And was also very popular and oversubscribed by over $100 million. So, that was really nice to see as well.

But in addition to the demand that we're seeing, you know, for zero emission medium and heavy duty infrastructure coming from the incentive side, our shared portfolio infrastructure is really going to be needed sooner rather than later, given all the activity that's taking place on the regulatory side as well.

So, starting in 2024, CARB's Advanced Clean Fleet requirement is going to require manufacturers to bring increasing percentages of zero emission trucks to market as a percentage of their total sales. And overall, that will equate to about 300,000 zero emission trucks being sold in California by 2035.

And the market's really taking off already, even in advance of the ACT kicking in. You know, according to the latest from Lawrence Berkeley National Laboratory, you know, the way the dollars are working out already is already very favorable towards zero emission heavy duty trucks. And so, that's really exciting to see.

So, with the governor's zero emission executive order, you know, it's certainly the case that a robust medium and heavy duty zero emission market is really achievable. And, of course, with the needs from the community health perspective it's really inevitable as well.

So, very much supportive of the plan that you've laid out. And thanks to Patty for you and your staff for collaborating with us through its development. And we'll look forward to continuing the collaboration as we start working on our funding plan to ensure that our investments continue to be complementary. So, big thank you.

COMMISSIONER MONAHAN: Great. Thank you, Sydney.

Will and then Michael.

MR. BARRETT: Thank you very much. This is Will Barrett at the American Lung Association. And very much appreciate the conversation today and the presentations staff walked us through.

I'll echo some of the comments that have come up. I think this is a good starting point plan and really do appreciate the -- it's a great complement, I think, to the strong regulatory structure that the California Air Resources Board is working through right now, as Dr. Vergis noted.

We do appreciate the ongoing kind of attention in the plan to improving air quality, to the public health, to equity.

And just wanted to note that last week the Lung Association issued our annual State of the Air Report and found 98 percent of Californians live in a county with a failing grade in our assessment for either ozone or particle pollution.

And we know that, you know, the burdens of unhealthy air don’t fall equally across California. So, again, the focus on equity in this plan is really very welcome.

We think that the allocations really do continue to build on the good work that was put in last year. And I’ll echo some of the comments that Mr. Magavern made from the Coalition for Clean Air on, really, the 50 percent investments in low-income and disadvantaged communities as being key as an important focus. We really want to make sure that as we’re making these types of investments and targets that they’re really, you know, ensuring that they’re translating into on-the-ground health benefits in the form of cleaner air.

The other thing I wanted to note was, you know, again supportive of the growing emphasis on medium and heavy duty infrastructure. We know that that category is a dominant source of unhealthy air in California and especially in communities most impacted by heavy duty trucking operations. And really do want to emphasize again, you know, how important that is to ramp up on the heavy duty size for both ZEVs and hydrogen.

And then, finally just say that, you know, as the plan is moving forward I think it does help to close those gaps in the light duty charging infrastructure.

And really, again, wanted to thank you for the thought and effort going into the focus on cleaning up the air in our most disadvantaged communities through those targeted investments as well. So, thank you very much.

COMMISSIONER MONAHAN: All right, thanks Will.

We have Eileen Tutt. Oh, wait I'm sorry, Michael next and then Eileen Tutt on deck.

MR. PIMENTEL: Well, thank you Commissioner Monahan and thank you staff for the opportunity to speak today. Michael Pimentel, Executive Director of the California Transit Association.

And wanted to echo all of the comments that we've heard today about just what a great starting point this is for investment in zero emission infrastructure and zero emission technologies more broadly.

I just want to note that from the Association's perspective it's wholly appropriate that the program is being focused very squarely on medium and heavy duty investments.

As you all know, there is immense need for funding for these types of programs in some significant funding constraints that are faced by entities within the sector. Of course, public transit being first among them.

Now, as we move forward I do want to continue to encourage the strong technology neutral approach that the Commission has taken. For my members, we are seeing that agencies are pursuing both technologies, both with a lot of interest. And wanting to make sure that we can trial these technologies to find out what's going to be the most effective for public transit service delivery.

Now, one of the things I did want to mention, though, is -- and you've heard me speak of this in the past is about the need to continue to elevate the importance of planning and addressing the issues related to grid resiliency. A need to build into this framework redundancies, investments in redundancies to the grid.

Commissioner Monahan, I do appreciate that, don't know if it was last year or the year prior, that you started up conversations at the Commission level about the importance of redundancies. But frankly, at the state I don't think that we're talking about this enough.

This is one of those areas where if we're not very intentional about our investments, I think we're going to find ourselves in a position where we're stopped in our tracks in our transition to zero emission technologies. These will be facing a new form of anxiety around zero emission technology and that will be I'll only have that vehicle available to me based on is the grid available to charge that vehicle.

And so, every move forward, if there are ways to continue to scope those types of considerations into the various GFOs, we'd strongly encourage it. I know that for my members this is one area where we just have not seen enough being made available and we can certainly benefit from a more considered focus on issues of redundancy.

And then, very finally I would just note that as we move forward with the budget, if we ultimately do see the governor's investment move forward, of course we as an association are loudly in support of that, we would hope that there would be continued focus in making augmentations to the medium and heavy duty zero emission vehicle and infrastructure component of this plan, recognizing the immense need there.

So, thank you for the time.

COMMISSIONER MONAHAN: Great. Thanks Michael.

We have Eileen Tutt next.

MS. TUTT: Yes. Thank you, this is Eileen Tutt with the California Electric Transportation Coalition. I just want to say, and we included it in our comments last year, and this slide doesn't really go out to 2023 where there is essentially -- well, there is zero fund for a light duty zero emission infrastructure.

And I also want to give a shout out to Tiffany who did a really awesome job responding to the SB 1000. And much of the work she did was shared with the Strike Force, but was not necessarily included in the final report.

And one of the findings that really struck me like hard was that in communities that are predominantly black, and Native American communities, Tribal communities, the scale, really X and Y axis had to be changed in order to show the access to charging infrastructure in those communities.

So, we have situations that when we talk about systemic racism, system social injustice it exists in the access to charging. And so, I just want to commend Patty on really focusing on equity and increasing to 50 percent. I think that is, you know, the investments in equity.

But I want to say the biggest in equity right now is in the light duty vehicle access to charging infrastructure. There's a huge lack of access and as much as low income communities it is in communities of color, particularly those that are predominantly black and Tribal communities.

And so, the idea that we could zero out, right when we have access to all the excellent people, but no access to communities of color or low income communities in 2023, it feels like a travesty and it does feel like we have forgotten that equity, while medium and heavy duty infrastructure is absolutely imperative, priority doesn’t mean no funding going to light duty investments. Especially, and I would argue, if not exclusively to low income, disadvantaged communities, and communities of color where Tiffany showed in her map there are areas where you see this dearth of charging. And most of those areas are largely and predominantly black communities.

So, we have some serious equity and racial injustices in our own build out of infrastructure that I’d like to see this program address.

So, I am very troubled by the fact that we zeroed out light duty infrastructure in 2023. I also would say that that particular action, just so you know, as we really work hard and to reauthorize this program is harming that effort. Because when we prioritize where all of the sudden it means no money goes to light duty, and that’s harming our effort to build a large coalition to get this funded.

So, we cannot, even though I understand that this plan, you know, has limited resources it is -- it is not only making it harder to reauthorize, essentially it’s just equitably unjust to have no funding or literally one-third, you know, of the funding that’s going to hydrogen light duty going to battery light duty, especially when we have, what, almost a million battery electric vehicles out there, almost none of which are in these communities.

So, I just -- I really -- I know that my comments were not incorporated in this. In fact the exact same Investment Plan was adopted. I am really troubled by that and I’m troubled by that from an equity perspective and from a reauthorization perspective.

That said, really thrilled to see the massive influx in investment in medium and heavy duty zero emission vehicle infrastructure. That is absolutely essential because those -- that infrastructure has to be there before the trucks come. So, that is an excellent use of the funding. It’s just it doesn’t have to mean that no money goes to equitable investments on the light duty side.

So, I appreciate all that the Energy Commission -- this part gets better every year. Staff deserves a lot of credit. A three-year allocation is much better than what we used to do year to year. And so, I don’t want to undermine the incredible work that the staff has done, but I just want to say I think that needs to be modified, and it's absolutely imperative that it be done soon because it is impeding our reauthorization efforts.

COMMISSIONER MONAHAN: Okay, thanks Eileen.

So, we have Zac Thompson next and Leslie Aguayo on deck.

MR. THOMPSON: All right. Hi, Zac Thompson with East Bay Community Energy. First off, I want to thank you Patty, and Patrick, and your team for this report and all the work that has gone into it. Obviously very impressive.

As for my comments, I mainly want to echo what Eileen was saying as well about the lack in light duty EV charging infrastructure funding over the later years in the funding plan.

So, there's $10 million for funding for light duty EV charging infrastructure over the year and a half after 2021-2022, so there's actually more money in the plan for light duty hydrogen fueling infrastructure than for light duty EV charging infrastructure.

And I certainly don't want to start the, you know, sort of ZEV death match between hydrogen fuel cell and battery electric plug in. Definitely believe that there should be both and that there is room for both. But, you know, considering our state goals and, you know, the lag in the infrastructure for EV charging that we currently have, and the gap that’s highlighted, you know, between what we have existing, what’s planned to be funded, and the goals that, you know, there’s a significant lag in EV charging infrastructure where that isn’t necessarily the case for hydrogen fueling infrastructure. At least not to the extent that it is for EV charging infrastructure. So, definitely some concerns there about that.

Additionally, for the alternative fuel production and supply there’s the same amount of money going to that in 2022 and ’23, and more money going to that in 2023-2024 than for EV charging infrastructure. And, you know, given our new state goals, and the executive orders, and everything shifting towards zero emission definitely have concerns there as well.

And, you know, thinking about the CALeVIP program and that that’s been oversubscribed by $250 million or more over the course of that program is really sort of highlighting that need for additional funds going to light duty EV charging infrastructure.

That when we are talking about the light duty EV charging infrastructure, there was a slide earlier showing that there’s fewer chargers within high population density areas, so that’s something that we definitely think that this plan should focus on. If we do want to achieve our EV adoption goals and the EV charging infrastructure goals, I think that we're really going to have to focus on that area of increasing charging infrastructure in high population density areas, particularly when we think about our multi-unit dwelling population. I know Richard Schorske spoke to this earlier, so I just want to echo his comments there. If we want the masses to adopt EVs, that's going to have to include those that live in this multi-unit dwellings that may not have the ability to install EV charging infrastructure where they live.

We're happy to see the focus on medium and heavy duty. We think that's critically important for a number of reasons, so just want to highlight that we're happy with that.

And this is actually maybe more of a question. I don't know if anyone from CEC can speak to it now or if I should follow up separately. But in terms of the definition of low-income communities being those that are -- the households that are at 80 percent or below the statewide median income, I was just wondering if there was any consideration about making that 80 percent or below area median income instead of statewide? Just given that California is obviously a very big state and it's very different depending on where you live. For example, in the Bay Area we'll have a higher area median income than, you know, say in Central Valley or other parts of the state. So, I was wondering if area median income was considered by an option by the CEC.

COMMISSIONER MONAHAN: Zac?

MR. THOMPSON: Yes, Patty?

COMMISSIONER MONAHAN: I'm sorry to cut -- I'm sorry to cut you off, but we have this -- you know, our three-minute goal, just because we want to make sure we get through everybody.

MR. THOMPSON: Yeah.

COMMISSIONER MONAHAN: How about if we commit to having Jonathan, who was leading that presentation, touch base with you about that question?

MR. THOMPSON: Sure, okay.

COMMISSIONER MONAHAN: Okay, Charles can you put that as a to-do for Jonathan to reach out to Zac.

And we have in the queue -- sorry, Zac, I just want to make sure everybody gets a chance to speak. So, Leslie is next and then we have Lucas, Neena, Bill and Morgan on deck.

MS. AGUAYO: Yeah, good morning, again. Thank you for the opportunity to speak. I also -- I've heard some sentiments that have already been shared by Bill and Eileen and some folks. Definitely also want to give a shout to Tiffany and that great work that she has done in SB1000, I definitely been informing a lot of our advocacy at greenlighting, right, this conversation of deployment versus accessibility. And just because we are seeing stations being deployed in sense of tracks that are identified as DACS that are lower income doesn't necessarily mean that the people that are in those communities do indeed have access to those investments like we saw based on the drive time. So thank you for that, Tiffany.

There's just a couple of things I'd like to share are, you know, it'd be really great if in the investment plan there was a clear definition of what the CEC hold to be as equity. You know, they are definitions that we follow through state legislature of what a DAC is, what a low-income community is. But I would really, you know, encourage the CEC to develop their definition of what they mean when they say equity, particularly as we're trying to align this other agency but has different definitions.

You really commend the CEC for their 50 percent commitment and to the part of the population. That's great. And I wanted to just share some potential metrics that I think might be useful for future SB1000 reports or just for the consideration of the environment plan, right. Looking at venues might be really helpful when considering there such a ploy charging station. Given that it's going to start changing with the climate, right, change by looking at flood risk data, fire maps, you looking at, you know, some PSB those utilities that might be operating or have service territories in areas that have, you know, shutoff, that could be particularly useful to take a look at.

Also demographic changes. So as we're seeing, you know, the suburbanization of poverty happen and that, you, Tiffany researched rural areas are particularly lacking in some of these investments. Because, you know, charging stations work on a longer timeline and you won't see these stations be shovel ready for the next, you know, five maybe ten years, it's important to figure out where people we're trying to target are going to be at the end of that timeline.

And if they're saying metro (indiscernible) couldn't share COVID-19, right? So there is a really big -- there's a direct link between our transportation policies and COVID-19. And we know that the folks that are in areas that have suffered the worst from COVID-19 risks and deaths are also linked to the folks that have, you know, been in environmentally (indiscernible).

The census tracts or have been most

(indiscernible) by, you know, transportation. And if we can take a look at those consensus tracts that have been affected by COVID-19, that could also give us a sense for party population and who those might be.

Just a couple of last quick things. I wanted to share the potential for in the future considering affordable housing and charging infrastructure at future construction sites, although their market rate or affordable. I'm thinking that reach codes also, as we're starting to bring back charging infrastructure in construction sites.

And the last two things I'll mention before I run out of time are thinking considering antidisplacement measures when we do invest in certain communities to make sure that the census tracts up near are investing in also have protections for the community members that currently live there but that land speculation doesn't drive them out and then they can no longer benefit from that investment in the future.

And just one last thing. Thank you for sharing that link to the MAC that I was asking for earlier on. I was able to download the attribute table. And if I'm not mistaken, I think you're going laugh at my own GIS calculation. And there are 1,339 stations so far in California that are either in low-income, disadvantaged, or both. So I just wanted to clarify that number because I myself am trying to get a sense for how much further we need to go in the specific communities but happy to touch base after this call which whoever might be the best person.

Thank you.

COMMISSIONER MONAHAN: Yeah, Leslie, I would suggest that follow-up conversation. Probably maybe start with Tiffany. I think we're directing everybody to Tiffany for some of these questions and then she'll find the right person to have that deeper conversation.

MR. AGUAYO: Okay, thank you.

COMMISSIONER MONAHAN: All right. We have Lucas, Neena, and Bill for the next three. So Lucas.

MR. ZUCKER: Hi everyone, I'm Lucas Zucker, I'm the policy director of CAUSE, we're an environmental justice organization in Central Coast.

I want to say that I think the CEC's absolutely on the right track in shifting priorities towards heavy duty, want to continue to encourage us to go down that road. I think California's EV policies in the past have had -- had a huge lack of focus on heavy duty compared to light duty individual EVs and heavy duty provides by far the biggest air quality and health benefits to environmental justice communities, the airports, warehouse, and truck warehouse where people are literally dying from diesel exhaust and struggling to organize for environmental justice.

I think it’s interesting that -- that seeing those maps, I think some of the biggest gaps in statewide -- statewide in access to fast charging are in rural communities, low-income communities, communities of color that are often the very same communities that are heavily burden by deadly diesel exhaust from major freight corridors.

And so, you know, I know there’s been some comments around this but I think it doesn’t have to be a zero sum game, I think this is a true of huge loss in Central Valley that are major trucking corridors but also lob the coastal communities that show up red on the map near the Port of L.A. or in my area in Oxnard. So I’d like to see what kind of investments to be made that both facility heavy duty freight electrification and accessibility of light-duty EV charging for residents in those communities that are impacted by freight.

I also want to commend the CEC on their goal of 50 percent of investments in low-income and disadvantaged communities. But as someone who works for environmental justice organization, I want to note it’s important that -- that disadvantaged communities don’t just need more public investment, we also need different types of investment. So my organization works mostly with undocumented farmworkers in the Central Coast. And as much as, you know, I'd like to be happy about California's progress towards EVs, you know, for our members in reality when I talk to folks, there is such a long way towards people owning their own EVs in our community that it feels like an impossible gapped bridge.

And so I'd like to see us prioritize more investments in EV infrastructure that supports shared and public transit like bus yards and transit centers because we don't just need to decarbonize a system of individual vehicle ownership, we really need to transform our transportation system to more mass transit. And it's critical for low-income communities and communities of color because the transition of zero-carbon transportation system is going to have serious cost to folks. And the best way to reduce those cost burdens is to improve access to mass transit.

And so particularly neighborhoods with lots of multifamily housing, this is going to be a huge barrier to, you know, just focusing on individual EV ownership. So also, you know, as Leslie noted in the last comment, given our statewide housing crisis, you know, I'm also concerned about a potential for investments where we might be inadvertently fuel intensification in neighborhoods around fast chargers, you know, real estate developers and landlords are going to increasingly see proximity to those facilities as an asset which is going to drive up the price of surrounding land, likely resulting in raised rents and evictions.

And so I'd encourage us in kind of multifamily areas to prioritize, you know, charging year permanently affordable public and nonprofit housing that are somewhat protected from the kind of displacement risks and ups and downs of the private housing market.

Then we can also give a preference to invested communities where cities have existing strong antidisplacement policies in place, but noting that that may lead to some discrepancy between rural communities that are less likely to have those policies in place already versus, you know, urban communities that have strong canon laws. So, you know, there's probably a need for multiple strategies here. Thank you.

COMMISSIONER MONAHAN: Great. Thanks, Lucas.

So we have Neena, Bill, and Morgan on deck. And just a reminder to folks to try to keep to three minutes, if you can.

MS. MOHAN: Great. Thank you. Yeah, thank you all so much for this presentation and thank you again for the opportunity to be on the staff advisory on behalf of the ten EJ organizations that the California Environmental Justice alliance represents across the state.

So I think in general, you know, as others have said, like really appreciate the overall direction this investment plan is pointing to such as the emphasis on supporting medium and heavy duty, you know, which is as folks have mentioned a very important for air quality improvement. Also really appreciate kind of the workforce development elements of this as well as the 50 percent funding allocations for low income and DACs.

And I just want to plus one also on what Leslie and Lucas said about, you know, trying to make investments that aid in transforming our transportation system and then also to focus on antidisplacement policies.

Yeah, so I think, you know, it’s clear from the recent executive orders and all of the updated state goals that folks have spoken to that we need to prioritize zero-emissions vehicles and related infrastructure. And so I think as Kevin as alluding to earlier, for me it was concerning to see the $25 million total projected investment for alternative fuels. And I think, you know, continuing investments in bio fuels and natural gas to me does not feel an alignment with our state's climate goals and there needs to be in general just better accounting for the various lifecycle of air and water quality impacts of bio fuels. I'm thinking about from feedstock production, from actual biofuel production, given all the various extra (indiscernible) that need to be accounted for. Like land use changes and leaks and how those implicate our greenhouse gas emissions.

So, yeah, I think it's also a little bit concerning to see the waste phase feedstock from (indiscernible) they invested in because that perpetuates expansion of polluting dairies, especially in the Central Valley, and then also the processing of municipal solid waste which can cause pollution in surrounding areas and those areas are most likely to be sighted in disadvantaged communities.

I also want to flag that, you know, while hydrogen is classified as zero emissions, hydrogen produced by biogas also raises the similar concerns out of the biofuels so I'd be curious to know, like, if there's a way to invest in hydrogen from hydrolysis or otherwise account for any lifecycle impacts in these funding decisions. Yeah, and again just to emphasize I think the focus on zero emissions technologies instead of near zero is the way to go. And, again, really appreciate that this is the direction that the CEC is heading in and I hope to see further alignment with this.

And my last comment, you know, I think I want to emphasize the importance of learning from various community engagement efforts to really consider, you know, what are the benefits the social cost and community priorities. So for example, I was reading in the investment plan about the new ideal community partnership program and so I'm wondering how is that program going to help solicit this specific feedback? You know, there needs to be resources invested into data collection and quantifying in determining various public benefits based on community inputs for different actions like, you know, installing a charging station and kind of speaking also to what Leslie was mentioning earlier.

So, yeah, again, really appreciate the opportunity, really appreciate all the work that's been put in to it. I think it's really great to see this moving in this direction. So thank you.

COMMISSIONER MONAHAN: Great. Thanks, Neena. And I would, you know, welcome to the Advisory

Committee. And I also think we might want to have a conversation you with me and some members of the Clean Transportation Program just so we can give you a little more of the historical context and some -- how some of these decisions are being made and a specific conversation on biofuel.

MS. Mohan: That'd be great. Thank you.

COMMISSIONER MONAHAN: So we have Bill, Morgan, and then Casey is after.

MR. ELRICK: You're saying Bill Elrick, correct?

COMMISSIONER MONAHAN: I'm sorry, yes. Bill Elrick.

MR. ELRICK: Just making sure. Didn't want to jump on Bill Magavern.

COMMISSIONER MONAHAN: No, you're right, there's multiple Bills here.

MR. ELRICK: Thank you so much for all this, Commissioner Monahan and all the work the staff's done. This is really important to the state goals. And like many have said, appreciate the attention on the program defining and addressing the priority community needs further.

A couple of quick questions to keep us moving along. There's been some discussions around emissions and benefits and everything. There used to be an emissions benefit analysis in these reports and it disappeared a number of years ago. I'm wondering if that's something that could be brought back. And it would be also interested to see the CTP investment funds be tracked as far as a dollar per ZEV mile or a dollar emission reduction achieved. You know, some real hard metrics on what we're getting since that's the goal of the program.

I think some other discussion points that we could go into a little further. But, you know, how does the program look at self-sufficiency criteria and metrics being consider for when program funds and investments are the actively showing a pathway moving away from public subsidies and building a sustainable market? Because we can't do this forever, especially as we look to reauthorization, you know, what do we really need to be -- you know, we don't want to do this every other -- every year or every ten years, we need to get out of this. So, you know, how do we look at self-sufficiency? I know on the hydrogen side we've been working on that hard and I think looking at the CARB report on that would be very important and should also be reflected in some of this information here going forward.

And then I think back to an earlier comment I made. You know, I'd really like to see CEC expand its ZEV leadership and develop tools and activities for hydrogen similar to what you've done. You know, great tools for the batteries. You have EVI-Pro, you have the RoadTrip, the wired models, you have the EVIT training programs. And, you know, you're not -- it'd be great to see this kind of focus and support across all of the activities and programs are doing. You know, the market's still nascent for all ZEVs. I think the data showed earlier it's 2 percent. So, we really need every ZEV or every clean fuel technology moving forward. And imbedding that into the program metrics would be useful.

So again, generally we support where this is going. We'll look through the docket with a little bit more clarity and closeness and provide written comments and anticipate hearing more coming up in the June meeting. So thank you.

COMMISSIONER MONAHAN: All right. Thanks, Bill.

One just quick response. We've got a data benefits analysis right now for the Clean Transportation Program. You know, one of the challenges has been actually that it's a lot easier on the ZEV side, the dollars for tonne calculation is, you know, often not as good as say when you do a biofuel investment, just the way dollars per tonne work and what is a market transformation and how (indiscernible). I want to say there is some sensitivity on these issues. And often when you put their emissions vehicles into that category, it's hard to justify the (indiscernible) dollars per tonne basis and it's really about this transformational change that we're looking for. So we're struggling with some of those like how do you account for what the transformational invest -- impact is of a hydrogen station or a battery electric charging station. So there's some tough analytic questions.

MR. ELRICK: Yeah. I (indiscernible) that. Thank you.

COMMISSIONER MONAHAN: So we have Morgan, Casey, and then Alfred on deck.

MS. CASELL: Great. Good morning. Thank you for this presentation and thank you to staff for putting this report together.

I also want to thank you, Patty, I forgot to thank you the other day for highlighting the Port of Long Beach and the CALSTART launch for Energize. So thank you so much for including us in that.

I do want to say, you know, generally speaking we're very supportive of this investment plan, particularly the focus on medium and heavy duty zero-emission vehicles and infrastructure equity as well as workforce development in training. I'll just make comment, two major comments on the report. One is related to how it outlines or distinguishes between CARB's role to invest incentives in equipment and vessels and then CEC's role to cover, you know, the infrastructure side.

I would just highlight that, you know, particularly for technology advancement, the coordination between the two agencies is really important when we're doing pilot programs. We still have a great need at the ports for demonstration of cargo handling equipment, particularly fuel cell vehicles as well as harbor craft in particular. And I know for the CARB Heavy Duty Investment Plan, it's unclear how much funding will be available for demonstration programs and so if the CEC is going out with some sort of, you know, solicitation for demonstration projects but it's not paired with what CARB is doing, you know, some programs may not be viable. They may not apply to the solicitation.

So just wanted to highlight the importance of that coordination and maybe flexibility on the solicitation side. I know you have funded vehicles in the past, but just something to think about in terms of how you develop that solicitation.

The other item I wanted to mention is, you know, the importance of planning and certainly commend the Commission for recent investments in strategic planning for infrastructure. You know, you highlighted the Phase I and Phase II for Electric Vehicle Ready Communities Challenge and there was 19 million in funds requested for Phase I -- or for Phase II and 7.5 million awarded. And then similarly, you went out with an electric vehicle blueprint solicitation for medium and heavy duty infrastructure. And there was incredible interest in that.

So I think you had 44 applications with 13.9 million in requested funding. And I would just say that this continues to be an area where dollars are needed. I can say on behalf of the Port of Long Beach, we believe we need about 10 million to be able to strategically plan for infrastructure on a terminal-by-terminal basis.

So just wanted to highlight those two areas but again, really appreciate the work on this. I think it looks great and we are certainly supportive, again, of those target areas of medium and heavy duty zero-emission vehicle's infrastructure, workforce development, and equity. Thank you.

COMMISSIONER MONAHAN: Great. Thanks, Morgan.

So we have Casey Gallagher next. We have Alfred on deck. And then (indiscernible) you're on deck as well. I would ask for you to wait until everybody else has spoken so that we get everybody a chance to speak once before we go to the second round.

So we have Katherine Garcia after that on deck.

MR. GALLAGHER: I'm good to go?

COMMISSIONER MONAHAN: Sorry, Casey, you're good to go.

MR. GALLAGHER: I didn't want to step on anyone's toes.

So good morning, everyone, I believe it's still morning. Casey Gallagher with the California Labor Federation. First of all, loved -- just wanted to commend the CEC on a great report and the amount of work they put into this as well as kind of taking on comments and consideration.

Some -- I'm going to keep this brief, I usually go over time so I will kind of pinpoint a few things in what I have for the docket.

I would like to echo a few points that were made by a few of the -- the Advisory Committee as well as what Morgan just mentioned right now on. I readily appreciate that there is focus on equity and also workforce development. I think in some ways we can actually expand our definition of equity in this plan by also focusing on workforce development and not just -- not just access to technology and cleaner energy within our communities but also access as we're talking about infrastructure and advancement of these -- of this technology that could lead towards high road union careers that we'd have families sustaining wages as well as focusing on these emerging sectors. If we talk about advancement of say manufacturing, also advancements within public transit as well as the ports, and just general construction.

Some of the things I'd like to lift up is maybe already being lifted up in this report but adds additional context about how some of these -- some of the elements that I've pointed out in this could also be lifted up as best practices or like mentioned in the report. Like for example, the acknowledgement of say the bus manufacturing companies (indiscernible) organized by SMART 105 or United Steel Workers such as Proterra and BYD.

Some of the additional investments and partnerships that came along with that are connected to community benefits agreements where combines labor, community, employers, and then also the state in advancing what do these careers look like moving forward as well access to these union jobs.

Another piece that I would like to highlight. It was in the previous report, but the role that partnership plays in say public transit, the role that people say the California Transit works as well as community workforce development -- California Workforce Development works as well as CARB and well as CEC in the past has funded this. And what that -- was the strength that's come out as (indiscernible) the rollout to the innovated clean trans rule. All of which happen to be projects that are funded through the GERF now as well as in combination with the California Workforce Development Board through the high road training partnerships.

So there's a really -- a whole lot of great stuff is being lifted up and great practices and policies. I would love to see it actually kind of pointed out as best practices of the role partnership of labor community as well as the state and industry as we look towards what does equity look like for our communities for things in sectors.

As well as we're talking about ports, we're talking about say up here in Port of Oakland where I'm down the street from, they just put out a great report on infrastructure and the role that project labor agreements have played in advancing community equity and what is the kind of that high road return on investment especially for public dollars that comes along with say project labor agreement, a community benefits agreement, as well as strong local hire in addressing racial justice in equity.

I can talk forever on this. I just want to say thank you and kind of add those comments. And I'll be adding additional things to the docket.

COMMISSIONER MONAHAN: Great. Thanks, Casey.

All right. So we have Alfred Artis and then Katherine Garcia on deck.

MR. ARTIS: Hello there, I'm Alfred Artis with Consumer Reports.

I'd like to first thank staff as everyone else -- a lot of people have. It's a great report. Really, really excited to read it, love the funding.

But I'd like to echo what Eileen, Jacob, and Leslie said about light duty infrastructure funding. You know, our data shows that for light duty drivers, public charging can be as expensive as four times higher than charging at home. And 40 percent of California's consumers in our survey listed that insufficient charging access is their number one barrier to adoption. And the benefits of that charging at home are huge. Consumers save six to ten thousand dollars over the lifetime of the vehicle if they can charge at home.

Now of course you know that retrofitting multiunit dwellings is expensive and that staff should be commended for adding drivetime accessibility to this analysis, but knowing that low-income and medium-income consumers make up a large portion of multiunit dwelling residents as well as knowing the benefits of home charging or charging near home, we just urge staff to prioritize public charging in or near multiunit dwellings to ensure that consumers in multiunit dwellings have access to the most efficient, most convenient, and most cost-effective charging. Thank you.

COMMISSIONER MONAHAN: Sorry. Paused to sneeze.

So we have Katherine Garcia. And then on deck, Ruben Aronin, and Robert Meyer.

MS. GARCIA: Thank you, Patty. Hi, everybody, this is Katherine Garcia with Sierra Club.

And I really want to thank staff for this update. It's great to see all of the investments that are being planned and moving forward and have already been completed.

I do want to echo some thoughts that have already been said that are just worth reiterating. In particular, Alfred just, you know, mentioned in terms of light duty. It is significantly less expensive to make buildings EV ready than to install charging after its built. So as has been said before, making sure that charging infrastructure is placed in multiunit dwellings, affordable housing, market rate housing, it's just extremely important that -- that the charging is there for -- for homes, especially since, you know, what we're seeing in terms of post-COVID is likely more people will be working from home -- not going into the office as much as before COVID. And so I think investments in making sure folks can charge at home is important.

And then switching over to medium and heavy duty, really commend the work that CEC has done. It's great to see -- great to hear about the excellent drayage pilot through the collaboration between CARB and the CEC. I do want to point out, Sierra Club, we are really trying to emphasize the need for other sectors that should be prioritized. In particular, urban delivery school buses and also public fleet. So I just want to point out that it's important to prioritize those different types of medium and heavy duty trucks and infrastructure as needed.

And also just want to point out in some work that we're doing in terms of the Southern California

AQMD. They are -- we're anticipating a huge vote next week on the warehouse electrification rule. And, you know, it's known that due to the online shopping boom during the last year, Amazon has tripled the number of hubs in Southern California. This has led to a huge proliferation of trucks polluting communities where those warehouses are located.

So in advance of the rule and since thinking through what a swift implementation would look like, I think it's important to point out that there should be infrastructure positioned around these warehouses and making sure that the warehouses have access to charging infrastructure in order to make sure that these logistics companies are having -- advancing their purchases for electric trucks. Thank you.

COMMISSIONER MONAHAN: All right. Thanks, Katherine. And congratulations on your new role as acting director of our trial program at Sierra Club. I've worked a long time with Dina and you're going to be a great fit for that role.

All right. We have Ruben, Robert Meyer and then Gia on deck.

So Ruben.

MR. ARONIN: Thanks so much. Can you hear me okay? Great.

Thanks, Patty, thank you, staff, and fellow colleagues for your robust comments and for this impressive plan. I look forward to hopefully being able to meet with a fresh eye with this group when new resources hopefully will come to the Energy Commission be the state or potential federal resources the need to meet and exceed the Governor’s objective to transition to 100 percent light, medium, and heavy duty, you know, cars, buses, and trucks really is going to require more investment than we have in this program. And of course our funding has been static so, you know, we’re losing the market, you know, dollars year over year relative to the needs.

I want to echo what Sydney and others have said about the importance of the shifting to prioritizing infrastructure for medium and heavy duty, especially with the ACT coming into force in ’24 and the fleets rule under consideration later this year. Apologies for my dog who wants to jump into the conversation. Almost as good as a kid, Patty.

I really support the CEC continuing to look for investments that can really leverage private investments given that the public resource, the needs exceed the public resources and quantifying those outcomes I think will be really important. But given that investments in front line, disadvantaged communities won't necessarily be prioritized by the private sector that continue identification of 50 percent or more of funding dedicated to those communities is something I really support. And particular if new dollars are in line, I appreciated Eileen's comments about looking at putting all of future dollars towards the light duty sector that becomes zeroed out in the current plan.

I also appreciate the note of how this is really a workforce program. And as the AEE jobs report last week showed, you know, with about 34,000 already in the electric transportation workforce expected to double in just the next two years, this infrastructure program is unlocking a whole supply chain of electric transportation jobs. And so I forget the restraints on. I know those small workforce training elements but I think both in talking about the program and where specific investments can be tied to job training, I would be very supportive of expanding that or, you know, trying to find ways to continue at the highest level possible rather than having to have that reduction because I think it's so important to be able to show demonstrably those outcomes can also benefit our -- the diverse workforce in California.

And the last thing I will share is, you know, we look at quarterly stacks, I feel like, for in the news ZEV sales and I expect we'll do the same in the medium and heavy duty sector. And they, you know, it makes the news, of course, when we have, you know, big electric truck orders. I've been so uplifted and impressed by the Greenlining tool upliftca.org and I just want to encourage the CEC to look at its communications resources of an innovative ways of tying infrastructure investments particular in front line communities to the throughput and to showing the impacts that these kind of programs can have. I know there's some innovative pilot projects that already are being deployed and I think could use better visibility to get momentum. The idea of, you know, if infrastructure is deployed somewhere, does anyone know? And so I think showing those investments could be really useful, putting my communications hat on.

Thanks again for the opportunity to comment and I'll submit additional thoughts in a written form.

COMMISSIONER MONAHAN: Great. Thanks, Ruben.

All right. We have Robert and then Gia on deck.

MR. MEYER: Good morning, everybody. Thank you, Patty.

I'd first like to thank the staff for all the work on the report, echoing everybody else's comments.

And particularly the support that we've seen from Larry Rolera (phonetic) in the fuels group in manufacturing Workforce training and development. ETP essentially funds training so what we're looking to do is develop a number of partnerships across the technologies aligned with the investment plan. We are in the middle of adjusting for job creation as well as the impact of our funding on the workers that we train, this includes both new and existing workers for manufacturing employers. But also for the logistic industries as well as the public side and heavy and medium duty transportation.

So we will provide more detailed comments, of course, but we just wanted to echo our support for the work that was done on this. We are working with our existing partnerships in economic and workforce development including GO-Biz, CARB, and the CEC to just make sure that any opportunity for job skills training that we fund, if it does include opportunities for ZEV technologies that they are aligned with the efforts of these agencies. Not as authorities to guide the employers but we want to call that information out so that the real nature of our work and the impact of the training that we're funding across all of our areas which also includes preapprenticeship programs, the feeder programs from high schools and youth, and the economically disadvantaged communities. We are looking to seek to amplify the work that's done there.

So I'd like to thank Morgan and Casey for their comments earlier and if there are opportunities to explore opportunities to reimburse job skills training costs in that we're all ears as we move into the plan. Again, thank you very much.

COMMISSIONER MONAHAN: All right. Thanks, Robert. So we have Gia next and Micah on deck.

MS. VACIN: Great. Thank you, Patty.

Good morning, everyone, I'm Gia Vacin from GO-Biz. I'm standing in for Tyson today who has a conflict with an event we're hosting with (indiscernible). So I'm glad to get to be part of the conversation. Thanks.

There's been a lot of great comments from the Advisory Board members today and so I just want to add a couple of points. First, recognizing, as others have, just the tremendous progress in the ZEV market in recent years. And how this plan has also evolved to reflect this evolution in the medium and heavy duty investments that focus on equity and workforce developing. So, you know, just echoing what many others have already commented on.

I think CEC has been thoughtful in trying to balance these huge and diverse kind of needs with the available resources, and the plan does evolve and get better every year. So well done.

I hear the concerns that I heard a little while ago about a shift away from the light duty and I understand and share some of those concerns. The main point I want to make is that I think that this really underscores the importance of incorporating alternative funding mechanisms in other ways in which we can help grow this sort of suite of ways that we can grow -- grow the resources we have. And so I appreciate the inclusion of the mention of this as we continue to mature the market and work to bring in additional private investment.

I was glad to see that the plans establish this, you know, loan funding working group with CEC and IBank and GO-Biz and I think that visual value on putting focus on where we can do this and thinking about how we can get to self-sufficiency faster and employing this kind of wider breadth of funding in financing tools as we help encourage that transition. So.

My last point is just that these kinds of collaborations and this kind of dialog and problem solving is exactly, you know, the heart of what the ZEV market development strategy is aiming to do. So as you move forward from, you know, inside the public agencies and from external stakeholders, if there's ways in which we can help place greater focus on key areas or ways we can help encourage more of this sort of cross pollination in thinking, you know, we're here to help on that. Thank you.

COMMISSIONER MONAHAN: Great. Thanks, Gia.

Micah, you're next. And I don't see any other hands raised. So I would encourage any Advisory Committee members who have not yet spoken to consider raising your hands so you can participate.

MS. MITROSKY: Great. Thank you Patty and staff, very informative presentation this morning.

I want to echo comments made by many of the other Advisory Group members. We're really glad to see the emphasis in this plan on equity and the 50 percent commitment as well as the prioritization of medium and heavy duty, that's really important.

And we agree with and support Casey's comments on High Road union jobs and partnerships. And then finally I want to chime in on previous comments about expanding access to charging opportunities for multiunit dwellings and renters, particularly for affordable and public housing residents. Thank you.

COMMISSIONER MONAHAN: Great. Thank you.

All right, we have Tracy next.

MS. STANHOFF: Good morning, Commissioner. I had a couple of comments here -- well, just two.

One, I am -- if it's possible to see something about tribal and rural funding specific to these categories here. And second if it's possible to add supplier diversity efforts for these efforts here because this is going to be a huge buildout and opportunity for contracting within the state and it would really help a lot of people to be able to become involved in this process supply chain.

Those are my two things. Thank you.

COMMISSIONER MONAHAN: Thanks. And I'm going to just take some executive privilege here because I think the questions Tracy raises is an important one about how tribes fit in or not and how we're defining and accounting for things.

So, Charles, I'm going to put you on the spot to figure out if there's somebody on the team that can talk about that now or at least we can commit to having a conversation with Tracy afterward to have -- be more transparent about it.

MR. SMITH: Yeah, absolutely. We can certainly commit to having the follow-up conversation after the meeting. We can maybe also compare notes in the background and see if we can come up with a short answer appropriate for the chat box as well.

MS. STANHOFF: Thank you.

COMMISSIONER MONAHAN: Great. We have Daryl next.

MR. LAMBERT: Good morning, everybody. My name is Daryl. I work with Rising Sun Center for Opportunity. We're, of course, a nonprofit based out of Oakland, serving the Greater Bay Area and San Joaquin counties.

I just want to start off by echoing the thanks to the Commissioner and the staff for preparing this report. It's excellent, well done. I want to also want to just plus one and support amplified comments made by Greenlining, (indiscernible), other folks about antidisplacement (indiscernible) equity. Also really appreciate the comments made focusing on High Road, higher job title, employers.

And also I want to mention we really appreciate the expansion of workforce development beyond state entities taking the (indiscernible) recommendation to good CVOs that serve and work in priority communities.

I also just want to emphasize that I feel that this is something we're always struggling with. But workforce development sort of gets -- put into a box of just being training and just being (indiscernible) out but it's much than that. And I feel the report has an opportunity to really drive that home and build awareness about that, but it's also supportive services. It's an ongoing coaching, connection to resources, you know, other things that might be presenting barriers to employment. And I feel that, you know, every opportunity we have to really put that front and center to remind folks that it's more than just, you know, actual skills and training, it's more about workforce readiness and access. I think that would be -- that would be great to see.

You know, the report has an opportunity to highlight this and really put this front and center. And, you know, I feel that those supportive services really make a big difference when it comes to opening acts as to High Road employment opportunities. And so that's the only reason I really bring it up, want to center it.

And beyond that, it would be great to see some metrics that focus on retention and advancement of those that are trained in place. Not just the fact that they're trained and placed, but how long do they stay in those jobs? Do they advance, do they move up? Because that's -- you know, that's the key to breaking cycles of poverty and building a generation of wealth is really, you know, stable employment.

That's all I really want to add. One more thing, actually. It would be great to see some more plans elaborated in their report focusing on how we plan to reward and invest in High Road employers to really invest in their folks and, you know, provide additional -- provide stability, benefits, and opportunities for advancing.

That's all. Thank you.

COMMISSIONER MONAHAN: Great. Thank you. We have Jerome next.

MR. CARMAN: Thank you, Patty. It's also awkward to call you by your first name.

I'm Jerome Carman with the Schatz Energy Research Center. We're a claiming renewable research and -- and development organization based at Humboldt State University.

Thank you for the opportunity to comment today and through your excellent work in your investment plan's development over the recent years.

A few comments regarding your engagement with DAC Advisory Committee. I'll add my applause to the chorus that we've heard here and really encourage continued emphasis by putting continued significant efforts that you've -- you've shown into the comments you've heard today on the equity and access, there's some very sharp and poignant points brought up today.

I wanted to make a recommendation regarding medium, heavy duty vehicle hydrogen refueling infrastructure and thoughts regarding starting 2022 considering allocating all of that funding to medium and heavy duty sector but considering including requirements on a percentage of those or perhaps all of those to include H70 fueling to support light duty vehicles and include over the fence public access. The reason for this is the cost of hydrogen is still very high even after LCFS credits and OEM subsidies. We need to increase the volume of demand to get that price down and medium and heavy duty demand is an excellent way to do that. So by taking that approach, that might offer a way to increase the volume per station and help drive that cost down.

I also wanted to quickly address the challenging business case for fueling infrastructure particularly a public electric vehicle charging infrastructure particularly in rural areas are experiencing Northern California in the rural area is particularly the O&M costs and the monthly fees associated with owning and managing charging infrastructure presents a challenging business case.

And building on the excellent work that Tiffany and -- and team have done, just a couple of comments on data that might be useful. We're coming up on some early stations reaching 10 years old. How have they faired? How many exist? How have they survived sunsetting a 2G cellular network, et cetera? What does that look like? How have they faired early market? And then also understanding who owns and operate those? How much our public local government, you know, local public dollars supporting the O&M costs there and getting a better understanding of -- of that burden on local communities particularly in the context of the costs network putting on low-income communities when putting these stations in the ground.

I think that builds on Alfred's comments from consumer reports regarding the fact that public charging is significantly higher and one of the reasons is these O&M costs.

And lastly, sort of a bit of odd of a comment perhaps, but the investment plans have done an excellent job incorporating background and context into -- into the plans. However, a thought on starting with where transportation sits and the overall greenhouse gas inventories of the state broken out by transportation sector. So just sort of taking a -- I think there's utility in taking a sort of simple assumption that each sector has to achieve their 40 percent and 80 percent reductions to meet state targets. And how is each sector sharing in that approach? And I think the light duty sector is furthest along. Although, I don't see a hundred percent of sales -- vehicle sales by 2035 in associated infrastructure as aggressive enough to achieve the electrification of vehicle miles traveled to get to net zero leaving heavy duty sector significantly behind its share and the offered sector is essentially nearly absent with the exception of ports in terms of fueling infrastructure. And there is -- there are emission -- there are equipment options -- zero emission equipment options for the offered sector.

So that might be useful to just keep that perspective in these investment plans.

Thank you.

COMMISSIONER MONAHAN: Great. Thank you.

So we have Russel next.

MR. TEALL: Hi. Good afternoon or -- or good morning, Commissioner Monahan. And I really appreciate the effort that staff has gone through.

I just have three comments. One, Wade Leon is at the Velas (phonetic) meeting and couldn't make it today.

And two, we need to make sure that there's a concomitant dedication to renewable energy when installing EV chargers. So. I'm sure that that's a requirement but it should be formalized.

And three, I have a question. Are there any program incentives for ZEVs for -- for fishing industry or recreational boaters?

COMMISSIONER MONAHAN: Okay. Russel, but your question was are there incentives for the vehicles themselves or for the --

MR. TEALL: The -- the vessels. The --

COMMISSIONER MONAHAN: Well that actually would fall more under CARB than under (indiscernible). So we're focused on the infrastructure and fuel side and CARB is focused on the --

MR. TEALL: Uh-huh.

COMMISSIONER MONAHAN: -- vehicle side. So honestly, I don't know. That might be something you might want to follow up with Sydney from Bay Area Resources Board about.

MR. TEALL: Uh-huh.

COMMISSIONER MONAHAN: Russel, are you done with your comments?

MR. TEALL: Yes.

COMMISSIONER MONAHAN: Okay. Great.

And are there any Advisory Committee members who haven't spoken yet who want to speak?

All right. Then we're going to go to the next people who have already spoken who have something to add after they've heard everybody else or have thought more.

And Richard, you are the first in line.

MR. SCHORSKE: Thanks very much. I'm Richard Schorske with EV Alliance and ZNE Alliance.

I just wanted to add something additional about equity investments and how to make them truly efficient and effective. We have is -- as Eileen was indicating, we have sort of charging deserts and EV deserts around the state both in rural and urban communities, various colors and the like.

I want to caution that if we don't simultaneously provide increased access to the vehicles with the infrastructure, we are going to be wasting a ton of money. Just scattering more charging, whether it's public or MUD, for that matter, fast charging in those locations without concomitant incentives and thoughtfulness about access to EVs is going to actually set us back because that's opportunity cost for incentives on the vehicle side.

So a couple of specific recommendations. Shared EVs should be getting priority treatment with respect to infrastructure investment. We have models like Envoy and others that include both market rate and below market rate options for typically being deployed at MUDs. Those are great models. They can be very cost efficient. They can introduce folks and give folks access to EVs. There's a lot of advantages to having that infrastructure in place in particularly larger apartment complexes and they can then become building blocks for folks that may acquire EVs.

And then the other piece on this is we're about to enter the era, as everybody knows, of ASE's autonomous shared electric and connected and electric and shared vehicles. And we have not much planning about how local governments and other stakeholders can work together to prioritize deployment of ASE's for the benefit of the massive opportunity to make car ownership, personal car ownership a rarity rather than a rule.

There's lots of studies indicating that, you know, into the 2030s as we have more autonomy built in to vehicles, we could have as many as 90 percent pure vehicles and have, you know, essentially one two-minute summon of an ASE's vehicle for use for folks and with more than, you know, approximately half or more of carbon being a body carbon and manufacture the vehicles, this is a huge opportunity. Electrification's only part of the carbon reduction battle, we also need to reduce a number of vehicles dramatically.

So I'd like to suggest that as we do planning grants, we specifically enjoin the stakeholders to think about how to rapidly increase the proportion of shared vehicles and especially autonomous shared vehicles and -- and frankly increase the penalties for individual personal auto ownership as autonomous and shared vehicles become cost efficient. And then also to subsidize and reward companies that provide autonomous and shared electric vehicles into the marketplace in an equitable and efficient manner.

So, I'll pause there. Thank you.

COMMISSIONER MONAHAN: Great. Thanks, Richard.

I see Kevin with his hand up.

MR. HAMILTON: Great. Thank you, Patty.

I just wanted to mention which I hadn't before, thank you and I really support this investment of 50 percent of all the investments in these communities, these low-income and disadvantaged communities.

I want to thank you also for the mapping tool. Very cool. In looking at it, it really came to me that the infrastructure investment is critical to the expansion of adoption of the vehicles. As I was comparing the PHEV adoption versus BEV adoption in the three counties that you invested in in the San Joaquin with CALeVIP, I noted that as the level of chargers went up, the number of density of chargers as did the adoption of BEVs in the -- the decrease in PHEV purchases. So I thought that was a really fascinating relationship that appears to be evolving out of that.

And showing that if you build them, they will come. So residents in those communities, at least according to the groups that we work with and we work with nine organizations, local community-based organizations, in forming a group called the CVEC that is -- that are really working on understanding -- to better understand the barriers these communities are experiencing and the fears that they have. And of course, range anxiety and a lack of charging infrastructure sits really high on that -- that list. And price actually is a little lower on the list and I think people understand or it's been conveyed.

So that investment in those other counties is going to be critical for us, and I think you'll see that across the state. Even in the more rural and less -- less densely populated counties, which by the way deserve these assets just as much as any other county, that's the driving force. They need to see some security in their ability to charge their vehicles before they're going to adopt the vehicles.

I know -- on another topic the idea that others are putting chargers out there was mentioned by someone else in chat. And I think it's -- it seems odd to me that I don't see that sort of at least nod that Electrify America, for instance, is out there putting hundreds if not thousands of chargers up and down the valley and it's hard to see where that -- that sort of, at least communication at that level and -- and planning -- excuse me -- and leveraging that asset is -- is worked into this plan.

And I understand that the two can't actually physically work together but certainly that work can be acknowledged and where one is working and -- and putting in a lot of infrastructure, it allows the CEC to kind of step back a little and maybe look at places that they're not looking at over EA and put more infrastructure in those places. So if it goes in in that balance, sort of, I hesitate again to use the word collaborative but at least acknowledging these things and taking advantage of those -- leveraging those. Is that happening? Maybe it is and I just don't know it. So can you answer that question?

COMMISSIONER MONAHAN: It is happening.

MR. HAMILTON: It is happening? So --

COMMISSIONER MONAHAN: Yeah. Let me -- let me -- let me take that on --

MR. HAMILTON: Sure.

COMMISSIONER MONAHAN: -- really quickly.

MR. HAMILTON: Absolutely. Because I have one more thing after that.

COMMISSIONER MONAHAN: So the data that Patrick showed about the infrastructure gap, the 2025 infrastructure gap takes into account Electrify America, the utilities investment. It's actually a publicly announced investment that we're able to track.

Now there are some private announcements that are not publicly announced that we're just not able to track and actually one of the, you know, conversations I'd like to have with the EV charging infrastructure strike force is this how do we make sure that we have the best data possible to be able to plan appropriately and to fill gaps?

So, you know, remember market is going to go where there's going to be the greatest sort of opportunity for business development, that's not necessarily where it needs to go to make sure that this is an equitable -- that, you know, California's have equitable access to infrastructure.

So we -- we do want to tailor our investments to really go where the market is not going and to show the market kind of how do we get to a point where public dollars aren't needed for self-sustaining, thriving charging industry for most of California. I would argue there's always going to be a place to make sure this is an equitable transition where industry may not go.

Mr. HAMILTON: Thank you. I appreciate that. That's very helpful.

And then last but not least, I certainly want to support this investment in medium and heavy duty but I want to call out again that in the San Joaquin where we're seeing this proliferation of cities who are now declaring themselves inland dry ports and again a proliferation of distribution centers in those areas and that a lot of the truck traffic is actually originating and ending in the valley supporting the robust agriculture in other industries there. It's really critical that we get these D3 chargers on the ground and in these areas where these warehouses are popping up.

We're having a difficult enough time as it is just trying to force them to use the best practice models of building these warehouses and operating them. But when they can call out that they don't even have the infrastructure to be able to put these vehicles into play, it makes it really difficult on advocates in the community to -- to make that argument. So we need you support us in that and the main support we need of course is that infrastructure investment.

So thank you very much. I appreciate your time.

COMMISSIONER MONAHAN: Okay. Thanks, Kevin.

And I just wanted to take a moment, I'm going to pass the baton to Charles for a minute because some of the issues that have come up around multifamily dwellings and transportation network companies and all that.

Charles, can I turn the mic over to you for you to share some information to everybody?

MR. SMITH: Yes. Absolutely. Thank you, Patty.

So during this meeting, one of -- another member of our team pointed out to me that hopefully within the next day or two, we'll be making a LISTSERVer announcement of upcoming funding opportunities related to charging in multiunit dwellings for disadvantaged, low-income communities and affordable housing related -- another funding opportunity related to charging access in rural communities. Another funding opportunity related to charging and can serve transportation network companies, Uber and Lyft, for example, potentially electric taxis and shuttles to facilitate adoption of

EVs by those companies.

So the -- we're not announcing the -- of the solicitation just yet. This is just going to be an announcement of our intent to do so. But given the interest in a couple of those categories, wanted to just give folks a heads up on that. And these announcements will be going out to some of our LISERVers, including the alt fuels LISTERVer. It' kind of the primary LISTSERVer for our program.

Thanks, Patty.

COMMISSIONER MONAHAN: Great. Thanks, Charles.

So I don't see any more hands raised. We're going to move it on to public comment unless the Advisory Committee members, if there's any committee member who hasn't spoken or who wants to speak again about the topic that's come up since they've made their remarks, this is your opportunity. I'll just wait 30 seconds or so and then we'll turn it over to public comment.

All right. I'm not hearing anything so I would encourage you to submit written comments if you feel like you want to make -- elaborate on a point or you just though more about it and you wanted to change something you had said, you know, we have been recording, of course, the comments that you have made publicly. So -- but just encourage you to, you know, submit written comments if you feel like, oh, I didn't get this quite right. We are going to have one more Advisory Committee meeting so you'll have another opportunity in a public way to -- to share your comments.

So let's turn it over to the public comment period. I think Ben De Alba, are you -- you're going to lead this part of the --

MR. DE ALBA: Yes.

COMMISSIONER MONAHAN: -- meeting?

MR. DE ALBA: I get to lead this.

And for those -- okay, so public comment, we're going to limit to three minutes per person. And please state your name and affiliation so we can have the court reporter get that correct in the record. And I will go in order as the hands are raised and unmute your line.

So first up we have --

COMMISSIONER MONAHAN: Oh, actually. Can I just check -- check for something, Ben, on this one. Because we had talked about earlier that -- that it was one minute for public comment, but you're saying three minutes for public comment. I just want to make sure that people have the right time on deck.

MR. DE ALBA: I -- I apologize. It is one minute. So we'll limit it to one minute for public comment.

COMMISSIONER MONAHAN: Maybe because we're --

MR. DE ALBA: Unless --

COMMISSIONER MONAHAN: -- the Advisory Committee meeting is ending a bit early, we can give some flexibility of two minutes. But if it seems like there's a lot of people on deck for public comment, then we'll revise that two minutes. So.

MR. DE ALBA: It seems like a great compromise.

COMMISSIONER MONAHAN: Sorry. We keep saying different things. We're -- yeah, we're going to split the -- I don't know if it's the baby, but we're going to split the time.

MR. DE ALBA: Okay. We'll go with two minutes.

Okay. William Zobel, you're up, I'm going to unmute your line.

MR. ZOBEL: Thank you. Good morning. Hopefully you all can hear me.

Thank you, Patty. Ben, good to see you and those who with the Advisory Committee. Thanks for taking the time.

I'm Bill Zobel, I'm the executive director of the California Hydrogen Business Council.

Very much appreciate all the conversation today.

This is a great group. I think it's nice that we have the opportunity to sit down and talk about how we want to move forward with all this.

I would say there were -- there are a couple of themes today that I just wanted to point out. One was equity, of course, which our organization really supports and we'd like to see the state get more behind that. We do think that, you know, equity has been defined a lot of different ways and it's being used by the state in a lot of different ways. But one of the things we believe is missing in the equity equation is choice, consumer choice.

What's apparent is that the state has really made a choice for consumers with regard to in particular the light duty segment, that it's going to move in a battery electric direction. We'd like to see, you know, the state offer choices with regard to -- with regard to hydrogen and hydrogen fuel cell technology in light duty space in particular and that has been talked today, continue to support medium, heavy duty sector, the off-road sector, and take advantage of some of the cross-sectorial benefits that can come with hydrogen that some of the speakers touched on today are relative to the heavy industrial sector and so forth.

So a lot of applications there. And we just would like to see this group consider consumer choice as a component of the equity conversation because battery electric vehicles may not work for everyone. We want to ensure everybody has that choice.

The other point I'll touch on, I'll be brief, is the self-sustainability piece which has come up several times. We support that. You know, how much does it cost the state and the citizens of the state to get us to where we want to go and achieve those goals? A lot of the goals, what's it going to take us to get there? How is it different than technologies? Are we headed in the right direction? Those sorts of things, except it need to be considered within the self-sustainability context.

So we look forward to working with the group and the members and continue to particular as we move forward. So thank you all for everything that you've done to this point, the staff, the CEC, for everything they've done. Appreciate the opportunity.

MR. DE ALBA: Thank you. So next we have Lisa McGhee, followed by Robert, and then Levi.

So Lisa, I'm going to unmute your line. You're unmuted.

MS. MCGHEE: All right. Now I'm unmuted, right?

MR. DE ALBA: There you go, we can hear you.

MS. MCGHEE: Okay. Great. I'm Lisa McGhee and I'm with GreenPower Motor Company. We're an OEM that's located here in California producing and providing both battery electrical bus, shuttles, and trucks. And I really do appreciate the influx related to the medium, heavy duty. This is really necessary to help support the numerous regulations that are before every commercial operator out there at some point that operates in California.

One of the things I really wanted to kind of express concern and maybe consideration for would be for the small businesses. There doesn't seem to be enough support that's directly support of a majority of these operators that will be impacted, better small businesses, to these many regulations beyond government and large businesses.

So I'd love to see some type of equity created for programs to support small businesses that are in a transportation sector facing these mandates. One thought that came to my mind was a pooling program or some type of funding pooling program to be created for small businesses.

In addition to the workforce development, I also really appreciate that and thinking through ways from the manufacturing size as well as a workforce development. We see a strong need for support as it relates to any type of dealerships and maybe even a more openness program related to how we can continue to try to move product as it relates to the medium, heavy duty ZEV sector. Much of this is being done by the OEMs themselves, and so it'd be nice to have either some type of cooperative regulation to support the nascent industry while it exists until we can move the product and get the training and the education done by the dealerships. We find it to be a big struggle and would love to see some type of cooperative, maybe alternative program to support both of us better for sales and education.

And on the passenger mobility, one thing I'm just kind of thinking through as it relates to some of the sectors, we've never done a program devoted just to the airport operators. I mean, many of these operators are small businesses so again I'd love to see maybe some type of program developed for them.

And thank you for your time and your program.

MR. DE ALBA: Thank you, Lisa.

Next we have Robert Perry, followed by Levi.

Robert, I'm unmuting your line now.

MR. PERRY: Yeah, hi, can you hear me?

MR. DE ALBA: We can hear you.

MR. PERTY: Okay. Great. My name is Robert Perry, I'm an independent energy consultant with the Synergistic Solutions consulting firm. And I want to thank everybody for being part of this process.

My main comment concerns vehicle grid integration. I think this is a technology that -- and confers substantial benefits to you, particularly the commercial industrial sector which is typically zoned adjacent to low-income communities. And that VGI technology confers a significant benefit for energy resilience for commercial industrial sites which typically suffer large economic losses during power outages.

So they would be incentivized to purchase vehicles having this technology. I think VGI is something that could, the resilience benefits from VGI is something that could really augment the value proposition that would lead to accelerated adoption of EVs particularly in the medium to heavy duty sector. And that also consideration should be given to strategic planning within commercial industrial zones for citing of hydrogen fueling stations because the EV cycle of commercial -- fleet vehicles lends itself to the benefits of fuel cells which in also commercial industrial sites have high energy capacities which could allow for local electrolysis in these zones.

So just please think about VGI and how to incorporate it wherever possible in your investment plans.

Thank you.

MR. DE ALBA: Thanks, Robert. And before you mute, I didn't catch your affiliation.

MR. PERRY: Synergistic Solutions. It's my independent consulting firm, it's an energy policy firm.

MR. DE ALBA: Thank you.

MR. PERRY: Uh-huh.

MR. DE ALBA: Okay. Next we have Levi Tillemann. Levi, I'm unmuting your line now.

MR. TILLEMANN: Great. Can you hear me all right?

MR. DE ALBA: Yes, go ahead.

MR. TILLEMANN: Perfect. My name's Levi Tillemann, I've vice president for policy at Ample which is currently deploying and operating a battery swap EV refueling infrastructure. Ample is supporting a fleet of Uber drivers who are operating in the Bay Area and plans to expand these operations significantly over the coming months.

I wanted to emphasize the importance of technology neutrality in CEC and California state policies in general. I think it's important for us to remember that EV still represents a tiny minority of California vehicles and part of that is because the current use case is really designed for affluent suburban dwellers with two-car garages where they can plug in overnight. We should be open to other approaches which represents a more direct and seamless transition from current revealing practices such as battery swap.

I also wanted to mention that we strongly support the efforts to expand charging to lower-income communities. Carnegie Mellon estimates that 78 percent of Americans lack access to overnight charging. And it would be important for us to look for options to remedy that situation.

Finally, I just wanted to mention that we support efforts to extend EV charging to fleet drivers and especially TNC drivers. It's important to think about the implications of part of EV charging infrastructure for high utilization fleets as well as TNC drivers. If you estimate a $15 an hour wage for TNC drivers, daily fast charging would cost a rideshare driver about $4,000 a year in income.

Again, obviously battery swap is a solution to all of these problems. And so we would urge the

California Energy Commission and its sister organizations throughout the state to integrate battery swapping to their thinking going forward.

Finally, I'll just mention that China is deploying battery swap massively and they have plans on the books to deploy over 40 million vehicles worth of battery swap capacity by 2025. And that's been done by multiple manufacturers in China ranging from Nio to the Beijing Electrical Vehicle Company to Geely and the Shanghai Automotive Industrial Corporation. So this is really a robust trend in local EV markets and something that California should work to encourage here in the state and in the United States more broadly.

MR. DE ALBA: Thank you. So Levi was the last to have his hand raised.

So we'll give a final call, if anybody would like to make a public comment, would everybody please raise your hand and we'll open your line. Otherwise, I'm going to turn it over back over to Patty to close us out.

COMMISSIONER MONAHAN: Well, and I'm going to turn it over to Patrick to just walk us through how to submit public comment.

MR. DE ALBA: There you go.

MR. BRECHT: Thank you. Actually, Ben, can you put back one slide, please.

Great. Thank you.

Yes, we've been taking notes. We'll also have a transcript to review. But we do strongly encourage you to submit comments to the docket, that way your voice is heard.

And up on the screen you can see the location of the docket and a way to submit e-comments. And we do ask that those comments get in before May 14th so we have ample time to incorporate those into the next iteration of this report.

So, thank you. Again, May 14th is the deadline. I strongly encourage you for those comments.

Thank you.

COMMISSIONER MONAHAN: Okay. Thanks, Patrick.

So just a few final thoughts. So we are trying to make this meetings as interactive as possible given the constraints but would love suggestions. So we're going to be doing some kind of survey after this meeting. And I would encourage you even if you just say like this was good or this was terrible or whatever your thought is, I would appreciate it.

Also, you know, we have some moving parts here as I've said in the very beginning. We have the Governor's budget proposal, we have the for --

reauthorizing the Clean Transportation Program frontloading a billion dollars in infrastructure. There's going to be the May revise which will happen sometime in mid-May. And, you know, there's going to be a lot of movement in the legislature with the Governor's office around us.

And so just encourage you to, you know, get involved as you see fit as it aligns what your organization believes. And also that, you know, if there is a shift and if the program is reauthorized under our frontloaded investments, we just have to consider what that means in the context of the boarder investment plan.

And so I think, you know, for my perspective on the bright side, there is general recognition. I think that it's really important that we deploy dealership vehicle infrastructure in a way that benefits all Californians. And we are really and truly wrestling with that question and has had conversations with numerous folks on the Advisory Committee and beyond around what does it mean since really benefits disadvantaged and low-income communities and I hear the comment that we need to be transparent about those deliberations. And I think we also want to be open to, you know, continually for advising and thinking through we -- how do benefit communities in a genuine way that we can track so that we can be held accountable for that.

So I personally am really excited about the possibly of like rapidly scaling up zero emission vehicles. The global market is moving, California is part of that global market. We want to be this -- more (indiscernible) place where we have good jobs associated with ZEVs and a buildout of ZEV infrastructure and that we especially provide concrete benefits to families that are struggling the most in the state.

So. I'm going to close up with that. And I would encourage you if you, you know, submit comments, you know, talk to the team or the field and transportation --

(Audio lost)

MR. KELLEY: We've lost your sound, Patty.

MR. SMITH: Patty, I think we've -- Patty, apologies, we've lost your audio for the last 30 seconds. We can't hear you, Patty, sorry. We've lost your audio for the like the last 30, 45 seconds.

MR. KELLEY: Thank you, Charles.

MR. SMITH: Sorry. We'll give her a half minute to return for the closing remarks. Sorry about that, everybody.

(Pause in proceedings)

COMMISSIONER MONAHAN: Can you hear me now?

MR. SMITH: Yes, thank you.

COMMISSIONER MONAHAN: Did you guys hear anything that I said? Because it was brilliant.

MR. KELLEY: No, it cut off right as you started talking. I'm sorry.

COMMISSIONER MONAHAN: Oh, my gosh. Oh, my gosh, I said so much. Now I have to remember all the things I said.

Zoom. Okay. Let me get back to my words of wisdom. I was encouraging everybody, you know, to participate in this process. And, you know, I think you've seen from this conversation like the team wants to have dialog with the Advisory Committee members, with members of the public, and external stakeholder community. This is about, you know, deepening our conversations and making sure that we are answering your questions and you're understanding the direction that the program has been going so that we can all work together to build a plan that makes the most sense.

One of the things I want to emphasize as some of the moving parts which I mentioned in the very beginning, the Governor's proposed budget, reauthorizing the Clean Transportation Program and the billion dollars of frontloaded investment in zero emission vehicles, infrastructure potential for up to a billion dollars.

And I'd just encourage you and your groups to get involved in this process as you see fit in a way that aligns with your -- with your interests organizationally. But I think what we are seeing is a lot of, you know, general recognition that we need to make sure that we have zero emission vehicle infrastructure ready to go in order to meet our goals.

And so, you know, doing this in a way that supports all communities is critically important. And those are issues that we are going to be as transparent as we can be moving forward and what it means to be equitable. This is dialog I would say like we never reach an equitable future, we're always striving to reach an equitable future. So we're always, you know, we always want to reexamine what we're doing with this eye towards continuous improvement and continuance refinement, and greater transparency.

So I have had conversations with some of you about well, what does it mean to benefit a community versus what does it mean to be in a community. I appreciate those conversations, I want to keep deepening that and being transparent about the decisions we make.

So one last thing is that the Zoom platform is hard for these kinds of big meetings, it's just hard. And we're open for ideas about what to do to make sure that everybody has a break, so we make it as interesting and dynamic as possible, and we give you the information you need to make a good decision. But sometimes, you know, we can be presentation heavy, that is -- it can be hard to just like sit around and watch presentations and listen to people. So give us your advice, we're going to send out a survey afterward asking for help on what we could do better.

And with that, I think we are done. I think we are adjourned. So thanks everybody who joined, really appreciate it, and look forward to our next Advisory Committee meeting.

(The meeting adjourned at 11:56 a.m.)