CALIFORNIA ENERGY COMMISSION

ADVISORY COMMITTEE MEETING

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2019-2020 Investment Plan	)	
Update	)	
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Wednesday, February 6, 2019

held at the

San Joaquin Valley Unified Air Pollution
Control District
1990 East Gettysburg Avenue
Fresno, California 93726

Reported by:
Peter Petty

APPEARANCES

From the California Energy Commission

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Charles Smith
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Patrick Brecht
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Committee Members

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William Barrett, American Lung Association
Matthew Barth, University of California, Riverside
Tyson Eckerle, California Governor's Office of Business and Economic Development
Joe Gershen, California Advanced Biofuel Alliance
Brian Goldstein, Energy Independence Now
Ellen Greenberg, California Department of Transportation
Ole Hoefelmann, California Fuel Cell Partnership
Steve Kaffka, California Biomass Collective, University of California, Davis
Ralph Knight, Consultant for Alternative-Fueled School Buses
Jack Michael, Recreational Voters of California
John Shears, Center for Energy Efficiency
Eileen Tutt, California Electric Transportation Coalition

Also present

Peter Christensen, California Air Resources Board
Bill Elrick, California Fuel Cell Partnership
Sarah Rafalson, EVgo
Jacqueline Moore, Port of Long Beach
Jeffrey Reed, California Hydrogen Business Council

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P R O C E E D I N G S

FEBRUARY 6, 2019 10:37 a.m.

COMMISSIONER SCOTT: Okay. Hi. Good morning, everyone, and welcome. We've had a few more Advisory Committee members come in, so we will go ahead and get going. This is Commissioner Janea Scott. I'm a Lead Commissioner at the Energy Commission for Transportation. And this is our Advisory Committee Meeting and Public Workshop for the 2019-2020 Investment Plan Update.

And why don't we start by doing introductions of Advisory Committee members here in the room and then we'll turn to those who are participating by WebEx or on the phone. And then we'll turn it over to Patrick to kick us off. So let's -- Will, you want to start?

MR. BARRETT: Sure. Good morning.

COMMISSIONER SCOTT: You have to push your button.

MR. BARRETT: Sorry. I'm new here. Will Barrett with the American Lung Association. Thanks for having me.

MS. ALAFIA: Joy Alafia, Western Propane Gas Association.

MR. BARTH: Hi, everybody. I'm Matt Barth, the University of California at Riverside.

MR. ECKERLE: Great. And Tyson Eckerle with

the Governor's Office of Business and Economic Development.

MR. GERSHEN: Joe Gershen with Encore BioRenewables and the California Advanced Biofuels Alliance.

MR. KAFFKA: Steve Kaffka, University of California, Davis and the California Biomass Collaborative.

COMMISSIONER SCOTT: And then I believe we have Ellen Greenberg on the phone.

Would you like to say hello?

MS. GREENBERG: Hi. It's Ellen Greenberg and I'm on the line from CalTrans District 4, in Oakland today.

COMMISSIONER SCOTT: Great. And good morning.

And I believe we also have Ralph Knight on the phone.

Ralph, would you like to say hello?

Yes, you're unmuted on our end, Ralph, if you're there.

MR. KNIGHT: Yes. I'm here. Can you hear me now?

COMMISSIONER SCOTT: Yes, I can. Good morning.

MR. KNIGHT: Good morning to everybody.

COMMISSIONER SCOTT: And are there any other

Advisory Committee members on the phone or on the WebEx?

John Shears, would you like to say hello?

MR. SHEARS: Good morning. John Shears with the Center for Energy Efficiency and Renewable Technologies.

COMMISSIONER SCOTT: Good morning.

All right. With that, welcome Advisory Committee members. We're delighted to have you. Thank you for spending some time with us this morning and afternoon to provide your expertise on our Investment Plan.

And with that, let me turn it over to Patrick to kick us off. And actually would you guys, would you like to introduce yourselves and say good morning?

MR. BARKER: Sorry. Kevin Barker, Deputy Director for the Fuels and Transportation Division. Thanks.

MR. SMITH: Charles Smith, Office Manager within the Fuels and Transportation Division.

MR. BUTLER: John Butler, Deputy Division Chief, Fuels and Transportation Division.

MR. BRECHT: Is this on? Okay. Good morning, everyone. My name is Patrick Brecht and I am the Project Manager for the 2019-2020 Investment Plan Update for the Alternative and Renewable Fuel and Vehicle Technology

Program.

Thank you to those who chose to be here in Fresno and those participating remotely.

I want to thank our host, the San Joaquin Valley Air Pollution Control District; and a special thanks to Michelle Franco, Brandon Swedblom, and Cathy Blevins for their help preparing for today's logistics and IT support.

The purpose of today's Workshop is to discuss the recently-released, revised Staff Report of the Environment Plan Update. This Workshop is being recorded and will be made available on the Energy Commission's website.

To start off, I'd like to thank all of our Advisory Committee members for their dedication in helping us to develop the Investment Plan and the Program, and generously giving us their time and expertise for another year.

Our meeting today will follow the agenda on the slide. First we'll start off with an overview of the Investment Plan and then after this overview we'll go into the breakdown of each individual category. We'll also take public comments after the Advisory Committee discussion of each allocation.

Since we have a lot of time to cover today and

many interested stakeholders are present, we request the public comments are kept to three minutes or less. At some point we'll break for lunch and reconvene an hour later, at which time we'll continue the discussion. Finally, we have another period for public comment at the end of the Workshop.

If you're a member of the public attending in person and would like to make a comment, please fill out a blue card, available with me, or on the seat behind me. Please include your name, affiliation, and the subject of your comment. If you're a member of the public attending at our headquarters in Sacramento, please hand your blue card to Susan. If you're attending from another location, please send a message within WebEx to the host presenter and we'll be able to unmute you and give you the opportunity to speak.

The ARFVTP was set up to develop and deploy innovative technologies that transform California's fuel and vehicle types to attain the State's aggressive Climate Change Policies. In addition, we have the complementary goals of improving air quality, increasing alternative fuel use, reducing petroleum dependence, and promoting economic development.

The ARFVTP was established by California Assembly Bill 118 in the year 2007. The program is

funded through a small surcharge on California vehicle registrations, which gives us up to 100 million per year, depending on how much is collected from the surcharge. The California Assembly bill extended the program through January 1st, 2024.

To demonstrate its commitment to diversity, the Energy Commission adopted resolution -- a resolution during the April 2015 business meeting to firmly commit to increasing the following: The participation of women, minority, disabled veteran, and LGBT business enterprises and program funding opportunities, outreach to participate -- excuse me -- outreach to and participation of disadvantaged communities, diversity and participation at Energy Commission proceedings, and diversity in employment and promotional opportunities.

The Energy Commission is also committed to taking steps toward broadening the pool of applicants to our various programs, especially under represented groups, disadvantaged communities, and small businesses. Workshops such as these are a part of the continuing effort to encourage diversity and participants for Energy Commission programs, which help us to ensure equitable access to Energy Commission funding, create jobs, and provide economic stimulus in under represented and disadvantaged communities, increase competition to ensure

the best opportunities are identified and funded, and ensure the local needs are identified and addressed.

We have survey forms located at the table at the entrance of the hearing room, and you can hand those to me at the end of the Workshop, and would appreciate your participation on that.

On this slide we show our funding to our disadvantaged communities, which accounts for 34 percent of ARFVTP funding and has gone to disadvantaged communities excluding statewide projects. Without an applicable site address, funding actually jumps closer to 45 percent.

The Annual Investment Plan Update serves as a basis for our allocations, agreements, and other funding opportunities for each fiscal year. The document is vetted through a public review process that involves multiple iterations of the document and meetings with our Advisory Committee, one of which we're holding today.

For fiscal year 2019-2020, we expect to have 95.2 million available for project funding. The allocations described in the Investment Plan are the General Project categories; and the Investment Plan provides an overview of the statutes -- excuse me -- the status of the fuel or technology and its potential over the coming fiscal year. The specific requirements of

what we will ultimately find are determined by solicitations and not the Investment Plan itself.

The schedule we expect to follow for the 2019-2020 Investment Plan Update is outlined on this slide. We released the Draft Staff Report on November 2nd and held the first Advisory Committee meeting on November 8th at the Energy Commission in Sacramento, and released the Revised Staff Report on January 10th, and we're holding the second Advisory Committee meeting today.

After reviewing and incorporating comments from this Workshop, we expect to release the Lead Commissioner Report in March and seek Business Meeting approval for the final document in April.

Some changes that were included in this Revised Staff Report are: The statistics were updated to reflect December 1st -- or up to December 1st, 2018. And we took -- excuse me. Manufacturing and Workforce Development were separated into their funding and made from the Zero Emission Vehicle Infrastructure Category to the Related Needs and Opportunities Chapter of the Investment Plan. Some input gathered from the first Advisory Committee meeting in Sacramento as well as from public stakeholders were also incorporated into the Revised Staff Report, including the separation of Manufacturing and Workforce Development.

Electric vehicles are a key component of achieving zero emission vehicle deployment goals, greenhouse gas reduction targets, petroleum reduction goals, and air quality standards in California. ARFVTP investments in electric vehicle charging infrastructures are guided by legislation and mandates. Executive Order B-16-2012 calls for 1.5 million zero emission vehicles on California roads by 2025 and Executive Order B-48-18 calls for five million zero emission vehicles by 2030. On the infrastructure side, Executive Order B-48-18 also calls for 250,000 electric vehicle chargers, including 10,000 DC fast chargers.

The ARFVTP's funding to date has supported infrastructure for more than half a million zero emission vehicles in California, roughly half of such vehicles in the whole United States. Due in part to ARFVTP investments, California has the largest network of publicly-accessible electric vehicle chargers in the nation. There is also the recent legislation of AB2127 and SB1000 -- excuse me -- 1000 that we'll cover a little later in this presentation.

ARFVTP has provided nearly 95 million funding awards for the deployment of over 94,000 -- excuse me -- 9,400 charging outlets statewide. You can see the spread of chargers on the map and on this slide. Please note

that the map doesn't show chargers that were installed in residential homes, which amount for a little over 4,400 chargers in the Private category.

In order to accelerate our progress towards reaching executive order goals, we needed a mechanism to install electric vehicle charger infrastructure for a more quickly [sic] and effective way. In partnership with the Center for Sustainable Energy, our California Electric Vehicle Infrastructure Project, or CALeVIP, aims to provide targeted charging incentives funding -- to simply the funding process and accelerate charger deployment.

Today, CALeVIP has two active incentive projects: The Fresno County Incentive Project, launched in February 2017, and offers rebates for the purchase of installation of -- and installation of Level 2 chargers in Fresno County. The project launched with four million available -- four million available for rebates and about 700,000 has been reserved thus far;

The Southern California Incentive Project, launched in August 2018, and offers incentives for the purchases of installation of DC fast chargers in the Counties of Los Angeles, Orange, Riverside, and San Bernardino. This project launched with $29 million available for incentives, and about 26 million has been

reserved.

We also have four incentive projects for other parts of the state planned for 2019. Sorry, I'm a little behind here. Here we go. Actually let's go back. Sorry. We also have four incentive projects for other parts planned for 2019, including Sacramento County, Northern California, Central Coast, and San Joaquin Valley. There we go.

In response to Executive Order B16-7 -- excuse me -- B-16-12, the Energy Commission codeveloped the Electric Vehicle Infrastructure Projects -- or EVI-Pro -- model in collaboration with the National Renewable Energy Laboratory, or NREL. The EVI-Pro model analyzes regional demand and quantifies the types, locations, and quantities of charges needed to support 2025 electric vehicle population -- the 2025 electric vehicle population, I should say. At present, the Energy Commission staff is establishing a streamlined method for collecting data from public network electric vehicle chargers to better understand the use of deployed and future chargers. Usage data will provide insight into how public stations are used by public -- plug-in electric vehicle drivers and help enhance the EVI-Pro model by enabling a better understanding of charger usage and plug-in electric vehicle driver behavior.

Signed last year, Assembly Bill 2027 will require the Energy Commission, working with CARB, or the California Air Resources Board, and the California Public Utilities Commission to prepare a statewide assessment of the electric vehicle charging infrastructure needed to be -- needed for the state to meet its goals of at least five million zero-emission vehicles on California roads by 2030.

Also, Senate Bill 1000 will require the Energy Commission in consultation with CARB to assess whether electric-vehicle charging station infrastructure is disproportionally deployed. "Disproportionate," as used here, refers to population density, geographic area -- geographical area, and/or income level.

I'm moving on to hydrogen refueling infrastructure.

The ARFVTP is the primary source of funding for hydrogen refueling stations in the state. Assembly Bill 8 directs the Energy Commission to allocate 20 million annually to fund the initial network of 100 hydrogen refueling stations. Today, through the ARFVTP, the Energy Commission has provided funding to install or upgrade 64 public-available hydrogen stations, capable of light-duty vehicle refueling.

There are 38 open retail stations funded by the

ARFVTP, plus a thirty-ninth open retail station that began as a demonstration station originally funded by CARB in 2011-2012. The open retail designation requires a station to meet several requirements agreed to by stakeholders, including developers, automakers, and state agencies. Another 26 ARFVTP-funded stations are under construction. Twelve of these stations will be located in disadvantaged communities.

In addition to the 100 stations committed for funding under AB8, Executive Order B-48-18 set an additional goal of 200 stations by 2025. In September 2018, the California Air Resources Board adopted Resolution 18-34 that modifies the low carbon fuel standard to allow hydrogen refueling stations to earn hydrogen refueling infrastructure credits based on the capacity of the hydrogen station in addition to credits earned for the fuel dispensed. These credits will help provide -- these credits will provide a subsidy to hydrogen refueling station owners that can supplement Energy Commission O&M funding, thereby increasing the amount of ARFVTP funding available for new construction.

At the end of last year, the Energy Commission and CARB released their Joint Agency Staff Report, as required by Assembly Bill 8. Based on the analysis conducted for their report, the Energy Commission and

CARB staff expects the goal of building an initial network of 100 hydrogen refueling stations can be achieved with further ARFVTP investments of approximately 70 million. Achieving the 200-station goal set by Executive Order B-48-18, however, will require significant additional funding.

Last month the Energy Commission staff also released -- released the draft concepts for the next hydrogen infrastructure solicitation. We are seeking feedback for those draft concepts, and there will be a staff workshop on them on February 12th at the Energy Commission.

Moving on to Advanced Freight and Fleet Technologies. The Advanced Freight and Fleet Technologies categories continue to evolve. As in previous years, the category still focuses on the needs of medium- and heavy-duty vehicles, which are most commonly used for freight and in fleets. These vehicles represent a small share of California's registered vehicle stock, about three percent. However, they account for 23 percent of onroad GHG emissions in the state. The California Sustainable Freight Action Plan, released in 2016, discusses potential statewide actions to improve freight efficiency, transition to zero-emission technologies, and increase the competitiveness

of the California freight system. This allocation is expected to be the primary source for Energy Commission funding and support for its Sustainable Freight Action Plan strategies and port collaborative activities.

This slide shows a summary of previous ARFVTP funded -- funding under the Advanced Freight and Fleet category and reflects the wide range of vehicle and technology types funded. Here we have a few examples. The top left picture, the picture is of Cummins low NOX engine to be demonstrated in yard tractor applications at the Port of Los Angeles. The battery electric drayage and yard trucks, similar to the ones that are demonstrated at both the Port of Los Angeles and the Port of San Diego are also shown on this slide.

Current activities. Staff is continuing to support many efforts under wide -- underway worldwide to positively affect the freight industry and aid in the commercialization of zero-emission equipment available here in California. Also they're working diligently to identify current needs related to freight vehicles and infrastructure and to draft the scope of the next grant funding opportunity set for Q3 of 2019. We currently have approximately 17.5 million available in current year funds, plus the availability of funds anticipated in the coming 2019-2020 fiscal year.

Moving on to low carbon fuel production and supply. The Investment Plan also includes funding for low carbon fuel production and supply allocation. As noted here, this is -- this can include a broad range of alternative fuels. Biofuels defined as nonpetroleum diesel substitutes, gasoline substitutes, and biomethane represent the largest existing stock of alternative fuel in the California transportation sector. In addition, production of and demand for renewable hydrogen are expected to increase in the coming years as hydrogen fuel cell electric vehicles are sold. Energy Commission staff expects the availability of organic waste feedstock suitable for prelandfill biomethane production to increase as a result of Senate Bill 1383, but sets goals to reduce statewide disposal of organic waste from 2014 levels by 50 percent by 2020 and 75 percent by 2025.

In addition, Senate Bill 1505, from 2006, requires the State's network of publicly-funded hydrogen stations to dispense a minimum of 33.3 renewable hydrogen. Renewable hydrogen production, therefore, is also an integral part of the State's plan to expand hydrogen refueling infrastructure.

This is a summary of what we have supported to date. Low carbon fuel productions include four different fuel types: Gasoline subs, diesel subs, biomethane, and

renewable hydrogen. We made 61 awards, with the total funding of 167 million. These numbers did not include recently-proposed awards under GFO-601 and 602.

GFO-18-601 targeted community and commercial scale fuel production. We released a notice of proposed awards for this solicitation in January. This solicitation was significantly over subscribed. We had 18 passing proposals which requested 74.1 million. We proposed five awards, totaling 19.45 million -- 19.4 million ARFVTP funds includes two ethanol and three biomethane projects. And Solicitation GFO-18-602, we also supported transformative technologies through demonstration skill projects.

We released the notice of proposed award the same day and proposed 12 million in ARFVTP funds for five demonstration scale projection projects. These includes five projects to produce four biomethane production -- production demonstration projects and one renewable DME demonstration project. These two solicitations utilized all ARFVTP funding, and currently we have 12.5 million available under the Greenhouse Gas Reduction Fund. Staff is working to host a guideline workshop in March 2019 and a release of solicitation in the summer.

Moving on to manufacturing. Funding support is critical to all stages of support -- product,

manufacturing, and business development to successfully bring emerging technologies to market. This funding allocation supports a number of recently-adopted or updated clean transportation plans, including the ZEV Action Plan, the California Sustainable Freight Action Plan, and the Low Income Barriers Study. With our allocation in this category, we're also looking for opportunities to invest in more heavily disadvantaged communities.

This slide shows the different sectors of manufacturing that have been funded for the ARFVTP -- funded by the ARFVTP. The funding has provided significant support to expand the in-state manufacturing capacity of zero-emission vehicles and components. We also have a solicitation currently open for this category intended to support the supply chains in California that manufactures ZEVs and ZEV infrastructure technologies. This solicitation was released December 19th and proposed funding of 9.9 million, which is split roughly between Category A, for proposed ZEVs and ZEVs components; and Category B, focused on charging infrastructure, equipment, and hydrogen refueling station equipment.

Moving on to workforce development. The Energy Commission has also provided significant investments for the training and development of California's alternative

fuel workforce through ARFVTP. Workforce efforts, funded through ARFVTP, have grown in size and scope with expanded programs from partner agencies, as well as efforts from new partner agencies. This slide shows the partners that the Energy Commission have funded, including other public agencies and community colleges.

Working for an augmentation to the Cerritos Community College District Agreement, this augmentation is for one million to expand the initial agreement to fund 12 high school's automotive programs in adding electric vehicle training to their curriculum. This amendment allows funding for at least 12 more high schools to be funded for the same technology.

Developing a new agreement for up to one million with the community colleges in the Advanced Transportation and Logistics Initiative, or ATL, to develop training curriculum for school districts who are receiving electric bus funding through the Prop. 39 School Bus Replacement Program. Developing a new agreement with community colleges and ATL for 1.4 million in funding to expand the Community College Advanced Vehicle Technology Training Programs to additional community colleges who have existing automotive programs. This agreement will award preference points for community colleges in low-income and under-served communities.

Okay. This slide shows a summary of all the funding allocations we are proposing in the Revised Staff Report of the Investment Plan, which are subject -- which is the subject of our workshop today.

Okay. Thank you. If you would like more information, please visit our program website. Also, please submit all ecomments regarding the Investment Plan Update by February 22nd at this docket location. If you'd like to provide comment at this moment, please fill out a blue card and provide it to me and specify on the blue card which category you will like to speak on. If you're participating by WebEx and would like to comment, please send a message to the host or use the raised hand feature. We will then call for your name and speak on unmute during the public comment period, which follows the Advisory Committee conversation.

COMMISSIONER SCOTT: Great. Thank you very much, Patrick.

I want to recognize that we have -- Eileen Tutt from CalETC has joined us; Peter Christensen from the California Air Resources Board has joined us.

Welcome to both of you.

And also Brian Goldstein on the line.

Let's see. So actually, Patrick, do you mind going back one slide, and we'll just kind of work off the

proposed funding allocations slide there for our discussion.

Does anybody have any clarifying questions for Patrick on his presentation before we jump into discussion?

MR. HOEFELMANN: I should have --

COMMISSIONER SCOTT: Yes, please. Pete, go ahead -- oh, I'm sorry.

MR. HOEFELMANN: This is Ole. I just wanted to make sure you knew that Ole Hoefelmann, Councilman, Chair of the California Fuel Cell Partnership, and Bill Elrick, Director of the Partnership, have also joined, and we're in Sacramento.

COMMISSIONER SCOTT: Great. Good morning. Welcome.

MR. HOEFELMANN: Good morning. Thank you.

COMMISSIONER SCOTT: Steve, please go ahead.

MR. KAFFKA: Patrick, I want to compliment you on whipping through that presentation, and then complained about whipping through that presentation. So there was just -- on slide 14 -- oh, on slide 14, if we could go to that, if possible. There, there is information on that slide that I can't see or read. And, unfortunately, it looks like the San Joaquin Valley is cut off. Here we are in the San Joaquin Valley.

So can you explain -- this is the EV infrastructure projection -- is there a particular allocation for EV infrastructure in the Southern San Joaquin Valley, that dark green patch at the bottom? I just was unclear what that was trying to depict.

MR. SMITH: So this is Charles Smith of the Fuels and Transportation Division. So I think this is a screen shot that's trying to sort of capture the general interface of the EV -- or EVI-Pro. It's not meant to highlight this specific region necessarily. What I think I'm seeing in the dark green patches are the higher levels of EVSC plug count, and so I -- but to your question of, I think, funding infrastructure for this region, I think probably the more applicable slide might be this one, the CALeVIP roadmap.

So we do have the existing Fresno County project up and running. I think Patrick mentioned there's $4 million in it initially and about $700,000 reserved as of now. And then down near the bottom you could see towards the end of this calendar year, we're hoping to come out with a similar project for the San Joaquin Valley that would cover some of the counties shaded purple on that -- on that map on the left-hand side. Yeah.

MR. KAFFKA: So I had a question about this

slide as well, if I can go on. The project for Fresno is less than 20 percent or so subscribed, but the one for Southern California is almost completely spent. Is there reason why it's slower here?

MR. SMITH: Of the top of my head, I am not so sure.

MR. BARKER: This is Kevin, if I can chime in. So for the Fresno County, this is the first one that we launched. It's actually only for Level 2 charging currently, which is quite a substantial rebate, if you will, less, whereas the Southern California is actually only DC fast charging. And so when we do launch the next four projects, we do plan to have breakouts for both Level 2 and for DC fast charging. So Southern California does probably have a high demand, but it's also because of the amount of rebates for the actual charging infrastructure.

MR. KAFFKA: And, if possible, then on slide 15, I was curious about the language. For SB1000, when the Air Board is going to assess whether projects are disproportionately deployed?

MR. SMITH: Well, --

MR. KAFFKA: I'm not quite sure what that means.

MR. SMITH: Yeah. So I will say it's mostly

our -- it's going to be our responsibility mostly in consultation with the Air Board. But there are sort of different ways of looking at disproportionally, and the bill does specifically call out population density, geographic area, population-income level. So those are just some of the different variables that we'll be looking at to see, you know, is maybe charging infrastructure disproportionately deployed on a population-per-square-mile basis, is it disproportionally in Northern California versus Southern California versus Central Valley. Is it located more closely in higher-income levels versus lower-income levels. So there are a lot of different ways that we will be looking at it.

MR. KAFFKA: You know, --

MR. SMITH: Is that --

MR. KAFFKA: -- I wondered, it's still complicated, it sounds --

MR. SMITH: Yeah.

MR. KAFFKA: -- like to me, because why wouldn't you have more chargers where you have more people driving.

MR. SMITH: Yeah, yeah. And part of the build that's not captured here is that if we -- if we find that there is disproportional- -- disproportionality, we are asked to sort of explain if there is a reasonableness to

that disproportionality.

MR. KAFFKA: I think that's it.

COMMISSIONER SCOTT: I see Ellen Greenberg.

MS. GREENBERG: Yes. Thank you. Could we return to the slide with the county maps highlighted? Was that slide 13, I think.

All right. So I just wanted to ask in terms of Fresno County highlighting in particular, is the county being addressed equally across the whole territory or is there in the roadmap an emphasis on any particular highway corridors, particularly the north-south corridors?

MR. BARKER: Hi. This is Kevin. So the allocation is first come, first served. Any -- anyone is eligible as long as they meet the criteria that we have outlined for Level 2. And then for the next part of the Fresno Project, the next phase of it, for also DC fast chargers, anyone is eligible throughout there. So, no, it doesn't designate specific areas. We -- go ahead.

MR. BUTLER: Yeah. This is John Butler. I was just going to add to that. So on the roadmap when in quarter 4 of 2019 when we're in San Joaquin Valley and expanding that, we are expanding beyond the Fresno area and more of the Central Valley, more of the San Joaquin Valley, so right now it's just -- you know, Fresno is the

current program, but it will be expanded later this year.

MS. GREENBERG: So the -- thank you. So the highway corridors are included but there is not a particular emphasis on the corridors or is there an emphasis on the corridors in any other aspects of the program?

COMMISSIONER SCOTT: Ellen, this is -- this is Janea Scott. I wanted to note that this is -- we have about three different ways that we're rolling out the charging infrastructure within the state. One of them is --

MS. GREENBERG: Right.

COMMISSIONER SCOTT: -- a traditional solicitation that you might envision where we say electrify --

MS. GREENBERG: Um-hum.

COMMISSIONER SCOTT: -- State Route 99, electrify I-5, right. And so that's what's kind of catching the corridors in the state.

MS. GREENBERG: Ah, I see.

COMMISSIONER SCOTT: But we recognize also that there's a lot of folks who probably want five chargers or seven or ten. They're not going to want to apply to a traditional solicitation, hire, you know, a grant-writing institution to put that together, and so that's why we

developed the CALeVIP program and that really is property owners that want to get some charging out there. And, as Kevin mentioned, they just meet some criteria and we -- and then they prove that they have the charger in. And we give them the reimbursement that's kind of lined out in the program.

And then the third way is that we put together --

MS. GREENBERG: Thank you. I --

COMMISSIONER SCOTT: Sorry. Go ahead.

MS. GREENBERG: No. I'm just -- thank you. I -- I realize now that I'm just -- this is just referencing that single program. Thank you. I appreciate the clarification.

COMMISSIONER SCOTT: Oh, you're welcome. You're welcome.

And if you want to highlight the third one because it's kind of cool, but it is -- it's called our EV Ready Communities. And, basically, what we did was ask communities to do the planning, right. So you work with your MPOs and others and figure out where would you like to have charging within your community. So the first round is plans for that. Those plans are due back to the Energy Commission in a little while, I don't know the exact date, but once we get those plans then we will

review those plans and hope to then have funding for actual implementation of the charging infrastructure in those plans. So we're kind of coming at it at three different layers or levels to try to really get to smartly deploy the infrastructure.

The other thing I'm excited about with those plans is if the Energy Commission can't fund all of them, maybe, you know, SCE through their proposals before the PUC could, or maybe LADWP, or other Smart Cities, Clean Cities can also use those roadmaps as they're thinking about where they want to deploy charging. So, anyway, I know that's broader than your question, but I couldn't resist the opportunity to highlight that.

Other -- other questions from the -- yes, please.

MR. BARTH: You know I think this is great. You know we talked about light duty and we talked about freight. And I think since we met last, the Air Resources Board introduced the Zero Emission Bus Rule. Has there been any consideration at all looking at transit in terms of electrification at this point, or are we too early in that game?

COMMISSIONER SCOTT: I think that -- this is Janea again. That's a great question. We are, you know, working closely with the Air Resources Board. I think

what the Energy Commission is noodling on is potentially funding some pilots or demonstrations about how you charge at scale, right? Because we're not talking about 10 buses, we're talking about 200 buses or 500 buses in a depot. And what does a charging solution at scale look like, and so we're in the process of kind of developing some solicitations around that. It may not necessarily go to transit. It could be, you know, one of the beach head leaps that's really kind of on the leading edge and looking to electrify, but also, you know, kind of at those broader numbers.

You also might want to add -- okay. Other questions from the Advisory Committee members on the presentation?

Yes, please, Steve.

MR. KAFFKA: You have all these programs highlighted in your presentation. It would be nice on the slide to have a link to the CEC locate -- website location where more information is available. Just as a general, and I'd like to have those things made easy.

COMMISSIONER SCOTT: Great idea. We can do that.

So, Patrick, please make note for the next round of presentations, include the links, hyperlinks, yeah.

Okay. Well, then if no other --

MR. HOEFELMANN: Janea, this is --

COMMISSIONER SCOTT: Yes, go ahead.

MR. HOEFELMANN: Janea, hi. This is Ole. And again I apologize that I'm not in person with everybody in Fresno, and this is --

COMMISSIONER SCOTT: Great.

MR. HOEFELMANN: -- the first time that I'm part of the Advisory Committee, so I thank you for giving me the opportunity.

I had a question maybe more around form and content. As you know, I'm the Chair of the Hydrogen Fuel Cell Partnership, and I see as the presentation kind of is structured, electric vehicle charging, I see the reference to the ZEV Development Plans, the zero-emission vehicles, but then I see the presentation that was made kind of distinguish between electric and hydrogen fuel cell and heavy duty, kind of seemingly giving me the impression that there is a separation between the overall objective of having five million zero-emission vehicles and really focusing that those primarily would be electric and maybe not enough emphasis, at least visually, on hydrogen fuel cell and hydrogen infrastructure.

And I think the question that just came up

around trains, we know that there are projects around the world that are pushing fuel cell solutions for trains. So I just had the general comment and it seemed to be maybe more structured toward supporting some of the executive order more through electric solutions and not fuel cells. So I just wanted to maybe get a reaction on that.

COMMISSIONER SCOTT: Sure. And, Ole, welcome, welcome. We're glad to have you on the Advisory Committee, so thanks for taking time today to do that.

So I think that the -- sorry. I'm echoing in here. It's distracting. I can hear myself talking back to myself.

One of the reasons that we have divided it up this way, so can you, Patrick, go back to kind of the last slide or second-to-last slide, is within the AB8 statute, the Legislature directed the Energy Commission to put $20 million to hydrogen refueling infrastructure. So that's just kind of done. And so that's why you see it as its own line. That is in no way, shape, or form meant to imply that we think the only solution in the zero-emission vehicle area, infrastructure area is just batteries.

And then the reason that you see the focus within the program on things that are on the road is this

program is funded through a vehicle registration fee at the DMV. It's about 2 to $3. That's what provides the up to a hundred million that the Energy Commission has to spend to invest in this space. And the Legislature typically likes to see that kind of go back into the on-road space. And so that's why you see the focus on things that drive on roads. We fully recognize that there's construction equipment and ag equipment and trains and ships and planes, and, you know, on the other side scooters and bikes and things, but the Legislature typically kind of likes to see it go back into that on-road segment. So that's why you see the focus on fleets and on-road things versus trains and other.

But does that help?

MR. HOEFELMANN: Yeah, it does help. Thank you.

COMMISSIONER SCOTT: You're welcome.

Other -- other questions?

* Okay. So let us turn then to our discussion of the Proposed Funding Allocations.

And, Ole, I think you might be the only new person, but it's probably -- and maybe Will, yeah.

And, Will, welcome as well.

And the way we typically do this is we just kind of run through each of the categories and hear from

the Advisory Committee members about the proposed funding allocations. And then we'll hear from the public to the extent that we have any public that wants to comment on that. And then we just kind of work our way through each of the funding allocations.

So let us start with the electric vehicle charging infrastructure, $32.7 million. Advisory Committee, comments, please.

Eileen.

MS. TUTT: Thank you, Commissioner.

Forgive me if I burst into song. I am very pleased with the amount allocated, given the total amount. I wish we had the same amount we had last year, but I understand that last year was a special year.

I do -- I do want to say that there are couple things I'd like to suggest and they're related to the same thing, and that is that we're seeing more and more TNCs that are electric vehicles. And what's happening, and I've had this experience personally, it's actually really frustrating because if you want to take your electric vehicle somewhere where you're going to need to fast charge, like Fresno for me, for example, then you can't really depend upon the DC fast charging along the corridors because the TNCs are starting to sort of take them over, if you will. And that's a great thing. I

love the fact that there are so many zero-emission TNCs, how fast that market has taken off has been amazing to me. But it is a challenge for those of us who are just driving.

And I've had -- I actually talk to them because I'm sitting there for an hour and a half waiting in the queue, but they love the cars and they go to the same chargers every day and they all know each other. They are like they know when they're going to be and they save the places in the queue for the next person. So it's getting congested at a rate much faster than I ever thought, especially where there is large numbers of zero-emission vehicles and TNCs that are zero-emission vehicles.

So there are couple of things. I think -- first, I think it might be a good time to sort of move the cap from the CALeVIP program because I think like if we could have a bank of chargers that were -- you know, that exceeded the cap, that might help. But also maybe allocate a certain amount of funding, additional to the 32.7 I would say, specifically for TNC only charging. So what a lot of these companies are looking at is putting in chargers that are available for their drivers only. And although that is -- that would not currently be eligible for funding, I think it's kind of important to

make it eligible for funding because we really want -- I mean they -- we want to encourage the TNCs to go electric.

And so my sense is that it might be good to have a portion of this funding specifically for TNC projects. And then, again to address the issue of just really you get these places -- these charging banks are over subscribed at the moment, it might be good to remove the cap. And so I think because of the evolution of the marketplace, it might be time to think about some changes to that program, and those are the two that come to mind. And I don't know if there is any appetite for that or if you all and the staff have had any conversations about that.

And, you know, I think I talked to you, Patrick, a while ago, but I had not had this experience personally yet, so I really wasn't aware of the problem. And it is, it's actually already a serious problem, particularly in certain areas like, for example, the Bay Area.

MR. BUTLER: John Butler, Energy Commission. So thank you for that. Staff are looking at options for TNCs, you know, in the EV-charging funding that we have, especially from last year. So we are looking at moving forward on a potential solicitation in that area. So I

think we recognize that as an area of demand and we understand that it's good to have the congestion but it's also bad to have that congestion. So we're very pleased that the chargers are being used, but we just need to get more chargers out there and get them in the right places so that, you know, our EV drivers have access to them, like yourself, you know, when they're needed. So it definitely is on our radar screen.

MR. BARKER: I would just add -- this is Kevin -- for the DC fast charger portion of CALeVIP, that's one where they do have a lot more stringent criteria, where they have to be open 24 hours, they have to be accessible to all. And so that would be something that we would have to rethink if it would be just for, let's say, your Lyft or Uber drivers rather than not, you know, for entirely for the public, at least for that program.

MS. TUTT: And I guess what I'm suggesting is maybe we do have a portion, just a pilot even for this -- this portion of funding for -- specifically for TNCs that doesn't have that -- those eliminating --

MR. BARKER: Yeah.

MS. TUTT: -- criteria. And, again, I do hope you all reconsider the cap as well on charging.

COMMISSIONER SCOTT: Steve.

MR. KAFFKA: My experience with Uber and Lyft

is that these are privately-owned vehicles that come in and out of the Uber and Lyft network. And, in fact, in San Francisco most of the people who seem drive seem to be coming from the Central Valley. So just for the point of clarification, are Uber and Lyft required as companies to regulate how their -- the private, the drivers who have their own vehicles operate? I'm just curious what this discussion is about, because they may be using those vehicles for their own personal needs as well.

COMMISSIONER SCOTT: I think that really what this discussion about -- is about is that we need a lot more charging faster in a lot more places. And because we don't have as much as we need, there are more cars that need to charge up right now than chargers that are available. And because the TNCs like Uber and Lyft, you know, they're driving back and forth, taking people all around, they're the ones who are at the chargers a lot more often maybe than folks who are doing the long commutes. And so do we need a TNC-specific solution where, you know, maybe we could do something fun, you know we have to look into it. But, you know, maybe there's like a little lounge there and, you know, the chargers, and that's kind of where the TNCs are charging up so that -- because right now it's just that the network is clogged up because there is not enough

chargers and too many drivers. And the TNC just kind of adds that overlay because that's what they do all day everyday, right, is driving around; and so thinking through what some of those solutions could be.

And, you know, this is something I think the Energy Commission through our AB2127 will be looking at as well. And I think that it's something we will want to, I think, work closely with EVgo and Electrify America, and the IOUs and everyone else as they're rolling out the infrastructure because they're probably thinking about this as well.

Who else?

MR. BARRETT: Thank you. So from the Lung Association's perspective, we think it's really important to continue this heavy focus on the zero-emission category from a public health perspective, air quality and climate change perspective, where as a state relying on the electrification of the transportation sector as quickly as possible to meet our health-based standards. So we do very much appreciate the focus there and hope that we can continue to, you know, all advocate for greater resources going forward. We see that as the critical element of achieving our cleaner goals.

And on the point of the TNCs, I do think it's a really important topic. Obviously it's a growing field

of study and research. And I think we need to know, you know especially as the Air Resources Board put out their report last year on VMT and greenhouse gases increasing in the transportation sector, this is going to be increasing focus across a lot of agencies. And I think we really do need to do a deep dive into what's needed to really control emissions from this category. They have a tremendous utility, but I think we need to really focus on getting the zero-emission element of it nailed down as quickly as possible so that as it grows we're controlling, you know, some of these issues that Eileen brought up but also making sure we're not backsliding on the air and climate issues.

Thank you.

COMMISSIONER SCOTT: Tyson.

MR. ECKERLE: Well, obviously this is a super critical category of funding. I think it's great. The allocation makes a lot of sense. I think just to flag for the future and looking forward is -- you know, I think we also have a big gap in the medium- to heavy-duty charging spaces. And so I think as we're looking at 2127, all the types of this is on your mind but ours as well, because this funding, in terms of filling gaps throughout the marketplace, I think that's going to be one that's going to come very quickly. And so I just

want to flag that.

COMMISSIONER SCOTT: Eileen.

MS. TUTT: Thank you, Commissioner. Eileen Tutt with the California Electric Transportation Coalition. And this is actually going back, so I apologize, but I realized one of my members asked a question that I think it might be worth kind of clarifying, coming from the CEC and not from me because I will mess it up.

And that is a lot of people think, oh, my gosh, the funding went way down this year from last year. And so internally a lot of companies are going, wow, what happened, how come this funding is less than half what it was last year.

And -- and I explain it, but I think just all those listening, it might be good to just say what happened last year and why it's so different this year because this year is just a normal year. Last year was a spectacularly wonderful, fabulous year, and I think people don't understand that. They didn't realize that they have only been tracking this for a couple of years. They're new or they may not realize that, so if you could take like one minute and just kind of...

COMMISSIONER SCOTT: Yeah. That's a great point. I would be happy to do that. And thank you for

reminding us, because you're right, those of us that are in the weeds and do this all day everyday, we're just -- so, yeah.

The ARFVTP program under AB8 is authorized at a hundred million dollars a year -- or up to a hundred million dollars a year each year. So that is usually the typically level that you will see the program at. It's in 95.2. The 4.8 is going to pay for the staff that work on the program. And the 95.2 then goes directly to these topics that we have indicated here.

Last year was -- so what happens in -- and, John, jump in and correct me if I don't explain this quite right. If a project doesn't make it to the finish line for whatever reason, that funding goes back into what is called the ARFVT Fund. And that fund has to get reallocated. And it typically -- we don't have access to it after it kind of falls into that fund -- I might not be describing this quite right.

Okay, good. And then so what happens is it does have to get reallocated. It often gets reallocated to other pressing needs around the state. So a few years back there was about $24 million in that fund. It went to the Air Resources Board for the Clean Vehicle Rebate Project. That was prior to cap and trade. So that's where the dollars that had kind of reverted back went.

Last year those dollars came back to the Energy Commission and that's where that bump came from. And so it was very exciting to have that. And you know the Governor's Office directed that towards the zero-emission vehicle infrastructure. So that's why there were more dollars in the fund last year than there are this year. But, as you noted, it is more typical for us to be around this 95,-, $97 million range.

So last year was very exciting for all of us because we did have a little bit of extra funds dedicated towards this, but it is not because, as you note, -- I don't know if "decrease" is even the right word, but the less -- the smaller amount of funding is actually the regular amount of funding. It's not because we are -- anyone is change their minds about what things are important or what things need to be worked on or focused on. So hopefully that helps clarify it.

Did I get the fund thing right?

MR. BUTLER: No, you did great.

So I'll just add one more thing. The revenues that come into the fund each year track at about this 95.2, a hundred million dollars a year. So, again, Commissioner Scott was right on when she was saying, you know, when we had projects that canceled and we can't reprogram those dollars immediately because of our

funding deadlines, they go back into the fund and it grows over time.

So I wouldn't expect necessarily to have a balance in the near future that could be again augmented but maybe at some point depending on, you know, what the status of our projects are over time, there could be another bump in a future year, but that's to be determined and up to the Legislature to determine how it's used and appropriated. Thank you.

COMMISSIONER SCOTT: Excellent.

Other -- other -- oh, yes, Peter.

MR. CHRISTENSEN: Did I do this right. There we go. Just a quick note on another complementary funding source. VW, you know a lot of the discussion is around the Electrify America funding, as part of the Appendix D, as in diesel, investments in California, though, California's Beneficiary Mitigation Plan does include 10 million for light-duty infrastructure. And that 10 million is 5 million for charging and 5 million for hydrogen fueling. So I wanted to put that plug out there. Public process coming up starting in a couple of months.

COMMISSIONER SCOTT: Tom, I don't see any of our WebEx folks -- okay.

Do we have any public comment on the charging

infrastructure?

Hold on. Thanks. From EVgo. So we're going to turn to the public comment on the WebEx. It's Sarah Rafalson or Adam Mohabbat. Are they unmuted?

Okay. You are unmuted. Please go ahead with your public comment on the EV infrastructure.

MS. RAFALSON: Hi. This is Sarah Rafalson from EVgo. Can you hear me?

COMMISSIONER SCOTT: Yes. Hi, Sarah.

MS. RAFALSON: Hi. And I apologize for not being there in person. I'm actually at an airplane right now on the East Coast, so I hope I can make it to the next meeting.

So I just wanted to say of all things, I've been ready for the opportunity to comment, give a brief and suited final comment at the end of November. But mainly I just wanted to comment on the TNC discussion from earlier on that Eileen brought up and that the Committee had started to discuss, and also just highlight one important policy that passed last year but I didn't see mentioned in the plan, is SB1014, which was under Skinner's (phonetic) bill, which does encourage TNCs to electrify.

So we announced yesterday that we doubled our energy delivered on our public network between 2017 and

2018. And of course a lot of that growth -- most of that growth is occurring in California. We've got about 125,000 customers now across the U.S. But one thing I'd highlight is about one-third of those caterage dispense (phonetic) are coming from light-duty fleets. And I would say, you know, TNCs are a big part of that, but there are also car-sharing companies and regional ride-sharing companies that would be part of that as well.

And I think the conversation earlier, I think there is definitely the discussion of there not being enough chargers, and that's certainly something that we're working on. And I think CALeVIP has been a really great successful program that works that is to participate in in 2019 and through 2020.

But, as Kevin alluded to, the challenge that we have with that in particular is the public charging requirement and the 24/7 requirement means that we can never do private or TNC or light-duty fleet charging despite the safe policy goals and the passage of 1014. So there's fleet programs for medium and heavy duty, but there's really nothing on the light-duty side despite the State's public policy goals.

So I think that is something that I hope the Committee can think about a little bit more, is how do we enable that light-duty fleet electrification. And I

understand the need to affect that market with the 2127 process, but I think the top limit is here now today, and I understand it's going to take some time to put that together.

And, you know, really when we're thinking about the issue, as Eileen mentioned, it's often to the detriment of consumer experience and also not great for the drivers of the light-duty fleets as well because charging is really a limitation to the growth of that sector, so really challengeable for light-duty and commercial-use drivers.

So, in conclusion, I did submit public comments, but I -- I agree that the -- something like CALeVIP would be a great way to do that, whether that's just sometimes waiving the public requirement or if there is also a way that there could be a pilot program, we will keep an eye out for the solicitation that Commissioner Scott mentioned earlier, but I think this is an urgent issue for consumer experience that we hope can be addressed through some of the existing programs that the Energy Commission has set up. So thank you.

COMMISSIONER SCOTT: Thank you.

Do I have any other public comment on electric vehicle charging infrastructure?

Okay, I'm seeing a no.

So thank you, everyone, for your great thoughts on charging infrastructure.

* Let's turn to the Hydrogen Refueling Infrastructure.

MR. ECKERLE: So obviously strong support for this. There's a lot of great momentum in that. I think the hydrogen sector is, you know, just with the 39 stations, I think this year we have probably another 10 or 12 or even more opening up, so I think there is a lot of good momentum there, so just keeping the foot on the accelerator is great.

COMMISSIONER SCOTT: Thank you.

Eileen.

MS. TUTT: Thanks, Commissioner. Eileen Tutt with the California Electric Transportation Coalition. I just want to express our support for this funding as well. I think it's appropriate.

I also want to kind of add to what Tyson said earlier in that in the heavy-duty vehicle space, both electric, plug-in electric and hydrogen, heavy-duty -- medium- and heavy-duty vehicles are very attractive. And so I hope that the Energy Commission will take a special look at that, because what we're finding already is as the utilities are looking to invest their SB350 dollars in infrastructure for medium- and heavy-duty vehicles,

it's actually much more challenging than on the light-duty side -- I don't know if it's much more. It's certainly more challenging and it's challenging in a different way. And so I think it's really important that we start thinking about infrastructure investment for both hydrogen and plug-ins battery electrics. We -- on the medium- and heavy-duty side, and really try to build off the experience that the utilities are having as they are making these early first investments.

COMMISSIONER SCOTT: Thank you.

Will.

MR. BARRETT: I also just wanted to agree. I think this is a critically important category and one that we're hopeful we'll continue to see increasing volumes of renewable hydrogen pushing past the requirements into the 100-percent range would be ideal of course. And we're happy to work with folks on that. So just again stressing our support for this category and wanting to keep the momentum going. Thank you.

COMMISSIONER SCOTT: Thank you.

Tyson.

MR. ECKERLE: Sorry. Just one other plug. I think the AB8 model for the hydrogen reporting, you know the ARB and CEC has served really well in terms of bringing the information out. And I think as we're

looking for -- forward with 2127, the more we can break down the silo between the two fuels and kind of look at it holistically, I think it's a great opportunity for the Energy Commission to help figure out, kind of how do we put the -- you know, get these technologies playing to their best roles within the marketplace. I think, you know, it's great work, and that last report was really good coming up.

COMMISSIONER SCOTT: John Butler.

MR. BUTLER: Thank you. I know this was in Patrick's presentation, but I want to give a plug for the draft solicitation concepts that are on the streets right now. We have a workshop next week. That solicitation is helping to capitalize on economies of scale. We're hoping -- we're trying to structure in a way where we'll pulling future funding into that solicitation, so this will be a critical solicitation for hydrogen and refueling infrastructure under this program. Certainly if you're interested, we'd like to hear your feedback on those concepts so that we can get the best solicitation out there to be successful. Thank you.

COMMISSIONER SCOTT: John Shears.

MR. SHEARS: Good morning to everyone. I want to speak in support of the funding levels both for the charging infrastructure and the hydrogen refueling, and

just maybe refine a little bit some of the observations that Ole referenced earlier, just to remind everyone that both fuel cell cars and what are, you know, normally referred to as EVs are electric vehicles. The difference is EVs or battery electric vehicles that use electrons to drive the vehicle, whereas the fuel cell vehicle uses protons to generate electricity, which is then used to move the vehicle, and that in supporting the development of both types of zero-emission technologies, some of which, depending on whether we're talking about battery or fuel cell vehicles, have particular niches and applications which they're, you know, best applied to, so we need the full solution set from both approaches. But the economies of scale will also manifest in that they do share a lot of the same components in terms of electric motors, et cetera, because ultimately they all get electrons to, you know, power and move the vehicles.

So I just want to remind everyone that all of these are electric vehicles, no matter whether we're talking about batteries and electricity off the wall plug or using hydrogen and protons through fuel cells to generate the electrons that then move the electric drive, okay.

COMMISSIONER SCOTT: Thank you.

Kevin.

MR. BARKER: Thanks, Commissioner.

I just wanted to respond to a comment, William, that you made with regard to a hundred percent renewable hydrogen. So this category is only for the infrastructure piece. Some of the later categories where we have advanced fuel production, we have actually funded a couple projects in a hundred percent renewable, so we do have alternative funding sources that are moving towards that.

COMMISSIONER SCOTT: Thanks.

And I might add to that, we're also very mindful of the medium-duty, heavy-duty needs in both the hydrogen and charging infrastructure space and are looking -- looking at that. And you will see that come up in, I think, probably electric vehicle charging infrastructure, hydrogen refueling structure, and advanced freight and fleet technology, so there are kind of pieces in each. So I just want to make sure that it's clear that we are -- we are mindful of and excited to work on the medium-duty, heavy-duty space with the infrastructure.

Matt.

MR. BARTH: I just wanted to quickly make another plug for transit. I mean transit's going to have the same problem, right? You have -- you can electrify

and you satisfy many routes with zero electric buses, but I think there are still going to be a lot of routes that need the hydrogen essential solution. So it's roughly the same thing. So I think the allocation's good and it kind of mirrors what we want to do with freight.

COMMISSIONER SCOTT: Any other Advisory Committee comments on hydrogen refueling infrastructure?

MR. HOEFELMANN: Yeah, Janea. This is Ole.

COMMISSIONER SCOTT: Hi, Ole. Go ahead.

MR. HOEFELMANN: Hi. And I'd like to echo some of the comments that John and Eileen and Tyson made, and would also like to recognize staff for the work that they've done with the document and everything they have put together. There is a lot of time and effort put into it and it's very well explained and very well laid out.

I also want to recognize the plug that the presentation had on the work that was achieved through the LCFS funding for hydrogen infrastructure, so I appreciate that.

I also want to commit to making the partnership resources available to add more information on the hydrogen fuel cell electric vehicles, and I appreciate John's comments on that. I think there is -- it's up to us to do a more thorough job in providing more information to staff so that staff can not necessarily

double the size of the report, because I think 80 or 90 pages is already pretty big. But maybe add a little more clarification and more detail on the hydrogen fuel cell and it's opportunities and not just light-duty vehicles but also in other segments.

And then I have a question or a specific comment. In the Investment Plan under related state policy, there is reference to funding opportunities for organic waste feedstock for prelandfill biomethane production, which I think is great. There is also a reference that no funding will be made available to the traditional landfill biomethane purifications, which is great.

The thing that I'm wondering about, because there has been a lot of discussion on renewable, I'm assuming the intent of this language is not to exclude landfill-source biomethane as a renewable feedstock for hydrogen?

COMMISSIONER SCOTT: That's a good question. I need to turn that over to Patrick or Charles.

And actually maybe can we hold that one until we get the low carbon fuel --

MR. HOEFELMANN: Yeah, that --

COMMISSIONER SCOTT: -- production and supply. But we'll look into that and be sure to address it as we

get to that conversation.

MR. HOEFELMANN: Yeah, Janea, that's fine. I think the way I understand it there is an distinguished -- we're distinguishing between, you know, giving funding to entities that want to build a landfill purification asset, so I understand that, but I wanted to make sure that that doesn't exclude the use of, again, landfill-sourced biomethane as renewable feedstock. So I just want to make sure that we address that. Thank you.

COMMISSIONER SCOTT: Yes. You're welcome. And thank you for the kind words to the hydrogen staff for their great report, they do work very hard to put that together, and for your offer to work with us. We are always looking for the latest and greatest information and data, so we're happy to have you send it to us, you know, either if it's appropriate for this and through this docket or just get it to the staff or when we're having hydrogen conversations, please be sure to share that with us. Thank you for that offer.

Do I have other Advisory Committee comments on hydrogen refueling infrastructure?

Do I have any public comments on hydrogen refueling infrastructure?

MR. BRECHT: Yes, there is a Jacqueline Moore, public comment.

MS. MOORE: Hi there. Can you hear me?

COMMISSIONER SCOTT: Yes.

MS. MOORE: Perfect. All right. Jacqueline Moore from the Port of Long Beach. First of all, I just wanted to say I support the commitment to the infrastructure and definitely appreciate the amount of work that I know has gone into deciding the allocations.

I'd just like to take a second to second the HD comment that was made a little bit earlier in terms of the heavy duty deployment. We are partial to the fuel type. And our latest feasibility assessment, it I.D.'ed that infrastructure is one of the largest hinderance to full deployment, obviously behind technical and operational feasibility. And this was for, you know, electric, hydrogen, natural gas, so for all the different type of fueling options, infrastructure then was one of the largest issues that we're having in fully deploying this. So obviously focused to the HD sector would be greatly appreciated in the Port.

COMMISSIONER SCOTT: Thank you.

MS. MOORE: Thank you.

COMMISSIONER SCOTT: Do I have any other public comment -- go ahead, Tom -- oh, Bill Elrick, please go ahead.

MR. ELRICK: Thank you, Janea.

COMMISSIONER SCOTT: You're welcome.

MR. ELRICK: I want to chime in, and a lot of folks already said this, but thank you and staff for the continued collaboration effort and leadership in this area. And, as Ole said, definitely have the full support of the Partnership. We're excited about the progress with the stations. We have the most vehicles there in the world right now as we start this journey. And some of the other advance, something that wasn't mentioned, was some of the new renewable and other hydrogen production announcements being made and that's in direct relationship to transportation and other hydrogen uses. So I think it's a very exciting time.

And we're excited for the workshop next week on the solicitation and discussing some of the new concepts proposed. Again kudos to the staff for really sitting down and looking at opportunities to do more in this.

I wanted to kind of go back to some earlier comments and maybe ask for some consideration of reviewing if not this time but in the future text of the Investment Plan. And that's in looking at the Investment Plan, it clearly identifies the ZEV Action Plan as well as the ZEV Executive Orders as the State goal is going forward. And that Action Plan also includes having the agencies target the 2030 Executive Order targets for five

million ZEVs, 200 hydrogen stations, I think it's 250,000 chargers.

And, to clarify, what I mean is if we look at the ZEV targets and then we read through the text of the Investment Plan, the approach is a little different. When we look at the BEV section we see a lot of reference to these targets, we see the EVI-Pro, which was mentioned, developed to really look to achieve these targets and how we do that.

And then in the hydrogen and fuel cell section, you see everything aiming very short term towards the near-term automaker surveys and I think that in no reference to the larger executive order targets. And recognizing the AB8 legislation is the focus on 100, I think taking that step back and looking at the bigger target that we're trying to achieve where we go next, you know, it's a continuum, 100, 200 stations, a thousand stations and more, I think trying to look at these and recognize that the text in here does matter. You know, it limits some of the government's thinking and approaches to some of the answers we're looking for and reaching the goals that we're trying to get to together; and that it also might send a wrong signal to industry as they're looking at these different technologies and where and how to invest; and so just to ask that we might at

some point look at how these larger State targets are being addressed within these documents.

COMMISSIONER SCOTT: Thank you.

I have Brian Goldstein.

MR. GOLDSTEIN: Hi. Can you hear me now?

COMMISSIONER SCOTT: Yes, I can hear you.

MR. GOLDSTEIN: All right, great. So Brian Goldstein from Energy Independence Now. I wanted to echo some of the other comments, and I'll keep that part short, but it's clear that the Energy Commission staff has been extremely dedicated to advancing hydrogen infrastructure. The work we've seen over the last couple of years and shortening the times when the point the solicitation goes out to the point that stations are open for customers has been remarkable. I think we're setting a global example here in California.

We saw specific feedback last week from the Japanese government about the advancements in California. We have more fuel cell electric vehicles on the road here than all other nations combined at this point. And, you know, our station network is only paralleled by maybe a couple of countries, and none of them are seeing the throughput that we're seeing. So, you know, getting the stations up and running as quickly as you guys have and making sure that there have been minimal hiccups in

trying to get them consistently running as, you know, we are pumping more cars than we had expected through them, just been a remarkable effort. So I'd like to thank the Energy Commission on that.

And I'd love to make some comments about the renewable hydrogen fuel production but, Commissioner Scott, I believe you asked that we wait until the low carbon portion --

COMMISSIONER SCOTT: Yes, that would be great, if you don't mind.

MR. GOLDSTEIN: -- in a little while, or do you want me to go ahead and speak to that?

Okay, great. Well, thank you very much. I appreciate it.

COMMISSIONER SCOTT: Yes. Thank you.

Any other Advisory Committee members?

Or members of the public on hydrogen refueling infrastructure?

Okay. So let us move on then to our discussion of advanced freight and fleet technologies.

Advisory Committee members.

Everyone's very quiet today.

MR. KAFFKA: Um...

COMMISSIONER SCOTT: Yes, Steve.

MR. KAFFKA: The State has a number of climate-

related goals that also interact, I think, with this category. One obviously is the short-lived Climate Pollution Plan that has as its intention the reduction of methane emissions from -- particularly from the dairy sector -- in that case it's one of the most addressable areas -- but also black carbon emissions and so on. And so I just want to reiterate that the program that I think is included in this category that supports investment in these very ultra low NOx emission natural gas engines that Cummins Westport has produced links very closely with short-lived climate pollution goals.

Going further than that, there is even links to carbon neutrality or carbon capture and storage and negative emissions that are possible through the -- what's basically developing as integrated biorefineries in California that have multiple fuel pathways in production. So, for example, at least two of the large-scale corn ethanol facilities are now also in the process of either currently using dairy biogas for their facilities and creating CNG fuels. And so they're also one of the simplest sources for which PURIC CO2 could be captured for carbon capture and storage. And so there's all kinds of interesting but nonobvious links between these programs and other beneficial uses that I think is important to be mindful of and be part of the public

record. And so I'm particularly -- it's particularly important to sustain that subsidy investment in these more expensive but very useful CNG engines. I think it will have particular impact in the San Joaquin Valley and in the South Coast region.

COMMISSIONER SCOTT: Thank you.

Will and then Eileen.

MR. BARRETT: Thank you. Again, Will Barrett for the Lung Association, and wanted to just say again reiterate support for this category getting attention. We think it's very important as far as the folks who are living closest to these gray facilities and major facilities are bearing a disproportionate pollution burden. And the more that we can address this through this type of funding program the better. So I just wanted to make that a quick statement, that this is a really important focus cleaning up the fleets that are working our ports, our warehousing, that kind of thing. Really important, especially in those communities most impacted by the goods movement sector, which I believe ARB has put the number about $20 billion a year in health impacts from that sector. So I think it's just, again, really important to keep this on the map and continue supporting that going forward.

COMMISSIONER SCOTT: Thank you.

Eileen.

MS. TUTT: Thank you, Commissioner. Eileen Tutt with the California Electric Transportation Coalition. I also -- I think that this funding is extremely important. And last year we saw a focus of this funding on zero-emission technologies, because I think this isn't just about climate pollution, especially in the San Joaquin Valley when you combust -- you use a combustion engine, there are other pollutants. So the degree to which we can focus this funding specifically on zero, I think that's important.

I think there are at this point very few technologies that can't go to zero emission, pure zero, either hydrogen fuel cell or battery electric. And I'm just wondering, because, you know, I read the report, I couldn't tell, but I assume there is some sort of priority for proposals that are zero emission versus near zero. Is that true?

Like, in other words, if you just can't get to zero, that's one thing. But if there are applications that can be made zero, but -- and there are two applications, I presume that the zero emission one that is prioritized.

COMMISSIONER SCOTT: Yeah. And we have not developed the solicitation for this category yet, so

that's kind of -- that will be coming. I know that the staff -- are you planning to workshop that when we get to wanting to talk about how to expand some of the advanced freight and fleet technologies? Because that's where we'll talk in a lot of detail, that's where we would kind of lay out what the scoring criteria look like, what the requirements look like. And, yes, so I think we are all driving to zero in the categories where zero emission technologies are available.

And, again, this component like -- so we funded previously, and then I'll let John speak -- is we have a fourth collaborative that the Energy Commission has put together over the last four or almost five years now, and it's been fantastic. It's the Ports of San Diego, Long Beach, L.A., Hueneme, Stockton, and Oakland. And we think that that makes a lot of sense to focus there because they tend to be pollution hot spots, but they're also working very hard to drive towards zero. And they have been great partners in testing out all kinds of technology, testing out some of the infrastructure with us, and really taking them on a shakedown run, right. So sometimes you will get a vehicle and it's different than how the driver's used to it and figuring out what do we need to do.

And I think that -- I'm excited about those

pilots because once we kind of shake the kinks out of that, then you could take that and just, you know, throw them into the mass market. And the Ports have been great partners with us in trying out things that you wouldn't want to have happen if it was in the mass market. They're not huge, you know, epic fails, or anything like that. But sometimes I think we had one where something was blocking the back view. Well, you know, okay, we need to fix that, right, before you start making a whole bunch more trucks like that.

We had one where because of the way the charging was set up, with a lot of bollards out there protecting it so it doesn't get run over at the Port, the cord was too short. An easy fix but, you know, you wouldn't have wanted to roll out a hundred trucks like that. And so they have been really great partners in kind of helping us kick the tires in this category.

So let me -- let me let John talk about if we're going to do some workshops.

And I don't know what the timing for that looks like, but you might. And you mentioned quarter 3, right? Yeah.

MR. BUTLER: Yeah, I was just going to mention that staff are working diligently on that next solicitation. And, yes, we will be workshopping the

concepts of that solicitation. This would be certainly an area we would like input on.

I think we have an example of our School Bus Replacement Program, where we actually funded -- you know our preference were ZEVs, but we do realize that there were, you know, certain routes that an electric bus would not work in, so we did have some CNG bus funding available for those school districts, again, to replace the diesel buses that were online or that were being used within the state. So I think that is kind of a model that -- how we're thinking about this. And certainly we want to make sure we're putting the funding to get, you know, the best bang for our buck and in the right areas to reduce emissions.

MS. TUTT: Good. I just want to say that I think -- I do think reducing emissions has always been one of the metrics here and reducing emissions as much as possible so that's why I just -- I know that last year we really, really focused on zero and I just hope we don't get away from that this year. And I don't usually participate in the workshops because I think of those as for people who are going to be applying for funds, but -- so this is the only opportunity I have to share that. I'm unlikely to be at the workshop, but want to just make sure that is adjusted.

MR. BARRETT: And just in response to John's comment, I think that the school bus replacement program is a good model, the heavy focus on zero emission proving, you know, they are going to be available to work in all those locations. There may be some applications that aren't quite ready that we have to address, but I do think that heavy focus on zero emission is really key, especially, you know, targeting early deployment in disadvantaged communities. So I think it's a good model.

COMMISSIONER SCOTT: Thanks.

Other -- other Advisory Committee members.

Maybe it's Tyson.

MR. ECKERLE: I just wanted to say we have our sustainable freight project manager Frank Ramirez, I think he might be on the phone, but has appreciated very much the partnership with the Energy Commission in working through this and as it relates to the Sustainable Freight Action Plan.

And then I just wanted to emphasize the importance of the infrastructure piece of this funding, which I wish we just had a lot more of it for everything.

COMMISSIONER SCOTT: Right. Thank you.

Eileen.

MS. GREENBERG: Yes. Thank you. So I'm --

(Audio signal abruptly ceases.)

COMMISSIONER SCOTT: Ellen, are you still there?

MS. GREENBERG: -- here. How about now?

COMMISSIONER SCOTT: Yes, try again.

MS. GREENBERG: Are you hearing me now?

COMMISSIONER SCOTT: Yes.

MS. GREENBERG: Yes, I can be heard now?

COMMISSIONER SCOTT: Yes, you can be heard now.

MS. GREENBERG: All right. Thank you.

I just wanted to note in terms of opportunities to link up administration goals, I want to second the comments about the importance of looking at the freight technologies and devoting resources in those areas, because of the many communities that are adversely affected. And, you know, one of the impacts is of -- is on our potential opportunities for infill housing and greater opportunities to add housing in communities, if we can make them healthier places for their current and future population.

So I think as we think about, you know, the broad set of administration -- administration goals and the Governor's emphasis on improving the integration of our transportation climate and housing programs, the freight piece really comes into view.

COMMISSIONER SCOTT: Thank you.

Other comments from the Advisory Committee members?

Patrick, go ahead.

MR. BRECHT: John Shears had to leave, so I just want to make one comment. I support this funding as the State moves forward with its MHD ZEV Program, and it will become more critical.

COMMISSIONER SCOTT: Thank you for that comment, John.

Any other comments from the Advisory Committee members on advanced freight and fleet technologies?

Okay. Tom, do we have any folks from the public who would like to make a comment? We'll transition to public comment on advanced freight and fleet technologies.

Okay, seeing none, let us now move on to the Advisory Committee discussion on low carbon fuel production and supply.

Joe.

MR. GERSHEN: I didn't even have to raise my name tent.

COMMISSIONER SCOTT: I was ready.

MR. GERSHEN: She was ready.

Okay, so a few things, and I'll go through it just some more, and we'll probably submit some comments

from CABA.

Still obviously have some questions about the metrics. Support the claims in table 6 to 7. The expected benefits are expected, and we'd like to see more metrics about what they really are.

But, specifically, I'm just going to focus on some comments I made after the last committee meeting, which we still saw in those cables. So I'm just going to reread the -- it's easier to just reread my comments from before, because I still see it.

So the Plan indicates that diesel substitutes produced in California will displace 81.5 million gallons per year of petroleum diesel in 2020, which we agree with it. But it goes on to say that this number will flatten out to 111.3 million gallons a year in 2025 and beyond, all the way to 2030.

So if we add up existing plant capacity, including biodiesel and renewable diesel production from New Leaf Biofuels, Imperial Western Products, Crimson Renewable Energy, Community Fuels, Agron Bioenergy, Biodeco, and AltAir, our current instate nameplate production capacity is actually 122 million gallons a year. And by 2020, with current expansions underway and scheduled for completion, instate production capacity of diesel subsidies will be at about 150 million gallons a

year. And so with LCFS credits, you know, we have been in the 190s. I think it's 193 right now. And there is some discussion about it going beyond 200, but you know that's another conversion. But either way, it's likely that most production in California will be at capacity because those LCFS credits are driving that, and I think we all agree about that.

So if we add AltAir's recent announcement -- AltAir is the renewable diesel and jet plant in Paramount, they have recently announced -- well, actually not so recently now, but they're expanding to 306 million gallons a year, that will add another 260 millions gallons a year capacity in the state, which puts California's total production of diesel substitutes at 410 million gallons a year.

So I'm just kind of curious, our industry is curious why you're flat-lining it at 111.3 million gallons a year after 2020, given all of that information. So I see Charles jumping in. You know, and that's not even including other -- other new plants, productions, and expansion, and stuff.

And then I -- before I let you go, I'm just going to finish out by saying we have recently, I think just today we're releasing a press release from CABA sort of addressing the Governor's -- the new Governor's

indication. We actually think that by 2030 we can displace all instate petroleum diesel with renewable sources. We think it's very realistic to go to an 80-percent renewable diesel and 20-percent biodiesel by 2030. And we have identified what it is to do that, and you will probably see that press release come out. But with that, obviously not all of it's coming -- just like today, not all of it's coming from instate, but quite a bit will be. And, you know, we're seeing new capacity being announced all over the West Coast. I'm sure you guys have seen that. There's some question about the feedstock of course, but I do think that we're going to see quite a bit more produced in the state of California, CEQA and other things notwithstanding. But -- I'm just curious. So, anyway, with that, I will let it go.

COMMISSIONER SCOTT: Joe, will you please make sure that we get that press release. And also is there a study that it's based on that you could send to us as well?

MR. GERSHEN: You bet. Yeah, and we'll release that and I'll get it to everybody.

COMMISSIONER SCOTT: Okay. That would be fantastic.

MR. GERSHEN: Sure.

COMMISSIONER SCOTT: And then let me turn to

Charles.

MR. SMITH: Thank you, Commissioner.

So the table that I think you're referring to, Joe, is Table 6 from the Investment Plan, on page 27. So the numbers that you see here for petroleum displacement as it relates to the fuel production categories, these are just based on the ARFVTP awards, not necessarily based on the entire industry of California. You know, we try to be as involved as we can be, but we don't fund every million-gallon-per-year capacity increase. And so we kind of have to be judicious about what assumptions we make about how much capacity our investments are allowing to be increased. And so, again, the sort of key takeaway is that the numbers that you see here are us trying to reflect what we have funded, not necessarily a reflection of what we are forecasting into the future for all biodiesel and renewable diesel producers.

MR. GERSHEN: So that sort of gets back to the question about, you know, with the close to 50 percent of LCFS credits being generated by those diesel substitutes, why would limit the investment. Obviously all the other things that are happening are great in these pretty exciting times, but why would we limit that?

MR. SMITH: So I think -- I think maybe the distinction I'm missing is that these are just based on

projects we have funded in the past, not to say that, you know, when we keep funding new biofuel production facilities in the future these numbers would presumably increase over time, --

MR. GERSHEN: Okay.

MR. SMITH: -- as we add more biofuel production agreements into our portfolio.

MR. GERSHEN: Okay. So that wasn't clear. Maybe --

MR. SMITH: Okay.

MR. GERSHEN: -- some clarification would be helpful, sure. Thanks.

MR. SMITH: Thanks.

COMMISSIONER SCOTT: Thank you.

Steve.

MR. KAFFKA: I'd be remiss if I didn't make some comments. I'm glad to see the investment level for bio -- alternative fuels at $20 million this year. I think -- and all from ARFVTP funds, I think. And I think that's a good policy decision and I commend staff and the board for doing that.

I want to say a couple of things that is kind of my standard message and that is that, first of all, I don't have any economic interest in biofuels, or I'm representing the rest of California and I'd like to think

what is the broad public interest in this area. So to the degree that I can make comments from that perspective, I try.

And in this case it's quite clear that in California there is a large need to better management significant biomass resources. It's also clear that there is a connection between the better management of those biomass resources and transportation fuels and also the State's bioeconomy. You may know that last week the Air Board had a very interesting and well attended meeting on the bioeconomy to help -- they have to help, you know, plan and run that meeting. A tremendous interest across the state in that area.

There is a kind of fluidity between fuels and energy power and bioproducts that occur in biomass use, and we can't actually foresee the future of how -- which proportion of those materials will go towards fuels, towards perhaps renewable hydrogen production, towards bioproducts. In many cases, there will be complementary products made from some of these new biorefinery activities. But there is a really strong public interest in better managing biomass.

So here we are in Fresno, so at the bioeconomy meeting last week it was commented that a lot of the forests above Fresno, it's up to 70 percent dead trees.

Without really good, you know, pathways for the use of those materials, CalFire at that meeting reported that up to half the trees in the state probably should be thinned in the state's southern forests for safety and public health. Maybe a third of the forest's biomass needs to be used, and it would be good to use it prudently. And demand for low carbon intensity biofuels to help make the transition to a cleaner, lower carbon economy is really one of the pathways in which some of that biomass may be prudently used at lower cost, or something's going to happen where you have catastrophic fires with colossally acute bad air incidents, as we did last year. I mean those acute air episodes of two or three months of smoke in the valley are certainly as bad as transportation emissions on average. And so this category is really important for that.

We know we have in this area a lot of open burning of old orchards because some of the biomass power facilities are gone. There is going to be a groundbreaking very shortly in Keyes in the valley for a woody -- orchard woody biomass-to-ethanol facility associated with AEMETIS. That's the first of what might be many.

There are a lot of things, a lot of technology transformations that are possible now for both

bioproducts and fuels that are in the pipeline or being developed not only in California but most commonly elsewhere that could come to California for this purpose. So I just want to reiterate the importance of this category in sustaining for a host of public benefits and goods that other kinds of transportation pathways don't necessarily address, including carbon negative -- carbon negative proposals, where you can basically help remove carbon from the atmosphere through some of these processes. So I just wanted to make that point.

COMMISSIONER SCOTT: Thank you.

Joy and then Eileen.

Am I getting good.

MS. ALAFIA: Perfect order. Thank you, Eileen. I don't think it will make much difference four minutes later or four minutes earlier, so. I'm just going to piggyback on what Steve shared, so I appreciate the comment with regard to low carbon intensity, the opportunity for carbon capture. And in this category I'd recommend that we don't keep the focus too narrow and risk jeopardizing other opportunities for greenhouse gas mitigation or untold opportunity costs for both zero- and near-zero technologies.

So specifically I'd recommend we consider cobenefit fuels and fuels that have developed low-NOx

engine technologies. A kind of few things that come to mind, top of mind for me are looking at what DME can do, dimethyl ether. So it can be used in the renewable hydrogen space, it can be used through -- extend the range for electric vehicles, and it could be used to decarbonize fossil propane. So there is a lot of benefit there for DME and should be considered in this category.

Similarly, another cobenefit of the renewable diesel process, and Joe shared about growing and expanding, look at the opportunities for the ability to produce renewable propane from that same process with some investment. You know, making this category eligible for DME and renewable propane, I think will have many cobenefits. They're looking at negative carbon intensities for some of these technologies. And the infrastructure is already there, so it's a very low cost solution, as well.

COMMISSIONER SCOTT: Thank you.

Eileen.

MS. TUTT: Thank you, Commissioner. And kind of building off what Joy said, I think on some level we want to look at the cobenefits. And I just want -- I also want to reference something that Joe said because it was a little bit worrisome to me.

I mean I think this Governor said we want to

eliminate diesel, the use of diesel. And I think -- personally I think that's great news, but I don't think that that means we want to go to all bio and renewable diesel. I think the idea here is that there is definitely room for all, for bio and renewable diesel. There's room for -- there's room for everybody. But because there's applications where you just simply can't get to zero, and I think that's very clear.

So I don't have -- but I think what we want to keep in mind is that there's multiple goals in this state. That's one and it's the relatively new one. But there are a lot of goals around ZIP requirements and air pollution and NOx and PM. And to the degree we want to address all of those goals, and I feel -- sorry, when you start bringing up fires and forest management and tree mortality, I think we have to be really careful there because biofuels, as much as I think there is definitely a place for biofuels and I myself am not a biofuels advocate either, but it's very controversial and you can't just disregard CEQA or the community's response because there are many communities and activists, particularly in the San Joaquin Valley, that are adverse to biofuels and biofuels plants.

And so we have a challenge there that's much bigger than this pot of funding. And I just want to --

it's not -- there is not an easy answer to how we get rid of these trees, these dead trees, and what we do to manage our forests and protect against tree mortality and really protect our forest, period.

I do think there are opportunities, I will just point out on the short list, the climate pollutant side. If you take that biomass and you turn it into electricity and you use it in electric vehicles, that is also a negative carbon intensity process, and you don't have any of the combustion energy pollutants from the vehicles.

So in the low-traffic fuel standard efforts, we have been looking at that, what are -- what's the carbon intensity for taking the biomass and turning it into natural gas renewable and natural gas, and using it in a combustion engine vehicle versus taking the biomass and turning it into electricity and using it in a zero-emission vehicle. And they're both negative carbon. And we just -- but -- so I don't want to -- there's a lot of different opportunities that we all need to look at here. My concern with this particular pot of money is we're going up from last year. Last year it was 12 and a half million. This year it's 20 million. And I -- I just don't think that's appropriate.

I think given the direction of all the other goals in the state, that we should be increasing like

perhaps the focus on TNCs going zero-emission vehicle and dealing with infrastructure challenges there. I think that's where I would put if there is additional money, I would put it in more zero-emission vehicle technologies. I would not augment this particular pot. Not that I don't think -- I think it should -- I think it's funded and I think it was, I believe, all five projects that were proposed last year were the 12 and a half million dollars got funded. So it's not oversubscribed, at least that's my understanding, and certainly not nearly as over subscribed as electric vehicle charging is. So -- and that means both hydrogen and battery electric.

So I personally -- although I think this category deserves funding, I would prefer that it stayed the same and then the other 12 and a half million that came from GGRF, welcome to the game. We're all fighting for that now too, to be quite honest. And it's -- that budget fight is very, very difficult and painful, to be quite honest, because there's a lot of priorities. But I don't -- I'm not particularly happy with this section being endorsed at this time. And I -- that's fine.

COMMISSIONER SCOTT: Thank you.

Joy.

MS. ALAFIA: Thanks. So I just wanted to add in terms of the program not being over subscribed and

looking at biomass, there's other ways to generate renewable fuels. And I think the other really important, particularly in the San Joaquin Valley what we're looking at is carbon capture for, again, they're looking at hydrogen cells and renewable propane. So that's just another opportunity of a carbon sink, if you will, that doesn't deal with the biomass.

Thank you.

COMMISSIONER SCOTT: Thank you.

Steve.

MR. KAFFKA: If I read this report correctly, biomass last year actually where these fuels were actually funded at about $22.9 million. Is that correct? In the end, the final allocation.

MR. BUTLER: I'm sorry. From what fiscal year are you talking about?

MR. KAFFKA: 2017-18. In other words, --

MR. BUTLER: '17-18. So last year or the current year we're in, it was 12 and a half million from GGRF and 12 and a half million from ARFVTP.

MR. KAFFKA: Good. And then there was some additional allocation above that?

MR. BUTLER: So this is Charles' method. So if you flip to page 7, Table ES2 has -- or Table ES2 and then also Table ES3 have the previous two funding

allocations for the previous Investment Plan and then proposed one for this year.

MR. KAFFKA: Yes.

MR. SMITH: And to John's point, the three asterises on the 25 million for 2018 to 2019, half of that was from GGRF.

MR. KAFFKA: So, in other words, Eileen's comment to the point that this is being increased in terms of funding actually -- compared to what was actually spent, it's not correct. In other words, you spent even a bit more than 20 million last year --

MS. TUTT: I just meant from this -- this allocation, 12.5 from this. That's the increased part. I recognize we also got GGRF.

MR. KAFFKA: Correct. So I just would like to reiterate that I think this remains a fundamental category or very diversary for all kinds of reasons. The CEC's IEPR Report suggests that liquid fuels of various kinds, including not just of course diesel and gasoline-based fuels, but also jet fuels and other materials will remain important in the state of California for the foreseeable future. That was a clear outcome of the bioeconomy meeting last week in which the Air Board identified the continuing need for these kinds of materials and fuels in the future of the state. So I

don't think that it's particularly a short-term view that we're going to require these kinds of transportation fuels and related bioproducts in activities in the state for the foreseeable future. The future is very hard to predict.

COMMISSIONER SCOTT: John.

MR. BUTLER: Yeah. So I think I heard you right, Eileen. You thought that this category wasn't over subscribed. Our last solicitation was over subscribed in terms of commercial and community scale projects, so there were a number of passing projects that did not receive funding due to the lack of availability of funds. I just wanted to correct that record.

COMMISSIONER SCOTT: Joe.

MR. GERSHEN: Yeah. I think definitely received over subscription. I just know a lot of our members have subscribed and will continue to subscribe. And, basically, I think we're just happy to see at the very least things go back to where they were, because with GGRF, when it happened it went to GGRF funding, it was not guaranteed, and you know that's a stroke of a pen and it's gone. So that's why going back to the 20th at a minimum makes sense to us. And it just means that these fuels are going to be important for I'd say decades to come. And so understand, you know, everyone's fighting

for the same pot of money and where should it go. I just -- and to look at it pragmatically, I support all the above, which I think is the intention of the program from its onset.

And so, yeah, I mean I think all of these things have a lot of merit, but I just want to make sure that it's sort of commensurate, it sort of ties back into that thing about expected benefits versus actual benefits. So I tend to look at it more pragmatically what's really going to get the job done in the near, mid, and long term, so that's my thinking on it.

COMMISSIONER SCOTT: Let me turn back to -- we had that question from Ole previously about the -- sort of the CDFA component, and then we also have Brian who mentioned he'd like to make a comment.

So it looks like Charles, is your mic on, do you want to respond to that, or --

MR. SMITH: Sorry.

COMMISSIONER SCOTT: Do we have -- do you guys have a chance to kind of look through and have an answer to Ole's question? Okay.

MR. BUTLER: So, yes, Ole's question was whether there was a specific exclusion of this funding to be used for landfill gas. You know, gas from the landfills directly, and the answer is yes, the way it's

written in there and the way we write it in our solicitation is that we exclude landfill gas as an eligible feedstock for these types of projects.

The reason for that is the organic waste diversion policies in California. We want to encourage and support the diversion of prelandfilled waste and get those organics out of the landfills and use them for fuel production within our project. So that is a specific exclusion and I believe that -- you know, our -- we had Howard Levenson, who was on our Advisory Committee in the past, certainly we took his input on CalRecycle's request to make that exclusion within our Investment Plan.

MR. HOEFELMANN: So, Charles, I understand it in --

COMMISSIONER SCOTT: Ole, go ahead.

MR. HOEFELMANN: Sorry. Can you guys hear me?

COMMISSIONER SCOTT: Yes, yes.

MR. HOEFELMANN: Oh, okay, yes. So, thanks, I appreciate that clarification. So that I understand in your Investment Plan, it makes sense.

My question is if somebody on their own decides out recover landfill biomethane, are we saying that that is excluded as a renewable feedstock?

I understand the Investment Plan and meaning any future investments you're going to make or support

exclude landfill, that makes sense. I understand the policy behind that. What I'm trying to clarify is that that does not exclude other ways of getting landfill of biomethane and using that as a renewable feedstock.

So, just to clarify, there have been a lot of conversations here on low carbon fuel, a commitment to, you know, decarbonized hydrogen, for example, at the Hydrogen Council 2030. Most of the members that make that commitment today supply hydrogen into the stations. So if today the members, you know, be it the Shell products, they have the keys, if they have access to biomethane and they want to use that as a feedstock to renewable hydrogen; I mean is that excluded for them?

MR. SMITH: So --

MR. HOEFELMANN: I realize that there might not be an answer today because we have to maybe explain ourselves a little more and more clearly. But I'm not saying that I want to get money from the State to build a biogas purification at a landfill. I'm saying I have already done that. If I have access to biomethane from a landfill, are we saying that the way this language reads, I understand it on the investment side, I want to make sure that this language doesn't translate into the GFO that then restricts the definition of renewable hydrogen to stations and the station infrastructure. Because I

think that will not get us to the end goal. I mean the discussions that a lot of the members here had over the last 50 minutes were around low carbon and zero carbon, carbon capture, biofuels, biomethane. I think what we wouldn't want to do is restrict, you know, pathways that are already existing today.

MR. BARKER: So this is Kevin with the Energy Commission. And I'm trying to go on mute.

MR. BARKER: Okay, here we go. So under Health and Safety Code 43869, which was put in place as a result of Senate Bill 1505, it sets the Air Resources Board as the sole authority to regulate the renewable hydrogen content and requirements for hydrogen refueling stations. So with regard to the definition and the content, I think ARB are the regulators there.

MR. HOEFELMANN: Okay. Thank you.

COMMISSIONER SCOTT: So, Ole, I think we understand your question. I don't know that we have an answer to it. So let us -- or maybe we do. Let me see -- no.

MR. BUTLER: Actually it might just be a punt of the question till next week at our hydrogen workshop, I think -- on February 12th, when we talk about the draft solicitation concepts. Ole, that might be a great opportunity to bring this issue up, especially since it's

specific to the hydrogen infrastructure, the GFO that will be forthcoming.

COMMISSIONER SCOTT: Yeah. And we should check in with the ARB too.

MR. HOEFELMANN: Yeah, and we have it on the docket. What we were trying to kind of understand earlier today is, is there a policy behind it, you know, is it maybe just oversight. Or, you know, in the end and not just broader to this category and some of the discussion that occurred earlier. I think this category and having funding for it is critical.

I also agree with a lot of the comments over previously that this should be broad enough so that we don't limit the innovation that, you know, companies can bring into the space.

I also think but I do not know how that can get built into this category is that the ability to scale is critical in this. So, you know, as the State looks to fund these opportunities, is the consideration into or taken can the solution that is being funded actually scale up to, you know, large quantities of the zero carbon fuel product or it being hydrogen, or whatever. So -- but I think the category itself is critical in keeping is also important for its success.

COMMISSIONER SCOTT: Thank you.

Brian. Are you still there, Brian?

MR. GOLDSTEIN: Hi. Can you hear me?

COMMISSIONER SCOTT: Yes.

MR. GOLDSTEIN: Yeah. Okay, great. No, I'm happy to see the increase in funding in this category. I was very happy to see the allocations for renewable hydrogen last year. I think further exploring the interconnect between fuel types, especially you know with biomethane as a feedstock there is really important, particularly because cultivation of some of that gas, you know especially from like diary biogas and so forth is incredibly expensive, and we're just not seeing enough projects popping up in the state. So, you know, of course we all aspire to see a complete zero-emission or a complete renewable grid, but there are just frankly going to be a lot of fuel types that will take quite a long time for us to transition out of, you know, even into the electrification arena.

So I think in the interim we need to continue to explore low carbon fuel types there and particularly where these fuels types can be built together, where these projects can be built together to potentially, you know, save money and take advantage of economies of scale.

For example, if we can colocate a renewable

hydrogen-production facility with a biogas-production facility and save dollars in that manner, I think that would be an incredible use of funds. And by using some of this pot of funds to, you know, inspire companies to start projects like that, I think that is exactly what this program is meant to do.

And, you know, I'd like to remind the other Advisory board members that some of these projects are in the hundreds of millions of dollars for full biomethane to renewable hydrogen-production facilities that aren't in urban areas. So the amount of funding in this area is relatively small, at least relative to the overall cost of some of the bigger projects that frankly will need to scale some of these biofuels anyway.

So you know I'm happy to see the funding increase in this area this year. I'd love to engage the Commission on finding areas of overlap where the different fuel types can in some ways potentially share funding so that projects can be colocated and that we can combine resources and some of the takeaways from the initial project. So thanks for giving me an opportunity to speak on this, and I appreciate the Commission's attention to this area.

COMMISSIONER SCOTT: Thank you.

Do I have any other Advisory Committee member

comments on low carbon fuel production and supply?

Okay. Let me now see whether or not then we have any public comment on low carbon fuel production and supply.

MR. BRECHT: Yes, we have Jeff Reed.

DR. REED: Yes. Thank you. This is Jeff Reed, Chair of the California Hydrogen Business Council and also a member of the research staff at U.C. Irvine.

So thank you, Commissioner Scott and the others, for the work on this, and we fully support the program and, in particular, wanted to comment on the alternate fuel production. It's probably similar in respect to what Brian was just saying regarding scale of the facilities, so it was very good news to see some funding for a few projects this year through the 602 solicitation.

Almost all, I think with one exception, of the bids into that solicitation were electrolytic with using primarily solar energy, which is great because that technology set needs development and we need commercial facilities to prove out and to also achieve some scale. But in thinking about that as I looked at the information and said, huh, it's very interesting. You know, does this mean the whole market is turning toward an electrolytic solution, but it's probably more likely the

case that at the funding levels, the buydown on those projects is 50 percent. Whereas with a large-scale SMR facility or a gasification facility, the funding amounts aren't enough to support the project or to make the difference between constructing it or not.

And I'm just wondering are there thoughts from Commissioner staff on, you know, how to get after this. I mean you could do loan guaranties. And in the past these big facilities have been more likely funded from the Department of Energy. I don't see that happening here.

And gasification, in particular, could be beyond the biomethane discussion we just had. But gasification, particularly for woody feedstocks, could be the most cost-effective approach, but yet very little activity going on there right now.

COMMISSIONER SCOTT: Thank you.

I think I will ask some of my biofuels team to follow up with you on this question offline. And I also think that typically where, as you know, where the Energy Commission is scoping these things out or kind of in those presolicitation workshops, when we're looking to see what needs to be funded, why, where are the best places to put dollars, and staff of course has their expertise that comes in to inform that, but we're looking

to hear from the public on that as well. And so when we get to that point, I would encourage you or the appropriate person on your team to either participate in that workshop or if you're not available to, make sure that the staff gets your comments and thoughts when they're kind of scoping out what that next round looks like.

Let me check, do we have any other public comment on the low carbon fuel production and supply categories?

Okay, I'm seeing none.

Okay, so it is 12:40. I would like to get a sense of the Advisory Committee members. We have manufacturing and workforce development left. I'd like to propose that we go ahead and just do those and then break when we're done versus breaking for an hour lunch and then coming back to discuss those two. Is that -- is that good? Okay, that's good for you guys? Okay, I'm getting thumbs up and nods.

Oh, sure, sure. Why don't we take a -- we're going to take a five-minute bio break, so everyone come back at 12:45, and we're just going to keep on going.

(Recess taken from 12:41 to 12:50 p.m.)

COMMISSIONER SCOTT: Okay. Welcome back, everybody. We just took a quick bio break here and now

we're going to move on to the last two categories. In case you're just joining us now and because we are almost done with the discussion, we decided to just do the last two rather than taking a lunch break.

* So let us move to Manufacturing and Advisory Committee comments on the Manufacturing Category.

Tyson.

MR. ECKERLE: Yes. Just -- this is a critical part. And I think within the Governor's Office of Business and Economic Development, it's a tool that we have used for recruitment and retention and expansion of companies who are focused in these key areas. And so we want to make sure just maintain that partnership going forward. And I think as we're developing the solicitation, I want to make sure our people who do the business investment services are connected with whoever is drafting up the solicitation, just so we can make sure we leverage that as much as possible. It is a super critical area and we want to make sure that we benefit as a state from all the policies, you know, in terms of creating jobs here too.

COMMISSIONER SCOTT: Great. Thank you and thank you for that offer of assistance.

Eileen.

MS. TUTT: I just want to thank you,

Commissioner Scott, as well as Tyson, the -- for your work on -- it's really clear you're coordinating, and this is a really important part of the investment strategy.

And I do think -- I mean I always wish there were more, but I think this is -- it's a really good pot of money. And I am particularly pleased with the coordination between agencies on how this money -- you both participated in our Prove It efforts. And those are going to result in real manufacture -- hopefully real jobs. And I'm just impressed by how it's not a whole lot of money and with the coordination between the agencies and the way you have implemented this program, I think it's probably used to the best efficacy, so I appreciate it.

COMMISSIONER SCOTT: Thank you.

Will.

MR. BARRETT: And just to tee up on that comment, the -- you had that Prove It Workshop that was held in November. I think one of the things that I heard most clearly out of that was a desire for training programs to start in the high school level, and it was nice to hear that this morning, and so that local students can be trained to work on these programs in many cases in communities that have high pollution burdens and

can go back to work helping with the deployment of zero-emission technologies in those areas. So, again, I really appreciate this staying in the plan and getting the support. Thank you.

COMMISSIONER SCOTT: Thank you.

Other Advisory Committee member comments? Do we have any of the members on the WebEx? I don't see any. Tom's doing a great job of raising your cards for you right here in the room so I know that you want to speak.

Okay, well, let's see, do we have any public comment on the manufacturing category?

* I'm seeing none. So let's now turn to Workforce Development and Advisory Committee member comments on the Workforce Development --

MR. HOEFELMANN: Janea?

COMMISSIONER SCOTT: Oh, I'm sorry, was that Ole?

MR. HOEFELMANN: Yeah, sorry. We had some technical difficulties over here. I just wanted to say so much, Eileen, that certainly I support this category. I think it's great.

I tried to in my mind to always figure out, okay, you know are enough companies taking advantage of us and really looking at them innovating and bringing new

technology to market. For example, what's interesting to me is obviously hydrogen station, hydrogen station development, and how we can accelerate that. So, again, I think the category is great and I'd love to see more, more companies participating in it.

COMMISSIONER SCOTT: Thank you.

And let me pause just in case any other Advisory Committee members from the WebEx or phone were trying to jump in. If so, please speak up.

Okay. So now -- thank you. Let us turn to the workforce development component, and Advisory Committee comments on that, please.

Eileen.

MS. TUTT: Thank you, Commissioner. I just want to -- I am particularly pleased with this investment, given what we've heard over and over again, and certainly as we started the Prove It effort, is that it is just so important as we transition away from our -- you know, a single-fuel transportation fuel economy to a more diverse transportation fuel pool, that that actually results in jobs in disadvantaged communities and low-income communities. And so -- and we are -- I mean we definitely want to help with that, so I was very glad to see the 1.5 million.

And I think what's really fabulous is that

there is 27 million in the Governor's Budget for GGRF this year and that's a new program. And I think the demand is probably a lot closer to 27, 28.5 million, but I also I think -- to Ole's point I think we're going to have to really -- it's incumbent upon those of us on the Advisory Committee and whoever is listening to help make sure that we take full advantage of this, because the need is out there, but it's a lot harder to access that need. They don't have the resources to hire consultants to put in proposals for millions of dollars. That's not the kind of resources that are available in some of these communities.

So, as you know, we have a few projects that we're working with folks on, but I think this is a real opportunity for all of us to think about how do we make sure that this money is getting to where it's most needed and it is leveraging against what is a much bigger pot of money in the Governor's Budget. And we sure hope that that is not reduced or in any way modified and revised. We're very much supportive of that allocation for GGRF and want to really support this as well, so thank you.

COMMISSIONER SCOTT: Thank you.

John Shears.

MR. SHEARS: Yeah. Good afternoon. Thanks. Just stepped out for another meeting and now I'm back.

I just want to -- you know as in past meetings, speak in strong support for funding, you know, at the workforce development and training as it relates to feeding into needs of the manufacturing industry as well as, you know, in the installation of fueling equipment and the maintenance of the vehicles, etc. I think going forward this is going to become more and more critical.

I'm not sure if people are aware of the recent report that came out from the Brookings Institute looking at automation in the agricultural industry and the potential implications for working poor here in California. So as I said in the past, these types of programs, including GGRF, are really important I think as economic development programs here in California. And I also want to reprise, you know as Eileen mentioned, and as if said in the past, the issue about helping to make sure that there is some funding out of these pools of money that are about developing the capacity to have the capacity to actually pursue requests for proposals, GFOs, whatever we want to call them. So I'm about to embark with some colleagues in the valley on seeing if we can organize an effort around pulling together community organizers and mayors in the valley to sort of heighten awareness around these programs and see what we can do on that.

But, again, I want to stress, as I have at past meetings, it's really important to work with, you know, community organizers beyond just holding a meeting in Fresno or Shafter, or wherever, and hoping people come but actually have community organizers go out and beat the bushes, as it were, to raise awareness in the communities and also to, you know, help develop that basic wherewithal within the communities to be able to take advantage of these funding pools, so thanks.

COMMISSIONER SCOTT: Thanks. And I'd like to, John, echo your comment and Eileen's as well in that we're very excited about these programs. The one that we're working on with the high schools was put together kind of by Cerritos Community College in the hopes that will then feed the high school students right into Cerritos Community College right into these clean energy economy jobs. So it's very exciting.

And it was -- I had a chance to visit three of the high schools that got awarded. So Patrick mentioned in his presentation that we awarded 12. And the teachers are also just incredibly excited to be engaged and involved in this. And so they're super inspirational. And these teachers, you know they're staying after school, they're coming in on weekends. One of them was talking about he's like, kids, you have to go home so I

can go home. But they're just -- there's just so much energy and enthusiasm in this space.

And one of the things that the teacher said that I found really inspiring was some of the kids that are in the shop classes are sometimes struggling academically, but then they get really excited about learning on how to work on an electric motor or they were building a car and they had to figure out how to light-weight it so it would go farther on the charge. And then they come back and they say, oh, well, I do need to go really learn this math. Or, I really do need to go back and look into this engineering. And so they get inspired to go back to different classes and really dig in.

And I mean they were working on everything from electric motors and material sciences, I mean a very broad set of topics, so it's exciting. Thanks for the support for this category. It's one that I'm very excited about as well.

And I think on the outreach point, we would love your help and any others too in terms of reaching out to the communities. I think the Energy Commission in and of itself is kind of a wonky agency that many folks may not know about, much less sort of that this program opportunity is available, so to the extent when we put out the program notices, if you have folks that you want

to forward it to or that you think we should specifically outreach, please provide that feedback to us because we're always looking to improve our outreach to communities on not just workforce development but on all of these topics. So I appreciate that.

Do we have other Advisory Committee -- yes, Tyson.

MR. ECKERLE: Thank you. Just to piggyback on some of the stuff that's been said, so I think there's -- if you look at Governor Newsom and his platform and then our new director at GO-Biz, their platform is California for all is kind of the thing that comes up the most in terms of what they're trying to do, right. So I think it's really important. And I think it's the workforce areas if the budget is the statement of priorities, just as Eileen pointed out. That's a really important and key thing.

And just piggybacking on the CalETC efforts, which has been a great campaign through Prove It. I think the one thing that I have learned is if we aren't able to get this money into the communities that we're targeting, we're not looking hard enough.

COMMISSIONER SCOTT: Yeah.

MR. ECKERLE: This is kind of as a stakeholder group. So we have to make sure that we're overturning

every rock to get it in there and I think this is a challenge for all of us, us included.

And then just one final thing and it's another program, to make sure that we don't get these as siloed as possible, for cannabis there is the Community Reinvestment Grants Program that was just kicking off the ground at GO-Biz and it has a workforce component. And that -- that part is -- I think it's about ten million to start, but there is -- where it's reinvesting into areas that were adversely impacted by the war on drugs. And so I think this is another pot of funding that we can help cross-leverage to really get into these communities. So it's something that we can make those connections as well.

COMMISSIONER SCOTT: Thanks.

John Shears.

MR. SHEARS: Yeah. I'm not sure if it was mentioned at all today, but of course there is sort of large overlapping is of space, setting the hydrogen issues aside, which many of us are working on, but also there's the settlement, dieselgate settlement money issue out there too that we're also trying to work with to electrify America on to, you know, support and leverage, mutually leverage these funds. So it should be, to sort of highlight that part of the loop and staying integrated

with those broader industry efforts besides those being led by CalETC and Veloz.

COMMISSIONER SCOTT: Thank you.

Do I have other Advisory Committee member comments on workforce development?

Okay, do we have any public comment on workforce development?

All right, so then I guess we will transition just to sort of the broader public comment period. Any public comment -- I'm sorry. I see Ellen.

Please go ahead.

MS. GREENBERG: Thank you. I did just want to mention the workforce development funds that come through SB1 and hope that there will again be some coordination across the multiple programs.

COMMISSIONER SCOTT: Great. Thank you.

Any other Advisory Committee comments before we transition to our public comment period?

Okay. And do we have any public comment, I guess, on any of the ARFVTP 2019-2020 Investment Plan Update that we didn't hit as we went through the discussions? If so, please speak up.

Okay. Looking like -- she's scanning through, she's scanning through on the WebEx.

Oh, Ellen, you still have your hand up. Did

you have another comment?

MS. GREENBERG: No. Sorry about that. I will put my hand down.

COMMISSIONER SCOTT: No worries.

Okay, so it looks like there is no additional public comment.

Patrick, can I ask you to please put back up the slide that shows the comment deadline and information.

So as you can see here, the comments are due on February 22nd, 2019. The link is right here on the slide and the contact information for Patrick is also on the slide. So please do take time to provide us with additional written comments. We look forward to getting those and we look forward to reading them and hearing your thoughts.

And with that, let me just say once again thank you so much to our Advisory Committee members. We really appreciate you taking the time to make your way down to or up to Fresno, depending on where you came from, or into Fresno, and that you provide your time and your experience to this program. It really means a lot to us. We tried very hard to listen closely to what you're saying and I hope that you see that reflected in the various drafts of the report. So thank you for your time

and expertise and energy. It's much appreciated.

And with that, we will adjourn. Thanks, everybody.

(The meeting was adjourned at 1:07 o'clock p.m.)