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In the Matter of:

2018-2019 Investment Plan )
Update for the Alternative )
And Renewable Fuel and )
Vehicle Technology Program )

ADVISORY COMMITTEE MEETING AND PUBLIC WORKSHOP

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

AUDITORIUM

2865 COPLEY DRIVE

DIAMOND BAR, CALIFORNIA

THURSDAY, MARCH 15, 2018

10:00 A.M.

Reported by:
Gigi Lastra

Martha Nelson
APPEARANCES

COMMISSIONER

Janea Scott

GOVERNOR’S OFFICE

Tyson Eckerle, Governor’s Office of Business and Economic Development

COMMITTEE MEMBERS

Brian Goldstein, Energy Independence Now
Joy Alafia, Western Propane Gas Association
Peter Cooper, California Employment Training Panel
Joe Gershen, California Advanced Biofuels Alliance
Claire Jahns, California Natural Resources Agency
Matthew Barth, University of California, Riverside
Analisa Bevan (for Steve Cliff), California Air Resources Board
Stephen Kaffka, California Biomass Collaborative, University of Davis
Bonnie Holmes-Gen, American Lung Association
Chris Shimoda, California Trucking Association
Justin Ward, California Fuel Cell Partnership, Toyota Motor North America
Irene Gutierrez (via WebEx), Natural Resources Defense Council
Ralph Knight (via WebEx), Consultant for Alternative-Fueled School Buses
Ellen Greenberg, California Department of Transportation
Eileen Tutt, California Electric Transportation Coalition
APPEARANCES

COMMITTEE MEMBERS

Joel Espino (via WebEx), The Greenlining Institute

John Shears (via WebEx), Center for Energy Efficiency and Renewable Technologies

STAFF

Charles Smith, Supervisor, Fuels and Transportation Division

John Kato, Deputy Director, Fuels and Transportation Division

Jacob Orenberg, Project Manager, Fuels and Transportation Division

Patrick Brecht, Assistant Project Manager, Fuels and Transportation Division

PUBLIC COMMENT

John Schott, ChargePoint

Bill Elrick, California Fuel Cell Partnership

Matt McClory, Toyota Motor North America

Naveen Berry, South Coast Air Quality Management District

Aaron Harris, Air Liquide

Wayne Leighty (via WebEx)

Emanuel Wagner (via WebEx written comment), Hydrogen Business Council

Steve Ellis, American Honda Motor Company
# AGENDA

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COMMISSIONER SCOTT: Good morning, everyone. This is Commissioner Janea Scott. And I want to welcome you all to our Alternative and Renewable Fuel and Vehicle Technology Program Investment Plan Update meeting. And our court reporter is up and running and we are ready to go.

I have some housekeeping notes for you all.

For the phones, we will ask people to please silence your phones or put them on vibrate mode, just to not disturb the meeting as it’s going along.

The restrooms are located down the hallway, across the auditorium -- across from the auditorium entrance.

And in the event of an emergency, the occupants may need to shelter in place or evacuate the building. If an evacuation is called, please exit the building through the exit doors at the back of the auditorium. If a
shelter in place is necessary, such as in the event of an earthquake, please drop, cover you head and hold on to your chair.

So those are our housekeeping notes.

Again, good morning and welcome. I am Commissioner Janea Scott. We’re just delighted to be here. We’re really excited.

As you know, about two months ago Governor Brown issued a new executive order on zero-emission vehicles. And it calls for 5 million zero-emission vehicles by 2030. And also, it’s got an infrastructure goal in it which we, at the Energy Commission, are especially excited about, 250,000 charges by 2025, including 10,000 DC fast chargers, 200 hydrogen stations. And it will really kick-start the transition to zero-emission transportation that the state has been working on. We really hope that this will help to accelerate the deployment of the infrastructure, and also to really leverage private dollars as we build this out.

And as you all know, transitioning to cleaner transportation is really important in the state of California and across the world. In California, 50 percent of our greenhouse gas
emissions are from the transportation sector, about 80 percent of our smog-forming nitrogen oxides which causes significant public health impacts, and about 95 of the diesel particulate matter here in the state. And that’s why we’re working so hard to transform our transportation system to one of zero-.emissions to help us meet our climate goals, to help us meet our clean air standards, to help with petroleum reduction. And it’s really exciting times.

We’re delighted that there are additional dollars that will come to the Energy Commission through the Governor’s budget for the zero-emission infrastructure. And so we’ll talk with you about that with all of you all today.

I want to mention, also, that we will have some workshops specific to the charging infrastructure and to the hydrogen refueling infrastructure on May 14th to really delve down into what solicitations should look like, all of the sort of pre-solicitation type of workshop that the Energy Commission typically does. So just to give you all a heads-up, we warmly welcome your participation in that workshop.

Again, it will be on May 14th.
I want to thank very much our Advisory Committee Members for being here today and lending their time and expertise to our program and to our investment plan.

And why don’t we go ahead and start with introductions in the room. And maybe the easiest way to do that is to start -- of our Advisory Committee to start here on my right with Brian Goldstein, and then we’ll just work our way down the row, and then we’ll check to see who’s in Sacramento.

So, Brian, please go ahead.

COMMITTEE MEMBER GOLDSTEIN: Good morning, everyone. It’s Brian Goldstein, Executive Director of Energy Independence Now.

COMMITTEE MEMBER ALAFIA: Joy Alafia, President and CEO with the Western Propane Gas Association.

COMMITTEE MEMBER COOPER: This is Peter Cooper, Assistant Director at the Employment Training Panel of the State of California.

COMMITTEE MEMBER GERSHEN: Joe Gershen with the California Advanced Biofuels Alliance.

COMMITTEE MEMBER JAHNS: Claire Jahns, Assistant Secretary for Climate Issues at the
California Natural Resources Agency.

COMMITTEE MEMBER BARTH: Matt Barth, Professor at University of California, Riverside, Director of CE-CERT.

COMMITTEE MEMBER BEVAN: Analisa Bevan, California Air Resources Board.

MR. ECKERLE: Tyson Eckerle with the Governor’s Office of Business and Economic Development.

COMMITTEE MEMBER KAFFKA: Steve Kaffka from UC Davis and the California Biomass Collaborative.

COMMITTEE MEMBER SHIMODA: Chris Shimoda, California Trucking Association.

COMMITTEE MEMBER WARD: Justin Ward with California Fuel Cell Partnership.

COMMISSIONER SCOTT: Excellent. And let’s have the Energy Commission staff in the room please introduce themselves.

MR. SMITH: Charles Smith, Supervisor for the Fuels and Transportation Division’s Program Integration Unit.

MR. KATO: John Kato, Deputy Director overseeing the Fuels and Transportation Division.

MR. ORENBERG: Jacob Orenberg, staff in
the Fuels and Transportation Division.

COMMISSIONER SCOTT: Good morning and welcome.

Let us turn now to -- we have a satellite location today. We are, as you all know, of course, here in the South Coast Air Quality Management District’s building. Thank you so much for welcoming us and letting us have our meeting here today.

Our satellite location is in Sacramento. And I do believe we have some Advisory Committee Members who are in the room in Sacramento. So, if so, please go ahead and introduce yourselves. Okay, it sounds like we don’t have anyone in the room in Sacramento, but I do believe we may have some folks on the WebEx from the Advisory Committee. So if you are participating on the WebEx and are a member of the Advisory Committee, please go ahead and introduce yourself.

COMMITTEE MEMBER GUTIERREZ: Hi. This is Irene Gutierrez from NRDC.

COMMISSIONER SCOTT: Good morning, Irene.

COMMITTEE MEMBER GUTIERREZ: Hi.

COMMISSIONER SCOTT: Any other Advisory Committee Members on the phone?
COMMITTEE MEMBER KNIGHT: Ralph Knight, School Bus Advisory in Napa.

COMMISSIONER SCOTT: Good morning, Ralph.

COMMITTEE MEMBER KNIGHT: Good morning.

COMMISSIONER SCOTT: And I believe we just have the two. If we get folks in the room in Sacramento, please be sure to send us a little note so we can be sure to acknowledge you. Thank you, Advisory Committee Members.

I want to note that we have blue cards. I didn’t bring one down here with me. But if you are a member of the public and would like to make a comment -- oh, I do have one, here’s what the look like. Patrick has them over here to my left. If you are a member of the public and would like to make a comment, please be sure to fill out a blue card, get it to Patrick. He’ll bring them up to me, and that’s how we know that you’d like to make a comment when we get to that point in time.

Also, you guys have done a fantastic job with the microphones. But I was asked to remind you to be sure to speak right into it when you’re talking. And if you’re not speaking, please turn it off.
And with that, let me hand it over to Jacob Orenberg.

Good morning, Jacob.

MR. ORENBERG: Good morning. Thank you, Commissioner, and good morning to everyone else. My name is Jacob Orenberg and I am the Project Manager for the 2018-2019 Investment Plan Update for the Alternative and Renewable Fuel and Vehicle Technology Program. The purpose of today’s meeting is to discuss the recently released Second Revised Staff Report of the Investment Plan Update.

Before we begin, I do need to note that this meeting is being recorded and a transcript will be made available on the Energy Commission’s website.

To start off, I’d like to thank all of our ARFVTP Advisory Committee Members for their dedication in helping us to develop the Investment Plan and the program, and for generously giving us their time and expertise.

I’d also like to thank our hosts at the South Coast Air Quality Management District for providing us with this venue for our meeting.

Our meeting today will follow the agenda.
on this slide. Right now, we’ll start the presentation on the development of the 2018-2019 Investment Plan Update. At about 10:45, we’ll start the Advisory Committee discussion on each allocation. And after each discussion, we will also have time for public comment.

Since we have a lot to cover today, and many interested stakeholders are present, we request that public comments be kept to three minutes or less. Also, please hold any questions until after this presentation is over.

At noon, we’re planning to break for lunch and reconvene an hour later at one o’clock, at which time, we’ll continue the discussion.

To provide some context for the ARFVTP, this slide shows some key statistics for the California transportation sector. Statewide, we have almost 29 million light-duty passenger cars and trucks on the road, as well as nearly 1 million medium- and heavy-duty trucks. In 2015, California generated 440 million metric tons of carbon dioxide-equivalent to greenhouse gases, and approximately 50 percent of these emissions were from the transportation sector which includes emissions directly from vehicles, as
well as those from gasoline and diesel fuel production.

Many regions in California also struggle with poor air quality. And in 2016 the transportation sector consumed 13.9 billion gallons of gasoline and 3.3 billion gallons of diesel fuel.

To help remedy these problems the ARFVTP was established by a California Assembly Bill 118 in the year 2007. The program was set up to develop and deploy innovative technologies that transform California’s fuel and vehicle types to help attain the state’s climate change policies. In addition, the program has complementary goals of improving air quality, increasing alternative fuel use, reducing petroleum dependence, and promoting economic development.

This slide outlines some significant laws and executive orders that the state has enacted to protect public health and wellbeing, and the environment. These include zero-emission vehicle and infrastructure deployment goals, greenhouse gas emission reduction goals, and air quality improvement goals. The development of the Investment Plan Update is guided by these
policies. And, in turn, the program’s investments will help the state achieve these objectives. In fact, the investments made with the proposed funding that we’re discussing today are expected to directly achieve some of these goals, once implemented.

The annual Investment Plan Update serves as the basis for all ARFVTP solicitations, agreement and other funding opportunities for each fiscal year. The document is vetted through aquifer public review process that involves multiple iterations of the document and meetings with our Advisory Committee, one of which, of course, we’re holding today.

For Fiscal Year 2018-2019, we’re now expecting a much larger than normal allocation of $277.5 million dollars, and I will be discussing this in depth during the presentation. The allocations described in the Investment Plan are for general project categories and provide an overview of the status of the fuel or technology and its potential over the coming fiscal year. These specific requirements for what we will ultimately fund are determined by each fund solicitation and not by the Investment Plan.
To date, the Energy Commission has provided over $753 million in funding through the ARFVTP. About 25 percent of this has been invested in biofuel production and distribution projects. Another combined 35 percent has been provided for electric charging infrastructure, light-duty electric vehicle incentives, medium- and heavy-duty electric vehicle demonstrations, and electric vehicle and component manufacturing. Twenty percent of this funding as gone to hydrogen refueling infrastructure and vehicle demonstrations, 13 percent to natural gas fueling infrastructure and vehicles, 1 percent to propane vehicles, and the remaining 6 percent to projects that either incorporate multiple fuel types or do not address specific fuel types.

To demonstrate its commitment to diversity, the Energy Commission adopted 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 and participation by disadvantaged communities; diversity in participation at Energy Commission
proceedings; and diversity and employment and
promotional opportunities.

The Energy Commission is also committed
to taking steps toward broadening the pool of
applicants to our various programs, especially
underrepresented groups, disadvantaged
communities, and small businesses. Workshops,
such as these, are part of a continuing effort to
courage diversity and participation --
participants for Energy Commission programs which
will help to ensure equitable access to Energy
Commission funding, create jobs and provide
economic stimulus in underrepresented and
disadvantaged communities, increase competition
to ensure the best opportunities are identified
and funded, and ensure that local needs are
identified and addressed.

This is the schedule that we expect to
follow for the remainder of the 2018-2019
Investment Plan Update. Most recently, we
released the Second Revised Staff Report on March
5th. After reviewing and incorporating from
today’s workshop, we expect to release the Lead
Commissioner Report in April, and then seek
business meeting approval of the final document
on May 9th.

For this Second Revised Staff Report, we have made significant changes of the funding allocations and the Investment Plan. These changes were made to fulfill the goals and directives of Executive Order B-48-18 which was issued in late January. The order instructs state agencies to, among other things, spur the construction and installation of 200 hydrogen refueling stations and 250,000 electric vehicle charges by 2025. The Energy Commission, through the ARFVTP, has been the state’s lead agency in deploying zero-emission vehicle infrastructure and is continuing in this role to implement the order.

To support these new goals the Governor’s draft budget provides the Energy Commission with an additional funding in Fiscal Year 2018-2019 that, if approved in the final budget, will be implemented through the ARFVTP. This includes $235 million specifically for AV charging and hydrogen refueling infrastructure, $25 million specifically for low-carbon fuel production, and $17.5 million for advanced freight and fleet projects. In addition to these funding changes,
we revised the layout of the Investment Plan to better reflect these new priorities.

This slide shows the layout of the Investment Plan, which is divided into chapters based on market area. The remainder of this presentation will follow this outline, as well.

The first category we’ll be discussing is electric vehicle charging infrastructure. And on this slide, we have the familiar graph developed by Veloz. This illustrates the progress the state and the nation have made with electric vehicle adoption. And for this slide, I’ve blocked off the past two years of progress, so what we’re looking at is where we were in January 2016 when we held the Advisory Committee meeting in Long Beach. At that point, cumulative California sales were at about 170,000 vehicles which are represented by the green line, and cumulative national sales were at about 400,000 vehicles which are represented by the red line.

Now, moving to present day, you can see the rapid progress we’ve made over the past two years. During this time, cumulative California sales have more than doubled to over 360,000 vehicles, and cumulative national sales have
nearly doubled to over 750,000 vehicles. And with this rapid increase of electric vehicles comes a corresponding increase in demand for a charging infrastructure. By 2025, California aims to have one-and-a-half [sic] zero-emission vehicles on the roads, and this goal increases to 5 million ZEVs by 2030.

As I mentioned earlier, Executive Order B-48-11 directs states agencies to ensure California has 250,000 EV chargers by 2025, including 10,000 fast chargers, to support the electric vehicles that will be on the road. Many of these chargers will be installed by private companies and utilities. However, the state government will also need to invest in this infrastructure to achieve this goal. For this, the Energy Commission will be maintaining its lead role in state-funded infrastructure deployment and expects to provide these investments through the ARFVTP.

Using the specialized modeling tools, our staff analyzed the expected number of chargers that will be installed through existing and planned investments by other programs and companies, as well as the number of chargers that
will be needed in 2025. What we’ve determined is that the combined efforts of government, utilities and private companies aren’t expected to result in enough chargers being installed under a business-as-usual scenario.

Our analysis shows that with current investment levels, California will have a shortfall of between 122,000 and 174,000 chargers in 2025. To make up for this shortfall, California will need an additional investment from all sources of between $1 billion and $3 billion over the next seven years.

The $134.5 million allocation we are proposing for Fiscal Year 2018-2019 will provide significant boost to charger deployment in California and help keep us on track to achieve the state’s goals. However, still more funding will be needed in the future to keep pace with electric vehicle deployment. We expect that this category will primarily fund infrastructure for light-duty vehicles, such as passenger cars and trucks, but may also fund infrastructure for medium- and heavy-duty vehicles.

The graph on this slide which was prepared by the Air Resources Board for their
annual Hydrogen Evaluation Report provides context for California’s hydrogen refueling station deployment efforts.

In this graph the solid vertical bars represent the estimates for the number of hydrogen vehicles which are expected to be on the road. The green horizontal bar represents the fueling capacity of the stations we’ve already funded, measured in the number of vehicles which can be supported. And the purple horizontal bar represents the station capacity from expected future investments under what was the business-as-usual scenario. With the funding we have been able to provide to date and the predicted future investments in a business-as-usual scenario, the Air Resources Board was projecting that the state would experience shortfalls in hydrogen refueling capacity in the early 2020s. This is also expected to impact vehicle deployment because the rate at which automakers can sell vehicles is dependent on the fueling station capacity and availability.

With this in mind for Fiscal Year 2018-2019, we are proposing a $92 million allocation for hydrogen refueling infrastructure, assuming
that California codes are amended to allow this. We expect that this amount of funding will support the construction of over 40 additional hydrogen stations which, when built, will achieve the goal of an initial network of 100 stations. Not only will this provide the state with sufficient fueling capacity into 2022, but it is also expected to allow automakers to increase the rate of vehicle deployment and help the state meet its zero-emission vehicle deployment goals. Some of this funding will likely also be used for operation and maintenance expenses of these initial stations to support this early stage business until there are enough fuel cell vehicles on the road for the stations to be profitable.

In this version of the Investment Plan we’ve combined the manufacturing and workforce training and development categories into a new single category with an $8.5 million proposed allocation. Based on the language in the draft budget, we expect that our manufacturing and workforce support for this coming fiscal year will be limited to infrastructure-related projects. While we expect that this funding will
be allocated in a manner similar to the previous separate allocations, combining these two categories into a single allocation will provide more flexibility to fund the most beneficial projects via dedicated manufacturing projects, combined workforce and manufacturing projects, or other infrastructure-related workforce needs. This category will fund projects that expand in-state manufacturing facilities for zero-emission vehicle infrastructure, as well as provide workforce development support for these and other types of zero-emission infrastructure-related projects. These types of projects will create jobs and provide an economic benefit for the state while indirectly supporting other ARFVTP categories. We also expect to pursue opportunities with this funding that specifically benefit low-income and disadvantaged communities, and this will provide a more equitable economic investment throughout the state, as well as further the equity goals described in Senate Bill 350 of 2015.

The advanced freight and fleet technologies category is also continuing to evolve. As in previous years, this category
still focuses on the needs of medium- and heavy-duty vehicles which are most commonly used for freight and in fleets. We define these as Class 3 through 8 vehicles with a gross vehicle weight of over 10,000 pounds. The projects funded under this category may focus on freight and fleet vehicles with advance technology powertrains, infrastructure to refuel these vehicles, and non-propulsion projects such as intelligent transportation systems.

We expect that the Energy Commission will continue to work with the California Ports Collaborative to help -- and to help -- I’m sorry, and help to implement the California Sustainable Freight Action Plan with funding from this category. This fiscal year the Air Resources Board will be providing upwards of $380 million for advanced technology vehicles under their clean transportation incentives. And these incentives cover up to the entire incremental cost of a zero-emission vehicle. The Energy Commission and the Air Resources Board are collaborating to ensure that our funding efforts in this area are complementary and avoid duplication. For the Energy Commission’s freight
and fleet vehicle projects, we are proposing a $17.5 million allocation.

Moving on to low-carbon fuel production and supply. We’re proposing a $25 million allocation for Fiscal Year 2018-2019. However, unlike the other categories the draft state budget is proposing that this money come from the Greenhouse Gas Reduction Fund. This category is expected to provide funding support for the production of non-petroleum diesel and gasoline substitutes, such as biodiesel and ethanol, as well as for renewable natural gas and, for the first time, renewable hydrogen. We expect that the category will have a continuing focus on a waste-based and renewable feedstocks, such as woody biomass, wastewater and municipal solid waste, as these tend to have the lowest carbon intensity of any fuel.

As in previous years the funds in this category are open to multiple fuel types and development stages, including pilot demonstration and commercial-scale projects. We are also expecting to fund renewable hydrogen production projects from this category. And the increase in funding to this category compared to last year...
is, at least in part, to support this new project type.

As we discussed in the previous workshop, one of the major changes to the 2018-2019 Investment Plan is that we’re not proposing additional funding for natural gas fueling infrastructure or vehicles. Right now, $2.4 million is available for natural gas vehicle infrastructure projects, and $9.7 million is available for new natural gas vehicle projects.

The state is continuing to provide funding support for natural gas vehicles from several sources. The Energy Commission’s Natural Gas Vehicle Incentive Project is still operating and is continuing to pay out incentives to reservation holders. In addition, in January the Energy Commission released a new funding solicitation that will provide up to $10 million in grants to California air districts to fund incentives for natural gas vehicles, and we’re currently reviewing proposals we received. And the Air Resources Board is providing incentives for natural gas vehicles with low-NOx engines through their Clean Truck and Bus Voucher Project.
This concludes the summary of the categories for this Investment Plan Update. Going forward, we will be seeking feedback on these allocations, the Investment Plan and the program in general from all sources. In order to incorporate any comments into the Lead Commissioner Report, we’re asking to receive them no later than Wednesday, March 21st. We prefer to receive comments through the Energy Commission’s e-commenting system, and there’s a link to that on this slide and in the workshop notice. We also accept comments via email and regular mail, and instructions for where to send these are also in the workshop notice.

We expect to release the Lead Commissioner Report of the Investment Plan in April and will likely be seeking approval for the final Commission report at the May 9th business meeting. The Energy Commission will also be hosting workshops this spring and summer to discuss plans for each funding allocation in the Investment Plan.

This slide shows a summary of all of the funding allocations we are proposing in this version of the Investment Plan. The Advisory
Committee discussion will begin momentarily, during which we ask for everyone’s input about these proposed funding allocations and categories. I can also answer any clarifying questions about this presentation now. However, please hold off on any questions or comments about specific fuel types, technologies or allocations until the discussion or the public comment period.

Thank you.

COMMISSIONER SCOTT: Thank you very much, Jacob.

I want to acknowledge that we have been joined by Bonnie Holmes-Gen from the American Lung Association. Good morning and welcome.

Eileen Tutt from Cal ETC, good morning and welcome.

And also, Ellen Greenberg from the California Department of Transportation, good morning and welcome.

And in our room in Sacramento, we also have Joel Espino from Greenlining, so good morning and welcome, Advisory Committee Members.

Let us now -- and just a reminder, if you’re a member of the public who would like to
make a comment, a member of the public here in the room, please fill out one of these blue cards. Be sure to get it to Patrick, who is to my left there waving at you. And that’s how we’ll know that you’d like to make a public comment.

And then let me open this up to our Advisory Committee Members here in the room. Does anyone have a clarifying question for Jacob on his presentation?

Yes, please, Bonnie.

COMMITTEE MEMBER HOLMES-GEN: Thanks, Jacob, for the excellent presentation.

I’m just wondering if you have or you can share any information about the distribution of the funding? I know that we have maps online, but we’ve had ongoing discussions about, for example, the San Joaquin Valley and trying to get more projects going in the valley. I just wondered if you have some comments about either past or looking forward, how we’re lining up funding to make sure that the hardest hit areas with pollution are getting some benefits here?

MR. ORENBERG: Thanks, Bonnie.

So in the Investment Plan in the
Executive Summary, and as well as in Chapter 2, there’s a series of tables and graphs which illustrate the distribution of funding throughout the state in major counties and in Northern and Southern California, as well as there are some charts which show how much funding goes to each specific fuel or technology type. And for the actual grant solicitations and projects, all of our grants solicitations are competitively awarded in some manner. So we award them to the, frankly, to the most competitive and most needy projects. And I believe some of those may incorporate criteria, like you’re discussing.

COMMISSIONER SCOTT: I happily opened right to the exact page. It’s on page 22 of the report. So if you’d like to flip to that page, it kind of gives you a nice breakdown of that. Yeah, Steve, please.

COMMITTEE MEMBER KAFFKA: Jacob, I’d like to ask a clarifying question about the funding source for biomass.

My understanding was that the Governor’s budget proposed a supplement for biomass and biofuels. This looks like, basically, a swap of funding sources. Could you clarify what exactly
the state budget proposes and how you’re -- what
your thinking was about that?

MR. ORENBERG: Sure, Steve.

So in the state budget, the draft state
budget, which may still change, there are a few
line items for the ARFVTP, or rather for the
Energy Commission for projects that will be
implemented through the ARFVTP.

The major line item is $235 million.

This comes from multiple funding sources,
including the normal ARFVTP allocation, the
balance of funds in the AB 118 fund, and funds
from the new Solar Homes Partnership. Now the
draft state budget specifically limits that $235
million to infrastructure for zero-emission
vehicles.

The other line items in the budget are
funding for low-carbon fuel production and
supply, and that is $25 million. And, yes, I
think calling that a swap between the ARFVTP
funds and Greenhouse Gas Reduction Funds is a
fair word to use. So we’re no longer funding --
well, for Fiscal Year 2018-2019, just this one
fiscal year, we are not funding low-carbon fuel
production and supply from the ARFVTP Fund. It
will be funded through the Greenhouse Gas Reduction Fund, if approved in that manner. Then the last amount is $17.5 for advanced freight and fleet projects, and that is from the ARFVTP Fund. Does that answer your question, Steve?

COMMITTEE MEMBER KAFFKA: Except for the part about the decision to call that a swap instead of a supplement. In other words, we had traditionally more or less spent around $20 million a year for that category from the ARFVTP Fund. If you were to add the $25 million, that would be $45 million. So instead, it seems -- I'm just wondering what the thinking was about that?

COMMISSIONER SCOTT: That -- excuse me. So where we were previously, if you look on our -- on page 23, actually, it shows the previously proposed funding allocations, and then the currently proposed funding allocations. And I do think swap is probably the right word. It was at $25 million. I think the calculus was to keep that at $25 million, but now the funding is coming rather than from the ARFVTP Fund, it's coming from the Cap and Trade Fund.

COMMITTEE MEMBER KAFFKA: So is that --
is that the recommendation of Staff or is that a consideration of the Board, the Energy Commission Board? Because it’s a significant kind of policy decision.

COMMISSIONER SCOTT: So -- and -- so, yes, this is our staff recommendation. That’s why we’re having our Advisory Committee meeting here, is to hear from everyone about what your best thoughts are on how you think we should allocate those dollars. So we’ll look forward, when we get to that component, to continue the discussion there.

But, yeah, this kind of shows the staff’s best thinking on how to put this together.

COMMITTEE MEMBER KAFFKA: Okay.

COMMISSIONER SCOTT: Other questions?
Other clarifying questions?

Yes, Ellen, please.

COMMITTEE MEMBER GREENBERG: (Off mike.)

Thank you. (Indiscernible.)

COMMISSIONER SCOTT: You need to turn your mike on.

COMMITTEE MEMBER GREENBERG: Thank you.

So just following up on this point on the recommendation that funding be through the GGRF,
so what is the pathway for that to get approved
and how does the timing relate to the timing of
the Commission’s action on the other
recommendations?

COMMISSIONER SCOTT: Right. So all of
this is proposed in the Governor’s budget, which
we support. And the Governor’s budget needs to
make its way through the legislature in its
normal legislative process. Part of that is the
greenhouse gas -- the allocations of the
Greenhouse Gas Reduction Funds. So that, I
think, will be something for all of us to keep
our eyes on, but it’s just the normal Governor’s
budget process that this will go through. Thank
you. So as Jacob indicated, if there are
changes, we may need to update the report to
reflect those.

Other clarifying questions?

Let me check whether in Sacramento or on
the phone, our Advisory Committee Members, if you
have clarifying questions for Jacob, please go
ahead.

Chris, do you have one? Yes, please go
ahead, Chris.

COMMITTEE MEMBER SHIMODA: I just wanted
to make sure I didn’t hear this incorrectly.

So did you say on the electric vehicle charging infrastructure allocation which traditionally supports light-duty, that there would be eligibility for heavy-duty projects if they met the other requirements, public access and things of that nature?

MR. ORENBERG: Thanks, Chris. Yes. And in the electric vehicle charging infrastructure category, we are planning to use some of that funding for medium- and heavy-duty vehicles. And they may not actually be publicly accessible, given the special needs of these vehicles for security or safety reasons.

COMMITTEE MEMBER SHIMODA: And just one more clarifying point.

We have a lot of sort of specialized equipment that may not be trucks themselves, but refrigerated trailers, for example. Do you think that that would be an eligible category, so long as it qualifies as a mobile source?

MR. ORENBERG: For that very specific example, I guess historically, that has not been an eligible project category. Going forward, I would encourage you to submit any comments to the
workshops that will be held to guide the
development of this funding and the grants
solicitations. But for that specific example,
that doesn’t -- it’s inconsistent with what we’ve
historically funded in this category and for
electric vehicle charging infrastructure.

COMMISSIONER SCOTT: And I’ll add to
that, though. We will have that workshop on May
14th --

COMMITTEE MEMBER SHIMODA: Yeah.

COMMISSIONER SCOTT: -- where we’re
thinking through how to spend the $134.5 million
that’s allocated for electric charging
infrastructure. So this is -- that would be a
great place to have the discussion, to bring the
data, bring the information for us to -- so that
we can have it in our -- in our hat for
consideration.

Other clarifying questions here in the
room? Okay.

Let me turn back again then to our folks
on the -- either in Sacramento or on the WebEx
from the Advisory Committee. If you have
clarifying questions for Jacob, please feel free
to weigh in.
Okay, I’m going to take the silence as meaning they don’t have any clarifying questions for you, so -- but if you do, please feel free to break in. Happy to answer questions.

Let’s now turn to the discussion.

Do you want to kick us off, Jacob?

MR. ORENBERG: Oh, yes. One second.

So a very quick announcement. We’re going to now begin the Advisory Committee discussion on electric vehicle charging infrastructure, after which we will have a public comment period specifically for that technology type. If you would like to provide public comment, please pick up a blue card and provide it to Patrick, who is helping to monitor by the WebEx conference.

Our four Advisory Committee Members participating remotely at the Energy Commission or other locations, your microphones or your telephones should be active, and you can participate at will.

For everyone else participating with WebEx, please use the raised hand feature if you would like to speak. We will then call your name and unmute you during the public comment period.
COMMISSIONER SCOTT: So Advisory Committee, thoughts on the zero-emission vehicle infrastructure, electric vehicle charging infrastructure allocation?

Yes, please, Matthew.

COMMITTEE MEMBER BARTH: So one question I had, so, obviously, lots of chargers make sense in deploying that in an intelligent way. But my question is more dealing with the grid stability and the fragility of the grid.

So is there the intention to use some of that money for things like energy -- stationary energy storage, as well as microgrids and other things that could allow for, you know, more and better distribution of chargers across the state?

COMMISSIONER SCOTT: Um-hmm. We certainly want to have a smart deployment of the charging infrastructure across the state. We want to make sure -- I mean, there’s a few component in this space, of course. So with the Volkswagen settlement, with the work that the Public Utilities Commission is doing to roll out infrastructure, the NRG settlement, right, there’s a lot of movement in this space. We want to make sure that we’re all coordinating well.
together and accelerating expansion of the network versus sort of, oh, let’s fight over who gets to charge up South Coast, for example; right? So we will be working -- we already are working together. And it is a very informal partnership, but we’re working together on that.

We do have some vehicle grid integration components that we may include as part of the charging infrastructure on the microgrid, sort of stationary storage. That would not come through this program. That might come through our EPIC Program, though, which invests in kind of looking at the grid and grid stability.

So hopefully that answers your question. And it’s something we’re very mindful of, and the PUC is, as well. But you need about -- my understanding is you need 3 to 4 million vehicles, at least, before they really have to start worrying about too much impact on the grid, but the utilities are already thinking this through.

Yes, Steve.

COMMITTEE MEMBER KAFFFKA: I don’t know very much about the EV system, but I was struck, you mentioned that, I think the goal is like
10,000 charging stations in this year’s allocation, and less -- is it less than 1,000 would be fast chargers?

And so the question I would have is regular charges, I think, take several hours to recharge batteries. Fast chargers take maybe just an hour, but I’m not quite sure about that.

So what’s the thinking about the proportion between the fast and slow chargers? Because most people right now take five minutes to refuel their cars, and so that almost represents a very significant behavioral change. So I’m just curious about the thinking that -- about how that might come about?

MR. ORENBERG: So, Steve, I think I missed the numbers you were quoting, although I will point to the numbers in the Governor’s executive order which called for 250,000 EV chargers by 2025, including 10,000 fast chargers. So we haven’t specified in the Investment Plan how much of the funding will be going to fast chargers and how much will be going to regular chargers. Our EV team is currently doing some in-depth research into figuring out what the optimal deployment of fast chargers and Level 2s
might be. And items such as these will be
discussed as the specific workshops, the first of
which we’re holding on May 14th, to figure out
how much we might want to give to each area and
what the requirements might be.

Also, regarding the fueling time, you
know, each -- the fast chargers in Level 2s have
very different purposes. And EVs have very
different usage habits than -- for fueling than
gasoline cars. You know, the fast chargers are,
of course, supposed to be somewhat analogous to a
gasoline pump. You can get to about 50 percent
capacity in 20 or 30 minutes, whereas Levels 2s
are meant for when you’re parked overnight at
your home or your multiunit apartment complex, or
at work where you have four, six, eight or plus
hours to charge and you can up to a full tank,
just while the car is sitting there.

COMMISSIONER SCOTT:  Eileen?
Oh, John, did you want to weigh in?
MR. KATO:  No, no. It’s okay.
COMMISSIONER SCOTT:  Okay.
MR. KATO:  I was trying to get Tyson’s --
I was going to try to queue Tyson of the broader
holistic collaboration efforts that we are doing
with other agencies to ensure that how we deploy and what degree and the number of them are, it’s well discussed and coordinated. I was trying to queue Tyson up to kind of talk of that level of coordination.

COMMISSIONER SCOTT: Great, Tyson, you want to weigh on -- weight in on that, and then we’ll go to Eileen?

MR. ECKERLE: Yes. I think that there’s a lot of stuff happening in this space.

And I think, you know, first to all, I want to commend the Energy Commission for the rapid turnaround. This is a big change in a short amount of time. And Jacob, you’ve done, you know, great work, so -- and the whole Energy Commission staff.

But I think in terms of the holistic look, so when the Governor set those targets, it was based a lot on the analysis that’s done in the Energy Commission using this EVI-Pro Tool that we developed -- that they developed with the Natural Renewable Energy Lab. And so really, that was kind of a ground-up model, looking at usage behavior.

And so when I think when you look at
plug-in charging, it is a behavioral change for a lot of people. But Level 2 chargers, for example, are an asset to the grid, kind of getting back to that question there; right? For that slow recharging it’s also, usually, a little bit more affordable for the grid and for the consumer, in most cases; right? Whereas, DC fast charging is kind of more a convenience charge; you need it right then and there.

And so the balance we’re trying to strike is how do you just get the electrons to as many places as possible where those cars are going to be? And so the workplace charging, for example, is a huge need, especially as we look at solar production during the day and the duck curve, and all that type of stuff, so I think that’s part of the thing.

I think on the battery and the storage thing, you know, I think we’re going to be learning a lot through time in terms of how to manage that and mitigate and like managing on a building load, for example.

COMMITTEE MEMBER BARTH: Yeah. And if I could add on, you know, it’s a significant deal when you talk about demand charges; right?
MR. ECKERLE: Yeah.

COMMITTEE MEMBER BARTH: I mean, kilowatt hours is one thing. But the demand charge, when you have the Level 3 spike, it’s huge and it really effects, you know, the utility rate, and then everything else that the infrastructure has to cover.

MR. ECKERLE: Yeah.

COMMISSIONER SCOTT: I’ll note that that’s a great point, and especially when we’re looking at medium-duty and heavy-duty charging up and having fleets that are wanting to charge at the same time.

So I didn’t mean to completely preclude storage from that. But I think what we would be looking at are -- you know, there’s the largest mobile deployment of solar powered charges is in Fresno County, so there’s one in each of 13 of the 15 cities. And it’s got a solar panel. It charges a battery. And then when you plug in, you’re plugged into the battery; right?

And so those types of solutions are certainly things that we would be looking at as we’re rolling out the infrastructure.

Eileen?
COMMITTEE MEMBER TUTT: Thank you, Commissioner Scott.

I just want to commend the staff and the Commissioner, as well, for turning this around so fast. I mean, this is pretty impressive. And, of course, we’re quite pleased to see adequate funding for infrastructure in this plan and the movement of money, so that there is sufficient funding for adequate funding.

I just want to point out that, just to Steve’s question or comment, most people, when you drive an electric car, if you drive an electric car, and I think probably a lot of us have, it really doesn’t take any time to charge because you plug in, it takes you five seconds to plug in, and then you -- you’re charging, your car is charging itself while you’re working or doing what you would have done anyway in a location you would have been anyway. It’s a very different kind of experience. And I’ll just tell you that I think most people embrace it in general. So it’s a change, definitely, but it’s a change for the better. It’s one of the positive things about electric vehicles.

I’m glad to hear this, that we have
updated the amount of chargers needed as a result of the 5 million goal. And I just want to say that the utilities are really looking at how they can accommodate all these vehicles, including the medium- and heavy-duty space. And they’re coordinating very closely with each other and with the regulators, so there’s a lot of coordination going on external to government and external to government with government. So I just want to ensure everybody that not only are the utilities engaging and committed to this effort and this level of investment, but they’re really working very closely with government to make sure that the grid stays safe, reliable and affordable.

COMMISSIONER SCOTT: Bonnie?

COMMITTEE MEMBER HOLMES-GEN: Thanks. I have a couple of batches of questions, but I’ll just focus on one batch.

First of all, the Lung Association really strongly supports the allocation of this funding for electric vehicle infrastructure. And we’re very excited to see this huge plug of new money, new resources and excitement that we’re putting into electric vehicle rollout. So this is
really -- this is a wonderful day. I’m really
happy to be here.

I did -- and we’ve talked a little bit
about the intergovernmental-interagency
coordination. I just wanted to raise the point,
I know that we’ve discussed before, we all know
the data that not enough people in California or
across the country know about electric vehicles,
know about the charging stations that are
available, I mean, surprisingly small numbers of
people are aware. And so I keep trying to think
about how is not just this effort but all these
efforts, and I like the way you’ve laid out all
the funding pots and the coordination that’s
going on, how are we addressing that in bringing
broader public awareness of this rollout of
infrastructure?

And I guess that brings up local
government coordination, broader awareness
campaigns, and the issue of pooling and car
sharing. And I see that that, you’ve addressed.
You have a paragraph about mobility services, but
we’re all looking at the new Three Revolutions
book and thinking more about this.

And I also know that there’s funding
through VW on consumer education and awareness,
and that hasn’t really rolled out. I mean, it’s
rolling out, but I don’t think we’ve seen some of
those campaigns.

But these all seem to be critical
elements of making sure that the public awareness
is growing and the local leadership and
coordination with the state is growing at the
same time the funds are rolling out.

So I wondered if any of you could talk
about this a little bit?

COMMISSIONER SCOTT: Sure. Sure.
COMMITTEE MEMBER GREENBERG: Thank you.
COMMISSIONER SCOTT: I think all of us
around the -- at least all of our state agencies
here around the table are very mindful of the
awareness and wanting to raise awareness, help
with education and outreach. And so we do
things, like the tenth anniversary celebration
that we had for the ARFVTP last week. We are
working very hard to go like the ribbon cuttings
and the groundbreakings and really try and call
attention to, not just on the charging
infrastructure, but I think the good work across
the board that the state is doing to move this
forward.

We’re also trying to be very creative in how we get the dollars out. So, for example, we have recently -- the Energy Commission has recently done a solicitation that’s a Charging Challenge. And we asked communities to sort of define themselves, and then define for themselves, what is charging infrastructure rollout look like in my community, and put together a plan for us. And the best plans will win additional funds to do more detailed planning. And then that set of folks who run the funds to do the more detailed planning, in a like a year or so will come back and compete to get dollars to actually implement the infrastructure plan that they put together; right?

So this is a way that we’re trying to capture the local imagination, capture folks how might not normally be thinking about this, but it’s like, oh, this would be great, we can have it at our church, we can have it a school, we can have it a local library, at a mom and business, and really think through, what does charging look like for you and your community, and then we’re going to help you get the dollars out there to
help you put that infrastructure in place. So I think that’s -- we’re trying to be creative in the way that we roll the dollars out so it’s not just a, you know, come to the Commission for a voucher and we’ll hand that to you. So we’re trying to raise awareness in that way, as well.

And then I think there are many folks in the room who have been part of an effort called Veloz. So we have the -- which is separate from what we’re talking about here today. But the Plug-In Electric Vehicle Collaborative has transitioned itself into an organization called Veloz. And the entire idea of Veloz is to develop an education and outreach campaign so that more Californians will understand about the transition that we’re trying to make, but really, just more basically, get excited about electric vehicles and to know that they’re there. And if you’re getting ready to buy a new car, this is something that you may want to consider; right? And we’re just really working through that group to try and raise awareness.

So those are a few things that are going on. And I don’t know, you know, Analisa or
Tyson, if there’s anything you want to weigh in here? But those are some of the things that the Energy Commission is trying to do to really help raise awareness about this category. You know, another idea that I have, so I’ll just throw it out there for the staff, is we’re going to have a little bit of dollars for school buses, which is also not part of this component. But as we roll out the charging for that, one thing that could be really fun is to do an art contest at the school. And whoever wins the art contest, they get to the wrap the charger in that piece of art, right, and you can come out and celebrate it. The kids get to celebrate it. The parents get to celebrate it.

How do you call attention -- how are we creative in calling attention to these types of things? And so we’re thinking very much about that, as well. And feel free to weigh in or feel -- you don’t have to if you don’t want to.

COMMITTEE MEMBER BEVAN: Completely agree about the importance of raising awareness. And it’s a topic that I keep bringing up as trying to find ways to spread the word.

In addition to the ideas and programs
that Janea was just talking about, the Electrify America Investment Plan, the first 30-month investment plan has funds allocated for public awareness and outreach in a brand-neutral, non-Volkswagen-featuring format that will be rolled out across the country, but also featured in California, that raises awareness, generates excitement, and also showcases infrastructure.

So we’re hoping that that’s a piece of it, but we absolutely recognize that that’s only a small portion of what really needs to be done to raise awareness.

COMMITTEE MEMBER HOLMES-GEN: Thank you, go ahead. I just want to follow up in one second.

MR. ECKERLE: You can follow up. Go ahead.

COMMITTEE MEMBER HOLMES-GEN: Well, no. I just wanted to say that, you know, these are all great ideas, and I look forward to hearing more things that are happening.

You know, the Lung Association, other health organizations, we’re doing it as much as we can and trying to envision, you know, creative and new ways that we can help in getting the word
out, too. So as we’re looking at these creative local challenges and community programs, we’d love to find ways that we can work together with you on those.

MR. ECKERLE: I think I would just add, I agree completely with Commissioner Scott and Analisa, but that -- what I would add is that, you know, in terms of coordination going forward -- wait, I completely lost my train of thought right there. Hold on.

COMMITTEE MEMBER HOLMES-GEN: You’ll get it back.

MR. ECKERLE: It’s going to come back.


MR. ECKERLE: Local outreach.

COMMITTEE MEMBER HOLMES-GEN: Okay.

Local outreach.

MR. ECKERLE: So, yeah, so in terms of local -- oh, the executive order, that’s right.

COMMITTEE MEMBER HOLMES-GEN: Executive order.

MR. ECKERLE: Yeah. So a lot of the thinking behind the executive order was to kind
of create those guideposts that we can measure our progress against. And so I think what we know at the state is that we don’t have enough resource within the state just to build the whole network out. It’s going to need collaboration and coordination of like the South Coast Air Quality Management District, for example, with the private sector, with the IOUs and POUS.

And so a big part of this effort, you know, through this Investment Plan, but also the executive order, is trying to get that, you know, kind of that shared vision together to help build out the infrastructure. And so I think, hopefully, it’s a forcing function for collaboration, but we still have a lot of work to do to reach out into those, you know, local governments and stuff. A lot of great ideas that the Commission has to do it, but I think that’s our task between now and the end of this administration and beyond, is bringing more and more parties into this ecosystem.

Thanks for your patience with my mind.

COMMISSIONER SCOTT: Go ahead.

COMMITTEE MEMBER BEVAN: If I could add, I’m sitting here thinking about what you were
just talking about with the local infrastructure planning process. And I think that’s a really positive way to approach public awareness, as well.

The recognition that implementation of infrastructure is not a one-size-fits-all, the same is true for public outreach and awareness. There can be common tools that come across from organizations, like Veloz or Electrify America and others, but the implementation of those at a local level will need to be matched to the specific community.

And I think all of us kind of choose a vehicle, partly on the research we do on the internet and what we see in ads, but a lot of it, too, is what we see parked in the parking lot next to use at work, what your coworkers drive, what your uncle drives, what your best friend drives. You find out about new technologies by word of mouth. And the outreach that is tailored to a community that provides opportunities to become familiar with the technology gives you access to people who have real-world experience with driving new technology, I think is key to growing this market.
And so coupling an infrastructure plan which meets a community’s needs with an outreach plan, which also provides opportunities for one-on-one exposure to electric vehicles, fuel cell vehicles, I think will be key to success.

COMMISSIONER SCOTT: I have Peter, and then Brian. Then we’ll turn to Ralph on the phone, followed by Matthew, and then Eileen.

So, Peter, please go ahead.

COMMITTEE MEMBER COOPER: Yeah. So I just want to remind the Advisors that, you know, I think workforce development and job training is a good way to bridge both the infrastructure needs, the long-term viability of increasing the number of charging stations and vehicles, as well as the community outreach and education. Because that way the workforce can see that this is a viable career pathway. And if you’re looking at things like, whether it’s an electrician that’s needed for the infrastructure for the new charging stations, or you’re looking at community planning that’s needed by local government to figure out exactly where they’re going to put the charging stations, those are all opportunities for both employers and the workforce and youth to
understand that this is an option as a way to go in the future.

So when I was looking at the plan, I was a little bit concerned, and I’ll get to my comments about that later, that there’s a huge amount of money going into the installation of the charging stations, which is great. But I want to make sure that there’s also supporting job training that’s needed to make that happen.

COMMISSIONER SCOTT: Brian, and then Ralph.

COMMITTEE MEMBER GOLDSTEIN: Well, thank you for the opportunity to participate. I echo, I think, the common sentiment in here, that it’s amazing how quickly this was turned around and the impact that this can have so quickly. It’s just, it’s very exciting.

I had one question and a couple of comments.

So on the education and outreach topic, are there specific areas of this budget that can potentially include education and outreach? I don’t think it’s actually spelled out under the individual categories, but is that something that potentially could qualify under this budget?
And then I have a couple of comments to make after that, please.

COMMISSIONER SCOTT: Sure. So the Energy Commission does not typically invest in education and outreach. Mostly the direction from the legislature is to see this going into the -- either into the vehicle, into the infrastructure, into standing up the foundation for these things, so that’s why you don’t see a ton of the -- or any of the money directed towards education and outreach. I think we all recognize very much how important that is.

And so we try to do that, again, in the ways that I mentioned when -- to Bonnie, right, which is to try to do the ribbon cuttings, to do the groundbreakings, to be creative in how we roll the dollars out. That’s usually our best way to get the word out about the transition that’s taking place. So you’ll see that most of this -- or all of these dollars are really going to go into the infrastructure itself.

COMMITTEE MEMBER GOLDSTEIN: Okay. So the comments I’d like to make, and I’d like to echo some of the sentiment already that, you know, this Committee and the overall program has
really been inclusive of all fuel types. And it’s really kind of one of the characteristics of the program over time. And I think we are keeping that in mind moving forward through education and outreach campaigns.

But, you know, as we promote electric vehicles, I want to make sure everyone realizes that hydrogen vehicles are electric vehicles. I know everyone in this room does. But as part of our outreach messaging moving forward, I think there’s, you know, in sheer numbers, less advocacy on that topic. But I would hope that as a community, we can all keep that in mind and be inclusive of all electrification options and messaging there.

But another point I’d like to make is that I think a lot of our education outreach, and understandably so, is directed at consumers. But I think we should conceptualize as a community how to include metrics about the impacts that this program has had, such as job creation, tax revenue generation, GHG reductions, health impacts in terms of, you know, direct impacts on health in certain communities, and then the economic impacts of, you know, cleaner air and so
forth that has directly resulted from this program.

I think in doing that we’ll ensure that people realize and can kind of, you know, return credit back to the policymakers that are making these decisions and say, hey, these are really impacting our communities. They’re creating jobs. They’re, you know, contributing to workforce training. They’re making for healthier communities. And I think in turn, that will then lead the policymakers to want to encourage more of these programs and more of this funding.

So while a lot of our E and O is encouraging drivers to potentially buy the vehicles, I think we need to kind of bring some of the credit back to the policymakers and agencies that have made this happen so that we can then encourage, you know, more good work like this in the future.

Thank you.

COMMISSIONER SCOTT: I forgot if I had Ralph and then Matthew, or Matthew and then Ralph.

COMMITTEE MEMBER BARTH: I think Ralph, yeah.
COMMISSIONER SCOTT: Okay. So, Ralph, please go ahead.

COMMITTEE MEMBER KNIGHT: Thank you, Commissioner. I just wanted to go along with your comments about the possibility of using the schools to be able to do RAPs and things like that on the chargers.

The District here in Napa has completed ten school sites now with solar energy to take care of the plants’ operation needs. And at those different sites, we have installed two chargers at each site which are totally free for public use. Staff and students both have been using the chargers, doing very, very well.

And also with the installation of the solar systems, they’re also putting tools in there for the instructors to be able to use in class time for the education of the kids on what the solar is really doing to operate that school site. We have one high school that is operating the total high school on less than $100 per year at a school site towards the PG&E bill. I mean, that’s just monumental on how it can really help.

But I think, you know, currently, right now, we’ve got 20 chargers sitting out there at
different school sites that are open to the public or staff to be able to use, so it’s made a big different here in Napa for sure.

COMMISSIONER SCOTT: It sounds great. We might have to follow up and come check those out. That’s very exciting.

I have Matthew, and then Eileen.

COMMITTEE MEMBER BARTH: Yeah. I don’t know if this falls directly in the scope of the conversation, but I wanted to bring up the issue of multiple charge networks. So we’re going to deploy a lot of these EV chargers and things like that. And as you know, there’s multiple charge networks. There’s EVgo, ChargePoint, Blink, all these different things. I drive and EV and I carry around multiple apps, multiple, you know, cards and things like that.

In terms of deployment, are we just going to let the market decide how that gets allocated, or is there a plan to allocate it in a certain way, or what’s the process in terms of how that would work?

COMMISSIONER SCOTT: In terms of --

COMMITTEE MEMBER BARTH: In terms of how things -- you know, okay, you’re going to deploy
hundreds of these in a particular community, do you just simply say, okay, the different charging network companies would big for those different things or --

COMMISSIONER SCOTT: Yeah. So I think one of the things that we will talk about in our workshop that will be on May 14th is what that should look like; right? How do we design -- the staff will already have great ideas about how to design the solicitations, but to get feedback from people about what would be the most useful thing for us to be deploying the dollars into? Do we want to -- I mean, it could be all a voucher program. It could be all competitive solicitations. It could be all sort of the community outreach kind of Charging Challenge, like I described. It could be a combination of those things.

So we'll really be wanting to hear from you all about what you think are kind of the best ways for us to creatively deploy this money to accelerate the uptake of the -- or accelerate the deployment of the infrastructure.

So we'll be -- so hopefully that answers the question. I think there's more details that
we need to think about. And I think some of the research questions, also, are there key pieces of data that we would like people to report back to the Energy Commission as a condition of the funding to make sure that we have the data and information we need to continue to be smarter, to continue to learn and, you know, update how we deploy the infrastructure.

So I think we’ll be thinking about that. Well, I know the staff is already thinking about it a lot. I’m already thinking about it a lot, as well. But we’ll have the discussion about how to do that, I think, in that workshop for how to put together the solicitations.

COMMITTEE MEMBER BARTH: Thank you.
COMMISSIONER SCOTT: You bet.
I have Eileen, and then Irene.
COMMITTEE MEMBER TUTT: Thank you, Commissioner Scott.
I just wanted to point out that the market education and outreach is particularly important in disadvantaged communities. They are -- it’s -- it takes them some education, and I know Analisa can tell that you CARB’s learned this, that is you want to implement, you know,
programs in disadvantaged communities, you have to invest in education and outreach in those communities.

And I can also, in my current efforts working with these communities, and I don’t like the term disadvantaged communities, I’ll just say that up front, it’s hard for me even to say it, but in my experience working with these communities, it does take quite a bit of effort just to let people know that the money is available. And they have no idea how to access it. And in all honestly, writing a proposal for the Energy Commission can cost quite a bit.

And so we need to think about whether or not some of this money, and I think I’m going to call on this Advisory Committee to help in talking to the legislature about allowing some of these funds to be used for education and outreach, I would say broadly it’s important, but very specifically in disadvantaged communities. You won’t get this program money into those communities without some investment in education and outreach.

And I know Veloz, I learned yesterday, and I’m really glad about it, is planning on
doing quite a bit of outreach that benefits these communities. So I think that would be a great way to help us get word out and help these communities get access to this funding.

COMMISSIONER SCOTT: Let me see, John, if you want to weigh in a little bit about our Cal EVIP and the initial deployment in Fresno, and just kind of trying to address exactly what Eileen has just mentioned.

MR. KATO: Yes. So your point on the ability for rapid deployment and reaching out to targeted communities and the aspect of simplicity, so we are trying with a program called Cal EVIP. And we’ve having an initial rollout, kind of a test rollout, so to speak, targeting at the City of Fresno. And so we’re working in partnership with the CEC. And what we’re doing is developing a website, a hand-raising kind of tool eventually, kind of that simplistic avenue with suggestions from the Energy Commission on our original recommendations of site placement, but also feedback from the actual local community of where they would like to have it placed.

So we’re trying to develop that interface
and ease of use to get the dollars to locations where the community sees that there’s a need, so that’s kind of in a nutshell.

COMMISSIONER SCOTT: Yeah. And this is -- it’s much more simple. It’s not a competitive solicitation to get chargers for Fresno. It is, if you meet these key criteria and put in a charger, you can come back and just get the voucher for that. So we are looking at ways to make this much more simple, as well. And I think we need a combination of both.

I’ll look very much forward to the outcomes of the workshop on May 14th and follow-up workshops because I do think we need a little bit of a combination of both. When we’re trying to deploy infrastructure to fill in the West Coast Electric Highway on I-5, that’s probably going to need to be a competitive solicitation, whereas some of these things, like within Fresno and other cities around the state, being able to just put your charger in as long as it meets these requirements and then come back to get your voucher to cover that, I think we’re going to need a combination of both of those things and other creative ideas to really move the
I have, let’s see, Irene, and then Bonnie.

COMMITTEE MEMBER GUTIERREZ: Hi. So I appreciate the work that staff has done on this revised report. And I really appreciate the additional funding going to electric vehicle charging infrastructure.

I guess echoing thoughts from some of the other Committee Members, I think one of the pieces that’s really important in thinking about getting 5 million electric vehicles on the road is thinking how to reach more communities. And a piece of that that’s really important, I think, is thinking about how to get infrastructure into multifamily dwellings and other places that people who rent and who might not have sort of an easy home plug-in site.

So I’m curious what thinking has been done around that at the Commission and thinking about ways to reach multifamily and folks who might not have sort of easy access to charging stations otherwise?

COMMISSIONER SCOTT: So I think -- this is Janea Scott.
I think some of that is going through our Cal EVIP Program and the outreach that goes there, trying to make this much more simple. If you want a charger, it needs to meet these few requirements, and then come in and get your voucher for it.

I think that we are also thinking through the Charging Challenge. I will hope -- I haven’t seen the proposals -- we got a ton of proposals, though, is my understanding -- that these include multifamily buildings in the communities. I would hope that the community doesn’t just have it like the library, but has it in multifamily buildings.

I think when you include the DC fast charging, it would be really interesting to see if there are some ideas about DC fast charging plazas where people would be able to go and charge up, so it would be kind of more like your gasoline model or your hydrogen refueling model where you go to a central place, are able to fill up quickly and then keep going.

So I’m excited to see what some of those solutions look like. There are some great curbside charging solutions that we’re hearing
about from LADWP and Burbank. And so taking some of that, and also working with the multifamily buildings, to get just charging infrastructure in places, at workplaces where people are able to -- even if you don’t have access at home, hopefully there are multiple other places where you do have easy access to charging, and also trying to get more of the charging at the multifamily buildings.

And I think we’ll be thinking -- I don’t think, I know we’ll be thinking about that in much more detail as we go through that May 14th workshop that kind of looks at how to design the solicitation to address exactly those concerns.

I have Bonnie, and then John Shears.

COMMITTEE MEMBER HOLMES-GEN: Thanks. Whoops, I think I’m on. Thanks, Commissioner Scott.

Just really wanted to second all this discussion around education and outreach, especially in disadvantaged communities. And I really appreciate the ideas that we’re hearing. And I think part of it is I’m just, I’m wondering, you know, number one, do you think, Commissioner Scott, that there -- I mean, there
has been in the past some funding directed toward education and outreach, specifically for local government engagement, but do you think that there could be or should be a specific allocation going forward, or do you think that it’s better to integrate it? It sounds like you’re always looking at ways you can integrate into some of the existing efforts. I’m just kind of curious if -- how you see best meeting that need from the Energy Commission perspective?

And I’m also wondering, we talked briefly about car sharing and ridesharing services, where would that discussion be happening, like on how to better integrate the -- those emerging activities with the infrastructure planning that’s going on? I’m just wondering, where would that be happening? Because that does seem like a need that’s fairly immediate.

COMMISSIONER SCOTT: Yeah. So I think that for education and outreach, the last time we checked in the with legislature, and admittedly, that’s been a little while, they were not a fan of having these dollars go towards that. So we -- you know, Energy Commission is a legislative body. We take legislative direction.
And that’s why you have not seen dollars going into this space.

I think that we all recognize how important it is to raise awareness about these options for consumers. So if the legislature were to indicate that they’d like to see that, we would be delighted to do it, I think. But that’s kind of the reason you haven’t seen the dollars in this program kind of going towards that. And I think that this was a feeling maybe from a while ago that, you know, if it’s the OEM or the fuel provider, they can advertise these things themselves.

I think when we think about how fast we want to make this transition, 2030 is 12 years from now, it’s just not very far -- it’s not even a whole 12 years from now, right, it’s 11 and some -- that it may make sense for everyone to work together and just move as fast as we can in this space.

So that may not be the most satisfactory answer, but I feel like the -- previously, the legislature was not a big fan of seeing dollars go that way, which is why you haven’t seen them spent in that way. But if they were to do so,
again, as I said, we’d be delighted to take that direction.

I think for the e-mobility, we have a current -- no, no, no, the solicitation is closed. And I think we’re currently reviewing the proposals that have come in on e-mobility. Some of them have gone out already, which is really exciting. We’ve got like the Bolt to College Program that CALSTART is helping us put together. And it’s really just kind of these places where it’s like the last mile, or you can’t get to transit which means you can’t get to school, so instead you put in these shared rides services that get people from where they -- oops -- from where they are to where they need to be.

The budget description of these dollars does talk about e-mobility and e-mobility services, so we’ll need to think about what portion of that could go to something like that versus just straight up rolling out the infrastructure. And I think that staff is thinking about that.

And I don’t mean to keep referring us back to the May 14th workshop, but that’s the one
where we’re really going to kind of get into the
details and dig into. Today is kind of the
broader allocations and have we gotten the
broader allocations right? The 14th will be,
okay, now that we’ve got the allocations, how do
we spend them?

So hopefully, that helps answer. Okay.

I have John Shears, and then Ellen.

COMMITTEE MEMBER SHEARS: Okay. Just
testing the technology here. Can people hear me?

COMMISSIONER SCOTT: Yes, we can.

COMMITTEE MEMBER SHEARS: Okay. Great.

Good morning everyone. Sorry I joined late. The
vagaries of finding out where it was I supposed
to be able to hook up with everyone, and lack of
parking.

So thanks again to the Energy Commission
and staff for another great Investment Plan
Update, especially given the last-minute changes
that arose as a result of the executive order.

So I want to thank the Commission and staff
again.

COMMISSIONER SCOTT: John, you’re fading
out just a little bit. Are you able to get
closer to the mike that you’re speaking into?
COMMITTEE MEMBER SHEARS: Yeah. I just,
I turned my head a little bit.

COMMISSIONER SCOTT: Okay.

COMMITTEE MEMBER SHEARS: That must have
been what happened.

So, and I’m not sure if this has been
covered, but I just want to express appreciation
for the fact that -- both for the EV and the
hydrogen fuel cell side, that there’s a tip of
the hat and an acknowledgment about, you know,
coming developments in the medium- and heavy-duty
space, so just in terms of acknowledging the
technology prospects going forward.

I want to also, you know, echo Peter
Cooper’s concerns. And I want to propose that,
in fact, I’ve been thinking for the past little
while that it actually might be time to work
together with, you know, Peter and likeminded
organizations in terms of developing a strategic
plan, just so everyone has a clearer vision of
how these monies would, you know, go through the
employment training system. Just, you know,
because I look at this and all of the other
related programs Analisa mentioned earlier, I
think that was Analisa’s voice that I heard, you
know, this is a great program for economic justice and economic development, although I still think there are implementation issues that need to be addressed.

And, you know, I’ve also -- again, thanks to Eileen, too, about raising the capacity issues, which is something that I’ve raised both here at the Energy Commission and over at CARB in terms of getting the money sort of to the grassroots in a lot of these challenged communities. But I would like to also highlight the fact that, you know, as Eileen mentioned, you know, there are the capacity issues of being able to pull together staff that have experience, you know, to be able to put together a proposal.

But really in a lot of these communities, it’s even a step beyond that, which is the capacity to develop the capacity. So there’s a need to develop seed -- a seeding system to -- which, you know, can be linked as part of the outreach and public education, but to develop, identify, cultivate, you know, community organizers around these issues so that those communities can start developing their own ability to identify what opportunities they need.
to pursue, and how to identify consultants and that, that can help them put together the proposals.

Vis a vis, the last solicitation, GFO-16 -- or 17-604, I think, which might have been the one Commissioner Scott was mentioning, I'm just curious as to what extent there are a lot of groups out there that, you know, made a run at putting together a proposal, given that it was scheduled over several holiday periods, but didn't -- couldn't get, you know, to the post to submit their proposals? And I have a feeling that there are probably a lot of groups that weren't capable of doing that.

And I'm also, you know, working on the ground with people that are working in communities to help develop projects around EVs and fuel cells. So, you know, and Joel's also involved in some of that work. So I just wanted to, again, highlight that this -- to me, I look at this as an important economic development opportunity, there's still implementation issues. And I think we need to, you know, figure out how much flexibility the agencies have, you know, or as Eileen, I think it was, inquired,
whether we need to get that direction to the agencies from the legislature in order to be able to free up a bit of funding to start, you know, building the capacity to have the capacity, get those community organizers and involved and help the, you know, develop their own community programs, which is, you know, some of the work that we’re involved in, Joel and I and partners, so thanks.

COMMISSIONER SCOTT: This is Janea Scott. Let me turn to our Deputy Director John Kato.

Do you know how many proposals we received? Well, we might have to do a little -- let us dig in and we’ll circle back to you, once we have the numbers from the folks who are overseeing that part of the program.

I have Ellen, and then Joel.

COMMITTEE MEMBER GREENBERG: Thank you. And thanks to John for reminding me that I, too, should have apologized for a late arrival, so apologies for the late arrival.

I wanted to just speak to a different aspect of awareness and to the opportunities that we each have in our own organizations. So within the state government, Tyson and the folks at GO-
Biz have really been leading a significant effort with the Interagency ZEV Group. My experience at Caltrans is to really be increasingly aware how important it is that the knowledge of the state of ZEV technologies on both the vehicle side and the charging infrastructure side and the outlook and the policy environment are information that really need to penetrate the organization much more deeply than they have. And that that will have, I think multiple benefits, both for our operations as a department, and also for the impact we have and our employees have, you know, through all their activities.

But it’s very conspicuous to me how the knowledge is really kind of in a very thin layer in the organization and really needs to go much deeper. And we’re planning, with participation from a number of you here, an event to try to really work on that education, so I do think there’s an opportunity, just kind of for all of us, in our continuing work to try to address the level of knowledge in our own organizations.

COMMISSIONER SCOTT: Thank you.

I have Joel. And then I don’t see any other tent cards up here or any -- oh, it’s Joel,
and then Bonnie.

Joel, please go ahead.

COMMITTEE MEMBER ESPINO: Good morning everyone. This is Joel Espino. Thanks for the opportunity to comment.

I have a broader kind of opening comment, and then wanted to talk about two recommendations from my perspective. And I kind of want to preface those recommendations by saying, you know, as an equity advocate, I’ve been really trying to figure out in this particular plan, right, you know, what are the opportunities to squeeze out as many equity outcomes as possible; right? So really trying to figure out, what are the opportunities to create either principles or program requirements that promote equity?

And so to unpack that a little more, right, how do we leverage this investment that is a public investment from the state to maximize the benefits to neediest areas and people, right, of California while minimizing the burdens, right, in those needy areas?

And, you know, I think, as I mentioned in the last Advisory Committee, I’m newer to the Committee and so I’m happy to see that the Energy
Commission is really promoting this objective, as witnessed in the resolution, in the executive summary of the report. But I think, as I’ve been thinking more about how to do this right, to operationalize this objective of maximizing the equity outcomes of this Investment Plan, I think there’s two kind of threshold things that the Energy Commission can do.

One of them is a tracking and reporting recommendation. And I don’t know that I’ve brought this up in the past, but there needs to be more explicit tracking and reporting of the investments to neediest community and people. And one way to do that is to kind of map, right, using the disadvantaged community definition, as pursuant to SB 535.

I know that the current map on the Energy Commission has a filter for CalEnviroScreen 3.0. But as folks are aware, that CalEnviroScreen 3.0 map has basically color coordination based on different cutoffs, right, 25 percent, 50 percent, 25 percent, et cetera. So it’s actually a little difficult, depending on the color screen, and maybe this is just me because I’m a little bit color blind in terms of red-green color...
blindness, but I think that’s not as helpful to kind of figure out where these investments are going.

I would recommend that there also be a filter added that is specific to the disadvantaged community census tracts, and that’s a little bit different from the CalEnviroScreen. And so I’m happy to talk to Jacob and others more about what the different is there, but I think that that’s an easy way that the Energy Commission can track and report out better.

And I know that there might be some feasibility issues in terms of, you know, some investments might be harder to track whether that benefit is to a disadvantaged community because maybe it’s an incentive, for example, for a vehicle. And that’s a totally understandable sort of implementation difficulty that the Energy Commission might have. But there are opportunities within the Investment Plan where there are sites, you know, like charging stations that can be communicated through -- whether that’s in a disadvantaged community or not.

And then to the extent that there are consumer-facing, individual-facing programs that
the Energy Commission has, being able to track whether that -- you know, there’s some income eligibility there, I think that that’s one way to do it.

And I would say that this is becoming more of a need as we start to see more of these investor-owned utility programs have disadvantaged community requirements and they do track and reporting along those lines. We have programs that could transform into climate communities that does the same thing. SB 350 Low-Income Barrier Study, I know that it’s been highlighted in the Investment Plan. And part of the recommendations there are really to target this type of investment.

So there’s a growing need to figure out, what are the different pots that the state has that have a targeted mechanism to disadvantaged communities, and figuring out, what are other programs that can maximize that opportunity? And I definitely see ARFVTP as one of those. So that’s one recommendation.

And then the other recommendation is more around just kind of an assessment, like an equity assessment that needs to happen. You know, and
ideally, that would be someone like myself, right, on the Advisory Committee, but I think I need to have a little more information about the performance of these programs. And so really assess the investment categories that can create the most benefits for needy communities and figure out what those are.

I’d recommend starting with the EV investments; right? I think that that’s an easy one, and the workforce investment opportunities that have been highlighted. And so within those, trying to figure out, okay, what are some program requirements? What are some principles that we can institute as the Energy Commission to ensure that we’re maximizing the equity outcomes? And I think that there needs to be kind of an internal assessment that has to happen for that.

And then to the extent that there’s gaps, right, that the Energy Commission for some reason can’t fully maximize the equity outcomes of these investment categories, being able to list in this Investment Plan, what are those barriers? Is it -- it’s, you know, we have funding restriction for this category that doesn’t allow us to provide funding for outreach, right, or, you
know, whatever the other barriers are. I think as an advocate, seeing the list of things that are -- that the Energy Commission has barriers to implementing equitable outcomes, that’s really important for us.

And it’s really valuable because, you know, the other hat that I have is, you know, talking to other state agencies and the legislature, right, and trying to figure out, how do we remove these barriers to these types of programs? And so that’s something that I think would be very valuable to folks interested in equity and trying to figure out how we can do more with this money.

And so the last thing I’ll say, I just want to echo, obviously, the recommendations that have been made around the workforce investment and figuring out if there’s a way to create a strategic plan to maximize equitable outcomes there, because I know that it’s a specific goal that the Commission has, and that is -- that was in the slides and that is in the Investment Plan. And I’ll just note that there are, I think, two or three of us from the Advisory Committee who are mission aligned on that and at least started
a conversation of how that could happen. And, unfortunately, we haven’t been able to come up with a more concrete proposal, but we’re very interested in working with the Energy Commission to figure out how we can develop that kind of strategy moving forward.

Thank you for the time.

COMMISSIONER SCOTT: Of course. Thank you. Thank you for these thoughtful comments. I do want to say, some of the things you have laid out we have at least the foundation for. I think it would be great for us to go back and reassess if we need to tweak any of that, change it, update it. And we should certainly, if you’re willing, walk through with you offline kind of what we have in place and get your best thoughts on what we may need to tweak or change.

I quickly conferred with my colleagues from ARB and GO-Biz, and the mapping layer that you talked about using the SB 535 definition instead of the CalEnviroScreen 3.0 definition is a GIS layer that we can absolutely get added to that map, so we will certainly do that.

And then I think, you know, we are always open to thinking -- so one thing, I believe, at
our April -- at the Energy Commission’s April
business meeting, we typically have each of our
deputy directors from all of our programs come
and report out on how we’re doing on diversity,
working with disadvantaged communities, getting
our funding and other, you know, jobs, all of it
for low-income communities, and so we’ll have a
report out on that.

I think we would be really interested in
feedback, if we’re hitting the right -- hitting
the right topics; right? If we’re not, there’s
something that needs to be added, I think we’re
definitely open to that, as well.

So what I’m going to ask our team to do
is walk you through what we already have going
on, and then think through what needs to be
changed or added or updated, so we can certainly
do that.

And I see that I have Steve Kaffka, and
then Bonnie.

COMMITTEE MEMBER KAFFKA:  I live in the
Central Valley and I’ve spent a lot of time over
the years in the San Joaquin Valley. And the San
Joaquin Valley has arguably the worst air quality
in the state. And I think it’s also probably the
most difficult area in the state to delivery
these kinds of benefits to.
So I would suggest that there might be a specific
mention or thought given to that most difficult
problem area.
And also, one other criteria. There are
a lot of low-income people there that, basically,
buy used cars. And they have larger families and
they have long distances to travel, and so it’s a
particularly difficult problem to address air
quality. We might need to think of multiple
pathways, besides the EV pathway. You know,
medium-duty vehicles that have these low-NOx
emission engines would be particularly valuable
in the San Joaquin Valley. And the support the
Short-Lived Climate Pollution Plan in that there
are digester and methane reduction programs.
And so some integrated thinking addressed
on a regional basis might be better than kind of
pathway-specific or limited approaches to solving
a very difficult air quality problem.

COMMISSIONER SCOTT: Bonnie, and then
Peter.

COMMITTEE MEMBER HOLMES-GEN: Thanks,
Commissioner Scott. This is really an excellent
discussion. And it might -- it might be beneficial to even plan a broader discussion with the Advisory Committee, maybe in the fall meeting, around this whole issue of how we are, you know, squeezing the most equity and benefits to disadvantaged communities out of this funding, and how a little more discussion about where the funding is rolling out and how -- what kinds of efforts we are making and could make to make sure that the funding is getting into areas that are suffering the most from pollution and other environmental threats.

So it might -- I would be in favor of trying to schedule that discussion in November, I guess, when -- I mean, I would love to have it earlier, but not wanting to generate a ton of new work for the staff. Maybe it could be integrated into another meeting that’s already planned.

And I guess maybe related to that, the issue of heavy-duty charging came up. We discussed it briefly. And I just wanted to note that that’s the issue of rolling out electric -- electrification, fuel -- electrification of all kinds, including fuel cell, of course, in the heavy-duty arena is incredibly important to the
American Lung Association. And that’s a huge, you know, area of local — a huge concern to the local hotspots and local air quality and health concerns with really high rates of asthma and other respiratory illnesses, of course, near ports and trucking centers and freeways.

And we’re really excited that there are a lot of new options, and we’ll be talking about that more, I know, in the advanced technology portion. But, obviously, there’s that — there has to be that fit between the rollout of the chargers and the rollout of the fleets.

And I’m glad that there is funding that will be available through this pot. I’m just wondering, you know, the CEC has done their — contracted for the EVI-Pro. And there’s been a lot of discussion about how many chargers do we need for light-duty, and where should they be placed? And I’m wondering, is the May meeting the beginning of trying to do that in the heavy-duty arena, or how is that all going to come together so that we have a statewide plan, not just for the light-duty, but also for the heavy-duty needs?

COMMISSIONER SCOTT: That’s a really
great question.

COMMITTEE MEMBER HOLMES-GEN: Just a small question.

COMMISSIONER SCOTT: Yeah.

COMMITTEE MEMBER HOLMES-GEN: A small question.

COMMISSIONER SCOTT: I think -- and I have to be honest and say, I have not talked to Noel to see what his kind of rollout schedule looks like, but let us circle back with him to see what that is. And I know that people are just slightly off topic but waiting with baited breath for his report on how he did the light-duty infrastructure. That poor report has gone to San Diego and back to Sacramento with me, to San Diego, to Diamond Bar, and I’m hoping I can look at it on the plane on the way back tonight. So it is on my desk. It is written. Its ready to go. I just need a chance to read it right quick before we put it out. So if you don’t see it on Friday, I will read it over the weekend and you will see it on Monday.

But I don’t -- I haven’t talked to him specifically about what does the rollout look like in terms of medium-duty, heavy-duty? It was
quite a lift, as you can imagine, to -- you know, and it’s fantastic. He and Kadir did such a
great job actually developing in house a model. And the model is fantastic because it has the
ability to look more granularly at the differences between regions and cities. And it also has the ability to, once we have new
information, and I’m sure he would cry if I describe it this way, but, you know, you just pull out the old information and plug in the new and run the model again; right? And so you can just -- you can update it quite handily, so very, very excited about that.

I think what we will be talking about on May 14th is really more, what is the solicitation design for that 134.5 look like versus sort of the overall broad statewide strategy.

One thing that we are working on through the ZEV Group that Tyson oversees through the Governor’s Office, we’re working together with Air Resources Board, with the Public Utilities Commission, with GO-Biz, the Energy Commission, Caltrans, DGS and others to really think through, what does that statewide plan look like? And I don’t know that we have a time, though, on that.
COMMITTEE MEMBER ECKERLE: Yeah. So the next thing you’ll see, at least on that, is that, you know, we’re updating the ZEV Action Plan and then -- but it’s going to be a near term. Everything is kind of driving towards our Global Climate Summit in September. And so the update to the Zero-Emission Vehicle Action Plan will be more of a, you know, what are our priorities for this year? But one of the things we’re trying to do is, you know, get a picture, so everybody can understand fully kind of what the strategy is going forward, especially infrastructure deployment.

I think that just simply to point out the difference of the light-duty and the medium-duty, I was just kind of thinking, and forgive me for the analogy, but I think the light-duty sector is a little bit more like cats; right? We’re trying to figure out where the cats would go, and so that there’s a place for them to land when they get there. And I think the medium-duty and heavy-duty might be more akin to dogs, right, where you kind of know -- you can train it a little bit more in terms of the use pattern.

So maybe that -- it’s the first time I
tried that out, and I’m looking around the room. But, you know, so you can specifically plan the infrastructure on a specific use case and a specific, you know, group like, you know, a FedEx or a UPS or whatever the delivery. So, you know, I think that there’s a slight difference in terms of approach, but they’re both equally important to figure out.

Does that work?

COMMISSIONER SCOTT: Yes.

Peter, and then Chris.

COMMITTEE MEMBER COOPER: Yeah. I just want a chance, quickly, to respond to some of the comments from Joel.

And I appreciate, we were able to meet with Joel and with the State Workforce Board and some folks from the California Labor Federation a couple of weeks ago to talk about some of the equity issues. This is really on the forefront of the work of the labor agency, I have to say. In fact, the State Workforce Board has a deputy director that works specifically on climate and equity issues.

So I think that there are a lot of different moving parts that we’re trying to get
our hands around right now. For example, and I
don’t want to get into this too much, but just to
point out regarding the geographic definitions in
the mapping. Every agency pretty much has their
own mapping structure. And our program, for
example, has high unemployment areas. Now these
maps, our regions don’t always match with other
regions of, let’s say, the Apprenticeship Council
or the State Board or the Equity Screen, so there
are all these different geographic definitions.

And I would welcome a meeting, I’d be
happy to host it at ETP, to talk about the
definitions of these regions and how we can move
forward in this area so that everybody has a
common understanding of what we’re talking about
and how we can report on some of how these funds
are being used.

COMMISSIONER SCOTT: Yeah. For that
meeting, I would also recommend that you invite
the folks from Cal/EPA that put together the
CalEnviroScreen, so that we’re -- the state is --
it’s nice to have the one layer that the state is
all -- you know, we have the same common metric
to talk about. So we’ll want to make sure, I
think, that they’re included in that
conversation, again, to make sure that it’s the common metric, once we have the right one that we’re all talking about together.

Chris?

COMMITTEE MEMBER SHIMODA: Yes. I think on the disadvantaged communities issue, I just urge a little bit of flexibility in our thinking about where the projects get sited for, specifically, the advanced freight and fleet technologies portion. Because, you know, I can tell you, these projects that are being discussed, probably more this year than I’ve ever seen before with our members, are sometimes outside of, I think, the 25th top percentile, you know, either located in or adjacent to.

And so one of the questions would be if, you know, you’ve got a 30-truck fleet, I’m talking about a specific one, third-generation family owned that wants to do 10 zero-emission trucks, are we really going to tell them, you know, we can’t give you funding to be one of the first 100 to do this, you know, because of a restriction that we have?

And I know this really hasn’t been an issue to date so far just because on the natural,
a lot of the projects have been located in or adjacent to but just maybe not 100 percent, but having some sort of flexibility for folks who really want to do good projects outside of -- outside of those areas, because this is just very initial. And some of the same issues around equity, having to do with, you know, sort of luxury EVs versus, you know, other types of vehicles don’t really exist in heavy-duty. These are all, you know, brand new.

And then just the other points, since the company names got raised, you know, I just say, as far as a statewide strategy on charging, I’m learning a lot about this now as we’re having these initial discussions with these companies. And I think even within companies that you think are very similar, what you find are very different fueling strategies existing, and then also different vehicle types and, you know, sort of different visions of how they’re going to deploy this technology for their different services.

And so it may be a little bit premature to think about like a comprehensive statewide strategy, apart from the stuff we’ve know about
for a long time which is where trucks congregate and, you know, things of that nature. But I just encourage, and we’d be happy to, obviously, help facilitate this, just staying really close to the fleets as they’re developing their thinking in this. Because, you know, real time, they’re saying, oh, well, we might be able to turn a 200-mile vehicle into a 400-mile vehicle if there was charging in a certain area. So I think it’s just -- it’s early to, you know, sort of unify the thinking on this. But, you know, we’d be happy to help facilitate dialogue in the next couple of years.

COMMISSIONER SCOTT: Great. And I think we’re very mindful of the differences between the medium-duty and the heavy-duty cycle, how fleets charge up. And even on the light-duty side, I mean, the batteries are changing, how fast chargers can charge are changing, and that changes -- each one of those changes, changes everything; right?

And so that’s why I’m so excited about the EVI-Pro model, because once we get that, you can plug it in and you kind of see what the landscape looks like again. So I think we’re
very mindful. We’re certainly happy to be flexible, be able to take in new information as it comes and then sort of adapt and pivot from there, be nimble from there.

Do I have any other -- I don’t see any other tent cards here in the room.

Let me open back up to our Advisory Committee Members, either on the phone or in Sacramento, for any last comments on the electric vehicle charging infrastructure.

COMMITTEE MEMBER HOLMES-GEN: May I ask one more question?

COMMISSIONER SCOTT: Yes, of course, Bonnie, go ahead.

COMMITTEE MEMBER HOLMES-GEN: I’m just curious, is there -- are there questions asked of the -- in the solicitation of what kind of outreach would be done? I mean, when we’re doing solicitations on chargers do we ask questions about the outreach effort and advertising and, you know, potential media? I mean, I know it’s -- we don’t want to create new hurdles, but I’m just wondering, you know, what kind of information do we indicate is important to us as we’re -- as you’re making the decision?
COMMISSIONER SCOTT: That’s a great question. I don’t have the granularity --

COMMITTEE MEMBER HOLMES-GEN: Yeah.

COMMISSIONER SCOTT: -- unfortunately on the solicitation. I know, for example, though, with our Cal EVIP, which is California Electric Vehicle Incentive Program or Project.

COMMITTEE MEMBER HOLMES-GEN: Um-hmm.

Um-hmm.

COMMISSIONER SCOTT: And -- Project. And so it’s -- for it to work you have to do outreach; right? And so that’s why we’re working so closely with CSE on this.

COMMITTEE MEMBER HOLMES-GEN: Yes.

COMMISSIONER SCOTT: What I don’t know, though, are sort of the specifics of what -- how they’re doing that outreach and that type of thing, so we can follow back up with you. I think when we do our broader solicitations, like please fill in State Route 99 with chargers, those don’t really typically have, I don’t believe, an outreach campaign around them.

But I think -- and, you know, what I also don’t recall is what type of outreach we put into our Charging Challenge. But in order to get the
charges in key places around the community, the folks are going to have to talk to each other about the charging infrastructure and why it’s important and why would they like to put it there, that type of thing. So that, although we didn’t -- I don’t think we put a requirement into that Charging Challenge, some of that will just happen organically because otherwise you’re not going to be able to put the charger at the library if you haven’t talked to the librarians about that, or put it in front of the mom and population business if you haven’t talked to the mom and population business about that.

So we can -- but it -- so anyway, we should --

COMMITTEE MEMBER HOLMES-GEN: This might be something look at.

COMMISSIONER SCOTT: Yeah, it’s a good idea, and we should think about what that looks like in some of the solicitations that we put together going forward.

Okay, so, oh, yes, Analisa.

COMMITTEE MEMBER BEVAN: I had one quick thought --

COMMISSIONER SCOTT: Of course.
COMMITTEE MEMBER BEVAN: -- about that.

I was wondering if you could -- if you did include a request for information about outreach, if that could be included as a cost share? So that would be one way --

COMMISSIONER SCOTT: That’s a good idea.

COMMITTEE MEMBER BEVAN: -- to leverage community dollars in the outreach and awareness side of things, focusing your money on the infrastructure.

COMMISSIONER SCOTT: Yeah.

COMMITTEE MEMBER BEVAN: Just a thought.

COMMISSIONER SCOTT: That’s a great thought, too. I’m like I hope I -- I see people taking notes, so it’s good.

COMMITTEE MEMBER HOLMES-GEN: That’s a good idea. Yeah, it is a good idea.

COMMISSIONER SCOTT: We’ll just check one last time on our -- on the phone or the WebEx. If you have a comment and you’re from the Advisory Committee, please go ahead and speak up.

COMMITTEE MEMBER SHEARS: Yeah, just John Shears with a follow up regarding the report Commissioner Scott mentioned that Noel’s leading up.
So are we to understand that, you know, part of the exercise in the report is to look at impacts on the distribution grid and various options for mitigating impacts for medium- and heavy-duty, such as using onsite storage, et cetera, to sort of deflect or avoid things like demand charges? Is the report working and the analysis working at that level?

COMMISSIONER SCOTT: I -- so I haven’t read it. I don’t think that’s what’s in the report. I think the report describes the EVI-Pro model and how it works. And then the information that you would get out of that model, I think would then look at some of the questions, John, that you’re talking about. But the report itself literally just describes the model and how it works.

COMMITTEE MEMBER SHEARS: Okay. Thanks.

COMMISSIONER SCOTT: Um-hmm.

Anyone else on the WebEx or in the Sacramento room from the Advisory Committee that would like to comment on the charging infrastructure?

All right, we have one public comment from John Schott from ChargePoint. Is he still
MR. SCHOTT: Yeah.

COMMISSIONER SCOTT: Oh, yeah, there you are. Please come on up to the mike, introduce yourself, and we look forward to your comment.

MR. SCHOTT: Thank you. John Schott with ChargePoint. Thanks, Commissioner Scott, and to the Commission staff for, again, putting together a great revision to the plan.

We absolutely support the increase from $20 million to $134 million for the 2018-2019 ARFVTP Investment Plan to help achieve the goals that the Governor has set forth to deploy 5 million ZEVs by 2030, and the 250,000 charging station goal that we’ve discussed, as well. It’s a lot of money and it’s a very exciting opportunity. We are absolutely confident in the Energy Commission’s ability to manage and deploy these funds to create the programs to make this successful and to get this funding out into the marketplace quickly.

I also just want to assure everyone that ChargePoint is just one EVSC manufacturer in this market both in terms of personnel and product availability, is ready to meet the growing demand.
for EV chargers, and that we are excited to play
a significant role in achieving the 250,000
charging station goal and leverage these programs
for our customers.

Like the ARFVTP, ChargePoint also just
celebrated our ten-year anniversary. And we have
a growing workforce of more than 450 full-time
staff and over 47,000 charging stations, 27,000
of which are in California alone.

Just a comment on the appropriate funding
mechanisms.

I know the plan discusses this. And,
Commissioner Scott, you made some comments that I
agree with fully about what appropriate funding
mechanisms are for different types of technology.

For, you know, projects like, you know,
corridors, fast charging corridors where there’s
a lot of money going out and there’s sort of a
strategic angle where you need to make sure
you’re covering corridors and providing adequate
spacing, we agree that competitive solicitations
are typically the best approach for that. But we
do feel that a significant portion of this
funding should go towards programs that are
simple, like Cal EVIP, you know, rebate voucher
programs targeted at the end customer that can quickly get funding out into the marketplace. You know, the first-come, first-served approach, I think, is what it’s called specifically in the plan.

And on the Cal EVIP Project and the first incentive project, which is the Fresno County Incentive Project targeted at the County of Fresno, fully supportive of that project. You know, that program as a whole was designed to be able to scale up to $200 million, to handle $200 million worth of funding. And we now have a significant amount of that funding covered.

We’re confident in the CEC, the Center for Sustainable Energy, and the Commission agreement and Manager Brian Fobble (phonetic) to properly manage that program to get funding out.

I also just want to -- I understand I’m out of time. Can I keep going or --

COMMISSIONER SCOTT: Sure, just one --

just a couple more sentences.

MR. SCHOTT: Okay. The ENERGY STAR requirement, we are fully supportive of that and commend the Energy Commission for standing strong there. There have been a number of comments
submitted, both in support and against ENERGY STAR. We think it’s -- you know, the point of that is to drive innovation. And you can see that other manufacturers are now in the process of getting their equipment certified, so it’s having its exact intended effect.

Also, on medium- and heavy-duty electric vehicles, we do agree that there are some, you know, special circumstances there that are needed to be addressed through their own funding mechanisms. And the grant funding opportunity 17603 for seaports, warehouses and distribution facilities was a great example of a competitive solicitation targeting a specific sector and getting infrastructure to those types of projects.

Last comment. I think it’s time that we really appoint a representative from the EV charging industry. We have a very qualified and diverse Advisory Committee. But I think it’s time that we consider somebody to represent the industry. I might recommend the Electric Vehicle Charging Association to represent the industry in a vendor-agnostic and neutral way. You always encourage us to, you know, put these in writing
and provide these comments. We have done that in the past, so we’d love to have that conversation, not just ChargePoint, but other manufacturers and EVSC companies, to figure out who best -- the right person would be to represent the industry.

So thank you very much.

COMMISSIONER SCOTT: Great. Thank you. And, yes, we always accept written comments, so please be sure to put all the details you like and send those into us in writing.

Do I have any folks on the phone or hand raisers who would like to make comment on this? Okay, I’m seeing, no.

So why don’t we -- we said we would break for lunch at noon. I’m wondering if folks want to keep going a little bit and talk about hydrogen refueling infrastructure, or would you prefer to go ahead and break now and come back a little bit early and start the discussion then? Any --

COMMITTEE MEMBER HOLMES-GEN: We can go for a little bit.

COMMISSIONER SCOTT: Go for a little bit?

COMMITTEE MEMBER HOLMES-GEN: Yeah.

COMMISSIONER SCOTT: Okay. Great. So
let’s keep going.

We will talk about hydrogen refueling infrastructure, which, as you can see, is at $92 million. Do I -- Justin?

COMMITTEE MEMBER WARD: Okay. I should probably turn that on. That helps.

So similar to kind of the spirit of discussion, even in the previous round, I do want to just thank CEC staff and everyone for the great effort to include the executive order information in this latest Investment Plan. Hopefully you guys are able to get back to normal sleeping and working hours now.

But I think this is a great effort and great opportunity. I think through this, California will continue to be a leader, to demonstrate leadership, and to be a pioneer in the mass adoption of fuel cell vehicles. The $92 million is a great step forward. And we’re really hopeful and excited to see how this funding will encourage new and also experienced players to further expand infrastructure across the state.

Kind of moving forward and kind of looking at future investment plans, I’d kind of
like to encourage staff to strengthen maybe the methodology used as it relates to some of the vehicle deployment pieces. Maybe as kind of a really simplistic example would be to maybe assume some deployment ratio based on executive order goals for all technologies, and then you won’t have to try to juggle how do you mix or balance actual numbers with predicted numbers and targets and all that other stuff. It gets to be a little bit hard to see in a kind of transparent way. But again, I do think there’s been a lot of great success in the current materials.

A piece that I didn’t actually have prepared for today was similar discussion to the previous topics related to education and outreach and kind of workforce training. I think a lot of that, those kind of comments carry forth, even through, into this, as well, so I’d like to just kind of further support also those comments towards education and outreach and workforce development.

COMMISSIONER SCOTT: Thank you.

Brian?

COMMITTEE MEMBER GOLDSTEIN: Well, Justin stole all of my thunder there, but I want to echo
his sentiment. I think it’s, you know, amazing that we’ve worked as a community for so long to, you know, hit 100 stations. And here we are able to double that goal and envision how we can do that effectively in a short amount of time. In fact, the stations are coming onboard, you know, in a shorter amount of time than they ever have in the past. So we’re, you know, really making leaps and bounds here.

And I also wanted to, you know, essentially kind of ask the question about Justin’s comment to the Commission here and how we’re looking at the number of stations in the context of the 2030 goal. And I think, you know, on the slides, we were looking primarily at the projected shortfall of stations, that we will have more cars by 2023 than stations to fuel them. And I know we’re looking to, you know, overcome that shortfall.

But in the context of the 2030 goal of 5 million ZEVs in total, you know, how are we collectively trying to assign a number of hydrogen stations that we would need in that time frame?

COMMISSIONER SCOTT: I know that Noel
used a percentage as he put this together. I am sorry, but I don’t know off the top of my head what it was, so I’ll have to -- I’m going to have to send him an email for all kinds of information to come back to you all with after lunch.

I don’t know, Tyson, if you remember the number? I think what we used was the Air Resources Board scoping plan split that they are using between battery-electrics and hydrogen fuel cells, but I don’t know what that split was.

COMMITTEE MEMBER ECKERLE: So I think the challenge is, so you’re talking about 2030 --

COMMITTEE MEMBER GOLDSTEIN: Correct.

COMMITTEE MEMBER ECKERLE: -- which is an amount in the future. So the infrastructure goals are organized around 2025. And so within Noel’s model, and I think the scoping plan, I think it’s about 1.4 million would be -- have plugs, and then about 100,000 would be fuel cell, is kind of what the -- but I could be -- it might be 1.3 million. You’ll have to go back and double check in terms of the --

COMMITTEE MEMBER GOLDSTEIN: And that’s the 2025 number?

COMMITTEE MEMBER ECKERLE: For the 2025
COMMITTEE MEMBER GOLDSTEIN: Right.

COMMITTEE MEMBER ECKERLE: And that’s kind of what the 250,000 station number is based around.

COMMITTEE MEMBER GOLDSTEIN: Okay. And, you know, I ask because looking back at the slides, when we’re looking at the EV charging stations -- and you know, for the record, obviously we need all of the above technologies here. I’m, you know, certainly not advocating one at the expense of another. But it just seems like those station numbers are suggesting what the, you know, what the shortfall will be by 2030 if we’re looking at an entire BEV infrastructure or, sorry, an entire kind of BEV population by then. So it seems like we’re looking at fuel cell electric vehicles in the context of a 2023 or 2025 shortage and how do we meet that, rather than how do we hit a $5 million overall -- or, sorry, 5 million overall electrification goal in 2030?

COMMISSIONER SCOTT: Yeah, that’s correct. The analysis is for the 1.5 million --

COMMITTEE MEMBER GOLDSTEIN: That’s
right.

COMMISSIONER SCOTT: -- by 2025. And partly, that’s because, as I mentioned, like on the battery technology, it’s just, it’s changing so fast. The charging infrastructure technology is changing so fast. The hydrogen refueling infrastructure is changing really fast. The cost of fuel cells are changing really quickly. And once you -- that’s like literally every variable, right, so you don’t have a constant to measure out past 2025, and then it just starts to get very fuzzy, and so we wanted to be as precise as we could, recognizing that all of these changes are taking place.

And so that’s why it’s keyed to the 1.5 million in -- 1.5 million vehicles in the 2025 time frame. We do need to do additional analysis to see what it looks like out from there. And, yes, I will let Analisa speak, as well. But it’s -- the reason is because all of -- you know, so you know when you’re doing an analysis like that, you want at least one of your variables to be the same. And in this instance, they’re kind of all changing. So we wanted to take the best information we have now but not extrapolate it --
COMMITTEE MEMBER GOLDSTEIN:  Sure.

COMMISSIONER SCOTT:  -- that far out into the future. So we do recognize that there is additional work that needs to be done to -- between the 1.5 and the 5 an what the infrastructure that looks -- that goes along with that looks like. And then you’ve got the autonomy, right, you’ve the shared vehicles coming. It’s just that all of the variables start to change.

Go ahead, Analisa.

COMMITTEE MEMBER BEVAN:  Well, I was just going to say that we’re doing the tools at ARB, as you know, that are analogous to the EVI-Pro for electric vehicles. We’ve got the tit and the that --

COMMISSIONER SCOTT:  That’s right.

COMMITTEE MEMBER BEVAN:  -- to model how much infrastructure we need for hydrogen. And like with electric vehicles, we can play with those inputs to grow that, the population, and come out with a subsequent number of stations and their capacity and all those things.

COMMITTEE MEMBER GOLDSTEIN:  I see. All right, well, thanks for the clarification.
And to the extent that, you know, the community can help, I understand that those are very dynamic variables in each of the different technologies. And it’s really tough to model these things. But to the extent that that -- you know, there’s a lack of that research, you know, let’s let it be known so the community can kind of step in under all technologies and help try to remedy that or, you know, come up with the best variables and math that we can.

So thanks.

COMMISSIONER SCOTT: I think Steve was first, and then Peter.

COMMITTEE MEMBER KAFFKA: Okay. This is almost $100 million investment by the state. And so I’m curious if staff or folks here on the Advisory board can explain how EVs and hydrogen fuel cell vehicles complement each other or, in fact, compete? And we have -- we’re looking at about $100 million investment for 40,000 vehicles under optimistic conditions, so it’s a cost benefit question, as well, and especially given constraints in other parts of this budget.

COMMITTEE MEMBER BEVAN: So I’ll see if I can address that.
The California Air Resources Board is depending on a complete transformation of the light-duty vehicle fleet to ZEVs out by the 2050 time frame. And so we’re supporting both electric vehicles and hydrogen vehicles, the expectation being that both technologies will be needed to meet everybody’s needs, be it from a range and faster fueling perspective to a size of the vehicle issue, as well as cost. The expectation for the cost of fuel cell vehicles being competitive or even more cost effective than battery-electrics in some applications means that we need to be supporting both.

And the investment in the infrastructure is a very different picture. With a hydrogen station, you serve many, many more vehicles. So that initial investment looks large but serves a very large number of vehicles, compared to the electric vehicle infrastructure which needs on a per-location basis but doesn’t serve as many vehicles per site.

COMMITTEE MEMBER ECKERLE: If could --

COMMISSIONER SCOTT: Tyson, go ahead.

COMMITTEE MEMBER ECKERLE: -- yeah, jump into this?
You know, earlier you had brought up the five-minute refueling that people are used to. That’s another thing, you know, we’re trying to get to 5 million yeses, and then ultimately 30 million yeses throughout the marketplace. And I think it’s -- you know, you look at the different consumer behaviors and having a solution for each, and you look at the multi-unit dwelling, for example, that’s come up in the past in this conversation, as well, but I think that’s another thing to keep in mind.

And also what the automaker are saying. You have, you know, Justin Ward over here from the Fuel Cell Partnership, but also Toyota, and you look at their product portfolio and what they believe. And so I think what we’re trying to do at the state is give the zero-emission vehicle market holistically the best chance of success; right? And so any of those solutions that work, you know, I think that’s what we’re after.

COMMISSIONER SCOTT: I have Peter, and then John Shears.

COMMITTEE MEMBER COOPER: Okay. This is a pretty broad question, so bear with me.

But I was wondering to what degree the
report and the forecast take into account the impact of artificial intelligence in the deployment of all these -- the ZEVs and the hydrogen vehicles? What roll does AI play and how is it accounted for in the report?

COMMISSIONER SCOTT: Are you thinking about autonomous vehicles?

COMMITTEE MEMBER COOPER: Yes, and how that impacts some of the use of ride sharing.

COMMISSIONER SCOTT: Yeah. I think that’s one of the -- and I’ll let ARB speak to this, as well, because they may have a different answer within the scoping plan -- this is one thing that’s one of the variables that I mentioned that makes this is a little bit tricky for us. I don’t -- I think that we are, maybe safe isn’t quite the right word, but we’re safe at 1.5 million zero-emission vehicles. We have 30 million passenger cars on the road here in California. And even if everybody started to share today, we’re still likely to have several million vehicles on the road.

I think that we’re very mindful of the fact that we are going towards -- we’d like to see much more sharing in how people travel, that
we’d like to see autonomous vehicles. It’s the
Three Revolutions that Dan Sperling has talked
about. Many of the car companies speak about it,
as well. They have an acronym called CASES (phonetic), which is also sort of connected
autonomous shared and electric. So I think we
all see -- or I think we all believe that that’s
kind of the direction we’re going.

What I don’t know is when do those --
when do all of those things start to happen and
how does that impact this?

And so I think with the first -- this
isn’t really the first wave of the rollout, this
is, maybe I’d call it, the second wave or the
third wave of the infrastructure that we’re
trying to get out to support this transition, but
it does matter a lot; right? Because, again, if
we have a bunch of autonomous cars that are
running around doing our errands all right now,
how they charge up, where they charge up,
hopefully they’re sharing our errands and not
each of us has our own single car out there going
around, we’re mindful of those dynamics. We work
hard to try to model those, but they’re -- it
makes it a little bit fuzzy. Just, we don’t have
great answer there. I don’t think we do, even
though we’re very mindful that this trend is
coming and that we need to set up.

And so that’s why the EVI-Pro model is
set up the way that it is. Because once we have
those variables and that information, we can pull
it in and it changes what it looks like. It
changes how many miles do you need between DC
fast chargers on a highway? Again, that changes
depending on how many vehicles you have. If 30
million of them are electrified, you still might
need one every 20 miles, it’s just you don’t need
it every 20 miles because of range, for example.

So there’s lots of kind of give and take
in there that we’re all thinking about, we’re all
mindful of, but I don’t know that we have a
specific -- you know, there’s not a specific
paragraph that says here’s how that’s in account,
at least in this report. I don’t know about the
scoping plan or, Tyson, any of the GO-Biz
activities.

COMMITTEE MEMBER BEVAN: Commissioner,
I’m not sure I could anything more to that. That
was very comprehensive in terms of we’re -- we’ve
got our eyes open, our ears open, trying to learn as much as we can about how these vehicles will roll out and be used. We’re just trying to make sure that they are zero-emission and having the least impacts to the environment. So that’s why we’re continually engaged in this, but we’re learning and trying to keep options open.

COMMISSIONER SCOTT: Yeah.

Tyson or Ellen, anything to add?

COMMITTEE MEMBER GREENBERG: Yeah, if I could just, on this point, and then there’s a connection back to an earlier comment that was made about kind of the whole emerging mobility environment.

So these issues which are, I think, very much kind of policy issues about how these emerging services, as well as technologies, are going to be regulated or, you know, shaped from a policy point of view, the cities are taking a great interest in this because they are already being so effected by the availability of ride-sharing services that in a lot of cases are shifting trips from walk, cycle and transit onto ride share. And there -- and our larger cities are seeing a significant increase in vehicle
miles traveled, so they’re looking at different kind of policy waivers.

And a lot of that conversation is happening in the context of an organization called NACTO, which is the North American -- oh, maybe not North American, but it’s the Association of City Transportation Officials, and it actually includes Canadian, as well as U.S. cities. And they have a document called Blueprint for Autonomous Urbanism. And they’re focused there on autonomy, but they do address incentives for electrification. So that’s one forum where this discussion is ongoing.

With respect to charging in particular, I mean, I think one of the sort of principal scenarios or future use cases is that the mobility companies would be owning fleets that would then be responsible in the fleet context for charging. So, you know, if these services are bundled together and you’re seeing significant numbers of large fleets, that then would be another, you know, possible transformative factor in the demand for disbursed charging opportunities.

So I think it’s certainly correct to say
there are, you know, many use cases that are
being contemplated or envisioned and that those
would then have, you know, kind of knock-on
effects on charging demand and supply. And also,
that all of us should realize that there’s a big
policy dimension here. And exactly what entities
are going to be responsible for establishing
those policies and regulating the providers, I
think is still very much in play.

COMMITTEE MEMBER ECKERLE: I think it’s
all been said really well. I think it’s an
essential question within a lot of the agencies.
I think the Office of Planning and Research is
playing a leading role, as well, in coordinating
this. And so I would encourage you, you know, we
can always engage, and looking for more voices.

But I think that the point to keep in
mind, and I think Eileen -- Ellen said it really
well, but it’s just that any investment we’re
making now in infrastructure is highly unlikely
to be a stranded investment in the autonomous
world; right? We’re going to need distributed
charging and fueling opportunities to make this
happen.

COMMISSIONER SCOTT: I have John Shears,
and then Claire.

COMMITTEE MEMBER SHEARS: You know, on the AI front, I just wanted to add that a big part of it will be the availability of fifth-generation cellular technology, depending on the various models or in terms of the use of AI and autonomous are being explored by a multitude of companies. And whether that’s introduced in conventional ICE-powered vehicles or EVs, you know, folks at the car companies, they’ll go where the market pools on that initially. But clearly, where we all want to go is to avoid the VMT and increased emission issues is on the zero-emission front.

So that segues me back to what I wanted to originally comment on which is that my comments earlier, if it wasn’t clear, I just wanted to make sure that I do make it clear that I’m not just talking about electric vehicles, but also fuel cell vehicles in terms of issues around training and equity and that, because there are opportunities to develop projects around fuel cell vehicles in challenged communities.

And then to maybe help answer Steve’s question, if we take, you know, the state’s
goals, what should be the world’s goals towards, you know, 2050 where we have an 80 or a 90 percent de-carbonized economic, essentially we’re going to have an economic run with energy carriers, that being either electrons, so the electrical grid powered by near-zero or zero-emission renewables, or protons which, you know, we use in fuel cells. Batteries and fuel cells, it’s all electrochemistry. And as we move forward the hydrogen economic is going to become an essential part of how the world operates, not just -- you know, and there’s an opportunity to produce a lot of that hydrogen in the future from the electrical grid.

The economics now are maybe not always that attractive, although here in California we have this problem, fortunate problem called the duck curve where we have the shoulder (phonetic) months in the spring and fall where we have really mild days, we have huge amounts of solar, to the point where we’re curtailing power production on the grid and we need to find beneficial load, you know, to use that, you know, free zero-carbon electricity. And one of the hoped-for beneficial loads would be a huge fleet
of electric vehicles, and also renewable hydrogen through hydrolysis for fuel cell vehicles. With regards to the fuel cell vehicles versus battery-powered electric vehicles, it’s all good in terms of whatever is developed around fuel cells is a scalable solution set. So as the market has developed around fuel cells and vehicles that use those, it’s moved from things like forklift. So Walmart, for example, is a huge fan of using fuel cell-powered forklifts as opposed to battery-powered or CNG-powered forklifts. And, you know, how you scale the manufacture of the fuel cells through whatever market opportunities you have, that gives you opportunities to lower the cost through the scales of manufacturing, plus, you know, returning investment on R and D to get costs and efficiencies up.

If we take light-duty vehicles as an example, an explicit example of how you can scale from light-duty to heavy-duty, Toyota has their pilot project with the Ports of L.A. and Long Beach at San Pedro Pier called Project Portal, where they have a Class 8 heavy-duty truck that uses two fuel cells taken from Toyota’s
commercially-available passenger vehicle, the Mirai. And you, basically, you can take two of those fuel cells and power a Class 8 heavy-duty freight-hauling truck with that. That’s an explicit example of modular scaling.

The challenge for battery-electric vehicles, and, yes, Elon Musk and Tesla have announced that they’re going to come out with a Class 8 battery-powered truck, a lot of us are still wondering how Tesla, and any other companies that would want to do a Class 8 battery-powered truck, would get -- be able to do any kind of long haul travel with us, because the amount of batteries, the weight of the batteries that you would have to carry to power the trip, would take up most of your cargo space, plus the weight would parcelatize (phonetic) so much of the power that you’re carrying in the batteries.

It’s kind of like until battery technology evolves, and it’s not to say that someday we might not have really fantastic batteries, at this point, fuel cell vehicles are sort of the path that we can sort of see going forward for longer travel medium-duty and longer travel heavy-duty applications. That’s not to
say that battery-electric trucks might not have niches. And, in fact, there are examples where they’re being used in short haul opportunities where you have predictable routes every day, so you know what your charging demands, et cetera, are.

So I just wanted to offer that and just, again, just say, go ZEV. So our organization supports electric and fuel cell vehicles.

COMMISSIONER SCOTT: Thank you.

Claire?

COMMITTEE MEMBER JAHNS: Thanks. I have two questions. The answer to the first may negate the second question.

But as I hear the, I mean, the technology of hydrogen, especially for single-passenger vehicles, and the rate of charging seems like it might lend itself to rural areas, as opposed to EVs. And so I’m wondering if there’s opportunity to pair fuel production with charging stations through kind of small scale gasification plants and things like that?

COMMISSIONER SCOTT: I think that is something that we have been working on. It probably fits more in the renewable hydrogen
production and wanting to have some vehicles near that. I can let others -- you know, I don’t know if Brian or Justin or others want to weigh in on that, but that is something that we are considering.

Right now with the light-duty stations, we’re building them out kind of where the -- we’re working closely together with the OEMs and the fuel providers and to be -- make sure that we’re rolling those out in the places where people are buying them. Right now, when we have 32 stations only, you have to be very deliberate about where you can sell things, and then you have to kind of expand out in a sensible way. Once we have more stations that are much more ubiquitous, then I think that it really opens up to a much broader set.

But as we’re kind -- of it’s a little bit hand-in-hand, working together. We’ve got about 4,000 fuel cell electric vehicles; 32 stations, I think, are open right now, 60 all right funded, and we’re on our way to the first 100, which is a great backbone network. But if you think about that, you still need to kind of live near one and have that technology work for you, at least right
now, today.

Okay, I don’t know if any of my hydrogen folks would like to weigh in on that? You don’t have to.

COMMITTEE MEMBER GOLDSTEIN: I’m happy to comment on it.

COMMISSIONER SCOTT: Sure.

COMMITTEE MEMBER GOLDSTEIN: I’m not sure if the question was more focused on whether the stations would reach those areas, or the production. But, you know, one of the interesting things about renewable hydrogen production, it’s certainly that the ARFVTP is already supporting, in the context of a Renewable Hydrogen Production Grant solicitation, is that the agricultural waste resources throughout the rural areas of California provide so much feedstock and have such a huge impact as far as the carbon intensity of the fuels that are created with them; right? So those resources are all located in rural areas, essentially.

And so we’re really working to try to figure out how to bring renewable hydrogen from those resources into the urban areas, but they will certainly, you know, originate in some of
the more rural areas in the state. So I think that they would have, you know, first access, certainly, to the most renewable fuels that we’re actually able to create overall in the state of California at this point. And I think it’s just a question of, echoing Commissioner Scotts’ comments, about kind of getting station saturation to the point where we can start to space out stations that would also hit those areas.

COMMISSIONER SCOTT: Did you have -- you said you had a second question, or I don’t know if Justin wanted to weigh in at all.

COMMITTEE MEMBER JAHNS: It was combined.

COMMISSIONER SCOTT: Oh, okay.

COMMITTEE MEMBER WARD: Yeah, basically, just parroting what Brian had mentioned, so I think in the very beginning it was really important, as the stations were really first coming out, that they were matched well with where vehicles were being deployed. So I think there’s been a great effort with that. And, again, I want to thank everyone at the Commission for supporting that activity.

But as we move forward in time, we’re
going to see applications with the -- those kind of rural applications offer lots of opportunity. And we should not be afraid or shy from those as those opportunities come -- become apparent as we move forward.

COMMISSIONER SCOTT: Bonnie, and then Steve. I think, actually, Eileen was in the middle, so Bonnie, then Eileen, then Steve.

COMMITTEE MEMBER HOLMES-GEN: Yeah.

Thanks, Commissioner Scott.

And I wanted to make sure that the Lung Association fully supports this $92 million for hydrogen stations. And it’s really incredibly important to keep these stations rolling out, and especially to get duplication in areas where we only have one station, and that’s been a problem. So we -- the public needs to have confidence to buy the cars and know that there’s multiple opportunities to fill their cars with -- to fuel the cars.

And I wanted to agree with Brian’s comments, also, about the importance of getting the information, about, you know, what are the gaps in stations that we might encounter in 2022, given where we need to be to be on track for the
5 million EVs? That’s an incredibly important goal, and especially given the long lead time to get the stations on line. It is important, I think, that we try to get that information as soon as we can and then, you know, gear up funding to support that need.

And finally, I’m really happy that now I know that the hydrogen -- or the fuel stations actually -- or hydrogen stations actually include their own education component. I was really happy to learn that when I went and fueled up a hydrogen car and I didn’t know exactly how to do it, and learned that there’s a nice little video right on the station which tells me how to do it, which I played about three or five times.

And I learned at the ten-year celebration that not only will stations have the videos on -- physically on the station that you can watch, but some are coming out where they’re going to have apps and then you’ll be able to look at the how-to video on your phone, and other ways of learning.

So I was really happy to see those learning components. And it definitely helped me get over the initial concern about how in the
heck do I do this?

COMMISSIONER SCOTT: Eileen, and then Steve.

COMMITTEE MEMBER GREENBERG: I just -- I want to comment on something that John Shears said, and I think he probably agrees with me, but I don’t know if I might have misheard it.

I would suggest that it’s too early to decide which technology works better for any application and for any person. And I would agree with Analisa said, which is we need zero-emission vehicles. We don’t need to pick a winner in any application. And we -- I believe that both of these technologies, and maybe there will be a new one, who knows, are needed in order to get to 100 percent ZEV in 2050.

So I want to avoid any suggestion that one technology is preferable or better, I think, or in certain applications or for certain types of people. I think that that is definitely the case now. And that’s why it’s great that we have some diversity in different kinds of zero-emission vehicles, but it’s not clear to me what the future is going to look like. And even in the -- in like the goods’ movement sector, last
mile trucks may not exist in five, ten years.

You know, we may have autonomous light-duty vehicles and drones delivering our goods and packages.

So I don’t know, and I think the transition is going to happen much quicker than we thought, but I want to say we definitely support this funding for hydrogen fuel cell stations and we think it’s very complementary to the charging stations.

COMMISSIONER SCOTT: Steve?

COMMITTEE MEMBER SHEARS: This is John Shears, who --


COMMITTEE MEMBER SHEARS: -- totally agrees. And I just want to -- yeah.

I didn’t mean to imply superiority of one technology over the other, just to clump -- to take (indiscernible), just use the complementarity of the technologies, so -- because they’re both going to be evolving and changing and having different capabilities, along with supporting infrastructure and technology, so I totally agree with Eileen.
COMMISSIONER SCOTT: Steve?

COMMITTEE MEMBER KAFFKA: I just wanted to complement Brian for his shout-out to poor old biomass and just kind of say that we have these categories we are setting up, but in many cases there could be complementarity and overlap. And so I’d like to encourage the staff and the Commission not to be too rigid in thinking in silos and categories, because they can be complementary.

COMMISSIONER SCOTT: Great. I don’t see any more tent cards here in the room.

Did anybody, any of the other Advisory Committee Members on the phone or on the WebEx would like to say something in response to the hydrogen refueling infrastructure allocation of $92 million, please go ahead. Okay, I know they’re not shy, so they would jump in if they had wanted to speak.

So with that, let’s turn to our public comment on the topic. We will start with Bill Elrick, followed by Matt McClory.

MR. ELRICK: Thank you, Commissioner.

First, I want to say congratulations, after ten years. It’s gone pretty darn fast. And
you’ve been really, really responsive to the Governor’s executive order and we’re really excited and happy to see the ZEV future that you’re aiming this towards.

We’re thankful for the $92 million. We think that will help achieve or get to a closer point to the early milestones of 2025 and towards 2030. I want to mention publicly, we’re working on a new roadmap at the California Fuel Cell Partnership. We’ll have it out, I’ll say, by this summer to provide a little bit more guidance, input and direction on where the industry is going. It will work towards that 5 million vehicle goal. We’re aiming that direction, and also the transition to a sustainable, private industry-led marketplace which really is our final goal in all of this.

Looking at some of the conversation earlier, I think it’s interesting, just I want to point out that there, in the slide you have, it was very helpful to hear the explanation and discussion about the 2025 goal versus 2030 and how you’re approaching it. But even the slides show a little difference there, where 2030 is kind of in the back of your minds on the BEV.
side. And 2023 is what you’re showing on the hydrogen side. So I think being a little bit more aware of the 2025 goals and where we really want to be in the ZEV world is important.

I also want to point out, there was discussion earlier about the different kind of funding pots out there. Right now, I heard VW, I heard ratepayers and the PUC. Hydrogen is not in those, so we are really thankful for this program because that and the private match are what are creating the early market. And to that point, picking winners or losers, I’m glad we’re not and the state has never looked two years into the marketplace and decided that future. Didn’t do that for batteries back in the 2010-2011 period, or even in the ‘99 -- 1990s, so I’m glad we’re looking at where we need to be, and that’s important.

And then the last comment I really want to focus on is back to the privately-led marketplace that we’re trying to achieve. One of the great things about hydrogen and the infrastructure we’re developing, there’s actually a business incentive, a business case at the end of this. Government’s role is to help launch the
market and then move us through that valley of
death into something where government doesn’t
have to play this kind of role again. Industry
sees it in hydrogen. They’re working towards it.
Industry and CEC and the other state agencies are
all working towards that, and I think that’s a
really, really important piece. Because that’s
our real goal at this, is creating not only a
2050 future of ZEVs, but one that the government
can focus on other things.

And so, you know, how we encourage and
create a policy and business environment to make
that transition is really important. And I think
you’ve had it in the investment plans and the
solicitations.

And I’ll just say at ending that -- thank
you very much for you, the staff and the
Committee’s hard work on getting us this far, and
we look forward to the rest.

COMMISSIONER SCOTT: Thank you.
I have Matt McClory, followed by Naveen
Barry.

MR. MCCLORY: Hello. Good afternoon.

Matt McClory with Toyota North America. And I’d
like to say on behalf of Toyota, we really
appreciate the opportunity to provide comment. And we thank the Commissioners and staff for the significant effort in a very short time to update the Investment Plan following the Governor’s executive order at the end of January. So we really appreciate this opportunity to be here today.

We fully support the proposed increase in the 2018-2019 hydrogen allocation of $92 million. And we recommend that this be used to maximize the ramp-up in the number of hydrogen fueling stations awarded in this term.

In addition to the concept that it’s been done in the past, of pulling forward funding from future terms, it is important to frontload the build-out of the stations due to the lead time necessary to get them up and operational, and also to ensure that the stations come first to allow the sales of vehicles, because this is a key thing when we’re talking to the customer and the dealership, is to explain to them where the stations are in order to make that decision.

We continually get the feedback from customers and from our regions that represent the dealers on intenders of fuel cell vehicles and
the feedback of, well, if there was a station in X-Y-Z area, I would be able to -- be able to purchase and so we’ll wait, or they provide us this feedback. And so we want to make sure that we provide that feedback to the state to help guide in those decisions.

Toyota has now sold and leased over 3,300 Mirai fuel cell vehicles as of early this week, and this is since our launch date in the end of 2015. And this would not have been possible without the leadership and the support from California and the significant incentive policy that’s available today. And we feel, also, that this is important to note that the collaborative process between automakers and the state was helpful in reaching this target.

The fueling data and the customer feedback from our customers in California shows that we now have the highest peak demand of anywhere on the planet for fueling, you know, higher than Japan, higher than Europe. And so this is really a tremendous accomplishment of where we’re at today, but it’s also showing -- it shows the potential growth for this technology, but it also illustrates the learnings of the
existing fueling network and the challenges of
the limited supply chain, as I think some of us
have experienced directly.

Based on these learnings, and to allow an
expansion of fuel cell vehicles in the state,
both for our current model, our next general
vehicle model, as well as for all OEMs, it is
critical to accelerate the build-out of these
stations planned in this Investment Plan before
the 2021 kind of target timing, so we want to
make sure that there’s this push. And we want to
make sure that this is part of a statewide
comprehensive network designed to balance
coverage and redundancy. So this is kind of a
bit of pivot from talking about capacity towards
really talking about coverage and redundancy to
make sure that the network is going to be robust
and resilient.

So to realize this goal, we recommend to
strengthen the coordination that we have today
between automakers, station developers and the
state to help develop the next solicitation, and
implementation of new measures that would allow
greater investment by industry towards this goal.

And so kind of three key points I want to
kind of highlight, is being able to recognize the
input from the automakers to identify target
locations of the market, of customers, to make
sure that these are kind of consistent with the
approach of where stations are going to be
awarded, an increase in the number of stations
proposed in a single award station and as part of
an integrated network, and an increase in the
peak fueling capacity. And we feel that this
support would allow reductions in the fuel price
to the customer, allow lower price -- lower
equipment cost or reductions cost through the
standardization of all purchases of standardized
equipment, and also improve the customer
experience.

So moving forward, and in closing, we
welcome the opportunity to provide detailed
guidance on draft concepts that may be generated
for the next solicitation. And we appreciate the
continued dialogue with staff to support the
increase in zero-emission vehicles in the state.

Thank you.

COMMISSIONER SCOTT: Thank you.

I have Naveen Berry, followed by Aaron
Harris.
MR. BERRY: Good afternoon, Commissioner Scott and the rest of the Advisory Committee. I’m Naveen Berry. I’m the Technology Demonstration Manager at South Coast AQMD, and just wanted to focus in on a clarification. We heard earlier that the EVSC (phonetic) funding that’s been allocated is available for medium- and heavy-duty, as well as light-duty vehicles. And I wanted to seek that clarification for the hydrogen portion of the funding as well. And if it’s -- I understand it may be focused on light-duty. I wanted to request consideration for medium- and heavy-duty hydrogen refueling infrastructure in the South Coast, Northern California, as well. I think it will go a long way towards supporting the Sustainable Freight Action Plan, our local ports Cleaner Action Plans, and certainly the AQMD’s Air Quality Management Plan.

So thank you.

COMMISSIONER SCOTT: Thank you. And, yes, we did mean to say that for -- there will be portions of that for medium-duty/heavy-duty on both the charging infrastructure, and also on the hydrogen infrastructure.
Aaron Harris. And that’s the last blue
card I have from the room.

MR. HARRIS: Hello.

COMMISSIONER SCOTT: And if you’d like to
make a comment, please feel free to fill out one
and come on up.

Hello.

MR. HARRIS: Thank you for the
opportunity to speak with you. And, also, we at
Air Liquide would like to really thank you very
much for the hard work. To the multitudes who
understand whose efforts led to both the
executive order and now the Investment Plan, and
again, I think we echo our complements and our
appreciation for your hard work.

And I think what’s interesting, thinking
that while many consumers already have the
prerequisites required to operate a battery-
electric vehicle, it’s clear that the allocation
of funding, as well as the comments that we’re
hearing today, that there’s a broader challenge
to that wider deployment. And we, in the
hydrogen infrastructure, understand that
challenge up front because we understand that
we’ve been facing that same reality day one on
our we deploy our hydrogen infrastructure. And we see a lot of complementary aspects to how we can collectively increase and move forward with the ZEV infrastructure.

So as an example, you may know that our installation for Air Liquide in Palo Alto will include two brand new charging stations as part of what the building codes require in Palo Alto. So as complements to understanding and seeing that, what’s unique, to say, okay, well, I’m sure the building code forced you to do that. Well, actually, we’re considering several of those similar complementary installations for our network in the northeast. And you may be aware that we’re building several stations based on your hard work and efforts here in California in the northeast in a private effort by Air Liquide to continue to push the envelope for this.

So that said, I think one of the things I wanted to make sure we advocated is for Air Liquide, we see the executive order as a response to the Hydrogen Council’s published report, which was published in November. It’s called Hydrogen Scaling Up. And we think that -- well, I’d certainly advocate any of you to go to the
Hydrogen Council website, download the report and understand more about what the Hydrogen Council is doing globally. That report, which was published by McKinsey and Company, outlines $230 billion of investment globally across seven market segments that we fill by 2030, specifically 10 to 15 million cars and 500,000 trucks, again, at a global level.

So now really part of our efforts within Air Liquide are trying to regionalize those. And regionalize, in the report, you’ll recognize that there are three -- four regions called out, Germany, South Korea, Japan and California. So still, in that sub-nation status which California enjoys and I think relishes, and also works very hard within, we’re recognizing that and we’re looking forward to that.

So we hope that the Global Climate Summit with the regional efforts in support of ZEVs will continue to help align the synergies with BEV charging in these retail environments, along with the continued acceleration of hydrogen network planning, particular, as was just stated, I think, in the expansion of heavy-duty and medium-duty applications.
So thank you very much. I really appreciate it.

COMMISSIONER SCOTT: Thank you. I don’t have any other blue cards from the room. Do we have comment on the WebEx?

MR. BRECHT: (Off mike.) Yes, we do. I’m trying to figure out (indiscernible) questions.

COMMISSIONER SCOTT: Okay. So I hear that we have two comments on the WebEx. Please indicate if you’d like us to open up your lines so that you can speak, or if you’d like to type in your comment and then Patrick will read it for us.

(Colloquy)

COMMISSIONER SCOTT: Emanuel Wagner, if you are there, please speak up. We’re ready to hear your comment.

I think he’s un-muted on our end; correct?

Emanuel, if you are there, you are un-muted on our end. Oh, I’m sorry, you’ve actually been muted again. Hold on just one moment.

(Colloquy)

COMMISSIONER SCOTT: Okay, Emanuel, while
we try to double check you’re un-muted, I hear
that Wayne Leighty is un-muted.

So, Wayne, if -- please go ahead, and we’re
ready to hear your comment.

MR. LEIGHTY: Thank you, Commissioner
Scott. Can you hear me?

COMMISSIONER SCOTT: Yes.

MR. LEIGHTY: Great. Thanks. I just
wanted to briefly echo what I think has already
been said very effectively by others, which is
there’s a powerful convergence of objectives
happening here, which is very exciting.

Accelerating and scaling up zero-emission
vehicles per the Governor’s executive order for
California’s emission reduction goals also
enables some of what Bill Elrick and others have
talked about; that scaling up enables the
conditions, I think, for broader and larger
customer adoption of the vehicles. Reducing the
cost of the infrastructure for hydrogen refueling
is something that I know very well and work on,
and that’s good stewardship, I think, of the
private and public funds accomplishing more with
every dollar. So I’m very excited that this kind
of scaling up can activate that potential.
And then building out the capacity and
coverage in the refueling network, as Matt talked
about, making the fuel more available, I think
also will help customers see fuel cell electric
vehicles as a good choice. And more and larger
volume and more diversity of vehicle types coming
helps us all find the ZEV that we want, whether
it’s a pickup truck or a minivan or a sedan.
So I’m very excited. Thanks for the
opportunity to make a comment.

COMMISSIONER SCOTT: Thank you.
Let’s see, is Emanuel Wagner un-muted?
MR. BRECHT: (Off mike.)
(Indiscernible.)
COMMISSIONER SCOTT: Okay. We see that
you’re typing.
So what I’m going to suggest that we
do -- do I have any other public comment on the
phone or the WebEx?
Why don’t we then, we’ll go ahead and
break for lunch. Everyone, please come back at
1:30. We will start at 1:30 sharp, and we will
start by reading the comment that Emanuel is
typing in.
Thanks everyone. So we’re breaking until 1:30.

(Off the record at 12:45 p.m.)
(On the record at 1:40 p.m.)

COMMISSIONER SCOTT: Welcome back to our critical mass back in Sacramento and on our WebEx.

And for our friends on the Advisory Committee in Sacramento, and also on the WebEx, I have been calling on you, just to make sure that you are recognized. But if you hear a pause and you’d like to say something, feel free to jump in, just as if you were here in the room with us at the table. We definitely want to hear from you, and so feel free to jump in if you don’t want to wait for me to call on you. But I will also try to call on, just the way that we kind of recognize folks around the room so that we don’t end up talking over one another. But, again, please do feel free to jump in.

What we’re going to do, because we’re losing Chris in just a little bit, is to start back after lunch. I’m going to ask Jacob to please read the comment from Emanuel Wagner on the hydrogen refueling. And when he’s done with
that, we will then transition into the Advisory Committee discussion of advanced freight and fleet technologies. When we’re done with that, we’ll jump back up to the manufacturing and workforce, and then to the low-carbon, and then to natural gas vehicles.

So, Jacob, if you would please read our last public comment there on hydrogen, that would be great.

MR. ORENBERG: Thank you, Commissioner.

This is from Emanuel Wagner, and I’m just reading this from WebEx into the record.

“On behalf of the California Hydrogen Business Council, I would like to thank the Commissioners and staff for the work and effort put into this second revised plan. The CHBC is supportive of the expansion of program funding to $92 million for hydrogen infrastructure.

“As Bill Elrick mentioned, this additional funding will help create certainty for our business members, allowing them to make long-term investments into technology in California.

“It will also expand -- help expand the
supply chain, bringing more companies into the market. We see this as an opportunity that can increase competition among suppliers and help reduce the cost of fueling station components and, ultimately, the stations themselves.

“In consequence, California will continue to lead the development and deployment of hydrogen fuel cell technology and create high-tech clean energy jobs.

“We also support the allocation of program funding to renewable hydrogen production. Hydrogen producers can make very good use of excess renewable energy,” I’m sorry, “electricity, thereby avoiding curtailment. Instead of curtailment, that electricity can be used to make hydrogen, a high-value transportation fuel that has no GHG emissions in its production and is fully zero-emission in its use. Adding funding for renewable hydrogen production facilities will diversify the fuel supply in the state and help reduce the cost of hydrogen at the pump.

“Thank you all for your time.”
Jacob, for reading that into the record for us.

And thank you, Emanuel, for your comment.

Let’s now turn to the advanced freight
and fleet technologies, which is a proposed
allocation at $17.5 million, and turn to the
Advisory Committee discussion.

Chris, would you like to kick us off?

COMMITTEE MEMBER SHIMODA: Sure, and
thank you for the accommodation.

Just wanted to support the allocation.

You know, as I said in the earlier item, the hope
is for both this solicitation and then some of
what the Air Resources Board is doing later this
month, that you will start seeing some actual
truck fleet-based projects for this coming year.

$17.5 million sounds like a lot. Based on the
cost of some of these projects, I can tell you,
that’s going to go fairly quickly if everything
works out well.

The other side of this would just be --
and I will take the advice, put this in written
comments, but there are also these other
equipment categories that are sort of trucking
adjacent, such as refrigerated trailers that you
have commercialized technologies for but a severe
lack of infrastructure at the facility side, that
we’ll definitely be interested in seeing some
projects on that side, as well, so -- but we’ll
make sure to actual put that down in writing with
some technical data that you guys can evaluate
and consider.

COMMISSIONER SCOTT: Other Advisory
Committee comments on advanced freight and fleet?

Yes, Steve?

COMMITTEE MEMBER KAFFKA: I seem to be
somewhat worried that I’m one of the critics in
your mass here, so -- but I’m wondering if this
includes, as well, funds for advanced compression
engines, for example, for medium-duty vehicles or
short -- or hub-and-spoke systems that would run
on compressed natural biogas? And that might be
particularly, in my view, valuable in the Central
Valley.

I’ve been part of the Short-Lived Climate
Pollution Program and contributed to the dairy
sector programs now that are attempting to reduce
methane emissions from the dairy sector. We also
could get biogas from waste straw (phonetic).
But one of the things that will limit the success
of those programs is a lack of demand, fuel -- in
other words, lack of vehicles that actually
consume the biogas, so you have to have that, as
well.

And so those vehicles certainly have some
emissions, but they’re much, much lower than they
were. And they represent a significant form of
short-term progress and mid-term programs for the
San Joaquin Valley. So a combination of
refueling stations and vehicles -- support for
vehicles that would actually use those fuels
would help advance the Short-Lived Climate
Pollution Plan --

COMMISSIONER SCOTT: Um-hmm.

COMMITTEE MEMBER KAFFKA: -- which should
be, I think, of concern to the Energy Commission,
as well as simple vehicle numbers.

COMMISSIONER SCOTT: Absolutely. I will
note that that is something that is of concern to
us, as well.

One of the things we did try to do within
the Investment Plan was put our investments in
context with the broader set of investments that
are taking place around the state. So on the
biofuel side, and we’ll get to that when we get
to that discussion, there are dollars at CDFA and
other places. And on the advanced freight and fleet vehicle side, Air Resources Board has the Clean Truck and Bus Program that has, I believe, $180 million. So we tried to put some of this in context because we, I think all of us, recognize how great the need is. And then each of us kind of has our component that we take on and work together.

And back to Chris.

COMMITTEE MEMBER SHIMODA: Yeah. And, you know, thankfully, biomethane is a drop-in fuel for, you know, a natural gas vehicle, so there’s really no specialized, at least on the truck side, equipment that you need to run that. There are some other allocations. Right now, I know the VW money, there is a 0.02 ultra-low-NOx natural gas engine allocation there. It’s split three ways, $60 million proposed. You do have the allocation for ASHRIP (phonetic) coming up, as well as, you know, apparently $10 million that we have not spent through this program.

So not saying that, you know, a natural gas project shouldn’t necessarily be considered here. But I would just say, again, these zero-emission technology demonstration projects, when
you combine the cost of the vehicle plus the
infrastructure plus some of the other facility
upgrades that these operators are looking to do,
the dollar amounts do add up pretty quickly, so
just, you know, just a thought there.

COMMISSIONER SCOTT: This is a lesson
learned, as well. We have a Ports Collaborative,
the Energy Commission has a Ports Collaborative
where we work with Port of Oakland, Port of
Stockton, Port of Hueneme, Port of Los Angeles,
Port of Long Beach and Port of San Diego. And we
put together a demonstration project for electric
infrastructure -- electric vehicles. And when we
came back the feedback was we also need money for
the infrastructure. The ports were surprised by
how much the infrastructure cost. And so we’re
certainly open to that as we put these together.

And I don’t know that we have a workshop
set up for how -- what the solicitation design
for this particular funding looks like yet, the
way that we have the one on May 14th for the
zero-emission vehicle infrastructure, but stay
tuned on our listserv. We will certainly have a
pre-solicitation workshop there.

I know the folks in the room have been
anxious to jump in, so let me just go back to
Sacramento. If you would -- are in the Advisory
Committee in Sacramento or on the phone and want
to jump in, please do.

COMMITTEE MEMBER SHEARS: Yeah. I’m not
sure where I was in the queue. This is John
Shears.

I just wanted to explore -- you know,
support the $17.5 million. But I’m just
wondering, too, to what extent there’s any
flexibility to tap into some of the $22.65
million for the EV fuel cell front given, you
know, the -- how important these types of
projects are to the communities around the ports,
and the fact that, you know, as pointed out in
the Investment Plan, the last solicitation,
GFO-16-604 funded $24 million for three projects,
but was oversubscribed by 15.6 in terms of, you
know, proposals that could have qualified?

So I was just wondering if we could get a
little more elaboration around, you know,
anticipated projects that could be in the
pipeline and flexibility, you know, with the
electric infrastructure and the fuel cell
infrastructure money; i.e. there might be some
synergies there with the projects at the ports and that? But I’m not quite sure how you would parse that our budget-wise, so if there’s any been any thinking about that, how to approach that, or if that’s something we would work out at these later workshops?

COMMISSIONER SCOTT: I think it’s something we’ll talk about in more detail at the later workshops. I will ask John Kato to speak, just for a moment, about the categories because there are times where we combine funding from different categories into one solicitation to make sure that we’re kind of hitting a well-rounded space, and maybe that’s all we need to say there.

But do you want to add anything to that?

MR. KATO: No, that pretty much what we look for is opportunities for synergies between categories where they make sense, with a holistic approach in all senses. So while they’re somewhat siloed in the categories, we have a holistic approach in the solicitations.

COMMISSIONER SCOTT: Bonnie, and then Ellen.

COMMITTEE MEMBER HOLMES-GEN: Thank you,
Commissioner Scott.

I just wanted to call attention to the fact that the American Lung Association and the Union of Concerned Scientists put in a letter, a comment letter, in November. And one of the key comments was that we would like to see the identification of heavy-duty -- medium- and heavy-duty vehicle categories where electrification should be prioritized.

And I definitely see a lot of discussion about, you know, the ZEV strategy and the sustainable freight strategy and some of the electrification goals, but -- and I see that there is a discussion about the School Bus Project, which I really appreciate and we’re very supportive of getting electric school buses out as quickly as possible.

And I wonder if you could just comment about that? The question is that, you know, we’ve made so much progress now that there are specific project categories that we think should be dedicated to electrification, including transit buses, delivery trucks and other short- and medium-range vehicle applications. And I just wanted to hear what the response is to that.
COMMISSIONER SCOTT: I think that we have taken that under consideration as we are thinking through how to design these programs. On the school bus workshops, I know we’re still in the middle of rolling those out and talking to people to understand the best way that we can utilize that funding across the school districts.

And I think that we have not -- we’re always open to whatever it is that we can get to transition to the cleanest vehicle, the cleanest fuel the fastest way that we can get there. And it’s because I think of Matt Miyasato and his photo of a beaker and it’s like, oh, no, we’ve got so much to do to meet the clean air standards, and that timing is coming really fast. And 2030 is also coming stunningly fast. So we’re always kind of trying to think about what that best mix is. We usually kind of really get down into the details of that when we’re designing the solicitation to make sure we’re aiming the solicitation in the right way.

So that’s kind of the broad answer to the question. And I think that those discussions, I know it’s taking place in the school bus workshops. I know it will take place in the one
that we’re having on May 14th to talk in more
depth about the charging infrastructure and
hydrogen refueling infrastructure. And I can’t
imagine that it wouldn’t also take place when we
have the discussion about the advanced freight
solicitation design, as well.

COMMITTEE MEMBER HOLMES-GEN: Well,
thanks. I’m glad to hear that. I just wanted
to, again, underscore the comment that given the,
you know, the maturation of electric technologies
and --

COMMISSIONER SCOTT: Um-hmm.

COMMITTEE MEMBER HOLMES-GEN: -- all the
great progress that we’ve been discussing today,
we’ve had a wonderful discussion here, that I
think we’re getting to the point where, from our
perspective, we should be laying out those
categories where we want to dedicate funding,
because we have to get over this hump and get
large numbers of vehicles and infrastructure out
there to get to these goals that the Governor has
set --

COMMISSIONER SCOTT: Um-hmm.

COMMITTEE MEMBER HOLMES-GEN: -- and to
get to our 2050 greenhouse gas goals.
COMMISSIONER SCOTT: Ellen?

COMMITTEE MEMBER GREENBERG: I just wanted to request that staff circulate information about the May 14th workshop you’ve referenced.

COMMISSIONER SCOTT: Oh, of course, absolutely. So I’m giving you all a preview that that workshop is coming up on May 14th. As with all of our Energy Commission workshops, there will be a public notice that comes out, lets the rest of everyone know, if they’re not paying attention to us today, so that they are able to come and to participate. And like all of our workshops, if you aren’t able to be in Sacramento where that one will be held, you can always participate by WebEx or provide us with written comments within the comment period for us to take under advisement.

But, yes, there will a notice. It will probably come out in April. But I wanted to give folks here and how are listening a heads-up, so that they know that that’s coming.

COMMITTEE MEMBER GREENBERG: Yeah.

COMMISSIONER SCOTT: And that’s where many of the detailed conversations about how to
spend the allocation will take place.

COMMITTEE MEMBER GREENBERG: That’s great. Thank you.

COMMISSIONER SCOTT: You’re welcome.

Bonnie, am I back to you, or is that up from before?

COMMITTEE MEMBER HOLMES-GEN: (Off mike.)

No, I think I’m okay.

COMMISSIONER SCOTT: Anyone on this side? You all are very quiet. Okay, I don’t have any more tents up in the room.

So let me turn back to the Advisory Committee on the WebEx or on the phone. If you’d like to make another comment, please jump in.

Ralph Knight, I see that you’d like to speak. Please go ahead.

COMMITTEE MEMBER KNIGHT: Yeah, I just wanted to mention that there’s a lot of fantastic things happening in the school bus world. We’re seeing most of the major manufacturers now electrifying both special needs buses, the smaller buses, and large buses too. So there are choices out there now. We’re publicizing it very heavily with all the districts to get involved. You know, I’m excited to see what’s going on.
The Volkswagen money is really opening the door for the yellow bus. And I think that we’re going to see a big push forward to try to get rid of all the older buses off the road as quickly as we can.

And I think the technology has improved itself in so many ways. You know, I every well remember the days in 1997 with 120-some-odd batteries in a battery pack that you had to deal with every day because one battery went bad in that pack. So, I mean, I know what electric buses come from, and I know where we’re going now I think is a fantastic situation.

So I think we’re going to see a lot of good movement in that. And there’s a lot of public publications going out, pushing this towards some people for it. So I think that -- I think it’s going to be a real positive situation.

COMMISSIONER SCOTT: Thank you, Ralph.

And if you could send those publications to us in our docket, that would be fantastic. I think we’d love to see those, and I imagine the rest of the Advisory Committee would, as well.

COMMITTEE MEMBER KNIGHT: Okay. I will get those put together and do that.
COMMISSIONER SCOTT: Thank you.

Do I have any other Advisory Committee Members on the phone or WebEx who would like to speak to the $17.5 million allocation for advanced freight and fleet technology? Okay. I do not have any blue cards from folks in the room.

Do we have any folks on the phone who would like -- or WebEx who would like to make a public comment?

Okay, so there is no public comment for us on advanced freight and fleet technology.

So let’s jump back up to the manufacturing and workforce development, $8.5 million proposed allocation within the zero-emission vehicle infrastructure.

Peter?

COMMITTEE MEMBER COOPER: Yeah. First of all, I want to thank the Commission for including the Employment Training Panel in your ten-year anniversary events. This was really exciting for us, for our staff, to be able to highlight the way that we’ve worked together with applied materials, as an example, and other manufacturers and employers in this sector. So I really enjoyed...
it and I’d like to see more of it for the 15th and 20th year.

I do have a few comments about the workforce development section of the plan. First of all, we’re also excited about the huge increase in funding for EV infrastructure. And I think that ETP and the state workforce agencies can really support that work.

Together with that, we do recommend that there is an increase in some of the funding for workforce training; an increase of $1 million would make sense to me for increasing from the previous $3.5 million to $4.5 million for the ‘18-19 fiscal years.

We’ve already had some interest from the electricians. The IBEW-NECA has training program called the EVITP. This is the Electrical Vehicle Infrastructure Training Program. And it’s a collaborative, industry-driven program to provide training and certification for the installation of the charging stations. So that’s pretty exciting and I’m hoping that’s one kind of program that we’ll be able to fund going forward.

One of the -- I also wanted to
highlight -- I was going to highlight some of the employers that we have funded recently in just a moment.

Before I get to that, I would like to also add that in the past the ETP has worked with local governments for planning around -- this is actually around drought, around the drought and training for their planning agencies. And this is something that we’ll be exploring to see if there’s some way we can work with local government for planning around EV infrastructure sitting.

So those are kind of areas specifically related to the EV charging stations.

Some of the employers we recently have been funding in the manufacturing sector include Carma Motors, Applied Materials. We’re working with GILLIG. And we’re hoping that BYD -- we’re developing a contract with them, in fact, also Faraday Future, Proterra. And we’re continuing to look at both the manufacturing employers themselves, but also their supply chains.

So one of the things that we’re doing in support of a ZEV Action Team is to work with the LAEDC to put together a symposium for
manufacturers in this sector to see what kind of workforce training they might be needing and how the state can support that, whether that’s ETP or there’s other -- what other state resources are available to them, so I’m looking forward to that, as well. And that’s going to happen this summer, and I’ll have more details for you on that.

We’re continuing to support the expansion of the transit project that Santa Clara -- the VTA down there has. And I’ve brought that information to you before, but this time they’re planning to work with L.A. Metro and AC Transit and the community college system to provide training for bus mechanics down there.

And one other area we’re working on is looking at the manufacturers for the school buses. And so we’ve just had some preliminary kind of discussions with John Kato from your office about ways that we can work with manufacturers in the regions, working with school districts to see how we might be able to strengthen their ability to produce those types of school buses in the future. And those might come to fruition in contracts, so we’re going
down that road, as well.

Just a few remarks regarding the Second Revised Staff Report.

We see that the manufacturing has been combined with the workforce for a total of $8.5 million. We don’t really think that this is a good change from the perspective of how ETP is able to market the program because, as we’ve seen in the past, it’s really important for employers to know that funding -- funds will be available before they start to enter into the process for developing a contract with us for job training, which can take a couple of months to get it to the point where it’s approved by our panel.

So there’s a little bit of uncertainty that’s created in kind of my -- the way I’m looking at this, when you start to combine both the manufacturing and the workforce development sections. We would prefer that they are bifurcated and looked more similar to the way that they did in past iterations of the plan.

Let me see, a couple more remarks.

Yeah, so overall, you know, we’re very supportive of the plan and the level of funding, but we do have concerns about the assurance that
there is enough money available for both the contracts that are in the development process with ETP, some of the manufacturers that I mentioned. We don’t want to cut those off, too, and say we’re going to just have funds to be supporting EV infrastructure. We’d like to do both, and we’d like to expand the pot of money for workforce training.

COMMISSIONER SCOTT: Thank you. And I did want to say, thank you, also, for coming to the tenth anniversary event. It was fantastic to have you there and be able to highlight all the things that we’re doing to build a well-trained workforce in this clean transportation revolution that we’ve having, so it was great to have you there. And as you all know, we can’t overstate the importance of a well-trained workforce, and so it’s great to get to work with you all on this.

I see Eileen, and then Ellen.

COMMITTEE MEMBER TUTT: Thank you. I just wanted to suggest that this workforce training -- workforce development money is incredibly important, especially in the communities that we’ve been working with. And we
have three upcoming meetings that I know, Commissioner, I’ve invited you to. And hopefully, maybe, you can send staff to those meetings to talk to these communities about this opportunity. Because what I’ve noticed in working with our sort of community folks, they’ve suggested that they really want to embrace electrification in their communities because they see job opportunities in those communities. And they have -- I mean, job opportunities are scarce.

And so to the degree to which we can use this money and do some outreach and education, even if it’s just -- you know, which would be absolutely -- I shouldn’t say just. It would be great if staff could participate in those meetings and explain how communities can access this funding and how they can access the benefits that will be generated as a result of your investments in workforce development in particular.

But I think there are a lot of opportunities to kind of really enforce -- reinforce the fact that electrification, whether it be fuel cell electrification or electricity
electrification, is going to create jobs. And we will try to and make every effort to push those jobs into the communities that most need them.

COMMISSIONER SCOTT: Thank you.

Ellen, and then Tyson.

COMMITTEE MEMBER GREENBERG: Thank you. I just wanted to bring some attention to the fact that SB 1, the Road Repair and Accountability Act of 2017, does establish funding for transportation-related workforce education training and development by the UC and CSU systems. And I would hope that there could be come collaborative effort around bringing these different investments together, because it really does seem like an opportunity there.

So that’s -- so we were talking about the, perhaps, somewhat confusing combination of manufacturing and workforce. And in SB 1 there’s a somewhat confusing combination of research and workforce education training and development.

But there you go, such is the nature of things. But certainly there is funding for transportation-related workforce development, and it would be great to capitalize on that.

COMMISSIONER SCOTT: Thank you.
Tyson?

COMMITTEE MEMBER ECKERLE: Great. Thank you. I just wanted to point out how nice the symbolism is of including the manufacturing and workforce within the zero-emission vehicle infrastructure thing. I think, you know, the state is stepping out to do a lot to build this market. And there’s no reason it shouldn’t be developing here from, you know, an economic development and workforce development piece.

And so I think from the GO-Biz perspective, we very much enjoyed working with the Energy Commission in leveraging kind of those dollars that -- you know, for the businesses that come into GO-Biz looking for expansion opportunities or placement opportunities in California, it’s a really important tool to be able to use the help and entice them to develop there, both on the workforce and the manufacturing side. So we appreciate this being in there.

COMMISSIONER SCOTT: Joel, and then John.

COMMITTEE MEMBER ESPINO: Thank you.

Just really wanted to take the time to reiterate some points that Peter raised around really
leveraging this investment. And really just
going back to what John had raised before the
lunch break around the need for a strategic plan
around how we can, again, squeeze out sort of the
economic equity components of this money.

And I kind of just wanted to reemphasize
that Greenlining is committed to figuring that
out with the Energy Commission. And I know that
there’s other folks on the Advisory Committee who
share that same intention. And so we’re hoping
to maybe circle up soon and then reach out to you
all at the Energy Commission to figure out how
best to engage that process, but wanted to just
the opportunity to flag that for everyone
attending the Advisory Committee today.

COMMISSIONER SCOTT: Thank you, Joel.

We’ll warmly welcome that, so please keep us
posted. And to the extent that there are things
that we ought to include in our docket, please be
sure to send that along, as well. That way we
have it on the docket, and not just the Advisory
Committee can see it, but the interested public,
as well.

I have John Shears, and then Eileen.

COMMITTEE MEMBER SHEARS: Yeah. Thank
you. So to just sort of follow up, you know, because part of my thinking in having a -- you know, working with ETP and the other workforce training and labor organizations, community colleges, et cetera, around developing a strategic plan is it would help, you know, like Peter was just saying, if we had another million dollars, so then, you know, staff would have to go back and figure out if they need to adjust it before the business planning meeting in May, it would help us all sort of see together, you know, what the road is on that side, what that looks like, what to help anticipate, so that we can support that side of the ledger.

I’m also thinking, you know, we could go, you know, and look up where all of these things are happening and kind of cobble together, you know, a rather messy picture of, you know, all of the efforts and the funding that’s going on. But part of my thinking in like having a strategic planning process is that helps us sort of pull together a nice refined picture with a refined narrative.

And then that is also an important part of community outreach, and also capacity building.
because there are probably tons of -- I just know, in the work that we do in the valley, the projects that I’m involved in, you know, we’ve been raising the visibility around a lot of these projects. We’ve recruited a lot of the mayors, you know, who really helped us in our advocacy with VW on their first investment plan. But at the same time, you know, it’s hard for those people to sort of know where it is that, you know, they could go to sort of access resources and things like that.

So I think a process similar, you know, not necessarily, maybe, but, you know, something like a strategic planning process would really us to start shaping and filling out what the picture looks like on that side. Because that also would allow, you know, the manufacturers to also tap into, you know, the system and have apprenticeships and stuff that are partially funded from these programs. So just allow everyone to see what the big picture looks like and what we might need to do collectively going forward, so, thanks.

COMMISSIONER SCOTT: You’re welcome.

I think Eileen did not have a comment; is
that correct? Okay.
I don’t see any other tent cards up here at the table. We just heard from John and Joel.
I don’t know if others, Ralph or Irene or John or Joel, if you have any final comments on our manufacturing and workforce development proposed allocation at 8.5, please speak now.
Okay, with that, let’s turn to our public comment on this, and that’s John Schott from ChargePoint.

MR. SCHOTT: Hello. John Schott from ChargePoint. Thanks again, Commissioner Scott and the Advisory Committee for this opportunity.

We are supportive of this allocation for manufacturing workforce development. I know some of you got to see, who were at the ten-year ARFVTP anniversary, that we were able to lug our new DC fast charging platform up there. I just wanted to note that we will be manufacturing that. We are manufacturing that in Campbell, California, so we could certainly put this money to good use.

With respect to the 2017-2018 Manufacturing Grant, I think a comment that I want to make regarding that and this is, you
know, what’s really critical here is
transparency. You know, unlike light-duty EVSC
deployments, manufacturing in particular is a
tricky subject and we can’t just, you know, sort
of create manufacturing projects on the spot. We
need visibility and a better sense of when those
programs are going to come out.

We’ve been looking forward to and
anticipating the manufacturing grant funding
opportunity under the 2017-2018 ARFVTP which we
thought was going to be in December, then
January. You know, I understand, things get
delayed and it’s hard to time that, you know,
perfectly. But just having more transparency and
visibility of that process would be appreciated.

It was a Manufacturing Grant from the Energy
Commission through the ARFVTP back in 2011 that
allowed us to develop a program called OnRamp
that allowed us to bring additional hardware
manufacturers onto our network. So we’re very
excited about that opportunity.

And for, you know, workforce development,
I just again want to, you know, mention, you
know, we have a growing workforce, and not just
directly with ChargePoint, but all of our
national O and M partners, and specifically in California, all these charging stations that we’re going to be deploying, you know, will need to be maintained. You know, while they don’t need regular service they -- you know, people bump into them. They get vandalized, unfortunately, from time to time. And we have a 24/7 operation to roll a truck within 24 hours to any charging station to repair it so we can get those stations back up and running.

So, again, we support that allocation. We could put it good use. And I look forward to participating in those grant funding opportunities when they come out.

Thank you.

COMMISSIONER SCOTT: Thank you. And thank you so much for being part of our display for the tenth anniversary. Appreciate that.

I don’t have any other blue cards in the room.

Do I have any comment on the WebEx? I’m seeing, no, I do not.

I want to jump back to Steve Ellis.

Steven Ellis, if he is on the phone, he would like to make a public comment about the EV and
hydrogen refueling infrastructure. So if you could please open up his line.

Steve, go ahead.

MR. ELLIS: Great. Thank you, and good afternoon, Commissioner Scott and Advisory Committee. As I mentioned, my name is Steve Ellis. And on behalf of Honda Motor Company based in California, Torrance, California, we’d like to thank the CEC and state for its continued support of projects toward lower emission vehicle transportation, and specifically toward this Investment Plan allocation to advance cleaner transportation solutions. This is really for our customers, the taxpayers citizens of California. The Honda Clarity is now out in the state and it’s available as a large, five-passenger sedan in three powertrains, the Clarity Electric, all-electricity vehicle, the Clarity Plug-in, the plug-in hybrid, and the Clarity Fuel Cell. And, you know, over many years of our activity, we’ve moved from many demonstration projects to early commercial deployment. And now, you know, it’s really commercial deployment of all three of these vehicles in the state.

You know, so in summary, really, we
support this big step up in funding toward infrastructure and low-carbon fuels and, you know, thank the state for leadership with the development of this and acceleration of this commercial hydrogen station network and EV charging network in the state of California.

So that’s it, and thank you very much.

COMMISSIONER SCOTT: Thank you.

Okay, we will now turn to the Advisory Committee discussion of the low-carbon fuel production and supply at $25 million. I’m going to start with Joe.

COMMITTEE MEMBER GERSHEN: I didn’t even need to put my name tag up.

So, obviously, I didn’t really want to be the sticky wicket here, but I guess that’s partially my role.

I want to congratulate folks for the EV that’s already made it to space. I think that’s fantastic. And I’m sure it’s captured the imagination of our friends and family in the Central Valley and other working-class communities around the state.

So notwithstanding that accomplishment, on behalf of the California Advanced Biofuels
Alliance that I represent here, I want to thank Commissioner Scott and staff for their work on the Investment Plan Update. But at the same time, we also are very disappointed to learn about changes that will ultimately severely disadvantage our industry.

The ARFVTP budget is projected to increase this next year from, as you say, $100 million to $277.5 million. In an all-of-the-above scenario, all alternatives would share equally, but that’s not the case with your proposed budget.

In previous versions of the Investment Plan Update, alternative fuel production was allotted $25 million for in-state production. This latest version of the plan eliminates funding created by AB 118 and AB 108 and backfills it with Greenhouse Gas Reduction Funds, which are not guaranteed and will need to be reallocated every year.

While the legislation that established the ARFVTP was technology-neutral, your proposal to transition biofuels funding to an annual budget allocation is clearly intended to favor one technology over another. This runs blatantly
counter to the intent and spirit of the program. Despite our suggestion -- your suggestion in Chapter 5 that you may consider funding opportunities for biodiesel or other related terminal blending infrastructure, GGRF funds cannot be used for this purpose, so that suggestion is really hallow.

As I’m certain you are aware, the $25 million in GGRF funds recommended in the Governor’s budget was intended to be in addition to our portion of ARFVTP funding allocations. It was not meant to be used to move our money into another category. As such, we insist that the $25 million from the program funding be reinstated and the $25 million allocated in the Governor’s Cap and Trade Expenditure Plan be included in the Investment Plan as new monies available to the industry to expand in-state production.

I would like to remind you that biofuels provide roughly 90 percent of carbon reduction benefits under the Low Carbon Fuel Standard. And yet, with this new Investment Plan the amount of funding available to this sector is less than one-tenth the amount of the total budget. By
refusing to allocate the ARFVTP budget among all the alternatives that are required by statute, you are picking a very expensive and speculative alternative. The proposed reduction in funding is unjustified and must be reconsidered.

The media and legislature should know what you’re doing, especially in an election year. We strongly disagree with this new plan. The alternative fuel production category should be allotted the $50 million that it was intended to receive and certainly has earned based on performance metrics.

The $25 million from the ARFVTP portion should be invested in biodiesel storage and blending infrastructure, as well as feedstock development that could easily double blending levels of low-carbon biodiesel in the state within 18 months.

The $25 million from the Cap and Trade Expenditure Plan should be invested in projects that increase in-state production of biofuels, including the Biofuels Initiative proposal. Since biodiesel already provides 20 percent of the carbon reduction in California’s transportation sector, we ask you, what other
category could reduce another million metric
tons, at least, of greenhouse gases in the same
period for such a small investment.

We have valued the open dialogue and
relationship that our industry has developed with
the Energy Commission, but also feel that this
plan undermines that relationship. The
Commission is legally obligated under the law to
pay attention to the metrics, as many on this
Advisory Committee have been suggesting for many
years, and stand up to ideologues who continue to
favor technologies that are barely moving the
needle when it comes to actual carbon reduction.

The same optimism about technology
improvements for electricity grid efficiency,
battery storage, raw materials sourcing and price
should be extended to biofuels technology
improvements, and all of the above strategy
demands no less.

We appreciate that some funding should go
to other modalities that might show some promise
in the future, but the climate is changing more
and more dramatically every year, right before
our eyes. And rather than minimally fund low-
carbon fuels that have consistently demonstrated
90 percent contribution to carbon reduction and will continue to do so into the foreseeable future, you actually strip away what was fairly allotted to us. This is counterproductive, and the people of California will suffer immediate damage for the sake of speculation about future technology improvements.

The California Advanced Biofuels Alliance and its members look forward to working with the Commission and its staff to rectify this issue in a manner that focuses on technology neutrality and lowering carbon emissions used -- using the most cost effective means possible.

We hope you will do the right thing and stand up for programs that are consistently outperforming everything else by many orders of magnitude. You need to reinstate the $25 million for biofuels from original program funds and add to that total the $25 million from Cap and Trade. Any action short of this will be a step backwards for a state that has gained worldwide attention and credit for its progress in fighting climate change. We intend to carry this message throughout the legislature.

Thank you.
COMMISSIONER SCOTT: Thank you.

Other Advisory Committee Members?

Claire?

COMMITTEE MEMBER JAHNS: Thanks. And I do -- I think it was appropriate to include this category in the ARFVT plan, despite the fact that the funding is coming from another source. Because as you noted, it is really foundational to have an all-of-the-above energy strategy.

And it did also note up front that there’s a willingness to reconsider this plan, should the funding amounts change in the future, which I think is an important note to point. Because if any of us in the room have dealt with GGRF funds, we know that often we don’t know -- we don’t know what’s going to happen until the legislature sings, if you will.

And I guess one question is, since the funding source is switching over, that’s going to continue to be administered by the Energy Commission?

COMMISSIONER SCOTT: Yes.

COMMITTEE MEMBER JAHNS: Okay.

COMMISSIONER SCOTT: Yes.

COMMITTEE MEMBER JAHNS: And do you think
it will -- that program will look a lot like what
the ARFVTP-funded category has funded in the past
and what’s sort of described here as future
ARFVTP funding plans --

COMMISSIONER SCOTT: Right.

COMMITTEE MEMBER JAHNS: -- might fund?

COMMISSIONER SCOTT: Sure. So we have
not yet, of course, had the pre-solicitation
workshop that kind of really digs into how we
would spend the $25 million. But I envision that
it will look very similar to the way that we have
been spending the allocations towards the low-
carbon fuel production and supply previously.

COMMITTEE MEMBER JAHNS: Okay. And
nothing about -- is there anything about the
funding source that would suggest any type of
project that had been previously funded would be
ineligible for funding because of the Cap and
Trades requirement?

COMMISSIONER SCOTT: I don’t think so.
That’s a terrific question. The Cap and Trade
Program has different requirements than the
ARFVTP program, so we just need to make sure that
we are hitting the Cap and Trade requirements as
we set up the funding for this. But all of these
fuels are low-carbon fuels that have great carbon benefits when compared to conventional diesel or conventional gasoline. So I anticipate that with those carbon reductions, we shouldn’t have any trouble funding the same types of things that we funded previously.

COMMITTEE MEMBER JAHNS: I think this actually represents kind of a unique opportunity to bring and elevated discussion of biofuels into the GGRF world. I know that that’s something that we’ve looked at to some degree for forests and CAL FIRE’s funding. Could this fund bioenergy? Could it fund biofuels? And I think kind of figuring out how the LCFS might be treated under the GGRF program, and vice versa, there could be just some interesting lessons learned there that we could extend outside of both of those funding programs, potentially, in the future.

COMMISSIONER SCOTT: Thank you.

I have Steve, and then Joy.

COMMITTEE MEMBER KAFFKA: Thank you. I, too, as I mentioned earlier, was concerned about what appears to be a loss of ARFVTP funding for biomass-related and biofuels-related
transportation fuels in the state.

I wanted to -- I mean, in the report itself, it mentions that there was a seven-and-a-half times larger demand for funds in the last year that focused on this category that was able to be funded so that there are currently large numbers of ideas and opportunities for expansion of these types of projects.

It should be noted that there’s many co-benefits that basically are hard to account for in the same kinds of metrics as other metrics.

So, for example, the Short-Lived Climate Pollution Plan, methane reduction and compressed natural gas biogas from the dairy system has a number of co-benefits for sustainability and distribution in the state which is of concern. And it’s the fuel demand or the potential demand for compressed natural gas fuels of this type that facilitate the capture and reduction of methane most effectively.

And you could talk about the same kinds of issues associated with woody biomass. You have open burning of dead trees, removal -- tree removals in the state now because the old biomass energy system is kind of worn out and broken.
down. So alternatives of conversion of that kind of material into transportation fuels provide other opportunities to produce black soot and other kinds of carbon emissions in the valley which is already has the worst air quality issues in the state. Right now the most promising pathway, it looks like conversion of that kind of woody biomass to ethanol which, of course, would be a ultra-low-carbon fuel, lower even than the CI (phonetic) reductions from EVs.

And there’s a number of the biofuels that have those ultra-low-carbon categorizations, and there could be more if this category was, I think, brought up to the level that we had originally anticipated. So there are a number of things here.

And I just would also try to say one more time that it’s important that we be creative and flexible in our thinking, so biomass might provide hydrogen, it might provide ethanol, it might provide biodiesel, it might provide other kinds of secondary compounds. It would have byproducts. It might have a bioproducts industry that also benefits from having fuel. I know that the Air Board is going
to have a bioproducts industry meeting. I’ve been asked to help with -- in June, I think, this coming year. And all these things are part and parcel of having this very diverse feedstock material around, and subject to all kinds of transformation pathways.

So I think it shortchanges the citizens of the state and opportunities for the future, particularly employment in rural areas and other kinds of co-benefits if we don’t adequately, or at least in part, improve the funding that’s available here.

COMMISSIONER SCOTT: I have Joy, and then John on the phone, and then Eileen.

COMMITTEE MEMBER ALAFIA: Thank you, Commissioner. I probably can’t state any better the remarks that Joe gave, so I’ll just kind of just add onto that and say a little bit about how it’s impacted the renewable propane industry.

And this group, along with the Low Carbon Fuel Standards and other programs, has really been the main driver for California to push for renewable propane. And by the way, we are pushing the rest of the country to consider renewable propane. Without inclusion in programs
like this, that market will disappear. Those investments -- investors will disappear. So I just would like to at least have the group consider not only California but national impact that this decision can have without returning back to the proposed -- or increase to the proposed $50 million.

And I like the comment that was shared earlier about looking at the area specific for impacts, such as the San Joaquin AQMD versus just a specific pathway. And I think the same can be applied here, that there are some great benefits that biofuels offer to San Joaquin AQMD.

And what we’ve also talked about is maximizing synergies and opportunities for coordination. So when you look at renewable diesel and the funding that’s allocated potentially through the low-carbon fuel production component of this, renewable propane is a co-benefit, if you will, of that process, so there’s a great opportunity to maximize that synergy. We are looking at inclusion in the Low Carbon Fuel Standards, as well, and that’s trending for the next iteration, so just being able to take advantage of that opportunity.
And then lastly, looking at including things like dimethyl ether, which is -- it transports a lot like propane. It’s a great fuel source. It’s from wastestream, a carbon intensity of negative 237 Co2 equivalents per gram per megajoule. So we would like to see opportunities for those types of energy and fuel sources, as well.

Thank you.

COMMISSIONER SCOTT: Thank you.
I have John Shears, and then Eileen.

COMMITTEE MEMBER SHEARS: So I thought I was going to be able to get away without having to say it at this workshop, but this is an example of the challenges with a program that includes the kitchen sink, everything, along with the kitchen sink.

You know, I understand that before the executive order, you know, the first draft, staff draft, or revised staff draft in January had $25 million, and this is basically a swapping of the $25 million per the Governor including it in the executive order and the budget. But, you know, given what we’re looking at over at CARB and the Low Carbon Fuel Standard and all the hard work
CARB staff has had to do in terms of, you know, how to address the years 2020 through 2023 where before Christmas they were considering plateauing, you know, the requirement for reductions and carbon intensity. And then with the release of the initial ISOR (phonetic) Report Initial Statement of Reasons on March 6th, they’ve smoothed the ramp and kind of avoided the plateau. But certainly we’re, you know, anticipating challenges.

You know, as Commissioner Scott was saying earlier, 2030 is coming up awfully fast. So I’m just -- I’d just like to explore the funding in this area a little further. You know, I understand it’s, you know, more than last year’s funding, and a million more than the 2016-2017 Plan had included, but given the, you know, demand, as Dr. Kaffka related, plus the challenges in wanting to position the LCFS in the, you know, in the best position to meet the 2030 -- meet and exceed the 2030 goals, I’d just like to sort of revisit this line item a little further.

COMMISSIONER SCOTT: Okay. I have Eileen, followed by
Bonnie.

COMMITTEE MEMBER SHEARS: I should also --

COMMISSIONER SCOTT: Oh.

COMMITTEE MEMBER SHEARS: -- I should also just sort of emphasize that globally, in terms of transportation emissions, and it applies here just as much as anywhere, but the International Energy Agency has pointed out, you know, that besides the other two legs of the transportation stool, as we refer to it here in California, vehicle technology and VMT reduction, we really have to accelerate the decarbonization of the fuel pool. And biofuels are going to have to play a role, especially, you know, more maybe for heavy-duty and for air travel going forward. So certainly, I think we need to talk, just maybe discuss it and revisit it with a little more focus, just this part of the program a little more thoroughly, so, thanks.

COMMISSIONER SCOTT: Okay. Eileen, and then Bonnie.

COMMITTEE MEMBER GREENBERG: Yeah. I just want to say that I do think that the plan and the investments have been sort of moving in
this direction throughout the years, and in part because we’ve been asking, as the Advisory Committee, for metrics about the benefits and the -- of these different programs. And this state has made a very strong and clear commitment to zero-emission vehicles, so it’s not too surprising to me that we’re now saying we want a majority of this money to go towards zero-emission technologies. That is very consistent with the way the investment plan has been moving and the way, certainly, the way the policies have been moving.

So I just want to make it clear that I think that there is -- I think it’s important to have this money invested I’m biofuels. And I think the $25 million is -- I’m not suggesting that it also should be moved or anything like that, but I don’t think that we are picking one technology, so to speak. I think we are picking a standard and that standard is zero, and we have to get there. So the idea that we would be investing more and more of the total pool of our state resources into the future, it seems to make a lot of sense to me.

So I actually am very supportive of the
direction this updated Investment Plan has taken, also very supportive of the Governor’s executive order and the budget, so I just want to make that really clear. And I don’t -- I do think it is setting a standard and then investing in that standard. It is not picking a particular technology. As we had in earlier discussion, there are a quite few technologies, actually, that are competing in the zero-emission space. And I think, fortunately, we’ve gotten to a place where we’re saying all these zero-emission vehicle technology types are complementary, and making sure we invest in all of them and not just one or the other.

Thank you.

COMMISSIONER SCOTT: Thank you.

I have Bonnie, and then Brian.

COMMITTEE MEMBER HOLMES-GEN: Thanks, Commissioner Scott. I wanted to also comment on the Lung Associations position on the mix of -- the mix of funding allocations in this plan, that we are supporting the staff recommendation for all of these categories. Of course, there’s -- we would love to see more in the electric infrastructure and hydrogen categories. But
given the limited resources, we are supporting
the staff recommendations.

And I would agree with Eileen’s mention
of the Governor’s executive order, and that’s a
preeminent goal now in our minds how we’re going
to get there. And with all the progress we’ve
made, we still have a huge lift. And we’ve
talked about -- we spent the whole morning, I
think, talking about that lift, what we have to
do, and the public outreach and awareness and the
infrastructure and the expansion of all of the
facilities and infrastructure and leadership that
we need to make that goal happen.

So I do think that this whole plan,
including, you know, this allocation, is setting
us more on that direction toward the zero-
emission goal that we think is a priority. And I
think these allocations are in line with the
legislative priorities that have been laid out.

I would like to mention, though, I think
there is a need for some more discussion,
exploration of the synergy in this category
between the biofuel production and use and the
Low Carbon Fuel Standard, and I think this has
been brought up. I’m curious how the staff would
respond, but it seems like there’s kind of an assumption that the biomethane that is produced would be used in natural gas vehicles, and that’s certainly one use of biomethane. But because, especially because of new pathways that are being opened up in the Low Carbon Fuel Standard for credits, there’s some very important pathways for using biomethane to produce electricity and hydrogen for use in vehicles. And so I think I’m not sure that that’s all reflected in this discussion, and I would really like to see that reflected in here.

And going back to the Governor’s executive order and our focus on the future in 2030, I think we want to see how we can use all the components of this program to help us move toward the goal. And if we can do to help demonstrate these new pathways and to help incentivize and spur more use of these pathways from biomethane to electrification and fuel cell, I think that would be very much in line with the goals that we need here in this with these expenditures.

So I just wanted to ask if there could be more investigation and discussion of the
integration with the LCFS, the new LCFS proposal and the pathways for biomethane?

COMMISSIONER SCOTT: The new LCFS pathways are kind of hot off the presses.

COMMITTEE MEMBER HOLMES-GEN: Yeah.

Yeah.

COMMISSIONER SCOTT: So --

COMMITTEE MEMBER HOLMES-GEN: Yeah, I get that.

COMMISSIONER SCOTT: I know. I think that, though, that’s something maybe Analisa and your team can work with Jacob and his team to see if we can get, you know, at least a paragraph that recognizes the brave new world under the new LCFS pathways into the report between now and when it comes to the full Commission for consideration in May. So I see Jacob is taking notes there. We’ll follow up on that.

I do think that it is -- we are still investing in a portfolio here. It’s -- rather than the more even keel portfolio that I think that you have seen previously in response to the Governor’s executive order and the budget, you see the focus and the priority on how do we achieve the zero-emission vehicle infrastructure
goals that he laid out for this state and for this agency to take a lead role on.

So it’s -- we’ve still got freight.

We’ve still got low-carbon fuels. We’ve still got manufacturing and workforce development. But it is, as Joe and others have pointed out, tilted towards that zero-emission vehicle infrastructure.

So let me turn next to Brian, and then Analisa.

COMMITTEE MEMBER GOLDSTEIN: Hi. I think, you know, Bonnie summed up my thoughts really well, and so I’m going to try not to dwell on the point.

But I think, you know, recognizing that, we are clearly going towards zero-emission transportation future. I think we still have to acknowledge, there’s a stepping-stone approach and, you know, a decarbonizing or reducing the carbon impact of some of the fuels that are already being used, and exploring ways to use, you know, bioproducts, like agricultural waste to then become a feedstock for zero-emission fuels, like hydrogen, I think it’s still a really important path that we need to look into and to
try to fund. Because, frankly, you know, 100 percent renewable hydrogen, it needs a little push right now as far as, you know, the economics of setting up the production facilities and the distribution. The impact, you know, once we get there, is massive. We’ve seen carbon intensities in the, you know, negative 270, negative 280 range using, you know, dairy biogas to produce hydrogen.

But I do really -- I understand and respect the balance that, you know, $277 million seems like a huge number, but when we look at, you know, what Volkswagen committed to putting into their program, I think the announcement was just $25 billion, Tesla has put $17 billion into there’s, I realize that we have to make some compromises in, you know, trying to accommodate each of the different goals of the program.

But I just wanted to voice some support, at least for continuing to explore routes to produce fuels, like renewable hydrogen, and to try to give the market the little push that it needs, whether it comes from this category or whether it just comes from this group of stakeholders working with the Greenhouse Gas
Reduction Funds to try to make sure that it’s getting some attention there.

So I just wanted to, you know, voice support for those fuels and try to figure out a way that we can all work together to get there.

Thank you.

COMMISSIONER SCOTT: Thank you.

Analisa, and then Tyson.

COMMITTEE MEMBER BEVAN: So CARB understands and supports CEC’s proposal for the $25 million coming from GGRF. When taking into account all of the state, local, federal programs that support low-carbon fuels, the LCFS in particular is an increasingly important program for driving down carbon intensity and clearly relies on biofuels and, in turn, provides financial incentives through credits.

And I’ll take back the request to provide more about the pathways for your upcoming documents.

That said, the scoping plan provides us -- points us to aggressive goals and our SIP (phonetic) really points us to reaching health-based air quality standards that require significant actions today in ZEV infrastructure.
to reach the goals that have been set out, so, thanks.

COMMISSIONER SCOTT: Thank you. Tyson, and then Bonnie.

COMMITTEE MEMBER HOLMES-GEN: Oh, sorry. I’m good for now.

COMMISSIONER SCOTT: Okay. Tyson?

COMMITTEE MEMBER ECKERLE: Well, this has been a great discussion and an important discussion.

I think, Analisa, you just summed it up really well. And I think what Eileen had said, you know, the standard, in fact, is zero, and so we’re trying to get there as quickly as we can.

I think that the challenge is we have a huge gap to fill to get to that, you know, get to our 2025 infrastructure target. And then 2030, you know, really isn’t that far away; right?

And so -- but I also want to emphasize, I think that, you know, there are a lot of good points that came up about thinking holistically. You know, Claire brought up the point, you know, through the GGRF program, and then, you know, in terms of the other sources of funding that we can
leverage for biofuels. But really that
collection into that zero-emission future
through, you know, hydrogen and electricity, I
think is a great opportunity that we want to keep
pushing for.

COMMISSIONER SCOTT: Thanks.
Steve?

COMMITTEE MEMBER KAFFKA: Recently, the
Low Carbon Fuel Standard scaled back its
expectations for 2020 compliance, partly because
of concerns that there wouldn’t be sufficient
credits and that the price impacts of sustaining
those levels would, perhaps, cause significant
political harm to the program.

The LCFS is the most important
transportation fuel program, I believe, anywhere
in the world.

I was invited last year to talk to the
European Commission about the LCFS by some
industry folks in Europe. And it’s quite clear
that the transparency and the objectivity of
using a performance standard was a far better
program than the Europeans had managed to
implement, and it warrants (phonetic) a more
important model.
So the way that -- we still have a very difficult objective of a 20 percent reduction by 2030. And as Joe mentioned and others have mentioned, at least it takes us aloft. It’s a slow process of achieving those gains. And in the short to midterm, by midterm, I mean by 2025 to 2028, biomass-derived fuels, however they are transformed, including either to hydrogen or natural gas or to ethanol or to dimethyl ether, are going -- often have, perhaps, the most significant greenhouse gas reduction potentials than other pathways, including electrification. So there has to be -- in all life, there have to be tradeoffs. Near-zero isn’t so bad if you gain huge carbon benefits.

So I would recommend, again, I want to reiterate that I think that that the demand is there. And the AB 118 program has been a significant lever to stimulate in-state production of biomass-related fuels in the state and with all the co-benefits of local employment. And so I want to ask staff to reconsider that allocation.

COMMISSIONER SCOTT: Bonnie?

COMMITTEE MEMBER HOLMES-GEN: Thank you.
I just wanted to comment that there’s probably a
need for some additional information that I
believe ARB is working on now regarding some of
the GHG and air quality and other benefits of
some of the pathways that we’ve discussed briefly
that need to be included in here, the pathways of
biomethane to electrification and hydrogen
because I think when these pathways are
evaluated, there will be more information on all
the full benefits of using these fuels in
electric vehicles. And I think, you know, when
you combine the GHG reduction of using a
renewable fuel in the electric and fuel cell
vehicles, then you do get lower emissions, you do
get greater benefits than in other technologies.

So there’s just, there’s a lot of data or
a lot of information being tossed around about
which is cleanest. And I don’t think we have all
the information in here. And I know, because
I’ve sat on another workgroup regarding dairy
biomethane, that there’s a lot of digging that’s
still going on.

And so I was just trying to politely say,
we might need a little more information here
before we say what’s cleaner.
COMMISSIONER SCOTT: Okay.

Joel? Joel on the phone, followed by Joe.

COMMITTEE MEMBER ESPINO: Yes. Thanks for the opportunity. I think I just kind of wanted to echo some of the points that were raised. I think I’d be remiss not to make a comment about the people case here.

You know, I think, it’s no secret, obviously, that, you know, the cumulative burden of transportation-related emissions and fuel production has hit low-income communities and, in particular, communities of color the most; right? And, you know, also the resulting impacts of climate change hit those communities the most.

And so if equity is a priority, you know, this principle of justice requires that, you know, we promote zero emission and prioritize that in those communities. And so, you know, people in environmental justice areas across California are not interested in less pollution or less polluting technologies, they’re interested in zero emission.

And so I kind of just wanted to reinforce the need for elevating the justice aspects of
what we’re trying to do here, and just wanted to
make that comment.

COMMISSIONER SCOTT: Thank you.

Joe?

COMMITTEE MEMBER GERSHEN: Thanks. Yeah,
I think it’s important that we don’t get into a
circular firing squad about what’s cleaner,
because there certainly is ammunition on all
sides of that. There cobalt mining, there’s
things like that that we all are aware of but
don’t necessarily want to face all the time.

The interesting thing is that, you know,
in biofuels, I mean, biodiesel, I talked about in
my comments earlier, there’s a relatively very
small investment to open up infrastructure for
increased blending. There’s plenty of low-carbon
feedstock and low-carbon production domestically,
that we could pretty much double our blending of
biodiesel in the state, which would lower more
than a million metric tons, which I think is
about a third of what the program has done
already. So within 18 months, we could basically
increase 30 to 50 percent of our carbon
reduction.

So the question then becomes, well, are
we -- you know, a deeper discussion about this is, is it about carbon reduction and climate change or is it about, you know, zero-emission vehicles, and is that the path? I think it really -- I mean, the intention, as I understood it all along, is that it’s an all-of-the-above solution. And while we know the Governor wants his legacy cemented in and that’s all great, we’re supportive of a lot of what the Governor’s done, he’s been great for climate action, but it also needs to -- you know, we need to take a pragmatic look at what’s going on. And I think if we can lower carbon emissions dramatically with some enhanced and intelligent and pragmatic investments, I think that’s really the way to go. 

And so what we see here is, like I said in my comments, a reduction from what was about 20 -- well, for a long time it was 20 percent for biofuels and it finally seemed to go up to 25 percent, even though we were producing 90 percent of the carbon reduction, and so that was great. And then all of a sudden it went to less than, I think it was -- I think I calculated nine percent, so less than one-tenth of the budget. So it just feels very -- like there’s a
lack of pragmatic application, so that’s all. So
I just want to be cautious and caution everyone
not to get into a circular firing squad here.

Thanks.

COMMISSIONER SCOTT: Thanks.

Are you okay?

I think that I don’t have any more tent
cards up here in the room.

Let me just make sure, John, Joel, Irene
or Ralph, if you would like to say anything else
on our low-carbon fuel production proposed
allocation, please do.

COMMITTEE MEMBER SHEARS: Yeah, as I
said, I wanted more discussion. There’s been
more, you know, and it’s good to hear, you know,
CARB having a clear position on it because, you
know, the due diligence, internal due diligence
would have been done on this beforehand, so the
LCFS staff would have been consulted.

So I just wanted to just -- you know,
just because the LCFS is the driving frame for
those non-ZEV fuels, and I just wanted to get a
better sense of where things lie with that. I’m
still, you know, not -- as much as I’m a strong
supporter of zero-emission, you know, getting to
the zero-emission goals, you know, we’re still
going to have the legacy fleet for decades
running on combustion-based fuels.

And so I still sort of would like to vet
this category more thoroughly, maybe as
preparation for the next Investment Plan,
because -- if not for this one, just so that we
can sort of pull together the information within
the context of the Investment Plan. I know the
IEPR process goes through it and everything, but
just so we have more of a focus so we can look at
this more holistically.

Thanks.

COMMISSIONER SCOTT: Thanks.

Any other -- Tyson?

COMMITTEE MEMBER ECKERLE: I think just
in terms of the relative funding, what I would
suggest, you know, in the way that we’re looking
at it from the Governor’s Office perspective,
it’s not taking away from other fuels as, you
know, as more of just a super-charging the ZEV
investment, so to speak, right, so that being
the -- that was the focus of trying to, you know,
get more money into this program.

So I think if that makes any sense, so if
you look at it, if you imagine that there wasn’t any more money going in, then we wouldn’t be having this discussion, right, because it’s the same level as it was in the past.

And so just something to keep in mind, we’re just trying to kick-start that market knowing that, in the long term, that’s really where we need to go.

COMMISSIONER SCOTT: Bonnie?

COMMITTEE MEMBER HOLMES-GEN: Yeah, just one more comment.

Just to John’s point, I know there’s a piece in this chapter that talks about some upcoming ARB regulations, low-NOx regulations, I think in 2019. So I just wanted to comment that, you know, there’s other factors that are driving use of biofuels, not just the incentives, and that the regulatory arena is at work on other measures that are going to require use of low-NOx and renewable fuels.

So, you know, there’s other driving forces that will get -- that will be able to deal more with the legacy fleet, also.

COMMISSIONER SCOTT: Okay. Any other comments on low-carbon fuel production and
supply? All right.

I don’t have any blue cards from people in the room.

I do have a public comment on the WebEx from Wayne Leighty.

Wayne, are you there? If so, please go ahead with your public comment.

MR. LEIGHTY: Hi. Can you hear me?

COMMISSIONER SCOTT: Yes, I can.

MR. LEIGHTY: Great. Thanks. I inadvertently raised my hand, so no comment, but thank you.

COMMISSIONER SCOTT: Okay. No worries. Are there any other public comments on the WebEx or the phone?

Okay, seeing none, let us talk about the natural gas vehicles and infrastructure.

And maybe what we’d like to do, Jacob, is start with possibly your slide that shows that there’s still funding from previous years that are left there, which is why we were not proposing to put an allocation there for this year.

Let’s see, do I have tent cards from around the room? I mean, do we need a cookie
break? I don’t have any Advisory Committee Members here in the room who look like they would like to speak.

For our folks in Sacramento or on the phone, Ralph or John, Irene or Joel, do you have comments?

COMMITTEE MEMBER SHEARS: No, because it looks like there are carryover funds. And so I think the staff has made the right -- taken the right choice on this.

Thanks.

COMMISSIONER SCOTT: Okay. Thanks.

COMMITTEE MEMBER HOLMES-GEN: I guess I have a question if that’s --

COMMISSIONER SCOTT: Yes, Bonnie, please go ahead.

COMMITTEE MEMBER HOLMES-GEN: Just, I think there was a lack of uptake of incentives from the last go around, that I just wondered if you could, you know, just give us a little more background on what happened there --

COMMISSIONER SCOTT: Let me see if --

COMMITTEE MEMBER HOLMES-GEN: -- in this category?

COMMISSIONER SCOTT: -- Jacob or John
would like to speak to that?

MR. ORENBERG: This is Jacob Orenberg.

So regarding the Natural Gas Vehicle Incentive Project, I wouldn’t necessarily say there’s been a lack of uptake on the incentives, rather the distribution of incentives through that project has been slower than expected. So they are going through all of the money that has been provided with them for that project. And they provided a sizeable number of incentives through that project, and those are highlighted in the Natural Gas Vehicle section of the Investment Plan, and they’re continuing to provide incentives. And, in fact, I believe they currently have a wait list for incentives.

COMMISSIONER SCOTT: Thanks. Okay. No tent cards in the room.

One last call for the Advisory Committee Members on the phone. Joel or Irene or Ralph or John, if you’d like to say something on this allocation, please go ahead. Okay.

I do not have any blue cards from public comment in the room.

Do I have any folks on the WebEx or the phone who would like to make a public comment? I
don’t. Wow.

Okay, well, please know that you can certainly send us written comments. We look very much forward to hearing from everyone.

Jacob, it was March 21st; is that right?

MR. ORENBERG: Yeah, March 21st.

COMMISSIONER SCOTT: Yes. And so here on the screen, you can see how to get those written comments into us. Please send us those comments by March 21st. We look forward to hearing from you.

You can see here the next steps. There will be a Lead Commissioner Report that comes to you in April. We will have a business meeting consideration of the -- of the Investment Plan at our May 9th business meeting.

And then we’ve mentioned to you the upcoming workshops on some of the funding allocations, the heads-up on the May 14th workshop where we’ll talk in more detail about how to spend the allocation for the charging infrastructure and the hydrogen refueling infrastructure.

And before we adjourn I just want to say, thank you so very much to our Advisory Committee.
Members. I really appreciate the time that you spend with us, the care that you put into your comments, the expertise that you bring and really help the Commission as we’re thinking what these allocations should look like. It’s invaluable and we really appreciate it, so thank you so much for everything that you do.

And I also want to say thank you to our terrific Energy Commission staff, and especially to Jacob, who had to put together an updated Investment Plan in quite short order, and he’s very calm. He did a great job.

(Applause.)

COMMISSIONER SCOTT: And with that, I will -- we’ll adjourn.

Oh, I’m sorry, Brian, please go ahead.

COMMITTEE MEMBER GOLDSTEIN: It’s not really, you know, a business issue, but I’m wondering, and I think we talked about this last time, whether we could put a contact list together for the Advisory Board Members? And maybe since we’re all here together, if someone like objects to it, we could, you know, address it now, but otherwise, we know that everyone is okay with it?
MR. ORENBERG: Brian, I’m going to jump in right here.

COMMITTEE MEMBER GOLDSTEIN: Okay.

MR. ORENBERG: This -- I think we need to follow up with our staff counsel back at the Energy Commission. There may be some implications with the Bagley-Keene Act. I’m not sure.

COMMITTEE MEMBER GOLDSTEIN: Okay.

MR. ORENBERG: But we just need to double-check on that.

COMMITTEE MEMBER GOLDSTEIN: All right.

Great.

COMMITTEE MEMBER HOLMES-GEN: And one more --

COMMISSIONER SCOTT: Yes, please go ahead.

COMMITTEE MEMBER HOLMES-GEN: -- important item.

Commissioner Scott, could you discuss the potential renaming of the ARFVTP program that we’ve talked about for years?

COMMISSIONER SCOTT: Well, we have, I think. So, yes, Alternative and Renewable Fuel and Vehicle Technology Program, ARFVTP, it’s a
name we all learned to love.

One of the things I was thinking about is that it might be fun to have a nickname for the program, the Cleaner Transportation Program, I’m not quite sure what that would be. So that’s something that we will likely be coming to you with.

I had just another Commissioner Scott brainstorm, so we’ll see how it goes over with staff, but I was thinking maybe we pick -- have our Comms Team put together the top three names, and then we get it out to the Advisory Committee, to our transportation staff, and really whoever else wants to weigh in, and do a little vote, and then do a reveal of the new program nickname, or something like that.

But you guys will miss the ARFVTP if you don’t have to call it that --

COMMITTEE MEMBER JAHNS: I think --

COMMISSIONER SCOTT: -- every time; right?

COMMITTEE MEMBER JAHNS: I think it’s a rite of passage, actually.

COMMISSIONER SCOTT: Right? Okay.

Any other last comments for the good of
the order here? Let me check. Oh, I see. Do we have someone on the -- I’m sorry?

MR. BRECHT: It’s Ralph Knight.

COMMISSIONER SCOTT: Oh, Ralph Knight --

MR. BRECHT: He’s --

COMMISSIONER SCOTT: -- please go ahead.

MR. BRECHT: He’s been un-muted.

COMMISSIONER SCOTT: Are you still there, Ralph? We’re happy to hear from you.

Let me just double-check, he is un-muted; correct?

Ralph, you’re un-muted on our end. Maybe double-check your mute. Happy to hear from you.

COMMITTEE MEMBER KNIGHT: Yeah, I’m un-muted on this end, but I don’t know what’s wrong.

COMMISSIONER SCOTT: Oh, I can hear you now.

COMMITTEE MEMBER KNIGHT: Oh, okay. I just want to say thank you to you, and the staff has just done an excellent job putting this all together, and just a lot of hard work here.

COMMISSIONER SCOTT: Well, thank you.

Okay.

Any other comments for the good of the order?
COMMITTEE MEMBER HOLMES-GEN: Thank you, Commissioner Scott and the CEC team, for your amazing leadership for ten years of this amazing program. We’re all so proud to be a part of it.

COMMISSIONER SCOTT: You’re welcome.

We’re happy to do it.

(Applause.)

COMMISSIONER SCOTT: All right, with that, we will adjourn. Thank you, everyone, for your time today.

(The workshop adjourned at 3:06 p.m.)
REPORTER’S CERTIFICATE

I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were reported by me, a certified electronic court reporter and a disinterested person, and was under my supervision thereafter transcribed into typewriting.

And I further certify that I am not of counsel or attorney for either or any of the parties to said hearing nor in any way interested in the outcome of the cause named in said caption.

IN WITNESS WHEREOF, I have hereunto set my hand this 28th day of March, 2018.

__________________________________________
Eduwiges Lastra
CER-915
CERTIFICATE OF TRANSCRIBER

I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were transcribed by me, a certified transcriber and a disinterested person, and was under my supervision thereafter transcribed into typewriting.

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I certify that the foregoing is a correct transcript, to the best of my ability, from the electronic sound recording of the proceedings in the above-entitled matter.

MARTHA L. NELSON, CERT**367

March 28, 2018