BEFORE THE ENERGY RESOURCES CONSERVATION AND DEVELOPMENT
COMMISSION OF THE STATE OF CALIFORNIA

In the Matter of:	)	
2015-2016 Investment Plan Update	)	Docket No. 14-ALT-01
	)	

MEETING AND PUBLIC WORKSHOP REGARDING ALTERNATIVE AND
RENEWABLE VEHICLE TECHNOLOGY PROGRAM

SAN JOAQUIN VALLEY AIR POLLUTOIN CONTROL DISTTRICT
CENTRAL REGION OFFICE
1900 EAST GETTYSBURG AVENUE
GOVERNING BOARD ROOM
FRESNO, CALIFORNIA

THURSDAY, FEBRUARY 12, 2015

10:00 A.M.

Reported by:
Jacqueline Denlinger

APPEARANCES

COMMITTEE MEMBERS

Janea Scott, California Energy Commission

Jack Michael, Recreational Boaters of California

Charles Smith, California Energy Commission

Erik White, Air Resources Board

Joe Gershen, California Biodiesel Alliance

Jim McKinney, Program Manager, California Energy Commission

Joy Alafia, Western Propane Gas Association

Peter Cooper, Employee Training Panel

Steve Cliff, Caltrans

Will Coleman

Bonnie Holmes-Gen, American Lung Association of California

Tim Carmichael, California Natural Gas Vehicle Coalition

Eileen Tutt, California Electric Transportation Coalition

John Sheers, Center for Energy Efficiency and Renewable Technologies

PUBLIC SPEAKERS

Todd DeYoung, San Joaquin Valley Air Pollution Control District

Jacob Orenberg

Michael Rivera, Office of Assembly Member Perea

Mike Lewis, Pearson Fuels

Bill Bunnell

Russ Teall, Biodico

Thomas Green

APPEARANCES (CONTINUED)

PUBLIC SPEAKERS (CONTINUED)

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

Michael Coates, Mightycomm

Ralph Knight, Napa Valley Unified

P R O C E E D I N G S

10:32 A.M.

PROCEEDINGS BEGIN AT 10:32 A.M.

(The meeting was called to order at 10:32 a.m.)

FRESNO, CALIFORNIA, THURSDAY, FEBRUARY 12, 2015

MEETING BEGINS AT 10:32 A.M.

PRESIDING MEMBER SCOTT: Well, good morning everybody. Thank you so much for joining us for our Advisory Committee meeting for the Alternative and Renewable Fuel and Vehicle Technology Program. I'm Commissioner Janea Scott and I'm the lead at the Energy Commission for Transportation. It's great to have all of you join us.

I wanted to do a special warm welcome for Michael Rivera from Assembly Member Perea's office. Thank you so much for joining us.

Do we have any other folks from other offices? Okay. Just checking.

Why don't we go ahead and we'll go around the table to do introductions of the Advisory Committee members who are here. And then when we're finished with that we'll go to the phone to see what Advisory Committee members are on the WebEx.

And I'll just let you know, I had a note from Bonnie Holmes-Gen and from Tim Carmichael. And they're on the train and the train is running a little bit late. So as soon as it gets here they will get here too.

So would you like to start?

COMMITTEE MEMBER MICHAEL: Jack Michael representing the Recreational Boaters of California.

PRESIDING MEMBER SCOTT: And up here at the table there's a little button right next to the red light, and it will tell you if your mike is on or off.

COMMITTEE MEMBER SMITH: Charles Smith with the Energy Commission, Project Manager for the 2015-2016 Investment Plan Update.

COMMITTEE MEMBER WHITE: Erik White with the Air Resources Board on behalf of Alberto Ayala who couldn't make it today.

COMMITTEE MEMBER GERSHEN: Joe Gershen on behalf of the California Biodiesel Alliance.

COMMITTEE MEMBER MCKINNEY: Jim McKinney with the Energy Commission staff. I'm Program Manager for the Alternative and Renewable Fuel and Vehicle Technology Fund.

PRESIDING MEMBER SCOTT: And do we have Advisory Committee members on the WebEx?

COMMITTEE MEMBER SMITH: Jacob, maybe you can unmute all for a moment.

COMMITTEE MEMBER ALAFIA: Hi. This is Joy Alafia from the Western Propane Gas Association, hoping to join you in person shortly.

PRESIDING MEMBER SCOTT: Great. Welcome, Joy.

COMMITTEE MEMBER COOPER: Hi. This is Peter Cooper from the Employee Training Panel.

PRESIDING MEMBER SCOTT: Good morning Peter.

COMMITTEE MEMBER COOPER: Good morning.

COMMITTEE MEMBER TYSON: This is Tyson Eckerle with the Governor's Office of Business and Economic Development.

PRESIDING MEMBER SCOTT: Good morning Tyson.

COMMITTEE MEMBER TYSON: Good morning.

PRESIDING MEMBER SCOTT: Others? Any other Advisory Committee members? Okay.

Well, we will go ahead and get started here. I just also want to say a nice thank you to the San Joaquin Valley Air Pollution Control District for hosting us here today. We're just delighted to be here and to do our meeting here in Fresno. And so thank you for hosting us.

And actually, we are going to turn to Todd DeYoung from the Air Pollution Control District, and he's going to give us a little bit of information about the San Joaquin Valley.

MR. DEYOUNG: Thank you very much and good morning. I assume the mike is on over here. First of all, welcome, on behalf of our Executive Director Seyed Sadredin who unfortunately couldn't be here today. We appreciate the opportunity to host not one but two state agencies here in our district. I think it's a wonderful. There you go. Thank you

(inaudible). Anytime we can get state agencies down here and really engage the valley in our unique circumstances, we -- we revel in that opportunity and we very much appreciate everyone's attendance today, so thank you very much for coming.

I do want to give just a brief sort of synopsis of some of the activities that we have going on related to incentives and alternative fuel. So if you'll bear with me I've just got a brief presentation that I'm going to run through.

So since 1992 the Valley Air District has adopted more than 500 rules and regulations targeted primarily at stationary sources. These rules are often the first of their kind and are generally considered the most stringent rules in California and sometimes the nation. However, currently 80 percent of the NOx inventory in the valley is attributed to mobile sources. There are several reasons for that, and I'll go through those.

The first and most impactful is -- if the valley's geography and topography. Obviously, we're in a giant bowl here. And the climate, with summer and winter inversions and prolonged periods of stagnation, we get significant buildup of emissions in the valley that are hard to -- hard to get rid of.

Along with that we have two major transportation

corridors that bisect the valley with Interstate 5 and Highway 99 that connect the northern and southern parts of the -- of the state. So it makes it -- it makes it difficult with the -- with the transportation.

Couple that with -- with high poverty and unemployment rates that we see here in the valley and a large number of disadvantaged communities, it really calls for a unique strategy.

The District has developed a broad multifaceted portfolio of innovative strategies to address the impact of mobile sources, and I'll go through those here briefly. There we go.

Again, since 1992 the District has operated our voluntary incentive programs. And during that time more than $1.2 billion has been invested in the valley. That's a combination of public and private investment. Of that amount $676 million has come from the District and has gone towards emission reduction mobile source projects. These projects have garnered over 116,000 tons of lifetime emission reductions.

The District is consistently lauded during program evaluations at the state and federal level for our efficiency and effectiveness in operating our incentive programs. And we currently operate a broad range of innovative programs. In fact, we currently operate a couple of different programs on

behalf of other air districts in the state, as well as the State Air Resources Board.

Our current programs include our heavy-duty engine programs, our heavy-duty on-road programs include the state's Proposition 1B program. And we've primarily used Proposition 1B funding to replace aging valley trucks. The Carl Moyer Voucher Incentive Program is another state-funded program that we've operated in the past, targeted at small fleets, smaller trucking fleets. We -- the District's own Truck Voucher Incentive Program is funded with local funding here in the valley, again targeted at small business in the valley, really focused on those -- on those small fleets in the valley in truck replacement.

We operate -- this past year we've operated the H-VIP Plus-up Program which is the Hybrid Voucher Incentive Program, Plus-Up. The HVIP Program is a state-run program that provided funding to offset the incremental cost of alternative fuel and other advance-technology vehicles, heavy-duty vehicles in the state. We put money on top of that, that's the Plus-up part of it, to encourage those -- those trucks to come here to the valley. It was a very successful program. We -- we put in $2 million during the last fiscal year into our program, and we funded -- we funded 105 trucks, 18 of those being all electric trucks, and 87 -- the 87 remaining were advance-technology hybrid trucks.

We're operating a School Bus Replacement and Retrofit Program. We have for several years. And currently we're operating the Statewide School Bus Retrofit Program on behalf of the Air Resources Board. We've done that for several years and we're going to continue to do that for the next fiscal year.

And this District has really been, because of the high -- high number single-owner operators and small trucking fleets in the valley, we've really been a leader in pushing to ensure that small fleets have access to these much needed incentive funds. And that started with -- with putting our own money into the -- the truck voucher program in this past fiscal year, a very successful program. We allocated over $10 million to that program and helped out numerous small trucking fleets in upgrading to cleaner -- cleaner vehicles.

Some of our other programs, and you can imagine, off-road, farm-related equipment. Agricultural irrigation pumps is a huge business here in the valley. We've -- we've electrified well over 2,000 ag pump engine. We've replaced over 5,000 additional engines with new cleaner burning diesel engines. Our Agricultural Equipment Replacement Program is right now one of our most popular programs. This is targeted primarily at farm equipment, including tractors and other implements that are used on farms. We've -- we've replaced well over 2,000 pieces of agricultural equipment to date in

that program.

And we've also had some locomotive funding from time to time. And we've -- we've purchased and replaced some -- some switcher locomotives that are operated in rail yards, as well as some short-haul locomotives, through that program.

Some of our light-duty programs targeted at passenger vehicles include our Drive Clean Rebate Program. This is a program that offers up to $3,000 that can be overlaid on top of the state's CVRP funding which -- which creates a $5,500 incentive, which we believe is the most lucrative rebate program, once you layer those two, in the entire state. It's been wildly successful. We've -- we've provided rebates for over 2,000 vehicles in the past year-and-a-half. You know, it's really taken off over the past probably eight to ten months where we've seen huge numbers of -- of primarily electric vehicles come into the valley, which is -- which is something that we've been -- we've been lagging behind in the rest of the state. So it's -- it's definitely a step in the right direction.

The Tune In and Tune Up Program is another innovative program that the District operates. This is based on a weekend event model where we have weekend repair events. So low-income folks can drive down to a local gathering place, usually at a fairgrounds or a community college. They can get their vehicle tested. And if their vehicle fails that test

they can be issued a voucher for smog-related repairs right there. It's been an incredibly successful event. We have -- we're generally operating about 24 to 26 events per years. Excuse me. And we're generally testing between 500 and 525 cars per event and issuing 300 to 400 vouchers per event for repairs.

The great thing about this program, one of the side benefits is that folks that were previously unregistered are becoming registered through this program. It's something like a 98 percent success rate of those folks that were unregistered come into the program, get repaired, and then go through that registration process. It's -- it's been a fantastic program for us. And there are some other things happening with that program that I'll talk about in our upcoming -- upcoming events.

Our Remove Program is one of our oldest, oldest programs. This is really aimed at VMT reduction-type program, bike paths, park-and-ride vanpools, we all -- we operate those -- those incentive programs through our remove program, and then other types of innovative VMT reduction projects.

The last thing is EV Readiness Planning, the result of a wonderful grant that we were able to obtain from the California Energy Commission. We went through a process to develop and EV Readiness Plan in the valley. There are several members of -- of the public here who participated in

that program. And we have a very robust and comprehensive plan. We were able to identify the barriers to more widespread EV adoption here in the valley. The next step is to take that plan and implement it.

And again I am happy to say that thanks to another California Energy Commission grant that we just received word that we were granted we will be taking the first steps in implementing that -- that EV Readiness Plan with some outreach events and some -- some training opportunities, both for local governments and for electrical contractors on the installation of electric vehicle charging infrastructure. So we'll be kicking off that grant very shortly.

Some of the other community programs, right now one of our most popular programs, due to the time of the year, is our Burn Cleaner Rebate Program. This is a program that provides incentives for valley residents to upgrade their older uncertified dirty fireplaces and wood stoves with new cleaner technology, EPA Certified technology. The rebates are currently at $1,000, and they go up. We have higher incentives for -- for low-income valley residents to ensure that they have the opportunity to access these funds.

Our Clean Green Yard Machine Program has been successful. This provides rebates to folks who crush their old high polluting gas-powered lawnmowers and go with new electric models. So it's a rebate program and it's ongoing,

and it’s been -- it’s been very successful, as well.

We -- we launched a couple of years ago our Public Benefits Grant Program. This is targeted towards public agencies for projects that benefit the public. We have three components under that. We have a light-duty vehicle component in which public agencies can get funding up to $20,000 per vehicle for advanced technology vehicles, and that includes plugin hybrids and all electric alternative fuel, they can get up to $20,000 per vehicle to replace those vehicles.

We have two RFP-based components. Our -- the first one is our Alternative Fuel Infrastructure Component. We have funded CNG and LCNG stations, new stations as well as expansion projects throughout the valley through that program. We expect to issue another RFP for that program in the coming fiscal year.

The Enhanced Transportation Strategies is another RFP-based program component that we operate. We just recently had a solicitation for that program and we’re currently evaluating the projects. That includes things like advanced technology, transit, bus rapid transit, and those types of projects.

And then finally our Technology Advancement Program. Our technology advancement program includes a wide variety of innovative technology, things that are not necessarily market ready but ideas and technology that has promise and the hope

of more widespread adoption. So we're currently evaluating our most recent solicitation under the technology advancement program, as we speak. That program, I believe, had $5 million for this particular solicitation period.

So we do have a couple of programs under development of note, the first one being Electric Vehicle Charging Infrastructure, and this goes hand in hand with our -- our Electric Vehicle Readiness Program that we've been -- that we've been implementing here in the valley. The first two segments that we're targeting are electric vehicle charging infrastructure at public buildings, government buildings, libraries, city halls, things like that, and then workplace charging, this would be public charging. We plan to operate the -- the public buildings through our Public Benefit Grants Program as another first come, first served component where public agencies will be able to come to the District at any point during the year and receive funding to install electric vehicle charging infrastructure. The workplace charging infrastructure we are proposing to operate through our Drive Clean Program as a rebate where they would install the -- the technology at the office or shopping center and then come to the District for a rebate. We hope to have those programs up and running this spring. They're in development right now, so they should be -- they should be out on the streets within the next couple of months.

And then the Enhanced Fleet Modernization Program, or EFMP, is a program that's run through the state. And we have at the District, through our Tune In and Tune Up Program, we've shown a model that -- that we've proposed to the State Air Resources Board to -- to run the EFMP program in a similar way to our Tune In and Tune Up Program, the idea being that there are vehicles out there that are not necessarily good candidates for repair. And we'd like to offer an additional incentive amount to get those folks out of those vehicles and get them into a newer cleaner vehicle all together.

So the EFMP program provides funding to -- to shift those folks from an older dirty car that may not be -- may not be worth repairing and get some into a cleaner car. This includes the EFMP Plus-up Program which is an overlay on top of the EFMP program which -- which would provide even additional funding on top of EFMP to those folks that chose an advanced technology vehicle, either a hybrid, electric or -- or a plugin hybrid vehicle.

So when you couple all of those -- all of those rebates and incentives together it starts to look pretty good in terms of -- of getting folks out of their old dirty vehicles and into an advanced technology vehicle. I think the last time we -- that we looked at it, if you -- if you layer all the incentives it could be up to $13,000 that -- that somebody could receive to -- to get into a hybrid or an

advanced plugin electric vehicle hybrid.

So again, we're your -- we're your valley partners. We're here. We're a regional agency. We're located in the valley. And in terms of advocacy and going after the funding that we're going to be discussing today, we really want to become a resource for the region to assist you in developing projects, going after funding, technical analysis, you know, implementing the -- implementing the different funding sources. You know, we're here to help. We want to be -- we want to be that agency that -- that is sort of a clearing house that -- that you can come to and we can discuss projects and partnerships and different types of -- of ways to make sure that the valley is well represented and that we're able to take advantage of the funding that we're talking about. I mean, it's -- it's significant funding that we're dealing with and we want to make sure that the valley is well represented in any funding opportunity.

So with that I'm going to provide my contact information. I actually have some business cards, and I can -- I can make some copies of this presentation for anybody that would like it. So you don't have to scribble that down. Just -- just approach me and I can get you my contact information. And you can feel free to contact me about any of the programs that we talked about today or any of the new programs that we may discussing through this workshop.

So with that I'd be happy to answer any questions or take any comments.

PRESIDING MEMBER SCOTT: Do we have any questions from Committee Members?

UNIDENTIFIED MALE: I've got a question.

PRESIDING MEMBER SCOTT: All right. We want to -- we want to just do the Committee Members for now. But if you don't mind, I'll ask --

UNIDENTIFIED MALE: I thought you said community members.

PRESIDING MEMBER SCOTT: Oh, sorry. I'll ask if Todd DeYoung will follow up with you though.

MR. DEYOUNG: Absolutely.

PRESIDING MEMBER SCOTT: So thank you so much for that terrific presentation and again --

MR. DEYOUNG: My pleasure.

PRESIDING MEMBER SCOTT: -- for hosting us.

MR. DEYOUNG: My pleasure.

PRESIDING MEMBER SCOTT: And let me turn it over to -- I think Jim McKinney is next.

COMMITTEE MEMBER MCKINNEY: Good morning everybody. Let me first echo Commissioner Scott's appreciation to the San Joaquin Valley Air Pollution Control District for hosting us today, to Seyed Sadredin. Todd, thank you for the information discussion.

I'm Jim McKinney. I'm Program Manager for the Alternative Renewable Fuel and Vehicle Technology Fund. Hopefully that's the last time I'll say the -- the title today.

And I'd like to introduce some of the other members of the Energy Commission, Staff and Leads that are here today. So we've got Jacob Orenberg who is Assistant Project Manager for the Investment Plan. Tim Olson, a fellow manager in our Transportation Division, going to merging as Policy Lead for biofuels efforts. Kristen Driscoll, Advisor to Chairman Robert Weisenmiller, and Al Estrada who is the supervisor for -- for Jacob and Charles and is in charge of the Investment Plan. So again, I want to say thanks very much, and welcome to our meeting.

So we're -- we've done introductions and opening remarks. And I'll go through the -- what we call the program status update. And the purpose of this is to inform members of the committee and members of the public how we're using ARFVTP funds that have been allocated to us for administration on behalf of the state.

So I'd like to start with a sense of scale. This is what we call our nation-state statistics. And I think some of you are familiar with these. But again, a very large population. We have the eighth largest economy at the global scale. And we had a large source of greenhouse gas emissions

for North America, and again on a global scale. Air pollutions, I think most people know, were in severe nonattainment for NOx here in the San Joaquin Valley, and for the South Coast Air Basin. We have an extremely large vehicle fleet, over 28 million vehicles total, so 27-plus vehicles light-duty and about 1 million trucks. We are the largest -- one of the largest fuel markets in the world. We cycle about 18 billion gallons of transportation fuel each year, and that's on-road transportation, 14.5 is gasoline and that includes over a billion gallons of ethanol at the E10 blend level and about 3.5 billion gallons of diesel.

And one thing I'll come back to is that that -- that truck figure, that 1 million, that's about three percent of the total fleet, that's the part of the fleet that consumes almost all of the diesel fuel. And that's the source for particulates, NOx, SOx, and some of the other harmful pollutants that we get from vehicle exhaust, a lot of roadways as well.

I think first we want to extend our appreciation to Assemblyman Perea and his leadership in getting AB 118 reauthorized in 2013. So we are a program funded through small surcharges on everybody's vehicle registration fee. It's a joint program administered by us, and we cover fuel production, infrastructure development, and vehicle technology development. Our colleagues are represented by Erik White

today with the California Air Resources Board, administer the Air Quality Improvement Program, and they handle vouchers for commercial vehicles. And they'll have a large slug of greenhouse gas reduction fund monies that will go into large-scale technology development demonstrations. And I think Charles will talk more about that in his presentation.

By the end of this authorization period the Energy Commission will have cycled $1.5 billion in public investments into companies in California that are working to develop the low-carbon, low-emission technologies that we need to meet our carbon and air pollution control goals. The Air Board will cycle about half a billion. So in total about $2 billion for public investment.

These are some of the policy drivers. We are primarily a carbon reduction program. That's really the emission specified in legislation. And I think most of you are kind of familiar with these numbers. About a 30 percent reduction from the 1990 baseline by 2020, and an 80 percent reduction by 2050. We have petroleum reduction goals, 15 percent below '03 by 2020. The low-carbon fuel standard which is a critically important part of our state's efforts to reduce carbon, as well. At the federal level the Federal Renewable Fuel Standard Program is another big driver for carbon reduction in fuels.

Air quality. So when I first learned these air

quality targets it really startled me. So to meet the Federal Clean Air Act standards in 2023 and 2032 we're going to need up to an 80 percent reduction in NOx emission levels from the transportation sector, and that's a really serious challenge. And again, it's going to hit, I think, primarily in the San Joaquin Basin and the South Coast Air Basins. This is a mandate, so we need to accommodate up to 1 million electric vehicles by 2020. And the Governor's goal is to have 1.5 million electric vehicles on the road by 2025. In Governor Brown's State of the State speech in January this year, he threw out some more markers. So for our sector a 50 percent reduction in petroleum use by 2030. So again, California has leadership, not just in North America in the U.S. but on a global scale, as well.

What this slide shows is kind of the way that the money flows through our program and through the process. So today is a very important part of how this money gets allocated. So Staff makes a series of recommendations and we present that to two public Advisory Committee meetings. This is the second of those. After Commissioner Scott takes control of the report and takes a Commissioner's report to the business meeting, that is our formal request to the five members of the Energy Commission. And when that's approved we then go to the solicitation level.

So we take those segments of money for each

technology area and develop competitive solicitations for that. We go through a screening and proposal review process and ranking. And -- and then we get down to the agreement level. So we negotiate the grant agreements with everybody. And then the rest of it, agreement management, survey and data collection, and then what we call the benefits report which I'll touch on briefly. So it's typically a six-year process, two years to liquidate, four years -- no, two years to encumber, excuse me, and then four years to liquidate the funding.

One part of AB 8 that's new is a benefit cost score. So this is something that we pay increasing attention to. This is incorporated into all of our solicitations now and, again, that takes place at the solicitation level.

So this is where we are in terms of funding. Last year we hit the half billion dollar mark in public investments through ARFVTP. We're now coming up on $550 million, coming up on 500 projects, we've got 470. And you can see how the money is allocated here. So about 30 percent each to about biofuels and electric drive, about 17 percent each to natural gas and hydrogen. Workforce development is a very important part of our program. And we're trying to train the technicians, the equipment operators, maintenance personnel that can maintain and operate these technologies of the future. Market and program development, those are our tech

support contracts to assist us on various parts of our program administration.

This is another way to look at it. This is -- the other one was by fuel supply, and this is by supply chain phase. So on the far left, the red and gold bars, that's our biofuels investments. So on $130 million total you can see the breakout, biodiesel, biomethane, and then ethanol.

Refueling infrastructure, hydrogen has now become the predominant part of that for us. That's the turquoise bar, I guess that would be. Green is our electric drive investments. The yellow or gold is our ED5. Purple is natural gas. And a little bit on the top there, biodiesel, that's kind of at the bulk terminal scale.

For vehicles it's about an even split between our electric vehicle investments and -- and natural gas trucks. There's a little bit on hydrogen. We've got a few demonstration projects there, and a little bit on propane as well.

Most of our manufacturing grants tend to go to the electric drive sector, so that's component share, assembly lines, and full vehicle development. And then on the far right again you can see the -- the disbursement of our workforce development under their program support funds.

One of the things that we wanted to do is show how the money is distributed geographically. So what this chart

shows is we've got kind of the major air districts in California. And we've tried to show, you know, what our investments our on a dollar basis in each of these air districts, so that's the -- the second column there. To the right of that, percent of total, so that's the percentage of our funds. And to the right of that I added a new column this year. So percent of state population. So in percent state population and percent of total funding are equal or about equal, that means there's about an even, you know, kind of inflow-outflow. To that number -- that number are the populous that are paying the registration fees, rolling up to the -- the state fund that we administer, and then going back to those air districts.

So you can see that the Bay Area is about equal. Monterey is getting a little bit less in its population share. Sacramento is running about equal. Santa Barbara is getting a little bit less than its population share. San Diego, about five percent less than its population share.

The San Joaquin region here, so getting about 14.7 percent of total funding and has about 10 percent of the population. And I think this is really important to highlight because we're really trying to target increasingly the, you know, the two main air districts with severe, you know, non-attainment issues, disadvantaged communities. So I think this indicates that.

South Coast AQMD, you know, nearly half the state's population are getting about 20 percent of the funding. I'll let you read the other ones there.

Yolo-Solano gets more money on a percentage basis because UC Davis is there and they've won some large awards from us over the past few years. And the other Nor Cal, So Cal, those are the smaller air districts. You can see those.

And then about 23 percent of our funding is what we call kind of state-level grants, so these could be for very large EVSC electric vehicle supply equipment awards, E85 awards, things like that. And it's really difficult for us to allocate those to the air district basins. So those kind of roll up statewide levels.

What I'm going to do now is kind of walk you through the four or five major technology areas in our program, so we'll start with electric vehicle support, $38.3 million to date, about 9,300 charges that we've help fund throughout California. You can see the breakout there, about 3,000. The commercial -- or commercial destination part, about 5,000 to your residences and those primary single-family homes. But we're trying to do -- kind of crack the nut on multi-unit dwellings. Less than 1,000 for workplace. And our DC fast charger network is up over 100 now.

The Regional Readiness Grants, we now have 21 of those for -- there's -- there's a typo there, it should be

$4.5 million, excuse me. And those are a really good return on investment. And I think Todd kind of, you know, talked about that a little bit this morning in his presentation. What we don't want to be is the Sacramento bureaucrats in the room, you know, in the conference room deciding how money should be spent in every locale, every region in California. Our state is too big, too diverse, too complex for that. So we think local government really has a lot to offer here, and we're getting a good return on that.

CDRP support. So over the years we have made payments to the Air Resources Board to supplement their funding for the Clean Vehicle Rebate Voucher, so almost $50 million and 21,000 vouchers.

This chart shows all sales through December 2014. So we think we're at about 120,000 vehicle mark in California. That's 40 percent of total sales in the United States. Again, we are -- it's not just that we're a leader for the other states and the United States, it's that we're toe to toe with some of the major industrial economies in Europe and Asia in terms of our investments in alternative fuel and zero-emission infrastructure and vehicles.

This map shows the rapidly developing fast charger network in California. So you can see the -- the ones that we funded, we've got the Tesla superchargers on there. The NRG EV Go, so that's the -- NRG is the -- has the settlement

agreement with the California Public Utilities Commission for charger deployment in California. So they're obligated to do 200 fast chargers and 10,000 what we call make-ready stubs. So that's the doing the conduit installation and pouring the pad so another vendor can come in and put a charger on that, and that's developing nicely.

I tried to kind of pull out and highlight some of our investments in the San Joaquin Valley for the different fuel categories I'm going to go through. So this is not a full list but it's some of the more interesting ones. So we have a network of eight DC fast chargers at hotels up and down the freeways here in the valley, two out here in the parking lot for the APCD, Fresno State. Fresno has got some municipal multi-unit dwelling chargers. Caltrans. And then Clipper Creek Reconnect, that was an early grant from us to upgrade the old paddle style chargers to the current modern standards.

I'm going to turn now to hydrogen station funding. This is also a very important part of our program. So we've done over $90 million to date through our program. Specifically we've done 48 awards, so 45 of those will be for new stations, 3 for station upgrades, and then what we call Operation and Maintenance Grants. We currently have 11 operational stations in California. And we're estimating that by the end of 2015 we hope to have 46 stations operational in California. And then the balance of the ones that we're

funding should come online the first quarter 2016 and second quarter 2016.

You can see some of our other investments. AC Transit, a fuel-side bus station up there in Emeryville.

CDFA, California Department of Food and Agricultural, Division of Weights and Measures, through funding support they developed the first retail fueling standard, so those include the regulation and the technical protocols, to allow for retail sale of hydrogen fuels in California. And again, that’s the -- that’s the first in the country to allow for that.

So these next two maps are courtesy of the California Fuel Cell Partnership. This shows operational, and then stations in the planning and construction development phase. So in Northern California we have two that are operational, Emeryville, and then the new station in West Sacramento. And Commissioner Scott and myself and many other people here from the Sacramento teams were really, really pleased to see that station come online. That was the first of our stations funded back in 2010 to become operational, and we look forward to more.

So this chart shows the -- the Bay Area network. So you can see a lot of investments in the -- the Peninsula, Silicon Valley there around Sunnyvale and San Jose. And we hope to get more stations in the East Bay. The Sacramento

station is in your upper right.

Southern California, this is the predominant number of stations that we're going to do. So you can see there are nine operational now in Southern California. And the balance there that you can see that are in development. And one of these to note, so in the Valley in Coalinga we're going to have what we call -- what do we call it -- a transition station. I'm losing my word there. Anyway, the one -- the one as you're going from one primary location to another that you can fuel along the way, so that's going to be in Coalinga. And that's a really important event for the valley to start linking up the big metropolitan areas in the north and south parts of the state.

These are the vehicles that either are available or will be available soon. The Toyota Mirai, I think a lot of us have been able to ride and drive that. It's a fabulous automobile. The Hyundai Tucson is now available, $499 lease per month. That includes your fuel. You know, you do the math. That knocks my fuel down a lot. So I'm kind of thinking about that, and I've still got kids. And the Honda concept vehicle, and we hope to see that out 2016-17 time period.

I'm going to turn now to our truck funding. And again, you kind of go back to those stats that I shared with you initially, just that ratio of the number of trucks with

the very high volumes of fuel, carbon emissions, and criteria emissions and particulates, so we put a lot money into it. Trucks about a third of our total funding, $156 million. Commercial natural gas trucks, we are really the only source at the state level for vouchers to get commercial, you know, modern commercial natural gas trucks out on the roads in California, about 2,700. Our fueling infrastructure, we've done 60 stations, and about 5 of those are dedicated to renewable natural gas. Commercial propane trucks was an early part of our program and we've since discontinued that.

Commercial ZEV trucks, so it's zero emission vehicle trucks, primarily medium-duty all-electric drive trucks, and I've got some pictures and I'll show it, the bulk of our money here is in advanced technology demonstration. So this is really the future for trucking. So that can include kind of these interim strategies with low NOx, clean burning natural gas engines, going up to electric drive, hydrogen fuel cell electric drive, and all the hybrid configurations you can do on that, including range extenders.

I'm going to walk you through a couple of project examples, again from the valley. So Proterra Electric Bus, they're running two busses in Stockton with the Regional Transit. So a $2.5 million grant from us. They have a very interesting fast charge capacity. So on the bus of that bus, you know, the coupler kind of pokes up. They drive under a

canopy, the charger comes down, and you can charge in five to ten minutes. So that kind of corresponds with the break time for the drivers.

Motive Power Systems, they're a Silicon Valley firm. The kid -- I mean, I'm sorry -- I'm sorry, Jim, the young man is barely 30 years old and he's a classic Silicon Valley guy out of Stanford. And my apologies, Jim. And he has made a company, you know, pretty much from a couple of guys, you know, in a spare bedroom to something that's now doing electric dive vehicles. And they've got installation kits for medium-duty trucks, for school busses. And they're even doing Class A garbage trucks in Chicago now. It's just -- it's just fabulous what this company has been able to do.

These busses here were funded through some of our Technology Development Grants, through our Assembly Line Manufacturing Grant that we gave to them. And this I a great example of partnership. The Air Board then came in with Air Technology Demonstration Grants and funded the glider, that's what we call, you know, the chassis and the body without a drive train, put that together. It's a really nice package, electric school busses in the valley. I guess John Clements (phonetic) is not here today, the electric school bus evangelist, he calls himself. But that's him down in the lower left driving the kids in that.

This project is a couple years old now but it's

still incredibly important in terms of scale. So Electric Vehicles International in Stockton, they did the 100 Truck Deployment Project which I believe is still the largest single deployment of electric trucks in the United States. That was Governor Brown at the -- the inaugural event there. So this -- this electric truck works very well. It cycles in front of our building. I don't know if it goes in front of your building, Erik. But I just love hearing that whine because you're not hearing the rumble-rumble, you're not smelling the exhaust, it's just that beautiful high-pitched whine of the electric motor, so --

PRESIDING MEMBER SCOTT: We saw one on the way here.

COMMITTEE MEMBER MCKINNEY: So turning to natural gas, I'm going to want to highlight some of our investments here in the valley. So we've got four CNG stations, two are at school districts and two are with local government. The way our Natural Gas Truck Voucher Program is set up, we can't quite get detailed geography information on where are operating. But we did a search of DMV data and we got about 2,000 natural gas trucks in the valley and another 1,800 light-duty -- light-duty vehicles.

Turning now to biofuels which is another very important part for the trucking sector, and also light-duty vehicles, about $131 million total. So biogas has received $50 million, ethanol $23 million, cellulosic ethanol $3.9

million, and biodiesel which has really made tremendous strides over the last few years to become commercially viable $36 million, and then renewable diesel about $17 million. On the far right you can see the estimates of production capacity. So we're thinking up to 145 million gallons per year. That's not bad, but again we have a very, very large fuels' market in California, so we have a long ways to go. You can also see our investments in E85 fueling infrastructure. And then biodiesel tank storage.

So I went through our -- our catalog or compendium and pulled out some of the projects that we've done here in the valley. So one thing to recognize about -- in terms of thinking of different parts of our valley investments, this is really where the action is in terms of jobs, economic development, tax revenues, multipliers through employee, and revenues. These are major industrial facilities. They've got a core workforce. And you've got all these satellite companies that are needed, not just to construct but also to bring in feedstock, to take out final product, so it's a real jobs creator

Crimson Renewable Fuels, Biodiesel Community Fuels, Biodiesel in Stockton, Great Valley Sweet Sorghum Trials, those are down in the Visalia and Bakersfield area. EdenIQ is a leading developer of cellulosic process technologies; they're also in Visalia. Pixley Biogas, I was at that grand

opening two days ago. Colony Energy in Tulare is a biogas project. And then the three big corn ethanol biorefinery companies here in California, Pacific Ethanol, and that is in Calgrain, all won awards to start introducing grains sorghum into their mix and start backing out the corn that's used to fire those plants.

Some shots of the construction. The refinery expansion at the Crimson Renewable Fuels Project run by Harry Simpson, very low carbon product, so 14 grams. You can really just think about that on a 100-point scale. So gasoline and Midwest corn ethanol come in at about 100 grams. So this means at 14 it's about 85 percent less than conventional petroleum products or -- or Midwest corn ethanol. So that is -- that is underway.

And you'll see again I spent a lot of time on the -- on the freeways here the last couple of days. So I was able to go down to the Pixley event on Tuesday, really, really gratifying. So a $4.6 million grant from us back in 2010. So what they're going to do here is that they've made a deal with the Four J Farms Dairy to take waste manures and they run it through a pipeline. The -- the kind of -- the white flat surface that you see there in the foreground is the digester pit, that's fully covered and they generate biogas from that.

So again, this is a very large capacity refinery, 58

million gallons per year. What they're going to do with the biogas is back out natural gas at about 6 percent, and that's going to push down their carbon intensity score to 67 grams Co2 equivalent per megajoule, so that's one-third less than Midwest corn ethanol, one-third less than gasoline. So this is now the lowest carbon industrial producer at large scale in California. So again, congratulations to that project team. It was really, really exciting to see that come online.

Turning now to workforce, we have a total of about $20 million, I think a little bit more, invested in workforce training. So that covers 13,000 people that we've helped provide training funding for across 600 businesses throughout California.

I'm going to talk very briefly about what we get in terms of carbon reduction and criteria reduction benefits from these cumulative investments. So we have a contract with the Natural Renewable Energy Laboratory in Colorado. Dr. Marc Melaina is the principal investigator. Let me walk very briefly through these benefits.

What this slide shows is what we call expected benefits. So we assume that everything we fund is built to scale and then operates at its design capacity through 2020. And you can see these -- what these colored bars mean on the bottom are the fuels, so biofuels, fuel production. The bulk of the benefit there comes from biodiesel and renewable

diesel, about 12 percent from biogas. The blue section is fueling infrastructure. And you can see that the bulk of the benefit here is from natural and renewable gas. And what's interesting to me there is if you think back to our investments, this is only $15 million investment across 60 stations. But because of the very high throughputs that you can get with these hopefully the truck fleets will expand and we can get that. So we get a large contribution from natural gas renewable gas.

The top part is vehicles. And I think the surprise to us, it was our Manufacturing Grants that are projected to really account for the bulk of our -- our investments and the bulk of our carbon reduction goals, so you can see that one there. Light-duty vehicles are still -- you know, we're -- 120,000 vehicles is great. A million is a lot more than that. And the percentage of a $27 million passenger vehicle fleet, you know, we have -- we have a steep hill to climb. So I told you about carbon reduction, about 2, 2.25 million metric tons.

We also have something we call market transformation benefits. What this means is that for all these demonstration projects that we fund, and that's really a big part of our funding, hopefully they'll be successful, most of them are. And then at some point, you know, in the future other investors will come in, develop companies, pick up their technology, and build replicate copies of that technology,

that plant, that vehicle. So we call this market transformation. We can claim a little bit of credit for it. And that really pushes the numbers up in an interesting way. So after -- after 2030 we're estimating, you know, about 3.2 million metric tons up to about, you know, 5.25 million metric tons. So is that a big number or a small number?

So we -- the Air Resources Board quantified the carbon reductions needed to meet the ten percent reduction to the low carbon fuel standard. That number is 15 million metric tons. So that gives you a sense of, you know, the relative contributions that we're getting from this funding program over its lifetime.

I'm almost done here. I'm going to talk now just briefly on the recent solicitations and awards since our last Advisory Committee meeting in November.

So the Regional Readiness Planning Grant, so eight additional awards for $2 million has gone to the San Joaquin Valley APCD, ZEV planning and implementation, and then our first hydrogen planning award. We added one more awardee for commercial-scale biofuels. This was the Verdes (phonetic) Biofuels Project in Oakland, that's a $3.4 million grant. Manufacturing, we are continuing to evaluate the project proposals that came in on this, and it's a $10 million solicitation, up to $3 million in awards. Our early scale biofuel production, $3 million grant program. We're doing

this in two segments now. So we did a request for information or an abstract, and then we're going to single out some of those and ask them to submit full proposals. That will be happening in April.

The San Joaquin Valley Center, I'm going to talk about this a little bit. So a few years ago we had a grant to develop regional centers throughout California. And the idea of those is to have a center of excellence where you can disseminate information on alternative fuels and vehicles and funding technologies, and also have demonstration projects there, so maybe some small fueling infrastructure, maybe a small vehicle fleet that comes in and out, and also run an educational program and seminars.

So we had two good awards in Northern and Central California. We're still waiting for what we thought was a high quality proposal from San Joaquin. And I was talking to Samir Sheik this morning before the meeting and we think there's really strong candidates that will put together some good proposals here. So we're really looking forward to getting that center funded and up and running.

ZEV Readiness planning, we continue to get a lot of interest in this from regions throughout California. So we have another $1.3 million available for that. And then one of our larger solicitations, a medium- and heavy-duty vehicle demonstration projects. So we are coordinating closely with

our colleagues at ARB and under -- this is Erik White's program, to make sure that we complement each other. So we're going to really tackle the early demonstration phases and a work on a pure technology development, you know, maybe one, three, five vehicles. And then Erik and Andy Panson with the work they're doing with the Greenhouse Gas Reductions funds, they're kind of going after much larger fleet trials and demonstrations throughout California, also with an emphasis on disadvantaged communities.

In terms of natural gas, one of the things we're doing here is starting to recognize the optional low-NOx standard that the ARB has promulgated. So that will kind of ratchet down pretty quickly from .2 grams NOx per brake horsepower down to .1, and then down to .02 which is an 80 percent reduction.

Some of the ones coming up, so EV charging stations, we've got that coming up. Natural gas fueling infrastructure; and we're really starting to shift our focus to school districts and municipal fleets on that. We think private market can take care of the trucking fleets. Natural gas vehicles, we're developing a contract with University of California Irvine to take over that part of our program, to run the voucher part of that.

And a new one that was specified in the AB 8 legislation is what we call intelligent transportation

systems. So this is a congestion relief and dispatch series of computer programs. So we want to get started on that, and then also with our federal matching funds.

And then finally, just a couple of other highlights. So again, under the policy leadership of Commissioner Scott, last year we did our first ever Integrated Energy Policy Report focused almost exclusively on the transportation sector. So that was -- the revised draft was posted in late January. And this will be heard at our February 25 business meeting. And the comment period just closed yesterday. And we expect to have a good discussion at the business meeting.

And then lastly, our -- what we call our, you know, section 3103 of Funding regulations, we're going to revise those to potentially remove what we call the credit discount provision under Part B of that regulation. So my colleague Tim Olson has been designated lead on that. So Tim is doing great work with his team to get that package ready for the commissioners consideration.

So that concludes my part of the program. And -- yes?

MR. ORENBERG: (Off mike.) (Inaudible) ask you to clarify that (inaudible) being March 2nd (inaudible) .

COMMITTEE MEMBER MCKINNEY: Okay. So Leslie Baroody, our EV team leader, has asked me to say that EV Readiness proposals are due -- would be due March 2nd. Great.

Thank you, Jacob.

MR. ORENBERG: (Inaudible) accepted right now, whereas the previous instruction was (inaudible).

COMMITTEE MEMBER MCKINNEY: Uh-huh. Yeah. Okay. So those -- those can be put forth right now.

Charles, shall we do clarifying questions now or after your presentation?

Commissioner, what's your pleasure?

PRESIDING MEMBER SCOTT: Why don't you take questions now?

COMMITTEE MEMBER MCKINNEY: Okay. I can take clarifying questions now, first from the Committee, then members of the audience.

Any clarifying questions from Committee Members present? Clarifying questions from Committee Members on the phone?

COMMITTEE MEMBER CLIFF: This is Steve Cliff. Can you hear me?

PRESIDING MEMBER SCOTT: Yeah.

COMMITTEE MEMBER MCKINNEY: Yeah, Mr. Cliff. Can you identify yourself?

COMMITTEE MEMBER CLIFF: Yeah. Steve Cliff from Caltrans.

COMMITTEE MEMBER MCKINNEY: Uh-huh.

COMMITTEE MEMBER CLIFF: Very nice presentation.

Thank you. I just wanted to point out early on in the presentation you had transportation I think at 36 percent of the GHG emissions.

COMMITTEE MEMBER MCKINNEY: Uh-huh.

COMMITTEE MEMBER CLIFF: I think that doesn't really account for the upstream. And so I just wanted to maybe urge for consideration going forward that, you know, the upstream component can be very significant as well. And it's probably work pointing out that refining the fuels and extraction is also a big chunk of the emission.

COMMITTEE MEMBER MCKINNEY: Great. Thank you for that comment. Yeah. No, this focuses on on-road emission, so you're -- you're correct in that.

Okay, Will -- Will Coleman, go ahead.

COMMITTEE MEMBER COLEMAN: Yeah. Can you hear me?

COMMITTEE MEMBER MCKINNEY: We can.

COMMITTEE MEMBER COLEMAN: So I just have a few clarifying questions. One is around density of infrastructure. So if you could go back to that map --

COMMITTEE MEMBER MCKINNEY: Hydrogen or electricity?

COMMITTEE MEMBER COLEMAN: Well, first let's just look at EVs. And maybe it's true -- it's a similar question for hydrogen which is do you have -- how are you guys thinking about density (inaudible)? Do you have a heat map that could be shared around what your goals are for density and distance

and where we're meeting those and where we are not?

COMMITTEE MEMBER MCKINNEY: Yes. So in terms of -- let's talk first about electric vehicle charging infrastructure. The regional readiness plans that have been developed by the -- the major metropolitan regions in the state have that type of information. This is really for illustrative purposes. And this just shows our fast charger network in the state. And we -- we can view more regionally based density maps on this. They get quite busy because of the density of chargers in some areas. But I think that's a good -- a good comment that you're making, Will.

For hydrogen we have used that mapping tool from University of California Irvine who has been our kind of mapping and technology support team for that. And we do have those heat maps. And of course, the California Fuel Cell Partnership has also done a lot of work on density for hydrogen fueling stations.

COMMITTEE MEMBER COLEMAN: Yeah. I'll follow up with you on it. I'd love to see some of those. It would be really interesting.

On the hydrogen front do we have utilization rates yet in terms of the infrastructure that --

COMMITTEE MEMBER MCKINNEY: I'm sorry. Can you repeat your question please?

COMMITTEE MEMBER COLEMAN: For the hydrogen

infrastructure, do we have any utilization rate yet for the infrastructure that it has been before, or do we have a comparison of utilization rights that cross different structure types?

COMMITTEE MEMBER MCKINNEY: This is very, very early commercialization for hydrogen fuel cell vehicles. So we've got, you know, basically a research fleet of about 200, 200-plus vehicles. And again, our colleagues at the Air Board, through their new authorities with AB 8, do what they call the AB 8 Report. The one that came out last June is really informative, so you can get that information in there. And they do those kind of throughput projections on a per station basis and a regional basis over time. So -- and they also have the vehicle deployment figures in there. So I think, correct me if I'm wrong, Erik, I want to say about 600 vehicles in the early years, growing rapidly to about 18,000, maybe 6,000 earlier, going to 18,000 over -- over the 2020 timeframe.

COMMITTEE MEMBER WHITE: That's a good question. I don't --

COMMITTEE MEMBER COLEMAN: Yeah. That is my next question. Because I think there were -- there were vehicle deployment targets associated with the deployment of infrastructure on the hydrogen side. How are we doing in terms of those vehicle deployment targets? Are we in line and

are we going to -- are we going to meet those targets?

COMMITTEE MEMBER WHITE: This is Erik White. You know, I have to follow up. That's not the area that I focus most of time working on back at ARB. But we could certainly follow up and report back on how we're doing on those.

COMMITTEE MEMBER MCKINNEY: Yeah. Or, Charles, if you have that. I know -- I know it's in our documentation. I don't have it off the top of my head.

COMMITTEE MEMBER SMITH: Yeah. So I don't have the number either. I was just actually going to point to the joint report that ARB will be working on towards the end of this year requires us to sort of evaluate the progress toward our hydrogen station goals and hydrogen vehicle anticipated goals. So that will -- that will be something that we do discuss. But I don't have the number with me, unfortunately.

COMMITTEE MEMBER MCKINNEY: And, Will, if I could say, as well, going back to EVSC, we did a major workshop about ten days ago that Leslie Baroody headed up. And I think a lot of the information that goes to some of your questions was discussed at that workshop.

COMMITTEE MEMBER COLEMAN: Okay. Great. I'll follow up. I'd love to get a link to that.

COMMITTEE MEMBER MCKINNEY: You bet.

COMMITTEE MEMBER COLEMAN: And then the other question I had was just around -- actually two more questions.

One is how that hydrogen -- what the -- what that infrastructure technology is and what the profile is of the hydrogen, the greenhouse gas profile is of the hydrogen that is actually being generated or distributed. Do we have that information? Is that -- because I know there was a pretty broad difference in terms of the greenhouse gas profile in hydrogen depending on the fuel source.

COMMITTEE MEMBER MCKINNEY: Right. So under state law, SB 1505, all fuel sold through hydrogen stations that have public funding, that one-third of that fuel has to be renewable hydrogen. So when we do the -- the calculations we estimate that with that assumption that the carbon footprint for hydrogen currently produced in California is comparable to electric vehicles, so about 30 grams Co2 equivalent per megajoule or, you know, two-thirds reduction below the petroleum baseline. So that’s kind the standard. That comes from a mix of central station facilities such as Air Products and Linde (phonetic) operate where you inject biogas and you get a renewable product. And we are also starting to fund very early generation onsite electrolyzers which is 100 percent renewable hydrogen. I think eight -- excuse me -- 5 to 8 percent of our -- 6 to 8 of our current stations are 100 percent renewable hydrogen.

COMMITTEE MEMBER COLEMAN: Interesting. And then just a clarifying question. You had an expected benefits page

that showed the breakdown for each infrastructure, vehicles, etcetera. The charts, the pie charts on the right, are those expected benefits based on current investment? Is that based on forecasted utilization? What do those actually represent?

COMMITTEE MEMBER MCKINNEY: Again, this is a best case scenario, everything that we fund is built to design parameters, it's operated at maximum throughput or usage rates. So this is the high case scenario, that's correct.

COMMITTEE MEMBER COLEMAN: Okay. Thank you.

COMMITTEE MEMBER MCKINNEY: I'd like to recognize Eileen Tutt, a Committee Member. Eileen? Committee Member on the phone with Cal ETC. Okay, we can catch Eileen's comment or question later -- later in the workshop.

Anything else, Jacob?

MR. ORENBERG: (Off mike.)

COMMITTEE MEMBER MCKINNEY: Can you speak into the microphone please and identify yourself for the Court Reporter?

COMMITTEE MEMBER HOLMES-GEN: Bonnie Holmes-Gen, American Lung Association of California. Sorry, we knew there was some delay in the train but I didn't realize it was quite as extensive a delay.

COMMITTEE MEMBER MCKINNEY: Well, good for you for taking public transportation down -- down to Fresno.

COMMITTEE MEMBER HOLMES-GEN: So in that little

triangle with the red in it and exclamation mark, it really does mean something on the website.

Anyway, I just had a couple of questions. I tried to listen in for most of this, wondering in terms of just he overview of the goals if you're going to be including the Governor's newly announced goals about 50 percent reduction in petroleum? I just don't see that necessarily reflected yet. I know it's relatively new, but I was wondering how that would be reflected in the report.

COMMITTEE MEMBER MCKINNEY: Yeah. So I referenced that verbally in the summary of the policy drivers that influence our program.

And I don't know, Commissioner Scott, if you'd like to speak further to that?

PRESIDING MEMBER SCOTT: I think we -- it's not in the draft that you have because that came out before he made those announcements. But in the -- in the next draft you'll see some references to it. A good example of how those might look, if you check out the Integrated Energy Policy Report, we put in a few highlights in there about the Governor's speech. And so we will -- we will do that.

We wanted to be a little bit careful because it's the state of the state speech and there's -- there's a lot that goes between. But it just -- it helps stress that we have some goals that we are working towards between now and

the 2050 goals. And so we'll -- we'll have appropriate updates throughout the text in the next version.

COMMITTEE MEMBER HOLMES-GEN: Okay. And I wanted to ask a question but I'm afraid that maybe it was already asked as I was walking in. But you were talking about some of the EV infrastructure. You know, there's been a lot going on between the Air Board and the Energy Commission looking at this. And I was wondering if there's -- are there some specific milestones that have come out that that are now being incorporated into our 118 funding recommendations in terms of the numbers of stations, the placement of stations, what we're trying to aim for and how that's meshing with these investments?

COMMITTEE MEMBER MCKINNEY: Yeah. So Charles will speak about this more in his part of the presentation.

COMMITTEE MEMBER HOLMES-GEN: Okay. Okay.

COMMITTEE MEMBER MCKINNEY: But generally we continue to -- to focus on areas that are, you know, say relatively underserved solely by private markets and private investment, so municipal -- multi-unite dwellings, excuse me, multi-unit dwellings. So I think 40 percent of the state's population does not live in single-family residences and live in, you know, apartment blocks or condominiums. So that's a critically important part of the driving public, so that's a big focus.

The DC fast charger network, workplace charging, we've had a lot of testimony through our IEPR proceedings that Commissioner Scott led. And then also with our workshops there's a very strong return on investment, and you can actually see these kind of blips or pulses in increased (inaudible) sales in areas served by those employers, so that's of interest to us. And then again, destination chargers, that is large, and we just continue to invest in that. And again, Charles is going to talk about some of the recent developments at the Public Utilities Commission and the industrial utilities in California, it's a lot -- a lot of action. It's very dynamic right now in terms of all the different pots of money, stakeholders and different actors coming into this part of the electric vehicle support market.

COMMITTEE MEMBER HOLMES-GEN: Okay. It would just be helpful to get a sense of how does -- what we're expecting matches up to the need that's been projected in these studies.

COMMITTEE MEMBER MCKINNEY: Yeah.

PRESIDING MEMBER SCOTT: Also that we are -- we are -- part of the workshop that we did about two weeks ago is to get smarter quick about all of the moving pieces that are out there. As you know, the playing field, and Charles will mention this, but the PUC decision is moving very fast. And so we -- we're working hard to be nimble and flexible so that we are continuing to target the money at places that expand

the network. So we're not recreating the wheel. We're not putting money in a place where the IOU is getting ready to go. So we're working pretty hard to try to be nimble there. But as you know, a lot of that is still kind of getting fleshed out a little bit, but I just wanted to add that.

COMMITTEE MEMBER HOLMES-GEN: That's great. One more quick -- just one more quick --

COMMITTEE MEMBER MCKINNEY: Certainly, Bonnie.

COMMITTEE MEMBER HOLMES-GEN: -- comment which is that I really appreciate you including the geographic distribution of funding. I just took a look at that this morning, so it will be helpful to look and digest that. And the focus that you've expressed on making sure that there are projects and investments in under-served communities, and I really appreciate that discussion as being a focus here. And glad to hear that the -- the project of a center of excellence in the San Joaquin Valley, it sounds like that's moving forward.

COMMITTEE MEMBER MCKINNEY: Yes.

COMMITTEE MEMBER HOLMES-GEN: And so I'm really glad to hear that. And just wanted to comment that I would really love to have more discussion or hear more at some point, it doesn't have to be right this second, about how the Energy Commission and the ARB can help encourage more projects in this region and what is needed in terms of technical

assistance or other tools that can be used to help increase the number of applications and the quality of applications so that we can get more funded projects here. It's great that we have the -- the 14 percent of the funding. But I think clearly everyone knows that we need to have more.

COMMITTEE MEMBER MCKINNEY: Yeah. I think there's a shared policy goal. Yeah. And also before I -- I just wanted to make sure that Bonnie, Tim, and -- and I'm sorry, I haven't --

COMMITTEE MEMBER ALAFIA: I'm Joy.

COMMITTEE MEMBER MCKINNEY: -- yeah, introduce yourselves as Advisory Committee Members.

COMMITTEE MEMBER ALAFIA: Hi. Joy Alafia with the Western Propane Gas Association. Thanks for having me.

COMMITTEE MEMBER CARMICHAEL: Good morning. Tim Carmichael with the California Natural Gas Vehicle Coalition.

COMMITTEE MEMBER HOLMES-GEN: And Bonnie Holmes-Gen with the American Lund Association in California.

PRESIDING MEMBER SCOTT: Could you check to see if there's any on the phone?

COMMITTEE MEMBER MCKINNEY: Yeah. Okay. Are there additional Advisory Committee Members who have joined us by phone?

COMMITTEE MEMBER TUTT: Hi, Jim. Can you hear me now?

COMMITTEE MEMBER MCKINNEY: Yes. Is this Eileen?

COMMITTEE MEMBER TUTT: Yes.

COMMITTEE MEMBER MCKINNEY: HI, Eileen.

COMMITTEE MEMBER TUTT: Hi. Yes. Eileen Tutt with the California Electric Transportation Coalition. And if you don't mind entertaining a question, I do have one after my other colleagues have been introduced.

COMMITTEE MEMBER MCKINNEY: Okay. Anybody else on the phone, Jacob?

COMMITTEE MEMBER SHEARS: Yeah. John Shears. I've actually been on since I think it was Tom Jordon [sic] who was giving the Air Districts presentation.

COMMITTEE MEMBER MCKINNEY: You should announce yourself, Mr. Shears. Okay.

Anybody else, Jacob. Great. Okay.

I'd like to recognize Tim Carmichael. Do you have a clarifying question?

COMMITTEE MEMBER CARMICHAEL: I do, thanks. I was in transition so I missed your conversation about potential near term solicitations. And I'm -- I apologize if you've already covered this, but if you could just give me the quick version of why are you listing UC Irvine as a potential administrator as opposed to the administrator? Because I thought that was definitely going to happen. Could you just clarify that?

COMMITTEE MEMBER SMITH: Yeah. This is Charles Smith. That -- that is -- that agreement has been executed at the business meeting. So it's no longer potential, it is expected.

COMMITTEE MEMBER CARMICHAEL: Thank you very much for that.

COMMITTEE MEMBER MCKINNEY: Right. Good catch, Tim.

COMMITTEE MEMBER CARMICHAEL: And then my other quick comment is as the staff knows pretty well some of my member companies have engaged on this 3103 issue for a few years. And very, very happy to see that the CEC is working on this and it's going to -- there's going to be discussion at the business meeting in a couple weeks. So thank you for that.

COMMITTEE MEMBER MCKINNEY: All right. I'd like to turn to Eileen Tutt.

COMMITTEE MEMBER TUTT: Thank you, Jim. I had -- I really appreciated -- in follow-up to Bonnie in a sense, I really appreciated the breakdown by -- by location, Jim. I thought that was very well done and really needed. But I had a question for Todd. And I -- my technical inability limited me from trying to get that question in when he was actually speaking. I don't know if I can ask the question still.

COMMITTEE MEMBER MCKINNEY: Yeah. He's approaching the microphone here, so --

COMMITTEE MEMBER TUTT: Okay. So my question --

COMMITTEE MEMBER MCKINNEY: Go -- yeah.

COMMITTEE MEMBER TUTT: -- Todd, is as Bonnie sort of indicated, there's a lot of concern, I think, among the policy makers and -- and stakeholder community about the level of funding that goes to the valley, given that the valley has been identified as pretty much entirely made up of the red dots on the -- on the CalEnviroScreen, disadvantaged communities, although I have to say I don't like that term very much, but in any case that's the term of art right now. And your presentation indicated that quite a bit of funding, and certainly the CEC has been very proactive in making sure that the valley is getting its fair share. And given that the number of impacted communities in the valley is so high I'm very happy to see that your percent total is above your percent of state population. Because your percent total of -- of impacted communities is also significantly higher.

But I guess my question to you is, you know, right now we have the Energy Commission money, and it really does look like you are satisfied with the way the money has been allocated and you're able to implement a lot of very important programs as a result of the Energy Commission's grant process. But there's also this new money coming in as a part of the expansion of the Air Quality Investment Plan Program under the Air Resources Board. And I'm wondering, are you, you know,

are you aware of that? Are you accessing that? As you may or may not know, certainly Bonnie is involved and I'm involved, there's a pretty significant shortfall, we think, in the '15-16 budget for funding for the kinds of programs that you're implementing in the San Joaquin Valley. And we do want to ensure that there's more money invested in that area and in those programs.

So I'm just wondering how connected you are to the Air Quality Investment Plan? And are you -- you know, is there anything we can do or that you see that the state can do or the Energy Commission or that this Advisory Committee can do to help ensure that the programs that you're trying to implement are successful and perhaps make sure that the funding continues?

MR. DEYOUNG: That's a great comment. And while we certainly -- we are absolutely very appreciative of, you know, the funding level that's been directed at the valley so far, you know, we definitely always think that there's room for, you know, for improvement in that area and for, you know, going for an additional -- an additional slice of the pie, as it were.

It's -- talking to your question specifically, we are definitely engaged in the ARB side of AQIP. And you know, we're sitting on all of the various working groups. We've been working very closely with ARB staff and management on

ensuring that, you know, a lot of these programs that are targeted at disadvantaged communities, you know, that we're actively engaged in how those -- how those programs are being developed, you know, the -- the specifics on how they're implemented to ensure that -- that the valley can take advantage of those funding opportunities. You know, we've been working very closely at all levels in each one of these programs. And we're definitely keeping a very close eye on the funding opportunities as they present themselves. You know, we're being active in making sure that those -- those programs are developed in a way that -- that they definitely benefit the valley or have the potential to benefit the valley, or specifically don't exclude, you know, by some reason don't exclude the valley in their funding.

So it's -- it's definitely something that we are engaged in and -- and we are being very active, particularly with this upcoming funding cycle and all of the -- the new programs that are being developed on the AQIP side.

COMMITTEE MEMBER TUTT: Okay. Thanks. That -- that really helped, Paul [sic]. And I'm going to reach out to you off the line just to talk to you about some of the upcoming funding beyond '14-15 and '15-16. I think we're facing a pretty substantial shortfall in the need, particularly in the valley, I would say.

MR. DEYOUNG: That would be wonderful. I look

forward to it.

COMMITTEE MEMBER TUTT: Thank you. And thank you for the links, Jim.

COMMITTEE MEMBER MCKINNEY: Did we have any more clarifying questions? Was that from the audience, Charles?

COMMITTEE MEMBER SMITH: WebEx.

COMMITTEE MEMBER MCKINNEY: WebEx. Okay. Can you open that up, Jacob?

COMMITTEE MEMBER SMITH: So we -- we had a comment come in from Dr. Thomas Green.

So, Jacob, can you selectively unmute? Is that possible.

Go ahead, sir.

COMMITTEE MEMBER MCKINNEY: Dr. Thomas Green? Okay. Maybe we'll come back later in the -- in the workshop program. Let's see. Okay.

Oh, go ahead, Commissioner.

PRESIDING MEMBER SCOTT: Well, I was just going to say, thank you for your presentation.

COMMITTEE MEMBER MCKINNEY: Yeah. I neglected in my -- my staff introductions to recognize Shawn Pittard from the Public Advisor's Office at the California Energy Commission. So his job is to facilitate communication between members of the public and stakeholders and Commission staff and the Commissioners. So -- okay.

PRESIDING MEMBER SCOTT: All right.

COMMITTEE MEMBER MCKINNEY: Thank you.

PRESIDING MEMBER SCOTT: Yeah. Thank you very much, Jim, for your informative presentation. And on the Public Advisor, if you want to make a comment we have these blue cards here. He has them in his hand right up front. And you can just fill out it, please, and then he'll give it to Charles. And we'll make sure that you have an opportunity to be heard.

And for folks who came in from I guess the right-hand side instead of the left-hand side, there are copies of all of the presentations, except the first one, out front so that you can -- if you'd like to pick those up then you don't have to take as many quick notes there. They're just right out front for you all.

So thank you, Jim, for your excellent presentation.

Let's turn it over to Charles.

COMMITTEE MEMBER SMITH: Thank you, Commissioner.

Good morning everybody. Let's see, oh, I need to load up my algorithm. Could you sit where I was, Jim, and --

COMMITTEE MEMBER MCKINNEY: Okay.

COMMITTEE MEMBER SMITH: We're going to shuffle seats a little bit here. So, Jim, if you could just hit escape and go down to PowerPoint and select the -- the Investment Plan presentation. There you go. And -- perfect.

Thank you. Okay.

Again, I'm Charles Smith. I'm the Project Manager for the 2015-2016 Investment Plan Update. Jim already mentioned a little bit about the Investment Plan Update, so I'll go quickly here.

This is an annually updated document. Each one determines our funding allocations for the coming fiscal year, so this would be for Fiscal Year 2015-2016 beginning on July 1st. We routinely write investment plans for a $100 million projected funding allocation. That, of course, can be affected or adjusted by the state budget. But we're still anticipating $100 million for the coming fiscal year. I want to specify that these funding allocations go toward broader categories of project types, not two specific projects. And that the Investment Plan is developed with input from Advisory Committee members and members of the public, whether in venues such as these or through our public docket. And I'll have that information about how to submit comments to our public docket at the end of these slides.

Here's our schedule for the '15-16 Investment Plan's development. You can see a few events that we've had in the past. The initial Staff draft was released in early November, and we followed that with our first Advisory Committee meeting at the Energy Commission headquarters in mid-November. We released our revised Staff draft or Staff report, I should

say, on January 9th, and are holding our second Advisory Committee meeting based on that document today. In March we anticipate release of the Lead Commissioner Report, and that will be the version that we take to a Commission Business Meeting for formal approval, and we're aiming for our April Commission Business Meeting.

About the revised Staff report, so we had a statutory deadline to distribute that document to the relevant and -- to the relevant policy and budget committees of the legislature ahead of January 10th, roughly when the Governor submits his proposed budget, and so we accomplished that. The revised Staff report provides updates to the context of the '15-16 Investment Plan which I'll mention in a little bit. It responds to and incorporates numerous stakeholder suggestions and comments. I think we received about 70 or 80 individual comments from about 20 different individuals and groups. And then I also wanted to highlight that the -- this particular revised Staff report does not propose any changes to the initial allocations scope or funding levels that were part of the first Staff draft that came out in November.

Regarding updates to the -- the context of the Investment Plan's development, these are a few of the things that I wanted to highlight, falling petroleum prices, the ARB's preliminary look at their funding proposals for the Air Quality Improvement Program, and the low carbon transportation

share of the Greenhouse Gas Reduction Fund, or AB 32 fund, and then finally the CPUC rule making decision.

You can see here the -- the price of petroleum has been coming down pretty significantly since about last fall compared to last year. This year is in the blue dots there. We know that the petroleum market is cyclical. It has ups and downs. We’ve had a long up period for a while and now we -- we’re in a downward period. We don’t know how far down, how long that will be, but we still maintain our long-term goals for the state pertaining to greenhouse gas reduction, air quality improvement. We also note that our -- some of our alternative fuels such as electricity and natural gas still commanded a decent fuel price edge or gasoline and diesel. I think the price of electricity relative to gasoline might be about half on a per-mile basis. And the price of the -- the price differential between natural gas and diesel may have gone down from a previous level of about maybe $1.60 per DGE or diesel gallon equivalent to maybe $.60 advantage per DGE now.

We’ve also, as I mentioned, had the opportunity to see a preliminary version of the ARB’s potential funding for the low carbon transportation share of Greenhouse Gas Reduction Funds and the Air Quality Improvement Fund, roughly $200 million and $22 million respectively. As part of an initial document and public workshop a week or two ago ARB

staff recommended similar funding as they approved for the last -- or current fiscal year, I should say. They're holding more focused workgroup meetings for specific project types throughout this month and into the next. And they expect to have a proposed funding plan for their board to review in May of 2015.

And this table shows the -- the project types. As mentioned, these are fairly similar to the previous fiscal year's funding for the Clean Vehicle Rebate Project, that's a light-duty electric vehicle and fuel cell vehicle incentive, as well as pilot projects to benefit disadvantaged communities in the light-duty vehicle sector. And then several heavy-duty vehicle and equipment projects, including the hybrid -- Hybrid and Zero Emission Vehicles, Truck and Bus Incentive Project, I think I have that right, the Truck Loan Program for Clean Diesel Vehicles, and New Low NOx Certified to Optional Standards Project, and then the California Clean Truck, Bus and Off-road Vehicle and Equipment Technology Program, that's a combination of demonstration projects and pilot projects. And you can see in the footnote there that at least 50 percent of their low carbon transportation funds will be slated to benefit disadvantaged communities, which may be of particular interest to this air district.

I also wanted to touch on the CPUC rule making decision that Jim and a few others have mentioned so far. So

the previous policy was that major investor-owned utilities were prohibited from owning charging stations. And that blanket policy has since been lifted in favor of a new policy that allows the CPUC to approve utilities ownership on a case-by-case basis.

Now since then we've seen the -- the big three investor-owned utilities put forth some -- some proposals for how many electric vehicle chargers they would be interested in deploying. So over the next four to five years San Diego Gas and Electric might be looking to deploy 5,500 stations. So Cal Edison, 30,000 stations. PG&E, 25,000 stations. So that's obviously a big development. Jim mentioned that our program to date has funded about 9,500 charging stations. So that gives you a sense of the scale involved here. And for that obvious reason we're continuing to track CPUC proceedings to make sure that we can do our best to compliment what's anticipated, to keep the ball rolling as those plans are being deployed.

I want to talk about a few of the specific changes that we made within the revised Staff report version of the '15-16 Investment Plan. So general changes throughout, we added a summary of alternative funding and finance -- financing mechanisms that we have both used previously in our program, as well as mechanisms that we could foresee using in the future, as well. This was something that a lot of people

had been asking about, whether there might be mechanisms in addition to sort of the standard solicitation and award process that we have used in the past.

Throughout the document we've also updated summaries of our previous awards just to stay current. And we have updated NREL's estimates of our expected program benefits, which you can see here Jim incorporated the chart on the right into his own presentation. But you can kind of see the change that occurred as we added more projects into the portfolio. The expected benefits went up. The market transformation benefits, both the high and low range, similarly increased.

Moving now into specific sections of the Investment Plan, in the biofuel production and supply section we added references to what is an illustrative scenario, not necessarily the definitive expectation but an illustrative scenario for what 2020 LCFS compliance might look like. And this is kind of an interesting exercise because it gives you a sense of the scale for -- for the amount of alternative fuel that needs to get incorporated for the number of different kinds of vehicles that need to be put on the road and so forth.

We also clarified the eligibility of dimethyl ether or DME as a potential biofuel for funding in this category. We updated information with -- from the ARB's proposed Alternative Diesel Fuel regulation. There's a lot of exciting

activity happening there. And finally, we expanded information on biomethane feedstock availability, as well as CalRecycle's recent grants that they've been providing with a smaller share of Greenhouse Gas Reduction funding as well.

On the charging infrastructure section, again, we updated that section to discuss expectations from the -- what has developed with the CPUC's rule making. We haven't yet been able to fully incorporate the utilities recently announced plans, so that will be fed into the next version of the lead commissioner report. We're also encouraging feedback on how we can reach disadvantaged and under-served communities with our charging infrastructure funding.

Bonnie had mentioned whether we had developed any sort of milestones for charging infrastructure. We do have sort of a broad general trajectory, I guess you could call it, for what level of charging deployment is necessary to reach the governor's 2020 goals for ZEV preparation. That's in Table 14. But, of course, other players are also stepping in. So we're -- we're not expected to be going it alone in that -- in that fight. Obviously, utilities are going to play a big role. NRG will have a role to play as well.

In the hydrogen refueling stations where we've kept a $20 million allocation, we have been revising our cumulative station count just to sort of stay consistent between the ARB's expectations and -- and our own, just to make sure we're

all on the same page. We may have to revise that again as we go into the Lead Commissioner Report. And then we've also introduced a mention of the joint CEC-ARB report on Hydrogen Refueling Network Progress which is due at the end of this year.

For natural gas infrastructure, we haven't made any changes to that section. But I might point out, as Jim mentioned, we have a natural gas fueling infrastructure solicitation. I don't think it's been released yet, but it should be out sometime soon. There's obviously the potential to backfill any over-subscription of -- of successful applications in that solicitation with funding from this proposed Investment Plan.

For natural gas vehicles, here again we're reiterated the potential biomethane role in ARB's Illustrative 2020 SCFS Compliance Scenario. And we have updated, but we're still awaiting more information, on methane leakage studies that will help us get a better sense of how conventional natural gas can contribute to our long-term GHG reduction goals.

In the Medium- and Heavy-Duty Advanced Vehicle Technology Demonstration and Scale-up category, we wanted to make explicit that we are considering not just vehicle propulsion technologies, but also non-propulsion technologies, for example, intelligent transportation systems that might

make the truck system -- or trucking system more efficient, even before the incorporation of alternative fuels.

We also wanted to clarify that this category is expected to be open to projects that seek funds for demonstration, scale-up and manufacturing, or both activities. I think there was a little bit of confusion on that point at the last Advisory Committee meeting. A lot of people were concerned that you could only come in if you wanted to do both, but that’s not the case. You can do demonstration, scale-up manufacturing, or both.

In the Regional Readiness section we updated the results from our most recent solicitation. But also I wanted to mention on this subject, as Jim mentioned, we modified and rereleased our ZEV Regional Readiness solicitation. And we suspect there may be more demand for successful -- more demand for those funds from successful applications than our current amount of funding and support.

Right now, based on the responses that we got to the previous solicitation there’s maybe the possibility of being over-subscribed, perhaps upwards of $3 million. So if -- if that is the case, and we should know more by the end of this month, well, moving into, I guess, March 2nd, was it, or March 5th we -- we might recommend putting additional funding into this category. One possibility for that is to draw a small share of the funds from charging infrastructure allocation,

for instance. We certainly see the value of this Regional Readiness efforts that we have been funding. We have been the, to our knowledge, the only entity in the state funding that kind of work. And so it's something that we certainly want to see proceed.

For the Emerging Opportunities category and the Workforce Training and Development category we haven't proposed any changes either to the funding allocations or to the -- to the surrounding text.

So this table gives you the summary of our proposed funding allocations as they stand in the revised Staff report.

Our next steps for the Investment Plan, again we're continuing to seek your feedback, feedback from all stakeholders. We ask for written comments a week from today, if possible, February 19th. You can send them to our docket office. Just send it docket@energy.ca.gov. Include in your subject our docket proceeding number which is 14-ALT-01. And then I ask that you cc: me, as well, just so that we get it that much sooner.

From there we will be developing the Lead Commissioner Report. We hope to release that in mid-March. And then in -- around April 9th, I think, is our expected Commission Business Meeting. We will be taking the Lead Commissioner Report to the full Commission for approval.

Assuming it gets approved we will have it by May 15th to distribute, again, to the relevant policy and fiscal committees of the legislature, May 15th being our deadline to do so.

And so I'll just leave this slide up. It's again our funding summary of proposed allocations. And that's what I have.

UNIDENTIFIED MALE: Can you briefly go back to your email address?

COMMITTEE MEMBER SMITH: Oh, yes. I've been asked to go back to my email address. Sorry if I sped through that. Charles.Smith@energy.ca.gov. And the docket office again is docket@energy.ca.gov. So I'll leave that up for a little longer.

PRESIDING MEMBER SCOTT: And we are posted online, right, so people can -- the presentation is posted online --

COMMITTEE MEMBER SMITH: Yeah.

PRESIDING MEMBER SCOTT: -- so people can --

COMMITTEE MEMBER SMITH: Oh, the presentation has not been posted yet but it will be, yeah. All right.

Do we want to do comments or clarifying questions?

PRESIDING MEMBER SCOTT: Do we have any clarifying questions from the Committee Members here at the table? All right. Any Committee Members on the phone?

Oh, I'm sorry. Go ahead, Erik.

COMMITTEE MEMBER WHITE: That's okay. This is Erik White with -- with ARB.

Charles, a question for you. You --

COMMITTEE MEMBER SMITH: Uh-huh.

COMMITTEE MEMBER WHITE: In response to Bonnie's question you had indicated Table 14 kind of lays out some of the infrastructure, EV infrastructure needs that you're going to need. When you talk about home dominant, what is the role of multi-unit dwellings in there? And I ask from the perspective of you've been very good about -- you've been very good about getting them installed and have been very successful, but that seems to be a glaring area where additional work in investment needs to -- needs to go in.

COMMITTEE MEMBER SMITH: Yeah.

COMMITTEE MEMBER WHITE: So how does that fit into what you see as the -- as necessary for the -- to meet some of the Governor's goals?

COMMITTEE MEMBER SMITH: Yeah, that is -- that is -- you're definitely right. That is a high priority area for us. My understanding is that in Table 14 the multi-unit homes are incorporated as part of that residential charging. So yeah.

COMMITTEE MEMBER WHITE: Okay.

COMMITTEE MEMBER SMITH: Oh. Bonnie?

COMMITTEE MEMBER HOLMES-GEN: On that -- on that same part, right --

COMMITTEE MEMBER SMITH: Uh-huh.

COMMITTEE MEMBER HOLMES-GEN: -- there’s a couple of different scenarios laid out.

COMMITTEE MEMBER SMITH: Uh-huh.

COMMITTEE MEMBER HOLMES-GEN: And is there a number in that range that -- that you -- that the Energy Commission is aiming toward, or how are you using these numbers?

COMMITTEE MEMBER SMITH: It’s sort of a benchmark for where -- where we would expect to need to be, somewhere within that range between the two different scenarios. It kind of gives us an idea for the -- the scale of investment that is appropriate for us. I mean, if you take that number of -- or that range of necessary chargers and you can, you know, make realistic assumptions about how much it has cost our program to support a charger of any given variety in the past, you can extrapolate that into the amount of funding that might be needed in the -- in this Investment Plan.

COMMITTEE MEMBER HOLMES-GEN: All right. I assume that it’s -- it would be helpful to get more information on how this PUC decision, I mean, how that is going to be implemented --

COMMITTEE MEMBER SMITH: Yeah.

COMMITTEE MEMBER HOLMES-GEN: -- before you can probably understand the gap --

COMMITTEE MEMBER SMITH: Yeah.

COMMITTEE MEMBER HOLMES-GEN: -- more clearly.

COMMITTEE MEMBER SMITH: Exactly. And those -- so two things about those utility rollouts, one being that we -- we do still want to get more information about, you know, whether those are going to be predominantly destination chargers, predominantly fast chargers, predominantly multi-unit dwelling chargers, again, to give us an idea of where those gaps are so that we can target our funding more appropriately. But also those are four- to five-year plans. So obviously we need to keep the ball moving ahead of -- ahead of that time. So that’s why we are continuing to try to be very engaged on this charging infrastructure category.

COMMITTEE MEMBER HOLMES-GEN: Uh-huh. Okay.

PRESIDING MEMBER SCOTT:

MR. RIVERA: I had a question in regards to the multi-unit homes and dwellings.

PRESIDING MEMBER SCOTT: Can you -- do you mind coming to the mike --

MR. RIVERA: Pardon me.

PRESIDING MEMBER SCOTT: -- so that the folks on the phone can hear you.

MR. RIVERA: Good afternoon. Michael Rivera with the Office of Assembly Member Perea. Question, and just for clarifying because I don’t have the information in front of me, but is there any baseline definition or is there a sought

after number of the number of housing units or household members that would actually qualify for the multi-housing unit infrastructure plan?

COMMITTEE MEMBER SMITH: Oh, like how -- how many units need to be in --

MR. RIVERA: Yes.

COMMITTEE MEMBER SMITH: I don’t think we have developed any firm definition of that in the past, no.

MR. RIVERA: Thank you.

PRESIDING MEMBER SCOTT: Anyone else? Anyone on the phone?

COMMITTEE MEMBER SMITH: Okay. Oh, John Shears, go ahead.

COMMITTEE MEMBER SHEARS: Yeah. Can folks hear me okay?

COMMITTEE MEMBER SMITH: Yeah.

COMMITTEE MEMBER SHEARS: Great. Yeah. So first just an observation, and I’ve talked with PUC staff and ARB staff about this, as well, that we need to remain vigilant with regards to the utility pilots on EV deployment and how the state is targeting -- targeting the money. We also need to closely monitor what is happening or is going to be happening, the exact shape of the pilots that are still being discussed at the PUC in terms of mere mid-term and longer-term effects of the pilot within the service territories at each of

the utilities. In the near term there may be -- may be benefits and dis-benefits to each. They're using different approaches. Certainly there are issues that have -- already been raised by other business interests that want to work in this space with regards to at least two of the pilots that have been proposed to the PUC.

So it's something I think that the agencies that are working on incentivizing and helping industry to develop this market needs to monitor closely so that we have a good handle on exactly, you know, how the deployment decisions and the incentive monies is really reaching maximum effect. I just wanted to make that observation.

And then I had a question regarding intelligent transportation systems. I'm just curious as to why it's limited in the context of -- of the Investment Plan to medium- and heavy-duty advanced vehicle technology demonstration. So for example, the City of Fresno, where those of you who are healthy enough to be attending the Advisory Committee meeting today, the City of Fresno has been developing its own intelligent transportation system broadly to manage, you know, just day to day urban traffic flows within the City of Fresno. And I think there's a great advantage with helping the various regions, especially, you know, the urban centers within the various regions. This could be a very helpful approach for them and their -- their SB 375 goals.

So I was just wondering if you could maybe elaborate more on the thinking around the inclusion of intelligence transportation systems? Because right now it seems like maybe you're thinking of applications like emplituning (phonetic) in that which is a rather limited application of use of intelligent transportation systems.

COMMITTEE MEMBER SMITH: Sure. So this is Charles. Thank you, John.

I think a big part of the reason that we have -- had based intelligent transportation system consideration in the medium- and heavy-duty demonstration category was that that was what we had been confronted with it in the past. I don't know that we have necessarily had much information presented to us about sort of citywide ITS that also looks at passenger cars and so forth. So that is certainly something that we would -- we would like to hear more about.

Jim?

COMMITTEE MEMBER MCKINNEY: Yeah. Jim McKinney.

If I can add to what Charles said, so the -- the meetings that we have been to on clean freight and ITS hosted by Caltrans and the Air Resources Board really have focused on the trucking sector, so that's why we've framed it this way.

But I would just say thank you, Mr. Shears, for bringing that to our attention and introducing that into the record.

COMMITTEE MEMBER SHEARS: Yeah. Because I would just like to add, too, that, you know, with the increased capacity that's now being placed within passenger vehicles in terms of telematics and the ability of the cars, you know, to -- themselves to be equipped with equipment that allows them to communicate in various means, the power of intelligent transportation management will increase many times. So it might be something to workshop, sort of as a sidebar workshop, to the next Investment Plan, bring in some of the car companies and transportation planners and sort of explore this -- this area a little further.

COMMITTEE MEMBER SMITH: Yeah. That is -- that is an interesting point. I know there have been a lot of developments, especially with discussion to the possible future of -- of driver-less vehicles. And so there -- there probably is a lot of information out there that we could expand on that we just haven't gotten to in the past, but it certainly would be of interest to us in the future.

Any other Advisory Committee Member -- Bonnie, here at the table.

COMMITTEE MEMBER HOLMES-GEN: Yeah. I just wanted to see if I could get clarification. We've talked a lot about the needs in the valley. And I don't want to keep just going on about this, but I just wanted to see if there's some clarity about -- you talk about adding some additional

criteria to the project's selection in terms of looking at disadvantaged communities. And I just wanted if there's more clarity you can provide --

COMMITTEE MEMBER SMITH: Sure.

COMMITTEE MEMBER HOLMES-GEN: -- about what's going to happen going forward in trying to target projects more in this area and in other under-served communities? And I'm sorry, I don't want to be repetitive, but I just wanted to get clarity about that.

COMMITTEE MEMBER MCKINNEY: Jim McKinney, Commission Staff.

No, it's -- it's a good question, Bonnie. And I think that both Charles and I neglected to say in our presentations that nearly all of our solicitations now have what we call a bump-up consideration for projects either located in or benefitting disadvantaged communities. And so far that ranges from 5 percent to 10 percent of a bonus score to recognize the additional benefits of placing them in such areas.

PRESIDING MEMBER SCOTT: Understand that both the -- Chair Weisenmiller with respect to the EPIC program and me with respect to this Alternative and Renewable Fuel and Vehicle Technology Program have made a commitment to be sure to also track that type of data. And we're still kind of putting it together in a way that's digestible. But we will

be tracking the information. As -- as Jim mentioned, we're targeting the money at some of the communities. We have to be a little bit careful because we can't -- we can't put a solicitation out most of the time that just says, oh, only companies here can apply; right? So there -- but there are ways that we can do the -- the kind of geographic distribution and monitor our progress towards that.

And we're also trying to put some incentives in for minority-owned business, women-owned business, disabled veteran-owned businesses as well. And so you'll start to see that weaving through the, as Jim mentioned, the solicitations. And as we figure out how to track that we will try to put it up on our webpage, kind of the way we did our map where you can see where all the projects are across the state and things like that. So I just wanted to add that too.

COMMITTEE MEMBER HOLMES-GEN: And when was that bump-up provision incorporated?

PRESIDING MEMBER SCOTT: Oh, what's the (inaudible) one?

COMMITTEE MEMBER SMITH: It's been there through quite a few of our solicitations.

COMMITTEE MEMBER HOLMES-GEN: So it has -- it's been there?

COMMITTEE MEMBER SMITH: Yeah. Sometimes it's more explicit than others. But I -- as far as I can recall it's

been in most of our solicitations.

COMMITTEE MEMBER MCKINNEY: Yeah. And even going back to our first solicitations in 2010, we used different terminology but it was the same idea, to have additional kind of scoring points available to companies that kind of maximize benefits and under-served or disadvantaged communities.

PRESIDING MEMBER SCOTT: And let me just add, too, we're not going to -- we're not recreating the wheel there. We're using the CalEnviroScreen for a lot of this. So I just wanted to mention that too.

COMMITTEE MEMBER HOLMES-GEN: So, yeah, that's -- that's helpful. And it seems like, again, this whole issue of how do we encourage and assist local -- local officials and companies and individuals that have the capability of doing these projects to bring them forward. So that really seems to be a big issue. I know the Air Boards and the Energy Commission are working on that. And just would appreciate it if continued discussions move forward about how to do that.

PRESIDING MEMBER SCOTT: One other thought on that. The other -- the other thing that we are doing, and I'm so delighted that Assembly Member Perea -- that Michael has joined us today, because we're also trying to work with our -- our friends in the legislative districts because your -- their distribution lists are different than our distribution lists; right? You kind of have to self-select yourself and know that

the Energy Commission is there and what we do to get onto our -- and so we're trying to reach a broader set of people. And the -- our legislative friends have been great about that. Like they'll take a solicitation notification, for example, and forward it out to folks that they think might be interested in it. And so if you have ideas about other ways that we can continue to get the word out, we're always looking for -- for information on that.

COMMITTEE MEMBER MCKINNEY: Yeah. Jim McKinney.

And if I can refer back to some of the discussions we had last year with our IEPR proceeding, again under Commissioner Scott's leadership, and I think Erik, you and some of your colleagues made these points, but there are lots of different ways to think of and categorize benefits from public funding programs such as this, so air quality improvement, economic development, technology development.

So it really -- there are really a lot of different ways to think about this. And I think that's important because as I said in my opening comments, there's a lot of biofuels money that's already been spent here in the valley, and the economic multipliers from that are prodigious. On the EVSC side it's lower. The CVRP voucher numbers that I pulled, I think they are still just shy of 2,000 vehicles in the valley. So clearly lots of room for improvement there. But there are lots of different ways to think about how different

parts of our funding stream can create different categories of benefits, you know, kind of throughout the valley and the state.

COMMITTEE MEMBER SMITH: Okay. Any other Advisory Committee Members on the phone with comment?

Eileen Tutt, go ahead.

COMMITTEE MEMBER SMITH: Hi Charles. Thank you. I wanted to ask to -- Charles, to your point earlier, and sort of in response to John Shears' comment, as well, in terms of the PUC proceeding and the utility applications, the decisions won't come certainly before October this year. The proposals all ramp up slowly. So I'm not sure that the '15-16 funding cycle that we -- that -- that the -- that there's any conflict with those investments or any overlap there just because it does -- the PUC process can -- can be a little slow and thoughtful. And so I don't see the -- this Investment Plan and how we allocate money in this Investment Plan being -- being conflicted or overlaid with what's happening with the PUC and what the utilities investment will be. I think they're kind of separate for now.

But John's right, as we go forward we're going to want to make sure that all these different investments in -- in, particularly, EV infrastructure are coordinated to reach the maximum potential benefits.

So that -- that said, my question really is that,

Charles, you mentioned that the Regional Readiness programs were oversubscribed. You know, in my world I got a lot of very positive feedback from those that applied and actually got those -- those Regional Readiness Planning Grants. There's -- there's quite a bit of good work being done locally. It strikes me as another opportunity for the valley, certainly this pot of money.

So I very much support the idea of considering adding that money back in. I just think a lot of action is needed at the local level. And since I wish I was in -- I wish I was with you there, but since we are in Fresno there, there in spirit or in body, that it is kind of appropriate to think about whether or not more regional money might be helpful.

The only thing that I would question is I'm not sure that it's an automatic decision that we would take the money from the EV charging infrastructure. Because it think what I -- I would assume that's also quite oversubscribed. So my sense is that I would look at these numbers and think about is there -- are there places where -- where there's under-subscription and if so -- or is there a potential for more than $100 million coming in this year? And that to me seems like a better alternative than, you know, siphoning off money from another oversubscribed category. Now if they're all oversubscribed, of course, then we've got a challenge in front

of us. But I would -- I would necessarily assume that the place -- to take the money -- the needed money for Regional Readiness to the electric charging infrastructure.

COMMITTEE MEMBER SMITH: Yeah. Yeah. Thank you, Eileen. Yeah.

COMMITTEE MEMBER SHEARS: This is John Shears, and I support Eileen's remarks.

COMMITTEE MEMBER SMITH: Okay. Thank you. Thank you both.

So generally speaking oversubscription, for better or for worse, does tend to be the norm around here. It's a good problem to have. And so I don't know whether we can anticipate any of these categories being undersubscribed based on our previous experience. But you know, it is certainly something that we keep an eye open for.

PRESIDING MEMBER SCOTT: Also the legislation caps us at -- and I think AB 8 has this too, I know AB 118 had it -- we're capped at $100 million. So if there were lots and lots of vehicle registrations and there was more funds than that, we still only get the $100 million. And of course, if there's less vehicle registrations and it's less than $100 million then we have to ratchet down a little bit by that -- by that difference. But I'm pretty sure AB 8 also has that cap. So if additional money came in over the $100 million I don't know where it goes, but it doesn't come to this program.

COMMITTEE MEMBER CARMICHAEL: At this point you're just asking for clarifying questions, not comments on the draft; right?

COMMITTEE MEMBER SMITH: Yeah.

COMMITTEE MEMBER HOLMES-GEN: Question. This is Bonnie again.

And the question is you mentioned on the methane leakage that there's information forthcoming about the extent and the implication for conventional natural gas. And I know I asked last time, but I just was wondering if you could provide any more information, where we're at, when we'll have that information? I assume that's all part of the LCFS. But just any -- any idea about timing?

COMMITTEE MEMBER SMITH: Last I checked, and I know whether, Tim, whether you're in a position to add to this, but I think I remembered that of the maybe 15 or so EDF projects that were looking at this issue, at last check maybe four or five would either completed or nearing completion. And so there were still quite a few to be expected, I think throughout the course of this calendar year.

Tim, I don't know if you have more information than that?

COMMITTEE MEMBER CARMICHAEL: No, I think that's correct. I have seen a table that shows the report subject and anticipated release date, but that has slid for almost

every report. I'd be happy to share that with Staff just as an information point. It doesn't necessarily need to be part of the record on this report.

COMMITTEE MEMBER SMITH: Sure.

COMMITTEE MEMBER CARMICHAEL: But, yes, we're anticipating between 10 and 12, not just EDF but other, you know, USEPA, ARB, you know, 10 to 12 reports --

COMMITTEE MEMBER SMITH: Okay.

COMMITTEE MEMBER CARMICHAEL: -- during the course of this calendar year.

COMMITTEE MEMBER SMITH: Yeah. Yeah, we'd certainly be interested in seeing that sort of summary table. I'd be very interested.

COMMITTEE MEMBER MCKINNEY: Yeah. Jim McKinney.

If I can -- can add, so under, I think it's AB 1257 in our 2015 Integrated Energy Policy Report we're obligated by legislation to report more fully.

Back to your question, Bonnie, on upstream methane leakage rates, and also on remedies that are available or are in proposal, so we know the White House has got the initial set of Energy Star recommendations to start to curtail methane leakages, both at the wellhead and at other kind of key points in the distribution process. And I think we had a pretty lively discussion at the Technology Assessment Workshops at the Air Board over just some of the accounting and allocations

of methane from different types of well activity in California, whether it's oil, enhanced oil recovery, natural gas recovery, etcetera. So a lot of technical work still to be done in that area.

COMMITTEE MEMBER CARMICHAEL: Yeah, I guess I would just -- I totally agree with everything Jim just said. But for those that don't track this there are a lot of facets to, you know, extracting the fuel from the ground or producing the fuel and getting it into the vehicle, whatever the vehicle is. But this -- and I choose my words that way because it also applies to renewable natural gas, at least some of these facets. But you've got -- you've got studies looking at the extraction. You've got studies looking at the pipelines and moving the gas, processing the gas, the processing systems. And then you've to the stations themselves, and then the vehicles themselves.

So there's a lot of different pieces of the puzzle, some of which we have a good handle on today and some of which we don't. And that's why these upcoming reports are so anticipated and are going to be so valuable.

I tend to agree on Jim based on what I know so far, the industry feels like the vast majority of issues that have been identified are going to be technologically fixable or they're going to be addressable. So, you know, the industry is quite optimistic, bullish on being able to address issues

that are -- that are going to come forward.

PRESIDING MEMBER SCOTT: Let me turn to -- I think we've got one more comment on the phone from Will Coleman. And let's -- if anybody else has a burning clarifying question that they want to ask, feel free. But then after -- after Will we might want to break for lunch, and then we can resume around 1:30.

COMMITTEE MEMBER COLEMAN: Yeah. I've just -- I've just got a question on the biofuel allocation. And just in looking at that I know for the last couple plans it's been mostly focused on production and supply, not infrastructure. And I'm just curious what the thinking is behind that given, you know, where we're at in terms of supply, where we're at in terms of blending walls and current deployment of infrastructure. Is there -- is there a reason we backed off of additional infrastructure at this point? And so how are you guys thinking about that?

COMMITTEE MEMBER SMITH: So looking at biofuel infrastructure, I guess I'd start by splitting it in two, for E85, for the gasoline subsidies portion, and then I presume you're referring to upstream biodiesel and perhaps renewable diesel infrastructure. So --

COMMITTEE MEMBER COLEMAN: I'm referring to -- I'm referring to both, actually.

COMMITTEE MEMBER SMITH: Yeah. Yeah. So -- so for

E85 we do have a few outstanding awards for E85 facility installation. Those are -- those are still proceeding. And I think we're trying to get through those existing agreements and collect some -- some data where we can on the -- the throughput levels for those new stations, and then evaluate what kinds of retail infrastructure we might consider in the future.

For -- for renewable diesel upstream infrastructure, our general sense has been that this wasn't as high of a priority as just getting more renewable diesel produced. For biodiesel infrastructure where it's maybe not as fungible, at least not beyond B5 levels, I think we're still very interested in hearing more about the infrastructure challenges that may be currently arising. That could give us a sense for what the need is for future investment.

COMMITTEE MEMBER COLEMAN: Okay. Now on the E85 side, how much -- how many total dollars have gone into that infrastructure?

COMMITTEE MEMBER SMITH: I think Jim may have had that in his slide. So I'll ask -- we're racing through the presentations to see.

COMMITTEE MEMBER COLEMAN: So as you're looking, so the concern with additional E85 deployment is a utilization question?

COMMITTEE MEMBER SMITH: Oh, Jim -- Jim has it here.

COMMITTEE MEMBER MCKINNEY: Yeah, Will. Jim McKinney here.

Yeah, so if you can go to slide 24 of my presentation. So we've got $14.6 million for 161 E85 stations. And I think I need to note that we had to cancel an earlier round of awards. So we had, I think 202 E85 stations we were funding. And due to relatively slow development in that market and inability to meet our funding deadlines we had to cancel some of those.

So I think in addition to throughput it's really we're looking for kind of stronger consumer response in this area to decide whether we want to open this up again to -- for funding considerations.

COMMITTEE MEMBER COLEMAN: Okay. And you cut out there for a second for me, but okay.

Do we -- do we do education programs in terms of deployment as well? Is that part of the -- the funding, you know, whether it's around EV charging, hydrogen, biofuel, etcetera?

COMMITTEE MEMBER SMITH: That -- a lot of that would probably be unique to each agreement.

COMMITTEE MEMBER MCKINNEY: And I think if I can add -- Jim McKinney again -- that is also something that the Regional Readiness plans I think would be well suited to -- to address as to get out that kind of consumer-level information

on the benefits and attributes of these different alternative fuels.

And I think Joe wanted to make a comment?

COMMITTEE MEMBER GERSHEN: Real quick clarifying but not burning question is those contracts that get canceled, do those funds go back to biofuels or do they just go to the general?

COMMITTEE MEMBER SMITH: Those funds go to the, I shouldn't say general fund because that's the state's fund. They go to the ARFVT Fund.

COMMITTEE MEMBER GERSHEN: But still allocated to biofuels or --

COMMITTEE MEMBER SMITH: No, no. It's --

COMMITTEE MEMBER GERSHEN: And the question would be why?

COMMITTEE MEMBER SMITH: It's --

COMMITTEE MEMBER GERSHEN: Why not?

COMMITTEE MEMBER SMITH: -- mostly just based on the state's budgeting process, as I understand. I mean, if the funds aren't liquidated through us then we -- we don't even have the funds at that point. It would have to be re-appropriated to us through the legislature.

COMMITTEE MEMBER GERSHEN: Is it not the case with other things that don't get allocated, do they go back to the same categories or no?

COMMITTEE MEMBER SMITH: What I'm describing is true for all of our project types if that's -- if that answers your question.

COMMITTEE MEMBER CARMICHAEL: A distinction, I think. There are projects where it -- you are trying to make it work for so long that the clock runs out on that project. And when it shuts down and they have to give the money back it doesn't go to the CEC. It goes back -- it's not in your control anymore, is my understanding.

COMMITTEE MEMBER SMITH: Correct.

COMMITTEE MEMBER CARMICHAEL: But I was under the impression that there are some projects that you know early enough that something is not going to work, and that money does come back to the CEC and you have a limited window --

COMMITTEE MEMBER SMITH: Yes.

COMMITTEE MEMBER CARMICHAEL: -- to reallocate the --

COMMITTEE MEMBER SMITH: Yeah. Yeah.

COMMITTEE MEMBER CARMICHAEL: Can you just speak to that?

COMMITTEE MEMBER SMITH: Let me touch on that. So we have two years to execute an agreement, and then after that four years to liquidate. The legislature has a special provision unique to hydrogen that's four years to execute and four years to liquidate, but that's separate. So if within

that two-year window, that is, you know, two years after July 1st of the -- of the fiscal year for which we have that money, if we sense that a project is not going to get completed the -- one prospect of what we might do, for instance, would be to just go down the list of the most recent notice of proposed award for that category and fund the next project on that list. But that does depend on it happening within that two-year window.

COMMITTEE MEMBER GERSHEN: I think some of the question comes from the fact that, and I'll comment more on this later, but there certainly is a need for infrastructure. And so it's -- it's tough to see if there are funds allocated and they don't get used that it then doesn't go back to biofuels because there are -- there's real need in the infrastructure. So thanks.

COMMITTEE MEMBER SMITH: Thank you.

COMMITTEE MEMBER SMITH: Yeah, Jim?

COMMITTEE MEMBER MCKINNEY: Yeah. I wanted to clarify one of my responses to Will Coleman's question on the number of hydrogen fuel cell vehicles projected in California. I slipped a decimal point. So according to the AB 8 survey reported in June of 2014, 6,650 vehicles are projected through 2017, rising to 18,465 in 2020. That's on page 41 of the current draft of the Investment Plan. And if you go to the corresponding tables under California Fuel Cell Partnership

Roadmap Update and the California Air Resources Board AB 8 Report, there are similar charts that show the capacity of the currently funded infrastructure system to accommodate those vehicles. And so everything that we're funding now would be used out in that outer timeframe of the 18,500 on vehicles or so. So --

COMMITTEE MEMBER SMITH: Okay. All right.

PRESIDING MEMBER SCOTT: All right. Thank you, Charles, very much --

COMMITTEE MEMBER SMITH: Thank you.

PRESIDING MEMBER SCOTT: -- for your excellent presentation.

It is 12:45. I don't know how close lunch options are to here.

COMMITTEE MEMBER SMITH: Oh, yeah. Maybe -- actually, Todd, could you come up here and just --

PRESIDING MEMBER SCOTT: Yeah, that would be great.

COMMITTEE MEMBER SMITH: -- give a little announcement.

PRESIDING MEMBER SCOTT: I'm trying to decide if we can -- if we should start again at 1:30 or do we need a full hour to kind of get out and get back. So let's hear from Todd.

MR. DEYOUNG: Yes. There are a couple of options that are very close, within walking distance. Gettysburg

Avenue is right out here. If you go right, just down at the corner of Gettysburg and Fresno there's a Mediterranean Restaurant that's really good. If you're into something more casual, if you go left, down to the corner is probably the best burrito shop in Fresno. If you're interested in a burrito, Don Pepe's is right there on the corner. If you want to drive a very short distance, less than a mile, go down to Fresno Street which is the next intersection here and just go up to Shaw, and there's any number of restaurants, Cheesecake Factory, BJ's, casual dining, things like that. And then there's any number of fast food restaurants on Blackstone, which is just right over here. So plenty of -- plenty of close options.

PRESIDING MEMBER SCOTT: So what's the sense around the table here? Do you think we need an hour?

COMMITTEE MEMBER CARMICHAEL: Well, I don't want to be selfish, but Bonnie and I probably need to leave at 2:45 or 2:50 to catch our train.

PRESIDING MEMBER SCOTT: Okay.

COMMITTEE MEMBER CARMICHAEL: So I would push for 45 minutes if we can do it.

PRESIDING MEMBER SCOTT: Okay.

PRESIDING MEMBER SCOTT: Okay. So we are -- we will reconvene at 1:30. If you're still eating, it's fine. Just bring it back to the table or bring it back to the room and

we'll keep going. See you all at 1:30.

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

(On the record at 1:34 p.m.)

PRESIDING MEMBER SCOTT: Hello everybody. Welcome back. We are now to the discussion part of the session. And so I'll turn it over to Jim or Charles. Which one of you is going to lead us up?

COMMITTEE MEMBER MCKINNEY: Yeah. I thought it was me but --

PRESIDING MEMBER SCOTT: Okay.

COMMITTEE MEMBER MCKINNEY: So welcome back. So the way we run this part of the discussion is that we will go through topic by topic on the funding chart you see on the screen or in your handout. And what we do is -- so we'll start with biofuels. We will take policy comments, questions, whatever recommendations Committee Members have starting here on the table, then going to Committee Members on the phone, and then turning to the public here, and then public on the phone.

So with that I'd like to --

PRESIDING MEMBER SCOTT: Remind folks, if you're in the room and you want to say something, don't forget to give us your blue card so we know to call on you.

COMMITTEE MEMBER MCKINNEY: So with that I'd like to open it to Committee Members here at the table. Start with

Joe and Tim.

COMMITTEE MEMBER GERSHEN: Thanks Jim. Joe Gershen with California Biodiesel Alliance. In deference to everyone's schedule, I know everyone's got to leave, I'll try to make this brief. I want to thank Staff for doing a great job. Good update. Good presentations.

I wanted to point out that you guys talked about petroleum prices coming down. Well, they're coming back up. And I think that really sort of highlights the fact that there's a lot of volatility, and there always has been and there always will be. Part of the thing that's great about this program and what the state is doing is by introducing diversity it hopefully takes -- sort of levels the field a bit and you have less volatility.

Now initially while we're getting this going it's difficult -- it's been difficult in the -- in the biodiesel industry, these prices going low. It makes it difficult to -- to make money, quite frankly. But, you know, I think everyone's pulling together and there's -- there's some great stuff going on.

That being said, as I'm sure you guys have expected I still -- we -- we -- CBA still has some concerns about metrics, objective metrics for evaluating budget allocations. And we think biodiesel allocation remains significantly underfunded. I realize, you know, there's a lot of

oversubscription, and clearly there is in all the biofuels, but biodiesel certainly is.

I think back in June several Committee members sent a letter to you guys which asked to maybe set up a special advisory committee or advisory panel, that that be formed that we could come up with -- create our own metrics methodology, and we'd still like to have that meeting. We just wanted to reiterate that for the record. You know, this is sort of consideration for -- in evaluating programs and guiding future ARVT budget allocations.

In this Investment Plan we note that it appears that diesel substitutes have received about ten percent of program funding since its inception. But we feel strongly this category, and biodiesel in particular, has been providing significantly more than ten percent of program benefits. We know that in 2014, for example, biodiesel provided about 16 percent of all the LCFS credits generated according to -- according to ARB data.

I wanted to just -- again, I'll try to skip through some of these things. And we'll prepare written comments which we'll submit later. We -- I want to appreciate that Jim noted the -- biodiesels contribution, and I want to support that. I think it was great.

I'd like to share a few metrics that might be -- might have been overlooked, but think it's quite illustrative

of biodiesel's contribution. So currently in-state biodiesel production capacity of 59 million is what we had, but I'm -- I stand corrected, it's 78.8 I think.

So everything -- all these figures will be about 30 percent higher than I'm about to read. So at that 59 million gallons per year it's created hundreds of high-paying green jobs in some of the most disadvantaged communities in the state, the CalEnviroScreen, stuff we've been talking about, while it's reduced over 800 -- well, with the adjustment, over 800,000 metric tons of carbon emissions from our atmosphere. This production capacity is also equivalent to removing almost 185,000 cars from California roads.

COMMITTEE MEMBER HOLMES-GEN: 185?

COMMITTEE MEMBER GERSHEN: 185. Now it was 140,000, but with this higher capacity, production capacity, I did a quick back of the napkin while we talked and it looked like more like about 185,000.

Preliminary estimates are showing that biodiesel plants contributed approximately $350 million in economic activity to California's economy in 2014. This is the year that just ended. And with consistent support our industry can quickly increase in state capacity to 200 million gallons per year, which is about a B5 level. And that would generate $2 billion in economic impact annually. So the multipliers for jobs created in communities like here in the Central Valley is

really tremendous.

For every $1,000 invested from this program the biodiesel industry can delivery close to 1,350 gallons of ultra-low carbon biodiesel production per year, which in turn would reduce 14 tons of climate-changing carbon emissions from our atmosphere. Like that's taking over three cars off the road for every $1,000 spent. Additionally, based on current market economics, this $1,000 investment would generate recurring economic contributions of about $5,400 a year. And if we bring our in-state production capacity up to 200 million gallons a year it would be equivalent to taking an additional 332,000 cars off the road and taking an additional 1.4 million metric tons of carbon emissions out of the atmosphere every year, all while creating hundreds of high-paying permanent jobs and contributing about $2 billion to the state's economy.

We think that's pretty compelling, and we just wanted to say that. So thanks. I'll -- I'll finish now. Thanks very much again. Great job today.

COMMITTEE MEMBER MCKINNEY: Great. Thank you, Joe.

Tim Carmichael?

COMMITTEE MEMBER CARMICHAEL: First, Tim Carmichael with the Natural Gas Vehicle Coalition. First, I want to just chime in on the thanks to the Air District. I haven't been down here in a while. I was wearing a different hat last time

I was down here five-and-a-half years ago. But I appreciate them hosting today and giving a presentation at the beginning. That was great.

On the biofuel production supply, I want to focus on the supply piece of this. And I want to share that there's an ongoing challenge in the biomethane sector of actually getting your fuel to market for fuel that's produced in the state. And part of it is connecting to the pipeline system. Part of it is the regs that PUC is still working through on what criteria or what standards the gas has to meet. It's worth noting that the current, you know, standard on the book is actually more stringent than the natural gas that's moving through the pipelines. And it's technically feasible, but the debate is ongoing as to whether it can be met in a cost effective way and still, you know, make the fuel price competitive in the marketplace.

So I just want to flag this as an issue that I think the CEC should do a little bit more investigation on. And there's, you know, there's the California Bioenergy Association. There's the Renewable Natural Gas Coalition. There's groups actively working on this, but it's -- it's a real issue. And you know, I'm not in any way advocating for the CEC to stop supporting production development. But there is an issue with, you know, supplying that production to the marketplace.

COMMITTEE MEMBER SMITH: So, Tim, this is Charles Smith. So to follow up on that I think we -- we recognize that a lot of our earlier biomethane production awards tended to be tied to fleets that were also located -- collocated with those production facilities. Is that -- is that still a -- maybe this is too specific of a question today. But is that still something that we could search for and find or is it getting to the point, do you think, where the bigger issue needs to be addressed of pipeline injection.

COMMITTEE MEMBER CARMICHAEL: So this is not my full-time focus but it’s an issue that I’m regularly, you know, engaging on. My understanding is there’s three different types of projects in California right now. There’s the one that you just described, small, whatever the waste stream is there’s an opportunity with a captive fleet and some power generation at a single site, really no movement of gas whatsoever. You’re moving the waste stream to that location but you’re not moving gas.

The second scenario is there’s attempts to combine multiple facilities, multiple waste stream facilities to a single production center and then move that gas maybe to a fleet refueling location or to power production, but there’s a gas movement component of that that is a challenge. And there’s also the challenge of finding the concentration of meaningful waste sources.

And then the third one is I think where we really want to get to is the larger scale production and supply projects. And whether that's a municipal waste water or some other significant waste stream, that's the project that I'm really talking about where, you know, larger scale, if you really want the economics to work you need to have pipeline access. And you know, whether you're sending that to a power plant or to a transportation, you know, user that's -- that's, I think, where we need to go if we're going to realize that whatever the number is, 2 billion gallons equivalence of in-state production, we can -- we can have -- you know, continue to support the smaller projects, but we're never going to get to the 2 billion number if we don't have, you know, more support for some of these bigger projects.

COMMITTEE MEMBER SMITH: So then following on that, so once we get to the point where we -- where we do have the large projects that can go into the pipeline is there going to be a system or mechanism in place to where we can more -- to where we can tie perhaps our biomethane production specifically to transportation? You know, at the risk of sounding myopic, our program is focused on transportation. And so if -- if the biomethane gets produced that's -- that's great. Every molecule of biomethane displaces a molecule of natural gas, regardless of what sector it flows into.

But then once it is sort of eligible for power plant

use or natural gas use is there sort of a credit tracking system that -- that we could rely on to help us get a sense for what's benefitting the transportation sector versus the power supply sector?

COMMITTEE MEMBER CARMICHAEL: So we're still trying to figure this out. We've actually started a conversation, or I should say the Air Resources Board started a conversation with us about his in the context of vehicle incentives and is there a way to tie that to a renewable natural gas contract or usage requirement. And I think the short answer is it's tricky and it depends who you talk to as so what sort of response you're going to get.

Clean Energy, for example, one of my member companies, will say, absolutely, we can do that. We can show you the paper trail of your natural gas -- your renewable natural gas to a station or to a specific user. UPS who is another member of mine who obviously is very committed to alternative fuels have said that they have not yet been able to come up with a workable mechanism for, you know, demonstrating, you know, X amount of renewable gas use at one of their facilities.

So we're still trying to figure out how to do that. I believe we will figure out a way, but I think the best way to characterize that is that conversation is ongoing.

COMMITTEE MEMBER SMITH: Okay. Thank you.

COMMITTEE MEMBER MCKINNEY: Great. Thank you, Tim.

Any more comments from present Committee Members? Bonnie Holmes-Gen.

COMMITTEE MEMBER HOLMES-GEN: Hi. I'm told I'm not speaking into the microphone enough, so I'll try harder.

So I wanted to comment on behalf of the American Lung Association in California that a key focus in our -- in our reading and evaluation of this report and our steps forward is always to look at how we are going to get the cleanest fuels, as well as the lowest carbon fuels. And I appreciate that you lay out in the report all of the -- the key state goals, including our clean air goals. And I think both Jim and Commissioner Scott have talked about the dramatic reductions we need in criteria pollutants to meet our federal ozone standards and federal (inaudible) standards. And we have tremendous challenges ahead of us.

So in this area, as well as in the other areas, we're always looking at how can we -- how can we promote the fuels that are coming from the cleanest feedstocks, and that's always a challenge that we face. And so especially, as we're -- as we're talking about biofuels I just wanted to raise our -- our recommendation that we continue to take steps. And I know there are a lot of complicated challenges, as we've just referred to, but to -- to step up the focus on waste-based and clean renewable feedstocks. And I

understand -- I appreciate that it's certainly referenced in the report that many of the dollars are going to waste-based feedstocks. I'd love to have more detail, if I've missed it, in how much of that funding is going to those and just encourage additional steps to make that a bigger priority. And maybe part of that is, as you've been talking about, looking at ways to deal with some of the challenges that currently exist to using higher quantities of those as opposed to conventional biofuels. And I think cellulosic, waste-based, other renewable feedstocks would be on our priority list.

COMMITTEE MEMBER MCKINNEY: Great. Thank you. Yeah, I think just as a friendly reminder, our portfolio of investments in biofuels really does focus on waste-based feedstocks, and the carbon intensity numbers for those are quite low. So several carbon -- negative carbon intensity pathways were different types of biogas. And then very low carbon values in the 10 to 15 grams per megajeule for biodiesels and renewable diesels from waste-based feedstock. So we're -- we're pleased with that and with the industry technology developments there.

Any comments from any other Committee Members at the table?

Jacob, do we have Committee Members on the phone who wanted to comment on this?

MR. ORENBERG: No one has their hand up.

COMMITTEE MEMBER MCKINNEY: Are there any Committee Members on the phone that would like to comment on the biofuels funding allocation?

COMMITTEE MEMBER SHEARS: Sorry. John Shears. I might have been muted. Can people hear me now?

COMMITTEE MEMBER MCKINNEY: Yeah. Go ahead, John.

COMMITTEE MEMBER SHEARS: Yeah. I just, again, just want to commend them for all of the great work that they're doing on this development and evolution of the Investment Plan. Ad I want to commend them for all of their extensive outreach and hard work with all of the other agencies and the -- and the broader stakeholder community. I know the staff has put a lot of effort into, you know, making sure that this Investment Plan really, really syncs up and tracks what's happening elsewhere in the state. And again, you know, as I've said with previous investment plans, you know, they've done a fine job of managing a program that includes everything along with the kitchen sink. So I just want to commend the staff again on a great job.

COMMITTEE MEMBER MCKINNEY: Great. Thank you, John.

Are there other Committee Members on the phone that would like to comment? Okay.

I think we'd like to turn to public comments in the room. And let's see, Charles, do you have blue cards or

who's -- who's got blue cards?

COMMITTEE MEMBER SMITH: Okay. So we have a comment from Mike Lewis with Pearson Fuels.

MR. LEWIS: You want me to come to the microphone or --

COMMITTEE MEMBER SMITH: Yeah.

COMMITTEE MEMBER MCKINNEY: Yeah. If you could come to the podium microphone, please, and identify yourself.

COMMITTEE MEMBER SMITH: Yeah. Either -- either at the podium or at the chair, whichever you're comfortable with.

MR. LEWIS: Preaching. So these are comments about the biofuel production and supply only; right?

COMMITTEE MEMBER MCKINNEY: Correct. Yeah.

MR. LEWIS: So the only thing that I would point is we do a lot of ethanol sales and a lot of E85 flex fuel sales around the state. And I wanted to commend you guys for the previous support to the industry, to biofuels and e85 and ethanol infrastructure and production.

On this category I would just ask you to consider the title biofuel production and supply. So obviously the emphasis, I know, is on biofuel production. And I think as Joe mentioned with biodiesel there's the capacity to -- the ability to increase the capacity of biodiesel pretty substantially in the state. And I think that ethanol is a little bit of a different animal. I think you have to keep in

mind that all the funding that you guys put out there makes a project subject to prevailing wages. So I don't think it's viable that it's going to build a new plant, build a new ethanol plant, a substantial ethanol plant, that's really going to impact the ethanol production substantially.

So according to your records or notes from the staff, 78 percent of the ethanol supply in California is imported from out of state or out of country. And I would just say don't ignore that. I mean, don't ignore that entirely. I mean, almost all of that is controlled by -- into five big unit-train facilities in the State of California that are run by the oil companies. I mean, there's -- Valero has got one, Shell has got one. There's some massive ones up in the Bay Areas. So that's where that ethanol is coming in. And so there are some producers of lower CI ethanol in the Midwest that don't have unit-train capacity.

So my point is that in that category I would just ask you to consider that it's biofuel production and supply, and supply would include sub-unit train transload facilities, in other words, places to offload railcars that are not at a 96 railcar capacity. Because otherwise you're basically saying that the oil companies can have 78 percent of the control of the market. And little guys that -- you know, it's just very hard to compete against that without some kind of an incentive. So consider that.

And then I do want to again point out, I do think ethanol is different than biodiesel in that capacity. It think biodiesel does have a lot of additional capacity that can be built in the state. But ethanol can be clearer, I just don't know if you're going to ever really build an extra plant from these -- these funds. So I just wanted to point that out.

COMMITTEE MEMBER MCKINNEY: All right. Thank you.

Charles, did we have any more in this category?

COMMITTEE MEMBER SMITH: Yes. I think Bill Bunnell, I think there a couple of remarks referenced here. But one of them at least relates to E85. So I figured this might be the right opportunity.

MR. BUNNELL: Yeah. Well, on the E85, I'm going to putting it into my station here in Fresno. I own a gas station in Fresno. But prior to that I ran half of the ARCOs in the State of California. And prior to that I was the fleet sales manager for ARCO. And one of the things that the fleet managers or the companies that -- you know, the PG&Es of the world and pest control companies and so forth, one of the things they want to see is a certain saturation. Because you can have the ability to get biofuels. But if it takes your driver an hour out of his way or 45 minutes out of his way to get that then you've decreased their efficiency, which is the primary thing that that fleet operator is targeted with.

And so I hope with some of these things where if you guys are looking at those maps that you put up where you go, okay, we got one in the City of Fresno, like for instance, with E85 we do have one in Fresno, but it's at the far end of Clovis which would be like going to the very edge of the peninsula of San Francisco or Palos Verdes Peninsula in Los Angeles or, you know, the very edge of the peninsula down in San Diego. Nobody goes 45 minutes out of their way to get biofuels and then go back on their way.

I think a city like Fresno with a million people between Fresno and Clovis and surrounding areas probably with like four or five strategically located positions you'd be able to service everybody who wants to get ethanol. And the same would hold true for the other biofuels that we were talking about.

And that really was the only thing I had that was apropos to -- to this. There was two other things I put down there, but I can hit those later if you want.

COMMITTEE MEMBER SMITH: So the other comments pertain to living wage proposals and their recent --

MR. BUNNELL: Okay. A lot of your speakers --

COMMITTEE MEMBER SMITH: -- diesel study.

MR. BUNNELL: -- a few of your -- you said it yourself, and then I think one other Board Member said they'd like to see more projects in the Central Valley.

I got involved, and I remember you from the very beginning, and I remember you from the very beginning, and Tim Olson who was here earlier, and my wife had some medical issues so I kind of backed out of all this. But one of the things that I faced when I was going to do this originally, and the Energy Department liked my project because I'm write where two freeways -- or actually now three freeways meet, and they asked me how much money I wanted.

And I said, "Well, you never know with planning commissions and that sort of thing." But I said, "If everything goes perfect $125,000. You know, they might ask you to plant some trees and things that have nothing to do with this specific project." But I said, "I feel very confident, less than $150,000. And certainly if they throw everything and the kitchen sink at me, less than $175,000."

And the Energy Department guy who was here at my station and some private consultant that they had hired said -- they looked at me. And I didn't know if that look meant I was asking for too much money and being greedy using the state's money in this way or I was naive and not asking for enough.

And so I said, "You know, what's that look about? What's that?"

And he said, "We haven't seen anybody do one of these things for less than $265,000 in three years. There's

no way you're going to do that."

And I said, "Look, I can put my brother-in-law in a director's chair and pay him $50,000 to watch these guys and I still couldn't spend that kind of money."

And then he said to me, "Are you going to pay these guys," I think he called it living wage or a working wage or something like that.

And I go, "I don't know. What -- what does that mean?"

And he said, "$36.00 an hour."

And this is when the program first started and everybody was out of -- Fresno still has double-digit unemployment, but it was like 20 percent at that time. And I go, "These guys are just happy to have work, you know?"

Like then the guy, he told me, he goes -- the consultant, he said, "I don't care if a guy is fetching from Starbucks, he better be getting $36.00 an hour to do it."

And I thought, as you were talking about the need for more money, I agree. But maybe if we were to -- you know, in the Central Valley the average wage is nowhere near what it is in San Francisco or L.A. or San Diego. You might be able to get three times more projects done or at least 40 or 50 percent more projects done without putting one extra dime of the state's money into it if you could make those reflective of what the realities are of the cost of living in different

areas. And I know my -- my State Senator is Kristen Olsen. And we had
talked about it. She was going to be trying to put a bill across for -- for every project so the Central Valley could get better represented and so forth.

But maybe at least in this aspect, if that could be reflected and you could get a heck of a lot more done for your money than what's being done now because of these rules that I think are somewhat inflexible.

PRESIDING MEMBER SCOTT: So let's -- Charles, on this, let's -- let's stay with the biofuels category. And so we'll call you back up for the other ones, and then we'll -- we'll just keep with the -- with the category that we're talking about.

COMMITTEE MEMBER SMITH: Yeah. Okay. Those are all of the in-room blue cards that I have.

I have a blue card representing Russ Teall who is on WebEx. Oh, no, you're here. Hello Russ.

MR. TEALL: And I didn't even take the train. Do you want me to speak here or --

PRESIDING MEMBER SCOTT: At one of the microphones so the folks on the phone can hear you.

MR. TEALL: My name is Russ Teall from Biodico. And I'm also the President this year for the California Biodiesel

Alliance, and a grant recipient from the CEC for two separate projects, one down at a naval base in Ventura County in Port Hueneme where the Navy has decided to set a goal of a 50 percent reduction in fossil fuel use for energy and for fuel by the year 2020 nationwide. So I think we can do it in California by 2030. It gives us an extra ten years.

The nation's state, let's see, Jim was talking about the nation's state. Well, we've got a state of states. So what is the largest agricultural state in the United States? Any guesses? California. What's the second largest state? Fresno County. So this -- this county represents, if it were a state, the second largest agricultural production in value in the United States.

And so part of what I wanted to encourage you to do is look at what are the feedstocks for biofuels? Because all the biofuels depend on that and we've got a tremendous resource in California. In Fresno County alone between Fresno State, Westfield Community College, and the UC Davis Agricultural Research Station there is a lot of resource going on on different feedstocks that can be grown sustainably for biofuels production. And I would encourage you to look at projects in the biofuels area on an integrated basis. You know -- you know, there are existing conventional feedstocks and there are new and emerging feedstocks. And you know, to the extent that we can encourage the development of new

feedstocks in California it's much better.

The low carbon fuel standard, as a trade association we've looked at it as being a tremendous benefit. And it's -- it's drawing in a lot of biofuel from other states, other countries, and in-state as well. And what we'd like to see and what the CEC is doing is -- is encouraging in-state production of those resources. So -- so, you know, if we've got an economic wave of demand that's going to occur, why not do it here in California and in the most disadvantaged communities. So even though SB 535 doesn't actually apply to funding under AB 118, you know, in spirit it should.

Do I have that wrong, Jim?

COMMITTEE MEMBER MCKINNEY: No.

MR. TEALL: I thought so. But it's -- the CEC has been including that in the bonds that have gone out. And I would encourage, you know, even more emphasis on that. And it's not just Fresno County, it's the entire Central Valley. There's areas in -- in Monterey and Watsonville and the Imperial Valley, in Downtown L.A. So you know, taking 6,000 voting districts, you know, in California, the census tracks, dividing them up into the CalEnviroScreen score, it's a real checkerboard. So you know, every community, you know -- you know, has areas in it that need development.

Finally, there's not enough money. That's the -- that's the bottom line. You know, $100 million for doing this

task is -- is not enough money to -- to really make the kind of change that we need to make, you know, in time. And so we've gotten together a coalition of biofuels interests, biogas, bioethanol, biodiesel, but it applies to all the renewables. And we're -- we're asking for Greenhouse Gas Reduction Fund monies to be dedicated to biofuel development in California. Tim's part of the Coalition. Some of your other members are, as well. We're coordinating with Eileen. You know, she has a separate initiative, and we don't want them to be seen as competitive at all. It's not a zero-sum game. We're looking at new funding coming in, you know, under Cap and Trade this year. And you know, the estimates range from a total budget, up from $800 million to, what, $1.1 or $2.2 billion. And so, you know, our feeling is that -- that since oil and gas have been brought under the cap, what more appropriate thing to spend it on than replacements and renewable replacements for oil and gas.

One final comment, as a grant recipient and applicant I love the pre-proposals. They're -- it's a much, much easier way than spending what ends up being a huge amount of time and effort. And if you're off base it's better to know early rather than later. Thank you.

COMMITTEE MEMBER MCKINNEY: Thanks, Russ.

Is that it, Charles, for blue cards?

COMMITTEE MEMBER SMITH: For -- for this category,

yes.

COMMITTEE MEMBER MCKINNEY: Great. Thank you. And -- okay.

So with that let's move to electric charging infrastructure. So the staff recommendation here is to increase funding from last fiscal year by $3 million to $18 million. And this was also put forth in November.

So do we have any comments on this from Committee Members in the room? We'll start with Erik White of the Air Resources Board.

COMMITTEE MEMBER WHITE: Thanks, Jim. And you know, we certainly want to express our support for the investment that the Commission is proposing to make. It's important towards implementing the Governor's action plan. It's certainly important towards supporting our continued investment for zero-emission vehicles for the CVRP program.

A couple areas that, though, we would suggest, maybe some clarification happen. One certainly would be I think along the lines of our earlier conversations about how you plan to increase deployments in multi-unit housing. That's very important. And I think having some specificity about how we can improve on our -- on the successes, or maybe not as successful as we would have liked to have been so far. And also I think, you know, as we look at our investments in disadvantaged communities, how the investments will benefit

other opportunities to increase deployments in disadvantaged communities as well. We have a number of programs that we will be implementing this year on the light-duty side, pilot programs looking to expand the deployment of advanced technology vehicles in the disadvantaged communities. So opportunities to pair investments on charging infrastructure along with those we think are important, not just for the deployments we'll be doing this year but our expectation to continue those investments next year and hopefully start to build on those and expand those in the years moving forward.

COMMITTEE MEMBER MCKINNEY: Great. Thank you. I think those are really important considerations. And we've worked with you before, and we'll continue working with you on that.

Bonnie Holmes-Gen?

COMMITTEE MEMBER HOLMES-GEN: Bonnie Holmes-Gen. And I would just want to echo --

COMMITTEE MEMBER SMITH: Microphone.

COMMITTEE MEMBER HOLMES-GEN: Oops. Okay. I want to echo Erik's comments for the sake of time. We support the -- the funding, the increase in funding for the charging infrastructure, as well as we support the hydrogen. Is that next or we're not doing that? Are we doing hydrogen now too?

COMMITTEE MEMBER MCKINNEY: No. We're on electric charging infrastructure.

COMMITTEE MEMBER HOLMES-GEN: Electric charging?

COMMITTEE MEMBER MCKINNEY: Yeah.

COMMITTEE MEMBER HOLMES-GEN: Okay. So --

COMMITTEE MEMBER WHITE: That's not the end of comments. I'll talk again.

COMMITTEE MEMBER HOLMES-GEN: Okay. All right. So I'll copy them again. No. But --

COMMITTEE MEMBER WHITE: You can go first.

COMMITTEE MEMBER HOLMES-GEN: I'll go first. I want to support this category. I'm really looking forward to seeing the information about how these new deployment - - new EV charging deployments are going to affect the whole picture. I think it's hard right now to have a full picture, except certainly we know we need to increase multi-unit housing. But in terms of what is needed around the state and geographically, we really need that additional information about how the PUC decision is going to roll out. So I'm looking forward to getting more of that.

I wanted to underscore the need to -- for continued strong coordination between ARB and CEC. I know that's happening in terms of making sure that the funds that are under both agencies' control are used to maximize benefits, especially to disadvantaged communities. And hoping, again, that there can be increased projects located in the San Joaquin Valley, and looking for more opportunities to -- to

find and to fund good projects that we can showcase in showing -- to show local governments in the valley and other places how important and effective these strategies can be.

I'm really pleased to be here in the San Joaquin Valley Air District and appreciated the presentation. I hope this also shows that there's renewed coordination between the CEC and the San Joaquin Valley Air District. That's really important in this EV deployment, both vehicles and infrastructure. And I think a strong partnership working together is really critical to deploy the most effective network of electric vehicle infrastructure and to -- just to work with local governments to make this really happen in the valley. So I'm glad you're having this meeting here. And I know there needs to be additional work between the agencies to figure out how to best roll it out.

Can I just say really quickly that --

COMMITTEE MEMBER MCKINNEY: Please do.

COMMITTEE MEMBER HOLMES-GEN: Please do. At some point when there -- if there's discussion of the -- the EV readiness projects, I know that's not funded currently, but I wanted to add my support to increase the -- to add at least a $3 or $4 million investment for that project also.

COMMITTEE MEMBER MCKINNEY: Yeah. And we'll make -- because you need to leave at 2:30 you said?

COMMITTEE MEMBER HOLMES-GEN: 2:45.

COMMITTEE MEMBER MCKINNEY: 2:45.

COMMITTEE MEMBER HOLMES-GEN: Yeah.

COMMITTEE MEMBER MCKINNEY: Okay. So we'll be sure that you and Mr. Carmichael get an opportunity to make any comments that we haven't gotten to yet.

Any other comments from Committee Members present? Let's go to Committee Members on the phone. Is there anybody who wants to comment on this funding category?

COMMITTEE MEMBER SMITH: We did receive earlier that request to comment from -- oh, you asked for Advisory Committee members first?

COMMITTEE MEMBER MCKINNEY: Uh-huh.

COMMITTEE MEMBER SMITH: Sorry.

COMMITTEE MEMBER MCKINNEY: Yeah, on the phone.

COMMITTEE MEMBER SMITH: Anything?

COMMITTEE MEMBER MCKINNEY: Flawless team work.

COMMITTEE MEMBER SMITH: I know; right?

COMMITTEE MEMBER SHEARS: Yeah. Just -- John Shears. And I also want to just echo the fact that the Energy Commission is -- is holding Advisory Committee hearings, moving them around the state so that local delegations and stakeholders can more easily participate in the hearings. And just look forward to working together with the Energy Commission and the other agencies on enhancing the deployment of advanced technologies in the challenged communities that

we're all trying to help get ahead. Thanks.

COMMITTEE MEMBER MCKINNEY: Jacob, was there anybody else on the phone for Committee Members?

COMMITTEE MEMBER CARMICHAEL: I'll speak -- I'll speak for Eileen.

COMMITTEE MEMBER MCKINNEY: Who's that? Is that Eileen?

COMMITTEE MEMBER TUTT: Can you hear me? Or I guess Tim can speak for me.

COMMITTEE MEMBER MCKINNEY: No, we can hear you. Please proceed.

COMMITTEE MEMBER TUTT: So I just -- I just wanted to say, yes, we definitely support the $18 million this year. We really appreciate the staff recognizing the need for infrastructure is probably the second biggest barrier to this market. The first biggest barrier is the up-front cost of these vehicles, of course. And so I noted that this -- this plan does not continue the light-duty. And in the old version it calls it the electric vehicle deployment, but really it's light-duty Clean Vehicle Rebate money is not necessarily electric, unless you call a fuel cell also electric.

But I wanted to -- Jim or Commissioner Scott, is there going to be an opportunity to suggest perhaps -- maybe I'm taking it -- that we are so underfunded in that program, given the current budget, CARB, the Air Board, Erik White can

attest to this. And we all know there's not nearly enough money in the Clean Diesel Rebate Program. So just would suggest that $18 million is great for infrastructure. Just wondering why we are not continuing to also fund the Clean Vehicle Rebate Program?

PRESIDING MEMBER SCOTT: Eileen, this is -- this is Commissioner Scott. You know, I think one of the considerations that we made at the Energy Commission on this is that we were putting about $5 million extra into the CVRP at a time when the CVRP was funded around $20 million, $30 million. The CVRP has $120 million right now. And so we wanted to kind of take some of that money and put it back into the other categories that we have that are also traditionally underfunded. And so that was kind of a balance we made now that the Greenhouse Gas Reduction funds are going into the -- into the CVRP program.

COMMITTEE MEMBER TUTT: Okay. I guess then my only request is that the Greenhouse Gas Reduction funds that were allocated this year are not sufficient to fund not just the CVRP, but also the very important environmental justice programs, as well as the heavy-duty vehicle pilot and demo programs and the -- and the HVIP programs. So we're pretty -- we're -- we know that we're quite short. CARB staff pretty much agrees with that. So maybe -- maybe we could ask that the Energy Commission help to support the -- or at least

recognize, s CARB staff has done, the need for more -- more funding there too. They are -- the programs are very substantially underfunded right now. So just wanted to put that bug in your ear. I know Erik is very, very aware of how -- how short we are, not just in the clean vehicle rebate program, but like I said, in the other, almost even shorter in the -- in the pilot and demo programs.

So that's all. I know it's not on the list, so I just wanted to pitch. I understand entirely, Commissioner, that makes a lot of sense. And I just would ask your support and help as we try to make sure that the (inaudible) side of this project is adequately funding -- funded if we aren't going to be using this money anymore.

PRESIDING MEMBER SCOTT: Uh-huh. Yeah. Duly noted. And I will also note that all of -- all of the things that we are funding are also critically underfunded as well. And so it's -- it's a tough balance. We're super lucky in the state because we have all of these pots of money that we can -- can draw from. But again, the need is great. The transformation we're trying to make is so large that all of our programs are oversubscribed. But that's duly noted. I take your point.

COMMITTEE MEMBER MCKINNEY: Jacob, were there any other Committee Members on the phone?

MR. ORENBERG: No one is requesting any comments.

COMMITTEE MEMBER MCKINNEY: Okay. Let's turn to

blue cards here.

COMMITTEE MEMBER SMITH: So I have a blue card for someone on WebEx, Dr. Thomas Green. I think we tried to reach for comment earlier but didn't get through. I wonder if he's available now?

DR. GREEN: Yes, I'm here.

COMMITTEE MEMBER SMITH: Hi. Please go ahead.

DR. GREEN: Okay. First, I'd just like to say that I am a private citizen, a resident of Redwood City. And I've got a personal interest in low carbon transportation options and efficient vehicles. I'd like to commend the Energy Commission and the Board for these investments. And thank you for the opportunity to comment and participate in today's meeting.

So my comment is that although you are -- it's clear you're investing quite substantially into electric vehicle infrastructure, I'm concerned about what seems to be a very paltry deployment of long distance charging facilities. From reading the update report, it's really an excellent report, I saw that there have only been nine DC fast chargers installed, and that's a pretty small investment so far.

And then from today's presentation and Mr. McKinney's update, so only about three public DC fast chargers outside of metro areas now. And there are 120,000 electric vehicles in California, as you noted. And you showed a chart

showing exponential growth. And I think your own chart shows that EVs will dominate among, you know, ZEV vehicles over the next 20 years or so.

The I guess a previous commenter, Eileen mentioned that cost is a big impediment to adoption, but also is -- but also range (inaudible) as you probably know the people mentioned. And people are very concerned about how far you can drive these. And it looks like your investments in the metro areas right now are good. And also there's been a lot of private investment so that I think people are realizing that electric vehicles are now practical for local travel. But as you all know, and a lot of you folks probably drove to this meeting over long distances, that Californians like to drive long distances. And we need some sort of network along transportation corridors for -- to really enable a new phase of electric vehicle travel. And also I think that would really aid adoption, as well, once people realize that going long distances is more practical. I think that's also probably a big issue for people in the valley. There are relatively long distances between the towns.

So as an action I'd like to encourage the Energy Commission to show some leadership by investing in an effective network of DC fast chargers along our transportation corridors, just like our neighbors in Oregon and Washington have. I know I've seen, I guess you do have some planned ones

along I-5 and 99, and I think that's -- that good. But it's really -- those alone are just a really insufficient network to enable long distance travel.

And I'm also a little concerned that maybe your focus on regional plans could have caused some sort of oversight, and by that I mean neglect, of inter-region travel. And I'm just sort of wondering if you could reflect on that a bit. And being able to connect the different regions is probably, you know, the next step and a very important thing, and not just deployment within regions.

So in addition to the ones you have planned for I-5 and 99, I would encourage you to include -- to think about deploying ones on Highway 101 between Santa Barbara and San Jose. I think just a few there would extend the network that starts in San Diego and goes all the way east of Sacramento. And there's just a gap there of about 300 miles now that maybe something like six chargers would -- would sample well.

And you know, if we had a network of something, a total of about 100 of these fast chargers, that would, I think, work on several transportation corridors, would -- could allow us to extend up to the Oregon border on 101 and I-5, connect to the West Coast Electric Highway. And from reading your own documents it looks like a network of 100 of these chargers would only cost about the same as 1 hydrogen fueling station by the average cost.

So just as somebody that's interested in moving -- helping move our state forward in low carbon emission, you know, end-to-end vehicles it seems like this could be a really worthwhile investment. And I encourage you to consider something like this. Thank you.

COMMITTEE MEMBER MCKINNEY: Thank you very much, Doctor -- excuse me -- Dr. Green, for your -- your thoughtful comments. And it's clear you've put a lot of thought and research into this.

A couple of things. So I think the prevailing theory in how you -- you start growing these ZEV vehicle markets is that you do really need to start with kind of regionally-based networks, whether it's hydrogen fueling infrastructure or electric charging infrastructure. And once you have reached a certain saturation point, then you can start to connect the regions. And that's where we are for market development for EVSC or electric vehicle charging infrastructure.

So we very much appreciate your -- your calls for more of a fast charger network. We are, in fact, working on these. And we've provided testimony to the Air Resources Board in conjunction with some of the other states that are part of the Eight State Coalition, so we are -- we are working on those plans. They tend to be more expensive. We're not quite sure of the use levels yet, so there's a bit of a risk

on the public sector investment. But again, it's noted. And I think as these markets mature and we get more thoughtful people like yourselves that are interested in driving further that we'll see more action in this regard.

DR. GREEN: Thank you.

PRESIDING MEMBER SCOTT: I'll just add, also, that we had a workshop about two weeks ago and had a whole bunch of people, and we spent the entire day talking in detail about a lot of the issues that you've raised. And so it is something we're very mindful of and aware of. And I don't know the link off the top of my head, but I think if you go on to the Energy Commission webpage and go under the transportation tab you might be able to find that workshop. And all of the presentations and things like that from the workshop are posted, so that could give you some more information into some of the things the Commission is working on.

DR. GREEN: Thank you.

PRESIDING MEMBER SCOTT: You're welcome.

DR. GREEN: I'll look for that.

PRESIDING MEMBER SCOTT: Thank you.

Anyone else on blue cards, Charles? Okay. Next.

COMMITTEE MEMBER MCKINNEY: Okay. We'll now turn to hydrogen fueling infrastructure. This is not a Staff recommendation. This is a legislative requirement that Staff allocate up to $20 million for hydrogen fueling

infrastructure.

So Bonnie Holmes-Gen here at the Committee.

COMMITTEE MEMBER HOLMES-GEN: Thanks. I want to, okay, turn on the mike.

I wanted to express my support for this -- for this recommendation, the $20 million. I realize it’s a legislative recommendation, but we think it is critical to move forward with this. And I want to remind everyone that it’s a critical part of our air quality strategy, in addition to the greenhouse gas reduction goals. And we just testified earlier this month on a proposal to strengthen our federal ozone standard. That’s another big issue that’s coming down. We realize that we are not -- that our current standards are not health protective enough. So we’re going to need to continue to do more and do faster work to get -- to clean up our fuels, not just for greenhouse gasses but by 2032 we’re going to need to see clean air that meets federal ozone standards in the South Coast Air Basin, and potentially even stronger standards.

So -- so this is -- so getting quick introduction of fuel cell vehicles and stations is a key part of the strategy. And I wanted to ask if you could comment, knowing that this strategy, as you said, is based on getting regionally-based networks, both for electric vehicles and fuel cell vehicles. Looking at the San Joaquin Valley it’s not -- it’s not on

the -- in the network now in terms of where hydrogen stations are going to be located. When do you think that hydrogen stations will be coming to the valley? When do you think that might be built out?

COMMITTEE MEMBER MCKINNEY: That's -- that's a good question. So we do have our first connector station that will be built in Coalinga by First Element. And that's supposed to come online late this year or first quarter of next year. That's -- that's a major achievement for connectivity.

And beyond that, you know, the automakers all run their own surveys of their potential customer bases, what they call hand-raiser data. And at some point they will signal to the funding agencies that there's a big enough critical mass to justify a station, and that could be, you know, Stockton, Fresno, Bakersfield, Merced, we don't know. We haven't had that testimony yet. That hasn't come into our solicitations. But that would be the trigger, I think, for us to really seriously evaluate a funding proposal.

I don't believe -- I'm kind of looking to Charles and others about the last solicitation. I don't believe we got any funding requests for stations in any of the major valley cities. I don't think, yeah.

PRESIDING MEMBER SCOTT: Yeah. I think just Coalinga.

COMMITTEE MEMBER MCKINNEY: Coalinga was the one.

So that’s -- I think that’s a great question. I think that’s a good question to pose back to the automakers. And I think over time the ARB survey, the confidential survey might start to reveal some of that -- that data, as well, geographically.

I guess another thing I would add is that -- this is in the Staff perspective -- I think an early market opportunity with hydrogen fuel cells would be in the trucking sector or the transit bus sector, and especially tiering off existing hydrogen stations that are serving warehousing and the forklifts that operate inside the big distribution warehouses, there’s a lot of that in the valley. And I think other parts of ARB staff, actually (inaudible), have talked about the potential for that in the Southern San Joaquin Valley in Bakersfield in some of their warehousing districts in that area. So we’ll see what emerges with the ARB solicitation.

Mr. White?

COMMITTEE MEMBER WHITE: So that’s -- that’s a good comment, Jim.

First, I just want to express our strong support for this. This is another critical year of investment in hydrogen infrastructure. You know, one of the things that we do want to make sure that, as -- as a Commission, is -- is going through the station selection process with a mindful eye of

what's needed in the future. You know, it's -- right now it is -- it is a very new and nascent market. We expect it to grow and grow quickly. And we make sure that as we are siting and sizing the stations that they are going to meet the future -- the future market demands that -- that we're going to see. So that's -- that's certainly an important consideration for us looking at this moving forward.

On the heavy-duty side that's an interesting question because I think that it is -- it will be important and will be important for us to sit down and discuss how, as we see hydrogen and electricity moving into heavier market segments in the transportation sector, what role in the investments we're making, and the light-duty sector can -- can play into that. Hydrogen certainly is an important consideration as we think about infrastructure needs there and how they fit in with the investments that are being made on the light-duty side, how can we either leverage those, which I think may be challenging, but ideally are there opportunities for siting nearby or other things that might help improve some of the economics around hydrogen as a fuel cell?

I'll look forward to having those -- those conversations as we move forward in some of the demonstration projects and pilot projects that we have, especially in the freight sector, move towards early deployment in the not too distance future. And transit is a good example. I think

there's a strong partnership as was shown with the work that we -- both agencies have done with AC transit. And as we look at our transit strategy in advancing transit I think there's going to be lots of opportunities to discuss how to use and site hydrogen in conjunction with significant reductions from that sector. So I look forward to that conversation.

COMMITTEE MEMBER MCKINNEY: Great. Thank you, Erik.

Tim Carmichael?

COMMITTEE MEMBER CARMICHAEL: Tim Carmichael of the California Natural Gas Vehicle Coalition.

In the light of using or seeing the Investment Plan as an education tool I think the section on hydrogen would be strengthened with the addition of a paragraph talking about renewable hydrogen. There's mentions of it but there's discussion of where it comes from. And obviously there's a connection to my world in that renewable natural gas is a significant feedstock for renewable hydrogen, but it's not the only avenue. And I just -- I think some people who read this report know very little about alternative fuels and where they come from, and they hear the term but they don't have the background that people around this table do. So I would just suggest the addition of a paragraph that covers that.

As I've noted before, I was fortunate to be part of the conversations that led to the -- the lock-in of $20 million a year for hydrogen for a period of time. Part of

those discussions were heavily weighted by the projections on how many vehicles were going to be on the road. And I know we're behind those projections. There's definitely promising, you know, news announcements recently about what's coming. But I just -- I'm going to keep reminding the Energy Commission staff to monitor this closely because that $20 million a year was, you know, committed to with an understanding that there was going to be X number of vehicles coming to market. And at some point if that doesn't come to pass then it's going to be appropriate, in my opinion, to adjust that $20 million a year. And it's something that Staff just needs to keep monitoring.

COMMITTEE MEMBER MCKINNEY: Yeah. Thanks, Jim, for that reminder. And I think the first formal opportunity for the Commission to do that will be under AB 8. So after the publication of the ARB AB 8 report in June the Commission and ARB will then prepare a joint report by December of 2015 that looks at that question directly. So thanks for the reminder.

Other Committee comments here at the table?

COMMITTEE MEMBER HOLMES-GEN: Just I wonder if, in response to the earlier discussion, if you could include more information, not just on renewable hydrogen, that was a good point, but on the opportunities, maybe I'm missing it in here, for deploying hydrogen in the valley and other impacted areas in the -- the bus and truck and freight sector?

COMMITTEE MEMBER MCKINNEY: Yeah. And I think to go back to what Erik was saying from the Air Board, I mean, there's -- there are some really exciting technologies that are emerging. And I mean, we need to push down cost and get more demonstration vehicles out on the road. But I think there's a lot of -- a lot of opportunity there. And that's one of the great things about fuel cell electric technology is that they are so readily scalable, you know, all the way up through big transit busses and Class 8 tractors. So -- so we also look forward to that.

Let's see, I'd like to -- any other comments from Committee Members here? I'd like to go to Committee Members on the phone.

MR. ORENBERG: We have Tyson Eckerle.

COMMITTEE MEMBER SHEARS: Yeah. This is John Shears. And I also --

COMMITTEE MEMBER MCKINNEY: Okay. We'll take John, and then Tyson Eckerle.

COMMITTEE MEMBER SHEARS: So can you hear me?

COMMITTEE MEMBER MCKINNEY: Yes, we can. Please, yeah, go ahead, John.

COMMITTEE MEMBER SHEARS: Yeah. So just want to also speak in support of the -- the $20 million.

And to follow on Tim's observations, I'm just wondering, too, you know, as we're looking to the Governor's

2030 and really, you know, they're -- we're going to be talking about 2050 goals in the context of the 2030 goals. And Senator de Leon has actually indicated -- I should say President Pro Tem de Leon has even indicated that he's considering having 2050 goals set in legislation that he's going to be championing, that the extended role of hydrogen, it would be good to refer to the extended role that hydrogen could play, not only in transportation and renewables, but also in energy storage and grid integration so there's -- as we move forward we're going to be talking more about the systems and the greater and greater integration of the systems, especially with the electrical grid.

And there's a lot of work going on right now, a lot of thinking going into the role that hydrogen could play, along with other forms of energy storage and transportation too. So if that (inaudible) but I can follow up with -- with you on that if you'd like. Pardon me, but I'm fighting -- fighting the -- this year's flu.

COMMITTEE MEMBER MCKINNEY: Yeah. Okay. Well, I hope you feel better, John. Thank you for that comment.

Tyson Eckerle with the Governor's Office?

MR. ECKERLE: Yeah. Thanks, Jim. This is Tyson with the Governor's Office of Business and Economic Development.

And first of all, John, I hope you feel better very

soon.

And second of all, I wanted to express a strong support in all three categories that you just talked about, the hydrogen infrastructure --

COMMITTEE MEMBER MCKINNEY: Tyson, sorry to interrupt. Could you speak up a little bit please?

MR. ECKERLE: Oh, I'm so sorry. Is that better?

COMMITTEE MEMBER MCKINNEY: There we go. Thank you.

MR. ECKERLE: Okay. Sorry. So, yeah, so I wanted to express strong support for the -- all three categories that we've just been discussing, you know, hydrogen, electric, and biofuel production. I think it's a very well balanced plan and it's -- the staff has done a tremendous job. It's not an easy thing to balance all these demands.

I think on the hydrogen side, you know, my day job is to help make sure that these stations are successful. And the signal (phonetic), you know, what the Energy Commission is going to do with the $20 million is incredibly important to the marketplace and -- and to the automakers in particular to bring out those numbers of vehicles that we need to help reinforce the program.

And then I just wanted to kind of step back from that role and talk a little bit more broadly on the -- from the GO-Biz perspective and how important we see this program as this is really investing in the economy, you know,

California's future economy. And so we see a large part of our role is helping to make sure that people who are applying to this program can find success and can grow. And part of that job is being able to tell the story and communicate, you know, what -- how the market is expanding, what job creation looks like both in a quantitative and qualitative manner.

So to the extent that the Energy Commission, I think, has done a great job collecting the benefit, I think the workforce and market growth, you know, to the extent we can focus on that, we would love to work with you on that directly.

Then also to the people in the room and the applicants, we want to hear, you know, how this is changing the way you can do business in California.

So thank you to everybody.

COMMITTEE MEMBER MCKINNEY: Okay. Thank you, Tyson.

Any other Committee Members on the phone want to comment on this one?

MR. ORENBERG: No.

COMMITTEE MEMBER MCKINNEY: Okay. Thank you.

And with that, recognizing the time constraint for two of our Committee Members here, we'd like to turn now to natural gas, and we'll come back to public comments on hydrogen later in the program.

But just looking at when you said you had to leave,

I'd like to say start with Tim on the -- and if you want to speak to both natural gas categories, feel free.

COMMITTEE MEMBER CARMICHAEL: There are three of us.

COMMITTEE MEMBER MCKINNEY: Three? Okay.

COMMITTEE MEMBER HOLMES-GEN: No. No, four.

COMMITTEE MEMBER CARMICHAEL: Four.

COMMITTEE MEMBER MCKINNEY: Four? Okay.

COMMITTEE MEMBER HOLMES-GEN: Okay.

COMMITTEE MEMBER MCKINNEY: Okay. Reedy, set, go.

COMMITTEE MEMBER CARMICHAEL: Okay. So I'm going to jump in. I actually have, if I can, I have comments on the next three categories, and I'll keep it brief but I'll just run through them.

COMMITTEE MEMBER MCKINNEY: Okay.

COMMITTEE MEMBER CARMICHAEL: So in general, very supportive of this -- Staff's work, the plan. I think this is really I'm for California for all the reasons people have shared today.

On the natural gas fueling infrastructure, my members continue to believe you, as an agency, will get more bang for your buck by investing in vehicle incentives. And that is almost to the company in, you know, a 26-company organization. So there's a strong belief that there's where -- and I know, you know, I've read your -- your report, I've read the NREL analysis, I'm sharing the perspective of

our industry members.

That said, if you, you know, ultimately decide that you're going to maintain the $5 million, I appreciate the categories that you have already included in prioritizing -- as priorities in that -- for that. But I also want to remind you of another important segment, and that's these multi-fleet opportunities that occasionally come up where there's no station in the area. No fleet wants to take on the refueling infrastructure by themselves. They really want to try, you know, three to five trucks, something like that. There are some portable options. They're not easy or not as easy as they could be maybe. And I just want to suggest that that be another category that eligible for this $5 million infrastructure. It's a multi-fleet proposal for a single station to service them. And I think there's -- there's need for that in various parts of the state.

Jumping to natural gas vehicle incentives, thank you is my only comment for maintaining this level of funding. We continue to believe it's important. We have an ongoing conversation with Staff and Commissioner Scott about some of the funding eligibility underneath the vehicle incentives. We talked about the -- the airport shuttle example. We've talked about the level of funding on light-duty -- the level incentive funding, per vehicle incentive funding for light-duty vehicles at $1,000. We're not seeing the impact that any

of us want to see. So there's a need to bump that up, we believe.

And I don't have it in front of me, but there's one or two other issues that we have communicated. And I'm hoping that, whether it's addressed in the plan or not, we will be addressing those in the next solicitation.

And then just reiterating my comments from the last meeting, very supportive of technology demonstration and scale-up. But looking at the list, looking at the balancing act that we're all trying to strike here, I continue to believe that shifting, you know, some of this money, maybe $5 million, to either vehicle incentives or biofuel production would be a more meaningful impactful investment. And again, I'm very supportive of technology demonstration but think $15 million in that category is a good number. Thank you.

There are some temporal errors in the -- in the report where it was written, you know, in the fall when certain things were happening or not happening. I'm going to include those edits that I caught in my written comments. Thank you very much.

COMMITTEE MEMBER MCKINNEY: All right. So were you an English major in a former life then?

COMMITTEE MEMBER CARMICHAEL: I wish I was a better writer, but I do enjoy editing.

COMMITTEE MEMBER MCKINNEY: Okay. Okay.

PRESIDING MEMBER SCOTT: Bonnie?

COMMITTEE MEMBER MCKINNEY: Yeah. Erik or Bonnie?

COMMITTEE MEMBER WHITE: I'll defer to Bonnie first.

COMMITTEE MEMBER HOLMES-GEN: I really was just going to say that we are really supportive of the staff's work on this plan. And you know, we'd like to see more money in several categories, but that seems to be the story you're hearing from everybody here. But we think it's a balanced plan. We think -- as I said, I think last year I think this -- each plan is building on the success of the previous plan. And this plan I think is getting us closer to where we need to be to get the investments and the deployment of technologies to reach our air quality and our -- our greenhouse gas, and now to move toward our 50 percent petroleum reduction goal. We would love to see, and I know this is still new, but more discussion of that 50 percent petroleum reduction goal, and I'm sure that will be coming because it's still new. I know we'll see more mentions of it in this plan.

But as we go forward I see some wonderful opportunities for cooperation and engagement between the ARB and the CEC as we work out that strategy and building it into this plan, as well as the scoping plan and many other plans. But there does seem to be a lot of creative work that needs to be done to figure out how we're going to step up the level of

deployment, even from what we're envisioning here, to reach that 50 percent goal. So I'm really looking forward to the additional work and creativity and all the -- the plans that need to be made to get to that 50 percent goal.

But thank you for the work that you've done on the plan. We're really pleased to be a part of this process. Thank you for allowing us to continue as a member of this -- of this Committee. I think it's incredibly important. And again, I really want to underscore the thanks, also, for having this meeting in Fresno and having some discussion with a more regional focus. Appreciate that.

COMMITTEE MEMBER WHITE: So I'll also keep my -- my comments short. Certainly recognize and appreciate the continued coordination for -- on the demonstration and the pilot side, and especially the way in which we've been able to, between the ARB and the Energy Commission, to coordinate that in a way where we are all kind of moving everything forward and to just say that we're not stepping all over each other's toes in trying to do that. And so I think that's been really well in effect.

At a meeting at the South Coast on their Clean Fuels Program a couple of weeks ago it was evident that just the benefits that the Energy Commission's investments are paying off in terms of projects in and around the ports as it relates to drayage trucks and other types of applications, just the --

the exciting news coming out where the demonstration of these technologies is looking very promising to the point where I think we hopefully in the not too distant future are doing exactly what Bonnie is looking for, and that's how we're deploying these vehicles and have moved beyond just demonstrating and piloting them. So we look very much forward to that and our continued partnership.

One thing I do want to mention, though, is the workforce training and development. And I think as we have learned through our deployment of advanced technologies, cleaner combustion technologies, for instance, for many fleets who aren't familiar with that technology what we find is challenges in terms of integrating that into their fleet and into their operations. And it's probably a part of our job that we don't give enough thought to in terms of the importance of that. And if to be successful in our demonstration -- I mean our deployment strategies we're going to have to have a well trained workforce out there to support them, not just at dealers, not just on those who design it, but those who have to maintain these vehicles within fleets.

So if there are opportunities, maybe not in this year's plan but in future plans, to Tim's point of if you find extra money we certainly believe that being able to bolster that is going to be important, especially a we've moving from technologies that are no longer combustion based and are

completely new and foreign to many of those in fleets. It's just -- now is the time to start building that -- that fundamental understanding of the technology so that when we are ready to deploy there is a skilled workforce out there to support those in the field. So --

COMMITTEE MEMBER CARMICHAEL: I just love finding opportunities to agree with Erik's comments in public, and I totally agree with that last section.

COMMITTEE MEMBER MCKINNEY: Yeah. So if I can recognize Al Estrada. So he's the supervisor of the group that's in charge of that. So I'm glad you're hearing this directly, Al. And we've got a series of meetings that we're setting up with local (inaudible) resource, yeah, you know, in the valley and in Southern California. So, yeah, we're working on that one. Okay. Okay.

COMMITTEE MEMBER WHITE: The mass exodus begins.

COMMITTEE MEMBER MCKINNEY: Okay. Great. Well --

PRESIDING MEMBER SCOTT: Thank you for spending your day here with us, and have a safe train ride back up.

We will now turn to the Committee Members on the phone who might have comments on natural gas.

MR. ORENBERG: Tyson and Eileen. I don't have anybody else on this.

PRESIDING MEMBER SCOTT: Call on Tyson?

COMMITTEE MEMBER MCKINNEY: Yeah. Tyson -- Tyson,

and then Eileen, you said?

MR. ORENBERG: Yeah.

COMMITTEE MEMBER MCKINNEY: Let's go in that order.

MR. ECKERLE: Sorry. This is Tyson. I forgot to un-raise my hand, but I'm supportive of the natural gas --

COMMITTEE MEMBER MCKINNEY: Okay.

MR. ECKERLE: -- as well.

COMMITTEE MEMBER MCKINNEY: Okay.

COMMITTEE MEMBER TUTT: So this is Eileen. I'm sorry. I had my hand up on the earlier item.

COMMITTEE MEMBER MCKINNEY: Oh, okay.

COMMITTEE MEMBER TUTT: But I think it's actually applicable to all three. It strikes me, Jim, you mentioned the risk that we are taking or the Energy Commission is taking with some of these investments, and you mentioned scalability. And I think in all three cases I just want to point out that, you know, this money is an investment in the future energy system in our state, and so with it comes risk for all of these technologies. It's not specific to any -- any particular technology. And I think we are all here to support you in taking these very calculated risks that we believe will help transform our economy to a more diverse transmission-fueled future.

So I don't want to -- I don't want to -- I want to make sure that the Energy Commission staff and, you know,

certainly the Chair or the Commissioner know that we're behind you. And you know, that's what we live for as an Advisory Committee member is -- is we support these investments, and we understand that there's a certain risk in all of them. And we also believe, at least I'm sure we all agree that -- that the scalability opportunities for all of these technologies are tremendous. So this is just the -- the toe in the door. And as the Commissioner pointed out, it's not nearly enough. But in any case I just didn't want to -- I noticed that these different kinds of comments were swirling around as if they were applicable to a particular fuel. But I think they're all -- there's all -- they're all a little bit risky. I think Energy Commission staff has ensured that the risk is minimal and the benefits are maximized. And they all have scalability options that we very much hope will be realized as soon as possible.

PRESIDING MEMBER SCOTT: Us too. Thank you so much for your support, Eileen. We do very much appreciate it. And you're right, it -- I think Bonnie said she was looking forward to the additional work and creativity that we have before us. And I, for one, am also pretty excited about that.

So other -- other comments on the phone from Committee Members? No?

COMMITTEE MEMBER SHEARS: Yeah. This is --

PRESIDING MEMBER SCOTT: Oh.

COMMITTEE MEMBER SHEARS: -- John Shears. And you know, I support the proposed funding levels for natural gas, taking into account Mr. Carmichael's recommendations.

I would also just again highlight by elaborating a little more on the potential future for -- for hydrogen in the energy economy of California, that there's a role to play together with -- with the natural gas system for -- for hydrogen as we look to completely or nearly completely de-carbonize the California economy.

COMMITTEE MEMBER MCKINNEY: Right. Thank you, John.

Any other Committee Members on the phone?

And I think Mr. Gershen here had a last comment from the table.

COMMITTEE MEMBER GERSHEN: Just wanted to support Tim Carmichael's recommendation that I think I heard for $5 million going -- adding to the biofuel production and supply. I thought that was a great, great suggestion. I'm very supportive of that.

Thanks, Tim.

COMMITTEE MEMBER MCKINNEY: And there was a softball pitch hit out of the park. All right, Joe.

COMMITTEE MEMBER GERSHEN: Yeah. I can't miss the opportunity.

COMMITTEE MEMBER MCKINNEY: Okay. I think -- let's see, we're on natural gas. Let's turn now to combined

category, medium- and heavy-duty advanced vehicle technology demonstration and scale-up linked with manufacturing. So the staff recommendation is $20 million for this category.

Joe, any comments from the table?

COMMITTEE MEMBER GERSHEN: Again, I think Tim's idea of taking $5 million and putting it into biofuel production makes tons of sense.

COMMITTEE MEMBER MCKINNEY: You really got me on that one.

PRESIDING MEMBER SCOTT: Exactly.

COMMITTEE MEMBER GERSHEN: Thanks for the softball.

COMMITTEE MEMBER MCKINNEY: Two in a row.

COMMITTEE MEMBER GERSHEN: Two in a row.

COMMITTEE MEMBER MCKINNEY: Yeah. Committee Members on the phone?

COMMITTEE MEMBER SHEARS: It gets my vote.

COMMITTEE MEMBER MCKINNEY: Sorry? What? Who was that?

COMMITTEE MEMBER SHEARS: John Shears. Just voting in support.

COMMITTEE MEMBER MCKINNEY: Thank you. Okay. Any members present in the public who want to speak to this?

PRESIDING MEMBER SCOTT: Okay.

COMMITTEE MEMBER MCKINNEY: Yeah. Take your -- take your -- yeah. You can stand or sit, your choice.

PRESIDING MEMBER SCOTT: Also, will you say your name for the Court Reporter

MR. COATES: Sure. It's Michael Coates. Is that on?

COMMITTEE MEMBER MCKINNEY: Yes.

MR. COATES: Michael Coates with Mightycomm representing Volvo Trucks here. And I just wanted to reinforce that in the deployments in this medium- and heavy-duty, that there's a long production cycle. And make sure that you're keeping in mind the -- the length of time it takes from a demonstration project to -- even to get to pilot production, and then to actual production, and make sure that that's -- that that's -- I think you note that in some of your reports and appreciate that.

COMMITTEE MEMBER MCKINNEY: Okay. Thank you, Michael.

MR. ORENBERG: And we have a public comment on the alternative fuel infrastructure.

COMMITTEE MEMBER MCKINNEY: Oh.

MR. ORENBERG: Would this be the right time to do that?

PRESIDING MEMBER SCOTT: Should -- so should we go -- should we -- should we finish with the Committee Members, and then we can just open up to the public and work back through or -- up to you guys.

COMMITTEE MEMBER MCKINNEY: I think that -- that makes sense. This will go pretty quickly here.

COMMITTEE MEMBER SHEARS: This is John Shears. I just wanted to speak in favor -- in support of Erik White's more recent comments in terms of, you know, workplace training, and more generally in terms of working together and how to figure out how to build capacity in the challenged communities so that they have a great ability to take advantage of the available resources and accelerate the deployment of the advanced technologies in their communities. I just wanted to, again, to be in support of Erik's recommendation.

COMMITTEE MEMBER MCKINNEY: Great. Thank you, John.

Any other Committee Members on the phone want to speak?

Then why don't we open it to the remaining category, so emerging opportunities and workforce training. So we've already had some comments on the -- the training allocation.

COMMITTEE MEMBER SMITH: And we had -- this is Charles Smith.

We had also mentioned the regional readiness category as well. So if there are any comments on that, now might also be the time.

COMMITTEE MEMBER MCKINNEY: Anybody on the phone?

MR. ORENBERG: Nobody's mentioned it.

COMMITTEE MEMBER MCKINNEY: Okay. Why don't we then go to kind of open public comment on these last categories.

PRESIDING MEMBER SCOTT: So just -- just a reminder, even though we're a small group if you have a blue card and you'd like to make a comment, just make sure that we get it so we know.

Do you have any other blue cards on your pile right now, Charles?

COMMITTEE MEMBER SMITH: I do not. So maybe we just --

I have two subjects on my card.

COMMITTEE MEMBER SMITH: Yeah.

COMMITTEE MEMBER MCKINNEY: Oh, that's right.

COMMITTEE MEMBER SMITH: Maybe we just go to general comments now.

COMMITTEE MEMBER MCKINNEY: Yeah, let's do that. So --

PRESIDING MEMBER SCOTT: Yeah, here or wherever you want.

MR. LEWIS: Thanks again for letting me speak. Again, my name is Mike Lewis. I'm with Pearson Fuels. And just a little history.

We have been doing this a long time. I've been doing alternative fuel infrastructure for 15, 16 years. And we built -- we built the first E85 site in the state. I built

the natural gas site. We operated that for many years. We're working on another natural gas site. I've built two big biodiesel blending facilities. I have five electric car stations. I have a propane station. So you know, we've been involved in a lot of these different fuels.

And again, thank you for your support. Back when we were doing this there was no funding allocation for this. You know, so it's -- it's been a long time coming. And it's -- it's good see, you know, when we feel like, oh, there's not enough money, we only have $25 million, so it's a different perspective.

But this -- and a bit of a review. What I understand the goals of this -- these projects to be is carbon reduction, petroleum reduction, and decrease in -- basically supporting the low carbon fuel standard, and I believe the legislation says without adopting any one fuel or technology.

And the reason I didn't get to speak earlier is because my category is missing up there, my E85 refueling infrastructure category. And you know, you guys had mentioned that there's -- you know, it's important to run this through like a project cost benefit analysis. And I mean, when you look at some of these fuels, I mean electric and hydrogen and natural gas, I mean, there's -- there's fueling infrastructure, there's vehicle incentives, there's vehicle deployment, there's manufacturing, there's workforce training,

there's technology demonstration and scale-up, and -- and then there's nothing for E85.

And I mean, to give you an example, my station which was open in 2003 will do 800 or more gallons today, and it has been doing that for years and years and years and will do that for years and years in the future, and that's petroleum reduction. If it does 800 gallons it's at least reducing 500 gallons of petroleum a day, every day, day after day, year after year. So I mean, as far as cost benefit it's hard to -- to get much better than that, I mean, when you consider the volumes. When you consider the volumes, I mean, you put an electric charger in and the car sits there for eight hours, one car on one charger.

You know, we -- I didn't mention, I've probably sited more hydrogen stations that anybody in California for these big hydrogen companies. And I think sometimes we get a little insulated from the reality and make the perfect enemy of the good. And I can tell you guys have funded a lot of things. You've funded a lot of hydrogen stations that I promise you will never be built. I mean, I hate to say it that way, but I've been involved in some of those. And many of those will never be built.

You know, you funded 161 E85 sites in this program. You actually funded in 38 more that were kicked out because they didn't get built. And now of 161, 19 of those are ours.

And I promise you those 19 will get built. But there's about 110 of those that are very likely to never be built.

And we've got a million flex-fuel vehicles, roughly, in California. We've got nine flex-fuel vehicles for every electric car in California. They're running about one percent E85 through those vehicles. So when you look at carbon reduction, E85 does extremely well. When you look at petroleum reduction it does very well. A low carbon fuel standard, 53 percent of the low carbon fuel standard credits came from ethanol this year, down from 73 percent.

So don't let the perfect become the enemy of the good because you can -- you know, you put $1.7 million into a hydrogen station and you could build 20 E85 sites for that. You could build more than that. So I just hate to see it -- you know, I've been watching this and I hate to see it just like disappear, you know, just like gone. There's not even any more discussion about it.

And as I was saying earlier, with the biodiesel -- with those biofuel projects, if the contracts gets canceled, you know, in this case these E85 contracts if they get canceled are just going to go away. I mean, there's not even a category for them. And I've seen it kind of happen in slow motion over the last few years and it's bothered me so much that I drove up here from San Diego just for this piece, and -- and, of course, to listen to the whole day, too, and --

and drive back tonight. So just don't forget E85. I mean, it's -- when you look at what the legislation is supposed to do it's hard to get more bang for your buck than E85.

And my last point on this is Charles had said the reason there's no E85 infrastructure this year is we wanted to get through the existing agreements. And I can tell you, again the hundred and some of those are likely to not be built, you know, the relatively slow deployment and not a lot of strong customer response -- I mean, there is a lot of strong customer response. I agree there's slow deployment. I mean, don't let the performance of one recipient reflect on the industry or what the potential is out there for the industry because I've opened three in the last three months, and I'm going to open one a month for about the next year or so. And I could just keep opening those if there was more funding. But your average retail guys are not going to build them on their own without some kind of support.

So thank you for letting me keep you, you know, from going home, and listening to me for a few minutes. And if there's any feedback or any counter arguments on this, I'd love to hear something, because I've been writing letters to the docket and meeting in person. And if anybody --

COMMITTEE MEMBER MCKINNEY: Well, yeah, Mike, it's Jim McKinney here. You know, thank you for -- for making the trip here and for your comments. And I think as we've said

over the years, you know, we've been concerned by the slow build-out, by the slow consumer response, by some of the pricing issues where there's not an apparent price benefit on a DGE or a GGE basis. So whatever quantitative data you can provide to us, you know, market data, pricing data, sales forecasts, I think that's how to build a case for possibly, you know, reinvigorating this category.

But from everything we've seen it's been a soft market. And despite all the benefits that you laid out, that it -- I think it really does have a good bang for the buck. For consumers the flex-fuel vehicle seems to be grossly underused in terms of E85 sales. So you know, whatever market data you can provide, you know, suggestions on how to build that, we'd be -- we'd be interested in learning more.

MR. LEWIS: Well, I appreciate it. And one more comment on that I meant to say earlier also is, you know, when you have your -- the -- the benefits, you know, the project benefits --

COMMITTEE MEMBER MCKINNEY: Uh-huh.

MR. LEWIS: -- and then there's the -- what do we call them -- the market benefits. And what did you call these three things?

COMMITTEE MEMBER MCKINNEY: Expected benefits and market transformation.

MR. LEWIS: Yeah. Exactly. I mean, the project

benefits are reasonably measurable, though you have to project volume. And -- and there's an incentive to protect high volumes if you're trying to get a grant, first of all. But you know, we can project some volumes. But when you get into the market transformation benefits, I mean, those are very ethereal or whatever for -- I mean, if you don't buy into that go look at the Fuel Cell Partnership's projections from 2009, and we're supposed to have, what, 8,000, 10,000 vehicles this year. So you know, it's hard to put -- I think sometimes we just think these projections are as legitimate maybe as the real project projections, and realize that these are, like you said, the best possible scenario.

Anyway, so -- but I appreciate it. And I will send you some stuff.

COMMITTEE MEMBER MCKINNEY: Yeah. And just kind of one last observation. You know, for LCFS compliance, one of the issues that gets raised periodically is the blend wall, you know, the E10 blend wall. But another option for increasing your ethanol sales is to -- you have a bigger E85 retail fleet and getting more of the, you know, kind of locally produced ethanol with a lower carbon footprint, you know, kind of cycled through that retail network. And that was a thought that staff had several years ago, but that really hasn't come to play.

So again, whatever information you can bring to our

record and our docket, we'd really appreciate that.

MR. LEWIS: Okay. Were you going to say something?

COMMITTEE MEMBER SMITH: Actually, I did have a very sort of quick follow-up. On the things that you might provide to us, would it be something like station throughput data that you may have? Just in terms of, you know, any -- anything that gives us a sense for expectations of gallons dispensed per month or per year for -- for -- you know, obviously different stations will have different throughput amounts. So any -- any information in that regard would be good.

MR. LEWIS: Okay. Thank you.

COMMITTEE MEMBER GERSHEN: Real quick, this is Joe Gershen again with CBA.

I support a lot of what Mike had to say, of course. I do think, though, and I was going to -- I mentioned it very early on in comments that I was going to talk about infrastructure. And I think what we've seen, an we've talked about this in the past, that there are something like 75 terminals around the state. And right now there are three Kinder Morgan terminals that have put in biodiesel blending. Chevron has got a terminal down in Montebello. Like Tesoro and a couple others have some other terminals. But it's something like 10 or 15 percent of the terminals in the state, and maybe not quite that much.

So in order to, you know, fully implement in a more

robust way, I think for biodiesel certainly, I think, you know, looking towards reinstating infrastructure on the basis of getting some of these -- these blending terminals funded, because obviously, I mean, Kinder Morgan is a good example, they've -- they've sunk I think about $5 million, I think per terminal for three terminals. They're looking, I think at doing one in San Diego next. But you know, the market does sort of indicate where they're going to -- where they're going to decide to put funding. And obviously with low fuel prices now it's more difficult to justify. Some signals from the state towards those sort of things would make a lot of sense. So it's -- so converting some more of these storage and blending infrastructure terminals around the state, I think our industry would be really supportive of that as well. Thanks.

COMMITTEE MEMBER MCKINNEY: Okay. One last call for comments before we turn to Commissioner Scott for closing remarks and next steps.

COMMITTEE MEMBER SMITH: Oh, yeah.

MR. BUNNELL: It was still part of that last one.

COMMITTEE MEMBER SMITH: Oh, yeah. So we -- we have sort of the -- the third part of --

MR. BUNNELL: My trilogy.

COMMITTEE MEMBER SMITH: -- comment from Bill Bunnell. And then after that we also have a comment from

Michael -- Michael Coates again.

MR. BUNNELL: Well, it’s more of a question to you guys. But in -- what you said earlier, and actually what you said earlier in terms of natural gas, and you were just talking about ethanol, you guys are looking at what’s the feedstock that creates it and what’s the global footprint of hauling it over here for Iowa, let’s say, with -- with ethanol of the amount of methane mixture of -- biomethane mixture and the natural gas.

And I just saw a report by the United States Energy Department on comparing electricity in vehicles and how it actually increased the global footprint depending on what feedstocks were used to make it. And in the United States the bulk of it was coal.

And so I wonder if you guys are even assessing this or giving it a value when you’re evaluating what makes sense to do and what not to do? Because although we might be shifting that pollution to a different area we might actually be increasing it.

And if the goal is to decrease it, the report I saw I think it said hydroelectric was the only one that actually decreased the amount of carbon footprint. And then biodiesel and ethanol were rated highly. Natural gas was rated highly. But even I think solar and wind were increased at something like 60 to 70 percent. Is that evaluated, the feedstock going

into what's creating this -- this electricity for these vehicles?

COMMITTEE MEMBER MCKINNEY: Charles, why don't you start.

COMMITTEE MEMBER SMITH: Okay. So -- so, yes. Short answer, yes. So we rely on a sort of life cycle greenhouse gas emission analysis that the Air Resources Board develops as part of their low carbon fuel standard. And so they -- they look at, you know, all -- all reasonable upstream emissions resulting from a vehicle, whether that's the electricity generating power plants in California or around the state -- or around the U.S. where California gets its electricity from to come up with the greenhouse gas carbon intensity for electric vehicles. And then it does a similar thing to track the upstream emissions for natural gas, for ethanol, for gasoline and diesel as well.

And so they come up with the low carbon fuel standard carbon intensity numbers, and it's really useful information. You can find it on their website. But it has just a long list of pathway descriptions and then what the relative carbon intensity is for each of those. And so that -- and so that is something that we're -- we take very seriously. Those numbers, of course, always get updated as the fuel pathways change, as new analysis gets done. So it's -- it's never a dead issue by any means.

MR. BUNNELL: So is this report shedding new light on that? Because what they were saying in this report, and I know we use more natural gas on the West Coast than they do nationwide, but it was 270 percent increase in greenhouse gas emissions using electric vehicle based on the average mix in the United States.

COMMITTEE MEMBER SMITH: Yeah. I'm not familiar with that specific report.

MR. BUNNELL: I think it was University of Minnesota or University of Michigan, and it was commissioned by the United States Energy Department.

COMMITTEE MEMBER MCKINNEY: Okay. All right.

MR. BUNNELL: Just -- it was -- I think it came out like three or four weeks ago.

COMMITTEE MEMBER MCKINNEY: Yeah. Yeah. I was going to say, I would just urge some caution on average numbers versus, you know, marginal numbers.

MR. BUNNELL: Well, they did break it down by feedstock, actually.

COMMITTEE MEMBER MCKINNEY: Okay. And I was thinking more of kind of the geographic margin here, so in California. So if you assume kind of 80 percent of our electricity supply is clean natural gas and you combine cycle turbines, the other 20 percent is renewables, 100 percent renewables. So that's kind of the -- the benchmark that we

use.

So the -- the great tool that Charles was referring to, there's -- there's a national version and there's a California-specific version. And that's why you have say companies like Joe is involved with in biodiesel, our ethanol companies all have a lower carbon footprint than their national counterparts. And it's especially true for electric vehicles. Our resource mix is one of the cleanest in the country. I think it would just be a few states with a very large hydroelectric quotient in their resource mix. But they are -- they tend to have a lot of coal, too, so in Washington, Oregon, and some of the New England states.

So I would just say, you know, kind of read it carefully and see what they say specifically about California --

MR. BUNNELL: Yeah. I didn't know --

COMMITTEE MEMBER MCKINNEY: -- versus the rest of the country.

MR. BUNNELL: -- and that's why I posed the question. You guys -- I'm just a guy that runs a gas station, and you study this all day every day. So thank you very much.

COMMITTEE MEMBER MCKINNEY: Thank you.

PRESIDING MEMBER SCOTT: Any more blue cards?

COMMITTEE MEMBER SMITH: Yeah. We had a blue card from Michael Coates.

MR. COATES: Thank you. Just real quick. Again, it's Michael Coates with Mightycomm, not representing a specific plant at this point but more kind of a portfolio of folks that we work with in industry.

I wanted to underscore, and I know you're -- you're going to be applying it more, but underscore Governor Brown's 50 percent petroleum reduction by 2030. I think it changes the playing field in a sense. In terms of looking at your investments you need to strategically look at near-term, midterm, and long-term investments, and particularly put a little more focus on some of the near-term ones that can drive this 50 percent reduction. And I would just mention, of course, this has been codified by Senator de Leon's bill that he just introduced, SB 350.

But I think you can -- you can focus on a lot of currently available and currently deployable technology. The DOE's Super Truck Program, for instance, with -- in the heavy-duty field showed a 50 percent fuel economy improvement while still using the conventional diesel engine. So without even doing other fairly minor modifications to the efficiency of the engine they were able to get those kind of reductions.

I applaud you look at ITS, along with some of the vehicle technology, because I think that will help capture some of those kind of improvements. I would also say that I think a near-term focus does bring the discussion back to some

of the things Joe was talking about in terms of biofuels. Those are currently deployable technologies that can be put into place to immediately reduce petroleum. As Mike was saying about E85, biodiesel, renewable diesel, that's something that can help move us toward that 50 percent reduction very quickly.

So thank you very much.

COMMITTEE MEMBER MCKINNEY: Great. Thank you for that.

Any more comments? Are there any more blue cards?

I did want to add something to the record from Leslie Baroody who is our EV Team Leader, going back to the comments from Dr. Green. So our next solicitation workshop for infrastructure funding actually will focus on DC fast chargers in a corridor setting. So that's kind of -- stay tuned for that.

So, Commissioner, that's all I had, Charles.

MR. KNIGHT: Jim, this is Ralph Knight at Napa Valley Unified. Do you hear me?

COMMITTEE MEMBER MCKINNEY: Loud and clear, Ralph.

MR. KNIGHT: I'm sorry. I've had nothing but problems all day long with the internet here, so we've had issues. I just wanted to say you guys have done a great job putting this together.

Just for information as far as electric charger

infrastructure, Napa Valley Unified now have five -- six sites now in operation as far as solar systems are concerned. So we are putting two charge station at each one of those school sites that will be open 24 hours a day, and the charging will be free for -- for the public to be able to use those. So just a thing that we want to throw out there to kind of help the charging issues and all of that.

And I guess the other concern that I'm hearing from some districts within the Bay Area is that we've got some districts that are wanting to be involved in alternative fuels that have never come to the platter before. But the disadvantaged area thing is really kind of hitting a lot of our people, me being one of them, but a lot of our people in the Bay Area, kind of hitting them pretty hard where they can't get involved with things like that because they may fall in an area that doesn't qualify for that.

COMMITTEE MEMBER MCKINNEY: Okay. Thanks. Thanks for that information, Ralph. Yeah. And I -- and I think you know our -- our ARFVTP funding on under AB 8 is -- is less constrained by some of those factors in the Greenhouse Gas Reduction Fund fundings that Erik Knight [sic] and others have talked about that ARB is administering.

MR. KNIGHT: Right. And I guess if I could share some email or phone numbers with Tyson, that would be great if I could.

PRESIDING MEMBER SCOTT: Sure. Ralph, we'll make sure you get Tyson's information.

Is he still there?

MR. KNIGHT: Thank you.

PRESIDING MEMBER SCOTT: You're welcome.

Any others on the phone? Any public comment on the phone?

MR. ORENBERG: I think Ralph was the last one, yes.

PRESIDING MEMBER SCOTT: Okay.

COMMITTEE MEMBER SMITH: So this is Charles. I just want to remind people that we're asking for any additional comments by February 19th, a week from today. And if you could send those in to the docket email address on -- on the screen here, subject 14-ALT-01, and cc: me, that way we get it that much quicker and we can look forward to incorporating those into the Lead Commissioner Report.

PRESIDING MEMBER SCOTT: Terrific. Thank you so much, Charles.

I just wanted to say in closing, really, thank you very much to our staff for the great job that they did in putting together the presentations and the work that they've done to build our Investment Plan. I wanted to thank our Advisory Committee for all of the terrific feedback that you continue to give us in your engaged participation here at these meeting. And also all of our stakeholders. We really

appreciate the -- the information, you engagement, your participation in this program as well, so thank you for that. Thank you for spending your day here with us.

And I want to also thank our -- our friends at the San Joaquin Valley Air Pollution Control District, and Todd DeYoung for his great presentation. Thank you so much for hosting us here. We're just delighted to do this in Fresno. And you made it really easy for us by volunteering your room, having terrific WebEx capability. And so we -- we appreciate that very much.

I have been diligently taking notes on my iPad as we went through the day. I won't go back and summarize all of the -- the highlights. But we do have them and we take that into account as we're putting together the next version. And if you have anything you didn't get to say, please do submit it to us in writing, as Charles has asked for, by February 19th.

So thank you so much to everyone. I think we're adjourned.

(The Meeting of the California Energy Commission adjourned at 3:18 p.m.)

CERTIFICATE OF REPORTER

I, JACQUELINE DENLIGNER, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission Meeting and Public Workshop Regarding Alternative and Renewable Vehicle Technology Program; that it was thereafter transcribed.

I further certify that I am not of counsel or attorney for any of the parties to said conference, or in any way interested in the outcome of said conference.

IN WITNESS WHEREOF, I have hereunto set my hand this 12th day of February, 2015.

/s/ Jacqueline Denlinger___
JACQUELINE DENLINGER

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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.

/s/ Martha L. Nelson
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February 28, 2015