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BEFORE THE
CALIFORNIA ENERGY COMMISSION

In the matter of, ) Docket No. 20-IEPR-02
2020 Integrated Energy Policy ) REMOTE ACCESS WORKSHOP
Report Update(2020 IEPR Update) )

IEPR COMMISSIONER WORKSHOP ON TRANSPORTATION
TRENDS AND LIGHT-DUTY ZERO-EMISSION VEHICLE
MARKET UPDATE
SESSION 2 - ZEV AFFORDABILITY AND
EQUITABLE ACCESS, AND MARKET PERSPECTIVES
ON THE ZEV 2030 GOAL

REMOTE ACCESS WORKSHOP

THURSDAY, JUNE 11, 2020
2:00 P.M.

Reported By:
Jacqueline Denlinger
APPEARANCES

Commissioners Present
Patricia Monahan, 2020 IEPR Update Lead Commissioner
David Hochschild, Chair
Karen Douglas, Commissioner

Staff Present
Heather Raitt, IEPR Program Manager
Dorothy Murimi, Public Advisor’s Office

Panel One
Pilar Manriquez, Moderator, California Energy Commission
Jose Torres, Energy Equity Program Manager, California Environmental Justice Alliance
Rey Leon, Latino Equity and Policy Institute
Judy Kruger, Senior Director of Strategic Initiatives, Los Angeles Economic Development Corporation

Panel Two
Tim Olson, Moderator, California Energy Commission
Ajay Chawan, Mobility Solutions Team, Guidehouse
Chris Nevers, Director of Environmental Engineering and Policy, Rivian Automotive
Rohan Patel, Senior Global Director for Policy and Business Development, Tesla
Stephen Ellis, Manager of Fuel Cell Vehicles, Honda
Public Comment

William Zobel, Executive Director, California Hydrogen Business Council

Joe Gagliano, Business Development Manager, United Hydrogen

Raoul Renaud, formerly with the California Energy Commission

David Park, California Fuel Cell Partnership

Jennifer Hamilton, Fuel Cell Electric Vehicle Driver
# INDEX

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Introduction</td>
<td>5</td>
</tr>
<tr>
<td>Opening Remarks</td>
<td>7</td>
</tr>
<tr>
<td>Panel One</td>
<td>9</td>
</tr>
<tr>
<td>Panel Two</td>
<td>62</td>
</tr>
<tr>
<td>Public Comments</td>
<td>108</td>
</tr>
<tr>
<td>Adjournment</td>
<td>120</td>
</tr>
<tr>
<td>Reporter’s Certificate</td>
<td>121</td>
</tr>
<tr>
<td>Transcriber’s Certificate</td>
<td>122</td>
</tr>
</tbody>
</table>
JUNE 11, 2020


I’ll quickly go over some housekeeping items before we begin. Let’s see, today’s workshop is being held remotely consistent with Executive Orders N-2520 and N-2920, and the recommendations from the California Department of Public Health to encourage physical distancing to slow the spread of COVID-19.

Please be aware that this meeting is being recorded. We will post a recording and written transcript on our website. Also, today’s presentations have been posted on our website.

We’ve broken this workshop into three sessions and over today and tomorrow. This is our second session. We will cover ZEV Affordability and Equitable Access and Market Perspectives on ZEV 2030 Goal.

Tomorrow is the third and last session, in which we will discuss Vehicle Miles Traveled and it starts at 10:00 a.m.

This afternoon, if you’re — and secondly, we’re
going to be using the Q&A function in Zoom, with the capability to vote questions posed by others. And if you’re on this morning, it’s the same thing we did this morning. So, attendees may type questions for panelists by clicking on the Q&A icon at the bottom of your screen. And then, so when you click on the Q&A you can type in a question. Or, if you see a question that you’re interested in or if it’s similar to the one you were going to ask, you can just go ahead and click a thumbs up on that one, and that votes on it, and that will -- Zoom will then tally up the votes and elevate that question. So, it will rise -- the questions with the most votes get risen to the top of the list. So, again, you can just type in a question or you can click a thumbs up if you see one that looks similar to what you wanted to ask.

And we’ll go ahead and we’ll do our best to respond to the questions, but we’re unlikely to be able to elevate all of them due to time restrictions.

This afternoon we will also be using polling to get feedback from you. And our aim is to get input as we explore how we can best conduct online workshops.

So, finally, I’ll go over how to provide comments on the material in today’s workshop. There will be an opportunity for public comments at the end of
the workshop. In Zoom you can click the raise hand icon on the bottom of the screen to raise your hand and let us know that you’d like to make a comment. If you change your mind, you can also click on it again and your hand will go down.

For those on the phone, who aren’t using Zoom, you can press star 9 and that will raise your hand to let us know that you want to comment.

Alternatively, written comments after the workshop are welcome and are due at the close of business on July 3rd. And again, the meeting notice provides all the details for how to submit comments.

So, thanks in advance for your patience as we try new things. And we’re learning as we go and figuring out how to best work in this remote environment.

So, with that I will turn it over to Commissioner Monahan for opening remarks.

COMMISSIONER MONAHAN: Yes, good afternoon everybody. And I’m excited to be hosting this webinar and having a remote IEPR workshop.

This is an area that I really care deeply about. As we move towards more near-zero and zero-emission vehicles, we need to do it in a way that benefits all communities. And so, I mean equity is really at the
heart of a lot of what we’re trying to do as we want to make sure that we are creating a transportation system that works for everybody, and especially for disadvantaged communities, and for folks struggling, you know, just to make it to work, to make it to school to make sure their needs are met. So, this discussion is one that I’m particularly looking forward to.

I know Commissioner Douglas is also on the line. I’m not sure yet about the Chair or Commissioner McAllister. But Commissioner Douglas, can I turn it over to you for a few remarks as well?

COMMISSIONER DOUGLAS: Yes, and good afternoon everybody. I just wanted to join Commissioner Monahan in saying that I’ve been looking forward to this panel and I look forward to the discussion. Thank you.

COMMISSIONER MONAHAN: So, just before I turn it over to Pilar Manriquez, who’s going to be discussing this panel, Pilar actually comes from my office, she’s an Executive Fellow. So, I’m really excited that she’s going to lead the folks in this panel.

And I want to encourage folks who are -- as Heather said, we’re trying to use different functions in Zoom to encourage participation by the participants. And one of the, you know, opportunities here is that you can actually have more of a voice through this remote
platform than through our traditional method. Right, you get this -- instead of sitting in a room where you see the back of people’s heads speaking you get to see their faces. And instead of waiting until the very end to make your remarks, you can ask a question in the middle. And we’re going to try and poll the different things.

So, please forgive us if some of it is kind of corny or if we do it wrong and know that we have the best of intentions, and know that you do, too. So, I would just encourage you all to participate.

And with that, I think I’ll turn it over to Pilar and the panel to kick it off. Unless we -- I should make sure there’s no more Commissioners on the line, right?

MS. RAITT: I don’t see any. This is Heather.

COMMISSIONER MONAHAN: Okay.

MS. RAITT: Yeah.

COMMISSIONER MONAHAN: All right, so let’s turn it over to Pilar.

MS. MANRIQUEZ: Hi, good morning -- good afternoon everyone. I hope there’s some of you all who joined us from this morning’s IEPR workshop. If not, welcome to today’s workshop. It’s called the ZEV Affordability and Equitable Access. It’s one of the
three workshops where we’re talking about transportation
trends and LD ZEV market status.

So, our panelists for today include Jose Torres
from the California Environmental Justice Alliance. We
have Rey Leon from the Latino Equity and Policy
Institute. As well as Judy Kruger from the Los Angeles
Economic Development Corporation.

I’m excited to have our panelists today and we
hope that they can contribute Northern California,
Central Valley, and Southern California regional
perspectives on how to collectively achieve the 2030 ZEV
goal, while prioritizing and working towards equity.

So, most of you are familiar with our state 2030
goal. It’s to ensure that we have 5 million ZEVs on the
road by 2030.

So, before we begin our presentations, I wanted
to kindly ask the dais to please hold any questions they
have for the panelists until after the presentation.

Thank you.

For our first presentation we have Jose Torres
who is joining us from the California Environmental
Justice Alliance where he serves as an Energy Equity
Program Manager. He works to ensure California’s energy
policies are focusing on building a more equitable
economy for working families and communities of color.
Jose, go ahead, take it away.

MR. TORRES: Hello everyone. Good afternoon,

I’m Jose Torres, CEJA’s Energy Equity Program Manager.

I’m here to talk to you about ZEV affordability and equitable access.

So, just really quickly I’ll tell you a little bit about CEJA, in case you haven’t heard of us. So, I lead the energy equity work, but we have a climate justice team, a green zones team, and programs, and then we have a legislative, civic engagement and comms program as well.

So, we have the unique ability to approach the transportation question from all angles. And I’ll talk about that in a second. But, yeah, our climate team is primarily -- they’re the lead over at the ARB, and the energy team leads the transportation work over here at the Energy Commission.

So, at that note, we’re a community-led alliance that works to achieve environmental justice. We have ten members and partners with varying needs statewide. So, we have members in Northern California, Southern California, the Inland Valley, and the Central Valley. And that gives us a unique perspective, as well as unique challenges.

That’s why we definitely, first and foremost,
want to just provide folks that, you know, we’re going
to do our best to try to address the affordability and
equitable access questions. But we always think that
the commitment to the community-led process is important
and we appreciate the emphasis on regional and local
solutions.

So, yeah, our members and partners across the
state have suffered with a variety of harms related to
pollution with (indiscernible) -- arising from both
direct emissions and climate change. And this
represents itself in different forms, right, on some
rural, suburban and urban perspectives.

For example, in terms of transportation, right,
some regions will benefit more from shared vehicles than
EV vehicle deployment, while others will definitely
benefit much more from electrifying public
infrastructure. We definitely believe that electrifying
public infrastructure is good for everyone. But we also
understand that some communities have many challenges
specifically in the Central Valley and --I will defer to
rate as dive deeper into that. But from our members out
there we understand that, you know, there’s a lack of
just even a transportation infrastructure in general.

I myself come from the Inland Valley and my
mother’s nearest bus stop is about an hour away. So, in
terms of how do you evolve the entire transportation
infrastructure, right, that presents some challenges.
And it’s why I think some of our members have definitely
focused on how you make vehicles, ZEV vehicles
accessible?

A little bit more details about the communities
we represent. Our communities are located next to
fossil fuel industry, right, and transportation
corridors by transportation pollution. It’s a big
contribution to our communities. This also results in
like unique employment needs and challenges to different
standards.

For example, displacement is a huge issue in
addition to affordability. So, upgrading let’s say a
multi-family building or a home with EV or, you know, I
also work on energy efficiency, can present some
challenges because that could mean rent increases and so
on. So, it has to be done carefully, right.

I think in terms of, you know, our suburban and
rural folks, right, we’re kind of talking about extreme
weather, right, in terms of really hot days or colder
days. And I already talked about the limited
transportation options, right, but just want to repeat
that again for you all.

So, yeah, that’s a little bit about who we
represent and, yeah, definitely could jump onto the next slide.

Thank you. Thanks for that. So, the first think we ask you is prioritizing clean and equitable energy investment in EJ communities. So, I’ll talk a little bit more about the communities and then kind of jump into why it’s important to prioritize investments in EJ communities.

So, you know, when I mentioned, you know, (indiscernible) -- I’ll explain a little more as to what it means, right, to be a distressed community or an EJ community, right. There’s poverty, high unemployment, air and water pollution and presence of hazardous waste as well -- incidences of asthma and heart disease, mostly consistent of our local residents, and immigrants, in addition to communities who have experienced the disproportionate burden of environment pollution and related health problems, right.

Which, you know, we think then it makes this question ultimately an ethical issue, right. Communities that have been disproportionally impacted by the supply side of the transportation system, which would be the fossil fuel industry, we think they deserve the benefits of these green and EV vehicles first.

So, and I mentioned the supply side because we
think that the solution should be holistic, right, it shouldn’t be siloed. So, although we appreciate the focus on ZEV passenger vehicles, our members definitely focus on medium and heavy duty transportation, as well as public transportation infrastructure, and how to change and phase out fossil fuels on the supply side.

And that’s because, right, the transportation is one of the largest sources of air pollutants that cause climate change and harm people’s health, right. As we probably already know, nearly half of all greenhouse gas emissions come from transportation and about 80 percent of forming pollution, and 95 percent of Prop 50 particulate matter come from the production, refining and use of petroleum in California. So, we think it’s important to see that. See both sides of the equation and why we always emphasize investing in EJ communities first because of that history and that current system.

Yeah, so I guess that’s through investments and affordability. As we’ve identified, we think it’s an ethical issue. And we definitely recognize some of the progress that has been made in terms of programs and successful pilot projects.

But just through (indiscernible) -- different car sharing programs, vanpooling programs (indiscernible) --
But our members, when I checked in with them about this, definitely want to emphasize that they think in order to achieve equity and environmental justice you should see more than just a program, right. It needs to be implemented on the side. But more so as a necessary ingredient for successful transportation.

Many of them see the role of government to people who don’t have access, you know, to these things as obstacles.

Yeah, and some even mentioned is if we’re serious about EV adoption in the EJ communities you would give them for free. I guess that, you know, resources are limited and that some of these things maybe sound, you know, difficult to achieve, but I do want to share those perspectives because to me it just illustrates kind of what our members are feeling, and what our members think are some solutions, right. And I think what that represents to me is that at the forefront, right at the core, you know, focusing as equity as a leading issue and not as a side issue, right.

And just really quickly, right, how does that benefit the communities? You know, obviously we’re removing a gross polluter off the road. It benefits local pollution very much, right. It decreases
pollution in the transportation corridors. We also see, you know, the potential job opportunities that could come from this industry, right, and I’m sure other folks here on the panel will talk about. So, yeah, we definitely see a lot of benefits both from decreasing pollution and promoting job growth, and also giving folks just the opportunity, as it was mentioned, to get somewhere.

And, yeah, so from that we can move on to prioritizing EJ communities to help out California.

The next slide, please. Yeah, so as I mentioned, right, there’s a lot of challenges and we think, you know, that designing a solution for affluent folks will not work. But we think that if you design it for EJ communities they will more places, right. If you focus on how EJ communities can adopt them, we think that it will benefit all Californians. And to be more specific, right, we don’t think the trickle down technology approach works as well, even for all Californians, right.

We think that, you know, affordability and access are linked. And I guess to be specific is our members make decisions, right, about vehicles based on affordability and they really affect it, right, the rationale about these decisions, right. So, in order to
ensure that they have access to these vehicles they need
to be affordable. But what does that mean, right? What
does that mean and how does that translate to the rest
of California? They’re evaluating not only how much it
costs, but all the obstacles that you foresee when you
purchase something, right. So, then you would have to
make charging stations more available. You would have
to approach this I think more like a cell phone than a
solar panel in terms of how you implement the technology
and kind of get through to help folks implement and
adopt these vehicles.

And I could talk more about that later, but I
just -- the quick point of that is that if we implement
these programs or this approach in EJ communities where
we focus on whether we need to facilitate level 2
charges, make them cheaper, or have dealerships kind of,
you know, offer them right off the bat, or whatever
solution would promote that is community centered.
Because after we address the issue of EJ communities and
how that vehicle can be proliferated in those
communities, we think it will be easier to apply it in
the rest of California. Thank you.

MS. MANRIQUEZ: Thank you, Jose.

Again, I wanted to mention that we’re holding
off all questions until the end of everyone’s
But I want to introduce you all to our next panelist, which is Rey Leon, who was born and raised in Fresno County. He is the Founder and Executive Director of the Latino Equity and Policy Institute, formally known as Valley Leap, which is an environmental and social justice organization serving communities throughout the San Joaquin Valley.

Welcome Rey.

MR. LEON: Buenos tardes. Good afternoon. And that’s me in the background right now. But, well, it’s a pleasure for me to be here with all of you. Thank you, Commissioner Monahan and greetings to Commissioner Douglas.

I’m caught up today. Some things came up, I had to make a trip to Fresno and I find myself in the Mexican Consulate. But I’m here very much present. And I guess I was born in Fresno, raised in the Huron area. My father arrived in ’51, in Huron, as an undocumented farmworker, laborer, and became a bracero farmworker in ’57. So, I’ve been here for quite a while.

And the mission of LEAP, as a result of me going up, surrounded in my farmworker community by my farm working relatives, our focus is with farmworkers. We work with communities throughout the region to achieve
economic, environmental and climate justice.

And so, we know that all of them have something to do with each other, right. And I think electric vehicles is definitely one of those items that has an impact in all of those cases and particularly as we’re working out our program, the Green Raiteros Program, it’s definitely -- it’s all those elements.

But next slide. I’m glad I have slides. And so, I mean I’ve been organizing for the past 25 years here in the valley. I started organizing when I went home one summer, after being at Cal the whole year, and went to the clinic and asked if they had anything for me to do. And the then director of the clinic was also the mayor of the city. And he said, you know what I think I do. So, he got on the phone and called the CEO of the clinic network, who was the mayor part here at the time, and told the mayor I got a chicanito here, like from Berkeley that wants to help us out. All right.

So, they got me involved. They got me involved on doing some history, actual research with farmworker families on the services of the clinic. And so, that was the whole process of entering a hundred farmworker families. And what’s impressive is that it was an impacting of tasks that I had. Because when I reported back, the clinic actually added hours on the weekend,
and did a bunch of other things to accommodate the farmworker families.

So, then, they provided me the opportunity to keep on working with them as a volunteer. And I started out there.

And I mention it because from the very beginning of my organizing it’s been about the public health of farmworker families, you know, and it continues to be that. We’re in a different era today but, you know, environmental justice has always been that. And that’s why I think I’ve really found my space in environmental justice.

And environmental justice is a concept that entails not just the environment, but justice for the people. If you are doing environmental work, but you’re not empowering the next generation of leaders, or the leaders on the ground when you are fighting around an issue to try to enhance your environment, then you’ll not conducting environmental justice. You’ve got to be developing the leaders in the space so that when you organize yourselves out of there the people have the power, and the struggle continues to enhance, improve the quality of lives of the working families.

And so, I see, and I mention this again because I liken electric vehicles in the same fashion, and I’ll
be able to talk a little more about that as I go on.

But, you know, I’ve had the experience in these numerous years to be able to work with not just my colleague nonprofits in developing coalitions that have had a huge impact not just within the region, but at a statewide level, policy-wise, systems change-wise. And then working with state organizations and federal organizations, with some of the other projects that we’ve got going on for environmental justice. And just all of it going back to improving, working for improving the quality of life for farmworkers, while simultaneously building the leadership of farmworker folks. And some of which have run and won seats on city councils in a few different towns, and been on a few different elected boards.

But if you’re not building leadership of the people you’re working with in the process of doing the work, you’re not doing environmental justice.

So, the next slide. So, you know, one of the programs that we’re -- we have going on the ground that is relevant I think to electric vehicles for sure is we got a grant for AB 617. And we’ve put down about five or six air quality monitors on the west side of Fresno County and Kings County thus far. We have another about 15 to go. But, you know, getting that data is really
I remember when I first started this air quality work in 2003, under the Latino issues Forum I was a -- you know, I was just really taken back, I guess I could say, when I seen the map of where all the pollution was. You know, you see all the pollution. On the map it’s showing that it’s all in the 99, and the east side of the valley area and then on the west side it looks all clean, you know.

And then, later on I got a hold of a map that showed where all the air quality monitors were at. Well, all the air quality monitors were on the east side of the valley, you know, along the 99 or on the most part east of the 99. And so, it basically, run it and said, of course they think it’s clean on this side because there’s no air quality monitors, right.

And so, in 2006 we were successful with then Assembly Member Arambula to put down the first air quality monitor on the west side, which is still there today. And it monitors PM2.5. And PM2.5 is one of the really bad affluent criterions that is attributed to over 2,000 premature deaths per year in the valley alone.

You know, I think while we are working towards replacing gas and diesel vehicles with electrical
vehicles for not just cars, but light duty and heavy
duty, we’ll start seeing a difference in that. And I
think having monitors throughout the west side to see
the progress is something critical.

And much more critical is having the community,
the residents that are on our steering committee that
have just been with us in the placing of these monitors,
and so they’re learning the science as we go. I guess
you could call it citizen science, you know, in
understanding the technology, and the pollutants, and
its impact, and also the solutions that it regards.

So, the project we’ve got going on, well, it’s
part of AB 617, Guerreros por Aire Limpio, Clean Air
Warriors. Well, that’s a group of folks that have been
working with us and we’re building leadership on the
west side of Fresno County and Kings County, and
unfolding all that work.

One of our bigger programs is our Raiteros
Program. I’ve mentioned it to a number of -- some of
you already. But Raiteros, and some of you may already
know just because you know, Raiteros come from the word
Raite. Raite is a Spanglish term for ride. So, if I
give you a raite, I’m giving you a ride. If I’m a
Raitero it means I’m giving you a ride or maybe I’m the
(indiscernible) that’s giving you a ride.
Right. So, a long time ago in 2014, well, not so long, but I went with a colleague to do a study. At the time we had the Action Research Resource Center going on, so some of my interns and myself worked with a colleague on a farmworker fuel study, which was something that was provided to then Senator -- I can’t remember her name right now. But she did some policy development.

So, then when we were getting all of this information we learned that about 50 to 60 percent of the farmworkers were commuting such a distance that it was costing them probably about 40 to 50 percent of their monthly wages to be able to commute.

You know, back in the day a tomato combine machine, sorter would employ about 12 individuals. Today it’s more like two or three, if you include the machine driver. So, a while group of farmworkers were an operation to harvest Roma tomatoes, which is usually used for paste, and goes on pizzas, and sauces and so forth, it used to be about 15, now it’s about four. And those four individuals are usually coming from a different community, so they’re not really carpooling.

And the cost was really extreme and just showing how the inequity existed to further undermine the economic advancement of these families and ultimately of
the communities, and at the end the region, you know, which is an impact to all of us. And it really undermines the quality of life that our families in these parts face.

So, that got me thinking and got to me remember also just the struggle when I was a child, and one of my cousins was basically on his deathbed at Fresno, at the hospital, having been in a car crash, and the doctor having realized that he also had Valley fever, so he was in really bad shape. And the day that it was pretty much the last day everybody was going to the hospital and so, there weren’t any Raiteros near us. And we were forced to just take what was available, which is the county, the rural transit, which at the time and pretty much until today is a commute of about three hours from my community of Huron to Fresno. Whereas, if you go in a vehicle it’s more like 45 minutes, 50 minutes, no more than an hour.

So, you know, that’s one of the problems that farmworker families have to deal with and it makes it really challenging.

So, I said you know what, I’m going to talk Raiteros that exist, still, and most of them being part of our committee in Huron. Of course, when you’re an organizer and you’re organizing the community you don’t
just go in and you organize right. You go and you talk
to the people that have been working. And, of course,
having the luxury of being from Huron, you know, I knew
a lot of folks. But as an organizer, you know, you want
to develop a comité’ of the people from the community
because really what they become is your board for that
area, you know your advisors. And you start where
they’re at. You know, you do the work that they need.
You don’t impose, you know.

And so, I talked to a lot of the Raiteros who
were part of this comité’. And I said, hey, what do you
guys think about, you know, having the -- continuing the
work that you guys do for using electric vehicles? And
everybody just was excited about it. And they said,
yeah, let’s do it, Rey. Do what you got to do, let’s
make it happen.

So, fast forward, you know, we have this Green
Raiteros Program where we have electric vehicles, we
have a headquarters with ten electric vehicle chargers
level two, and dispatch, a small staff. And we’ve been
able to give hundreds of families rides to they’re
doctors’ appointments, nonemergency medical
appointments. And Fresno has, Bakersfield, Madera, to
Valley Children’s Hospital. A lot of children have
asthma and so they require this specialized attention.
And most of the people that get the trips are to
specialized doctors, or it’s dialysis, or what’s that
called, the cancer doctors.

But so it’s a -- we have a few hundred clients
that make use of these Raiteros. And so, we’re
continuing to work that out.

The next slide. So, let me conclude for now.
And so, of course there’s also a lot of folks have
needs, social service needs, and so we are able to try
to work that in. On the most part we got to do -- we’ve
got to fundraise to have the resources to provide those
rides. We have two type of programs. One is with the
Green Raiteros where we use the vehicles and we have a
contract with these volunteers that we reimburse them.

But that’s, you know, from having done a lot of
the policy work in numerous years, I’ve even developed
some of the coalitions like Central Valley Equality
Coalition, and others, and trying to set up -- set the
stage for other work.

You know, one of the important things is also
not just us fighting for --

MS. MANRIQUEZ: Hey Rey, sorry to interrupt.

Sorry to interrupt.

MR. LEON: So, I think that we should be able to
be the ones to develop the programs we need. Thank you.
MS. MANRIQUEZ: Thank you, Rey. Thank you, I appreciate that.

Again, we’re going to hold off for any questions.

We have one more panelist and I’d like to introduce her now. Last but not least we have Judy Kruger. Welcome Judy. She is from the Los Angeles Economic Development Corporation where she’s dedicated to advancing opportunity and prosperity for all by engaging the LA Region in building on their global competitive advantage and opportunity to create a strong workforce. Take it away Judy.

MS. KRUGER: Good afternoon. I’m looking to see if I’m good to go. Can you hear me okay? Okay.

MS. MANRIQUEZ: We can hear you.

MS. KRUGER: Okay, great. Thank you. I want to go over a couple of slides here. And what we did a few years ago is we pulled together a number of electric vehicle companies in California, and in Southern California, and also some of our strong partners like California Edison, AQMD, LA Metro, and said what do we need to research? What do we need to look at? And what do we need to do with what looks like we’ve got a fantastic electric vehicle ecosystem here in California, what do we -- what do we need to do?
Well, they commissioned, along with our Economist Commission Report called “Electrifying the Ecosystem in California” and specifically Southern California.

The next slide, please. So, what happened with this report? It’s a 50-page report. It’s online and on our website. What we found is that we have a tremendous ecosystem in California, as many of you know, but it’s striking when you see the actual mapping of where the headquarters are, and the design and tech studios, and who’s doing manufacturing and R&D.

So, you know, you may have -- you’ve of course heard of Tesla, but have you heard of Fisker, Inc., or Karma Automotive, or the new car company Canoo? These companies are actually employing lots of good-paying jobs in California. In fact Canoo, headquartered in Torrance, has employed about three to four hundred people now, and about 50 people in the Bay Area, so both Southern California and Northern California.

Fisker, Inc. is an interesting new electric car company also in the Southern California/Bay Area. And they’re going to come out with their first vehicle in about year or so, made with recycled materials but at a price point of about $40,000 per vehicle. So, lots of interesting things going on with this ecosystem. And
this is a great visual to see what actually is happening.

The next slide. And so, we also charted the bus, truck and tram companies that are in California. And this is another slide and just tracking who’s doing what, where was quite a challenge. Because we have our bus and truck companies, also many of whom are looking at California as a fantastic market opportunity and they’re popping up either with a sales office, or a tech center, or a distribution center.

So, actually, our report on the electric vehicle ecosystem has about 50 pages and we have multiple slides that show the asset mapping on multiple layers. But what I want to say though is -- I say this every time I go to Sacramento and every time I meet with leaders in Southern California as well, it’s like this is something that’s truly unique to California.

And as you know, historically California set environmental goals that drove companies to resolve those goals that they drove market share. So, it’s a win/win on so many different levels because these are good paying jobs. This is great for the economy. It is an ecosystem that’s very innovative.

And I was telling Pilar, as we were getting ready for this call, I moved from Michigan three years
ago. And Michigan thinks it’s got all that going on in electric vehicles and they do have a tremendous amount of automotive companies. But nobody in the U.S. has an ecosystem like we have here in California.

And the question is as economic developers is how do we nurture this ecosystem? How do we protect it? Especially in this new what could be a significant recession? How do we protect this ecosystem and grow it not only to meet our environmental goals, but to meet our new and higher level-concerned equity goals and inclusion goals?

The next slide. So, our report broke down some of the workforce under certain categories for Southern California, as well as California as a whole. The ecosystem by industry includes utilities, construction, manufacturing, retail, and you can read the rest of the industry profiles.

But as you can see, in Southern California the EV ecosystem prior to COVID-19 was 119,200, in California 275,600. So, this is an interesting workforce that are creating some pretty good jobs. And we’re working with community colleges in Southern California to make sure that pipeline, the curriculum is built, the pipeline is --- new workers is being funneled to the community colleges, into the workforce with
internships, and curriculum development.

The next slide, please. And so, the forecasting for the future of electric vehicle jobs in California, currently 275,600 jobs. Anticipated for a 13 percent growth. Of course, we’re adjusting all of this -- this report was commissioned and completed before our shelter in place and what could end up being a recession.

We still believe that this is an industry that’s going to bounce back and bounce back with perhaps a 13 percent employment growth. And looking forward in Southern California currently 119,000 jobs and looking at a 27 percent employment growth. And all of the categories that you saw on the slide previously, those are some really good middle skill/middle wage jobs. And as we look through the lens of equity, and inclusion, and how do we move so many people from low paying/low skill jobs into middle skill jobs and decent jobs.

This is an environment and an ecosystem in California that is the pathway for a lot of workers to actually get a decent paying job.

The next slide. And so, the full report is available on our website. And like I said, it’s 50 pages. It covers not only the asset mapping that you saw earlier, but it also covers the jobs report, and jobs forecasting, and a breakdown of the jobs. It also
reviews a little bit of a review of combustion engine
versus electric vehicle. It also has a pretty
exhaustive review of what the incentives are and the
impact of incentives, and what are some good future
policy considerations.

As well as who is -- who are the organizations
that are providing assistance to this ecosystem.

Thank you.

MS. MANRIQUEZ: Thank you, Judy, appreciate it.

So, now we’re going to transition over to the
dais. That concludes our presentations. Thank you,
panelists. I ask you to please turn on your video and
I’m going to go ahead and transition over to
Commissioner Monahan.

COMMISSIONER MONAHAN: Yes, I have a couple of
questions. One is for Judy and the analysis that you
all did, which I read the report and it was really
great. Actually, a beautifully displayed report, so
kudos to your team.

So, we’re curious how much analysis has been on
the job impacts of building out charging infrastructure
and whether you have any thoughts on that? It’s
something that we’re interested in as an Energy
Commission because we’re investing in the build out of
the charging infrastructure. We’re looking at, you
know, at the time when you’re really struggling with job loss, and economic impacts, and working families are having a tough time. We’re trying to figure out how do we leverage our funds to support job creation. And just curious if you have any thoughts on that equation, the build out of the charging infrastructure.

MS. KRUGER: So, yes, it’s not covered in detail in the report as you could see, but we did see that the charging infrastructure jobs are at a lower threshold for education which, as you know, is really important to pull in high school graduates, as well as those that have community college education. So, that is really a niche because there’s a huge need for engineers. We do a lot of engineering graduates. We have a pipeline of some pretty strong engineering graduates.

But the infrastructure in particular is another niche of a good paying jobs that don’t require as much education. So, we don’t really have statistics on it, but as far as a career pathway there is significant opportunity there, and I think our community colleges can really assist with that.

MR. TORRES: Patty, I think you’re on mute.

COMMISSIONER MONAHAN: Yes, I am. Sorry about that folks. So, I have a question for Jose and Rey and then I’ll turn it over to Commissioner Douglas to see if
she has questions.

So, as you all know, I mean for the budget it’s a rough year. And funding for vehicle incentives, we just heard from the Air Resources Board that they don’t have any. So, you know, we’re going to have to be really strategic as a state about how we dispense very limited funds to support transportation electrification and especially to support the light duty vehicle market.

And I am curious about your thoughts or recommends to the state as we wrestle with this big budget shortfall. How do we support making sure that disadvantaged communities are able to access vehicles? Should we focus more on the secondary market and not on the primary -- on the new vehicle market? You know, I just would be curious about any ideas and recommendations you have for the State of California.

MR. TORRES: Do you want to go first, Rey?

MR. LEON: So, I mean the last thing I want to see is that once again we’re giving leftovers to the hardworking people on the ground. You know, my community is farmworkers. That’s what we do. We’re surrounded by lettuce one season, onions another season, tomatoes, garlic, melons, watermelons, everything you guys eat, you know. And I just don’t want to be able to rationalize giving the secondhand to those that are the
essentially workers that we have continuously
overlooked, you know.

I think we should figure out how not to do that.
We shouldn't do that. Because to an extent that’s a
practice that is inequitable. You know, my people
deserve the best available technologies also. They are
putting it down and sacrificing themselves, and they
always have been, and so they shouldn’t be second rate.

So, what I do think is that the second market of
vehicles, they could go through the programs that are
making sure that the access gaps are being attended to,
you know, so that -- you know, I think the future
ultimately is about going from personal ownership of a
vehicle to community ownership of a fleet that is then
owned by the community cooperatively, and controlled
democratically. I think that’s the future. That’s
about resilience.

And we’ve seen through this COVID situation that
it’s resilience that is much more valuable than anything
else. But the systems that we have which are identified
as normal aren’t about really resiliency, you know. And
who is most impacted first and worse when these type of
things happen? It’s the farmworker, it’s the low income
communities of color, you know. And that’s what, you
know, I’ve seen my whole life and didn’t know it to what
extent and for that (indiscernible) and started learning
more about it. You know, and so that’s why I’m here and
that’s why, you know, I do the work that I do.

But Jose, you want to throw some in?

MR. TORRES: Yeah. No, thank you, I think that
was great. And like I pretty well think the first point
made in terms of the ethical question, right, is like we
definitely think that these communities deserve to be
prioritized and they should be at the forefront of the
planning and getting the resources they need.

I think as far as statistics, they’re
complicated with limited resources, so we should
definitely think about how to get those. And whether
it’s bonds or taxes, right. But I think thinking just
within the parameter of what we have now, I think the
charging stations is something that’s a powerful thing
to focus on and making those more visible, or free.

I think when you think of the amount of
challenges that are already there that could be, I
think, minimized with coordination, sort of that optimum
idea and the rate support for the idea of getting free
these EV support which I think is the ultimate solution.

But I think for now, right, as there’s limited
funding it’s questions about how can we make this much
easier, right. And I think even if you want to buy a
vehicle and you want a level 2 charger at home because you don’t want to wait more than eight hours depending on what you charge, right, with the level 1 charger, then it’s like -- there’s some rebates, maybe there’s some help, but is there a system to really just have it come with it, right.

Like when you buy a cell phone, right, you come with the charger. It’s already there. You don’t have to think about it, right. And then like making chargers universal, right. I think that’s another thing that’s just very plain and accessible do you have to worry about what charger plugs into what charging station?

I think this is low-hanging fruit that you could resolve just by looking at how other technology has been implemented that can address that.

And also batteries, right. On the used electric vehicle market I think one of the scary things is do you have, you know, electric vehicle mechanics in your area? Do you have battery rebates? Are you afraid of a $5,500 expenditure after you buy a used vehicle, thinking it’s going to be cheaper, right.

So, I think answering these questions and resolving them can be done with some coordination. And I think we already have a lot of those tools to ensure that there’s more equitable access. And so, I think,
yeah, definitely prioritizing how we do our charging infrastructure and making it more accessible by targeting these communities.

MR. LEON: So, if I could add in terms of the rebates that are out there, I know there’s different programs, there’s different pots, and I know that you really can’t stack them all. So, I think they should be stackable, now.

You know, I know there’s a CAVAP, the beneficial state foundation and I don’t think you can stack that with some of these. So, we should start thinking about, you know, stacking them and to make available the EVs to the environmental justice communities that are disproportionately impacted by pollution. So, that they could be disproportionately impacted by the best available control technologies that will reduce the pollution.

You know, the other thing is that let’s make it easy. Let’s make it easy. It was also mentioned that something that it will make it easy makes no sense, the south pole of the charger. Of course, why not, why isn’t it like that, right. Make it a level 2 charger. Don’t make it a level 1 charger because you’ll be there forever.

But the other thing is when you’re able to --
you’re outside, like you’re on -- we’ve got 24 chargers right now, level 2. We’re the city and the country with the most EV chargers per capita. But the way I tried to say it is that we’ve got water in the river but not enough canoes. So, we need to, you know, be able to get those canoes out into the community. But a lot of people are challenged by the technology. And each different company has a different way of charging the -- it’s a different car, it’s a different knack, it’s a whatever. It’s difficult. It’s challenging and a lot of people aren’t going to be able to deal with that.

So, if the utilities could play a part in this and especially if a family gets an EV and they’re in the tariff program, or whatever that program’s called, and then they could qualify for cheaper energy or a discount on the energy, and then in the mail through the utility they’ll get that charging card that you could use in any company for any charger.

I don’t know that just sounds like a good idea to me, make it easy. Make it simple. So, that’s just, you know, one thing that I’d like to share.

COMMISSIONER DOUGLAS: So, I think I just have a couple questions. This has been really helpful, so thanks to all of you.

MR. LEON: Thank you.
COMMISSIONER DOUGLAS: Yeah, how are you right?

Good to see you. Actually, my first question is for you. So, you know, I’ve thought for some time that the community-based model that, you know, that you’ve been implementing, really, is a great way to get electric vehicles out into areas that we would have a hard time reaching just with generalized rebate programs and, you know, the kind of usual outreach that we do.

How, you know, how effective do you think that is and what do you think needs to be done to make these kinds of approaches sustainable and provide, you know, the needed support around it so that you -- you know, what does it take in other words to make that work from your perspective?

MR. LEON: I think moving around some pieces. You know, we talk about the resources not being there, but I think there’s a lot of things that are consuming resources that may not, you know, really qualify in terms of trying to provide families’ access to their doctors. You know, that to me is pretty important. Having a healthy family and healthy families provide for a healthy community, it provides for a healthy economy, you know, I’m going to share it in that fashion.

But, you know, the type of system that we call -- we have, we call it the grassroots independent
transportation hub. And that basically depends on just the community coming together and having drivers available that could get their neighbors, their folks from the community to where they got to go. You know, it’s about bridging that gap. Because that gap that exists in terms of creating the geographic isolation of communities that are already linguistically isolated is one that is real, and it’s impacting in a very negative way and undermining the quality of life of a lot of our families.

You know, it’s kind of like the digital divide, right. So, these grid hubs, basically, and similar things like it could provide people access. Like in Huron, we have nobody part of the apprentice program in Fresno, yet it’s a county program. You know. That’s something that I’m working on and making sure that that connection exists, and not just for Huron.

You know, and the four poorest cities in the State of California are in Fresno County. Huron’s one of them. You know, and so if we want to really resolve these issues, we’ve got to make the right moves to make it happen. You know, right now we’re talking about we can’t return to normal, we can’t return to normal, but normal is what everybody’s used to. You know, and I think people are just trying to put flowers on the
normal and say, hey, we’ve got it to the next level.
You know, we really got to rethink this, man. And all
the different agencies have got to circle up around and
we’ve really got to rethink this because otherwise we’re
just going to be coming back to this and talking about
how the problem still exists. And it will be just
different people in the circle having this discussion.

You know, there’s some solutions, there’s a way
to do it but then, you know, unfortunately with the
COVID now we have a strong -- or somebody’s got a strong
argument to say that the resources aren’t there. I
think the resources are there, but they’re over here.
We’ve just got to get them from other there and bring
them over here.

COMMISSIONER DOUGLAS: Okay. Well, thanks.
And, you know, yeah, you’ve been -- there we go. My
screen just almost fell down on me. Thank you, Rey, and
thanks for your hard work in Huron. And, you know,
happy to chat ever, when you have more ideas about, as
you always do, about things that can be done to really
make a difference on the ground.

And I was just going to ask one other question.
I don’t know, it might be for Judy or it might be to
anyone who has some thoughts on it. But if you think
about spending money in this area in a way that is most
likely to have a, you know, job creation impact, you
know what are some of the investments that seem to make
the most sense from that perspective?

MS. KRUGER: So, if I can answer that question.

Of course, we’re looking at the biggest impact on job
creation. So, you know, again using my experience
working with the State of Michigan, I knew I wanted to
move to Southern California because the State of
Michigan used to pay me to come here to recruit
companies back to the state. And I worked under
Governor Granholm, who is now on the board of Proterra.

So, job creation is keeping this ecosystem
strong. And it is making sure that companies like Tesla
stay. I was holding my breath with that whole crisis
with Elon Musk and thinking, oh, please, don’t mess this
up because they are such a strong leader for the state,
and this ecosystem of innovation, and whether it’s
SpaceX or Tesla.

But I ask companies why would you set up Canoo
or Fisker, Inc.? Why are you doing headquarters and
setting up the manufacturing in the State of California?
It doesn’t make sense. You could do it in South
Carolina, or Michigan, or Indiana and have a better
profit margin. But these companies want to be here in
California. They want the LA brand. They want the
market. They want the talent and they want to be here in California.

But I do want to step back a minute because I think Rey has said some very insightful things that we have to pivot to and change very quickly. And at LAEDC we’re brainstorming very hard on this new environment, which is all about inclusivity and equity.

But Rey said he asks the people in the community what do they need. And I think if I look and I review some of our programs that are trying to reach the underserved with electric vehicles, and we’re kind of missing the mark. And, you know, I had talked to some of the electric scooter companies that are providing free rides to certain communities and it’s not being accessed. Or, you know, we look at the success of some of the low cost paying -- the low cost rideshare programs.

But I think we haven’t done a good job of working with CBOs who are working with -- who are working with local leaders exactly like Rey said and saying what is it that you need.

So, we set up the LA County Community Connectory right after COVID. I’ve hired a team of five, we’re doing a huge amount of outreach to micro enterprises, working hard on hitting micro enterprises of color in
all industries.

And my team of five was first of all just saying here are all the grants and resources, and SVHEPA, and this is all that you should be doing. And we realized we weren’t asking the question what do you want? Do you want all those loans? Do you want to go into debt when you’re not that there’s going to be an economy that’s going to sustain and be able to repay the loans.

So, the team is now just simply asking the question on every call, and we have about 20,000 micro enterprises we’re reaching out to. What do you need? What do you want? And if we keep asking that question, we’re going to get to solving the environmental issues for our communities that desperately need it and we’re going to be able to provide the solution whether it’s ridesharing, subscription-based, better cost of electric vehicle. I loved Rey’s comment, we don’t want secondhand equipment. So, maybe not cash for clunkers. We should be doing something that is a new car, that is a new technology, but it’s an affordable rideshare rate that’s subscription based.

But unless we start asking the community leaders what do you want and the individuals in those communities what do you want, we’re not going to get to that solution.
COMMISSIONER DOUGLAS: Okay, thank you. Any other comments on just the question of the job side of this? Yes, go ahead.

MR. TORRES: You’re on mute.

MR. LEON: Commissioner, in the valley there’s a lot of solar funds coming and a lot of them are in the 200 -- well, not taking up all of the 200,000 acres that have been put out of production, but a lot of them are in that area. So, there are other ones coming up in prime and subprime agricultural lands which is a concern because when that solar farm goes down it lasts at least 20 years. Right, the solar plant will have a lifespan of about 20 years. A thousand acres of that takes out 250 jobs out of our local economy, 50 from the field and 5 per fieldworker out, that’s 250 jobs.

And so, I’ve been messing around with numbers and at a minimum wage, over 20 years that equals about $130 million in 20 years, taken out of the local economy.

Those that aren’t coming in with a check because they’ve been able to work there, into town, to eat at a restaurant, grocery store, gas, whatever, pay their taxes whatever, their rent. That’s being stripped out of the local economies. You know, and if you look at how much it costs to sell a kilowatt hour, you know,
over an amount of 20 years what the solar plant is making is over $800 million. That’s a big difference.

So, then let’s repeat, the money’s out there.

Let’s repeat, how are we dealing with the policies that we’ve established and the equities or the inequities that are being created in the process of something yet being built? But how good is it? You know, we’ve left out the fact that (indiscernible) -- in terms of health justice, getting people to the doctors, and environmental justice by not polluting, climate justice no GHGs. It’s a transportation justice, we’re connecting the people to where they’ve got to go and it’s economic justice for getting the people covered, and getting paid, and the families don’t have to pay those on their books. They get it for free. They give a $10 donation, whatever. But it’s all those five points.

So, when we try to provide a solution how many points are we resolving? How many problems are we solving with one solution, right.

I think the solar farms, we’ve got to really look at that because if they’re pulling 130,000 acres of land that are on subprime farmland, a thousand acres is pulling 250 jobs and in 20 years $130 million, but they’re able to make over $800 million what does that

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look like? To me it looks like a fund for these communities. We’re the village next to the diamond mine and we’re not even getting a ring, you know.

And so, in terms of that a fund that creates an apprenticeship, re-skillling for farmworkers, because if the workers aren’t going to have any more fields then why are we perpetuating a farmworker class. A quality education in our local schools should be better to get them to be engineers, you know, inventors, the white collar employees to work alongside Judy, and the gentleman that was on here earlier from Honda, whatever, you know. Those doors should be open. You know, those scholarships with these companies, these corporations should be open to take in these youth, these kids, a fellowship program.

I was on the CERT board meeting earlier this week with V. John White and we were discussing it. And by the way CERT, the -- the upcoming of the Green Raiteros when we started it. But, so, I think this is a learning moment for all of us. You know, nonprofits really got to, you know, add more color to their organizations. Corporations have got to do the same. Not just on the lower echelon of their operation, but on the higher and upper echelons of their leadership, right.
And so, going back to those solar farms that’s a lot of money to re-skill, scholarships, internships, you know, how communities like Huron really access opportunities. And because if it’s going to change like this, then we can’t be having this discussion 20 years later saying, oh, this is a huge problem and we should have thought about this 20 years ago. No, we’ve got to. Right now is the time.

COMMISSIONER DOUGLAS: All right. Thank you. I don’t know, it looks like the Chair might have questions or, if not, I think Heather just sent a text that Pilar does.

CHAIR HOCHSCHILD: No questions. Great to hear the discussion.

MS. MANRIQUEZ: Welcome Chair, thank you for joining us.

So, if there’s no other, further questions from the dais, I’m going to go ahead and transition over to a short discussion and moderator -- moderator questions, my apology.

And I do want to share that before we open up the space for discussion a bit more, I want to ask you all to be mindful of our perspectives and how we effectively engage equity as we transition to a clean transportation economy.
We’re all working towards solutions, so let’s frame our conversations towards solution-based models and being more specific about what programs we’d like to expand with the limited resources that the economy has right now.

So, panelists, feel free to answer questions as they come and feel free to engage each other in the discussion as well.

So, my first question is COVID-19 has disproportionately impacted disadvantaged communities. What opportunities do you see in the near future to enhance ZEV adoption in an equitable way. I know it was mentioned by Patty, but I did want to bring that up and I wanted to hopefully engage this one of the questions that Jose brought to us, and Patty’s question on the trickle down tactic-- and just all bringing that up more for a discussion.

So, I know that can be more useful for community members, but also understand that there’s limited resources to provide rebate programs for used ZEVs. And even in providing used ZEV rebates this will decrease the rollout of ZEVs to further achieve our 2030 goal. Do you think that a subscription model, as mentioned by Judy, or even a similar program like the Green Raiteros program that Rey has shown, are those solutions that can
be provided as the economy gets better? Or, how can we proceed with providing solutions to this issue?

MS. KRUGER: You’re looking for any one of us to answer, right. So, there is a Senate Bill 1445 that does -- gives legal credibility to the subscription based model. And electric vehicle company Canoo helped author that bill. We supported it. I think that it will provide a better framework for the subscription based model.

And I think we’ve got to look at other programs like Blue LA, an LADOT program that provides lower cost ridesharing. Because I don’t think -- I don’t know this for sure, but I don’t think that ownership is really the thing of the future. I could be wrong because it could be that we can’t ever really transfer away from our love of a car, an individual car, and especially now that we’re going to be struggling with the pandemic issues for a while longer people may not want to rideshare.

But prior to that it looked like rideshare, cost effective rideshare and subsidized rideshare was a good program.

I think short term we’re going to see less people wanting to share a car. But the subscription based model makes it cheaper and it’s sort of a hybrid sharing platform.
MR. TORRES: I want to briefly I think just to reiterate what Judy and Rey have been talking about. And I think it’s a perfect opportunity to kind of elevate it again. I think that we need less decision making models and support share rides in a community and their particular needs. Just because I think those questions that Judy pointed out about how do folks feel about ownership in the future right. How do folks feel about sharing? How do they feel about sharing something they don’t own, right, or even share ownership over it. And I think folks will have different approaches, right, depending on the need that each region has, right. Some regions have longer drives. Some regions have more public transportation, more buses. And I think there will be different answers. But I think the big thing that I mentioned earlier, right, is if you’re serious about environmental justice and equity rights the community had to be involved, and engaged, and be allowed to be a part of it and make some decisions. Of course, you know, that’s challenging but I think it will ultimately get us to a better solution.

MS. MANRIQUEZ: Thank you. I have another question. I know that something that was brought up was creating free charging stations and that’s something
that I wanted to expand the conversation a little bit more on. By creating -- I know that Rey has mentioned creating these charge cards, how can the state -- how can state policy support something similar to a charge card where it can create free charging stations for low income individuals and in the State of California. And how can we further engage manufacturers, they’re also communities into this decision of rolling out a program like this in the future.

MR. LEON: Is that a question for Chair Hochschild?

CHAIR HOCHSCHILD: That was a question to me about free charging stations?

MS. MANRIQUEZ: No, this is for our panelists. I think Rey is just mentioning that he’d like to hear a comment from you. But this is for a panelist. If panelists would like to tie into this question and I can repeat it, if needed.

MR. LEON: So, I think, I mean the money’s out there, it’s just how we organize it. I mentioned those solar farms that are around the environmental justice communities. And I don’t like it when people say, well, you’re going to get clean air. Well, not really anytime soon because a lot of these solar farms are already purchased by Southern California cities. And so,
there’s -- I think we’ve got to do some dissecting, you know. The money’s out there. I think providing free charging would be great. I mean Tesla (loss of audio) -- was effective in providing that as an incentive to future Tesla owners, right, for people around, working families, why not.

Maybe it looks like the CARE program, right, that the utilities have, that the CPUC got going a while back. You know, had a lot to do with it, my former employer. But maybe it’s something like that where it’s a common card and people get it with their car, and it goes along with the utility account. And if they have a CARE status, then they get it subsidized or maybe it’s free.

You know, but yeah I think that’s a good thing.

CHAIR HOCHSCHILD: You know, I’d like to build on Rey’s comments. I think that’s actually a very creative idea to sort of have a CARE program equivalent for electric vehicle charging. Because, you know, we’re making a case, you know, as strongly as I know how to the Governor and the Recovery Task Force that investing in electric vehicle charging infrastructure, you know, has huge benefits. It’s infrastructure, it’s here, it requires, you know, a lot of jobs. And actually the net effect, by the way, of everybody plugging in more
electric vehicles is it actually drives rates down. Because electric rates, you know, most of that system cost is fixed, about two-thirds of the system cost is already fixed. So, you’re just feting those fixed costs among more kilowatt hours. And so, that’s a good thing generally.

And equity has got to be at the front and center of the approach. I do -- I’m actually very intrigued by that concept, whether there could be an equivalent of the CARE program for EV charging. I’m just wondering was that something that you had written up at the Tuition forum or is there another paper on that?

MR. LEON: I have done studies on the CARE program for utilities back in the days. Of course, they closed their doors in 2009. But if you want to see that original study I’m sure it exists and I can help accessing it or connecting you to the people that were a part of that.

CHAIR HOCHSCHILD: Uh-hum.

MR. LEON: Yeah, we could figure it out. I mean he’s a quite a -- he’s a quite a chair.

CHAIR HOCHSCHILD: Okay.

MS. MANRIQUEZ: Okay, thank you. We are backing up and I wanted to pose one last question. And this focuses again on the secondary model market for ZEVs.
Do you all believe that the secondary market for ZEVs provides sufficient opportunity to increase access to lower income communities? Do cost barriers remain? Are public programs sufficient and well known enough in such communities? If so, how can we create educational programs or share resources for communities to be able expand ZEV adoption?

MS. KRUGER: You’re asking the question about the secondary market or used car market?

MS. MANRIQUEZ: Yes.

MS. KRUGER: Okay.

MS. MANRIQUEZ: Yes.

MS. KRUGER: So, we recently signed on to LACI, the LA Cleantech Incubator’s congressional ask for $150 billion in green infrastructure and jobs. And it was a whole, huge ask. And LACI has received federal funds in the past, ten years ago, in the last recession.

So, if that were -- if they were to get even a portion of that and could provide to LA residents and under-served communities either that share card, or a better rollout in level 2 or fast chargers in certain communities, and ride share subscription base that would be great.

I think that the more that -- the longer we have a cycle of electric vehicles purchased in the state, the
more we’re going to have our secondary market flooded with vehicles.

One of the questions of the pushback on signing this ask, this federal ask with LACI was why would we incentivize the higher end electric vehicles. And my thought is because we want more secondary vehicles in the market. And so, in all ways we want more electric cars on the road. And so, if that means if people are buying higher end cars and then getting ridding of their secondary cars, and the Tesla is in fantastic shape as an eight-year-old model that fits nicely into a shared or a subscription base for a community organization, then that’s fantastic.

So, I think all the ways that we can incentivize all the different layers of electric vehicle adoption should be on the table.

MR. TORRES: Yeah, I have a lot of thoughts on that question and I think appreciate kind of the -- definitely don’t want to forget Rey’s point about, you know, wanting to get the best technology in this first because we think it’s an ethical question as well, right. Those who have suffered the biggest brunt of environmental injustice right, deserve environmental justice, right.

But I think just in terms of what we can do is
just I do think the secondary market does open some doors. The question is can we answer those questions that folks have, right. Because I think if you’re compared a used electric vehicle to a used gas vehicle, right, and there’s no reason to buy the used electric one because you don’t understand the advantages that’s a challenge.

And what I mean by that, I just want to go back to the original point I made about, you know, affordability versus access, right. I think the affordability question not only is a question about how much you’re willing to pay it’s like what do you see what you’re paying for. So, if you see a vehicle, an electric vehicle including a lot of obstacles because you don’t understand where to charge it, you don’t see charging stations everywhere, right, then if you even save a hundred dollars for a comparable vehicle, then I think the decision making is -- it makes it tough, right.

And so, do I think there’s a space for the used electric vehicle market? Yes, I think there should be a focus on that. But I do think there’s a bigger question to ask around, you know, equity and how we want to approach these questions. That I think Rey proposed about a shared solution is about shared vehicles and
kind of how to get new vehicles on the road.

And just on the trickle down technology piece,
and just to address that, I think there’s a point where
like the battery costs, and please feel free to push
back on this, where it can only get so low, but you
still have to pay for the shell, right. I think that’s
something that’s still going to cost and, hopefully, we
get there. And if we’re serious about battery costs,
then I think the closest thing I can see to the solar
implementation of like, you know, large investments
would probably be like focusing on medium and heavy duty
investments or fleets, right. Because that’s where you
can get that economies of scale and really decrease
battery prices, right. I think that’s where I see that
kind of maybe working right, the trickle down technology
approach. But I think those are just some rough
thoughts.

COMMISSIONER MONAHAN: So, all — I’m guessing
Rey has something to say, but I’m sorry to say that
we’re a little bit over on this panel and I guess it’s a
lesson learned that we need more time with the equity
discussion.

But I just want to thank Pilar and the panelists
for joining this discussion. A great conversation and
you’ve given us a lot of food for thought. So, thanks
to everybody.

And now, we’re going to be transitioning to more of a market perspective on reaching on 2030 zero emission vehicle goals, having 5 million electric vehicles on the road.

So, I’m going to turn it over to Tim Olson to facilitate the next panel.

MR. OLSON: Thank you, Commissioner. This is Tim Olson. I work at the California Energy Commission, also.

So, this panel is intended to discuss the potential to reach those 2030 goals. And you’ll hear -- we’re hoping that you’ll hear insights about the kind of market landscape, similar to what we heard this morning from Bloomberg New Energy Finance.

And we also have three panel members who represent automakers. And so, I’m going to introduce all of the panel members and then ask them, to just save a little bit of time, to ask them to just do their sequence based on what’s on the list here.

And I’ll just quickly introduce. Ajay Chawan is with the Guidehouse. This company’s formerly known as Navigant. Pretty extensive tours of duty with Ford, Nissan, and Audi.

Chris Nevers is with Rivian Automotive.
Previous experience with the Alliance Automobile Manufacturers, USEPA and Chrysler.

Rohan Patel, Senior Global Director for Policy and Business Development for Tesla.

And Steven Ellis, Manager of Fuel Cell Vehicles.

A long time hydrogen fuel cell vehicle expert at Honda.

So, let’s start with Ajay.

MR. CHAWAN: Great. Good afternoon everyone.

Can you hear me okay?

MR. OLSON: Yeah, you got a little echo, a little bit of echo there?

MR. CHAWAN: Is this any better? I’m using the phone.

MR. OLSON: It will do.

MR. CHAWAN: Okay, thank you. Okay, thank you very much for the opportunity to be here Chair Hochschild, Commissioner Monahan, members of the CEC. I had the privilege of being here last year in person to present to you.

My name is Ajay Chawan. I’m a member of the solutions mobility -- the Mobility Solutions Team, excuse me, at Guidehouse, formerly known as Navigant. I’ve been there for about two years, and after spending many, many years in the automotive world as Tim just mentioned.
Some of the EV projects I’ve led were the launch of the Nissan Leap in the U.S., for North American production. And Audi’s entry into the plug-in vehicle space, with its e-tron hatchback and SUV.

So, my goal for today is to share with you some of the key findings that I’ve seen over the course of -- of the projects I’ve done while at Guidehouse, as well as over 150 electrification-related projects that our firm has done.

If you could advance to the next slide, please?

The first topic that’s at the top of mind for everyone that I’d like to address is the impact of COVID. And so, we know COVID is having a very negative impact on the overall economy and also, and specifically after looking at the automotive sector in particular, it definitely had an impact. Projects of sales in the U.S. market are projected to drop like about 30 percent. That number is being revised regularly based on market conditions.

The EVs are going to also take a hit, and probably a disproportionately high hit in that reduction because EVs are more expensive on average than their counterparts.

The good news is that based on what we’re seeing and the interviews that we’ve done with production, with
manufacturers, as well as consumers we are projecting a
return to a pre-COVID trajectory over the next two to
three years. And then, by 2030 we’re projecting the
cumulative registrations to be both down by only about
two percent compared to the pre-COVID trajectory.

The California market is projected to follow a
very similar trajectory to this and we are currently
updating that forecast, as well as the forecast for
other states.

If you can proceed to the next slide, please.

We’re going to talk about some of the other projects
that we’ve done. So, during my time at Guidepost I’ve
personally had the fortune of leading about a dozen
projects relating to electric transportation and have
contributed to about a dozen others.

Many of these programs are focused on promoting
EV adoption. While each project has been different,
what we’ve seen is that there’s several common themes
that have consistently emerged. And those are
highlighted here, and go around the figure starting at
the top left corner.

First, what we thought was that people really
wanted EVs. Like once people get behind the wheel they
enjoy driving them, they like the way that they feel,
they love the acceleration. Then, you tell them that it
costs less to you to maintain, they’re all about that.

But they also want an EV that they want to buy.

Back in the early part of this -- the early part of the last decade, when EVs were just starting you only had half a dozen models to choose from. By the next -- in the next few years we’re going to have close to 200 models, potentially, to choose from in the U.S. So, that choice is going to be available for consumers.

The COVID crisis has delayed the introduction of some of these models. Those models are still coming and are expected to be available for consumers. And we’ve interviewed numerous automakers to confirm this.

Second, in the bottom left corner is that people still need to learn about EVs. Even in the State of California, which holds about half of all EV registration in the U.S., consumer awareness is still relatively low. So, there are actions that we need, that California can take to make people more aware of the benefits of EVs, including the benefits, the models available, and places that fuel.

In the top right corner, we’ve always seen the need to help with the affordability. EVs on average are more expensive than their ICE counterparts. EVs cost more to manufacture today because of the cost of the batteries, while that cost is coming down. The price
curve is not expected for another few years.

So, incentives programs such as the CVRP, is a major contributor to the success of EVs in California. And it’s important for that type of incentive to remain in place and to -- to remain in place and that structure to be transparent, consistent and reliable, so consumers know that it’s there when they’re ready to buy a car.

And then, lastly, ICE -- we need incentives to get ICE vehicles off the road. So, a vehicle’s lifecycle is very regulated, very standardized in the -- it’s very standardized. If you want to bring that cycle to get more ICE vehicles off the road and replace them with EVs, there has to be an external incentive to help break that cycle. So, a “Cash for ICE” type of program that has been something that we’ve modeled in numerous markets, and that is shown as -- we’ve known that to be effective.

If I could go to the next slide, please. I want to talk about just the overall global market for EVs. EVS are definitely not a flash in the pan. And I know that the work that the CEC has done has helped to make sure that EVs are just part of the culture in California.

I want to share with you that EVs are definitely going to be a global phenomenon. And a key driver, one
of the key drivers for this is the Chinese market. In China, the new Energy Vehicle Mandate was actually modeled after the California ZEV Mandate. So, that mandate was -- so, the ZEV Mandate was used to create the mandate for the Chinese market, which sells about 26 million vehicles a year, which constitutes about 30 percent of global vehicle sales.

By comparison, in the U.S. we sell about 16 million vehicles a year.

When I was working at Audi, one of the key questions that I was asked when I asked for a new product feature or was discussing a vehicle concept, the first question was can we sell this in China? Or, a similar question was what does the Chinese market want. So, that tells me that automakers are really thinking about what will sell in China and using that as the -- to figure out what programs to invest in. And that is definitely not abating.

And what we’re seeing at automakers during our interviews with them is they are reducing their product development budgets for ICE technology and shifting all that to electric vehicle technology.

And then, if I can move to the last slide, I want to give you just a brief update on a case study that we’ve seen about how EVs can be effective today.
Now, this is a case study that I led last year for a project that had 12,000 vehicles spread across seven states. Knowing what we know today, it is cost effective to electrify a fleet of 12,000 vehicles by half between now and 2030. When I say cost effective, that means if you could -- the cost of -- the total cost of ownership for the EV is less than that of the ICE counterpart, making it a positive business case.

So, I want to thank you very much for your time. I know that it’s a lot of information in a very short amount of time. I’ll be happy to chat further later.

Thank you, Commissioners.

MR. OLSON: Thank you, Ajay.

And Commissioners on the dais, if you don’t mind holding comments until we finish all of the presentations.

The next speaker with be Chris Nevers of Rivian.

Please go ahead, Chris.

MR. NEVERS: All right thank you, Tim, Commissioner Monahan, esteemed Commissioners on the dais. So, I will just go over who Rivian is, what we intend to do, and our support for the California programs, including the California ZEV Mandate, and the Advanced Clean Truck Rule.

The next slide, please. Okay, so Rivian, we’ll
start with products, we plan to release a pickup truck and a 7-passenger SUV. The pickup truck or the R1T will be at volume in calendar year 2021. That’s not model year. That’s calendar year, that’s next year. With a target label range of somewhere around 400 miles. That’s the target for one of the models.

And then, the R1S, which is the 7-passenger SUV, would be launched in that same year, probably about three months after the truck.

We do have manufacturing in the U.S., our own manufacturing right now in Normal, Illinois. And as was discussed earlier, we do have a lot of operations in California, in Palo Alto, Irvine, Carson City, and San Jose. We also have operations in Plymouth, Michigan, Canada, and the United Kingdom.

And these are considered medium duty passenger vehicles, even though the R1T and the R1S are going to have very high towing capacity, very near a heavy duty vehicle. The R1T, for example, will have one configuration that will have a towing capacity of near 11,000 pounds.

The next slide, please. You probably have all heard of the Amazon orders, also, known as the Rivian Prime Van. This is a jointly developed van, primarily for last mile delivery. This is what’s called the 2b
and 3 category. You’re looking at about 100,000 of these vehicles by 2030 and will have the gross vehicle weight ratings of up to 14,000 pounds. And this vehicle does have some common elements with the R1T and R1S, although not wholly common. And it will also be produced in Normal, Illinois.

And by the way, that 100,000 is not back loaded at 2030. We should see over 10,000, if not tens of thousands of these starting to come out with calendar year 2022. There will be some early, in calendar year 2021. But this is going to be a high volume product.

The next slide, please. So, you can see there Rivian. Our slogan is “Keep the World Adventurous Forever”, or that’s our goal. And what does that mean here? Well, forever really means sustainability and it means electrification.

And so, we’re here not just to electrify the segments that we’re in, but to help to electrify all transportation. So, that’s sort of who Rivian is and what we plan to do.

And I will note one more thing. Earlier we had heard discussions about the impacts of COVID-19 on production. COVID-19 has not affected our volume launch of products. So, some of the very, very early vehicles that you might have seen driving around more so in
development, or the like, those may have been delayed.

But we’re still on time for 2021 with the R1T and R1S, and late 2021 and 2022 for the Amazon product van.

The next slide, please. So, Rivian does support Advanced Clean Truck Rule. And so far, what the California Air Resources Board has been discussing about Advanced Clean Cars II. We support the objectives that’s in the Advanced Clean Cars II discussion.

We also believe that the Advanced Clean Cars II and the ACT, they need some help. ARB can do their best with the mandate, but you really still need the Low Carbon Fuels Standards, the CVRP local incentives, as well as industry and utility partners. And just as importantly, if these programs are written in such a way they can propagate across state lines that’s great.

And in addition to that, when you look at ACC2, they have some really great, big picture goals and incentives. One is improving ZEVs for customers. What does that mean? Well, they discussed it in the last board hearing, I believe it was May 28, but they talk about adding warranty and durability requirements to BEVs, battery electric vehicles. We think that’s a good thing. Not just for the used car market, but also for the initial purchaser so they have some confidence in the product.
And California, CARB’s also discussed increasing or improving the experience of customers when it comes to owning ZEV, such as battery state-of-health monitors, and standardized fast charging. And, certainly, the state-of-health monitoring is a great thing, especially when it comes to the used market.

And we did talk earlier, briefly, about possible rebate programs for used electric vehicles. And if a program like that were to go forward, I think the warranty and durability requirements, and the battery state-of-health metrics will certainly help lend some confidence that these vehicles are capable, and will help I guess spread electrification to all markets.

You know, as we mentioned earlier, as a matter of fact I think it was in the 2019 IEPR Report, there’s a challenge in penetrating the truck and SUV segments. And maybe a used rebate or maybe reexamining some of the SMRP casts of more capable vehicles might be in order as we try to displace some of those ICE’s like we’ve said that might be used to tow, or might be used to carry seven people. You know, towing -- an EV that can tow 11,000 pounds or carry seven people will have a different base cost structure, perhaps, than a smaller, four-passenger electric vehicle.

The next slide, please. So, that’s pretty much
all I had. And I’ll leave the rest of the time up for questions. And I thank you for this opportunity.

MR. OLSON: Okay, thanks Chris. We’d like to then proceed to Rohan Patel of Tesla. Rohan, you’re on.

MR. PATEL: Hi, Tim. It looks like the video isn’t working, but no problem either way. Oh, there we go. I’m laughing a little bit, my four-year-old daughter came in here and was really finding it funny because I put on a -- I’m usually wearing a t-shirt nowadays, but I put on a button down shirt, but I’ve still got my swim trunks on. So, I think this is typical of a lot of folks with this Zoom culture we’re now in.

I, first of all, am very grateful to the chair, Chair Hochschild and Commissioner Monahan, not just for the work you’re doing here but, you know, for the various roles that you’ve had inside and outside of government, and the results that you’ve gotten in both. So, appreciate having the change here.

Yeah, I think this is a super challenging time. I know we’re going to get into some of the COVID impacts. We’re dealing, obviously, with a difficult pandemic that’s difficult on everyone, including business. But I think what we’ve realized since the George Floyd murder is the level of social unrest. And
for all of my colleagues at Tesla, we happen to be a majority minority company. You know, for our colleagues and citizens that have been pleading for justice, we’ve got to start listening. We’ve got to start getting results. We’ve got to start focusing on the issues that matter.

You know, I’m at Tesla because I want to make a difference. And I think most of my colleagues are as well. Our entire mission is about sustainable energy and accelerating the advent of sustainable energy and transport.

But, you know, I think our employee resource groups at Tesla, black at Tesla, and others, you know, we have started to do a lot more listening roundtables. The head of our HR department, the head of our recruiting department, security departments have taken the lead in doing this work and making sure all of us actually understand and take the time to listen.

You know, I think -- and that needs to envelop a company like Tesla maybe even more. Because we do have extremely determined employees. The folks that are on my team, including Fran Moll, who I know works with many of you all, and the staff, and Dan Shaw, they care deeply about this work.

But we’ve got to be determined not just to do
the work about climate change, which is our mission, but
also about these other things that have such an impact
on our -- as I said, on our colleagues, and customers,
and people in the community.

    So, you know, I think to that end we’re not just
committed to championing diversity, and equity, and
inclusion, we’re committed to increasing that
representation. We’re committed to connecting our
employees. Committing to make sure that the products
that we have also, and the policies with which we are
advocating also are driven by that purpose.

    Let me breeze through a couple of things related
to Tesla because I think maybe more important than me
droning on about various different aspects of the work
that we’re doing, the accomplishments we’ve had, the
policies that we support is just being able to take
questions and maybe provide some feedback. And, of
course, happy to follow up on any particular questions I
personally can’t help to answer.

    One thing I just wanted to note, we’ve spent a
lot of time over the last year trying to get better at
challenging ourselves to benchmark. It seems like an
obvious point, but at Tesla we’re going so fast on so
many things that benchmarking our own internal progress
both in terms of the climate and emissions impacts of
our products, but also the climate and emissions impacts of the installations that we have, the factories that we’re running, the manufacturing facilities, the supply chain. We’ve got to do better there.

And so to that end we just put out an impact report two days ago. I hope folks have a chance to take a look at that and provide criticism, and feedback, and questions. We want that. We want to be more open and transparent about the work that we’re doing and how all of you, colleagues, and as well as folks in government can help us do better.

So, last year, just to get a sense of it, we delivered 370,000 cars or so, 50 percent more than the previous year. We expect that to dramatically increase because that’s from a baseline of basically just one -- well, one factory. One factory pumping out cars in Fremont, California.

In Fremont we’ve got, and just as a result of Tesla coming to Fremont about a decade ago now, we’ve got tier one suppliers, tier two suppliers, tier three suppliers that have set up shop in the nearby vicinity. Many in Alameda County, but all over.

We, ourselves, have vertically integrated into, especially into Lathrop where there’s casting happening, a number of different manufacturing activities happening
there. A community that’s really super excited about
that and excited to continue to expand and we expect
that to happen as well.

In Q1 of this year, even with COVID, you know, taking up the latter half of March, we delivered a
record for Q1 of 102,000 vehicles.

In California, you know, the estimate is that
Tesla vehicles comprise about probably just over 70
percent of the electric vehicle market. You know, last
quarter, we’re very proud of this, last quarter Model 3
was the number one selling vehicle in all vehicle
segments.

And another thing that we’re extremely proud of,
especially when we go overseas, is to be able to tell
California -- California’s number one expert today is
electric vehicles. Last year we were number two. As of
right now, electric vehicles are the number one expert
and that’s almost all Tesla.

So, and I think, you know, especially one thing
related to Model 3 that we get a lot of questions about,
the whole point of Model 3 is to continue to bring those
costs down. Just last week we announced another $2,000
drop in the price. That’s not because of demand issues,
that’s because our whole mission is to make the car more
affordable and to bring more people, bring EVs to more
people that can afford it. So, you’ll continue to see that. That’s a driving note whether it’s with our suppliers, whether it’s verticalizing our own supply chain and innovating to bring those prices down so that we can continue to serve that market.

Already, when you look at the cost, and the total cost of ownership, you know, EVs are a no brainer. And Model 3 is already less than the average price of a vehicle today. Model Y began production in Q1, in Fremont. And, you know, we’re going to build a whole bunch of Model Y’s all over the world. So, very excited about that.

We announced a Tesla semi a couple years back. A lot of engineering has gone into that. We’ll have a 300-mile version, a 500-mile version, and actually there will probably be more than that, but that’s what we’ve announced thus far. I can get into more on the truck. No question, we’re very aligned with what Chris was saying earlier and in terms of the truck rule, the Advanced Clean Truck Rule at CARB.

In terms of manufacturing and this is something I think I’d really like to maybe get into a little bit more, is the workforce development aspect of things. Coming into Tesla my knowledge was zero on workforce development programs, what’s scalable, how are we
reaching into communities in the right said. As I said, you know, we’re a majority minority company. But how do we build on that?

And so, we have three programs that we just recently started. One is a manufacturing development program, very successful, both in Fremont, and Buffalo, and in Nevada. And that’s a program where we educate and recruit talent from Title 1 high schools, primarily. And it’s a unique kind of opportunity to jumpstart a career. You work full time as a production associate, but you also have an opportunity to pair up with a community college and continue your education, if that’s what you’d like to do, and we would pay for that.

The technician training program, the same kind of thing. We’ve got a whole bunch of university engineering students that we partner with. We’ve grown that from a pilot of five students and now we’re way past that.

And the other thing that I think is maybe most inspiring and one of the most inspiring days I had a Tesla, visited a Title 1 high school where we are supporting the robotics program. And one of the things we’re starting to do, we’ve started to develop curriculum where we bring teachers into Fremont, to Nevada, to Buffalo to talk about curriculum they could
use that’s very real world, and also on robotics and sustainability focused programs in terms of curriculum development. So, we’ve partnered with a number of different entities on that.

So, I’m happy to get into more and also connect folks on the workforce development front.

You know, I think on the IEPR and what you guys are doing it’s a fantastic document. It’s setting a vision. Super, super important. And I think one of the things that I just want to sort of underline, it’s really important, I think Ajay said this earlier, it’s really important that we keep our eyes on the prize. And, unfortunately, it seems like we may be headed in the opposite direction federally. Not maybe headed, we are headed. Tesla in fact is the only car company, I think maybe the only company that’s legally -- we’re spending a lot of legal resources to buttress California, a number of other states, and the environmental community on fighting back against the Trump rollbacks. So, we’re doing that right now.

Unfortunately, and I think some of the gains that we’re seeing in California may start to recede if we don’t further that. And, you know, there’s effective programs, that’s HVIP, CVRP, somebody mentioned the ZEV Mandate. There are a number of those kinds of things
that we certainly don’t want to see go by the wayside.

So, let me -- I won’t drone on anymore, Tim. I think what I -- yeah, super excited.

MR. OLSON: And we’re going to revisit these in some of the Q&A. Appreciate your comments. And also apologize, we had your name misspelled on your slide and apologize for that. So, appreciate that Rohan, and stay there and we’ll have a Q&A here in a second.

So, the final speaker is Stephen Ellis of Honda. Please proceed, Steve.

MR. ELLIS: Thank you, Tim, and thank you Commissioner Monahan and Chairman Hochschild, and other fellow Commissioners. I really appreciate this opportunity to offer some insight into our fuel cell vehicle activities. That is my role at Honda and has been for some time, but also supporting all of our vehicle electrification efforts.

And that is, you know, Honda has very specific electrification goals and CO2 reduction goals with two-thirds of our auto sales expected to be electrified by 2030. And doing that even through hybridization of high volume vehicles can really do a huge difference in those steps.

Honda, of course, has pioneered a lot of the clean vehicle technologies that you’ve seen over the
years and has the highest corporate average fuel economy
of the major automakers.

And so, let’s go to the next slide. For
perspective, you know, going forward let’s start and
talk a little bit of where we’ve been. The FCX on the
far left, as you look at this, became the world’s first
fuel cell vehicle car certified by U.S. agencies in 2002
for use on public roads and highways. And I bring that
up because we’re still more an infancy mode, you know,
with this technology. I was there the day the Honda EV
Plus and the GM EV 1 launched way back in the ‘90s
there.

And, you know, we’ve come a long way with
vehicle electrification. But this pathway also can
provide great value for consumers.

So, we did a lot of the world’s first with this
vehicle. The world’s first subfreezing temperature
startup, which some people said would not be possible
because of the water produced from the fuel cell stack.
And the world’s first lease to individual consumers, and
we learned a lot through that.

That led to that next step where we showed the
2008 FCX Clarity. And this was referred to as a
generation skipping technology because no one thought at
that time that the technology could be that advanced to
fit into -- all of the components into a sedan. And so, you know, we had a 20 percent increase from the previous one in fuel economy, 30 percent increase in vehicle range. So, we went from like 160 to 270. A big weight reduction in the power train, 30 percent reduction in the power train sense, energy density was way up, and even the first application of advanced lithium-ion batteries in this. Because like the hybrid, it stores its energy there.

And so, really, after all those years of experience and development, including parallel pathway with helping develop hydrogen stations that led us to the Clarity fuel cell, which is shown here. And that’s the vehicle that we have on the road. This one launched in December of 2016 and has received widespread praise by the California consumers that were looking to drive, you know, the zero emission vehicle that may be better aligned with their daily mobility needs.

The one thing we, of course, always have to educate people about is the values of a hydrogen fuel cell car, which is three- to five-minute refueling and over a 300 mile range. And all the fuel cell vehicles on the road today are exactly the same there with over a 300 mile range. So, this really represents our next leap forward toward the broad adoption of fuel cell
vehicles.

So, why is this slide important? Really, from 2002 to this current one there have been many hurdles to cross. There were not standards and codes for how to fuel a hydrogen fuel cell car. Hydrogen’s been around a long time, used in many, many industrial applications. But Honda worked collaboratively to develop that.

This was a symbiotic and critical relationship toward this pathway to advance the vehicles, improve both the vehicle and station technology. That’s why these efforts were so critical.

And no different than the early EV connecting devices, you know, which were as much as $10,000 in the early days, and now $500, station costs have come down immensely while the footprint has become smaller, and the capacity is way up.

It’s the same with the cars, cost is down, the size actually has gone up, the fuel economy has gone up and the range has gone up significantly.

So, we’re no longer at just kind of this research phase mode of the technology. Rather, the graph now will begin this upward climb. And, really, there’s no looking back. And that upward climb is kind of the first of this growth of this technology. This is enabled by the leadership efforts with the State of
California in both the CEC funding of hydrogen stations under programs like AB 8 and, of course, with all the automakers that are participating in continuing development of the product and introducing it into the market.

So, you know, you have to take these by steps that we’ve done here to move from the teenager role into you could say adulthood, moving from the tens of cars, to thousands of cars, to hundreds of thousands of cars toward the million that we have set as a goal for 2030. So, the pathway is clear.

Let’s go to the next slide. Just to cover a little bit about the vehicle, you know, I don’t have to repeat these attributes here. But, you know, the Clarity is one of three Clarity models that we have introduced, the three-for-one platform. We gave this a very reasonable $375 a month lease price with 20,000 annual miles. Because we know that drivers of vehicles that have HOV access tend to accumulate more annual miles than the non-HOV vehicles, especially for commuters. $15,000 in fuel is also included to offset the higher cost of hydrogen today.

Then, of course, we appreciate things like the $4,500 CDRP that helps with the consumer adoption and, as I mentioned, HOV access.
So, it’s a large, five-passenger, 350-mile EPA rated vehicle. And as I said, it began in 2016.

We established a dealership network that was critical to not only make it convenient to deliver the cars to consumers that wanted this technology, but also to provide service support in a convenient manner, and training the technicians. And kind of another world’s first when we first had the FCX Clarity and we had dealer support through service and training. So, even things that were done with hybrid electric vehicles and the early electric vehicles to train technicians on high voltage systems played a very beneficial role toward supporting this technology.

And we’ve even provided financial assistance to some startup companies to bring hydrogen stations into the market. And now, they and others are leading the advances in stations.

Other role points, Honda Engineering developed what was referred to as the MC fill method to even make fueling faster than what was five-minute refueling. So, the flow is three minutes. And that protocol was provided through SAE and now adopted under what’s called J2601, the global standard for filling hydrogen fuel cell vehicles.

And as you know, we worked with CEC closely with
all aspects of the grant funding awards and also with
ARB for station locations and wherever needed.

So, let’s move to the next slide. So, that’s
kind of where we are. Where are we going? So, it’s

public information that in January 2017 Honda and
General Motors jointly announced the establishment of an
advanced hydrogen fuel cell production system, or
facility called Fuel Cell Systems Manufacturing that
will be south of Detroit, in Michigan.

And then, following onto that was announced of
agreements between Honda and General Motors for
advancing battery chemistry. And all of this toward
growing the scale of the technologies, whether it be
batteries or whether it be electric drive systems for
the fuel cell systems, for continuing to reduce the
cost.

So, we see today that fuel cells offer a
tremendous opportunity for not just the average driver
of, you know, a vehicle in California. This proves that
the application even with sedans, despite the industry
move to SUVs and as we heard earlier CUVs, there’s still
a lot of Honda Civics and Accords sold in the State of
California, the most popular vehicles. And so, there’s
lots of room, plenty of room in that category for fuel
cell vehicles.
We see now greater challenges in the market for any of these advanced technologies. And now, solving some of the problems with multi-unit dwellings and those that have on-street parking, just one hydrogen fuel cell -- one hydrogen station in close proximity to any concentration of housing units, where you don’t have the luxury of putting in charging can solve 100 percent of the needs of those people that really want to product, and that can go a long way.

So, just in wrapping up, I look forward to any questions. But everything is advancing beyond what most people said was possible. Stations are ten times the capacity and now we are seeing the first four fueling position, four-hose, 1,200 kilogram-a-day stations put into the market, and customers love that because there’s no more waiting in line.

So, this is the pathway forward for hydrogen fuel cell and we’re glad to be part of that. So, thank you for your continued support.

MR. OLSON: Okay, thank you, Steve.

Congratulations on your progress.

And at this point, Commission Monahan and the others on the dais, what’s your preference on questions?

COMMISSIONER MONAHAN: Well, let’s take some questions from the dais. And I know the Chair has a few
questions, as do I. Chair Hochschild, would you want to start up?

CHAIR HOCHSCHILD: Yeah, I need to put my video back on. I think it got turned off somehow on your end.

So, first of all, let me just thank all the panelists for those comments.

I just want to respond to Rohan’s in particular. You know, we’re in a very, very difficult moment inside a difficult moment with the injustice that’s going on and civil unrest in the middle of this pandemic. And I had a couple of thoughts, you know, just about how we get through this. And for me, it really starts with living how we want the world to be and treating each other with respect and with inclusion. I was heartened to hear your comments, Rohan, I know, and all the organizations and companies, and we’re a part of that dialogue that’s going on.

But secondly, I think we should all approach this moment as if we’re on a precipice of maybe one of the most progressive eras in American history. I really do feel the opportunity is there. And what we’re doing in California really is a template for that in every respect, but particularly with this subject of clean transportation that is underway here.

And to be successful, you know, we have to be
collaborative between state agencies, and the private
sector, and other stakeholders, the environmental
justice community, and we have to be relentless. And
there’s just a huge number of obstacles.

The budget that, you know, we’re dealing with
now is, you know, in terrible shape. So, we don’t have
anywhere near the amount of money that we’d like to have
for things like the CVRP program. But there are a lot
of things nonetheless that we can do. And I’m thinking
of, you know, electric rate design for electric
vehicles, permit acceleration and, you know,
establishing longer term goals that really send a
positive message and will help drive investment. It
will help the customer adoption. You know, including
things like fleet procurement from the state government.
I mean, there’s a lot of different ways that we can
lead.

And I hope that all of you, as you engage in the
economic recovery conversation that we’re having as a
state, you know, can be articulate about the opportunity
for economic recovery that all of this stuff presents.
Because I think clean transportation in particular has a
really exciting opportunities. You know, there’s
manufacturing and a huge, huge jobs opportunity.

So, I think, you know, this is really an
important summer that we’re in now, both for what we can
do at the state level and also feeding into, you know,
whatever successor stimulus packages, you know, come
after this. So, I just wanted to share those thoughts.

And I’d like to hear, just when we look ahead
that what are the main barriers that you’re facing?
What is at the top of the list? Just really quickly
form each of the panelists, please, starting with Rohan.

MR. PATEL: Boy, that’s a tough question to
answer succinctly, but I’ll try to do my best. And I
think maybe where you’re going, Chair, is something that
I think in California we do have a myriad of agencies
that we’re dealing with. Just last week Fran, Fran Wall
on our team I think spoke to me about the Department of
the Chief Architect, the Department of Agriculture, just
two agencies I never would have dreamt we’re going to
have to try to escalate issues to, that relate to
electric vehicle charging.

So, there’s -- I think, you know, those are just
-- it’s just an example of the kind of report you’re
putting together is exactly what’s necessary. It’s
exactly what’s needed. Because in a state like
California that has done so much, and has so many things
going for it, it also has a lot of layering sets of
different agencies that are hard to sometimes get
straightened out. So, that’s one.

You mentioned rate design. What could be more important? So, I think from our team’s standpoint, when we look at hiring we are definitely emphasizing those people that have some level of rate design background or at the very least have the capacity to understand it, and learn it, and get better.

And so, rate design not just in California, everywhere. Streamline service connections, make ready infrastructure is so important.

I heard Steve talk and, Steve, you know, I think really appreciated your presentation. There’s a number of things with electric vehicles that people don’t quite understand. One is that, really, everybody has opened up to this type of technology, but we don’t have the make ready infrastructure necessarily embedded in the code and emphasized within each of the agencies and enforcement agencies. There’s a lot of things that can be done there. So, really, everyone is available -- everybody has the availability to get an electric vehicle.

The last thing I’d say just on that is the charging speeds and the way that the customer experience works is so important. The thing I think Tesla has done well -- we’ve done a lot of -- we’ve screwed up a lot of
things, but one of the things that we’ve done very, very well is the keen focus on customer experience. So, when you go up to a Tesla supercharger it is super easy. People actually like it. Our customers get very jazzed about the whole experience because you plug it in and that’s it. It’s got a credit card reader. There’s not a whole lot of bolts and suspenders. That’s it, it’s very easy to use. And you see that in the consumer ratings.

So, that focus from regulators also about what it is that is getting in the way of that customer experience. So, sorry, I’ll stop there, but there’s a lot of small things, especially in California, that are so, so important.

CHAIR HOCHSCHILD: Can we just quickly go through the number issue from each of the speakers?

Ajay, do you want to go?

MR. CHAWAN: Sure. Thank you for the opportunity. I think the lack of a national, a large scale program or a standardized program, and you all have alluded to this as well, would be helpful. So, if we had a passport of what we’re dealing with for things like make ready, or rate design, and other items like that. So, if there’s any way to help standardize some of these. The technology groups have done this with
standardized connections, and starting protocols, and so forth. And so, if those extra standards could be furthered to make it easier for people to design to particular elements, then that means that would help promote sales overall.

CHAIR HOCHSCHILD: And Rivian and then Honda.

MR. NEVERS: Yeah, Chair Hochschild, this is Chris Nevers, Rivian. I would have to say our biggest challenge is trying to get other states to do what California’s doing. I’m not sure how much that helps you all here. But to the extent you can make your programs, for lack of a better term fungible, such that other states can adopt them easily would be great.

And I know you only wanted one thing, but I wanted to piggyback on Rohan’s issue on customer experience and maybe figure out a way to do something other than credit card readers in the chargers. Thanks.

CHAIR HOCHSCHILD: Steve.

MR. ELLIS: Great, thanks Chair Hochschild. So, I think one of the most important things, you know, is to create a business environment where there’s certainty and confidence. You know, and I’m speaking on this as an automaker.

Leadership matters, California policy and leadership, you know, is long standing and we understand
that. But what we need is really a non-wavering conviction to the technologies the state has helped us develop. And this provides an investible pathway forward. Investment means even at the automaker level.

So, an example would be like the AB 8 program. Your early days, the funding stations was a little bit less structured. But AB 8 gave it structure. AB 8 gave us certainly. And things like just the announcement of having $20 million a year to spend on stations lets automakers say, okay, I can make a commitment to producing these cars, and we can do the math and we can understand both the timing of when the stations will be there, and the capacity to support the cars.

So, that’s really critical. And without that, you lose the symbiosis that occurs between these trusted entities. When we talk about, you know, private partnership it’s critical that this be a good relationship where we understand each other and what our needs are.

You know, earlier, you know, we heard some comments about other activities in the state and, you know, the great work of automakers. Honda, in 2019, celebrated its 60th year in the State of California. It got started on Pico Boulevard in Los Angeles, moved to Gardena, and now we’re headquarters in Torrance. We
employ a lot of people and it’s a great, amazing success story.

But I bring that up only because that in and of itself gave certainty in the market, you know, with our employees and the community that Honda, as a great employer, can make a difference in their lives.

A partnership between Honda and the employees, and the goals of respect for the individual. But we need that same approach with this public/private partnership with the state. Certainty matters. Federal level, if we had more certainty at the federal government level, with the incentive programs, or even manufacturing incentives with -- Honda has vast manufacturing operations in the U.S. here. And all of these things matter when it comes to accelerating ZEVs into the market.

Last I would offer that people want choice. I know that there’s a sentiment that, you know, battery electrics are the exclusive role with the light duty. I think the Clarity Fuel Cell and the other light duty fuel cell vehicles show that people appreciate having the choice of technologies to meet their needs so that they can get on with their business in the State of California. We have doctors and lawyers that tell us all the time how much they value the ability to have the
faster fueling and long range. And, yet, the average
John and Jane Doe customer that just says I need a
vehicle that meets my needs and it does that.

So, stay the course, give us -- your policies
can give us certainty, but the actions also have to
provide certainty. And that way, when we report to ARB
our future ZEV numbers we have the knowledge and the
certainty that the stations will be there to support
them.

CHAIR HOCHSCHILD: Great. Thanks everybody.

COMMISSIONER MONAHAN: So, thanks everybody this
has been a really interesting panel and I’m looking
forward to more questions, actually, from the other -- I
don’t know if Commissioner Douglas is still on, but also
with Tim.

I had a few questions, but first I wanted to
just make a quick comment which is kind of following up
on which Rohan said, which it’s nice to see you again,
Rohan, it’s been a while.

That, you know, the state is -- we’re not just
facing a pandemic, we’re facing social unrest over the
murder of George Floyd. And I want to encourage anybody
who hasn’t seen it to check out the Governor’s statement
on this. It was a pretty powerful statement.

I also want to say I did read the blog post by
the head of HR for Tesla, which I thought was always a very great blog post. And just some of the struggles that the country is facing and how we can all do a better job of addressing racism, acknowledging it in groups, and trying to change our institutions, and our behaviors, and our personal attitudes to fix the problem.

So, let me turn now to cars. Steve, I -- first, I want to thank Honda for standing up for the California Vehicle Standards. We really appreciate that Honda has signed with the other -- with several other automakers that are going to continue to comply with the standards and support California, so really appreciate that.

I am curious about where you think Honda is going in transportation electrification? Right now, and correct me if I’m wrong, Steve, the Clarity is -- there’s a plug-in Clarity, there’s a fuel cell Clarity, that’s the only electric vehicle model, fuel cell and battery electric vehicle model that Honda is currently investing in.

Can you give us a sense more for what the future will look like? That’s one question.

MR. ELLIS: Sure.

COMMISSIONER MONAHAN: And then the other one, which I wrestle with a lot is, you know, we need to have
a global area change around transportation
electrification. This has to be a solution that is not just in California, but globally. We’ve already seen California is like the seed. Like we come up with the very ambitious, visionary policies like the Zero Emission Vehicle Mandate. It migrates to China. China adopts it. It drives down -- China is the one that have the price drop in batteries that we see today. It’s not the only reason, but it’s a major, major reason.

And I’m curious about the global theory of change with hydrogen and fuel cells, and what Honda’s thinking is about do you get -- how do you build a market? California can’t scale that market.

MR. ELLIS: Okay, great, thanks. I appreciate the good question. Let’s talk about the future and I think more, you know, we’ll pull it through the funnel. The overall goal -- well, if we go back in time, the goal was -- for EVs was just smog, cutting smog emissions because cars were very -- the new goal, of course, being CO2 reduction.

So, Honda’s goals for carbon reduction globally are very aggressive. And the way to get there can be done many ways. And so, just counting the number of EVs or fuel cell can almost misguide your view, let’s just say. And so, that’s why I said earlier about our focus
on hybridization of very high volume vehicles makes a huge difference, a huge impact on cutting carbon emissions. And we can do that globally. We can do it at a lower cost.

And, you know, when you compare the daily sales of general combustion or/hybrid vehicles compared to all other forms of pure battery electric, even plug-in, and fuel cell, we can make huge gains there.

So, what are we doing with EVs? It was also announced recently some work with General Motors, coming up for two new electric vehicles in collaboration with them. Not a lot of details. I can’t say anything beyond what we’ve stated publicly. But that is on the map.

We also have other regional programs with EVs that don’t necessarily come to America.

And then globally, again, there’s things that we’ll see happen with fuel cell in the U.S., Japan, and other countries I can’t talk about today.

But I think to your point California shouldn’t bear this alone. The State of California established an MOU with the other ZEV and 177 states to deploy ZEVs. And the goal when that was done was towards scale and improving the volumes. Because if we’re all in this together and we get other states to increase their
sales, then the scale goes up. And whether it’s a
battery electric or fuel cell, with scale you get cost
reduction and especially at this early stage with
hydrogen fuel cell.

To date there’s no other state that has on their
own developed a program like the State of California,
with AB 8 funding for infrastructure for hydrogen fuel
cell. That’s a huge, I would say opportunity, but also
it’s a serious omission of attention to ZEV as opposed
to just a plug-in battery electric.

So, we would like to see the state play a
greater role. That MOU was established, but it didn’t
necessarily lead to anything substantive for the other
ZEVs, let’s just put it that way. I hope that answers
your question.

COMMISSIONER MONAHAN: Thank you. I know we’re
under a bit of time constraint here. I have one
question for all the battery electric vehicle thinkers
in this panel, which is this question about as we try to
figure out how do we make EVs cost -- reach cost parity
with conventional vehicles? There’s this whole like
complicated equation of cost that goes into prices.
Just the vehicle, right, it’s the fuel, and it’s one of
the things I liked is a battery. And, oh, what if you
do cool V to G things to help with our integrated
renewables, and to provide frequency regulation, and all sorts of complicated calculations which could be important, I think especially in the heavy duty space.

But I’m curious about in the light duty space do those even factor in from your perspective? Like what besides the vehicle and sort of the basic electricity cost would you factor in for the average light duty vehicle owner, as you’re trying to think through how to make your vehicles cost competitive?

And if you could be really fast. I’m sorry about this complicated questions. There’s no time left and I want to make sure Commissioner Douglas has a chance to ask her question.

MR. CHAWAN: I can take this one very quickly. Commissioner, what our approach has been is to say bring all the stakeholders together to find an even greater solution because that’s what’s needed to get the cost to -- to get the upfront costs down is by extending the life, the useful life of the battery.

So, the battery typically -- most batteries will have a rotating life of say somewhere between seven and ten years. But even after that, a battery will have a good amount of a storage capacity left. And there are markets available for that, such as grid facing applications such as energy that is backup stations,
backup energy sources for critical facilities such as hospitals and data centers.

And so, what we’ve been doing is finding stakeholders to help finance those batteries to provide that upfront value of -- that value upfront so that it can help reduce the overall cost of the vehicle upfront by improving the residual value of the vehicle, which impacts the financing cost of the vehicle.

And so, if there’s a value that can be ascertained on the backend that value can be brought forward so that the upfront costs can be reduced and that then it can be utilized by a consumer to get into a vehicle in a more cost effective way. And then, by having the other partners such as utilities and other commercial property managers on board to take those batteries and actually deploy them, once they become available.

It’s very much a multi-stakeholder project and there’s a lot of activity going on in that space.

MR. PATEL: Commissioner, maybe I can take it next just because I have a slightly different view. I mean the cell chemistry that’s involved in our stationary storage is slightly different. It’s set up for many more cycles. So, yes, could you do end-of-life storage? Yes. That’s definitely not factoring into how
we would look at driving cost reductions for customers.

Driving cost reductions for customers is all about, for us, innovating on each and every part of the vehicle, not just the batteries and the battery packs. Which, of course, you know, we’re pumping out more batteries than everybody else combined here in the states by a lot. And that in and of itself is important, but that’s not the only thing. And I think that’s something that gets lost often.

You know, there needs to be a drive towards efficiency that’s really, really important in every aspect of the powertrain, every aspect of design, every aspect of what tires you’re using that impacts your range. And that’s something that I think Tesla’s almost obsessed with is seeing that efficiency.

That’s one of the reasons why, you know, just to be honest we’re a little confused about the continued support for fuel cell. Nothing against Steve. I’m sure they’re creating some incredible products out at Honda, no question. But it’s at the very least two to three times less efficient just in terms of energy used per distance traveled.

And so, that has been confusing to us, you know, just as a matter of investment that the state has provided. I mean, you know, just to -- not to make
light of it, but to just state the fact. Last week we
produced and sold more cars, more electric vehicles than
have been sold, period, of fuel cell vehicles in
California. That doesn’t mean that next year things
might not get better.

But to your earlier question, Commissioner, I
didn’t want to not be able to state where in a very
difficult time in terms of budgets, as the Chair spoke
about. Is this what we are funding? Maybe the answer
is yes. I’m certainly not an expert on fuel cell
vehicles. But it has been kind of -- it has been
confusing.

MR. ELLIS: So, let me respond to that and this
is very simple. There was a day in the industry when
there was only 8,000 battery electric vehicles on the
road, too. No one was saying eliminate them. No one
was saying don’t do that. We’re on our growth path. It
may not look the same as fuel cell vehicles. But as to
the efficiency, CO2 reduction and CO3 reduction, a
hundred percent of the fuel goes out at the shell and
for selling those today is a hundred percent renewable.

So, carbon reduction comes in many different
ways. And fuel cell vehicles provide that. I don’t
think we should not be at this point taking cheap shots,
but rather we need all technologies to provide choice.
We will cut carbon reductions faster with giving people a choice of technologies that meet their needs. I think that’s clear.

As far as --

COMMISSIONER MONAHAN: I want to make sure Commissioner Douglas has -- I’m sorry, we’re almost -- we are out of time. We need to turn to public comment. But I wanted to make sure that Commissioner Douglas has a chance to ask her question, so I’m going to cut off conversation for a second so she can ask her question.

Commissioner Douglas, we can’t hear you. You’re on mute. You’re still on mute. Uh-oh, so you may not be able to ask a question. You can type a question. She says no. We’re doing sign language here.

So, I think Tim, we have stolen all your time for Q&A because the dais had so many questions and we had a panel that likes to talk, which is a good thing. It’s a good thing for all of us.

So, Heather, am I right in terms of timing we have to turn it over to public comment at this point?

MS. RAITT: Yeah, I think we need to. So, thank you Tim and thank you to our panelists for the excellent panel. That was really helpful. And sorry to cut some of the conversation short, but we do need to move on to public comment.
So, if you’re on Zoom and you’re interested in commenting, please use the raise hand function. You can just click on that and that will let us know that you wanted to comment. I see one and there may be more.

And then, also, if you’re on the phone you can just press star 9 and that will let us know that you’d like to have a comment.

And Dorothy Murimi from the Public Advisor’s Office will go ahead and lead the public comment period for us. Thank you, Dorothy, go ahead.

MS. MURIMI: Thank you, Heather. So, we’ll start with folks on Zoom. I see William Zobel. And make sure you’re unmuted on your end. Please spell and state your name, and your affiliation. Thank you.

MR. ZOBEL: Okay. Can everybody hear me? Hear me okay?

MS. MURIMI: Please go ahead.

MR. ZOBEL: I guess you can, okay.

MS. MURIMI: Yes.

MR. ZOBEL: This is William Zobel, W-I-L-L-I-A-M, Zobel, Z-O-B-E-L. I represent the California Hydrogen Business Council as their Executive Director. Good afternoon everyone. I wanted to thank the panel, Commissioner Monahan, Tim, and the other Commissioners who are giving us the opportunity to participate. Very
much appreciated listening to everybody.

I will say that the Council appreciates the opportunity to provide input to the workshop and we look forward to working with the Commission on these policies which promote fuel cell electric vehicles and consumer choice in the light duty vehicle market to achieve the state’s equity, decarbonization, and air quality goals.

The Council supports the State of California’s zero emission vehicle initiatives. We believe that the fastest and most equitable way to achieve California’s transportation related climate improvement goals is through the mutual success of all zero emission vehicle platforms, which includes fuel cell electric and battery electric vehicles.

Commissioner Monahan, you mentioned at the outset that we need to focus on meeting the needs of all consumers, both from an access and affordability standpoint, and we agree with that.

We would point out that fuel cell electric vehicles meet the needs of many consumers, where other zero emission vehicle technologies may not. For example, consumers living in multi-unit dwellings or residences that don’t have garages and require on-street parking will not be able to charge at home. This represents more than half of low income residents in
large cities according to CEC research.

This is an access issue which can be addressed by a broader and more robust hydrogen refueling network, coupled with deployments of affordable, fuel cell electric vehicles to use them.

Also, light duty fuel cell electric vehicles on the road today can better meet consumer demand for long range fast fueling. Fuel cell electric vehicles have over a 300-mile range and the ability to fuel in three to five minutes.

We would point out that manufacturers, investors and consumers are watching policy promoted here in California. Regular and consistent support of all light duty zero emission technologies will be required to meet the state’s goals and provide consumers with affordable products and access to convenient refueling infrastructure.

So, we encourage the Commission to send that signal and promote all these technologies.

We acknowledge the challenges that zero emission vehicles have with infrastructure. This is certainly a concern. We would point out that fuel cell electric vehicles fuel with hydrogen from centralized refueling centers that provide access to hundreds, if not thousands of consumers. In short, they provide very
good access.

Growth and scale of this hydrogen network will bring down costs, making the technology more affordable and even more accessible, allowing for fast and convenient refueling experience.

In summary, the Council believes that consumer choice is important and that policymakers need to make fuel cell electric vehicles a real, affordable, and accessible choice available to consumers. This comes only by supporting technology in the IEPR and other programs consistently, and with an eye towards higher levels of market penetration.

We support the regular and consistent support of fuel cell electric vehicles and supporting infrastructure, things that sent the right signals to the market.

MS. MURIMI: Mr. Zobel, your time is concluded. Please finish up your comments.

MS. ZOBEL: Yes, ma’am. In closing, we’ll point out that it’s particularly important to recognize the diversity in consumer needs. Not every consumer and commercial enterprise fits into one box. It will take a host of solutions, including zero emission fuel cell technology to meet our mutual goals. Thank you for the opportunity.
MR. MURIMI: Thank you, Mr. Zobel.

You will be followed by Joe Gagliano. That’s Joe Gagliano. And please make sure you’re unmuted on your end. Also, do not use the speaker function on your end. Please state and spell your name. Joe Gagliano, go ahead.


United Hydrogen, even though hydrogen is in our name, is supportive of California and all of its ZEV initiatives, and achieving the state’s air quality and climate goals. It definitely needs the success of all ZEV platforms, including fuel cell vehicles and battery electric vehicles.

And I’d like to talk about, follow up on some conversation and comments earlier from Steve and Commissioner Monahan about cost competitiveness.

The cost competitiveness -- or, to be cost competitive with conventional vehicles, overall fuel cell electrical vehicle costs, cost reduction efforts will need a two-pronged approach.

One is needed to help achieving meaningful cost reductions for fuel cell technology, continued incentives are needed for the purchase and use of light
duty fuel cell vehicles by continued development,
support for light duty hydrogen fueling stations
statewide, and other measures.

Additionally, given the expected volumes that we
will be seeing from medium and heavy duty fuel cell
vehicles to help drive down hydrogen fuel costs,
incentives for the purchase and use of medium and heavy
duty fuel cell vehicles are needed, again through
support for heavy duty hydrogen fueling stations, and
other policy measures.

Supporting only one segment of the fuel cell
market, fuel cell vehicle market will only delay the
state meeting its energy and environmental goals, and
also will delay important technology and fuel cost
reductions.

United Hydrogen, therefore, strongly recommends
that the state commit to the 1,000 hydrogen fueling
station goal by 2030, which will support one million
vehicles, all light, medium and heavy duty fuel cell
vehicles by 2030 through appropriate policies and
financial incentives to help successfully build the fuel
cell vehicle market in all vehicle classes. Thank you.

MS. MURIMI: Thank you. Next, we’ll have Raoul.

Please state and spell your name, and state your
affiliation, and please make sure you’re unmuted on your
end as well. Raoul, go ahead.

MR. RENAUD: Yes, thank you. This is Raoul Renaud, it’s R-A-O-U-L R-E-N-A-U-D. I’m retired. My last employment was at the Energy Commission and I was there for ten years. Hello Commissioners Douglas and Chair Hochschild.

I just wanted to touch on the -- back on the previous topic, the access issue, and the question of whether the secondary ought to be used or not. And I’d maybe like to suggest that instead of looking at how old is the zero emission vehicle in question, is it better than what the perspective driver is currently using? As far as I’m concerned any electric vehicle is better than any gasoline vehicle.

My three-year-old Clarity fuel cell, I’d take it over any new gasoline vehicle.

So, again, I think there’s -- particularly the used fuel cell vehicles have a great deal to offer in this area. Considering, for example, look at the Toyota Mirai. The Toyota is reselling the off-lease Mirai’s that are three years old for under $20,000, and those come with three years’ of fuel. If you can imagine being able to deploy five of those for under $100,000, and you could serve the San Joaquin Valley Region just by -- with a handful of hydrogen fueling stations along
the, let’s say, the 99 corridor and maybe another one on I-5, those customers would not have to worry about fueling infrastructure, or charging infrastructure at home. They’d be able to go wherever they needed to go and get back without worrying about whether or not they needed to recharge while they were at work. And they’d be driving, in the case of a three-year-old Toyota Mirai, or almost any three-year-old vehicle, one that is indistinguishable from new, offers all the latest technology, and is zero emissions.

And I just also just want to throw in briefly, since I’ve been at the session this morning and this one, I’m very impressed with how well Zoom’s working compared with the system that we used to use when I was working there. I think this is way better. Thank you.

MS. MURIMI: Thank you, Raoul. Next, we’ll have David Park.

And just again, for folks on the phone, if you would like to make public comment please press star 9. And to allow time for others, please folks stay three minutes -- leave three minutes for your public comments. Thank you.

You’re up David Park, go ahead.

MR. PARK: Hi, good afternoon. This is David Park with the California Fuel Cell Partnership. That’s
D-A-V-I-D, the last name P-A-R-K.

And first of all, thank you very much Commissioner Monahan, Chair Hochschild and Commissioner Douglas for this really valuable session. I want to recognize that the nation’s fuel cell market would not be possible without CEC’s leadership in funding hydrogen fueling station development through the CEC GFO process.

And just recognizing this time of social unrest, as pointed out by Mr. Patel, that there really is a need to insulate ourselves from fake news.

I want to thank Commissioner Monahan’s reminder this morning that ZEV includes battery electric and fuel cell electric vehicles. And California would not be able to meet its climate improvement goals without both battery and fuel cell electric ZEV technologies.

Recognizing that fuel cell electric vehicles are a nascent technology, I don’t have to remind you that CEC launched the market in 2009 with the first hydrogen station’s GFO. Followed up by the subsequent 2015 GFO and commercial launch of production fuel cell electric vehicles in 2015.

With regard to the scale and pace of adoption, fuel cell electric vehicles lagged battery electric vehicles. However, the industry is rapidly accelerating into the light duty space which we expect will be
further empowered by CEC in your award of hydrogen
station development grants through your GFO-19602
process that just closed this May. And congratulations
and thank you for that.

As you know, Governor Brown signed an executive
order directing California to charge to development of
200 hydrogen fueling stations to support California’s 5
million ZEV target by 2030. If California can stand
behind that order, it will greatly improve the market
conditions for accelerated scale and paces of adoption
to a light duty ZEV tipping point.

Just to briefly address the social equity topic,
recognizing the challenges of charging and fueling
infrastructure accessibility in high-density housing,
hydrogen fuel cell electric vehicle centralized fueling
is well adapted to high-density housing, in a way that
other electric vehicle technologies are not.

Furthermore, if you connect the dots, if I can
quote from the Honda Motor Company fuel cell program
head, he stated: In order to develop fuel cell systems
for trucks, it has to be done first with passenger
vehicles because you cannot mass produce the power
plants at a cost effective price and connecting it to
the equity and environmental justice neighborhoods. To
be able to launch fuel cell electric drayage, trucking
for instance in the I-710 corridor, in L.A., as well as introducing electric vehicles into those neighborhoods would greatly improve the condition there.

So, thank you very much for the time.

MS. MURIMI: Thank you, David Park.

Next, we have Jennifer Hamilton. Please spell and state your name, and give your affiliation, and make sure you’re unmuted on your end as well. Thank you.

MS. HAMILTON: Thank you. Can you hear me?

MS. MURIMI: Yes, we can. Go ahead.


I would like to comment today from the point of view of a fuel cell electric vehicle driver. I am a customer of Toyota. I drive a 2017 Mirai fuel cell vehicle. And I am very grateful every day for my zero emission vehicle and for the fact that I can go to one of three stations in my area and fuel quickly, thanks to the funding and support from our state agencies, and from the policies that drive this.

And I am very excited and optimistic at the future of electrifying transportation across the board. And I also am very optimistic at the future that this will hold for my six-year-old daughter and my three-year-old son. And I just -- we need to continue this
and keep moving on the positive path. Thank you.

   MS. MURIMI: Thank you, Jennifer.

   We’ll be a moment to see if there’s anyone else with public comment. And let me say again, folks who are in the phone you can press star 9 to raise your hand for public comment.

   Seeing none, I will pass this back to Commissioner Monahan. We are done with public comment at this time.

   COMMISSIONER MONAHAN: Great. So, thanks everybody for participating and thanks for those who participated all day long. I think tomorrow we have another IEPR workshop. And at that point we’re going to do a survey to see how people like this new format, compared to the old format, and maybe we’ll ask some questions about how we can make it better going forward.

   Given that while the shelter in place remains, we’re going to be doing these remotely. So, we want to make them as good as possible for making the conversation interesting and informative for all of us.

   So, thanks to everyone. Hope you have a good evening. And I look forward to tomorrow’s session.

   (Thereupon, the Workshop was adjourned at 4:43 p.m.)
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I do hereby certify that the testimony in the foregoing hearing was taken at the time and place therein stated; that the testimony of said witnesses were reported by me, a disinterested person, and was under my supervision thereafter transcribed into typewriting.

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