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BUSINESS MEETING

BEFORE THE

CALIFORNIA ENERGY COMMISSION

In the Matter of:

) 21-IEPR-03

2021 INTEGRATED ENERGY POLICY
REPORT UPDATE (2021 IEPR UPDATE)

CALIFORNIA ENERGY COMMISSION

REMOTE ACCESS WORKSHOP: California’s Evolving Economic and
Demographic Landscape

TUESDAY, FEBRUARY 2, 2021

1:00 P.M. Session 2 – Post COVID-19 Transportation Future
and California’s Post COVID-19 Business Economy

Reported by:
Peter Petty
APPEARANCES

Commissioners

J. Andrew McAllister, 2021 IEPR Lead Commissioner
Patty Monahan, Commissioner
Karen Douglas, Commissioner

Staff

Heather Raitt, Assistant Executive Director, Policy Development
Mark Palmere
RoseMary Avalos, Public Advisor’s Office

Panelists - Panel 1

Giovanni Circella, UC Davis
Ellen Greenberg, California Department of Transportation
Austin Heyworth, Uber
Barbara Jacobson, CALSTART
Antoinette Meier, San Diego Assoc. of Governments
Mike Roeth, North American Counsel for Freight Efficiency

Panelists - Panel 2

Carol Zabin, UC Berkeley
Lance Hastings, California Manufacturers and Tech Assoc.
Bob Keefe, E2 (Environmental Entrepreneurs)
John Larrea, California League of Food Producers
Matt Peterson, LA’s Clean Tech Incubator
Bob Raymer, California Building Industry Association

Public Comment

Steven Jimenez, American Lung Association
Robert Perry
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MS. RAITT: Good afternoon, everybody. Welcome to Session 2 of today’s IEPR Commissioner Workshop on California’s Evolving Economic and Demographic Landscapes.

I’m Heather Raitt, the program manager for the Integrated Energy Policy Report which we refer to as the IEPR for short.

Today’s workshop is being held remotely consistent with the Executive Orders N-25-20 and N-29-20 and the recommendations from the California Department of Public Health to encourage social distancing to slow the spread of COVID-19.

This afternoon we have two panel discussions. Our first will address the post-COVID-19 transportation future, and the second and the last panel of the day will concentrate on California’s post-COVID-19 business economy.

For those in the audience who would like to follow along, the workshop schedule, a copy of questions that may be asked during each panel and biographies of the panelists have been docketed and are available on the Energy Commission’s website.

Instructions for how to access that information is on the meeting notice.

All IEPR workshops are recorded and both the
recording and a written transcript will be linked to the Energy Commission’s website in a few weeks.

Attendees have an opportunity to participate today by asking questions or uploading questions submitted by others through the Q and A feature on Zoom. You may also make comments in the public comment period at the end of the day or submit written comments and information for how to do so is in the meeting notice, and written comments are due on February 23rd.

With that, I’m pleased to turn the microphone over to Commissioner Andrew McAllister. He’s the lead commissioner for the 2021 Integrated Energy Policy Report. Thanks.

COMMISSIONER McALLISTER: Hey, Heather, thanks a lot. This is Andrew McAllister here, and I want to just, first of all, thank all of our panelists for this afternoon. We had a great session this morning, very interesting, looking at the econ demo kind of background, and trying to get out the crystal ball and start to think about trends, broadly speaking, and lots of interesting stuff to chew on.

And transportation, which we’re moving to now, is obviously a huge part of our energy and climate picture going forward, and we have an amazing team at the Energy Commission doing transportation forecasting now, and that
work has just, I think, come matured very much over the last few years, the last few IEPR cycles. So I’m really excited for that team to really engage on these big issues related to COVID, and our economy, and our settlement patterns and all that that implies for transportation along with technology development and all the many interlinking topics that influence energy consumption in this realm.

So, I wanted to, again, just thank all of our panelists. We’re really looking forward to discussion. I think perhaps, first, if Commissioner Douglas wants to make some opening comments, I want to give her that chance because I know she’s going to have to be in and out here, and out in a few minutes. And then also Commissioner Monahan we have on who is the lead on transportation. So, I want to invite either or both of them to give opening comments. Thanks again.

MS. RAITT: Commissioner Douglas may not have joined yet.

COMMISSIONER McALLISTER: Oh, okay. That’s fine. Oh, yeah, I didn’t see her on the site here.

Okay, Commissioner Monahan, would you like to step in? I know you have lots of deep knowledge on this already, and I’m sure you’re excited to engage.

COMMISSIONER MONAHAN: Well, I actually these panelists, we have great panelists and so I would bow to
their expertise, and I’m really curious to hear what they have to say.

You know, I think pre-COVID we had a sense of the three revolutions really taking off, a lot more investment happening in automation, electrification and mobility of the service and the confluence of the three. And I’m curious to just learn more about what the panelists are thinking in post-COVID world what the future looks like. I’m more in listening mode, my curiosity, and coming up with a lot of answers here, so, looking forward to the afternoon discussion.

COMMISSIONER McALLISTER: Great. So, Heather, back to you and to Giovanni who is going to be a moderator.

MS. RAITT: Great. Thank you, Commissioners. And just before I introduce our moderator, I’d just like to remind moderator and panelists to please introduce themselves. Say your name each time before you speak. It’s really helpful to those trying to follow along on the phone.

And, so, I’m pleased to introduce Giovanni Circella. He’s the director of the Three Revolutions Future Mobility Program and a Honda distinguished scholar for new mobility studies at UC Davis. His current research has focused on the impacts and information and communication technology, shared
mobility, micro-mobility and vehicle automation, and the evolving lifestyles and mobility patterns of various population segments.

So, thank you, Giovanni. Go ahead.

MR. CIRCELLA: Thank you very much, and good afternoon, Commissioners, and good afternoon everybody. Thank you for having me here moderating this very interesting afternoon session in which we will discuss a topic, the impact of the COVID-19 pandemic on travel, which certainly is very, very relevant for many important questions that the Energy Commission is interested in like energy consumption, but also environmental pollution emissions and many other important planning processes that are certainly very important in our society.

Already this morning we heard that during Session 1 there was a little bit of discussion on topics that somehow touched on the transportation-related issues, and so I think we will really dive into some of these topics during this session today.

I’m very pleased to be joined by five great experts in this session. So, the five speakers for today will be Ellen Greenberg, who is the deputy director for sustainability at Caltrans, Austin Heyworth, the senior manager of public affairs in California for Uber, Barbara Jacobson, the senior project manager of innovative mobility
at CALSTART, Antoinette Meier, the director of mobility innovation at SANDAG, and Mike Roeth, the executive director of the North American Counsel for Freight Efficiency.

So, somehow it meets all experts from the public sector, the nonprofit, the private sector, and really bringing different perspectives to inform about how the pandemic is really transforming our society and the impacts on transportation and energy consumption.

With that I will really ask our panelists, starting with Ellen Greenberg, to give brief introductory remarks about how really the pandemic is transforming transportation, in particular for your perspective in your work and the priorities that you see we face.

At the beginning, I will remind all speakers to please mention your name just for the sake of those listening on the phone and for the record. Thank you. Ellen.

MS. GREENBERG: Thank you, Giovanni. Ellen Greenberg, deputy director for sustainability at CalTran. That’s the California Department of Transportation.

I want to thank the members of the commission and commission staff for inviting us and getting this organized today.

So, Giovanni asked us to speak very briefly about
our role and provide maybe some framing to the conversation. So, I lead a small group in the director’s office at CalTran’s headquarters. So, we concern ourselves with sustainability issues as they relate to CalTran’s activities all around the state.

And some of the areas I am most keenly engaged in are addressing the issue of the climate impacts of the transportation sector, which is associated with about half of the greenhouse gas emissions in the state, as well as addressing the issues of resilience and adaptation relative to climate impacts.

We have an increased focus on equity in the department, and I suggest anyone interested in seeing what we’re doing go on to CalTran’s website and look at our recent equity statement. And the equity concern is bound up in all of our sustainability work.

We have been really making a big shift from the traditional CalTran’s activity towards a focus on reducing the amount of driving, reducing vehicle miles traveled and supporting other means of travel and accessibility for people all around the state, and that includes a big emphasis on increasing active transportation.

So, all of those issues are bubbling up with the pandemic. Personally, professionally I am a planner, so I’m really interested in the connections to land use
change, and I’m thinking of this whole pandemic experience, the phrase that I’m using is an “unwelcome natural experiment,” right. So, we have this natural experiment, we have so much to learn. The glimmers of positive change that we may be seeing, right, they’re all connected to, you know, really this set of larger calamities.

So, I think we have the real challenge of kind of sorting out, are we seeing some positive opportunities? How do we make the positive phenomena or opportunities stick when we are past really the crisis that we’re in?

So, just a few quick bullet points. One of the things we’ve seen during COVID is an increase in speed, so, among other things, we have safety concerns. We’re seeing changes in behavior. We’ll talk about behavioral change, changes in goods movement as well as passenger movement, and I’ll talk later about the whole big issue of how living in an auto-dependent state and an auto-dependent society influences what’s happening during the pandemic.

So, let me stop there and there’s some other panelists.

MR. CIRCELLA: Thank you so much, Ellen, and somehow you’ve touched already some of the topics that we will discuss more in details in this panel.

Let’s move to Austin. Austin, can you please make your
MR. HEYWORTH: Sure. Can everybody hear me okay?

MR. CIRCELLA: Yes we can hear.

MR. HEYWORTH: Great. Good afternoon, everybody, and thanks to the commissioners and staff for inviting Uber to participate here. We’re very eager to collaborate on this issue.

To start off, the pandemic has brought in an almost impossible to imagine amount of change for our business. As one would expect with shelter orders in California, our mobility business is down. At times it’s been down 80 to 90 percent, which is really remarkable.

It’s also ushered in a pivot towards other businesses like food, and merchants, and even, you know, pharmacy delivery which has been a real learning experience in itself, and it’s really seeing this sort of hypothesis about how those trends will interrelate as mobility rebounds.

It’s not impossible to imagine that you could save on vehicle miles traveled by having somebody deliver you from the airport along with somebody’s Thai food. You know, it seems silly, but in a lot of ways that type of proficiency is what our business is constantly iterating on and getting towards.

I think the main theme I want to share and will answer another question here is really the company, and not just Uber, but I think others in our industry are pivoting
towards being more of a mobility aggregator. For those in Sacramento, you saw, you know, shortly before COVID the micro-mobility business, the jump bikes and scooters. It was the healthiest market in the entire world, and it was really exciting to see how that complemented our ride-sharing business.

And we’re also developing things like autonomous vehicles, both of which we’ve divested from but are still very much seeing those as part of our future business, but not one which we need to control and operate necessarily, but one in which we just need to kind of become the integrator and consolidator for, for things like that including transit, including delivery. Think of it as an app that allows you to fly into a new city and get anywhere you need to go and get anything delivered to you that you might need, and do it in a way that, you know, advances, you know, efficient use of vehicles and efficient use of miles.

You know, one thing I try to encourage folks to think of Uber as is it’s really an experiment in creating incentives that drive human behavior in the right direction. I’ve driven for Uber. I’m also a new electric vehicle owner, and so I’ve dabbled in this. And it’s really an interesting experiment in trial and error where you learn, you know, new efficiencies
because an Uber driver knows that a -- you know, saving on fuel means money in their pocket. And having a more efficient route and optimizing your utilization, how often someone is in your car, translates to your own economics. And, so, it’s sort of a hyperrational game of incentives for both the rider and driver that, you know, we are constantly trying to perfect and get better at.

And, you know, COVID has obviously made that very challenging with things like, you know, pooling, which is part of my alma mater UC Davis’s and Professor Sperling’s push for the three R’s. You know, Uber is really sort of an embodiment of that concept. It’s certainly not where it needs to go, but it is -- it’s trying to integrate, you know, the idea of shared autonomous and electric.

But electrification is one area where we’re making serious investments. A couple years ago Senator Nancy Skinner passed the piece of legislation SP-10-14, which the Air Resources Board is now implementing, called the Clean Mile Standard which is sort of the -- sort of cutting-edge policy here which is really encouraging us to use every tool in our toolbox to advance our sustainability efforts. And that doesn’t just come with electrification. It also comes with, you know, the multi-mobile effort to try to get people into transit, into micromobility, also boost the utilization of vehicles, all of which, you know,
I think are very interesting tools that shouldn’t be discounted when you think about this. It’s not just about vehicle acquisition, but also something that there’s a long way to go on it, so it’s about constantly optimizing economics.

Some of the policies that I’d love to talk on, too, that we think advances the narrative that still need, you know, political backing and some wider adoption, even in a place like California. Thinks like road pricing. Road pricing or congestion pricing would really create an environment in which the advancement of those efforts, that optimization of those economics is given another layer of incentives, right.

And, for example, if I open my Uber app and it becomes very clear to me that not only is it the quickest, but it’s also the cheapest and most efficient way to get from A to B is to take a transit ride. You know, having the Uber app right in your face is exactly what we want to be looking towards. And, so -- but that’s not fully operational in every place and, in fact, it’s still in two places, so there’s one way to go on that front.

EV infrastructure and incentives that really push towards utilization, right, not just, you know, how you use in a consumer context, but, you know, how much can it be used and how much can be shared with other people is
something that we can measure.

We have -- you know, one interesting thing we haven’t spoken a lot about is the technology available on your cell phone today allows us to measure these things with a level of precision that, you know, brings, you know, policy that otherwise has a lot of gaps and implementation to life in a way that’s really exciting.

So, I will stop there.

MR. CIRCELLA: Thank you so much, Austin. Let’s move to Barbara, from your perspective, this pandemic and all the big changes, and also I will remind the speakers to please introduce yourself at the beginning when you speak for the audience that is listening to us remotely.

MS. JACOBSON: Thanks, Giovanni. My name is Barbara Jacobson. I’m senior project manager of innovative mobility with CALSTART.

And I think one aspect of the pandemic that we’ve all seen and are living is this shift towards remote working, and really envisioning how we utilize transportation during this time.

So, focusing in on the last mile piece is something that I’ve been doing in my career up until now, but it’s really gained this acceleration, so thinking more about bikes and scooters and their availability and how they complement the pre-existing transportation network is...
really essential.

And thinking, too, about the equity considerations as transit gaps are becoming more prominent due to a lack of funding and cutting bus lines, for example. So, considering options like microtransit as a supplemental gap filler for transportation modes in areas that are predominantly lower income and hence be further away from light bus and subway networks are things that I focus on.

And then an emphasis on making sure that communities have access to funding during this very challenging time is really important.

So, a program that I manage is called the Clean Mobility Options Voucher Pilot Program, and its focused on providing capital for low-income communities throughout the state of California to plan for and launch a variety of different projects based on community transportation needs assessments.

So, we’re seeing this shift back to an equitable inclusion of soliciting community feedback at the onset of project design. So, I’ll put that in as a pro of the pandemic.

And we’re seeing renewed emphasis on something that’s pretty interesting in my opinion, which is curb space management and this notion of right sizing vehicles
for delivery. And I don’t know about you, but I’ve become like converted in getting my groceries delivered, and I think that COVID accelerated these trends of getting medical supplies and groceries delivered across a variety of different ages and abilities. And that’s a trend that we’re going to see continue throughout.

So, the real goal is how to ensure that these things are done safely and more sustainably with the shift to electric vehicles and then more creative solutions focusing on human-powered vehicles like electric cargo E-bikes, which a couple of years ago seemed kind of out there, but now it’s really taking off, and we’re in this very interesting period of creative ingenuity and, unfortunately, we’re here because of a global pandemic, but recognizing that behaviors are changing and how can transportation adapt to those changes are some of the areas that I focus on.

MR. CIRCELLA: Perfect. Thank you so much. We’ll move to San Diego. Antoinette, if you want to briefly give us your introductory remarks.

MS. MEIER: Thank you, Giovanni. Antoinette Meier, director of mobility and innovation at the San Diego Association of Government, or SANDAG, which is the metropolitan planning organization and the regional transportation planning agency for the San Diego region.
I’m thrilled that the commission is having this panel today, and thinking seriously about the potential long-term impacts of the pandemic on travel behavior.

At SANDAG I am responsible for planning for the future of transportation, so, of course, I’ve been thinking a lot lately about what we’ve learned and what we’ve experienced during the pandemic that could actually lead to a better transportation future.

Perhaps the silver lining in all of this is the opportunity to recover in a much more sustainable way. So, for example, while telework is certainly not going to solve all of our transportation challenges, it is definitely part of the solution moving forward and it’s something that we should promote.

More people than ever are walking and biking, and this is something that’s, you know, really wonderful, and we want to last into the future, so we have an opportunity to invest more in making biking a safe and comfortable commute action for people.

We’ve also seen some really innovate partnerships between TNC’s and public agencies to provide more efficient ways to move people and goods during the crisis. And, ideally, we can help to facilitate these types of partnerships moving forward.

So, I think we’re at a really pivotal point.
Traffic is rising quickly. Car sales are going up, and as more people are getting vaccinated and as communities start to open, there will definitely be demand for mobility.

If we’re strategic though, I think, and we act now and we enact some of those policies that Austin was talking about, we can ensure that we mitigate the risks of returning to a transportation future with even more traffic and emissions.

So, thank you very much. I’m looking forward to digging into these topics with the panel today.

MR. CIRCELLA: Thank you so much. Last and not least, Mike, you are an expert in freight, so that is certainly a sector also that is getting a lot of impacts curing the pandemic.

MR. ROETH: Yeah. Hello, everybody. Again, it is nice to be here and good afternoon.

I lead the North American Counsel for Freight Efficiency. My name is Mike Roeth, and I’m the executive director, and we’re 11 years old, and we do a lot of work helping fleets be more efficient in their moving goods around North America as well as moving the zero-emission freight movement in that part of the transportation network.

The pandemic has been really interesting for trucking, and, you know, we studied small trucks and urban
delivery all the way up to class A heavy duty long haul, and help the industry be better in those.

And as we look at what’s occurred during the pandemic, I mean the first thing that comes to mind is, you know, truckers kind of liked it because all that car traffic was off the freeway. And, you know, in particular corridors where, you know, truckers they are limited in how many hours they can drive a day, so when they’re in congestion around certain corridors, that’s really difficult. So, they did see, you know, a real improvement there, and that was really important for certain sectors as we went through the pandemic. I mean we’re short of hand sanitizer and toilet paper, and all those things where -- you know, trucking really became much more appreciated in the -- you know, in our consciousness.

Oftentimes when we worked in trucking and asked consumers, you know, what do they think of trucks, you know, all they want to talk about is how they get in their way, and they’re big on the freeways and in the roads, and they’re really in our way and more of a problem than help.

And, you know it’s part of the -- coming out of the pandemic where the, you know, truck drivers, delivery people were looked at is really valuable to our way of life, and so, that was I think a really good thing that’s helped the trucking industry perform throughout the
pandemic.  

You know, other parts of the trucking industry, you know, were really, you know, challenged with shutdowns, so manufacturing shutdown, other parts of the -- changed, and we’re very much challenged.

As I look at what the trucking industry is kind of learning and the changes that are going on throughout, you know, 2020 and as we look forward we see a, you know, a hastening or an acceleration of some trends that were already occurring, you know, E-commerce, but not just the, you know, the intracity or the urban delivery is the final mile, but also a lot of changes in what many call the middle mile or regional haul movement of goods. And that’s like, you know, warehouses to warehouses, or the fulfillment centers at the stores where we’ve seen a -- you know, a reduction in sort of the classic long-haul disparate routes, you know, truckers sleeping in truck stops.

We’re seeing a growth in that regional haul dedicated. And dedicated is a really good word for what we’re seeing, you know, a change in freight movement. It’s becoming more predictable, more dedicated which, you know, is a real help to electrification, for instance, because now we’re more confident that those trucks will be on the route where we can charge them at the beginning, maybe do
an opportunity or a charge in the middle of the route,
maybe timed with the driver’s rest period.

So, we’re learning a lot, and there is a change
in freight, maybe not as much as some people think, and we
may get into that here with these questions, but it’s
exciting to be part of it, and I’ll share more as we move
forward, but, you know, freight is a big part of the
transportation piece, and, you know, trucking is the most
obvious one. Thank you.

MR. CIRCELLA: Thank you so much. That was a
great round of interactions and a lot of great topics, and
we will come back to a lot of this stuff in the rest of the
session today.

Clearly, the pandemic has brought big changes,
and these are also continuing to evolve as the pandemic is
still with us and we move from the first stage, the initial
stages of the pandemic to the various other adaptations
that we’re seeing in society.

And as many sources of data have shown, there was
a big, big reduction when it comes to the transportation
sector in pretty much all type of all the trips.

In the first stage of the pandemic there was a
reduction in car travel as well as the use of transit, as
well as the use of all other modes of short-distance travel
and long-distance travel.
But if we look at the data, after that initial stage of the pandemic in spring, 2020, we have seen that substantially there was a big rebound in car travel. The use of public transportation, share mobility, but also for the long-distance travel, air travel, is still remaining much lower, so it’s still way below the pre-pandemic levels, but somehow even if many of us are instead of commuting from home and working remotely we see already that car travel and the use of personal vehicles has already gone up a lot, and in some cases really getting close to the levels they were before the pandemic.

And a lot of big questions when it comes to try to understand future demand for transportation and energy, it’s also what component of these changes will continue to be in the longer-term impact of the pandemic on society versus what are only be temporary changes that the pandemic has brought during the peak now of the epidemic, but those will largely go away after that.

And it’s very important for planning processes but also for assisting the work that many of you here are actually. And many of us are doing research on this. At UC Davis we have a large project that we are working on. I invite you to check also the information on this project on the post-COVID-19 mobility.UCDavis.edu. I will pass also the link in the chat box. And I think this is a very
important topic to discuss today, what component of these changes are more temporary in nature versus longer term impact of the pandemic has brought for our society.

So, I will invite the commissioners to jump in the conversation any time with their questions. But we will start digging into some of these topics now. And I would say already this morning there was some conversation in Session 1 about telecommuting, and we know that certainly telecommuting is a very, very important topic.

Telecommuting was not largely adopted before the pandemic. About five percent of Californians were working from home before the pandemic, and it’s really seen a boom during the pandemic with also big equity issues. Many of us, I like to call ourselves the privileged because somehow we are those that are not that affected by the pandemic. We can work from home. We are lucky we still have a job, but many others are considered essential workers or they were impacted in their ability to work either reducing the number of hours, or they were failing, the business completely go out of business. And, so, those are, like you know, much more dire situations, and we really also need to focus on that.

But when it comes to transportation, even the large shift to telecommuting is a big question mark for the future. Most likely many of the people that are
telecommuting today will go back to work in person at some point, but some might continue to do it the longer term, and so probably the post-pandemic level might be somehow in between the pre-pandemic level and what we see now.

And a big question is what does this mean for transportation? Do we -- can we see in the future of transportation what are the impacts on this, also based on what we know from the past that telecommuters, even if they commute less to work, sometimes they do more discretionary trips, sometimes by car, home-based trips to go to the gym, or to go to the grocery, do other activities instead of commute in person to work.

And are the new telecommuters somehow different from what we knew in the past about telecommuting, and what are the implications of this on vehicle travel, but also the use of other modes, including public transportation and all other modes of transportation.

And maybe we could start with Ellen and your perspective from cultures, but I would really like to invite you to speak and also to rejoin the conversation after that.

MS. GREENBERG: Thank you, Giovanni. I think you touched on a number of the key points in the discussion on telecommuting.

So, one thing I would suggest is that we think
about essentially digital substitution more broadly than just the commute. So, really important to keep in mind, commute trips are between 20 and 25 percent of total trips in terms of trip purpose, and usually between 25 and 30 percent of total vehicle miles traveled.

So, when we’re talking about, you know, really looking for really substantial change in travel patterns from the entire population, we’re talking about more than the work trip. And there were some really good comments this morning about the retiree population, so, you know, keep in mind we have entire households that are not concerned about the work trip.

So, I also just want to note that there’s a very interesting and somewhat inconsistent set of research findings on telecommute pre-pandemic. And the key thing that I think there is agreement on is that when people eliminate the drive commute they’re not necessarily eliminating all the miles traveled. So, some of the research even points to an increase in household VOT with telecommuting. Some really interesting and complicated findings as travel behavior research often gives us and we have to kind of tease out, the important pieces of that.

But, to me, one of the important pieces, again, is back to the idea that, you know, Californians live in places that were largely built for dependence on using cars.
to get around. And I think the school trip is a really interesting one. We all hope that we’re going to see school openings and return to school travel, so wouldn’t we love it if the students of the state, if their parents aren’t driving to work, if the students would leave their house and walk, or cycle, or scooter to school. And, so, to the extent we can enhance those opportunities at the neighborhood level we’re going to be decreasing driving, we’re going to be increasing physical activity, get some real public health benefits out of that as well as environmental climate benefits. So, the relationship between trips across the household is really important to consider.

I do want to -- just two other quick things. So, one is that weighing in favor of a more significant long-term switch to remote work is the investments that so many organizations have now made during COVID in the equipment and the platforms, right, that we need to sustain remote work.

So, CalTran, I think a lot of people think about this kind of, you know, dinosaur organization. We have about 22,000 employees. About half of that is workforce that work in the field that are among our essential workers, among our emergency responders. But we have purchased between 5,000 and 10,000 laptops since the
beginning of COVID. Now that people have that equipment,
now that we’ve made that investment if, you know, we are
able to sustain a much higher level of telework and we are
intending to do that. So, capital investment is a really
important piece of the puzzle for a lot of organizations.
And other thing I wanted to touch on, but now,
lucky for the next panelist, I have forgotten what it is.
So, on to the next.

MR. CIRCELLA: Thank you, Ellen, and I see
Antoinette ready to bring her perspective on this topic.

MS. MEIER: Thanks, Giovanni. This is definitely
something we’ve been conducting a lot of research on, and
thinking about.

I think there are a lot of misconceptions about
telework and its impact on transportation. Unfortunately,
it’s become a bit of a distraction for some policymakers.
So, there’s no doubt that telecommuting can
reduce peak period congestion. But the data that we’ve
collected in our region through our regional household
travel survey and data that’s been collected at the
national level through the national household travel survey
suggests that teleworkers actually make much more
discretionary trips, about 11 percent more, and those trips
tend to be longer, about 16 percent longer, because when
you’re not chaining trips together with your commute, and
perhaps you just want to get out of the house. I think we’re all feeling that right now in the pandemic, a little bit couped up and wanting to get out more.

So, that impact on VMT and GHG from telework might not be as great as some might think.

We also need to understand that the ability to telework is really limited to specific types of jobs, and those are typically higher wage information-based jobs. So, for just about everyone that works in industries like hospitality, which is a sector that employs a lot of people in the San Diego region, food service, healthcare support, these are not jobs that can be done at home, and a lot of these are lower wage jobs, right.

We’ve done an analysis and determined that there’s about 39 percent of jobs in the San Diego region that are considered teleworkable. This is slightly higher than the national average at 34 percent, but there’s a cap on the amount of telework that can be done in the region.

Just because a job can be teleworked does not mean an employer will allow it to be teleworked. We surveyed employers last summer, about 150 of some of the largest employers in our region, to understand how much telework was occurring during the pandemic and perhaps what their plans were for the future, and while more than half of them had most of their workforce working remotely, they
did not expect that that was something that would continue much in the future, about a quarter of the employers that we spoke with, so that they would have a portion of their workforce telecommuting in the future on a part-time basis.

So, we still need to be investing in transportation because people are going to be traveling to work in the future, at least on a part-time basis. And it’s an equity issue, as mentioned before. Those jobs that can’t be teleworked are lower wage jobs, folks that depend on public transportation, so we need to ensure that we are continuing to invest in public transportation for their needs.

MR. CIRCELLA: Austin.

MR. HEYWORTH: Sure. This is jumping really quickly here. I think from the perspective of private industry here, in at least the services we enable in most communities, I think it’s important to realize that not every California community is the same. Downtown San Francisco is a mobility market, really where Uber was born. It’s a whole lot different from even a community like San Diego or certainly the suburbs of San Diego.

And, you know, I think getting back to my point about being a mobility aggregator and sort of what we’re able to enable, we’re not just competing against taxi. We’re competing against people’s or individual’s otherwise
ability or desire to drive themselves, right. And I think there’s an element of remote work that is going to stay. I think we’re seeing, you know, certainly a desire at least in a lot of our market research to travel for personal reasons. All of us I’m sure want to get out of our homes and go explore the world, but business travel may lag for some time. And what that’s enabled is two things.

One, it’s allowed families to move into more remote areas than they otherwise may have, right. I think the desire to live in, you know, the housing bubble of San Francisco has definitely been depleted a little bit by this phenomenon. And the housing issues that the state is facing, you know, no doubt led to some of the congestion challenges that we have. And, so, that’s led to sort of contradictory themes here. As people are moving to the suburbs or moving to, you know, Tahoe, for example, that comes with sort of a natural reliance to own personal vehicle, right.

So, a lot of the trends that, you know, we think that our industry was helping in terms of making car-free life styles more realistic in some ways can be enabled by teleworking, but also by these other behavioral patterns where families are choosing to relocate, it may set us back, you know, significantly. And, so, it will be interesting to see how that trends over time because
there's sort of I think counterbalancing in facts we're seeing.

MR. CIRCELLA: Excellent points. And you somehow touched on some of the points topics we were planning to talk very soon in this panel, and so I would really like to link this telecommuting topic also to public transportation. So, you had mentioned how you're increasing telecommuting might actually mean lower volume of travel during the peak time, but also more discretionary trips in other times of the day, and there might be also some other longer-term impacts with people that decided to relocate in some more suburban locations. All these might actually seem to be a sign that public transportation might continue to suffer.

Public transportation ridership right now is very, very low, and public transportation is majorly better suited to serve trips that go towards the central core of the city usually, and they actually work better during the peak time, and they are not very well suited usually to serve trips that have been during other times, so that they all for destinations that are outside of the central core of the city or more central destinations.

So what should we expect in the near versus median future in terms of the future of public transportation, and this is also a question that many are
asking also because many agencies in California are really promoting large investments to promote public transportation, to also increase capacity, like in the Bay Area, for example, the BART system and the public transportation has been operating at capacity during some of the peak hours before the pandemic.

And there’s been now also some questioning about like, you know, what demand will be in the future and how we can support the public transportation, but eventually also creating a way of modifying the service or integrating the service.

What is your view on this, and maybe we’ll start with Ellen, but also we would like to hear the opinion of Barbara and Austin in the new technology space?

MS. GREENBERG: Thank you, Giovanni, and thanks for the comments.

So, first, I want to repeat something we heard in this morning’s session, which is to recognize that lots of people are using transit, and those people are people who don’t own cars, you don’t have enough cars in the household to get everyone to work.

So, we want to recognize that while people with choice, we’ve already talked about, you know, the bias towards information sector jobs being jobs that people can do remotely. You know, people riding transit, yes, we have
seen a very drastic drop.

So, in terms of, you know, what’s the future of public transit, which was part of the question that we looked at in advance, you know, to Austin’s point of about not every place is different, you know, in our core, in our downtown cores in the state, and I think San Francisco financial district is probably the prime example. If we see a resurgence of downtown employment, those places require transit. The only way we can deliver that workforce to that kind of physical environment is with rail, the capacity of rail is what enables our densest employment locations nationally, internationally.

So, we have the future of transit intimately linked with the future of our densest and high value real estate, commercial real estate. So, it’s really important to keep that in mind.

The other thing, back to the point about peaking that Antoinette was mentioning, the peak period is the most expensive to serve. It’s the most expensive for transit to serve. It’s the most expensive to provide roadway capacity.

So, if we have a leveling off of peak demand, that BART may become a lot more pleasant to ride. The labor costs that are associated with peaking may be moderated somewhat. So, there are some scenarios where
there could be some benefit, and I think that, you know, there’s much to be seen.

I definitely want to point out that internationally there are transit services that have seen a much greater recovery, a much more substantial recovery without health impacts having been demonstrated even during COVID because there are, you know, many particularly the larger cities internationally where people are simply dependent on transit and don’t have the option of not using it.

So, I think there’s a lot of opportunity. I do think it’s going to be a rough road. I’m hoping we’re going to see a lot of support for transit recovery from the Federal government. I think we will. And I’ll be interested in hearing the perspectives of others.

MR. CIRCELLA: Barbara, your job really works with innovating mobility. So, how can we see this new public transportation, and what do you think the perspective can be?

MS. JACOBSON: Yeah. Thanks, Giovanni. So, Barbara Jacobson with CALSTART. I tend to think about bus rapid transit being part of the recovery effort for public transportation in general. Making the bus more approachable and building in that reliability that people associate with rails could be a really viable opportunity
now with a post-COVID world.

And then, thinking about how public transportation will need to be more adaptable to meet people’s more customized times of day needs, so be it early morning commutes for people working in cafes, or for the night owl service for people working in restaurants. I see the micro-transit sector in a public/private partnership model really being a key component to help unlock some of the gaps that public transportation will need to solve for, and then the pieces pertaining to active and human power transportation with bike share and micro-mobility as service options playing an integral role.

But with a lot of these innovations there’s the technology front, and then there’s the infrastructure piece, and the redistribution of roadway space for these types of modes is something that I’m optimistic that we’ll see those changing demands being designed in the streetscapes of cities throughout the country and here in California with curbside pickup zones, and then like the parklets for outdoor dining.

So, thinking about how the curb can be leveraged with public transit as an economic generator is an opportunity for enhancement down the line.

MR. CIRCELLA: I see Commissioner McAllister.

COMMISSIONER McALLISTER: Yeah, Giovanni, thank
you very much. This is a super interesting discussion, and, you know, I overlap somewhat with this, but not entirely, and you guys, so bear with me if I’m a little bit off base here with my question.

In terms of planning, transportation planning, as a practice, you know, whether it’s sort of the regional -- we had SANDAG on in the morning, you know, the metropolitan planning organization and transportation planning organizations across the state. Do they have all the tools that they need? I mean, you know, access to data. You know, what challenges are really out there and kind of not fully addressed that policy could help sort of find solutions for support?

So, it’s a general question, but as choice -- as marketplaces go in lots of different directions and this choice increases, and, you know, we want to go and support our public transit and also, you know, embrace new technology, wondering sort of how blind you think you are as planners or not and how we can help.

MS. MEIER: I’m happy to address that question, Giovanni. That’s a really good question, and, you know, data is critical to understanding the problem that we’re trying to solve, right.

So, we just developed a vision for our 2021 regional plan that was very data driven. We started from
scratch. We didn’t assume that any of the projects in previous regional plans were the right projects, and we looked at data on how people need to and want to move around the region, to identify what those critical connections are that need to be made.

And the data availability is a huge challenge. You know, there’s some data that we collect. Penn State is available, for instance. There’s census data, LEHD data that’s available, but we can also acquire data through private sources, but this is expensive for public agencies. Survey data is another, you know, great tool for collecting data during these regional household travel surveys, but again, expensive.

Data collected from cell phones is another source that we’re using, but again, really expensive.

So, yes, if there is a way that we can pool our resources across the state to start to acquire some of the data that we need to make sure that we’re planning for transportation in the right way.

I don’t want to throw my friend Austin under the bus, but there’s been a lot of challenges with getting TNC data, and that’s really important. So, we had to spend a lot of money collecting data that Giovanni has been analyzing for my team on TNC travel behavior in the region to know where should we be making investments for perhaps
pickup and drop off zones and things of that nature.

So, yes, there’s a lot of opportunity to improve access to data so that we’re developing the best possible solutions in our plans for transportation moving forward.

MR. CIRCELLA: Ellen --

MS. GREENBERG: Giovanni, can I jump in?

MR. CIRCELLA: Sure.

MS. GREENBERG: Okay. Ellen Greenberg, deputy director for Sustainability at CalTran.

So, appreciate all the comments Antoinette made. I think that I absolutely agree with all the data needs, but I think we also need to recognize the unprecedented nature of what’s happening now, and that’s one of the reasons why it’s so interesting to us.

That’s one reason it’s interesting. The other is that we want to do the best we can in helping people meet their needs during the crisis and going forward.

So, we have various tools around, scenario planning and testing and modeling tools, and I think that we are going to be challenged to figure out how actually to test out various ideas and keep part of that challenge. It’s another theme that was touched on this morning.

We don’t know when we will be in recovery in terms of, you know, any kind of steady or steadyish state of a return to mobility or a new level of mobility behavior.
post-pandemic.

So, one thing I’ll note is that during the pandemic there’s been more kind of mini-phases of transportation response than we might have expected. So, in April we were at about 40 percent decline in VMT, now we’re at about 10 percent. So, we’ve had these, you know, mini-phases.

Our recovery will probably also have mini-phases, so the data need is going to be ongoing, and I think we are going to need to really challenge ourselves in terms of looking at solutions and changes to our system.

So, do we have all our tools? I don’t think we have all our tools, but we have a lot of really good people, so that’s going to --

MR. HEYWORTH: Just to jump in and address what Antoinette had mentioned is we agree. I think data is eventually -- is the answer to this and already is. We use a tool called Uber movement which we’ve iterated on and tried to build out which allows the sharing of aggregated data to provide those kinds of insights. It’s like any data set, still needs to improve. It needs to kind of grow in real time.

I also think COVID in the mobility market is effectively almost freezing, preventing a new opportunity to cut through this tension that had been growing. Uber
and Lyft collectively, including taxi, is still about one-and-a-half percent of VMT in California, so I do think it’s not super wise at this point to, you know, shared rides as sort of the answer to this when really it’s all vehicles going back to the sort of concept I started with, which we are competing against people’s ability to drive themselves.

And I think the truth of it is there’s actually a codependency here with transit that’s actually quite good, which is if you’re going to -- like I do. I leave Sacramento and go to San Francisco, or at least I used to when the world was in a healthier state. It would be great to press one button and have everything timed up, so an Uber drops me off at Caltrain, and an Uber is going to pick me up very efficiently when it gets there, right. That’s a better version of the world where that efficiency becomes very, very attractive to people.

One way to bring that up on board is not to sound too self-serving here, but is integrated of transit onto, you know, apps like ours. And it doesn’t need to be only apps like ours. You know, there’s other competing, you know, applications that do this kind of integration, but putting mobile payment and trip planning, or journey planning as we call it, onto an app like ours kind of naturally solves the solution. It appeals to the behavioral sort of incentives of people. It also would
naturally share data by us quite literally pushing our
demand towards transit in a way that is, I think, you know,
mutually beneficial.

So, there are places like Denver where this is
working quite well. California is a very complicated
transit landscape. We’ve really invested in that. We’re
the whole team of folks trying to get this right, but to
answer the commissioner’s question, a little bit of nudge
from policymakers can help, I think, bring that, you know,
accelerate things, particularly with this sort of once in a
lifetime opportunity that -- I don’t want to sound so
optimistic, but the disruption of the mobility market that
COVID has brought.

MS. JACOBSON: This is Barbara. I’d like to
address the commissioner’s question also. So, soliciting
feedback from target community members and stakeholders is
an important component as well as the clean data pieces.

And then, also, putting into practice access to
like safety measures and protocols, because we’re going to
be in this period of PPE, mask wearing, even bringing your
own handles onto transit. So, making sure that there is
the funding available for the operations, the increased
costs and operations from a public safety perspective, and
regaining the trust from the public through outreach, and
marketing, and educational campaign I think is an important
way to get people back onto transit that may have strayed, and then building that reliability and trust that transit will still serve them.

COMMISSIONER McALLISTER: I have one other question. I don’t know if anybody else wanted to tackle that last one, but those were very -- thank you very much for your answers.

I guess, so just thinking in terms of equity and maybe building on that integration, Austin’s point on integration across, you know, platforms, TNCs and transit. And then the equity lens that I’m thinking of is, one, you know, people without a car, and then number two, elderly people.

You know, we have an aging population. We have a lot of communities that are retirement oriented. And as people, for whatever reason, don’t, or shouldn’t, or can’t drive, you know, how can we sort of tackle several conundrums, you know, with coherent policy? I think there are a lot of potential to help people get where they need to go so that elderly people don’t have to just stick in their homes all the time, and, you know, there’s a broad societal sort of public health benefit to getting out and about, but in a way that’s accessible to actual people, given their constraints.

And so I guess I kind of came in thinking about
the elderly, but I think there are other populations that we could be focusing on with concerted policy that can help us with some of our, you know, recovery as we head out of the COVID period.

Anyway, just thoughts on that. It’s not really a question, but maybe just a commentary. Love your perspective on --

MS. GREENBERG: Ellen Greenberg, CalTrans. The one thing that comes to mind is this very much cross sectoral, as we were saying earlier. So, the issue of whether healthcare is going to continue post-COVID to be available to people in remote mode and insurance companies, you know, continuing to reimburse providers for that kind of care. You know, thinking about, you know, all of the different access needs I think is important.

I don’t know that we’ve mentioned broadband, CalTran does have a role in broadband, so that’s really important, you know, getting broadband to all areas of the state. There have been some great innovative efforts in cooperation with the transit operators, some of who have used their buses to provide neighborhood wireless, wireless access. Great example there, collaboration across agencies.

I want to say also, earlier in our lives when we were taught in conversations, you know, back in time when
we started becoming aware of the opportunities for digital connectivity, I mean, we used to hear sometimes, you know, the fast trip is a trip not made. I think now we have a greater sensitivity to the risk of social isolation and the benefits. You know, to me, the best trip is a walking trip.

So, you know, back again to the idea of the benefits of walk, bike, micro-mobility and transit, because transit is almost always linked with some level of physical activity that is greater than a drive trip.

So, I think that active transportation opportunities at all scale is key. The broadband accessibility is key, and an economy that supports, you know, appropriate digital substitution. So, you know, that relates to education opportunities, not to the degree that we’re using them now remotely, and certainly to healthcare as well as to work opportunities.

MR. HEYWORTH: I’ll just throw in two bullet points. One is I think understanding where there’s unserved demand. Since I’ve been with Uber and work with some public transportation agencies there’s lots of well-intentioned programs that just sort of miss the mark about how demand is evolving, and that’s the kind of data types that we can actually share, right.

Understand and start first with where there is
seniors that have a mobility need that’s not being served for whatever reason, or folks in a rural community and then work backwards from there. I’ve seen that work well.

And then, secondly, I think what we refer to as right sizing is I think an interesting concept where at a time when, you know, San Diego, for example, it’s going to be tough to justify the investment of completely rebounding fixed route bus lines while there is still struggling demand. But there’s still lots of areas in the state where, you know, having your neighbor drive you to the airport or drive you to an event is still going to be, you know, much, much more efficient for the time being.

And I’m not just schilling for Uber. I think there’s a lot of ways to utilize under-utilized vehicles that may be part of the public transit fleet, right, and just connecting that to demand in a way that is a little bit more flexible, a little bit more adaptive than, you know, trying to go all the way back to the time of fixed route public transit that, you know, we have during sort of normal times.

MS. JACOBSON: This is Barbara. I have a couple of points as well. So, addressing the question about senior populations, may also be beneficial to include immune compromised people as well in that bucket.

Leveraging paratransit as a more sustainable
option with lower price points could help supplement this. And then thinking about how a lot of businesses like pharmacies and grocery stores have a dedicated hour earlier in the day for senior people to shop. Partnering with that, private enterprise could be beneficial so that way it’s done safely and gets people to where they need to go in a more sustainable way.

It doesn’t address the active components, which Ellen touched upon, which is really important from a public health perspective. But I think we’re going to start seeing the notions of like more walkable communities, and I just wanted to throw out that there’s opportunities for some synergies with private businesses on this front.

MR. CIRCELLA: I would like to chime in. Antoinette, I see you’re ready to comment on this topic, but I also want to mention something. We talk about public/private partnerships, we talk about promoting alternatives to use of cars. But also, it’s evident that despite these efforts to try to promote public transportation alternatives to the use of cars and so on, there is a risk from everything that has been said so far that will be increased car dependence in the next stages during the pandemic and also in the post-pandemic.

And, so, maybe Antoinette, I see you were ready to answer this question. Maybe we can join the question
also to are these interventions to try to support public transportation, to integrate it through technology with other modes, to give access also to those that do -- are not able to drive, or do not have a car, or they have a physical disability that -- an impairment that prohibits them from driving. Are all these interventions, will this be somehow enough to counterbalance the potential increasing car dependence on society, or should we abate our forecast and really get ready for a period of several years perhaps of increased car demand and increased car dependence in our society?

MS. MEIER: I think that depends a lot on what planners do in the near term.

So, one quick data plan I want to share with you, Giovanni. We did a travel survey in the summer, and we collected data from about thirty-eight hundred households on how they were traveling during the pandemic and what their expectations were post-pandemic. And what we learned about transit was actually incredibly interesting and very optimistic.

So, about 42 percent of the people surveyed said that they took transit before and that they would continue to take transit in the future.

But what we weren’t expecting was about 18 percent of survey respondents did not take transit before
and said that they would take transit after there was a vaccine. Only four percent of people who took transit before said that they wouldn’t take transit.

So, I think, you know, that this fear that we think people have about sharing the ride and taking transit might not be as profound, and as more people get vaccinated, they’re more likely to take transit.

But the problem is is that if transit is not convenient, if it’s not fast, if it’s not frequent, if it doesn’t connect people to where they need to go, we’re never going to attract the ridership that we need to to reduce VMT and GHG.

We also need to do a better job for the transit dependent. In our region only seven percent of low-income people are within close access to fast and frequent transit. That’s tragic, you know. We need to do a better job.

Our transit dependent population doesn’t have access to a vehicle. They rely on public transportation. They really can’t afford services like Uber without some kind of a subsidy or help from the public sector, and that’s an opportunity, I think, to address, you know, mobility for that population.

But we need to do better to attract new riders, but we also owe it to our residents who depend on transit.
today and will in the future to make it better.

MR. HEYWORTH: I’ll just throw in very quickly, too, something I failed to mention in my first comment, is safety has taken on a whole new meaning, obviously, in this world. You know, we’ve done some market research where it is significant that, you know, sharing the back seat of a car with a stranger was something that was, you know, unequivocally good for our business and something we were trying to encourage every way possible. But there’s just going to be that, I think, lingering feeling even beyond, you now the immunization effort for folks that are going to be a little bit reluctant to do that, or to get into mass transit, and that’s something that we’re going to have to really work towards because, you know, I think people feeling safe had already a significant meaning in, obviously, how someone got in a car with a stranger. But now it is something that, you know, I think is going to have an influence for years after this unfortunate pandemic.

MR. CIRCELLA: I don’t know if the commissioners have more questions.

COMMISSIONER McALLISTER: I wanted to pass -- I saw that Commissioner Monahan was on and I wanted to pass the baton to her if she has some questions to ask. I think she just rejoined after a little while off.
MR. CIRCELLA: Okay. She might have, you know, a conflict with the other meeting she mentioned, so maybe as soon as she’s back we can give her the -- perfect.

COMMISSIONER McALLISTER: Great. If you want to go ahead, I’m good with my questions, so thanks a lot, everyone.

MR. CIRCELLA: Perfect. Thank you so much. I would like to touch another type of technology. We talk a lot about telecommuting, about technology for the on-demand passenger, ride industry with the ride hailing and Uber and Lyft. We talked a little bit about micro-mobility, but the other big sector that has been growing a lot is, of course, E-shopping. And E-shopping has seen a big acceleration of a pre-existing trend that was already like, you know, growth in the voluminous sales on line that was happening already before the pandemic. But during the pandemic there was both an increase in the total volume, but also process of democratization of shopping, if you want to say, survey data, for example, that our team at UC Davis have been collecting has shown that the population of uses of shopping is somehow expanded also among those that were not traditional E-shoppers, including elderly population, nonurban residents and so on, even if there is still equity gap with especially the low-income individuals that tend to be less likely to buy on line.
But my question now is less on the demand side and less on the user side, but more on the supply side and the logistics side. And, Mike, you are an expert in the freight sector, so certainly like, you know, the sharp increase in shopping has brought to -- has brought a change in the way we move goods around, also with a big increase with the need for delivery services, fast delivery of parcels at home, and this certainly is changing. The industry with a need for more delivery balance, but also medium, heavy duty trucks and so on.

How do you see this sector and what do you expect, like you know, this -- the near future to be? Are we going to see sustained trends in the growth of this sector that will continue also in the future? And also what are the implications for these for emissions and for energy consumption for the sector? Also, when it comes to the type of vehicles which are used there is a push to try to move to zero emission vehicles, alternative vehicles, and less polluting vehicles. Is this accelerating that trend or might actually slow down that transition?

MR. ROETH: Boy, a lot of questions. I wish I had written each one of them down, Giovanni, but let me give it a shot, and if I ignore one, please call me out.

So, I think what we’re seeing with E-commerce is an acceleration of the trend. So, when we work with, you
know, the players in E-commerce, both, you know, large companies as well as some of the others like Austin was talking about, you know, we hear that we expected this sort of increase, that we expected it over two, three, four years, and so, it’s hitting faster. So, you know, they may not have been as prepared. We had hiccups at Christmas with deliveries that didn’t get there and a lot of, you know, packages not making on time. So, I think we’ve -- but overall, you know, it’s delivered pretty well.

So, the demand was up, and the systems that these companies were putting in place to handle that demand years down the road, you know, they were stretched hard, and, you know, for the most part performed pretty well.

There are some outstanding questions, that, you know, you and others study more than we do around will this stick. I do think once, you know, vaccinations and we’re more safely considering shopping, that we will return some of that shopping to, you know, in person delivery at home. But, clearly, you know, a lot of people who didn’t use Ecommerce before and now are seeing how convenient it is, and if it keeps them from -- you know, is time saving and other things, I mean I do think we definitely have a step change that’s going forward.

Part of that trends that was occurring anyway is in this middle mile or any bigger trucks, so the medium and
heavy and more of the tractor movement. We already saw
with a lot of technologies around, you know, GPS, you know,
things like the freight, and the driver, and the tractor
and the trailer, we know where all that is, and that’s
helping to, like I mentioned in my opening, more organize
the freight, more dedicated routes, and that’s helpful.

We see empty back hauls, you know, which is just
a measure of empty miles, the trucks traveling around have
decreased, you know, every year for 10 years. So, there
has been some efficiency and load matching, and, you know,
just more freight per truck, which is a very difficult
ting to study and to understand. But we do think that’s
trended, and, you know, continues.

So, the last point, in your last question around
what kinds of trucks, and particularly zero emission trucks
and all fuel trucks, what’s their, you know, their sort of
future going forward. You know, first of all I want to say
that, you know, with the pandemic came a lot of business
struggles, right, a lot of recessionary struggles. And, so,
you know, all of the manufacturers of trucks and
battery packs, and, you know, engines and all that that we
do a lot of work with, all of their product development
programs were quickly under study for budget cuts. And,
you know, which of those product development programs and
delivery programs needed engineers to fly around and be in
different places and locations.

I’m really pleased at the electrification of transportation, particularly trucking, has done so well in 2020 and has not seen a fallback because of budget constraints or that kind of things. You know, there’s a few deployments that are slowed down, but more importantly is this more dedicated freight. You know, if it’s more dedicated the charging infrastructure will be more confident in where we put these electric trucks and the charging infrastructure. You know, we’re starting to see what some call urban ports or these locations where we do much more mode switches.

So, you know, where the big truck maybe come to the outside of the city, the freight is, you know, docked or trans-docked from a big truck to a little truck, a truck that’s much more convenient and conducive to the congestion of a city, and, you know, more oftentimes can be zero emission with an electric truck in shorter miles where it’s inside the city.

So, a lot of good things, really most of which were already happening prepanademic, so you might question whether, you know, these are things that are coming out of the pandemic or not, but definitely some comments there.

MR. HEYWARD: I’ll just jump in quickly here.

One thing, it’s been fascinating to look at the data within
my company. We run a side of our business which is called Uber Freight which is exactly like Uber for them to find an owner/operator. At its best it boosts utilization the same way it does with the passenger vehicle. If an independent operator is dragging almonds from the central valley to Chicago, they're able to find a load that’s going to take them back so they’re not deadheading and putting, you know, empty VMT on the roads, and that’s great.

Secondly, it’s not a surprise that the pandemic has been good for Amazon and not so good for brick-and-mortar retail. And that’s definitely, I think, going to have a lingering effect where it’s just harder to run, you know, big investments in retail when, you know, it’s a lot more efficient to ship in your goods of all consumer types from outside the city. But the delivery space within the gig economy is helping merchants stay afloat by making it more competitive, right.

If Amazon can get something on your door in a day-and-a-half, you know, the retailer on your street can drop it on your door in two hours if you have sort of delivery from inside of the city. But also can have, you know, negative effects on VMT if that’s not done efficiently, and so, I think there is, you know, frankly some attention that isn’t sort of appropriate in how efficiently are these systems working. If we can bundle
two people on the way to the airport, we should be able to bundle two deliveries in a way that reduces VMT in the same way.

And, so, that is something our company is already putting a lot of thought into, but, you know, like all things, there’s a right way and a wrong way to have this done, and this has definitely accelerated the growth in that space.

MR. CIRCELLA: Thank you, both of you, and Mike, I’ll say that you really pointed to one important point, which is that increased volume seems to bring more efficiency also because of the economies of scale and the network effect can work more efficiently also for the delivery of these goods.

And it seems like, you know, that E-shopping probably will remain like, you know, it’s a more permanent change in society. Sure, maybe people will shop a little bit more in the shops again, but also somebody that started to do E-shopping during the pandemic might like to have it and continue to do it so after the pandemic.

But there is another type of service that I would like your opinion about, which is more like, you know, deliver your meals and that type of delivery that has really boomed during the pandemic, also substitution for traditional trips to restaurants, for example. And that is
something that is becoming today very, very important. I think, Austin, for your company it is actually becoming a very, very important line of business.

But also, a lot of the studies that we are doing at UC Davis, Antoinette, I will be interested to see your data in San Diego, show that in many cases are the same customers that now are buying with Uber Eats or they’re getting this delivery of meals are also those that are not going to the restaurants any more, and that probably is not a permanent trend, so most likely when these customers return to restaurants there will be a drop in these services.

Do you agree with the assessment, or do you see these as a more permanent transition that society will maintain over longer term?

I guess it’s mainly for Austin, the questions from the company perspective about the longer-term vision for the delivery of meals and these nonpassenger services.

MR. HEYWORTH: Yeah. We expect it to grow. I mean you may have seen this morning that we acquired a company that primarily focuses on alcohol delivery. You know, we are certainly going to invest in that. We think it also is not sort of a standalone effort, right. As I mentioned I think in my introduction, if you consolidate these things and integrate these things, there’s an
opportunity to capture efficiencies you may not consider, right.

I think a futuristic view of Uber, Lyft and companies like ours, it is an electric vehicle picking somebody up from the airport and having a drone drop a hot meal on top the vehicle because it’s being dropped off to your neighbor, right. That requires a whole lot of real time logistics work, but it is -- is definitely an exciting tool in terms of the way cities can plan around being more livable, right. It’s taking meals off the road by really, really just hypercharging the utilization of these more efficient vehicles.

I haven’t spoken much about the -- sort of our perspective on electrification, but it’s really just that. It’s that there’s a lot of evidence, a lot of it coming out of UC Davis that, you know, a zero-emission vehicle on ride sharing platform can have magnitudes more impact on sustainability just because of the level of utilization, right. Unlike a second vehicle in a family’s vacation home that’s sitting still, these are driven in an almost commercial sense where you’re getting, you know, not just a lot more miles.

I like to joke that Uber and Lyft drivers are really good at running a used Prius into the ground and making sure it’s no longer usable. The same may be true
for an electric vehicle as well.

And, so, we’re very excited about sort of integrating these things where these are not two separate conversations anymore. It will become closer and closer to sort of the same.

MR. CIRCELLA: Very good point. Ellen, I see you want to make a comment, and then I see Commissioner Monahan is back and probably wants to ask a question to the panelists.

MS. GREENBERG: Well, I would be happy to defer to the Commissioner and hear what direction she’d like the conversation to go in.

COMMISSIONER MONAHAN: Building off this topic, so, Ellen, if you want to elaborate, and then I’m going to ask a question specific to this topic of which -- which modes are kind of best primed for electrification.

MS. GREENBERG: Okay. So, I share the enthusiasm for the idea that there’s a benefit to a certain amount of travel transitioning from individual travel to fleet travel because I think we’re going to see a much faster transition to electrification in the fleet environment. It just, you know, seems intuitive, so I think that is really positive.

I want to come back, though, to the broad question about the VMT trends during the pandemic. So, many of us, and Giovanni and I have had repeated
conversations about how surprised we are at how little the reduction in VMT has been for the past few months, right. We’re at about a 10 percent reduction despite the fact that there is no soccer practice, that, you know, between 30 and 50 percent of working people are working remotely. There are no movies. There is no in-restaurant dining. There is no professional sports, you know, et cetera, et cetera, et cetera. So, it is a surprise to many of us. I don’t want to put words in Giovanni’s mouth.

But one of the things I want to highlight and I think relates to these other points, particularly the liquor delivery made me think of it, is that I think we may be collectively undervaluing the transit commute, and in particular the transit commute to conventional mixed-use cores, or historic mixed-used cores. Because when people take transit to work, A, they can’t drive for the whole day, and, B, they very often can’t buy that bottle of alcohol in a shop during their day. They can go to a restaurant. So, this ties into the question of restaurants.

You know, lots of us used to go for a drink or out to dinner, right, from our workplace. And, so, the efficiency of the places really has a huge impact on the demand on all different modes of travel. And, you know, I suspect that some of what we’re seeing in increased VMTs,
like that population that’s working remotely, that wasn’t a population that a hundred percent had a drive alone commute. That includes, you know, I would say a disproportionate number of transit riders, because so many transit riders were going to office jobs.

So, that group of people that used to take transit to their office job and go out for a drink, or dinner, or buy a bottle on the way home is now at home with access to a car all day, and they either drive or call Austin for their drink. So, you know, that’s a big change and I think it’s just very valuable for us to appreciate the extent to which, you know, somebody is taking light rail and work in downtown San Diego can walk to old town San Diego or walk to little Italy, you know, and have dinner, rather than, you know, drive to a restaurant or, again, ask Austin to deliver their dinner.

So, we do have a look at that whole spectrum of activities that is supported and that is efficiently supported in those (indiscernible) environment.

MR. HEYWORTH: I’ll just add two points here. I mentioned congestion pricing earlier, but, you know, we’ve seen this in London where they actually have sort of car exclusion zones. You can’t come into the central city without a certain type of vehicle type. And where congestion pricing has worked well think about, you know,
an example, there’s certain areas of the city where you simply cannot drive.

We’ve seen small, small experiments with this in San Francisco. It creates a real incentive to plan around, you know, some other means of mobility where it doesn’t create these sort of wasted or just miles because you have a car sitting around. But also, if you have congestion pricing for the trips you do need to take a vehicle you see those sort of in-built incentives in real time, right. If I see it’s all of a sudden much more expensive to travel during the most congested period, the most congested places, you know, the Uber app at its best if it’s built into the policy you can see that incentive in real time and respond to it in a way that the policy would hopefully, you know, change behavior.

So, that’s the kind of vision that I think we want to kind of row the boat towards.

MS. CIRCELLA: Very good points, and I will add, actually, that it would be very nice to see in the policy environment that actually like, you know, the ability of modes, including public transportation, but also share mobility and ride daily or micromobility can really combine with each other to promote a non-private mode trips let’s say. So, tourists, as Ellen was saying, that really allow to travel around during the day, organize activities
without a private vehicle, which would have a lot of
benefits for society from a number of points of view. And
it will be nice to really see this very well embedded into
the clean air standards or other policy frameworks really
is a promotion of alternatives to car product, car trouble.

Commissioner Monahan, I know you want to bring
the topic to a --

COMMISSIONER MONAHAN: Yeah, I actually -- I
really appreciate what Ellen just said, that resonates a
lot with me, and this whole panel has reinforced this idea
that whatever VMT reduction we’ve experienced, it’s less
than we would have thought because people are still driving
because they love cars, which we know. Anybody who works
in transportation knows it’s really hard to get people out
of their cars.

We talk a lot about transit, which is critically
important, especially for low income and disadvantaged
families, but really for a lot of families who -- but it’s
still a very small percent of VMT, and in terms of
greenhouse gas emissions it’s all about cars and it’s all
about trucks.

So, this conversation has really reinforced to me
this imperative that we have to electrify as soon as
possible. We have to do a lot of other things. We have to
have smart planning. We want to get people out of their
cars. We want to make it convenient. We want to make sure it’s nice. We want to do all sorts of other transportation-related planning activities, but in terms of global warming solutions, we’ve got to electrify as soon as possible.

And we already had a discussion about fleet electrification. I’d be curious, Austin, if there’s anything you would add in terms of the electrification of TNCs that you think would be important for us to consider.

And, Mike, I’m really interested in this middle mile. I mean, the Governor has a goal of having all drayage trucks be zero emission by 2035, and that’s the existing fleet, not just new vehicles. So, it’s a very strong target.

So, what you said to me in terms of -- what you said to everybody in terms of this opportunity, that seems like a huge opportunity to electrify that middle mile. So, for Austin, Mike and whoever else wants to chime in in terms of city planning relating to electrification.

MR. HEYWARD: I’ll go really quickly. Thanks for the question. I think that’s a great sort of segue. And as I often do, I’m plagiarizing Adam Coromas on my team who used to work at CARB and is really brilliant on this stuff.

But, in short, we see sort of three sort of economic like disadvantages for an EV driver currently. One is charging, simply put. You know, someone in that...
Prius can stop at a Chevron way, way quicker than somebody can charge. So, downtown curbside available fast charging is just going to help chip away at that sort of disadvantage. In a way it’s going to make it much, much easier to see that breakeven point of, look, I have to plan around charging for a little bit, but it’s not going to set me back in terms of earning potential.

Number two is vehicle acquisitions. We think that the secondary market for EV’s is going to get better with the technology.

And third, not a lot of Uber drivers, or even people doing delivery now, go and buy a vehicle with the intention of just doing this work, right. It’s a lot of folks that are working part time but using a vehicle they may already have.

But one entry point we’ve seen have high, high uptake is short term rentals and leases. General Motors had the Maven Program for a while that was very, very successful. We saw almost 200 percent growth in the number of EVs in the Bay Area and Sacramento market because of that being available, right.

So, you think of the individual who decides I want to go out and make some extra money, but I don’t have a car for this. That entry point of connecting that somebody they can get for 250 bucks for the week is the
best way to get uptake I think that we have right now, and, so, you know, kind of lowering the price point but not having that total cost of ownership that is so daunting to so many that are already doing this circumstantially iFEs a big, big deal.

And I mentioned utilization, right. Programs like CVRP, they incentivize just the purchase of the vehicle. We think there is a lot of good to come from incentivizing the utilization. The Clean Mile Standard Program that I mentioned earlier does that in some ways, but, you know, being incentivized to drive it a whole lot and share it with a whole lot of people is obviously better than just incentivizing the purchase of the vehicle.

MR. ROETH: Mike Roeth from NACFE on the second question around fleet electrification around trucks. I think there’s -- you know, building off Austin, first of all, is the urban package delivery. You know, I think there’s a couple of things there. One, it’s a really good application for these early electric trucks. Relatively small battery packs, return to base every day. They actually -- you know, we don’t want them in our neighborhoods in the evening and overnight, so slow charging overnight, I mean they just make so much sense.

And then the last point on the little trucks, I call them little trucks, is Austin’s point around, you
know, also where are these -- where can we get electric rental, you know, pickup trucks, delivery vans for those people who want to augment their, you know, their day with delivering, you know, beds from Ikea or other places where, you know, we’ve already had an industry sort of grow up around diesel and gasoline delivery of things. So, those are kind of on the smaller trucks.

And then, you know, the one thing that we’ve really felt like we’ve kind of figured out and has a huge impact on the greenhouse gas emissions are these DACAG regional haul middle mile tractor trailers. You know, they can be 500 miles a day. I mean just think about the impact on emissions and fuel use when you’re looking at 500 miles a day. Or let’s just step back and maybe it’s 200 or 300 miles a day beverage.

You know, when I first thought about electric for beverage trucks and tractors I thought, well, it will be a later adopter because of the weight. You know, they go out really heavy. But on the other hand, they go out and with all of the huge skew explosion with all the kind of flavored waters and the beer, microbrews and all that, those trucks end up spending a lot of time at the -- sort of at the delivery point, and so they don’t really get a lot of miles. So, this regional DACAG, whatever we can do to understand those routes and encourage charging and
infrastructure at those sort of hubs where these, you know, either distribution centers are or fulfillment centers, all of that.

You know, and then the last point is they do become very dedicated, and they’re pretty predictable routes. They go from a manufacturing plant to a distribution center, and that gets the confidence at the fleet level that they know if they put an electric truck in that freight will be there, so the truck will be there, and the infrastructure to charge, they’ll have a lot more confidence to do that rather then, you know, stick charging somewhere and then the freight goes away and the truck goes away, and now they’ve got a landed asset they’ve got to figure out where to move.

But, yeah, a few thoughts there.

MS. JACOBSON: Hi, this is Barbara. I just wanted to add a couple of additional pieces for consideration.

So, the infrastructure components are essential. Getting businesses on board with utilizing electric trucks is important. And then also the transition from the industry that makes these vehicles, itself, is an essential component of this. And, you know, we’ve just heard about GM transferring to all electric production by 2035, and so thinking about how this can also be extended to the truck
sector as well. And with these three points of the
triangle it really drives it forward. So, it’s a good
synergy of effort at this point.

MR. CIRCELLA: Commissioner Monahan, do you have
more questions that you’d like to ask the speakers?

COMMISSIONER MONAHAN: Well, I have a -- I don’t
know if this is a provocative question, but the
micromobility issue, I’ve heard different reports about
whether this keeps -- siphons away from public transit,
whether it actually increases emissions, whether it reduces
the time that people spend walking in zero carbon mode to
-- just any data on the impact of micromobility on
emissions?

MR. HEYWARD: I’ll jump in first, because there
was a lot of exciting work going on before, unfortunately,
this pandemic set it. Yeah, there was some obvious, and
just laying it bare, kind of honest trends that were not
great just when the market was getting off the ground, like
having a big roll around and have to pick them up and
charge them every day. But there was new innovations like
swappable batteries that was making that DMT imprint a
whole lot more exciting.

And so we had sort of a vision of, you know,
those jump bikes that are now owned by Lime, they have a
big swappable battery about the size of an old VHS tape
which is great. But you still need to bring them back and charge somewhere, but, you know, there was interesting innovation with some of our retail partners like a McDonald’s or a Starbucks where it almost looked like an old Redbox where you used to rent movies in a grocery store where you could actually plug the batteries into there and have those like a swappable charger. So we would encourage the riders, themselves, to actually swap up those batteries. So it would be kind of a more self-sustaining system.

So, I think there’s a potential for it to get better, but again, the market was really just in its infancy.

We did see a lot of linkage, though, between micromobility trips and transit, certainly not as perfect as it was going to get, but there was just starting to be conversations about how we really more purely incentivize that in a way that, you know, you get a dollar off, if you end it within a transit hub, because that means it also leaves it for the next person that’s getting off, you know, getting off the train.

And, so, I think that work can pick up again, hopefully, but there was certainly -- things were turning in that direction.

MS. MEIER: I would just -- go ahead, Barbara.
MS. JACOBSON: Oh, sure, thanks. It will be really fast. So, with like Bikeshare, for example, walking to said bike and then riding, and then docking or locking it up at a transit (audio skips), building in that walking aspect. And there are some platforms where there was a unification element for, you know, you get more points or financial incentives if you put it in a specific place, so it tends to create that impetus for building and walking. So, Antoinette, I’ll turn it to you.

MS. MEIER: Thanks. I just wanted to build on what Austin was saying, and I think that public agencies and the operators were just learning how to work together when the pandemic hit, right. So, we were all taken by surprise when overnight scooters and bikes showed up all over city streets, and it was pretty chaotic.

And we all saw the potential for those services to be first, last mile connections and to be alternatives to the private automobile, but it was very chaotic in the early months. But, you know, through partnerships with companies like Uber we were able to figure out how to make the services work, where to station them so they weren’t a public nuisance or safety issue, you know, for people. And things were going well and there was just a lot of potential, so I’m actually looking forward to getting back to a point where we can revive some of those efforts and
pilot projects and we do start to see micromobility being used more as a viable kind of transportation connection. Whether it’s to and from transit or, you know, just getting people out of their car in general, it was serving a purpose.

MR. CIRCELLA: Ellen, I see you.

MS. GREENBERG: Thank you. Ellen Greenberg, CalTrans.

I think the commissioner’s question was about the broader TNC impact on modal choices, although there was a little blip in my audio.

COMMISSIONER MONAHAN: Well, it was actually -- it was about micromobility, but happy to expand to that bigger issue.

MS. GREENBERG: Okay. So, I think that there was, you know, some really interesting survey data, particularly from some of the denser urban environments where the TNCs operate pre-pandemic, you know, showing a fairly strong tendency of people to move, walk, bike, short transit trips to TNCs.

And I will say there’s some really positive things about that because some people had poor service. You know, they were substituting a lousy transit trip to a good TNC trip.

But there was also definitely reason I think for
concern about a reduction in walk trips. Again, there’s always the possibility that they were unsafe trips, or uncomfortable walk trips. Some of that substitution I think is really positive, like the 2:00 a.m. bar closure, you know, explosion of TNC trips. But it is, I think, kind of a complicated universe of services out there and definitely worth, you know, kind of further investigation as things -- I don’t want to say normalize -- but, you know, as things evolved postpandemic.

I know that the long-term aim is have the TNCs influence auto ownership, like that’s kind of the prize at the end of the day. If having the availability of a ride share service can enable households to own one fewer car or zero cars, that’s where I think we would see the really big reduction in our VNT, and I think, you know, that’s still -- that’s a hope.

MR. HEYWORTH: Three things I --

MR. CIRCELLA: I want to say we’re starting to run out of time, so maybe, Austin, a very brief answer to this question and then we have -- we have, I think, moderator’s question from the audience. Austin, go ahead briefly, please.

MR. HEYWORTH: Yeah, very quick response here just to kind of link all the things all together here. I was mentioning aggregation of all mobility in one app and
the kind of positives that would come from that.

For one, just from a business perspective, if we had every possible transit option within the public sector on our app, as well as all the micromobility, even if it’s not generating revenue for the company, it’s good for our business because it’s more time where people are looking at the app to try to find their best option from A to B. And that’s a good thing, I think, for all parties involved.

Two, the addition of walking and active mobility is also good for a lot of things, and we can be pushed to do that.

We had a product called -- God, it’s been so long since I’ve talked about it -- but it was express pool. We encouraged people to walk half of a block to a place where there was open curb space which prevents, you know, cars needing to do that extra VNT, extra three blocks to loop around an area like downtown Sacramento, for example, where it’s just more efficient.

And third, by adding a little micromobility in all the transit you’re actually doing something that’s better for the driver and is better for the whole community because they’re able to stay busier driving people to the airport which is just better for their own revenue because it encourages people if they have a four-block trip to find that easier, better option that isn’t adding cars to the
road, right. So, there’s a lot to be studied and a lot to
be unlocked, I think, by integrating things in a way that’s
just going to sort of optimize, you know, human behavioral
patterns.

MR. CIRCELLA: Perfect. And it seems like, you
know, the questions from the audience has been more or less
addressed already in some of the questions also from the
commissioners.

So, I would like probably to ask, and I think
it’s probably going to be one of the final topics,
considering the time that is available, one question that
related to one topic that we touched but we didn’t really
get into a lot of that yet, which is walking and bicycling.
So, we talk about the impacts of the pandemic and one of
the good impacts seems to be that people are walking and
bicycling more, at least in cities and in certain
environments. And, certainly, there have big efforts from
cities to provide more walkable environments, also the
transformation of some parking space into new bicycling
lanes, and so on.

And, so, big question for the future is how can
we try to turn this temporary pattern into more permanent
training society, and what can we do as a society to
promote that. And, of course, like, you know, cities can
provide the infrastructure to bike and walk, but also the
question is more broadly what can we do in terms of federal, state, regional policies to promote this trend which can be somehow related to the topic that we just discussed related to micromobility, but it’s also like, you know privately on bicycles and scooters and walking, and, in general, all the healthier behaviors rather than sitting in a private vehicle.

MS. GREENBERG: I’d like to start. This is Barbara. This is an area which I’ve worked in for a while now, and I’m really excited that it’s coming to the forefront again. And just thinking about the democratization of curb space and reallocation of road space for people to be in, it’s a very exciting moment. And there’s a couple of policy ideas that could be supported.

So, one, with the pretext commuter benefits, adding in Bikeshare’s part of that to be covered, and also the placement of parking facilities for bikes and scooters, really important from a safety perspective and from an economic perspective. And then a lot of business on tactical urbanism and pilot programming for improving the pedestrian landscape in general through like curb extensions and bulb-outs, just to get a sense of how much space is actually needed for cars to go through.

And I know we’re in California, but a lot of
really interesting stuff happens on the roadways when you plow with the snow, and you can see how much space is essentially left aside for pedestrians and cyclists to use. So, and interesting frame of how much space could be repurposed for biking, walking and parklets and outdoor dining.

So, it’s a very exciting space and a lot of political will is needed to move this forward.

MS. MEIER: I’m happy to add to that a little bit, too. So, we have bike counters on some of our major regional bike corridors in the region. And the last I checked, we had seen over across all of the bike counters, all of those corridors, a 91 percent increase in biking since 2019. So, it’s really significant.

The survey I mentioned to you earlier, too, a lot of folks responded that they were walking and biking more, and they enjoyed it, and they were intending to do it in the future. So, to help local jurisdictions create safe spaces for people to walk and bike and recreate we created a little pilot funding program called The Shared Streets Program, and we gave funding to cities to do exactly what Barbara was talking about, so temporary measures that could be put into place to either, you know, close part of the street, or repurpose a parking lane, or slow traffic in neighborhoods to allow people to have that space to walk
and bike and not feel threatened by, you know, fast-moving vehicles and traffic.

The feedback we go from that program was overwhelmingly positive, and we’re going to offer more funding to local agencies and do another call for projects this spring to coincide with bike month.

But our hope is that this positive experience, this sort of pilot project with these temporary measures will lead to more permanent solutions. Cities will see the benefits. They’ll get good feedback from residents and will be implementing more permanent solutions that give space to people on bikes and walking and micromobility.

MR. CIRCELLA: Perfect. And, Ellen, I think you also have some comments on the same topic.

MS. GREENBERG: Yes, thank you. Ellen Greenberg from CalTran.

So, just briefly. I agree with the points made. I do think that, you know, for people who have acquired a bike, like again, that’s a capital investment during COVID that hopefully will stick around. We need to kind of dig into what the higher level of walk and bike is for in terms of recreation, exercise versus purposeful travel.

And I just want to mention that street light data has published an E-book on COVID bike trends, and they highlighted the fact that in a number of big cities there’s
been a drop in biking, and those are the cities where there was, I think, the highest level of commute cycling.

So we are seeing in different places nationally different directionality of the bike trend. So, that was really interesting to me. I’m totally on board for doing whatever we can to sustain and extend the bike impacts. And even at CalTran we were able change some of our internal rules to enable some of that conversion of street space for outdoor dining on surface streets that are state highways, and with Antoinette and the others who are working to advance this walkability and bikeability.

MR. CIRCELLA: Excellent. And these efforts actually can involve a lot of coordinated efforts for proving incentives, to infrastructure, to coordination also with the partners in industry that can promote the shared competence of these micromobility movements and combine it to walking and biking naturally happening in cities.

I think we probably only have one minute left, but it seems to be time for one very quick question more from the audience.

MS. RAITT: Yes, that would be great. Thanks, Giovanni.

So, Mark Palmere is going to go ahead and read that question. Light duty vehicles forecast and the Energy Commission’s Transportation Energy Forecast Unit. So, go...
ahead, Mark.

MR. PALMERE: Hello, everyone. Hello, the panel.

This question is for Mike, and it’s from Robert Perry. He’s asking about a potential partnership between bus and trucks. He says, “Assuming regional bus transit undergoes a massive facelift, is there an opportunity for trucking and Class A buses to partner in building the necessary charging and refueling infrastructure?”

MR. ROETH: Yeah, I mean that’s a good question. We out in the early days of electric trucks and maybe, you know, for a lot longer, anywhere we can share infrastructure and get that, you know, usage up fast is really important, so if the location fits and we can make that happen, you know, I think that the trucking fleet and the bus fleets will want to do that.

You know, charging, you know, some of these chargings can take time and these trucks are big. So, one of the things to think about, whether it’s garbage trucks, or tractor trailers, or even the smaller medium trucks is space, you know, you just can’t turn these trucks on a dime. They’re going to need, you know, bigger areas for charging, and so that’s something to really consider as we think about it.

And that whole -- that whole, you know, space for charging and infrastructure, turnover of fleet, going from
diesel to electric and so forth is -- you know, that’s a pretty big challenge. So, it would be the same whether they’re doing it in a private area or in a partnership, sort of public charging infrastructure idea. So, good idea, but it’s got to be done thoughtfully.

MR. PALMERE: Great. Thanks, Mike. And I just want to point out there actually were a couple of other questions for Mike that he had answered via text. So, if you’re interested in -- about fuel cell trucks and ZEV trucks and used trucks, the answers are in the question-and-answer box as well. So, that looks like it concludes the question-and-answer portion of this panel.

So, I’ll throw it back to you I think, Giovanni.

MR. CIRCELLA: Thank you so much, Mark. And I think we have already used all of the time that was available for this panel, and so, we touched a lot of topics that were very interesting. Of course there would have been some other topics that would have been interesting, too, like vehicle sales or intercity travel, but we will need to organize another panel for that because, obviously, the impact on America is so huge and big in various areas that it takes a lot of time to discuss all of them.

I really want to thank everybody. Thank you Ellen, Antoinette, Austin, Barbara, Mike. Thank you so
much for your participation and your contribution, and with this I think we go back to the Energy Commission for the next panel. Thank you so much.

COMMISSIONER McALLISTER: Thanks all.

MS. RAITT: Thank you, Giovanni. Thank you to our panelists. That was really awesome.

So, we will move on. This is Heather Raitt, and we will move on to our third panel, the last panel of the day. It’s on the California Post-COVID-19 Business Economy. And I’m pleased to turn over the microphone to our moderator, Carol Zabin from UC Berkeley. Carol is the director for the Green Energy Program at the Center for Labor Research and Education. She’s a labor economist, and her current research focuses on the impact of climate and clean energy policy on California’s economy, workers and labor unions. So, thank you, Carol. Go ahead.

MS. ZABIN: Thank you, everybody. Can you hear me?

MS. RAITT: Yes.

MR. RAYMER: We can.

MS. ZABIN: Okay. I apologize. I had to switch computers. My other computer went kaput, so I don’t seem to have video.

Okay. So, welcome to the last panel of the day. I hope you’re hanging in there with us. And I am very
pleased and honored to moderate and speak it in. This panel addresses California’s economy post-COVID, and we have a distinguished panel of speakers representing trade associations from a broad swath of California industries. They are Lance Hastings with the California Manufacturers and Tech Association, John Larrea with the California League of Food Producers, Matt Peterson with LA’s Clean Tech Incubator, Bob Raymer with the California Building Industry Association, and Bob Keefe, E2 Entrepreneurs.

So, the panel is organized a little differently than the previous one. I’ll kick things off as I was specifically asked to provide a perspective on workforce and labor issues. And then we’ll turn to the industry panelists for their comments. And they’re going to give comments on the four priority questions that I picked out from the long list of questions that staff distributed. And after that, we’ll have an exchange. So, it will be, hopefully, not more -- hopefully as interesting as the previous panel. I really liked how Giovanni interspersed questions, but I didn’t plan it that way, so we’ll stick to the plan.

Okay. So, I’m going to kick it off just by saying, of course, this is a really unique year for IEPR because changes are not incremental, but our economy is
being fundamentally reshaped by the pandemic.

And I was really pleased that the last panel incorporated the issue of equity right from the get go and sort of throughout the discussion of changes to the transportation system, because I think, you know, that what the pandemic exposed more than everything is the really deep and systemic inequities in our economy, and so, we really do have to address the unequal effect of the pandemic on Californians and how to reduce those trends rather than allow the pandemic to exacerbate those trends in the future.

I mean we have a bigger budget than in previous years because wealthy Californians have done really well. But so much of the news and so many new studies show the really unequal hit that low-wage workers, and particularly black and brown Californians have experienced, both economically and health wise. I mean the death rates, the excess mortality in that Stanford study that really shows service and blue-collar workers in -- is so much higher in food and agricultural workers, transportation and logistic workers, facilities workers, manufacturing and construction workers. And, of course, that has to be of great concern to the business owners in the industries that we’re going to hear from today.

So, with that said as a frame, I believe
Commissioner McAllister recommended me because of my work on the Jobs and Climate Plan for 2030 that the Newsom administration recently presented to the legislature. So, I want to spend a few minutes on that because it both shows the problems of low-wage jobs in many of the industries impacted by climate policy, and also provides a road map for the future for policies and climate agencies like the CEC to incorporate complementary equity policies in the design of programs so that we don’t continue to exacerbate the problem of low wage jobs which then end up being, you know, health inequities, education inequities, et cetera.

So, in terms of that work what we looked at, what’s really the impact of climate policy on industries and where we saw good outcomes for workers and where we really saw some problems, either continuation or exacerbation of low-wage jobs.

In terms of we call high-road success, that is the support of businesses and the business model that invests in workers, invests in training and pays decent family supporting wages and benefits, we see the renewal portfolio standard, which really has driven the construction of utility scale, solar farms and wind, et cetera. And those have produced good jobs with good career training, inclusion of disadvantaged workers in apprenticeship basically because they were and have been
almost exclusively built under project labor agreements which are essentially union collective bargaining agreements over big developments.

But we also see a bunch of what we call low road challenges, low wage trouble spots where climate policy is impacting and sometimes promoting the growth of low wage jobs, and we see this in rooftop solar and some pieces of energy efficiency market, in trucking, in ride sharing and transportation network companies, in waste management, in some manufacturing, in fire prevention and forest management, et cetera.

So, the point of the study is to say we have to be intentional about protecting workers and creating good jobs, and improving bad jobs. And I think the lesson of the pandemic is that we can be intentional, and if we’re not intentional, we’re just going to perpetuate this pretty, you know, stark reality that is going to impact us into the future.

So, how will climate agencies control, or I would say influence? They control some public investment, and they influence a lot of private investment. And depending on the industry, there are different tools to ensure that the jobs being created are good jobs, and that the businesses that really invest in their workforce and have developed business models that can support good jobs are...
supported.

  We know the ones in construction. I mentioned project labor agreements and you can add inclusive hiring practices to those. You can put skilled and trained workforce requirements to tap into the registered apprenticeships system in the state, and there are other tools.

  In nonconstruction there’s inclusive procurement requirements and really using the power of state purchasing to do that, and local purchasing as well. We heard a wonderful transportation panel, and one of the positive examples in terms of jobs is the procurement of electric buses by transit agencies where they use bidding language to really promote those manufacturers who make commitments to use good labor practices, invest in training, do inclusive hiring and support worker voice on the job.

  So, it is -- this is kind of new to the climate agencies, I think, and in a way IEPR is a technical process, but I think, as the last panel also really pushed, equity considerations are really key even in a technical planning process.

  And I think it’s also important that the climate agencies aren’t necessarily well versed in how to ensure that their program design and mandates promote good jobs. And one of the positive outcomes of the jobs and climate
plan is that the state labor agency has actually dedicated staff working with the climate agencies to identify all the ways they can improve job outcomes, and they have a new MOU with the CPUC. They’re working with the ARB, and I’m presuming and hoping that they work with the CEC as well.

So, again, the underlying headline that I want to underline is that we are in a situation where low wage jobs will persist unless we intentionally use all the tools in our tool box to really support those businesses to improve lower wage jobs and to build business models where training, and innovation, and quality are their competitive edge rather than lowest cost products.

So, with that, I’m ready to introduce the panelists and ask them to answer some questions. I’m going to read those questions because there was such a long list and then turn it over to the panelists.

So, one, how has the pandemic affected your industries? What uncertainties do you see that can affect your industries and the welfare workers that your members employ? Specifically please do address how the pandemic has affected the lower wage workers in your industries.

Second. What major trends do you expect to see over the next 10 years, and again, how can government and your organizations help your members grow, but grow in a way, a high road way that supports equity and better job?
Three. Did the first round of Federal stimulus make a difference, and what would you want to be funded in the new stimulus package that would support high road development in your industry? And then finally, how will California environmental regs advance or challenge your business in particular, and how can these regulations mitigate any negative impacts on workers and ensure good job quality and job access.

So, with that, I’m going to first turn it over to Lance Hastings. I want to remind folks to unmute themselves and also say their names whenever they speak. I was asked not to go into the bios. The bios of all these great speakers are in your package.

So, with that, Lance, I turn it over to you.

MR. HASTINGS: Great. Thank you very much. Appreciate the opportunity to present on the panel given all of the challenges that COVID has brought our way.

And I think the first part, I just want to chat about the pandemic being in phases. That early when the Governor issued his shelter in place order on Monday, March 16th, was really an important marker for the manufacturing community because, unlike other sectors and perhaps everyone on this call, it was difficult for us to pivot to remote working, because in order for the factories to
remain open one must go to the factory in order to manufacture items. So, we felt immediately that we were right in the middle of adapting to a new paradigm and worked very closely with the folks over at GoBiz and the Office of Emergency Services really to do our best at keeping manufacturing open, recognizing that there were some health and safety risks associated with that.

So what we did initially is we pivoted with a broader use of PPE at our sites, and keep in mind, the manufacturing sector is already accustomed to wearing PPE, whether it be eye, ear and foot. Toe protection is something that we do every day. So, the addition of a face covering for us was incremental as opposed to fundamentally different. So, I think in that regard we were able to meet those immediately challenges of COVID quite well.

And then it became a matter of community health, having employees in some cases, several thousand at one facility, and then going home and coming back became an issue, so we had to really ramp up our health and safety.

I think that was really more phase one, how to deal with the pandemic that we really knew nothing about. We didn’t know much about how the disease was transmitted. We certainly didn’t have any vaccine on the horizon. And it was just challenging in those early days.

Unemployment figures in the manufacturing sector
remained lower than most other sectors. And I’m going to kind of answer the tail end of the question about low-income employees in our sector at the same time.

The manufacturing sector has a very high median wage, and for that reason the more that we could keep working within the sector was going to be better off economically for the state of California and for local governments as well.

And just by contrast, the hospitality sector, as you all know, was hit very, very hard, continues to be hit hard, including the restaurants, and immediate income in those industries is a little bit lower.

So our over-indexing I think actually has been a helpful thing for the state of California and for local industries.

And then we evolved through the summer. You know, do we reopen, as we did for a time, and then reclose, and the ability to keep manufacturing going in California has really been, I think, a savior for the state physically and otherwise. I mean it’s nice to continue to keep that out, but going in the fifth largest economy in the world and our job is really to keep it, at least at that spot and not slip down and slip backwards.

So, that kind of covered I think your first question, Carol.
The second question, you know, what are major trends over the next 10 years, and relevant to this panel really is the evolution of manufacturing into what we’re calling the advanced manufacturing, which is emphasizing green technologies, making our existing technologies more efficient so that we can have reduced emissions per unit of our output.

And I participated in a panel just over a year ago where a CARB representative identified that manufacturing emissions have held steady, but we’ve increased our output. And the only thing that one can really interpret from that is the efficiencies of our sector are improving every day, and that’s something that we continue to want to do.

One of the ongoing challenges will be in our sector as it ages. We do have a silver tsunami effect hitting the manufacturing sector in California and making sure that there is enough employees in the future that are trained and prepared, willing, ready and able to go to work in the sector.

And part of the things that we’re doing here at CMTA is changing that narrative to make manufacturing sector an appealing career choice for someone, notwithstanding our median wage, which is higher than most, hovering between the 75 to 85,000 dollars a year, but kind
of departing from the Hollywood portrayal of the sector as a dirty, dark and dangerous environment when, in fact, it’s anything but.

And some of the most quiet places I’ve been over the last two years has actually been manufacturing facilities around the state, and that’s the kind of narrative that will help us ensure that we have workers in the future for our space, and quite frankly, I’d like to make sure that the manufacturing sector grows, and the only way to do that is to have some effective training programs.

From a stimulus standpoint, the Federal government, a lot of the programs that they did offer, I’ve heard that some of our members were able to take advantage of some of the programs, but not all. We were able to keep operating under most cases. I think the paycheck protection program was utilized by a few. But in terms of a broad brush, I’d have to say likely not because of the impact on our sector being less than some of the others.

And then finally, on the environmental regulations and where we’re headed, I think you all recall Governor Newsom in his inaugural address made comments regarding the polluters in the world, specifically those here in California. We saw that as a wakeup call and a challenge to be more efficient with how we operate. But I think we’re at this really odd confluence of issues.
Coming out of the pandemic where economic activity has declined has certainly had some environmental benefit, the expected economic surge that is to follow is really going to be challenged and I think impacted by Californians -- by California’s environmental regulatory scheme. And the net of that is, of course, manufacturers leaving this jurisdiction and looking for other localities in other states to make those decisions. So, what may end up being an externality that California creates rather than an opportunity to sit down with all the regulators and all the stakeholders, including those on this panel and the previous panel, to have really important and robust discussions about what that looks like.

And not to speak too hyperbolic, but in order to make things there are processes involved that due require emissions, some more than others. But we have to have a honest and open discussion about how to address that rather than just establishing what could be considered grandiose targets without the technological capabilities to meet those targets in any timeframe, let alone the ones that are established.

And I just want to let, you know, a conclusionary comment. CMTA and our members stand ready to engage in those conversations in a constructive manner, but it’s certainly something that we need to have, particularly as
we come out of a global pandemic to an uncertain future, particularly economically, let alone environmentally.

But I do appreciate the opportunity, Carol, to opine. I hope I covered as much of the questions I could in a brief amount of time.

MS. ZABIN: Well, thank you so much, Lance, and thanks for sticking with the time. You were exactly at seven minutes.

MR. HASTINGS: Just as I rehearsed it. Thank you very much.

MS. ZABIN: You’ll get a chance to respond to questions later, so it’s not your only, you know, your only play here.

So, I’m going to turn it over to John Larrea of the California League of Food Producers. John.

MR. LARREA: Good afternoon. Again, thank you for allowing me to present at this particular panel. I’m the executive director of -- the director of government affairs for the California League of Food Producers, and we represent a lot of the seasonal industries associated with the harvest, such as tomatoes, peaches, pears, nuts, olives, you name it, and the types of things that you eat every day are the types of people we represent in terms of this.

We’re industrial food processors, though, so we
actually fit kind of in with Lance’s group in terms of the amount of energy that we use in order to process.

But what I want to point out, I know that -- how did the pandemic affect us? Because we’re seasonal the first of the year is usually used in order to prepare for the upcoming harvest. We have to be -- they go through everything in terms of making sure that everything is working so that by late June, early July we can hit the ground running. We go 24/7 for about three months and then it drops off because we are aligned with the harvest.

COVID hit us like a wave. It added a layer of complexity to our preparations that we were unprepared for and that because we are fairly nimble on our feet we were able to address those issues.

Now, it breaks down into two. We’ve got some companies that are -- they’re large companies associated with this. And so they have HR departments, and they have the manpower and the ability to be able to address those concerns, and they kept their companies apprised of situations such as, you know, changes in the guidelines, the availability of PPEs, and helped them to address how to prepare for this. Whereas a lot of our companies are family owned, or were family owned and still retain some of that character. And so what you’ve got is instead of having an HR department, you’ve got one person who may have
two or three different hats on. And that required them to be even more focused on this, and it required a lot of management time and a lot of staff time in order to prepare for the upcoming season.

Now, the uncertainties associated with that was that we were watching people being, you know, hunkering down as a result of the Governor’s orders. There was questions as to whether or not, you know, are these people going to show up for work in June or July. Where were we? So, there was a lot of uncertainty going forward. So, that kind of really hit us hard.

The other was that we saw a lot of it in the -- for instance, our operations, you know, we need the people to be able to operate that. Raw materials. Was there going to be a harvest? Were we going to see these products brought to us in a timely manner so that we can get them processed? Transportation and trucking was a big issue. I heard a lot about that because our members were finding that there weren’t enough truck drivers associated with this to be able to even get the harvest going, and normally they prepare all of this ahead of time.

So, we worked with the State to try to fix things but, you know -- for instance, the DMV closed down its operations and was not finalizing any of the new truck drivers associated with this, so these truck drivers
weren’t licensed and we couldn’t put them into our processes.

So, we were scrambling, really scrambling at the beginning of this, and we managed to -- the companies found a way to get it done, but we’re also looking at a continuation this year as well.

As for uncertainties, you know, when we look forward the uncertainty associated with this is not so much in terms of what COVID impacts were, but in terms of the environmental and energy policies that the State is currently pursuing.

You know, the electrification of California is something that, you know, we’re not generally opposed to it. I haven’t heard a member say anything to those effects, but they are concerned about what the impact is going to be on natural gas. We are primarily a thermal industry. So, we don’t know what the price of natural gas is going to be if suddenly the State starts shutting all down in terms of this and trying to move towards electrification.

We’ve explored electrification associated with this with regards to our boilers, which are the largest in the world in these cases, and it’s cost prohibitive associated with that, plus with the current reliability issues and whether or not they can even, you know, fix the...
grid, in order to be able to supply the types of energy needs that we’re going to need in the future to go with something like an electric boiler is still questionable itself.

So, we’re kind of sitting back and watching what’s happening here and seeing, you know, and trying to make sure that you understand it. In our particular industry, you know we are constrained by a number of factors that need to be addressed within the regulation as it moves forward itself.

The trends in our industry, question number two, I think what we’re looking at, top of the list is probably automation. Labor, labor continues to be a problem and it will be into the future. And it’s not so much the low wages; it’s also the mid wages, too. We’re not finding the types of technical help that we need in terms of like mechanics in order to keep the operations running.

My members tell me that, you know, they are constantly looking for workers to be able to come out and to keep our operations going, even though it’s only for a three-month period, but it does make effect.

So, automation is probably one of them, and, you know, in terms of employment, obviously, we operate -- most of our guys operate in the valley. And the valley is like the epicenter for unemployment. You know, it’s generally
anywhere from five to 10 percentage points higher than the rest of the state at any one time. And so, you know, addressing those needs, we need to be able to address that issue if we’re going to be able to keep producing food at the prices that we’re currently being able to do it at. Otherwise, you know, we could see a huge increase in food prices going forward, and that’s what we don’t want.

The other was some of our members as a result of the Food Production Investment Program, FPIP, you know, they’ve changed the way they look in terms of trends going forward. That program actually helped our members roll out of an incentive-based thought process and into a more capital investment process.

What I mean by that is that, you know, generally incentive programs were usually offered by the utilities or some other where they provide some technology associated with this, and if you employ this technology we’ll write you a check.

FPIP directed the solicitation not to the technology companies, but to the food processors themselves and said what do you need. And what that did was it took the risk of that funding away from going into technologies that we may or may not use but actually went to technologies that we actually wanted and would employ right
away.

And, so, FPIP helped us to understand that it’s not a matter of just setting something in and getting a check, but some of our members who really caught on early on began to figure out that I can look ahead five, 10 years and get my capital budget and get these things done now. And all of it was associated with emissions reductions.

Now, how did that help the workers? Well, you know, I mean it generated jobs associated with installation of this and it also got our members thinking in terms of outside the box how else can we get more efficient, how else can, you know, keep up with where the State is trying to go, but without them, you know, kind of running over us in terms of just pushing green technologies on us that really don’t fit our particular area.

So, one of the things that we’re hoping that we can see in the future is that the State in terms of the regulation -- well, let me get to that question. I’m kind of jumping ahead here.

MS. ZABIN: And, John, you are approaching your time, so --

MR. LARREA: Oh, I’m sorry. My boy complains about that, too.

Let’s see. Finally, okay, how will the environmental regulations advance or challenge our business
sector in particular? What we’re trying to do is to make
sure that the regulators and those that are developing the
regulations understand the difference between other
industries and our industries, and that they can account
for those in the development of the regulations,
themselves.

Being a seasonal industry, being located in the
valley are things that we cannot control in terms of our
particular industry and the development of it. So, I’ll
stop there.

MS. ZABIN: Okay. Thank you so much. I just
want to pick up on that FPIP Program because that’s a
perfect example of where you could also add labor and skill
standards to ensure that the installation is done well and
that workers are tied in. Those are mostly skilled trade
jobs that workers are tied into the State Apprenticeship
Program and get good career jobs.

And I’m hoping that may be our next speaker. I
haven’t spoken to him, but I hear that Matt Peterson of
LA’s Clean Tech Incubator has had some experience
partnering with labor, partnering with apprenticeships, so
I am hoping you can touch on that. I’m turning it over to
you now, Matt.

MR. PETERSON: Thank you, Carol. Good to be with
you and good to be with the commissioners and my esteemed
panelists.

Just for those who are not familiar with our organization, the Los Angeles Clean Tech Incubator, or LACTI’s mission is to create an inclusive green economy in three different ways. One is working with startups and small businesses in the region, working to transform markets connecting market signals with the practice and entrepreneurs and vice versa, to create markets. And, third, enhancing communities through pilots that we bring the benefits of the green economy to disadvantaged communities and bring in underrepresented populations into the green workforce.

To tee this up, on the workforce angle we did release a report on Friday with HR and A, the advisory firm, looking at the opportunity countywide here in Los Angeles for green job creation.

Now, eventually I think we all would concur, every job is a green job as we transform the economy and transition to a zero emissions and hundred percent clean energy future, yet that requires a lot of intention. But if we look at what is a green job, obviously, or a clean energy job, whichever moniker you so choose, it’s everything from installing the solar panels and installing the charging stations, to the technicians or the CAD designers, the desk workers that make it all possible.
We set forth a series of recommendations in that report that obviously extend statewide and nationally because we don’t live in a vacuum here in Los Angeles.

We are the largest metropolitan economy in California, and the third largest in the world after Tokyo and New York. So, we certainly lead on our own rights, but we can’t work without our partners at the State level and the Federal level.

And the recommendations range from everything, how do we really invest in the jobs that are coming? A lot of our great workforce organizations and community colleges, you know, they have legacy equipment, they have legacy programs that may not readily represent the direction we’re heading.

So, how do we help them pivot? And we are doing our own workforce training program that’s focused right now on some of those very areas.

How do we maintain charging stations, which is really an IT job? It’s not necessary a contractor coming out and fixing an electrical connection. It’s what happens when the backhaul or the Wi-Fi connection goes down and the data logger isn’t pinging and, therefore, it shuts the charger down. So, that’s what we’re training the workforce of the future to do. We’ll help on the front end with the design of the system and learning CAD and project
management programs and getting certification.

So, that’s really how do we invest in the future of the green job workforce and prepare these individuals to be part of that green economy? And, of course, as you talked about, Carol, high wage, high road jobs, and that’s really at the center of all this.

And, so, part of it, obviously, we recommended in that report is also -- I’ll take a different order of the questions -- is we need stimulus.

Yes, the support for the economy over the last year for relief packages have been enormously important, of course, whether it’s unemployment or PPP for small businesses, EIDL. Yet we need infrastructure stimulus.

So, President Biden has talked about two trillion dollars in infrastructure stimulus, and that’s why with our transportation electrification partnership and 50 other companies and organizations around the United States we’ve called on Congress to ensure as part of that package that 150 billion is dedicated towards transportation electrification. It aligns with President Biden’s other priorities and Build Back Better and, of course, on climate as well as environmental justice by reducing the air pollution that affects our lowest income most overburdened communities the most. But that investment will help us return to manufacturing, whether it’s supply chain
manufacturers, or OEMs, making the actual automobiles or
buses themselves across this country.

And, certainly we have Proterra and BYD right
here in LA county that have great partnerships with labor
and great -- Proterra announced a great workforce training
program recently. Those are people that can be put to work
and increase the amount of production that they are able to
put forth by investing in their workforce and their
production capacity as the demand for those vehicles goes
up across the country.

As well as the charging infrastructure. How do
we upgrade, of course, the amount of distributed energy
resources needed to power the EV charging stations that are
going to be coming? In President Biden’s goal there’s
500,000 charging stations across the U.S. that he’s called
for, of course, in converting the Federal fleet as well as
moving to ending the combustion engine as the Governor has
done here in California through his Executive Order.

So, how do we invest, of course, manufacturing
incentives for those vehicles, the charging infrastructure,
the utility upgrades that are required, and then the
workforce training? We put in twelve and a half billion
dollars for workforce training, of which a billion was
dedicated to utility -- excuse me, union apprentice
programs.
And then, of course, active -- zero emissions active in public transit. How do we help? Not just the transit, relief packages are critical to getting the transit agencies to recover from, you know, the precipitous loss in transit and fare income that was talked about in the earlier panel, but how do we help them transition to a zero emissions future? And, so, that’s what those funding dollars are for, as well as they’re making our streets safe for people to walk and bike.

And then, finally, the innovation. We need to put money into where our innovators, our startups we support every day are really creating the next big, you know, climate hack to be able to advance, you know, towards a zero emissions future and a carbon neutral economy. And those dollars are also needed for those founders of small startups and owners of small businesses that have a tougher time getting access to capital.

Women, people of color have an institutional historical barrier in getting access to capital. And, so, how do we help them succeed and thrive, as we’ve seen this COVID economy and the pandemic, itself, affect those populations more than any other black and Latinx populations that have suffered the most in this -- from this economy and pandemic.

And, so, that’s sort of the response to how we
look at the green job investments we need. Of course we need to train them. We need to put people to work.

In terms of how our startups and small businesses have pivoted through this economic crisis that’s come with the pandemic, they, like every small business and startup, have done their best to tap into PPP. We did our best to help coach them and, and guide them, and connect them in that process. We provided some microloans to our startups as well as the small businesses, thanks to a couple grants from the Wells Fargo Foundation.

You know, we’ve done everything we can and, fortunately, of the roughly 60 startups and small businesses we support we’ve only seen one of those go out of business during the pandemic. You know, it required a lot of intention by those owners and founders, as well as our team and other partners.

But we’ve seen some of them thrive. South LA Café, a small business that’s gone through our Impact Acceleration Program has partnered with one of our Clean Tech Startups to expand their economic opportunities by using a lower emission solution by a last mile delivery solution company that’s trying to add their menu, the café’s menu, to this new company called ChewBox. And, so, by ChewBox and South LA Café partnering we’re expanding economic opportunity for both of them. So, we’ve seen some
businesses actually thrive and grow by pivoting to this situation.

And, finally, I think I will address the question around regulations and policy. From our perspective policymakers set the market signals which, you know, may not have given birth to Tesla and Elon Musk’s success, but without those market signals, with the EV mandate, you know, we know Tesla wouldn’t be profitable at this moment and we wouldn’t have seen incredible success that’s come from the first mover market that has grown here in California, and certainly it’s gone far beyond.

But EVs are now the number one export in California. And those market signals are critical, and that’s why we’re active in the public policy realm with our corporate partners, with our government partners, whether it’s the Mayor of LA, the County of Los Angeles, our utility partners, Edison and DVP, and we’re all working together now to say, all right, the Governor set forth this very bold Executive Order, and even before that Executive Order on electrification was rolled out last September we called for a California EV authority.

How do we increase coordination amongst the existing state agencies and increase the financing and funding tools that are available to facilitate this transition, because if we’re going to meet these bold goals
that we set here in the region through our transportation partnership and have been set now statewide, we need a lot of help to get there, whether it’s California Energy Commission and the CARB. Of course, they’re both doing tremendous work, but we need a lot more to succeed and hit these targets on charging vehicles on the road, the workforce, as well as really embracing this economic opportunity that’s presented in this transition.

MS. ZABIN: Thank you, Matt. Sorry, I was muted. Thank you so much for that overview of your work and your perspective on this, and I now want to introduce Bob Raymer from the California Building Industry Association. Take it away, Bob.

MR. RAYMER: Thank you, Carol. Can everybody hear me?

MS. ZABIN: Yes.

MR. RAYMER: All right. We were having problems earlier. I’d like to thank you, Carol, and especially the commissioners for inviting me back to this forum again. I’ll go ahead and kick off, but just by way of intro, the California Building Industry Association is a statewide trade association. We have thirty-one-hundred-member companies in CBIA who deal in both residential and commercial construction. Approximately 85 percent of the new homes built in California each year are built by CBIA
members.

So, I’m going to pile through this and, Carol, go ahead and give me the hook when it’s needed.

So, in terms of immediate impact from the pandemic, as Lance had already mentioned, the Governor very early on in March went ahead and identified a number of industries as essential, and construction was clearly one of those industries. And he specifically made note that housing construction was an essential service. And that was instrumental in sort of keeping things together for us. It was still, obviously, a very difficult time, but that really helped, the Governor’s action helped out with that.

However, like so many things in California, you know, local jurisdictions do have the ability to come up with more stringent rules. And in this particular case, very few people on the planet were associated with a worldwide pandemic, and so in the Bay Area things sort of rolled out a lot slower than in Southern California.

A lot of jurisdictions in the Bay Area were trying to figure out how to go forward, even though we were listed as an essential service, and when the jurisdiction doesn’t have sort of a clear path forward, the utility company, in this case PG&E, will not go ahead and do service for new construction. And that was very problematic because once the jurisdiction finally gets
things going, it will then take PG&E anywhere from two to 
four weeks to get back up and running on that particular 
job site. And so that really slowed things down in the Bay 
Area.

But on a very positive note, in Southern 
California, particularly the building departments put their 
heads together, and even with social distancing and all 
that, they figured out a variety of ways to really take 
remote plan check and remote inspection right through the 
roof.

I was on a national panel, and of the four 
jurisdictions throughout the country that were basically 
explaining how they succeeded at remote planning, three of 
the four were from Southern California.

And that’s the type of thing that’s going to 
carry on after COVID becomes a thing of the past. And 
there’s a lot of efficiencies associated with that, and the 
good news here is I strongly suspect that some of the 
remote plan checking and some of the efficiencies that were 
put into the local building department process is going to 
really help out with solar interconnections.

You know, that’s still an issue. That’s a 
problem out there. And there’s even going to be a bill in 
the Legislature this year once again trying to deal with 
that problem, but the locals are up for the task. And, so,
that was very helpful.

In terms of trends, as you already heard from this morning’s panel, there’s a noticeable exodus from high density areas, particularly the Bay Area, and too, of course the Sacramento region and central valley. But that’s been going on prior to COVID. The odd sort of trend that I saw was sort of the movement away from the urban area to the suburban area directly associated with that urban area.

Case in point, you know, Sacramento. There’s a whole lot of people moving out of, you know, urban Sacramento to Elk Grove, for example. And while that’s really boosting the property values in Elk Grove, that’s good if you own a home in Elk Grove; it’s not good if you’re a young, first time home buyer who has a lot of student debt who basically wants to move to that home in Elk Grove. And, so, there’s plus and minuses around here.

In terms of the product that we’re building, a couple of interesting design trends are happening, particularly with work at home. You know, what used to be called the den is now called the home office. People are really looking -- I mean that is becoming sort of a number one plus in terms of marketing a new home. If you’ve got a space for a home office, a segregated home office or a home gym, one or the other -- that now become a very marketable
item for new homes.

And looking on in terms of environmental challenges or whatever, clearly a major challenge that we’re dealing with now is decarbonization in both new and existing buildings, and that, of course, includes both residential and commercial.

And I’d like to point out, you know, it’s not a question of can it be done. Of course it can be done. The challenge for industry is getting it done on an accelerated schedule.

And looking at the recent solar mandate, industry work with the CEC, particularly Chairman Hochschild and Commissioner McAllister, for nearly a decade, and it was a heavy lift, but over the course of that years, that 10-year period, we basically created a smooth transition.

And this sent a very clear message to the rest of the nation. We had 49 other states, the Building Industry Associations in those states that we were pretty much nuts, but by the end of the day, by the time we hit January of 2020, we actually had the nation’s first solar mandate, and California didn’t fall into the ocean. As a matter of fact, people, quite frankly, they knew it was coming. They were ready for it, and that was a very good thing.

And now the CEC and other agencies, of course, are pushing for decarbonization, electrification, if you
want to refer to it that way, for both homes and commercial buildings.

But this is going to happen on a much more rapid pace than with the solar mandate. And with this accelerated effort brings significant challenge, and COVID, you know, isn’t helping all that. And, in particular, it’s going to be with the labor sector and with grid reliability.

You know, we need to retrain our existing workforce to become very familiar with products and installations, you know, particularly in the residential sector. We’ve got to become familiar in a very quick fashion with electric heat pump water heaters and electric heat pump space heaters. That’s easier said than done when you’ve got COVID sort of hanging over your shoulder. And the Energy Commission is certainly going to be assisting us with that. But once again, it can be done. It’s just can’t happen overnight.

I think, though, putting that aside, the bigger challenge as it exists with the labor market and with our electrical grid. As we well know, there’s tens of thousands of individuals that are employed in high-paying jobs in the gas industry, and the State is giving very clear signals that, you know, over the course of time these individuals need to be moving to a different career path.
such as renewable energy industry. But let’s face it, that is a lot easier said than done, and it’s a very emotional thing to have to basically have someone who’s been in the job capacity doing very well at it for 20, maybe 25 years and basically saying it’s time that we start looking, you know, to move that career path elsewhere.

And, you know, to be somewhat critical, I’m hearing the term “compassionate transition” from one job to another, but I’m not really seeing a massive plan that can handle this transition. And I’m also hearing the same thing from the petroleum workers. This is something we’ve all got to work together on. Once again, it can be done.

And, lastly, the issue of grid reliability. An all-electric home with an EV in the garage, at least one EV in the garage, we’ve been working with the CEC staff and we’ve come to kind of the same conclusion, that an all-electric home with the EV in the garage uses roughly three times the amount of electricity that that traditional mixed-fuel home uses. And, of course, if industry is building 100,000 new homes and apartments each year, that will be what we do this year, the question is can the grid handle this increased load.

So, once again, these are problems that can be solved, but the question is can we get this done in a very short period of time.
And, lastly, in terms of impact on the industry, my friend, Matthew Hargrove, from the Building Owners and Managers Association and the California Business Properties Association gave me some data points that I’ll provide to the Energy Commission.

We’ve already heard that the shopping center industry, the brick and mortars, got hit hard. To put this into perspective, there was a job loss of three-quarters of a million employees from basically the shopping center industry throughout California. That’s just California, not the nation.

And along with that, there’s a 22-billion-dollar lost sales, and, of course, associated with that is the tax that would have gone to local and state entities. And, so, it’s going to be a long, steep climb out of this, but we can do it by working together.

So, Carol, that’s my presentation. Be happy to answer any questions.

MS. ZABIN: Thank you so much, Bob. And our last speaker is another Bob, Bob Keefe from E2 Entrepreneurs. I’m just going to hand it over to you, Bob.

MR. KEEFE: Well, thanks, Carol. I always love being the last Bob on the list on the last panel of a long day, mainly because I get to hear and learn so much from other people. So, thank you all for letting me participate.
As mentioned, I’m Bob Keefe. I’m the executive director of E2 Environmental Entrepreneurs. If you don’t know us, we’re a national organization of business people who care about the environment, care about the economy as well.

We got our start in California here about 20 years ago. We now have about 10,000 members and supporters stretched across nine chapters from Seattle and San Diego where I am to New York and North Carolina.

Our members are -- cover the gamut of the economy. There are folks in real estate. There are folks in manufacturing. They’re farmers, they’re tech people and all of the industries that have been represented before me today.

The one thing they have in common is that they realize that the economy and the environment aren’t at odds, but, in fact, rely on each other.

And a lot of our folks are clean energy entrepreneurs, investors, business owners, et cetera. It’s not all of our members, but it’s a good chunk of them. And I think what I’d like to talk about today is the impacts of COVID on those clean energy workers and those clean energy jobs, because it’s something that we’ve been tracking at E2 for almost a decade now in one way or another, most
recently through our work in collaboration with U.S. Energy Employment Report, the user report which is developed every year from NASEO, which you all know well and Energy Futures Initiative, but we’ve been a part of that since the beginning.

And from that data we create something called Clean Jobs America, state-specific reports on California and about 20 other states, and then industry-specific reports on energy efficiency jobs and other things like that.

So, let me just kind of frame it up for you. Before COVID-19 there were nearly 3.4 million Americans that worked in clean energy nationally. In California, the biggest state for clean energy, about 537,000 people worked in clean energy. And, yes, those are solar installers and wind turbine technicians, but they’re also folks that are working in energy efficiency, clean vehicles, efficient lighting. They’re welders helping build wind turbine towers and solar racking systems for residents. They’re electricians installing LED lighting systems in our downtown office buildings, whether it’s in Sacramento or Los Angeles. It’s HVAC folks that are putting in high efficiency heating, air conditioning, ventilation systems, ductless mini-splits. And it’s construction laborers putting in low-E windows and insulation and better building.
envelopes, the folks that work for organizations that belong to Bob’s organization, for instance.

The median salary for clean energy workers in California at the start of this year was about 27.50 an hour. That’s about 29 percent above the state average.

So, that will give you a perspective on what it was like before COVID.

In March we started tracking using the same methodology and job categories as the U.S. Energy Employment Report. We started tracking unemployment filings in those same job sectors. And what we found was that since COVID-19 hit in March, about 71,600 Californians that work in clean energy had filed for unemployment. Nationally the number is about 429,000 at the end of the year.

Not surprisingly, unfortunately, workers of color have been hit among the hardest. Hispanic and Latino workers, for instance, make up about 14 percent of the clean energy workforce. They represented about 25 percent of the job losses, and there’s a lot of reasons for that we can get into if you’d like.

But I’d also point out that the hardest hit in metropolitan area, the hardest hit MSA in the country is where Matt Peterson is, the LA Long Beach MSA. Thirty-eight thousand clean energy workers in the LA area filed
for unemployment, a decline of about 26 percent from where
we were year earlier in clean energy employment.

By county, LA was also -- the Bay Area was number
four in the country for clean energy job losses. About
19,500 clean energy workers lost their jobs since COVID in
the Bay Area.

By county, LA County fell about 12 percent, San
Diego fell about eight percent, Orange/Alameda Counties
fell about seven percent.

We’ve seen a lot of -- the biggest decline was
back in March, I think, and we started to see some pick up
again in job growth beginning in June, and it’s been --
it’s been bouncing on the bottom basically is how I’d
describe it when it comes to returning these jobs. Yes,
they’ve been picking up a little bit, but nothing like we
expected with -- clean energy employers expected at the
beginning of this year for sure.

So, you know COVID-19 meant that energy
efficiency workers couldn’t get into homes or office to do
energy audits and upgrades to do their jobs. It meant that
investors started tightening purse strings amid all the
economic uncertainty, derailing some large utility scale
clean energy projects, for instance. It sidelined
residential sales for solar, which in most cases was really
dependent on face-to-face meetings, for instance, and it
sided the availability of supplies to companies. You know, I’ve talked to some of our solar folks who had the work to do but they couldn’t get the panels out of factories, whether they’re domestic or in China.

One of the biggest wind turbine manufacturers in America had a huge COVID outbreak at two of its plants. They couldn’t get turbine parts. They couldn’t get the nacelles and other parts out of those factories and into the hands of the folks in California and elsewhere that are trying to install them.

So, we’re starting to see those jobs come back, but at the same time actually we’re now starting to hear from some of our members, anyway, and other employers who are saying the other problem is we can’t find enough workers now. We can’t find enough skilled workers. So, how is that when you have a huge hit in employment in clean energy and then you have people saying we can’t get enough workers.

Well, think about one of the biggest sectors in clean energy is construction jobs in one way or another as I mentioned, welders, electricians, construction laborers, et cetera. And some of the growth that Bob and the building industry has seen recently thanks to low interest rates, and remodeling projects, and new home construction, et cetera, has kind of sucked some of those employees out
of clean energy because these folks need a paycheck, and
they’re going to go where things are growing.

So, a lot of employers that we’ve talked to in
clean energy have said that when things do come back, and
when they come back big, and when it comes back under the
policy that you’re seeing under the Biden administration,
from the policies we’re seeing in California, we’re
actually going to need a hell of a lot more workers than we
had previously. And in order to get those workers we’re
going to need to train them up.

So, one of the things that we’re really keeping
our eye on is the kind of thing that Matt Peterson was
talking about earlier, which is workforce training. We
need to figure out how to get more employees trained up for
this type of work so they can transition into this work
when it does return big time, and we know it’s going to
return big time. We know it from what’s happening in
Washington, we know it’s happening in Sacramento. We know
from what the markets are doing and what investors are
doing.

You know, earlier today I was actually on a
Brookings conference call with Larry Finke of BlackRock who
basically said, look, there’s actually a lot of private
capital on the sidelines right now that is just looking for
ways to invest in clean energy in the United States. Right
now, most of our investments -- BlackRock’s investments he said for its -- for the clients and advisors are going overseas when it comes to clean energy investments. That’s going to change. That’s going to change with the policies and the leadership on clean energy that we’re seeing at the Federal level for sure, and it’s going to change here in California because of that and because of the leadership of CEC and the State Legislature and the Governor’s office.

Where is that growth going to be? You all probably know it as well as I do, yes, it’s building decarb. Switching to electric buildings means electric hot water -- heat pump hot water tanks. It means ductless mini-splits. It means induction stoves. It means LED lighting systems. Somebody has got to make all that stuff. Somebody has got to install all that stuff. Somebody has got to sell all that stuff. It’s going to be in storage, of course, the holy grail of clean energy has been found, I think, and we’re going to see a lot more storage obviously down the road, and those are ranging from the LG battery on my garage that’s hooked to my solar panels to the truckloads of those that are serving as storage for utility scale solar and wind all across the country, and, of course, yes, EV, electric vehicles. Yes, cars, but also buses, trucks, yard vehicles that are working at our ports and in our shipyards and our warehouses and so forth.
And it’s in grid modernization. That -- you all know this better than I do, but we’ve got to do something about the grid. The opportunities are there. Several of the other speakers, many of the other speakers today talked about that.

I was talking earlier this week, or rather last week with one of our E2 members who -- he’s in Colorado, but he runs a major wind development. He’s done a lot of work in California and a lot of other states. But he told me basically, Bob, it’s almost getting -- yes, it’s great that everybody wants more wind and solar, and we stand ready to build it, but here’s the deal. It’s almost becoming not economical to do so because the cost of wind energy has become so low, which is great for consumers, it’s great for all of us, but there’s going to be -- they’re starting to get pressure on wind, and solar development for that matter, could be able to build these projects at prices that justify the construction of them. That’s a good thing for anybody who uses juice, right. But we need to figure out how to get that cheaper electricity around and available to more places. And to do that we need to fix the grid.

So, the last thing I’d like to mention, and sorry if I’m rambling, but is around equity. I mentioned the diversity issues in clean energy. Right now, clean energy
is about 75, 78 percent white males, actually. Clean
ergy has got a diversity problem. We should be looking
at ways to fix that, and we can do that with the programs
and the policies that we’re seeing both at the State and
the Federal level now.

And we need to figure out how to get those
opportunities in clean energy not just in jobs, but in the
benefits of lower monthly electricity bills, and the
benefits of cleaner energy into the communities that have
been bypassed by this industry so far -- LMI communities,
communities of color, rural communities, and communities,
frankly, that have been impacted by the transition or being
impacted by the transition into cleaner energy.

So, I’m hopeful that we can find solutions to
train the workers that we need for the clean energy
industry, get them back to work, and do it in a way that
opens opportunities for all of us.

And, Carol, I’ll turn it back to you if that’s
the plan here.

MS. ZABIN: Okay. So appreciate the data, and
information, and perspective from all of you.

And to sum up, we’ve seen a lot of different
stories, and I think it’s really important to highlight
that each industry is different, and the challenges and the
solutions are different.
I heard a common theme of being willing to work with government and other partners to solve problems, including the challenges posed by COVID and by environmental regulation.

I was pleased to hear people discuss workforce inequity issues, including job loss associated with natural gas or other fossil fuel decline, including the need for diversity and inclusion, and including the need for training. I didn’t hear too much discussion about low-wage jobs, and I just want to highlight, since taking ownership of being a moderator that I hope in the future the business community really does engage on that front as well.

And I want to just point out the Biden administration’s Executive Order really on climate, if you look at the number of times the phrase “good union, clean energy jobs” was in that Executive Order, it was, you know, at least a dozen times. And I think that is a very different perspective than our last Democratic president, President Obama, who I cherish, but who talked about green jobs, and I think there really is a recognition at the Federal and the State level that the power of -- the bargaining power of workers in this economy is important, that equity is important, and particularly with stimulus which stimulus really is going to more than anything invest in construction infrastructure. And those are trades jobs,
and we know that we have a gold standard in training there
that also works to diversify the workforce through
registered apprenticeships.

So, I’m going to stop there and ask the
commissioners to respond and ask questions, and we can have
a more free-flowing discussion. Commissioner McAllister, I
don’t know who else is here from the commission, but I’d
love you to respond to this panel.

COMMISSIONER McALLISTER: Yeah. Can you hear me,
Carol? I’m switching from phone to computer.

MS. ZABIN: Yes.

COMMISSIONER McALLISTER: Okay, great. Well, I
want to just thank everybody, first of all, for being on.
Very diverse perspectives here, some common themes.
Obviously, as you said, Carol, the sectors are distinct and
need really tailored solutions, a lot of diversity across
our state.

Plus heartened to hear the success of the -- not
surprising, but heartened to hear about the success of the
FPPIP model, and I think there’s a lot of opportunity to
channel any stimulus funding, whether it’s Federal or
State, or, you know, programmatic directed funding from the
Legislature to that kind of a model.

I totally agree that, you know, it has to be a
partnership, not widget focused but process focused and
integrated with the particulars of the business of the particular sector.

So, we try to be flexible but still performance oriented, and across the board that’s the solution that I think we’re seeing over and over again, gets the most success. So, those kinds of partnerships really positive about.

I guess, let’s see, I have a couple of -- well, I want to make one observation. You know, climate is different from many of the other problems that we’ve had in the energy sector. I mean we are not going to solve the climate problem without in large measure simultaneously solving our social justice and economic inequality problems. That just seems increasingly clear. I mean, again, it’s sort of not rocket science. You know, we need to solve those problems for many, many good reasons independently of climate, but I think climate is the kind of problem that is the ultimate community resource problem, common pool resource problem.

And, so, you know, just on a performance basis we’re not going to get our emissions down if we don’t bring everybody along, and that means sustainability across all the different metrics you’ve been discussing here. So that’s both giving access to, you know, low-income disadvantaged communities. You know, we’re developing
different terminologies better, more kind of just terminologies for those folks, but as receivers of clean technology, but also as participants in the clean energy economy with good jobs.

And, so, this is a huge complex problem and so I think just the collaboration we need across all the business sectors, and government, and nonprofit, and local, you know, government at all levels is just -- I think it’s unprecedented. And we have a huge opportunity as we creatively think about how to restart and grow our economy again and target how we’re going to do that. So, I think there’s a lot of -- at high level I’m just describing we have a lot of opportunity, but, you know, it comes with a lot of difficult conversations and discussions.

So, my question, you know, Bob O’Keefe (sic.), you pointed out the U.S. Energy and Employment Report, what you guys do with the data that NASEO and EFI come up with. Every year I’ve been involved in that for a number of years. And, you know, those numbers are staggering, and the Biden administration talks about eight million, 10 million good paying jobs in clean energy sector.

If you do the numbers in California, we’re talking 10s really hundreds of billions of dollars in investment, and the question is where is that going to come from? And, you know, obviously the State can’t subsidize
really even a large -- you know, a good-sized fraction of that, a small fraction perhaps. And what do entrepreneurs need -- and you said there’s lots of capital, you know, on the sidelines. That’s been the case, you know, for a long time, way pre-COVID. We’ve had low interest rates and lots of capital, searching for a place to go. What’s it going to take for capital to find projects in communities across the state and organize the supply chain and the value proposition for the customer to get those projects in the pipeline and done as scale?

And this isn’t just a question for Bob O’Keefe, but I think for everybody. But if we’re going to get into our, you know, 12 million homes and all of our business and all the establishments, you know, building in the state, if we’re going to get into those and retrofit them, it’s a serious pipeline and it needs to be done over the next 15 years, 15, 20 years. So, what ideas do you have for how to sort of, you know, begin to get that done in scale?

MR. KEEFE: Well, thanks for that. This is Bob Keefe with E2. I’ll start, since I think you kind of directed that at me, and see what I can come up with.

But, you know, certainly a big chunk of this has got to be at the Federal level, right. One of the questions was about how have companies and others benefitted from the stimulus that we’ve had so far.
I would suggest that we haven’t had a stimulus so far. We’ve had some recovery. We’ve had some rescue. We had PPP and absolutely that helped just about every company in America, including clean energy companies. It helped them get back on their feet. It didn’t help them run. We haven’t had the type of stimulus that we saw, for instance, in 2009 where the Federal government injected 90 billion dollars into clean energy projects through the American Recovery Reinvestment Act.

What did we get out of that? We got something like 100,000 clean energy projects around the country. We got a million homes weatherized. We got Federal loan guarantee programs that invested in companies like Tesla, for instance, that paid its loan back in full, as we all know, and about 450 other companies that created millions of jobs behind it, Tesla alone 48,000 jobs, I think.

So, certainly a lot of it is going to have to come from the Federal -- at the Federal level and trickle down through the states as it does through grant -- community grant programs and other things like that, I believe.

Certainly it’s going to -- but just as importantly as that market signal that we’ve been talking about throughout today that is so important in government’s actions to drive target markets, guys like Larry Finke that
I mentioned, they’re sitting on the sidelines with that money waiting to do something. Yeah, it’s been around for a while, but we haven’t had the conditions, at least at a Federal level, to unlock that until recently.

In California the successes that we’ve seen here, thanks to you all and the other leadership in the state, that’s starting to be seen in other parts of the country as well, and you see some of these states coming on and following California in everything from the Clean Trucks Rule to clean vehicles, et cetera.

So, the other component I think is going to be the need for things like green banks. There’s legislation now in the works nationally for a national green bank essentially. Connecticut pioneered this idea many years ago and has done a pretty good job, and California has talked about it for a long time. That’s something that can help I think, channel some private investments and pool some of this money to jump start some of these projects.

COMMISSIONER McALLISTER: Thanks, Bob. Anybody else want to talk about maybe models for channeling private capital to projects across the state for decarbonization?

MR. RAYMER: Yeah, I’ll take a stab at it. Two thoughts come to mind, and, Commissioner, you and I have talked about this in the past.

First off, in terms of planning and land use,
both new residential and commercial. To give you an example, both Newhall and Tejon Ranch, you know, the two very large southern California projects, have been in the planning stage for over 25 years. In the case of Newhall, it’s 30 years. And they’re finally getting off. They’re finally going to be building homes. But if there is a way, if basically in plan check if they can show that they’re going to be doing X, Y and Z in terms of electrification, in terms of battery storage, grid harmonization, you name it.

There’s any number of things that can speed up that planning and land use process and give them some certainty about when things -- that will be worth enormous financial benefit to that project and, in turn, that money can be channeled into more productive things other than attorneys.

And, so, that is one thing in the course some facsimile similar to the New Solar Home Program for battery storage, et cetera. The fact is back in 2012, you know that we had a market penetration of less than one percent for rooftop solar. But that relatively small amount of money that was used there, you know, it was a game changer. You know, within five years we had a market penetration of between 25 to 30 percent. And that, you never see a program that successful. It was stunning. I’ve been doing
this for 40 years and, still, that will be the one program that I always remember that this actually changed the face of construction.

And, so, things like that where government can partner with the private sector and, in turn, you know, basically leverage a lot of different programs together at the same time, you can leverage that and it will work. I mean new solar homes was an example that, you know, basically tweaking (audio skips) a little bit, no major changes, but basically providing some assurance and certainty on the planning and land use process, that would be worth millions of dollars. Thank you.

COMMISSIONER McALLISTER: Thanks, Bob Raymer, and then thanks Bob Keefe.

I guess anybody want to talk about maybe existing buildings. I mean actually when I asked the question I was thinking about both, but really primarily the huge, you know, preponderance of existing buildings that are the ones we need to get into along the road to 2045 and beyond.

And, you know, if you do the numbers it’s a lot of billions of dollars to get into those buildings and upgrade them in various ways for decarbonization.

So -- and, Carol, feel free to chime in here as well, anybody who wants to step up to that questions. I’m conscious of the time. This will be my last question, and
then if there are other commissioners on the line, either Commissioner Monahan or Douglas. I don’t see either of them at the moment.

    MS. SABIN: Any other commissioners on the line?
    No, okay.

    COMMISSIONER McALLISTER: It does not look like it.

    MS. SABIN: Andrew, Commissioner McAllister, I mean you and I -- you’ve dedicated your life to energy efficiency, which is I’ve dedicated a few years of my life to it. And it’s really one of the toughest ones, and I think it would be good to kind of admit that utility incentive programs haven’t really moved the needle very much, and to really try some new and different models, I mean I would always push models where the workforce -- where the job outcomes can also be good, and I think there are plenty of those.

    I still think public investment in the whole much sector is key, and that produces jobs and really builds the industry and builds the knowledge and knowhow and practice of contractors who already work in those sectors to them expand. I mean we kind of started with residential in California, and I think if we had started with public and commercial we would have had a more solid group of contractors, more highly skilled workforce.
And then the other, you know, idea that you thought of that has never really played out is procurement. So, you know, we do pilot programs for emerging technologies and emerging business models to procure electricity, and we could do the same for procuring savings of electricity, and we haven’t really totally explored those models of putting out pilot programs for procurement that could have labor standards embedded in them and really spark the entrepreneurs who are willing to take some risk in those investments for a guaranteed market. A guaranteed market of procurement is a very powerful tool.

So, other questions? May I ask the CEC staff if there’s questions from the audience, because we only have six more minutes.

MS. RAITT: Sure. This is Heather. Thanks, Carol. Mark Palmere, would you go ahead and share a couple of our questions? Thanks.

MR. PALMERE: Yeah, it looks like we have two from the audience.

The first one is from Robert Perry is about the possibility of vehicle grid integration in the industrial microgrids. I’ll just -- you guys can kind of read this setup, but the question is, “How does vehicle grid integration implemented in your respective areas through development of commercial, industrial microgrids, zero
carbon fleets and a trained local workforce advance
California’s proposed pandemic recovery while also
addressing resource adequacy, transportation
decarbonization and equity goals?” Just open that up to
anyone who would like to respond.

MR. PETERSON: I’d like to respond and take a
stab.

You know, I think -- I mean vehicle the grid, or
vehicle the building or vehicle the home is still something
that’s emerging, as most of you all know.

I will say we’ve taken a look at -- we’re really
focused on heavy duty charging infrastructure in and around
the ports complex of Los Angeles and Long Beach, nothing
along the 710 out to the Inland Empire, and we’ve been
studying sites both on their ability to integrate public
charging, so to speak, for a class A truck drivers, drayage
truck drivers, as well as how we integrate the DER into
those high-speed fast chargers that are going to require an
enormous amount of electricity.

It’s certainly an opportunity that we’re getting
towards the end of our study to determine that financial
feasibility, what level it makes sense and doesn’t make
sense. But those are certainly great opportunities for the
workforce and the kind of thing that we’ve included in our
Federal stimulus proposal to integrate DER storage along
with storage and solar primarily with charging.

And, you know, I think there’s a solicitation on the street right now from DOE that will, I think, promote -- profligate, you know, pull forth some BGI pilots with some utilities that may have been reluctant before, including seeing some movement from the Department of Water and Power as OEMs and utilities begin to engage more in dialogs about how to really tackle BGI.

MS. ZABIN: Thanks, Matt, and, you know, you might want to put the website for your new report with stimulus recommendations on the chat.

MR. PETERSON: Okay.

MS. ZABIN: Anybody else want to tackle that or should we move on to the next -- the last --

MR. RAYMER: Well, I think one very quick thing. It doesn’t get to the heart of the question that was asked, but sort of an emerging thing that we’re working on right now. This is the Department of Housing and the Energy Commission staff along with ARB staff. We’re updating our green buildings standards, and, you know, looking at my crystal ball, for the regs that are going to take effect in 2023 there’s going to be a quantum leap for multifamily construction. And instead of having a few spaces that are what we call, you know, EV capable for level two, we’re looking at massive application of level one.
So that if you’ve got assigned parking, you know, in a secured area or whatever, you’re going to have access to level one. Oddly enough, that’s not around now. Yeah, you’ll find a plug here and there, but we’re looking to make sure every dwelling unit has access to that level one. And when you’re, of course, staying there overnight, that’s kind of what you need, plus from an energy standpoint it’s much easier to handle that load than a series of level two. So, that’s in the works right now. We’re going to have another workshop next week on this very subject.

MS. ZABIN: Thank you.

MR. PETERSON: One thing to add, Bob, to your comment. There’s a company down here called PCS Energy that’s installed about eight to a thousand of the 10,000 chargers the Mayor just announced that have been installed within the city of LA, and a lot of those have been installed in multiunit dwellings, permanent buildings without adding additional electrical capacity because they’re really looking on how to manage that load through software managing the chargers and the use.

MS. ZABIN: And, Matt, I just want to catch that last question before we end our panel.

MR. PALMERE: Yeah, I guess this is the other questions. We have a couple of minutes. So, it’s for Bob Keefe, if you could perhaps quickly address more detail
about the reasons for a higher percentage of African-American and Latinx unemployment and clean energy job loss, which is a higher percentage compared to the total percentage.

MR. KEEFE: That’s a great question. Thanks for that. So, I think it depends on a number of things. And, by the way, mainly it’s Hispanic and Latinx workers who have been hit the hardest in clean energy with unemployment. Blacks and African-Americans have actually done a little bit better. But still communities of color have been hit the hardest for sure.

So, part of it has to do with demographics. I mean if you think about where I mentioned was the biggest decline in clean energy jobs in America was in the LA MSA. The LA MSA is about, I think, majority Hispanic, Latino right now -- Latinx right now. So, that’s part of in California, for instance.

The other part is the labor force makeup. A lot of -- a huge number of clean energy jobs are, in fact, when you get down to it construction jobs. They’re construction laborers. They’re energy efficiency jobs. They’re installation jobs, HVAC jobs, et cetera. And there is a very large population of Hispanic and Latinx folks that work in construction. So, there’s that.

And then lastly is kind of the societal thing
that we’ve kind of touched on here, and the need for workforce training and education, which is simply the lack of diversity in clean energy generally.

Because people want to do what they see, and let’s face the facts, you see a lot more solar panels and Teslas in Santa Monica than you do in Watts. You see a lot more clean energy opportunities in white communities than you do in communities of color. So, you have fewer people going into these jobs to begin with. And that’s, again, something that what’s the right policies and a focus on workforce education and equity we can hopefully start to address.

MS. ZABIN: Yeah, and I’d just like to point out in every recession unemployment is worse for folks of color than --

MR. KEEFE: That’s true.

MS. ZABIN: There is a hierarchy in the labor market, and as we talk about diversity we just have to link that to the job quality so that people aren’t just in the worst -- the folks of color aren’t just in the worst and lowest wage jobs in the clean energy, just as in the economy as a whole.

So, I’m going to wrap up. I want to thank all the panelists and thank the commissioners for this opportunity to have a rich discussion, and I wish you all
well. So, I think I am done with my job; is that right, Heather and others?

COMMISSIONER McALLISTER: Thanks, Carol.

MS. RAITT: Yes. Go ahead, Commissioner.

COMMISSIONER McALLISTER: No, sorry. I was just saying thank you, Carol, and thank you all panelists. Really appreciate your comments and hope you to get your engagement as we move forward throughout the IEPR cycle this year in 2021 to look at a variety of issues that are going to -- like our energy infrastructures and our buildings and our reliability of our electric grid. So, thanks again.

MS. RAITT: Great. And thank you, Carol, and to all the panelists. And we have reached the end of our day where we will move to public comment. And Rosemary Avalos is here again to help us with that from the Public Advisor’s Office. Can you go ahead, Rosemary?

MS. AVALOS: Thank you, Heather, and good afternoon to all. I will first call on attendees using the raised hand feature on Zoom. Please state your name and affiliation and spell your first and last name. Also, please do not use the speaker phone feature because we may not be able to hear you clearly.

So, let me take a look and see who we have. We have Steven Jimenez. Okay. You may need to unmute on your
end, Steven. Go ahead. Hi, Steven. You might need to unmute on your end in order to be heard. Okay, you’re unmuted. Go ahead. Yes, we can hear you.


Good afternoon and thank you for allowing me to comment at today’s workshop. My name is Steven Jimenez, and I’m a manager of (indiscernible) advocacy with the American Lung Association.

We’re deeply concerned about the ways that COVID has had an immense impact on the state’s resources and Californians, and we appreciate the attention that the Energy Commission is giving to the multiple lung health crisis facing Californians.

According to our most recent State of the Air Report, California is home to seven of 10 of the most ozone polluted cities in the U.S. with six of the 10 most impacted cities by annual level of particle pollution.

And as new research continued to emerge, we are seeing that exposure to air pollution makes individual more vulnerable to more severe COVID 19 impacts.

With this, we fully support adoption of 100 percent zero emission vehicles infrastructure and technologies throughout California as rapidly as possible to improve air quality and reduce transportation solutions,
especially for our most vulnerable and disadvantaged communities who often face disproportionate health impacts due to poor air quality.

The widespread electrification of zero emission vehicles can have an immense impact and reduce a wide range of public health problems, including asthma attacks, heart attacks, strokes, lung cancer and premature death, which often fall hardest on the state’s most disadvantaged communities, children, seniors and people living with heart and lung disease.

Full transition to zero emission vehicles in California could yield 22 billion dollars in annual public health benefits, avoid over 1,900 premature deaths and 26,000 asthma attacks, according to our 2020 Clean Air Report.

As we move forward, California must continue with efforts to encourage the prioritization of disadvantaged communities in the state’s transition to zero emission vehicles.

We recognize (indiscernible) in California’s clean air and climate standards relies in large part building zero emission vehicle infrastructure as rapidly as possible to spur the transition needed to meet the goals as outlined in Executive Order N-79-20, and thus the urgency to maintain on the zero emission vehicle infrastructure
across the light and heavy duty sectors, especially for our
most disadvantaged communities and multiunit dwellings to
encourage an equitable deployment of zero emission
vehicles, ease consumer concerns and help the state reach
its clean air and climate standards.

Thank you for your time in this matter, and we
look forward to working with the Energy Commission as
California continues its efforts to meet the transportation
and healthier transportation future. Thank you so much.

MS. AVALOS: Thank you for your comments, and I
would just like to remind listeners that if you are on the
phone dial start nine to raise your hand and star six will
mute and unmute you.

Okay, moving on Robert Perry. Go ahead. Your
line is open. Okay, there we go. Go ahead, Robert. You
may need to unmute on your end. Thank you.

MR. PERRY: Can you hear me?

MS. AVALOS: Yes.

MR. PERRY: Yeah, hi. My name is Robert Perry,
R-O-B-E-R-T, Perry, P-E-R-R-Y. I’m an independent energy
policy consultant.

And I’m just kind of adding on to the question I
posed to the last panel concerning commercial and
industrial micro-grids and utilizing vehicle grid
integration technologies.
One thing that may have gotten lost in the translation, and I apologize for the length of my question, was the fact that, you know, most commercial, industrial zones are located adjacent to low-income communities who are disproportionately impacted by the emissions from these commercial, industrial sites. And it’s a real opportunity to decarbonize the commercial, industrial zones which will benefit the low-income communities. If you can combine that with promoting microgrid technologies at schools, which are general perceived of as -- or perceived as critical facilities, there’s the opportunity to build a curriculum around these technologies which would ready local students to enter the local workforce.

So, there’s a lot of synergies that are presented by this opportunity, and I encourage the Energy Commission and other state agencies to really take a hard look and to develop those areas.

Thank you very much.

MS. AVALOS: Okay, thank you. And, again, I’ll give a few more seconds and see if there are others who would like to make a public comment. Again, a reminder, if you’re on the phone, it’s star nine to raise your hand, and if you are on Zoom you can go ahead and raise your hand with the raised hand icon. Okay. Seeing there are no raised hands, I’m going to turn to Commissioner McAllister.
Go ahead.

COMMISSIONER McALLISTER: Well, great. So, this is the end of the day, correct. I just wanted to sort of confirm. Do we need to do wrap up comments?

MS. RAITT: That’s it, yeah. If you have any comments.

COMMISSIONER McALLISTER: Well, great. Thanks for this third excellent panel. What a day today. Really a lot of information, a lot of food for thought. This is exactly the kind of creative thinking and lots of kind of laterals that we I think highlighted for further exploration. Certainly the updating of our network on some of these long-term issues that we’re facing in California through COVID and beyond as we try to restart the economy and really leverage that opportunity to help the clean energy sphere, and do it in a way that’s just equitable.

So, I think today has really served us well as a kickoff point for the 2021 IEPR. So, I want to just thank again everyone who participated, everyone who stuck it out. We’ve got 49 people still on the line.

And again, all of our excellent speakers, really appreciated the conversation today, looking forward to doing the continued spade work throughout the course of the year, and producing a really valuable IEPR that helps us head in the right direction for the long term.
So, with that, I think I’ll turn it back over to Heather to wrap us up, and send us off.

MS. RAITT: Okay, great. Thank you, Commissioner, and thank you again to all the panelists for being here today. Welcome you to submit written comments, and they are due on February 23rd, and please see our notice for information about how to do that, or you can contact us and we’ll be happy to help you. And so that’s it. Have a great rest of your afternoon.

(The workshop adjourned at 4:26 p.m.)
REPORTER'S CERTIFICATE

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

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IN WITNESS WHEREOF, I have hereunto set my hand this 13th day of April, 2021.

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Barbara Little
Certified Transcriber
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