

DOCKETED

Docket Number:	21-IEPR-03
Project Title:	Electricity and Natural Gas Demand Forecast
TN #:	237443
Document Title:	Transcript 02-02-21 re California's Evolving Economic and Demographic Landscape, Session 1
Description:	***SUPERSEDES TN Number: 237430****California's Evolving Economic and Demographic Landscape - FEBRUARY 2, 2021 9:30 A.M. Session 1 – California Economy Now and in the Future
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Organization:	California Energy Commission
Submitter Role:	Commission Staff
Submission Date:	4/13/2021 5:21:42 PM
Docketed Date:	4/13/2021

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
9:30 A.M. Session 1 - California Economy Now and in the
Future

Reported by:
Peter Petty

APPEARANCES

Commissioners

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

Staff Present

Heather Raitt, Assistant Executive Director, Policy
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Nancy Tran
Le-Huy Nguyen
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Panelists

Irena Asmundson, California Department of Finance
Stephanie Guichard, San Diego Association of Governments
Julien Lafortune, Public Policy Institute of California
Jerry Nicklesburg, UCLA Anderson Forecast
Laura Ratz, Moody's Analytics

Public Comment

None

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1 feature. We'll try to reserve a few minutes at the end of
2 the panel to read out a couple of questions for our
3 panelists.

4 You may also make comments during the public
5 comment period at the end of the morning session, and we
6 also welcome submitting written comments, and instructions
7 for doing so are in the meeting notice. Written comments
8 are due on February 23rd.

9 I'll just mention that we do have one change to
10 our schedule today. This morning our moderator, Jeffrey
11 Michaels, is unable to join us, and so we have the Energy
12 Commission's Nancy Tran and Le-Huy will slip in as our
13 moderator for this morning.

14 And with that, I'm pleased to introduce
15 Commissioner Andrew McAllister. He's the lead commissioner
16 for the 2021 Integrated Energy Policy Report. Go ahead.
17 Thank you.

18 COMMISSIONER McALLISTER: Thank you, Heather.
19 I'm really excited for today. I've been looking forward to
20 it and kicking off another IEPR cycle. They overlap, so
21 we're wrapping under the 2020 IEPR under Commissioner
22 Monahan's capable leadership, and now we're kicking off in
23 earnest the 2021 IEPR which will be a full forecast, and so
24 the econ demo workshops of today is kind of kicking off the
25 level set. Much of that analysis that will go forward that

1 we'll be doing going forward in the Assessment's Division
2 and really across the commission.

3 So I'm really looking forward to the panels. We
4 have some incredibly high-quality folks here and it's
5 really -- I'll just thank them ahead of time right at the
6 outset for providing their time and expertise with us here
7 today.

8 I see that my fellow Commissioners Monahan and
9 Douglas are here and I will invite them to give some
10 opening comments here in a bit.

11 But I just wanted to highlight briefly that, you
12 know, these times make forecasting and prediction even more
13 difficult than usual. You know, the energy consumption
14 patterns and the economy broadly, demographic trends,
15 regional trends, all of those things are complicated, all
16 those aspects of the forecast are complicated by just the
17 bizarre times that we're in. Sometimes it feels like we're
18 living in the Old Testament with plagues and demagogues,
19 and fires and pestilence. But, you know, I think that's a
20 challenge for us and we have a lot of smart people in a
21 large economy like ours that could help us grapple with
22 some of these trends and use data to chart the path
23 forward.

24 And I think one of our big challenges will be to
25 try to get the air bars around our forecast as narrow as

1 they can be given all the uncertainty that's heightened,
2 even compared with previous forecasts. And, so, I think
3 we've got a lot of work ahead of us. It's really exciting,
4 actually.

5 There are many reasons to be optimistic, I think,
6 as we emerge from the COVID crisis and we figure out the
7 path forward to restart our economy in traditional
8 directions, but also in new and innovative directions as we
9 decarbonize our economy, you know, within our energy
10 systems.

11 So, I'm really happy to get this conversation
12 going today and would pass the baton to Commissioner
13 Douglas.

14 COMMISSIONER DOUGLAS: Thank you, Commissioner
15 McAllister. I really have nothing to add. I'm looking
16 forward to this workshop and just doing my best to dial in
17 as this new IEPR cycle kicks off, so, thank you.

18 COMMISSIONER McALLISTER: Great. Commissioner
19 Monahan, would you like to make any comments to open us up,
20 too.

21 COMMISSIONER MONAHAN: First, I want to
22 congratulate you on likening the current situations to the
23 Old Testament. That was very appropriate.

24 I, too, am really interested to hear what the
25 latest thinking is. As you said, these are really

1 uncertain times, and we're trying to do the best analysis
2 we can, given the information that we have. So, I'm really
3 looking forward to diving in and learning more in today's
4 workshop.

5 COMMISSIONER McALLISTER: Great. So, I think I
6 did not see Chair Hochschild on, but, of course, if he
7 joins we'll welcome his comments as well.

8 And, yeah, with that, I think I'll pass it back
9 to Heather, and we'll get started with the first panel.

10 MS. RAITT: Great. Thank you, Commissioner. Our
11 first panel is on California's Economy Now and in the
12 Future, and as I mentioned, we have a change in schedule,
13 and Jeffrey Michaels is unable to join, but we are
14 fortunate to have Nancy Tran and Le-Huy from the Energy
15 Commission to moderate this panel.

16 So, go ahead, Nancy. Thank you.

17 MS. TRAN: Thank you, Commissioners. Thank you,
18 Heather. Good morning, everyone. My name is Nancy Tran.
19 Comoderating this panel with me will be Le-Huy Nguyen.
20 Both of us work here at the California Energy Commission in
21 the Energy Assessments Division.

22 As an economic and demographic forecaster and our
23 end use serve lead, Le Huy and I will be asking this panel
24 questions related to California's current economy and
25 future economy.

1 And we are fortunate to have a distinguished
2 panel of experts with us today, and on this panel we have
3 Irena Asmundson from California Department of Finance,
4 Stephanie Guichard with the San Diego Association of
5 Government, Julien Lafortune with the Public Policy of
6 California -- Public Policy Institute of California, Jerry
7 Nickelsburg with the UCLA Anderson Forecast, and Laura Ratz
8 with Moody's Analytics.

9 If you'd like more information about our
10 panelists, please refer to our CEC website for their
11 biographies under the 2021 IEPR.

12 Because some folks tuning in will be in listening
13 mode only, it has been requested that we have the panelists
14 restate their name prior to responses to the question.

15 And I'd also like to invite the commissioners to
16 ask questions during this discussion.

17 So, let's start the topic we all have lurking on
18 our minds, the pandemic-induced recession that has been
19 caused by COVID-19.

20 So, my first question is which region within
21 California experienced the greatest and the least COVID-19
22 impact in 2021 -- or in 2020 and 2021, and when do you
23 anticipate a recovery?

24 So, let's have Stephanie start us off because
25 she's in San Diego, and then we'll move on to Laura Ratz as

1 a follow up.

2 MS. GUICHARD: Hi. So, on -- I'm going to cover
3 mostly when we think the economy is going to recover, and I
4 think, you know, the war story is kind of the same whether
5 you're talking about San Diego or the U.S. as a whole.

6 What, you know, we saw like a major collapse in
7 the economy in the spring and a strong recovery during the
8 second quarter, but since then, recovery has really
9 stalled. I mean we haven't seen much improvement whether
10 you look at data at the national level, we see in the last
11 quarter of the year GDP growth was just focused on and it
12 left us about 2.5 percent below where we were before COVID,
13 so we haven't reached back the level we had before COVID.

14 And when we look at the San Diego region, we have
15 tried as SANDAG to look at, you know, many different
16 dimensions using I frequency data, so we look at, you know,
17 mobility data, food traffic data, credit card spending. We
18 also look at the traffic on our freeways, which is kind of
19 an indicator of the underlying activity. And what we've
20 noticed is it seems like since the summer we are kind of on
21 the flat line. I mean there's ups and down, but it's very
22 moderate. And this is not surprising when you look at
23 what's happening on the pandemic front.

24 So, just to give you an example, I put together a
25 dashboard in the summer where I could track all these high

1 frequency indicators to see when we would go back to pre-
2 COVID level. And so everything started in the dark red in
3 the summer, and then I added this called scale which was
4 going towards orange when you are like around 50 percent or
5 where you were before COVID and slight kicking the yellows
6 when you were getting closer to pre-COVID levels, and then
7 once you reach preCOVID level you are kind of in the green.

8 And I was thinking when I put this together more
9 than six months ago, well, I'm going to present this on a
10 regular basis and we can all see the progress. And you
11 know what, I've been presenting this dashboard several
12 times and it seems that since the fall we kind of -- we are
13 stuck in the orange on most of the dimensions.

14 And this is ready, I mean, it's not surprising
15 this is linked to what's happening on the pandemic front,
16 and the bottom line is that unless we have a vaccine that
17 is effective, including with the new variance, and until
18 this vaccine is rolled out to a larger share of the
19 population, we are not going to see the economy recovery we
20 are all waiting for.

21 But that's kind of the, you know, the pandemic
22 recession story, so we don't think this is going to happen
23 before the summer of 2021. So, mostly likely we'll reach
24 this level where we can go back to normal. I mean we all
25 have fingers crossed that the vaccines are going to work,

1 against the new variance, and there won't be any shortages
2 in the supply of vaccine, so in that scenario it means that
3 you can start having a recovery because the pandemic is
4 behind us in the second half of this year.

5 Then the other question is how fast do you go
6 back to kind of, you know, normal situation. And all of
7 you understand that this is going to take time for several
8 reasons.

9 One of them, it's going to take time for people,
10 you know, to go back, to feel confident that this pandemic
11 is behind us. We saw it in the past when there were major
12 events. It takes time for people to go back to traveling,
13 these kind of things.

14 The other issue I hear a lot about sense of
15 demand, but let's not forget the demand that is the most
16 effective is services, and I mean, even if things go back
17 to normal and you can't -- I mean there is a limit of how
18 often you can go to restaurants, every day, or every week,
19 or even let's talk about hairdresser. How many times can
20 you go to the hairdresser in a given week? I mean you
21 can't. It's just ridiculous. So, this is going to take
22 time.

23 And the other thing is, you know, this crisis has
24 led to many disruptions. We're going to talk later in the
25 panel about how, you know, the economy is going to be

1 different going forward, and this means that there are
2 several structural changes in the economy to which
3 businesses will have to adapt.

4 We know, also, that many small businesses have
5 closed, so some jobs are lost. They are not going to come
6 back by magic when this pandemic is over, but it's going to
7 take some time, and this includes -- this will require, in
8 particular, to retrain people. I mean we believe that some
9 of these jobs are gone, and they're gone for good. But
10 there are new opportunities that have emerged with this
11 crisis.

12 So, to get there you will need some training of
13 the labor force. From my previous experience working in
14 different countries, I mean, this is not the strength of
15 the United States, the training of the labor force, so this
16 is going to be a major challenge to make sure that the
17 people who lost their job in this pandemic are going to be
18 able to sizeable opportunities when we go back to normal
19 which is going to take a few years for this recovery to
20 fully happen.

21 And that's it for now.

22 MS. TRAN: Laura, would you like to tackle that
23 question?

24 MS. RATZ: Yeah, I mean I would echo that
25 forecast, that, you know, it's going to take several years.

1 You know, we don't expect the U.S. economy to,
2 you know, fully recoup all the lost jobs until, at best,
3 mid-2023, and I think California will be somewhat later,
4 you know, up to six months to a year later. And this is in
5 a large part because the pandemic has hit California so
6 hard, and we've already seen that employment is not
7 recovering as quickly, you know, just because of the
8 persistent infections, the necessary closures to contain
9 that.

10 And then you combine that with, you know,
11 California does have sort of structural hurdles to overcome
12 that won't help the recovery either. You know, it's just
13 there's -- we've been seeing population declines for quite
14 some time, and I think that, if anything, the pandemic will
15 have hastened that trend.

16 MS. TRAN: Jerry, would you like to chime in?

17 MR. NICKELSBURG: Sure. So, I have a little bit
18 of a different slant on this. I think when we compare
19 California's unemployment rate and job loss to other
20 states, including the U.S. as a whole, and think about
21 California's public health interventions, what are called
22 nonpharmaceutical interventions, that's closures, stay-at-
23 home orders and so on, California has been more stringent
24 than other states. So, you'd expect us to have higher
25 unemployment and slower addition of jobs. But the evidence

1 that we have from the 1918, 1919 pandemic is that the then,
2 and, of course, this is a different pathogen, a different
3 economy, but then the cities that had more stringent public
4 health interventions had better health outcomes and
5 stronger economies after the pandemic was over with.

6 So, kind of drilling down a bit on this, I think
7 part of the original question was what parts of California
8 have been hit the hardest, the sectors, and I'm not telling
9 anyone anything that they don't know, that have been hit
10 the hardest have been the sectors that involve a lot of
11 human contact, and so that is principally leisure and
12 hospitality.

13 But if you take leisure and hospitality, and
14 personal services in the sector called other services, and
15 retail and education because the schools are closed, you
16 get about -- you get over 75 percent of all unemployment in
17 California.

18 And, so, you know, where is the pain? It's in
19 two places. It's in places where you have tourism, so this
20 is going to be north Orange County, Los Angeles, San
21 Francisco, wine country, Coachella Valley, and places where
22 students aren't going to school, particularly university
23 students, and where tech workers can work remotely and are
24 not going into the city, and so that is the Bay Area and
25 the areas around universities.

1 So, that's where the pain is, and when do we come
2 back and how fast? That is the -- the answer is the same
3 as what the others have said, when is the pandemic going to
4 be over with? And we are hopeful for this summer, but we
5 don't know.

6 MS. TRAN: All right. Irena, Julien, would you
7 like to give your take?

8 MS. ASMUNDSON: Sure. So, you know, I actually
9 want to take a step back first and say we as economists
10 tend to think about the recession happened and then when
11 are we going to get back to the previous trajectory? When
12 are we going to get back to the previous level of GDP?
13 When are we going to get back to the previous level of
14 jobs?

15 And, you know, one of the things I think we all
16 observed during the pandemic was that there was an enormous
17 amount of inequality in our economy, and, you know, there
18 was an enormous amount of unfairness that was really
19 brought to the fore by the Black Lives Matter Movement that
20 we should probably pay attention to.

21 And, so, when we talk about the recovery I don't
22 really want to go back to what we had before, and I really
23 don't want to go back to the trajectory that we were on
24 because we knew that it was going to be pretty painful to
25 get to a net zero carbon economy that we know that we need

1 to get to in the next couple of decades.

2 And, so, when we talk about recovery are we
3 talking about GDP levels, which are probably going to
4 recover in the next couple of years? Are we talking about
5 jobs? Maybe we were going to get to them in a couple of
6 years further. But when are we going to get back to the
7 point where people actually have the opportunity to save,
8 and have a living wage, and actually do well? And we
9 hadn't been there for kind of a while, maybe ever if you
10 look back at history.

11 And, so, that's the kind of recovery that is a
12 huge, huge destruction of the pandemic, it's kind of an
13 opportunity for.

14 I think the commissioner put it very well when he
15 said one of the big challenges right now of doing forecasts
16 is that people's behavior is changing enormously. And, you
17 know, we know that we're going to be wrong because we're
18 going to get people's behavioral changes wrong. And we
19 know some of this, it's captured in migration numbers, it's
20 captured in which sectors are doing well and which sectors
21 aren't doing well, captured in the geography of where
22 people are choosing to live.

23 But I think that this is kind of a rare
24 opportunity to set out a new agenda for saying, yeah, we
25 know that energy prices are going to have to do a certain

1 -- you know, they're going to have to go up if we're going
2 to get to net zero carbon. We know we're going to have to
3 change our behavior and, so, what does that look like?

4 So, I don't think that I disagree with my
5 panelists, my fellow panelists, in the sense that it's
6 going to take a couple of years before we get back to our
7 traditional indicators, but I did want to throw that in
8 there.

9 Julien.

10 MR. LAFORTUNE: Thanks, Irena. This is Julien
11 Lafortune with PPIC.

12 I agree with all the previous panelists, and echo
13 kind of Irena's point that when we're thinking about
14 recovery that can have different definitions.

15 So, what do we mean by recovery? Are we getting
16 to, you know, previous levels of GDP? Are we getting, you
17 know, employment back to where it was prerecession,
18 prepandemic, or are we kind of thinking about structural
19 changes and new directions almost as an opportunity where
20 we'll be going forward, and so I think, you know, those
21 timelines are all very different and I think a lot of that
22 depends on the policy choices we make as well over these
23 coming years.

24 But just kind of at a high level I do think, you
25 know, we'll probably see, you know, just some of the broad

1 GDP-like indicators recovery, you know, in the next year or
2 two, but the labor market might lag for a bit longer than
3 that.

4 And I think back to kind of the original or one
5 of the kind of first parts to the questions about the
6 regions that will lead and lag and kind of what has
7 experienced the greatest impact. So, I think that one
8 thing that stood out to me is that this has really been a
9 service sector recession so far as opposed to one kind of
10 based in goods. And as a result we've seen a lot of these
11 greatest impacts in these large cities in the urban core,
12 San Francisco, LA. And a lot of that is driven in part by,
13 you know, just by differences across regions in the
14 industry mix, right, the industries Jerry was talking
15 about, tourism, service sector, face-to-face retail,
16 hospitality and leisure. These are all things that have
17 been hit particularly hard.

18 But work-from-home culture and, you know, the
19 dynamics of how that plays out over the future will also
20 affect -- you know, has been a big factor kind of driving
21 some of these losses and the differences across regions.
22 And this led to differences that kind of go beyond just
23 what we see at the industry level.

24 So, if we kind of try to net out just the
25 industry mix and the job mix and look at places that are

1 doing a bit worse or better than expected, these big kind
2 of coastal urban cores stand out as doing worse than
3 expected, even given their industry mix. And I think a lot
4 of that is driven by the fact that, you know, there are a
5 lot of businesses that rely on these clusters of workers,
6 of people in one place at one time for economic activity,
7 and without, you know, kind of full vaccination or at least
8 the pandemic being over, it's hard to see that coming back.
9 And, so, I think recovery is going to lag in a lot of these
10 regions, especially on the coast.

11 And in some ways that's going to be kind of a
12 reversal of previous recessions and previous trends where
13 kind of the impacts have been larger and more persistent
14 and slower to recover in some of the more inland regions of
15 the state.

16 MS. TRAN: All right. Thank you, guys. So, my
17 next question here is the Federal Reserve Chair and others
18 have said that we will be coming back to a new type of
19 economy post-pandemic, and I think you all agree with that
20 assessment.

21 What does that post-pandemic economy look like?
22 You guys gave us a little idea of what you guys think it
23 would look like and Stephanie most certainly touched on
24 that. So, what do you guys think that post-pandemic
25 economy is going to look like in terms of not just jobs,

1 but just life, teleworking, those sorts of things?

2 Anyone want to jump in at this?

3 MS. ASMUNDSON: I think -- oh, sorry, this is
4 Irena Asmundson from Finance.

5 I think that people are probably -- this has been
6 a huge demonstration project of can we work effectively
7 from home and who can effectively work from home. And, so,
8 even if people decide to go back into the office one or two
9 days a week, I think that permanently there is going to be
10 less demand for commuting, which is a great -- like I love
11 working from home. But it also means that probably for
12 energy purposes the load is just going to be very different
13 in many places.

14 I think that probably makes it a little bit
15 easier to do the load sharing when we're trying to plan for
16 electricity demand, and especially if we electrify
17 everything, that that will help because I think that it
18 will smooth things out a little bit. But that is, in
19 particular, something that I think is going to be
20 permanent.

21 MR. NICKELSBURG: So, let me add a little bit on
22 that. This is Jerry Nickelsburg from UCLA.

23 In two regards. One is I agree with Irena that
24 we're going to have more flexibility, and we're going to
25 have more of our work time being done from home, so that

1 shifts the energy demand towards what we've seen the energy
2 demand shift in this pandemic thus far, to residential
3 neighborhoods from offices.

4 So when we do go back to the office -- and I want
5 to comment on that momentarily -- when we do go back to the
6 office, the offices are going to be open, and so I think
7 the real question that you all have to struggle with is are
8 they going to have their lights on five days a week, even
9 though only part of the workforce is coming in? You know,
10 is the energy usage going to be just about what it was
11 before in office-intensive areas, but higher in residential
12 areas? So, that's -- I don't have an answer to that, but I
13 think it's something for you all to consider.

14 And then --

15 COMMISSIONER McALLISTER: Can I jump in actually?
16 Jerry, can I jump in on that point, actually? This is
17 Commissioner McAllister.

18 I guess I've been sort of formulating a question
19 that I want to ask sometime this morning, and you've just
20 sort of provided a little trigger for it, so I ask it.

21 You know, so in a long-term perspective at the
22 point of like, okay, well, you just made, are the lights on
23 all the time on the office space, which is a great
24 question. But I guess there's a longer-term structural
25 question of are there the same numbers of square footage,

1 you know. Is the same square footage actually being
2 occupied? So, if the lights are on all the time and you
3 have, you know, two out of five employees on any given day
4 in the office, then you can expect shrinkage in the
5 commercial and office space in those urban cores. So I
6 guess I'm kind of wanting you all to think about the long-
7 term implications of that structural shift, if we think
8 it's going to -- you know, do you think it's going to
9 happen and, you know, what does that mean for sort of the
10 commercial demand as we begin to look at it? You know, is
11 that a -- is the denominator going down over time as people
12 become more diffuse in their patterns?

13 MR. NICKELSBURG: So, I've given this a little
14 bit of thought and I think, you know, the short answer is
15 we don't know what the office is going to look like post-
16 pandemic. But in the latter part of the last decade we saw
17 square footage per employee in the office shrink.

18 And one of the changes that I think we can
19 expect, and firms that want to be competitive are going to
20 do this, is a reconfiguring of the office for more square
21 footage per employee, because people don't want to be on
22 top of each other, and that would mean fewer people but
23 more square footage per person, and is that the same size
24 of an office, or is that less office space? So, that's the
25 first part.

1 The second part is when we started working from
2 home there was this narrative that, oh, that's going to
3 change work completely, that nobody is going to go back to
4 the office, and that is proving to be sort of patently
5 false. And the reason is it's -- you know, there are
6 multiple reasons, but being in the office allows you to get
7 nonverbal signals. It allows a different kind of
8 communication. It allows creativity and teamwork, and also
9 you get to be in front of the boss.

10 So, you know, if you are working from home and
11 home is in Grand Junction, Colorado are you going to get
12 that next promotion? Are you going to get the raise? Are
13 you going to be able to network so that you can move along
14 in your career? And the answer is clearly no. So, people
15 are going to want to be back in the office, and also, so
16 far we haven't seen anyone's cat jump on them or kids run
17 in, but, you know, there are distractions at home.

18 So, we will be going back to the office, but as
19 Irena said, maybe not every day, and kind of that open
20 question is does that mean more energy usage per person or
21 less? And I think I would think more.

22 COMMISSIONER McALLISTER: I think the team is
23 beginning to get a handle on that based on data, so it will
24 be interesting to see how the forecast, you know, as we get
25 individual level, you know, and we start to aggregate some

1 of that demand data.

2 But I guess I want to hear what other people have
3 to say about that because I guess, you know, I've been
4 assuming, and with no real information other than
5 anecdotal, but that hoteling might become more popular and
6 that overall square footage might shrink as people share
7 space. It sounds like, Jerry, you don't think that's going
8 to happen, but I guess it seems like an important point to
9 tease out a little bit to the extent we can.

10 MR. NICKELSBURG: So, before we turn to other
11 people, I think it could happen, but firms that are going
12 to do it are going to have to ensure their employees that
13 the person before them was either healthy or that space
14 that they're occupying now has been appropriately cleaned.
15 So, that increases costs, and I'm not sure if that happens
16 or not.

17 MS. RATZ: This is Laura Ratz. One thing that I
18 would like to add to Jerry's point about how the transition
19 to working from home may not be quite so complete is that I
20 really do feel that memories will prove short. You know,
21 once the pandemic really is behind us, people will want to
22 return to some semblance of normalcy and we've seen that
23 already. Not that going out to eat and going in to the
24 office are all the same thing, but we've already seen a
25 great reluctance in certain parts of the country for people

1 to, you know, to stay at home and to adhere to social
2 distancing guidelines.

3 And I think that, you know, once the pandemic
4 really is in the rearview mirror people are going to want
5 to go back to the office just for the sake of normalcy, and
6 I think that will be a really hard -- you know, in --
7 assuming this is all behind us in 2025, I don't think
8 people are going to work from home out of concerns that
9 COVID -- assuming the pandemic is under control, of course.

10 MS. ASMUNDSON: This is Irena Asmundson from
11 Finance. One of the interesting things is, you know, Jerry
12 and Laura have talked about certain bounce back to previous
13 behavior, whereas I think what we're going to start
14 observing is that there's going to be new behavior
15 evolving, and people are going to figure out new ways of
16 sort of interacting.

17 Actually, I think that one of the hopeful things
18 about people working from home is that if done right you
19 can actually focus much more on sort of those like actual
20 quality indicators rather than nonverbal signals. So, if
21 you have to be very measured about how productive people
22 are being when they're working from home, that's actually
23 an opportunity to remove some bias and to make the playing
24 field a little bit more level because you are focusing on
25 like actual productivity indicators. This doesn't always

1 work, but that is potentially a silver lining.

2 So, the longer this drags on I think the less of
3 a bounce back there's going to be because people will have
4 evolved new ways. Like they're going to carve new grooves
5 in their brain is kind of how I think about it.

6 Stephanie, I think you were going to say
7 something.

8 MS. GUICHARD: Yeah. I wanted to add something.
9 So, basically, with this working from home experiment I
10 think we are moved forward like 10, 15 years in a few
11 months.

12 And one thing that we shouldn't forget, I mean
13 for my generation working from home was -- I mean it worked
14 very well, but it was not so natural to our generation.
15 But think about the people who are going to be in the labor
16 market like 10 years from now. Now that I have teenagers
17 at home, I mean these are the people who are having such
18 difficulty that parties with their friends and just using
19 their phone. They were not seeing each other all the time
20 but they could have a party just using their phone, and our
21 generation was not able to do that. We've learned to do
22 that with COVID, but I think we shouldn't underestimate the
23 ability to make working from home work because they have
24 been used to this way of communicating with other people
25 since almost they were born. I think they can trust each

1 other better in the working from home environment that we
2 do. I have on board two interns in the recent months.
3 They haven't stepped foot in the office, and they adapted
4 very well and very quickly. I'm not sure I would have been
5 able to adapt to a new job in this kind of environment the
6 way they have adapted.

7 So, we shouldn't underestimate, you know, the
8 ability of the new generation to be able to adapt and make
9 this new environment work. This is -- I think what would
10 have happened in 10 years, it may start happening now.

11 The other thing I wanted to stress, according to
12 what Irena was mentioning earlier is the inequalities that
13 were existing before this crisis and that we have already
14 seen even clearer than we were seeing them before. And, I
15 mean, we are talking about, you know, working from home.
16 There is also, you know, distance learning, virtual medical
17 healthcare, online shopping. All these things have really
18 been exacerbated by COVID, and what we see is already
19 clearly also at the same time the digital device.

20 So, for instance, in San Diego I think 23 percent
21 of the low-income households don't have a broadband
22 subscription which means that, no, they can't work from
23 home. They can't study from home. They can't do online
24 shopping the way we do it, and they can't do virtual
25 healthcare. I think in some of the local districts 20 to

1 40 percent of the students don't have home internet access.
2 So, this is really what is going to make this thing work or
3 not is whether it can include everyone in the population or
4 if it's going to remain a very inequitable system where
5 part of the population has access to all these benefits
6 from the digitalization of the economy that has occurred in
7 10 months instead of 10 years, or whether, you know, we're
8 going to remain divided on that front.

9 And just something I wanted to mention. I just
10 have some kind of hope about the future of our economy.
11 You know, we saw that business have better adapted very
12 quickly to COVID and they have, you know, many businesses
13 which, you know, didn't have a website before, didn't have
14 online sales before, they got it done during COVID. And
15 one of the issue we were observing as economists is that
16 there were very high productivity gains in the top firms in
17 the U.S., but it was not being -- there was no diffusion to
18 the majority of companies, and maybe and that's the hope,
19 and we need to do more research on that, but maybe one of
20 the positive aspects of COVID is that it would have forced
21 this diffusion of technologies to companies which were, you
22 know, they were doing okay so there was no need to adopt
23 these new technologies.

24 Maybe, and that's my hope for the future is that
25 thanks to COVID we'll see more productivity gains in the

1 small business sector. And at the end, I mean if we can
2 address the inequality issues and if we can get higher
3 productivity in the small business sector, maybe we'd get
4 out of this better than we were before.

5 COMMISSIONER MONAHAN: I wanted to follow up on
6 that issue that Stephanie raises about equity and what
7 changes we can expect as more people telework in terms of
8 the equity implications. That's one question.

9 And the other question I had is whether you are
10 aware of -- if anybody on this panel is aware of any
11 upcoming research that really pieces out this question of
12 what percentage of the population is going to continue to
13 telework.

14 I know anecdotally, you know, we've done surveys
15 internally. Our staff prefers work from home. They say
16 they're more productive because we have the online tools to
17 be able to do, you know, work simultaneously on a document,
18 you know keep confidential -- information confidential but
19 still be able to work from home. There's been such an
20 evolution in terms of the technology.

21 We've also seen as these IEPR workshops begin and
22 we ask our participants do you like it better to do it
23 online, or did you like it better when we did it in person,
24 and the answer is they like it better. So, there's some
25 ways that I think people are like, oh wait, maybe this is

1 better than what we had before through technology.

2 Definitely that technology was an enabler of that.

3 Any upcoming study that we should be aware of?

4 I've seen so few. Actually really trying to quantify both
5 the demand in terms of travel demands, but also electricity
6 demand and percentage of population that is going to remain
7 working from home.

8 MS. ASMUNDSON: So, this isn't a forecast, but we
9 have been tracking the Household Pulse Survey that the
10 census was doing. And I wouldn't be surprised if the
11 census chooses to continue some form of that just because
12 the behavioral changes have been so big.

13 COMMISSIONER MONAHAN: What would be the timing
14 -- you know, what would be the timing on that? Like when
15 could we expect to see some data?

16 MS. ASMUNDSON: So, the Household Pulse Survey is
17 being done by the census every two weeks, and I think
18 they've just released like the 22nd iteration of this that
19 covers the first part of January. I could send you the
20 link or put it in the chat function if you want.

21 COMMISSIONER MONAHAN: If you could put it in the
22 chat for everybody, and that way the folks that are
23 listening in could also get access.

24 MR. NICKELSBURG: So, before we think that the
25 platform that we're on right now and those like it is our

1 permanent future, I think we ought to, you know, kind of
2 step back and so, you know, what about studies.

3 So, there was a really interesting study done
4 maybe five years ago by a couple of professors at Rutgers
5 University. So, 30 years prior architects, urban
6 architects took videos of various spaces in cities around
7 the country and analyzed them as a way of trying to
8 understand how people use public spaces. And these
9 professors from Rutgers decided to revisit that, and the
10 surprising thing that they found, and they were expecting,
11 you know, the millennials, for example, to be on their
12 phones, and this is kind of to Stephanie's point, and, you
13 know, the joke about millennials is they're sitting at the
14 dinner table communicating to each other on text rather
15 than talking across the table.

16 So, what they found was exactly the opposite.
17 Boomers were on their phone and millennials really were
18 starved for that human contact. And I sometimes think that
19 science fiction writers are better forecasters than
20 economists, and Isaac Azimov has in his "I Robot" series
21 something that, you know, how prescient everyone is using
22 something like what we're using today, and they so abhor
23 the lack of human contact that they end up engaging in
24 really dangerous behavior just to get together with one
25 another.

1 So, I think we're too early in this to say this
2 is the future. Are we going to use this technology to
3 improve our productivity and to get more flexibility in our
4 work lives? Sure. But work from home, you know, I just
5 think that we are too much social animals to have that be a
6 permanent thing.

7 And the second aspect of that is that, you know,
8 creativity tends to happen when you get together, and, you
9 know, you see things in your peripheral vision, and they
10 give you sparks. And that doesn't happen as much at home
11 even though we have really great tools. But to Irena's
12 point, work from home can perhaps allow us to move to a
13 more equitable workplace, and that would be certainly a
14 positive outcome.

15 With respect to energy usage, I think Stephanie
16 brought up something really important, and that is that
17 telemedicine may mean less energy usage in medical
18 complexes, right, because you have smaller -- potentially
19 smaller footprint there. The decline of brick-and-mortar
20 retail, less energy usage there. So, I'm sure you're
21 considering those things, but those are important changes
22 on what will the economy look like post-COVID.

23 MR. LAFORTUNE: One thing I wanted to add to
24 that, and I guess I agree with Jerry that, you know, I
25 think some of these changes won't be immediate and there's

1 a lot of benefits from going in to work in person that, you
2 know, just aren't realized, at least aren't realized yet in
3 an online setting. But I don't think we'll start to see at
4 least an acceleration of these trends that were already
5 happening in more teleworking.

6 But one thing I wanted to touch on this is kind
7 of back to the point about equity. It's just that work
8 from home is actually something that's more for the highly
9 educated and the more fortunate among us.

10 So, I think I don't know if there's, you know,
11 more recent numbers on this, and one national number I've
12 seen, I think it's about 40 percent of college graduates
13 right now are working from home, but it's only about six
14 percent of those with a high school degree or less. And,
15 so, given that there's still a large portion of the economy
16 in the workforce that are, you know, not kind of this
17 highly educated bubble that we often are surrounded in, I
18 think there's just a -- you know, we may not see as much of
19 a paradigm shift in the kind of next iteration of this
20 post-pandemic economy just for the reasons that a lot of
21 significant portion of economic activity is still going on
22 in person, even right now, and will probably continue to do
23 so in the future. And that has big equity implications as
24 well.

25 So, as much as, you know, working from home can

1 enable a more equitable workplace, I think that's not
2 something that's available for all types of work.

3 COMMISSIONER McALLISTER: I wanted to put a
4 question in the chat actually about this. I guess, so, you
5 know, I guess I'm interested in whether we're seeing the
6 structural shift of like where home actually is, right.
7 And you just said higher educated people have more access
8 to work at home with these remote tools, you know, in a
9 professional setting. But, you know, how many people
10 really are choosing to change, move out of San Francisco,
11 and move into the, you know, foothills or someplace, you
12 know? Where are quality of life considerations kind of
13 overlaying all these other issues we're talking about?
14 And, so, you know, rather than -- so how does that affect
15 our kind of geography?

16 You know, I'm thinking about energy usage
17 patterns in a particular place, like a circuit, or a region
18 or locale, when you've got this sort of post-modern mixing
19 going on where it's no longer rural urban but it's sort of
20 based on class. So, I'm wondering if anybody has any sense
21 of how big the kind of COVID related migration of home is
22 likely to be.

23 MS. ASMUNDSON: Well, since I also have to deal
24 with the demographic stuff, you know, it's something that
25 we're really curious about. And I will note a couple of

1 rules of thumb for California and demographics in our
2 population growth. Our last set of estimates we did show a
3 very, very close to zero growth.

4 We disagree with the Census Bureau, by the way.
5 They think that we're shrinking; we think that we're still
6 growing a very small amount.

7 And normally what happens is births outpaced
8 deaths in California, so, you know, over 400,000 births,
9 usually under 300,000 deaths, and then you tend to have
10 positive net migration, and because of international in-
11 migration, and then California tends to lose people to
12 other states.

13 So we will only have one of those flows for the
14 migration trend in 2020 basically. And it's probably going
15 to take a little while to revert back to that international
16 migration flow. We do think that it's going to start
17 happening eventually. The question is kind of when.

18 And then in terms of the date about where people
19 are ending up, this is kind of the wild card because I
20 don't think people know where they're going to end up yet.
21 There was a lot of people who sort of moved and they
22 thought it might be temporary, and now it's kind of turning
23 into permanent. And then there were a lot of
24 administrative things so that people didn't have to go into
25 the DMV and change their driver's license. And, so, there

1 were all of these things that are messing with our data
2 about where do you officially live. That post office
3 change of address form there's also like maybe they're
4 adequate, maybe they're not. The DMV data, you know,
5 people's tax filings, we're not going to get data on that
6 for a little bit.

7 So, that's a long way of saying I think we're
8 going to be figuring this out for another couple of years
9 because we don't know whether someone is officially here or
10 not because they don't know.

11 MR. NICKELSBURG: Let me add one thing to that on
12 the data. Another way in which the data is conflated with
13 COVID moves is that the leading edge of the millennials is
14 at the point where they have to decide whether or not
15 they're going to have families. And for those who decided
16 that they want families, they're following what generations
17 before them have done, which is move to larger living
18 quarters, move to the suburbs.

19 And the reason for staying in the city if you
20 were planning on doing this in 2022 or 2023, was because,
21 you know, all of the cultural amenities in the city. But
22 that's all shut down. The interest rates are close to
23 zero. So why not do it now and go and get that home in the
24 suburbs since we were going to do it anyway in months or a
25 just a couple of years.

1 So that kind of migration of millennials to the
2 suburbs conflicts the data. You know, are they moving
3 because of COVID or because they're just at the point in
4 their lives where they're ready to start families?

5 To the extent that we see, and I've been looking
6 at the San Francisco Bay Area pretty carefully recently, to
7 the extent that we see rents decrease, that provides an
8 incentive for the next generation of the Zs who really want
9 to be where the action is in tact to move in, because it's
10 now less expensive.

11 So, Irena hit it on the nail. The data is really
12 inflated with lots of different things happening right now,
13 and we have no way of separating those out.

14 MR. LAFORTUNE: Just to piggyback on Jerry's
15 point, and this is, again, something, of course, that's
16 conflated in the data so there aren't really good
17 indicators of the extent to which this is happening. But
18 if we kind of go back to the previous conversation we're
19 having about working from home part time, going in part
20 time, you know, you don't have to be in the office every
21 day, and so I think a lot of workers may choose to live a
22 little bit further, so they may not relocate to other
23 states. They may not locate to other metros, but they may,
24 you know, kind of might shift their tradeoff between living
25 very close to their job, to these cultural amenities that

1 have been kind of put on pause and moving further out in
2 the suburbs further, you know, to the fringe of that, you
3 know, away from the urban core. That's something that I
4 haven't seen data on, but if I had to guess I would expect
5 that we're going to see more of that, kind of an increase,
6 you know, in demand for places on the kind of fringe of an
7 urban area and a decrease in demand for those right at the
8 center.

9 But again, you know, kind of as Jerry mentioned,
10 that changes price dynamics which then can induce a whole
11 new set of people or the next generation to move in.

12 But I do think, you know, for multiple reasons
13 that we won't see this kind of full work from home shift,
14 you know, people moving far away from their jobs, you know,
15 another thing that we kind of mentioned before but it's
16 still helpful, especially for young workers, even for
17 millennials starting their families and moving to the
18 suburbs to be close to their place of work, close to these
19 jobs networks, it's important for career development,
20 especially for the younger workers, not something that's
21 just hard to substitute on line.

22 So, I guess when we think about, you know, this
23 just has implications, and when we think about energy
24 usage, we think about transit, right, maybe fewer workers
25 on transit every day. We're taking kind of these short

1 trips, maybe a greater reliance on long-haul trips, whether
2 that means driving or whether that can be something, you
3 know, more kind of mass transit I think depends on, you
4 know, policy choices and what we invest in in the coming
5 years as well.

6 MS. GUICHARD: I'm just going to add a bit to the
7 confusion about what people are going to be doing. I think
8 there is some research suggesting that, you know, in an
9 environment where there is no COVID people working from
10 home may prefer to be located in kind of denser areas
11 where, you know -- I think it's partly leading to the
12 social aspect, like if you're going to be working from home
13 and be far away from, you know, any cultural and
14 recreational activity, I mean, it's already being kind of
15 cut away from society, so working from home and being in
16 the kind of denser, maybe not the core of the city center,
17 but being in a denser area where, you know, you can meet
18 people. You step out of your house. You meet people. You
19 go to cafes, restaurants. Even with children you go to the
20 park instead of being in a complete suburban environment.

21 So, I think in the absence of COVID we would see
22 more with the working from home, we will see more
23 relocation in dense -- denser area rather than commute to
24 rural or suburban areas. COVID may be changing the
25 picture, but maybe not for a very long time, so again,

1 there are many possible trends, and it's good for economics
2 and demographics because we can do a lot of research in the
3 years to come.

4 COMMISSIONER McALLISTER: Thanks a lot. Let's
5 maybe move over to the next question. This is great.
6 Thanks for all your insights.

7 MS. TRAN: So, I'm going to go back a little bit.
8 So, we'll dive into the industry portion. So, as we are
9 in, you know, a pandemic and we are trying to figure out
10 the post-pandemic effects and impact, what industry do you
11 expect will drive our economy in the future? You know,
12 what is hurting, but what will be the future? What will
13 grow in the future? And which industries are just going to
14 lose out at this point, and will probably be obsolete?

15 Let's see, maybe Laura, would you like to answer
16 that?

17 MS. RATZ: Sure. I mean one thing that the
18 pandemic has actually done is hasten this transition from
19 brick-and-mortar retail to online, the Ecommerce purchasing
20 rate.

21 And again, this is hastening a trend that was
22 already in place. Amazon was already a behemoth and
23 getting larger, but it's just blown up in the past year or
24 so.

25 So, transportation, logistics, warehousing, all

1 those kinds of things I think are going to be a much larger
2 piece going forward.

3 And the nature of tech jobs has changed quite a
4 bit. I still think that's going to be a significant driver
5 to the California economy, but it's going to be more about,
6 you know, these software tools, things to facilitate this
7 new world that we found ourselves in.

8 I think things like, you know, these personal
9 services and leisure and hospitality, I don't think they're
10 going to go away. I do just think it's going to be a long
11 haul to get back to where they used to be, and no small
12 part because certain establishments simply won't connect
13 outside of this pandemic.

14 My dog is (inaudible-dog barking). I'm going to
15 go on mute.

16 MS. TRAN: Irena, did you have something to add
17 to that?

18 MS. ASMUNDSON: This is Irena Asmundson from
19 Finance.

20 I tend to agree with Laura. You know, we are
21 seeing much slower comebacks in the service-oriented
22 factors. And, you know, that's been hard because they were
23 the ones that had added the most jobs during the previous
24 expansion.

25 And, so, you know, one of the things that we had

1 really noticed after the previous recession, the great
2 recession, was that manufacturing, which still is a very
3 large sector in California, and California has the largest
4 manufacturing sector in the U.S., it took a permanently
5 lower trajectory. So, it was pretty flat. It wasn't
6 growing before that recession. It dropped to a new level,
7 and then it just sort of continued. So, it's maybe grown a
8 tiny bit.

9 In terms of GDP growth, though, it's been
10 increasingly large. And, so, you know, we're kind of in
11 one of these areas, and as Stephanie mentioned, we probably
12 do need an enormous amount of retraining because there is
13 definitely more than enough work for everyone. It's just
14 who is going to pay for it, what kind of certifications do
15 they need, and who is actually going to pay those people a
16 living wage.

17 PROP 22 did pass in November. I think that we
18 are going to be grappling with that. And that interacts
19 very much with how California's housing costs go. You
20 know, we've been talking as though everyone can afford to
21 buy a house or can afford to pay their living costs, but,
22 you know, our household median income probably didn't move
23 that much from 2019 to 2020, and in 2019 it was about
24 \$75,000.

25 And if the median home price in California, that

1 sales price, was over 700,000, that means a multiple of
2 home prices to median household income is almost 10, which
3 is completely unaffordable. If that multiple should be
4 something like three or four, then that means that you have
5 to be rich to live in California, and you have to be rich
6 to sort of have the American dream. And that is going to
7 induce a lot of structural unpleasantness.

8 So, if we did go back to, you know, having the
9 services recovery, and most of the jobs are in services
10 that tend to be lower paid, well, you know, it is going to
11 be very difficult.

12 MS. TRAN: Thanks, Irena. Would any of you like
13 to join in to answer the question or do you want to move
14 on?

15 MR. NICKELSBURG: So, we haven't talked about
16 construction. Irena talked about manufacturing, and, you
17 know, there's been a lot of -- so I'm going to talk about
18 both of those.

19 In construction we're seeing an increase in home
20 construction and warehouse construction. There may be a
21 lot of infrastructure building, and this is the place that
22 at least some of that 1.4 million unemployed Californians
23 might be migrating to, but perhaps training is required for
24 them to do that, especially when it comes to heavy and
25 civil construction and noncommercial construction. But we

1 see that as a growth area.

2 And in the second, what Irena said about
3 manufacturing, we're looking post-COVID at a change in
4 supply chains. Those attenuated supply chains to Asia are
5 going to change, particularly to China. Some of that is
6 going to come back to the U.S. That which comes back to
7 the U.S. will be heavily capital intensive, and we'll use a
8 lot of robotics and not much in the way of labor, but some.

9 And if it is not intensive in the use of land,
10 which is expensive in California, then you can expect
11 California to have real advantage in this regard, so that
12 could be a growth sector for employment, not to the extent
13 that others are, you know, but a place that lower income
14 Californians with retraining can move into and make that
15 much more attractive.

16 So, we did see some growth in manufacturing, and
17 public policy could make it, you know, much more rapid
18 growth, and that will be advanced manufacturing.

19 MR. LAFORTUNE: This is Julien Lafortune with
20 PPIC.

21 Another couple industries I'll highlight as well
22 that we haven't talked about as much. One is that I think
23 has seen, at least in certain areas, a lot of growth in the
24 pandemic is warehousing and logistics, and this was
25 something that already was on an upward trajectory, but I

1 think that will probably see increases, and I don't know if
2 that's enough to kind of drive recovery, but that will
3 certainly be a big boon to many regions, and, you know,
4 that has implications for energy demands and where workers
5 locate as well as shift way from kind of in-person retail
6 to more online retail and other kind of goods purchased.

7 Another one that's interesting that I think maybe
8 Jerry mentioned a little bit earlier on is health. The
9 health sector has been, kind of, you know, growing a lot
10 over the past decades, and really it's been a source of a
11 lot of these good jobs. So where, you know, Irena
12 mentioned there's a lot of job growth in these kind of
13 hospitality industries that have been hit particularly hard
14 and food service, those weren't necessarily the best jobs.
15 And there has been a lot of good job growth at least in
16 terms of those that pay higher wages and get closer to
17 this, you know, affordable standard of living.

18 But that may change if we start thinking that
19 telehealth is kind of a new modality that could be more,
20 you know, more popular. There's a lot of jobs that are
21 associated with just one, you know, visit to a physician
22 that may not be required if we shift to telehealth or just,
23 you know, kind of modes of delivering healthcare that don't
24 require as much in-person interaction. And so that's kind
25 of the flip side of this. We might see, you know, some of

1 this growth coming through efficiency, but that may not
2 necessarily result in greater numbers of jobs in those
3 industries, and so that's something I think we don't -- you
4 know, we haven't really seen and will take a while to kind
5 of see how the full extent of this plays out, but that has
6 big implications on employment in these industries as well.

7 MS. TRAN: Great. So, we're going to move on to
8 -- while I guess you already touched on some of the
9 demographics, but let's touch on them a little more.

10 So, again, we're hearing a lot of like lots and
11 lots of people are moving out of California, within
12 California, just migrating everywhere because of the
13 flexibility to telework.

14 So, we're seeing this from the Bay Area,
15 Sacramento. Bay Area people are moving to the San Diego
16 Area, and they're searching for cheaper housing than the
17 San Francisco region, and they're looking for different
18 amenities that a house versus like a small condo in San
19 Francisco could provide them.

20 So, which regions do you guys think were most
21 impacted by the -- and will we ever see a higher population
22 despite the lower birth rates that we're seeing right now?
23 And we're looking at like three, five years, 10 years into
24 the future.

25 I guess we'll ask our DOF expert Irena.

1 MS. ADMUNDSON: This is Irena Admundson from
2 Finance.

3 So, you know, this really depends, and I will
4 caveat this with lots of people have written multiple times
5 about how California is dead, and people are leaving
6 California, and California is terrible, and California is a
7 wonderful place to live, and it has always sort of come
8 back and there's been this innovative spirit.

9 Things are a little bit different now, and they
10 are different because they are interacting with some of
11 these demographic impacts.

12 So, at this point many of the homeowners are
13 older. They're not in the labor force. There is that huge
14 baby boomer contingent which is now pretty firmly into the
15 retirement age. And there has not been the same increase
16 in homeownership in the prime working age force because
17 there has been increased generations.

18 And, so, if we want people who are going to be
19 having those kids, who are going to, you know, be starting
20 their careers here, who are going to be starting the
21 businesses here, who are going to be like, you know,
22 putting down roots here and continuing that population
23 growth in California, you actually do need to give
24 opportunities to those people and not make it so that only
25 rich people can live here.

1 So, you know, how this is going to play out is
2 very uncertain, but that is the one thing that gives me
3 pause, and, you know, makes me think that there are some
4 factors that are different this time than there have been
5 in the past.

6 And, so, I'll --

7 MS. TRAN: Do you think we'll ever get to the one
8 percent, or just slightly above one percent population
9 growth ever in the near future, or are we projecting a lot
10 less than one percent?

11 MS. ADMUNDSON: The current set of projections
12 that we have that we released pre-COVID, so, last January,
13 shows that we are going to have slowing population growth,
14 and that's -- so, our slowing population growth does assume
15 a mean reversion to a higher level of international
16 migration. So, absent that, we're going to get pretty
17 close to -- we would probably go negative.

18 In the current set of projections it does assume
19 a higher international migration. We get very close to
20 zero by the end of our projections that go out to 2060.
21 So, one percent is going to be very, very difficult to
22 achieve without an enormous amount of housing growth, and
23 voters just don't seem to want that.

24 COMMISSIONER McALLISTER: Irena, maybe you just
25 answered my question with that last sentence, but I guess

1 do you do scenarios about, you know, different housing
2 trajectories and how much housing we can get built and how
3 that would affect the sort of long-term growth? I mean,
4 you know, maybe policy-based scenarios or that sort of
5 thing. I mean it's clear that we're only getting, you
6 know, a fifth, or a sixth, or an eighth, or you know, pick
7 your number, of the housing we actually need to get some
8 reasonable multiple in terms of income to housing costs.

9 So, yeah, like how do we grapple with that and
10 make suggestions for policy and, you know, chart a path
11 forward that seems more sustainable?

12 MS. ADMUNDSON: I think that, you know, we
13 haven't done specifically housing-based scenarios. We've
14 done some risk scenarios in terms of what if things go
15 better than our current baseline scenario, what if things
16 go worse. It's not specifically tied to housing, but
17 housing is kind of within that.

18 And so I think everyone in California agrees,
19 housing is really expensive. We probably need more
20 housing. And then when it comes to where are we going to
21 put that housing, then -- and, you know, how are we going
22 to have it be done in an environmentally friendly manner so
23 that it's not going to burn up every three years, that's
24 kind of the issue.

25 So, there's a big divide between what we want big

1 picture and what we're actually going to do to get there.

2 MS. RATZ: One thing I would just tag on there
3 about slowing population growth, it's not something that's
4 strictly speaking unique to California. We're seeing that
5 nationwide.

6 You know, as Irena touched on, that's a lot of
7 that has to do with birth rates, and actual immigration
8 will probably be the saving grace for California, but this
9 is part of a larger trend, and, you know, very few states
10 will buck that trend.

11 MS. ASMUNDSON: I will say that one of my uncles
12 lives, you know, he was born in the forties and he was very
13 into this zero-population stuff, and he used to sort of
14 rant and rave about, you know, when I was born there were
15 like two billion people, now there's eight billion people,
16 and, you know, at some point there is a limit. I think
17 that we're never going to get -- we're hopefully not going
18 to get to a Malthusian sort of turnaround. But for
19 environmental reasons it could turn out that, in fact, our
20 population worldwide starts dropping, and in the U.S. it
21 does start dropping. This has happened in other countries.

22 The issue here is that you have to have
23 consistency. So, you can't simultaneously assume that your
24 tax revenues and your bond payments and, you know, what
25 you're planning for in terms of energy production and all

1 of that, you can't assume that it's going to continue
2 growing when, in fact, it's dropping. That creates a
3 problem. But you can plan for what you think is actually
4 going to happen, and you can plan for a dropping population
5 in California. It's just that consistency is key.

6 MS. TRAN: And the Department of Finance
7 projections do include the COVID-19 impact, the cases and
8 death rates.

9 MS. ADMUNDSON: We do not have a new set of
10 projections out. Our last set of estimates that we
11 released covered through July of 2020. Those were released
12 in December. And then we are hopeful that we are going to
13 get the 2020 census numbers, but then we're going to have
14 to spend some time interpreting those because 2020 was just
15 a weird year. And then we probably will rethink everything
16 sometime in 2022.

17 We might include a new rebenchmarking to the new
18 lower level, but not rethink all of those assumptions that
19 go into it before then.

20 MS. TRAN: Okay, great. So, now I'm going to
21 move over to Le-Huy's set of questions for you guys, so,
22 Le-Huy.

23 MR. NGUYEN: Thanks, Nancy. Yeah, we've been
24 having such a great conversation about like economics, and
25 then the housing, especially new construction or how people

1 are utilizing the space. So, it's great.

2 But before we dive deeper into that, you know,
3 more like on the population side there's something else I
4 wanted to ask was, you know, so we talk about the
5 population growth, but how do you see California's average
6 house size changing over the next 10 years? And, you know,
7 there's probably going to be some regional differences, so
8 if you guys want to expound on those a little bit. Maybe,
9 Stephanie, would you want to kick us off on this one?

10 MS. GUICHARD: So, I mean at SANDAG we have a
11 pre-COVID forecast where we are just slightly declining the
12 size of households from, I don't know, like 2.8 to 2.6.
13 But, again, possibly what's happening right now, everything
14 you've discussed so far could change this trend and we
15 still don't really know how it's going to work.

16 So, for instance, let's say you are -- many
17 people leaving California because housing is too expensive,
18 and then you manage to get lower house prices, and then
19 young people decide to leave their parents house and to buy
20 this new available housing. Then you would have a decline
21 in the -- softer decline in the size of the households.

22 One other thing that we don't know what's going
23 to happen, what's going to happen with the retired people.
24 So, as Irena mentioned we have many households which are
25 retired. They are typically small-sized households.

1 Whether they're going to stay in California or not, is also
2 going to have some impact. If they leave California and
3 they free these units for people who are going to start a
4 family, we could see the evolution going the other way.

5 So, I think for now we stick with our
6 conservative forecast and we wait a few years to see what's
7 happening with the migration trends, whether, you know,
8 they have been exacerbated by COVID or whether we go back
9 to the kind of environment was (indiscernible) before.

10 MS. ADMUNDSON: We -- sorry, this is Irena from
11 Finance.

12 Can I weigh in with like one weird data thing
13 that's been going on that we're trying to grapple with as
14 well, which for household size is -- so when you calculate
15 household size, there's sort of -- you can take the number
16 of housing units and the number of population and then sort
17 of divide the two.

18 But, as we've been seeing, there's also an
19 inequality in who owns the homes and what is happening with
20 them. So, Air BNB kind of brought this to the fore where
21 people were buying houses and then they were mostly using
22 them as sort of temporary rentals, and it's not actually
23 fully occupied all of the time as, you know, renter-
24 occupied units.

25 Or people are, you know, for example, interest

1 rates are low, wealthier people did very well. Just
2 anecdotally, I heard a lot of people bought a second home
3 in 2020 because they could afford it.

4 And so when the housing stock becomes this kind
5 of like bimodal type of distribution where a couple of
6 people have a lot of housing and the vast majority of
7 people don't have a lot of housing, the average household
8 size is not necessarily the best indicator of what's going
9 on with households, and is not necessarily going to be the
10 best indicator of sort of the load that each individual
11 housing unit or each neighborhood is going to have.

12 So, just wanted to bring that up because I think
13 that it matters for the electricity forecast.

14 MR. NGUYEN: Actually, that's very helpful for us
15 to keep in mind, you know, like these like different
16 scenarios that we want to think about, especially with the
17 future and things being, dare I say, uncertain sometimes.
18 Thank you.

19 Yeah, so now we can talk about some of these like
20 new constructions or just talking about homes. Because you
21 know if we have a shortage of supply, but then now we have
22 COVID, like what are we going to be seeing in new
23 construction. So, are we going to see more single-family
24 dwellings, multifamily dwellings, or are we going to see
25 more commercial space developed? So I kind of wanted to go

1 in that direction. And, of course, we're seeing with all
2 the questions that there's state regional differences.
3 Yeah. So, Jerry maybe you want to start us off with this
4 one.

5 MR. NICKELSBURG: Okay. So, for some time now,
6 some time being since basically the end of 2007, the mix
7 between multifamily construction and single family detached
8 home construction has been about 50/50. Prior to that,
9 single family home construction was dominant in California.

10 In our forecast we don't have the 50/50 mix
11 changing much because the large single-family developments
12 in places like Mission Viejo, south Riverside County, far
13 north Los Angeles County, they're far away from jobs, and
14 that means more commuting, longer commutes absent things
15 like new transportation modes.

16 So, we're looking at it being about 50/50
17 multifamily versus single family, and our forecast has the
18 home building going up to about 130 -- about 130,000 units
19 per year which certainly doesn't make any dent in any sort
20 of measure of affordability.

21 So, that's the distribution we see is single
22 family out in the periphery, and that's about half the
23 housing, multifamily in the denser urban areas, some
24 conversion of retail space to multifamily housing. But
25 this is going to be a growth area because today we're only

1 building just over a hundred thousand units.

2 MR. NGUYEN: Great. Thanks, Jerry. You know,
3 it's funny also we've been talking about is the
4 transportation, and, Jerry, you described that, long
5 commutes, and what not. So, you know COVID has kind of
6 changed -- it has changed our office environment. And if
7 we see it as, you know, permanent change where more people
8 are being allowed to work from home, and such, you know,
9 how will all this in the transportation sector from like a
10 personally use, but also like the public system itself,
11 like public transit. Yeah, so, Julien, do you want to give
12 a crack at this one?

13 MR. LAFORTUNE: Yeah, sure. And this is Julien
14 Lafortune from PPIC.

15 So I guess I was kind of touching on it in
16 response to an earlier question that I think my expectation
17 is we'll probably see -- we won't see as much of a shift to
18 kind of full-time work from home, and maybe more of a shift
19 to this part time work from home modality. And, so, for
20 those reasons, you know, I think we will -- you know how
21 does that impact transit, right. So, I think we're going
22 to see potentially more workers living a little bit further
23 away from this urban core, and that kind of aligns as well
24 with maybe millennials starting this transition to, you
25 know, forming families.

1 And I think that just, you know, leads to this
2 kind of in equilibrium where there's a great reliance on
3 driving and a greater reliance on kind of long-haul transit
4 trips. And especially, you know, if you're further away
5 from some of these center city amenities, you know, there's
6 less of a reliance on transit, you know, for non-kind of
7 work trips, right, and so that's something I think maybe
8 for environmental goals that's a bit of a worry, right.
9 So, on one hand we have a lot.

10 You know, maybe workers are staying from home --
11 you know, working from home more so there's less of a
12 reliance on actually going out and using this type of
13 energy and these resources to get from point A to point B,
14 but more of that kind of shift, the compositional shift
15 that would be more towards driving and less towards systems
16 of mass transit.

17 But, you know, I think another thing that I'll
18 kind of add here that's interesting is I think some of this
19 depends on what happens to demand for single family homes
20 and kind of back to the earlier demographic question we
21 had, what happens to birth rates and family formation. And
22 so we've seen that declining birth rate for a long time
23 now, and so whether, you know, a lot of these, you know,
24 millennials, kind of my age cohorts, right, if they're
25 actually starting to form families or not I think we've

1 seen a big delay in family formation, and I think the
2 pandemic is delaying that further.

3 And, so, I think it's just kind of a wait and see
4 on that because that kind of changes a lot of the, you
5 know, individual demand for space and where you work and
6 where you live. So, I don't know if there's a clear
7 answer.

8 I haven't seen any kind of good data that points
9 one way or another, but I do think it kind of, you know,
10 tilts us in this direction where we're getting, you know
11 further away from this kind of dense center with a lot of
12 kind of, you know, reliance on mass transit and less on
13 personal transportation. Maybe at least there's some
14 pressure kind of moving us some steps back away from that
15 in the future.

16 MR. NGUYEN: Great. Stephanie, do you have some
17 comments about this from a regional point of view?

18 MS. GUICHARD: So, I mean, we -- I mean we
19 shouldn't -- we shouldn't forget that there is a
20 substantial share of the population that is difficult to
21 believe, doesn't have a car and relies on transit. And
22 what we saw during this crisis is that many of our
23 essential workers rely on transit. I have some data for
24 San Diego that I cannot find right now, but -- so, besides
25 the -- and, you know, most of these jobs that cannot be

1 done from home, they are also some of the jobs that people
2 doing these jobs rely on transit, so for us as a
3 transportation agency our priority is to make sure these
4 people continue to have access to opportunities and have
5 more access to opportunities can, you know, have access to
6 jobs.

7 And we talk about this, you know, the
8 transformation of the economy, so if you have a very
9 efficient transit system you get more access to these
10 people to different job, but also new job opportunities to
11 training, so we think, you know, transits and public
12 transport is going to remain very important.

13 The other thing I wanted to mention, I mean if we
14 think about the -- something we've noticed with, you know,
15 working from home situation is that although initially
16 traffic on our freeways declined a lot, it has recovered
17 faster, people going back to the office. And this is kind
18 of in line with what we knew before was that when people
19 work from home they use their car a lot because, you know,
20 the trips where you would start from -- you leave your
21 home, you go somewhere. On your way to work you're going
22 to drop your kids at school, or you're going to do
23 groceries on your way back. You're not going to go to
24 work, but you receive the groceries. In a environment
25 where the schools are open you will drive your kids to

1 school, and the time you save not being stuck in traffic
2 going to work because you work from home, you may use it to
3 drive somewhere else, to drive to the park.

4 Here in San Diego I noticed something during the
5 summer is that there were massive traffic jams around the
6 beaches because people were working from home, kids were
7 home schooled, and everyone wanted to take a break from
8 that environment, so there were more traffic in the kind of
9 recreational activities.

10 One of the other things we learned from this
11 crisis is although there is still a lot of people driving
12 around, what working from home does is that it reduces the
13 traffic jam in the peak hours. So, we haven't seen
14 congestion in San Diego like as we used to see it.

15 I let Jerry say what he is experiencing in LA.
16 It may be different because traffic jam in LA so used and
17 maybe you still have traffic jam in LA, but I can tell you
18 in San Diego even with just 10 percent of the cars not
19 driving we have seen congestion reducing by a lot. So,
20 that's something that's important for us going forward, and
21 if we talk about transport, what we have seen during this
22 crisis is more people using active transportation, bikes,
23 walking, and right now it may be a substitute for, you
24 know, going to your favorite fitness activity. This may
25 become a habit, and people, you know, once you have

1 experienced biking around your house, you may continue
2 biking to work, if it's possible, so we -- I think there is
3 more demand for, you know, wider variety of transportation
4 mode with this crisis.

5 And I would just let Jerry tell us what's up in
6 traffic in LA.

7 MR. NGUYEN: I'm really interested. We always
8 see around, you know, that traffic, and, you know, the East
9 Coast we hear people that think, oh, how's LA? What's
10 going on? How are you guys driving?

11 MR. NICKELSBURG: So, I don't have data on this,
12 just anecdotes.

13 And I live in a beach city, so what Stephanie
14 said was right. We used to have our traffic jams on the
15 weekends, and now they're every day.

16 But commuting from the more affluent parts of LA
17 into downtown, that seems to be much lighter. But
18 commuting going the other direction from the eastern part,
19 the more affordable parts of LA, into the western parts, so
20 these are going to be a lot of essential workers,
21 construction workers, and the like. It's not where it was
22 before, but it certainly has come substantially back. So,
23 I think the Los Angeles experience is very much, you know,
24 what Stephanie has told us is the San Diego experience.

25 And so that's my anecdotes, but I don't have any

1 real data on what's happening with commuting and congestion
2 in Los Angeles.

3 MR. NGUYEN: That's all good. You know, little
4 insights here and there always help. So, thank you, Jerry.

5 MS. ASMUNDSON: Can I bring up one thing?

6 MR. NGUYEN: Sure, Irena.

7 MS. ASMUNDSON: This is Irena at Finance. So,
8 you know, we know that a lot of emissions come from the top
9 percent of the income distribution. And, so, you know, as
10 Stephanie mentioned, essential workers, lower income
11 workers, tend to rely on transit, and if you're richer then
12 you can afford to have a car, or you can afford to take
13 lots of plane trips, and that behavior has been disrupted
14 during the pandemic.

15 And, so, are there things that we can do to
16 continue changing the behavior of that small percentage of
17 the population who really imposes the most externalities on
18 the environment? And encouraging that and making sure that
19 we can continue to disrupt that, that I think is a big
20 opportunity for us. So, just wanted to sort of connect
21 that dot.

22 MR. NGUYEN: Thank you. Yeah, the conversations,
23 I think we're running short of time.

24 There's something that I think will be of big
25 interest to folks will be just the wildfires, you know,

1 every day in the news this summer. So, like what
2 demographic trends are likely to be impacted by the
3 increasing frequency and magnitude of wild fires in
4 California? Laura, did you want to take a crack at that
5 one?

6 MS. RATZ: Sure. So, I think what you're asking
7 is will like the increase in frequency of wildfires, you
8 know, will in some way ding population growth in California
9 or hurt migration to and from California.

10 MR. NGUYEN: Uh-huh.

11 MS. RATZ: And you would think, you know, clearly
12 as an East Coaster seeing this on the news, you know, it's
13 like why would someone want to live in this, you know,
14 clearly dangerous place. But if you look at the -- if you
15 actually start to dive in and look at the data I don't
16 think there really is a compelling story that fires do
17 dissuade people from moving or staying in California. You
18 know, actually ran several regressions on this, you know,
19 trying to tease out is this actually happening. And while
20 people certainly are leaving the state, the reasons we've
21 already talked about. It's a cost story. It's nothing --
22 I won't say it's nothing to do with the fires, but I don't
23 think it's going to be this huge demographic driver that
24 you might at first glance think.

25 And people -- I think people choose to live in

1 California for a myriad of reasons, and I don't think the
2 fires are enough of a deterrent, at least not yet.

3 MR. NGUYEN: The fires are not.

4 MS. RATZ: And hopefully we don't get to that
5 point.

6 MR. NGUYEN: I guess something I was thinking
7 about, like potentially people are just migrating to
8 different parts of California, Laura, I guess.

9 MS. RATZ: Sure , but again, I do still think
10 that will be driven more by costs than anything else. To
11 some extent some of the places that, at least this past
12 year like if you look at some the fires and around the wine
13 country, and these are incredibly expensive areas to live
14 in to start with, so I don't think it is just going to boil
15 down to costs and it's happening to coincide with, you
16 know, natural disasters.

17 MR. LAFORTUNE: One thing. This is Julien from
18 PPIC, and I'll just kind of piggyback on Laura's point is I
19 agree and I definitely buy that we haven't seen that in the
20 data yet and that it's probably not likely to be a big
21 driver in terms of just kind of net overall migration.

22 But one kind of consideration or worry, at least
23 that I have, is that part of the reason we still have a lot
24 of, you know, people moving in, and most of these are kind
25 of wealthier individuals that are moving in and kind of

1 propping up some of these migration numbers, is just that
2 there's a California premium. Housing costs, the costs of
3 living are so high, and some of that comes from the amenity
4 value of living in California, and I think the wildfires
5 as, you know, currently the kind of distribution of where
6 they are, but then the impacts of the smoke which kind of
7 hit, you know, individuals and households across the state,
8 I do think that does, you know, put kind of downward
9 pressure on this amenity value or this premium you'd pay to
10 live in California.

11 And the extent to which this gets worse or the
12 coming years and decades I think is something to keep in
13 mind and is a big worry that could kind of, you know, make
14 it more difficult to continue attracting people to kind of
15 offset these outflows when the costs are already so high
16 and some of these benefits maybe aren't as great, or the
17 difference, you know of living in kind of beautiful, sunny
18 California relative to -- and not having winters relative
19 to somewhere else, I think that that kind of differential
20 is decreasing due to the effects of climate change. I
21 think that will eventually over the long term have
22 implications.

23 MR. NICKELSBURG: So, I'm going to take a little
24 different view from Julien. This is Jerry from UCLA.

25 Climate change is everywhere, and so, yes, we

1 have more wildfires. Texas and Florida have more sea level
2 rise and hurricanes. The Northeast has more polar
3 vortices. And so I'm not sure that that differential is
4 going to be squeezed by climate change. It may, in fact,
5 work the other way, but I don't know, have no idea what the
6 answer is.

7 But I think the answer to the question about the
8 impact of wildfires comes from an observation of whether or
9 not California's rebuild in areas that have been hit by
10 wildfires or other -- wildfires, or earthquakes, or
11 whatever. And I think the answer is a resounding, yeah, we
12 look at it and say that it's really tragic and it's
13 horrible, and where is the contract that you rebuild. And
14 we see that in the Woolsey fire area in southern
15 California, in the Thomas fire area. It's happening in
16 Sonoma County. It is more a function of being able to
17 finance the rebuilding, but the abandonment of areas that
18 have been struck by wildfires just doesn't seem to be
19 happening. It may happen in the future, but so far we
20 don't see it.

21 COMMISSIONER McALLISTER: May I ask a quick
22 question on that? What's the insurance overlay on this,
23 and how do you think that's evolving?

24 MR. NICKELSBURG: So, casual observations says
25 those who have insurance are rebuilding or money, are

1 rebuilding more rapidly. Those who don't, you know, who
2 maybe are naked insurance may be moving out of state
3 because they just can't afford to rebuild, but they're
4 selling their properties. And, so, you see in less
5 affluent areas in the urban rural interface, urban
6 wilderness interface, slower rebuilding because the folks
7 there were less affluent and had lower insurance coverage.

8 So, it does matter. It matters in terms of the
9 time. But I don't know of any evidence of abandoning a
10 fire area. And, of course, a lot of the fires are up in
11 the Sierra in very sparsely populated areas. But here in
12 California where they hit a lot of homes and in the North
13 Bay where they hit a lot of homes you are seeing
14 rebuilding.

15 MS. ASMUNDSON: I did also want to interject one
16 other thing, which is that the nature of how we provide
17 utility services and, you know, our grid and some of our
18 fire insurance, a lot of that is not entirely priced
19 according to the risk. As we make public policy choices
20 that, you know, we're sort of going to not penalize people
21 for living in rural areas, and so we're going to
22 essentially subsidize the provision of services to them, or
23 if an emergency happens that is actually very predictable,
24 we're going to, you know, invoke emergency declarations and
25 help them out.

1 And, so, one of the hard things I think in
2 getting to this here in that carbon world is that we sort
3 of assume that the past is a predictor of the future, where
4 as we know that the future is on a trend, is contradicting
5 some of these past historical experiences.

6 And, so, grappling with that and setting up the
7 system so that you do have that consistency internally is
8 one of the things that hopefully you're going to be
9 grappling with as you do your forecast.

10 MR. NGUYEN: Thank you. So, I think we're just
11 out of time for just the standard questions, so I think the
12 dais or the commissioners if they have any other questions
13 that have not been asked today.

14 COMMISSIONER McALLISTER: I mean, I have tons of
15 questions. I think, you know, these are broader than even
16 this panel, even though you all are spectacularly
17 knowledgeable about a broad variety of issues. But, yeah,
18 that last point I think is very apropos, you know, how --
19 when the U.S. developed, you know, not just California but
20 throughout the world, parts of the U.S. there were public
21 policy choices made to, you know, cross-subsidize in a way
22 that benefitted everyone in terms of that kind of growth
23 and other imperatives at that time. And to some extent the
24 imperatives have changed, right, as we confront climate,
25 and so, are we up to this task of moving this ship,

1 steering this ship in a different direction that's more
2 aligned with long-term sustainability in our current
3 policies, right, for 2045 and beyond.

4 So, those are big questions and we may not be
5 able to answer them all in the forecast, but we certainly
6 need to bring them up and begin to grapple with them in
7 earnest.

8 I wanted to open up to Commissioners Monahan and
9 Douglas in case you had any questions that we can answer
10 quickly. Also, we need to get to some Q and A beyond the
11 dais.

12 COMMISSIONER DOUGLAS: Nothing from me, thanks.
13 I just wanted to thank the panel.

14 COMMISSIONER McALLISTER: Okay. Me too. Great
15 panel. Commissioner Monahan.

16 COMMISSIONER MONAHAN: Yeah, it really was a
17 great discussion and it seems like there's a lot more
18 questions than answers at this point, and I do think this
19 issue that was raised multiple times about, you know, the
20 fact that it's not affordable for many people to buy a home
21 in California and to see if there are any long-term shifts
22 due to this work from home and the opportunity to live in
23 other places, I'd be really curious to see how much that
24 plays out because, I mean, we need to make a California
25 more equitable. We need to make it easier for young people

1 to live comfortably and not have to sell their souls in
2 order to live in California, so this will be really curious
3 to see how this plays out in the longer term.

4 COMMISSIONER McALLISTER: I mean this structural
5 deficit, this housing structural deficit that's been going
6 on for, you know, it's not a -- annually, yeah, there's a
7 deficit, but it's accumulating over time. We have more
8 than a million overall housing deficit in the state right
9 now, and so how do we, you know, kind of start to close
10 some of that back and get housing more affordable. I think
11 that's a huge overlay.

12 I continue to be curious or just really
13 interested in this idea of what happens to the rural areas
14 when there are pockets of affluent people that move out of
15 the urban core into the rural areas, and really what scale
16 that's going to happen at, you know, as we sort of settle
17 into some new normal about telework and all these
18 professional level telecommuting tools. I think that's
19 potentially, at least, a key question for energy demand at
20 the local and sort of distribution system level. You know,
21 what is that going to look like for a distribution grid,
22 and how is it going to drive investment in new and
23 different ways, how is it going to drive consumption and
24 low shapes and reliability.

25 And as the customer base changes in some of these

1 traditional slightly lower reliable, you know, slightly
2 more vulnerable distribution grids is there going to be
3 some need for shifting investment patterns by the retail
4 service providers. So, I think there's kind of a
5 conglomeration issue there that's really interesting and is
6 going to change things.

7 And, you know, we're in this distribution,
8 distributed energy world and it's only going to accelerate,
9 and so how is that going to impact our public policy. So
10 the econ demo trends are really important to kind of begin
11 to tease that out. So, anyway, I'll get off my soapbox and
12 see if there's any other questions from the dais. No, okay
13 great.

14 And I think so with that we're at 11:11. Maybe
15 Nancy or just panelists, do we have time for maybe some
16 final comments. The public comment period is scheduled to
17 start for a few minutes at 11:20. We're not quite there
18 yet. We could start it early alternatively as well.

19 MS. RAITT: Commissioner, this is Heather. Yes,
20 I think we could do that.

21 So, just as a reminder, we were going to take a
22 couple of sessions from the attendees on the closed
23 sessions on the Q and A, too.

24 COMMISSIONER McALLISTER: Oh, great.

25 MS. RAITT: I just needed to say that. Thanks.

1 COMMISSIONER McALLISTER: You've got that
2 starting though at 11:20, correct? Well, we could go ahead
3 and get started with the Q and A from the online attendees
4 as well. Do you want to go ahead and get started with
5 that, Heather?

6 MS. RAITT: Sure, it's okay.

7 COMMISSIONER McALLISTER: Okay, great.

8 MS. RAITT: We have Mark Palmere, he's from the
9 Energy Commission, to moderate the Q and A. And Mark is
10 our lead for the forecast for electric light duty vehicles.
11 Go ahead, Mark.

12 MR. PALMERE: Good morning. Good morning,
13 Commissioners, good morning panelists.

14 Yeah, we have a few questions in the Q and A, and
15 again, feel free to add yours if you'd like.

16 I notice -- it looks like a couple of them are
17 actually about transportation. I may briefly address them,
18 but just as a reminder, we have one of the afternoon panels
19 is on the future of transportation, so I definitely
20 recommend maybe asking them again there.

21 But to start with I do have a question about the
22 economics of our future from Giovanni Circella. And his
23 question is, "We want to know if there's a serious risk
24 that with increased remote working and technology, the
25 local scale and the economies of proximity will become less

1 relevant while the economies of scale will prevail," and I
2 think he thinks that may advantage large companies and
3 depress small businesses even more. So, I don't know if
4 any of the panelists want to tackle that one.

5 MS. ADMUNDSON: So, this is a competition -- this
6 is Irena from Finance. Sorry. So, this kind of goes to
7 the competition aspect. And, you know, the past four years
8 and probably the past couple of decades there hasn't been
9 as much antitrust sort of enforcement as maybe there should
10 have been. And so a lot of the trends that we talked about
11 on our panel, the inequality, the wealthy people sort of
12 having more opportunities than others, this all feeds into
13 this competition aspect and this larger companies versus
14 smaller companies and who has, you know, the opportunity to
15 compete and to grow and to start things up.

16 So, you know, I don't necessarily know that this
17 is a COVID thing. This is more related to competition.
18 But I think that Giovanni is probably right to worry about
19 how these two things intersect.

20 MR. PALMERE: Any other panelists comments on
21 this one? Thank you, Irena.

22 MR. LAFORTUNE: This is Julien from PPIC. I
23 guess I can add, and, you know, again, I think this is
24 somewhat speculation, so it's hard to know what -- you
25 know, how this will play out, but there's a sense in which

1 this could go in the opposite direction as well, increased
2 remote working and kind of reliance on, you know,
3 technology could advantage smaller firms that no longer
4 have to be in these high-cost locations. They don't have
5 to have as much of a footprint. It may be cheaper to find
6 workers, and, you know, workers actually in many cases can
7 be more productive working from home, and so that -- I
8 guess I'm just saying it's not a given that this is
9 necessarily going to advantage large companies, but, you
10 know, how this plays out I think, as I said, this is just
11 speculation on my part.

12 MR. PALMERE: Great, yeah. Thank you, Julien.
13 That's something to be thinking about as well. There's
14 certainly a lot of varying factors.

15 Yeah, I guess -- it looks like we do have time
16 for another question. I'm going to ask -- this one from
17 Robert Perry, and I would definitely recommend possibly
18 asking it again to the transportation panel. But while we
19 have time I will ask it to our morning panel here. And
20 he's kind of interested in the knowing if any of you have
21 any thoughts, I know we talked about -- a little bit about
22 traffic, but he's kind of curious about I guess the
23 ownership of cars in general and that future where
24 teleconference in -- he says, "Teleconferencing in
25 combination with a robust internet could spur a multi-modal

1 transportation system where the ability to participate
2 wherever you are reduces the perceived need to own a car.”
3 And he thinks that could reduce carbon emissions and have
4 some positive environmental and health impacts.

5 Any of you guys have studied that or have any
6 thoughts, as I said, we’ll definitely hope to get to this
7 in the transportation panel, but if any of you have any
8 kind of thoughts on that you’re welcome to share them now.

9 MS. GUICHARD: Yeah. This is Stephanie from
10 SANDAG. I feel obliged to take this one given that we are
11 a transport agency.

12 As I mentioned earlier, you know, even if people
13 don’t need their car to commute to work every day with the
14 teleworking and teleconferencing, they use their car for
15 other trips, to see friends, to do the groceries, to drop
16 the kids at school. So, working from home and
17 teleconferencing doesn’t reduce the need to own a car by as
18 much as you would think.

19 And the other thing is because you have this need
20 to do all these other trips there is no alternative
21 transportation system like a good public transit system.
22 Then the need to own a car persists, and so that’s what we
23 try to do in San Diego, is to make sure that people have
24 other options than taking your car.

25 You know, even one of the things that has been

1 studied is just to be able to enjoy the beaches of San
2 Diego. If you live far east and you don't have a car it's
3 almost impossible to enjoy the beaches because there is no
4 reliable public transportation to take you there, and so
5 you miss out on one of the amenities of the region. Or you
6 may find a way to go taking two or three different buses
7 and waiting half an hour between the different connections.

8 So, there is -- what I want to say is, first,
9 there is still a need of people to get around, even if it's
10 not to get to work. And, second, to reduce the need for a
11 car you need to have alternative options that are, you
12 know, efficient.

13 MR. PALMERE: Yes, thank you, Stephanie. That's
14 certainly -- I do work on our light-duty vehicle forecast,
15 so we've been looking at a lot of different projections.
16 But, yeah, you definitely did a good job of like
17 summarizing all the different factors for why people might
18 own a car or not.

19 And, yeah, thank you to our panelists for your
20 question-and-answer answers. I think we're now going to
21 transition to the public comment period, and so this is for
22 if anyone has any public comment, so, Heather, I guess I'll
23 throw it back to you.

24 MS. RAITT: Sure. Thank you, Mark, and thank you
25 to each of our panelists. That was really a helpful

1 discussion, and thank you to Nancy and Le-Huy for
2 moderating that.

3 So, we will go on and move to the public comment
4 period. The panelists, you're welcome to turn off your
5 videos at this point.

6 And we will request that only one person per
7 organization comment, and will limit comments to three
8 minutes per speaker.

9 If you're using the online Zoom platform, please
10 raise your hand to let us know that you'd like to comment
11 and we will call on you and open your line.

12 If you are on the phone you can press star nine
13 and that will raise your hand, and then star six to unmute
14 your line.

15 With that, we have Rosemary Avalos from the
16 Public Advisor's Office to moderate the public comments for
17 us. So, go ahead, Rosemary. Thank you.

18 MS. AVALOS: Thank you, Heather. Good afternoon
19 to everyone. I will first call on attendees using the
20 raised hand feature on Zoom. Please state your name and
21 affiliation and spell your first and last name. And, also,
22 please do not use the speaker phone feature because we may
23 not be able to hear you clearly.

24 As I look right now at our list I don't see any
25 hands raised, so I'm going to go ahead and give it a few

1 more seconds.

2 And also a reminder, the star nine feature on
3 your phone is to raise your hand, and the star six to mute
4 and unmute your phone line.

5 So, are there any comments? All right. I'm not
6 seeing any hands raised, so I'll go ahead and turn this
7 over to Commissioner McAllister and I'll still keep an eye
8 on the raised hands. But right now, no hands raised.
9 Thank you. Commissioner McAllister.

10 COMMISSIONER McALLISTER: Thanks, Rosemary. I'm
11 a little surprised because there's so much up in the air
12 here and so much uncertainty. And we talked about a lot of
13 that throughout the course of this first panel, so I wanted
14 to just thank our panelists again for your insights, and
15 hopefully we can draw on you going forward as questions
16 come up.

17 But, yeah, I would really invite people listening
18 in to ask questions, you know, in particular just how it's
19 related to all the different themes which are pretty
20 weighty, meaty things that we're wrestling with and trying
21 to help us elucidate a path forward and form the forecasts.

22 Obviously, at the Energy Commission we're trying
23 to get a handle on how all this will influence energy
24 demand and, so, I think the sort of geographical
25 distribution questions, the demographics, we didn't really

1 talk about regional migration within the state. And if
2 those trends maybe would change a little bit because of
3 some of these choices that people who can actually we know
4 are making to some scale. But lots to -- lots of
5 information to work with and lots of data that hopefully
6 will be coming in to help us chart a path forward in the
7 forecast.

8 I will just open. I've asked my questions along
9 the way so I don't have any new questions. But I just want
10 to give one final opportunity to my colleagues on the dais
11 in case they have questions. And wondering if there's
12 time, Heather, for rapid comments, or should we close it
13 out?

14 MS. RAITT: Sure, we could do some rapid fire
15 close out comments.

16 COMMISSIONER McALLISTER: Maybe we'll just go
17 each person on the dais and give you a last opportunity to
18 say anything that hasn't been touched upon through the
19 course of the morning.

20 COMMISSIONER MONAHAN: Well, I want to thank the
21 panel. It was really an interesting discussion, and in my
22 mind somehow raised more questions than answers I think at
23 this point. But just really appreciate the conversation,
24 and the dialogue, and the thoughtfulness, and we will be
25 wrestling with these. I imagine next year we're actually

1 going to have a lot more to say about the long-term
2 implications than we can this year. But just really
3 appreciate the conversations. Very helpful.

4 COMMISSIONER McALLISTER: Great. So, no
5 requirement to make final comments, but if the panelists
6 want to make some final wrap up comments, jeopardy style,
7 it will be good. Not necessary, but if you want to, feel
8 free and then we'll wrap it up. Okay. Well, Heather, I'll
9 pass it back to you then.

10 MS. RAITT: All right. Well, then, I'll just
11 remind folks that written comments are welcome, and they're
12 due February 23rd, and invite everybody to join us for the
13 afternoon. It starts at 1:00 o'clock, and it has a
14 separate sign in or log in information. You can see the
15 webinar I.D. number and password posted on the site, and
16 they're available on the notice that's posted on the
17 website.

18 So, with that, thank you so much everybody, and I
19 hope to see you again at 1:00 o'clock. Goodbye.

20 COMMISSIONER McALLISTER: Thanks. See you in the
21 afternoon. Thank you.

22 (Off the record 11:26 p.m.)

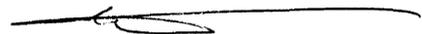
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A handwritten signature in black ink, appearing to read "Barbara Little", is written over a horizontal line.

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