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STATE OF CALIFORNIA

CALIFORNIA ENERGY COMMISSION

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COMMISSIONER WORKSHOP ON CALIFORNIA'S ECONOMIC OUTLOOK

TRANSCRIPT OF PROCEEDINGS

SESSION 1

REMOTE VIA ZOOM

TUESDAY, JANUARY 31, 2023

10:00 A.M.

Reported by:

Martha Nelson

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Somjita Mitra, Chief Economist at CA Department of Finance

Jerry Nickelsburg, Director of the UCLA Anderson Forecast

Walter Schwarm, Chief Demographer at CA Department of Finance

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P R O C E D I N G S

10:00 a.m.

TUESDAY, JANUARY 31, 2023

MS. RAITT: Welcome to our workshop this morning, Commission Workshop on California's Economic Outlook. I'm Heather Raitt, the Director for the Integrated Energy Policy Report.

And so this workshop is part of the Energy Commission's proceeding on the 2023 Integrated Energy Policy Report, or the IEPR for short. This is our first one for the 2023 report.

So I'll make a few logistical comments and then we'll get into the substance today.

So next slide, please.

So this is a remote-only workshop. And the meeting schedule and presentations have all been docketed and are posted on the Energy Commission's IEPR webpage and you can go there to get them if you would like to.

This workshop, and all IEPR workshops, is being recorded and then we'll have a recording posted on the website shortly after today's workshop. And then we'll have a written transcript that will follow in roughly a month or so.

We welcome the audience participation today. We have reserved a few minutes after the panel this morning to take some questions through the Q&A, if you'd like to. If you have a question for our panelists, you can use that Q&A function on Zoom to type it in. And we'll have a moderator to go through those and read the questions that get submitted. We may not have time to get through all the questions, but we welcome them. And if you see a question there that looks like one that you were going to ask, you can press the thumbs up and that'll upvote the question.

And then at the end of the day, we have an opportunity for public comment, and so we limit comments to three minutes per person, and that will be in the afternoon at the end of the day.

And then we also welcome written comments and the notice gives all the instructions for doing that. And the written comments are due on February 14th.

And then just as a reminder for all of us today, if you can please introduce yourself before you start speaking, just to help us have an accurate record, and for the folks who are on the phone, to help them follow along as well.

And with that, I am happy to turn it over to Commissioner Monahan, who is the Lead for the 2023 IEPR this year.

Thank you, Commissioner.

COMMISSIONER MONAHAN: Great. Thanks so much, Heather, and welcome everyone to our kickoff workshop for the 2023-2024 IEPR cycle.

And I'm pleased to welcome our fellow Commissioners from the Public Utilities Commission. We have President Reynolds here and Commissioner Shiroma. Thank you so much for joining. Look forward to your participation, actually, throughout this whole IEPR process. Also joined by fellow Commissioners and Vice Chair Gunda and Commissioner McAllister at the Energy Commission.

So excited for this kickoff and really looking forward to the conversation and learning more about the economic -- what we're anticipating California's economy will look like and what that means for energy use and equity in the state.

I also wanted to just say that this year's IEPR is -- we're going to be focusing on a specific topic, in addition to our legislative responsibilities, including our core legislative responsibility, the demand forecast. But this year we want to really be laser focused on the issue of how do we speed the interconnection and deployment of clean energy resources on the grid. And we'll be publishing a notice soon, in the next week or so, and looking forward to feedback on that.

And this conversation is truly cross-agency. We need to engage our sister energy agencies, the CPUC and CAISO, as well as the Air Resources Board, in terms of meeting California's climate goals.

And this is an issue we're facing in the space that I oversee, transportation, very acutely in terms of the build out of zero emission vehicle infrastructure. We're facing it when it comes to energy use and it comes to energy storage, battery, energy storage. We're facing it when it comes to integrating solar and wind onto our transmission lines.

And just writ large, we need to speed these clean energy resources in order to meet our climate goals. And we want to look for all ideas from stakeholders about how we do that. And we're encouraging, you know, not just participation through our formal workshops but through the docket. And so we want to collect as many good ideas as we can, try to articulate the benefits, the pros and cons of each of these strategies, and really look for opportunities to adopt strategies that are going to be effective at helping speed deployment of clean energy resources on the grid.

So just looking forward to this entire IEPR cycle. As I said before, this is really cross-agency. And even in terms of our leadership within the Energy Commission, I'm looking to Commissioner McAllister, Vice

Chair Gunda, our Chair, in terms of helping to facilitate and orchestrate this. One person can't do it, actually, and I'm really looking at it as a team sport in terms of how this is going to be managed going forward.

So with that, I'm going to pass it over to Vice Chair Gunda for his remarks.

VICE CHAIR GUNDA: Thank you, Commissioner Monahan. I just want to say big thanks to you for the vision that you laid out. Just as I think it's in terms of keeping the way we have tried to move the IEPR into kind of a new format. You know, I really like this idea of having a single topic that we focus on, but also kind of have, you know, a second segment of our mandatory elements that we continue to move forward. And I love that we're able to do that. I love that you are focusing on just kind of bringing on the interconnection, whether it's on the distribution side, the bulk side, making sure the clean energy transition is actually implemented at the pace that we need to.

So I'm looking forward to supporting you this year on the elements that we work together and assist agencies, and definitely today, specifically on the econ demo and the economic outlook that we look at, which is the fundamental element of our forecasting part.

So just want to, again, welcome President

Reynolds and Commissioner Shiroma, Commissioner McAllister, you. It's just always a pleasure to be on the dais together. And I'm absolutely enjoying this CEC's dais being evolved more as an ideation, you know, kind of more of an en banc, a regular en banc, kind of, on important topics. So it allows for a neutral venue for us to have important conversations and it's beginning to take that shape more and more, so I love the idea that we're all together here.

Want to extend my thanks to a key staff here, Nancy Tran, who will be presenting. She's our econ demographic data point of contact at the CEC and leadership.

So thanks, Nancy, for your leadership on both pulling the agenda together, but also framing the conversation today. Heidi Javanbakht, the Manager for the Demand Forecasting, Nick Fugate, Chief Forecaster, and some new people on the team specific to forecasting, Vivian Chi, Hilary Poore, and obviously Heather and the IEPR Team.

You know, as you all know, last week we adopted our 2022 forecast data, and we're already 2023, we're kicking in a week later. This is a continual process. It takes a lot of commitment and rigor and, you know, thoughtfulness in keeping this going, so thanks to the entire CEC team.

But also the forecasting happens in a very interagency coordination forum called the JASC, Joint Agency Steering Committee. And CPUC, CAISO, and CARB play a critical role in that, specifically CPUC and CAISO, so just want to give a big shout out to all of our fellow colleagues there who lead those processes.

In terms of laying out the vision for the forecasting, I just want to remind everybody who is on the call today that CEC has been slowly trying to evolve the forecast from purely a point-based planning tool to more of a policy scenario tool, given the inflection that we're going through in the transition.

So I commend the staff on really developing the framework to make forecasting not just a planning tool, but that gives data for us to think about various policy scenarios, and undergirding all of our tools, which mostly are econometric models and fundamentally rely on economic data, economic and demographic data that really power most of our forecasting models. So whether we're using a specific forecast, a projection of these data, or various scenarios, it's foundational to everything we do at the CEC.

So I wanted to just welcome all the panelists, and also for both their giving their time but also educating all of us on some of the trends they're observing. We are the fourth largest economy and have a lot of responsibility in terms of climate agenda. And we have a unique opportunity with the amount of support we have from the governor, the administration, and all of us here to move this forward.

So with that, I look forward to the conversation and help support this workshop under Commissioner Monahan.

Thank you, and maybe pass it on to Commissioner McAllister.

COMMISSIONER MCALLISTER: Sure. Thank you, Vice Chair Gunda. Just couldn't agree more with both of your comments.

I want to thank Commissioner Monahan for taking on this year's IEPR, and absolutely team effort, and I'm here to support. And we have so much in common across all of the divisions in the Commission. Particularly, I think, with Commissioner Monahan, just this electrification boom that we have to foster and encourage and figure out how to fertilize and have all the flowers grow across the state in terms of our electrification and interconnection, obviously, is a huge part of that.

Buildings and transportation, we're just going to see, I think, this real revolution. It's starting first in transportation, but we need to make it happen in buildings as well. And that's going to really impact all of the aspects that we're talking about with both the econ demo going forward, that's going to be a growing part of our economy and, obviously, it's going to impact the forecast in a huge way in terms of all the different new loads and how we go about shaping those to the benefit of the grid and creating, hopefully, some downward pressure on rates. So thanks to you again, Commissioner Monahan.

And you know, I want to also just highlight the interagency nature of not just the IEPR, but really almost everything we do. Certainly, the execution of our clean energy transition and bringing all these resources online, that is a big lift across all the agencies. You know, the Air Resources Board’s Scoping Plan, you know, has laid out a vision that has the possibility of getting us to our goals. And I think all the agencies have to coordinate to execute on that. You know, managing the nuts and bolts just doesn't happen by itself. It really requires active leadership.

And I did want to acknowledge just all of the fundamental work that the PUC does in this realm in terms of the innovative thinking that the PUC is sponsoring in several venues, but in particular, just around distribution grid planning and just all the issues that come up, the technologies and the sort of needs to get ahead of that in terms of just planning for having all this new equipment hanging on the distribution grid. That's really kind of the focus of a lot of the investment and it's very granular work. It's very detailed work and requires some different ways of thinking. And I just want to give kudos to the PUC for engaging in earnest on that.

And highlighting, again, just data. Econ demo, we're going to hear today, is foundational for the forecast and many other kind of predictive elements of what the Energy Commission does.

And we also are in this new world of consumption data, you know, again, having this very granular view across the distribution landscape and the ability to build new tools and really provide leadership, not only in California, but across the nation on how we utilize sort of big data and how we automate a lot of that analysis and how we really get the kinds of insights out of that data that we need to do good planning in this distributed energy world. So really excited about that, as well, and partnering with Vice Chair Gunda and others on that.

So I'll wrap up there, but I just want to again thank President Reynolds for being with us and Commissioner Shiroma. I'm sure we'll have presence from all the Commissioners at the PUC during different parts of this IEPR and that would be just -- it will be such a pleasure to partner on these important issues with all of you.

And I’ll pass the mic to President Reynolds.

Thanks.

PRESIDENT REYNOLDS: Thank you, Commissioner McAllister.

And I did want to start by thanking Commissioner Monahan for leading this 2023 IEPR, and I'm really excited to be here for the kickoff. I do echo the comments of CEC Commissioners in recognizing that this work, so much of it, is cross-agency and joint work and involves a lot of collaboration. I'm really pleased to be here and sharing the dais, as well as participating in the workshop.

And I also wanted to note that I appreciate Commissioner Monahan's focus on the topic area for facilitating build out of projects. This is incredibly important and timely and it's really fundamental to the clean energy future that we're all working so hard on. So I did want to, up front, recognize the importance of that topic.

And then also would like to thank CEC staff for putting this workshop together and all the work that I know they will tackle with a skill and enthusiasm going forward as they work on the 2023 IEPR, So I look forward to participating in the process.

I, unfortunately, have some conflicts today with this workshop, so I want to stay on as much as possible but

I'm going to have to be in and out of the workshop.

With that, I'll turn it back to you, Commissioner Monahan. thank you so much. And I assume Commissioner Shiroma. I'm not sure who wants to go next.

COMMISSIONER MONAHAN: Thank you, President Reynolds. that was wonderful to hear. And I really am excited about this cross-agency collaboration and thank you so much. No one agency can do it all. It really is going to take all hands on deck. And so it's exciting to embark on this and it's also heartening to have so much support from the team that's going to be really fundamental to making it -- implementing, identifying the solutions and implementation.

So let me pass it to Commissioner Shiroma for remarks.

COMMISSIONER SHIROMA: Thank you. Thank you, Commissioner Monahan for your leadership for the 2023 IEPR, and for convening the Workshop on California's Economic Outlook. I'm pleased to join you and colleagues from the Energy Commission and the CPUC.

I also want to echo others who are emphasizing the importance of the collaboration and continued dialogue between us and our other sister agencies. And it is very important to hear the latest on the state's economic outlook. It will inform on ongoing policy, upcoming policy decisions, the impact on customer bills, and jobs, job creation.

I do look forward to the discussion today. I want to thank the presenters and the staff. The agenda looks very impressive. I'm very appreciative that this is a complex landscape and that it is not only the clean energy resources, but the grid itself. It needs to be prepared for us to achieve all of our mandates. So thank you for this very important workshop en banc today.

Back to the Energy Commission Commissioners. Thank you.

COMMISSIONER MONAHAN: Thanks, Commissioner Shiroma.

Well, I'm going to pass it on to Heather to start the workshop.

MS. RAITT: Great, thank you all so much. Thank you, Commissioner Monahan and all.

So, this is Heather Raitt and our first presenter today is Nancy Tran from the Energy Commission.

So go ahead, Nancy.

MS. TRAN: Morning Commissioners, President Reynolds and stakeholders. Thank you all for joining us today in today's California's Economic Outlook Workshop. My name is Nancy Tran and I'm the Economic and Demographic Analyst in the Energy Assessments Division.

Next slide, please.

Today's workshop kicks off our Integrated Energy Policy Report, also known as the IEPR. This is a biannual legislatively-mandated report, which includes forecasts for electricity and natural gas demand, as well as transportation. The forecasts are used in various proceedings, including the California Public Utility Commission's long-term procurement planning process, and the California Independent System Operator’s Transmission Planning Process. The Energy Commission's full demand forecast is done biannually in odd-numbered years.

Recognizing --

MS. RAITT: Nancy, this is Heather. I'm sorry. It sounds like some folks can't hear you very well. Maybe if you can just try to talk a little bit louder or turn up your volume?

MS. TRAN: My volume is at the highest.

MS. RAITT: Okay.

MS. TRAN: Can you still hear me?

MS. RITTER: I can hear you, okay. I just sounds like maybe some -- kind of, it varies. Anyway, I'm sorry I didn't wrap. Go ahead.

MS. TRAN: That's okay.

Recognizing the process alignment needs and schedules of the CPUC and the California ISO planning studies, the Energy Commission provides an update to the full IEPR forecast in even-numbered years. The forecast includes demand cases designed to capture a reasonable range of demand outcomes over the next ten-plus years.

So this specific workshop provides us with a glimpse of what is occurring throughout the California economy that could impact our forecast. We have various important inputs that we take into consideration in our models, including the economic and demographic impacts, electricity, natural gas rates, self-generation, climate change impacts, efficiency programs, EV adoption, you know, just to name a few.

Next slide, please.

So our California economy is set to become the fourth largest economy in the world. We're continually outperforming other states. Economic activity is really a key driver for our demand forecast.

Here we have two charts depicting, on the left side, electricity consumption that we use, and you can see it tracks pretty well with per capita income. On the right, you'll see employment with a clear trend with electricity consumption as well. So once again, economics is a key driver for us as we develop our forecast.

Demographics is also a huge indicator, as well, as we need to see where the demographic shifts are going to be, and especially in economic conditions, such as how it affects other parts of our forecast, particularly the adoption of electric vehicles, more efficient homes, moving towards decarbonization.

So we have a lot of questions for our two expert panels to discuss today. And we hope that they can point us in the right direction on drivers that we need to look further into, or if there's any additional ideas or concerns that you may have so that we can better understand energy consumption, energy markets, both regionally and throughout California.

Next slide, please.

I'd like to thank Vivian Chi, Hilary Poore, and the IEPR Team for their assistance in organizing today's workshop, and our moderators and panelists for joining today.

So I'd like to introduce our first panel's moderator, Jeffrey Michael, and he is the Executive Director of the University of the Pacific Center for Business and Policy Research.

MR. MICHAEL: Thank you, Nancy. So as you mentioned, I'm Jeffrey Michael. I'm Director of the Center for Business and Policy Research and Director of Public Policy Programs here at McGeorge School of Law at the University of the Pacific.

I'm moderating an absolutely fantastic panel today, as you can see on the screen. Each of them are going to have an opportunity to provide some opening remarks and introduce themselves before we get into the panel questions. I'll just briefly mention who's here on the Zoom with us, so that includes Francis Hagarty, who is a Senior Economist at S&P Global, Somjita Mitra, who is the Chief Economist at the California Department of Finance, Jerry Nickelsburg, Director of the UCLA Anderson Forecast, and Walter Schwarm, Chief Demographer at the Department of Finance, so it's really an excellent panel.

And Francis has some slides to sort of set us up and lead us off.

So, Francis, over to you.

MR. HAGARTY: Alright, so we did -- yes, to the slide.

So my name is Fran Hagarty. I'm an Economist with S&P, am here to give a picture of our near-term U.S. outlook and where California fits into that picture.

So we can move to the next slide, please.

So following the deep pandemic losses in 2020, the California economy has really rebounded remarkably well over the past two years, while outpacing the national growth rates over a series of measures over these past two years.

That being said, our January forecast does include a mild recession, starting in the first quarter of this year with the recovery beginning in the third quarter. This recession's driven by persistently high inflation, rising interest rates, slowing growth internationally, and the falling consumer confidence that's coming with that.

So in the recession, we see a peak-to-trough decline in real U.S. GDP, falling by six-tenths of a percentage point, and the national unemployment rate peaking at 5.1 percent in the fourth quarter of this year. The experience for the California economy, we expect to be pretty similar, with a decline in real GDP of 0.7 percent and the unemployment rate peaking at 6.1 percent at the end of this year.

Differing from past recessions, the main drivers of this recession we see will be pretty broadly felt across states, where the only differentiating factor that will stand out as the pending housing market correction. We expect to have a higher degree of regional variability especially impacting the West and South regions, two of the areas that ran hottest over the past two years in terms of home price growth.

So we move to the next slide.

This is just a map quickly covering the latest population release for 2022. And it shows, while

California's population did decline again, it declined at a lower rate than in 2021. And besides the spike in net international migration that was seen nationwide, the difference for California here compared to the year prior was a real slowdown in domestic out-migration. It's kind of the settling of those pandemic spikes. We see a return path to the pre-pandemic rates of out-migration.

Moving to the next slide, please, it's just another look at where we see California fitting into this recession in the near term. So while, looking at the map, it's in that darker red in that lowest band of states in terms of job loss by the fourth quarter of next year compared -- or this year compared to the fourth quarter of 2022, one thing to note is the tight band, if you look at the legend of outcomes across states, just underlying the broad-based nature we see this recession having.

So while California is one of the lower-performing states, the U.S. job decline year over year, we see gaining eight-tenths of a percentage point, California is just 1.0 percentage point. So despite the look of this map being worse, it really is going to be a tight band of performances across the country.

Moving to the next slide, just a quick one to gloss over to give kind of an idea of these recession impacts, while the employment losses are going to be slightly deeper in California than the U.S. overall, the magnitude is still going to be pretty similar across measures with disposable income trailing slightly, but still being in range, and real domestic product growing at similar rates as well.

And then just moving to the last slide, this gives an idea of regional performance.

If we could move to the next slide, please? Sorry.

This just gives an idea of the regional performance within California of some of the larger metro areas since the onset of the pandemic. As you can see, California through November was slightly above its pre-pandemic rates, but two of its largest metropolitan areas, Los Angeles and San Francisco, still faced a deficit. And with the pending recession, their return to peak pandemic is going to become a bit more sluggish since it hasn't already returned there.

On the bright side, as you see, Riverside and Stockton are kind of leading that recovery among the largest areas, with growth above five percent over the Past -- since February 2020.

And with that, thank you, and I'll pass it back to Jeff.

MR. MICHAEL: Great. Thank you, Fran.

Next up is Somjita.

MS. MITRA: Thank you, Jeffrey.

Good morning, Commissioners and everyone. It's my pleasure to be here. I just finished actually doing the economic forecast for the Department of Finance for the governor's budget, so I just wanted to take a few minutes and go over what we are seeing in finance for the state.

And Francis, I think there might be some places where I diverge from you a little bit, but that's what makes economics so interesting. And I'm sure Jerry will have some other stuff to add to that, too.

And so the governor's budget forecast is -- it was -- we finalized that in the middle of November when, you know, things looked even more different than it does a couple months later, now. And so, you know, we are looking at -- we are projecting that we're going to keep growing, but very slowly into 2024, the state and the U.S. economy, because really just the high interest rates are going to limit some spending that's sensitive to high interest rates, business expansions, hiring decisions, building construction, and all of that are just going to really slow down.

And also the Fed has been raising interest rates seven times in 2022. The FOMC meeting is happening today and tomorrow. And we also expect the Federal Reserve to raise interest rates, probably about another 0.25 base percentage points, again. And again, that's going to increase interest rates for the eighth time since last March and that's going to, you know, just really affect how much money people have to spend.

And the tightening money supply and consequent decline in investment is going to lead to slower consumption. We've already seen some declines in consumer expectations, consumer confidence in the next few years -- or in the next few months. And so this is just really going to play into that a little bit.

We do expect that the Fed is going to start easing monetary policy as things kind of settle down by the end of 2023 as inflation cools. Inflation has already been cooling a little bit, not as fast as we want it to, obviously, but it's the sixth consecutive month of cooling inflation. And then we'll obviously, as inflation cools, investments are going to start recovering. And then we expect the economy to go back to its steady state growth starting in 2025, which is going to be normal now.

President Biden just announced that they're going to cancel the emergency declaration for COVID on May 11th. Even though we're still seeing hundreds of deaths a day, we are now, I guess, in that period of ongoing endemic response to the pandemic.

China has also started easing its zero-tolerance policy for COVID-19, which bodes well for our trade relations with our largest partner.

So all of these things, inflation is kind of slowing down, the emergency declaration is kind of over, so we are a little bit more confident about what we're going to see happening in the 2023 and 2024.

Obviously, there's some issues. You know, we don't have a perfect crystal ball for what's going to happen with the state economy. We are assuming there's not going to be any further disruptions from COVID-19. We're not going to have another variant that's really going to knock us on our feet. Any other public health issues, the global supply chain bottlenecks are going to continue to ease, especially now with China easing some of its policies.

Energy price spikes that's related to the ongoing invasion of Ukraine is not going to further impact the nation.

And so that's what we're seeing. We're going to see slow but moderate positive impacts on headline growth. Unemployment is going to continue to go down and inflation is going to continue to ease.

We're also going to see, California has now recovered all the jobs that we have lost during the COVID-

19 pandemic way back in 2020. And we are now about 70,000 jobs above where we were before that. So it's kind of, you know, it’s kind of stopped for two years and now we're going to ready to go back to our normal rate of job growth.

But it's going to slow. You know, obviously, the faster you get to the slower -- the closer you get to steady state, there's just not that many people looking for jobs, so job growth is going to slow. Right after the pandemic when we had 16 percent unemployment, you know, everybody, almost everybody was looking for work, you know, and businesses were hiring rapidly. It was relatively easy to quickly add jobs.

Now we're going to see that slow through 2023 and then pick back up as the economy opens up, the monetary policy loosens up with the Fed and the businesses get more confidence. Right now, businesses are kind of in a holding pattern. You know, with interest rates, inflation, they are going to hire, they're kind of -- they aren’t going to hire. They're kind of in a little bit of a holding pattern.

The tech sector, I'm sure you've heard, every day we get the news about another large tech company that's laying off thousands of workers. We've done some analysis. For us, it's probably, you know, it's really hard to define who's in the tech sector in California because these are like multinational conglomerates. But it's probably about point -- if they were all in California, I would probably looking about 0.1 percent of our employment, and they're not all in California. And they do tend to be highly educated, highly versatile workers.

And so if the tech sector's laying off people, these large companies, we do expect them to find employment relatively quickly in other sectors. And in fact, small businesses have actually been -- you know, we always say small businesses are the backbone of the state and that continues to be true. They've actually driven three-fourths of the job growth in California and in the U.S. So we would expect these qualified tech workers to find employment relatively quickly.

And at the same time we have -- although we've lost a little bit of share in venture capital funding, you know, we are still the lion's share of investments in venture capital and our entrepreneurial spirit continues to thrive. And so, you know, inflation is going to slow, people are going to, you know, get back to our new steady state normal.

And then we're also going to see some wages increase as a result of strong job growth in 2020 and 2021 that was driven by companies trying to hire and get back on track. Sometimes they over-hired, which I think was the case in a lot of these tech companies. They were -- you know, we had to transition. One day we're in the office, the next day we're at home. Guess what? Who's going to support that? All the tech companies. And then, you know, now that we're in this normal, we're in this hybrid stage, they're kind of un-normalizing their hiring.

One of the things that continues to be a huge issue for California, unfortunately, is our critical housing shortage. In fact, that's going to be probably the biggest drag on our economic growth moving forward, barring all other exogenous shocks. California, in the last 20 years, added almost 6 million households, at the same time, about 2.5 million housing units. So you can see just how critical our housing shortage is.

Every year, according to the Department of Housing and Community and Urban Development, they've estimated we would need about 180,000 units to keep up with our demand, even with slowing population growth and slowing immigration. But right now we're about several million short of that 180,000 units. So every year we're getting further and further behind.

Housing continues to be extraordinarily expensive for the average Californian. Last year in May, 2022, housing reached a high. An existing single-family home reached a record high of over $900,000 in the state. So we're really looking at almost a million-dollar home, the average home in California, which is just, you know, for the average Californian, just completely out of reach. And you know, when that happens, you know, we're really looking at the middle-class getting pushed. Obviously the lower-income workers are really struggling to find adequate housing. And that is really going to play into our economic growth moving forward if we can't house Californians in the state. And so that's kind of where I am right now.

You know, obviously, there's always a recession risk. Francis had mentioned, we had seen a recession. We are not projecting a recession, but that does continue to be an ongoing risk for any economic forecast, you know, like an exogenous shock can really push us off track.

You know, there's supply chains. Even though China is like opening up, there might be some other disruptions that are happening, especially in Europe with the ongoing war and the Russian invasion of Ukraine.

There's long-term structural changes, our challenges in the state. We just went through a storm in the December beginning of January where for a ten-day period, California received the most water of any place in the world. And even though we have a drought, we just did not -- we don't have the infrastructure to gather all that water. And so although we made a significant dent in our drought, you know, unfortunately that wasn't really enough for us.

And so along with, you know, every year I talk about wildfires and earthquakes and drought, and now I want to, you know, also include winter storms that are really going to affect us.

But that's my forecast, and so thank you for your time.

MR. MICHAEL: Great. Thank you, Somjita. And we'll have opportunity to dig a little deeper into some of those topics here.

But for right now, I want to pass it over to Jerry Nickelsburg with the UCLA Anderson Forecast.

MR. NICKELSBURG: Good morning and thank you for the invitation for being here. Always a pleasure.

So our view of California is certainly much more consistent with the Department of Finance’s view, that if there is a recession, and I don't think that that is baked in the cake, I think that that is a function of what the Federal Reserve does over the next six months, California will have a much more mild recession than the rest of the country. So that's a little different from the earlier presentation from Francis.

And I want to explain why we have that view of what's happening in California, but the underlying economy is strong, inflation is coming down, so a recession is not necessarily given, as it is in most recessions, with overbuilding of something. This is purely a policy, a function of policy.

So let me go through a few sectors to tell you why we view the California economy for the first time in certainly five recessions is going to have, if there is a recession, a much more mild recession than the U.S.

And the first is logistics. You saw the graphic on the Inland Empire, one of the faster growing parts of the state based on logistics. If one looks at port data today, it's at record levels, but a lot of port traffic has been diverted to the East Coast, and that's purely a function of fear of a port strike and fear of a rail strike. So some of that will be coming back spurring increased growth in logistics.

With respect to construction, we have a new infrastructure bill, in addition to all the infrastructure that's going on now, and that's going to increase the demand for construction labor.

Housing, California is going to be hurt less by these higher interest rates than other states. And you can see that in the permit data going across states as to who is contracting the most rapidly. And the reason for that are the three senate bills and the three assembly bills that created new housing products, such as ADUs and duplexes. And that's where we're seeing the new permits. So with new housing products, we're getting increase.

For the first 11 months of 2022, California permits were actually up, even though interest rates were up. And if you look at 30-year mortgage rates, they've been fairly constant for months now. They've actually retreated by almost 100 basis points, about 90 basis points from their peak. So these Federal Reserve increases seem to have already been factored in. Anecdotal evidence says that the market is starting to turn in terms of home purchases, at least in Southern California.

Office and retail construction, of course, is the same as across the country, no worse, no better.

And industrial is very hot. Industrial vacancy rates are under two percent. And we have millions of new square footage of industrial space that's going to be in construction in 2023.

Tourism, Somjita mentioned the end of COVID-0 in 2018, 1.8 million Chinese visited California; 2020, 2021, 2022, it was almost zero. They're coming back so that's going to boost tourism relative to the rest of the U.S.

And then some important aspects. We have a new defense bill, eight percent greater than before. Defense durable goods require really sophisticated components. Those are built in California. The defense industry is still large, especially in Southern California.

And the Clean Energy Bill, the Inflation Act, is spurring new investment in tech. And that's absorbing some of these tech workers as well. It's been estimated that we're going to have a thousand clean energy or green energy tech unicorns in the next couple of years. And if you look where venture capital money is going, it's coming both to Northern and Southern California.

So when you put all of that together, you see forces at work in California that are going to mitigate against a recession. Those high interest rates, they're going to impact the auto sector, but that's not much in California.

They're going to impact business investment in software and equipment -- I'm sorry, in business investment in capital goods, but software and intellectual property is something that we see increases in. And we think that's going to continue as particularly in the service industry, as you have a move to automation in the face of shortages across the country. That also disproportionately benefits California.

So kind of when you add all of that up, if we do get a recession, and again, that's not certain, but if we do get a recession in 2023, as was pointed out, it will be mild, but it's going to be even less mild in California and might not even take the state into negative territory in terms of economic growth.

So that's our perspective on 2023. We see 2024 as a real growth year, both in the US and California, both growing at about the same rate.

And that concludes my introductory remarks. Thank you.

MR. MICHAEL: Thank you, Jerry.

We'll move to our final panelist, Walter Schwarm, Chief Demographer at the Department of Finance.

MR. SCHWARM: Good evening -- good morning, actually. I'd like to thank the Commissioners and everybody for the opportunity to talk today and et cetera. I'll keep mine short since, you know, to a certain extent, I think some of the questions will be longer as we go along.

I'm going to go on the bandwagon and say, you know, I disagree with Francis, but only in one thing, actually, and that's, you know, despite all the good things to a certain extent that Jerry just talked about in terms of, you know, future economic prospects of, you know, California versus the United States and et cetera, and obviously, you know, Somjita and I share the same sort of economic picture since, you know, she's the economist and I'm the demographer, so, you know, I'm not going to go and say, no, I see completely different than Somjita on this one. I think, you know, I see things a little bit closer to that, but that's not really what I'm taking.

I'm going to point out that despite the sort of overall, you know, sort of, I wouldn't say rosy, but not necessarily terrible economic picture for California as we go forward, we are facing some difficult kind of demographic headwinds. You know, I agree with, you know, Francis, it's certainly that the large amount of domestic out-migration that we had, that we saw in '21 has, you know, sort of come back to sort of trend from that.

The thing that I see a little bit differently is domestic in-migration was also very soft in 2020, 2021, and 2022. And with these increased jobs that Jerry talks about, I think that there could continue to have additional, you know, growth there, but I think I see that the domestic in-migration continues to remain below trend or at least a little bit slowing from here on forward.

And that's one of the headwinds, partially because of affordability issues, even though, you know, if we adjust for cost of living, certain parts of California are just as, you know, as expensive as other places in, you know, Colorado or even parts of Texas, like Austin, or in, you know, the Phoenix Metro area. But nevertheless, there's this shift to remote work means that there's a little bit less draw for some individuals to move to California from some other places where they might have been previously.

And you know, giving us sort of a stronger piece here, we really are, in the U.S. and California, and California because we have so many more of them, really are undergoing sort of another demographic transition here, a really strong sort of change. Baby boomers are getting older. And significantly, we have probably proportionally almost the largest share of baby boomers in any state, because we attracted the most of them in, you know, the late '70s and '80s to move here. And that makes us one of the fastest aging states as it goes along here.

And that's something to think about when we think about energy policy, and we think about transportation policy in the future there as well. We will have, by 2029 or 2030, over 33 percent of the population over the age of 65, and, you know, over 12 percent of the population over the age of 75. So we're going to be the, you know, sort of the sectors that are going to be benefiting from this one in terms of care and various other things are very different than some of the other ones that were in previously.

So in terms of, you know, putting it all together, because one of the questions is, are we ever really going to grow much? And, you know, kind of like we grew a lot in the ‘40s through the ‘60s. We had high births, we had low deaths. We had sort of westward movement. You know, obviously birth slack in the late ‘60s.

We have the baby bust as we go into that cohort of individuals that fought World War II and didn't have a whole lot of babies. But we still had young mobile population in the United States, and many of them moved to California. Housing was relatively cheap and, you know, a relatively nice place. And, you know, we were drawing an inordinate share of immigration at that point in time.

You know, we look at it now, it's a little bit different. We have a much older U.S. population, and California's own population is aging considerably. Interstate migration overall, I mean, ignoring, you know, on a per capita basis is much lower than it was in the ‘50s, ‘60s, ‘70s, even ‘80s. Fewer people move away more than 50 or 100 miles from where they grew up. That's been a real change, particularly starting in the ‘90s.

We have far fewer births. You know, we're below replacement level. We're in Eastern -- you know, we're in sort of European levels of births in terms of total fertility here, 1.1 -- 1.51.

And we attract a proportionally reasonable amount of immigrants, but nationally, in terms of an overall structure, we have some real issues there, and whether the political motivation in Washington is there to get together to find, you know, a solution to the immigration problem because therein lies our future workforce, that is a question.

It's an open question because immigration, as it stands right now, some of -- you know, obviously, if we are attracting 30- and 40-year-old individuals that are working and et cetera, that's great for the labor force, but we've also attracted considerable number of 60-year-olds. They're not necessarily -- it's great for the families, wonderful and et cetera, great for overall demand. On the other hand, for future workforce needs, they're not exactly the most attractive individuals to be bringing forward in immigration.

So I guess what I see here is we have some -- you know, yes, the affordability still exists in here and, you know, we're building homes and various other things. But I still see us being -- you know, obviously, I agree with Francis that this year is negative again. I actually probably see next year is negative again too or real close to zero, and maybe even the year after that being really slow.

I think we will pick up. The forces are there to continue to have growth. But California's growth, at least this decade, unless we look at the very, very, very end of the decade, this is a very slow growing decade. Last decade was pretty slow too, but this decade is really slow, actually, I think. The features, I mean, the attractiveness is still here, or the reasoning for people being in California, all here. The pools of individuals that were able to move here and et cetera, like that, are a little bit lower and smaller and the wells of attraction are less, you know, sort of clearly, you know, clearly drawing as many people to California as not.

Hopefully, fewer people leave. I think that that's clear with the increased, you know, job opportunities and increased various other things that continue to go on, as Jerry talks about, as we look towards the future. But I do think that, you know, we can have economic growth without really strong population growth, at least for a little while. And I do see that probably being, you know, kind of the, where we're going, at least in the near term.

And I'll leave it at that.

MR. MICHAEL: thanks, Walter. Yeah, you ended on one of the observations I had a little. It's interesting to see these relatively optimistic assessments of the economy while we're still projecting sort of population loss, at least in the near term. So we can unpack that a bit more.

So my first question for the panel was about -- you've already answered it -- I was about to anticipate recession in the nation or California. So my scoreboard has one recession. Do we muddle through and avoid it? I also observed that it is the California natives who have the more optimistic viewpoint on this recession and the ability to avoid it.

And so I'd like to unpack that a little bit more and think about sort of what might drive that recession and maybe actually slightly divert from what I told them earlier on the order and maybe pass it back to Fran a little bit to see -- to ask what you see as the risks of recession going forward?

MR. HAGARTY: Thanks. So just to kind of go back to reiterate what I mentioned quickly during my slides, the persistently high inflation in the sense efforts to get that down with the rising interest rates we see as a really key factor driving that recession, which between the housing market, and also slowing consumer spending through that process, we see as kind of the main drivers of the recession. And like you said, or like I mentioned at the start, we have it as a relatively mild recession focused in the first half of this year.

So just in the Fed's efforts to slow inflation, we see propelling the country overall in California, as well, into a mild recession.

MR. MICHAEL: Okay, so primarily a Fed-driven recession.

Maybe Jerry and Somjita, if Jerry's got an immediate response to that, but I'm just curious with some of the risk factors out there that could change your forecast.

MR. NICKELSBURG: Well, I think Francis is right that this all depends on the Fed. And if the Fed is very aggressive and creates a recession, then we get one, but the Fed doesn't have to be. Usually, you know, when we forecast a recession we see an overbuilding of housing or an overbuilding of military goods, so we can see something that absolutely needs to be correction.

If you go to the last six months of the CPI, we're at two percent inflation. So if that were to continue for two months, the Fed might change their mind, not go to 5.5 percent or 5.25 percent terminal rate, but say, let's take a breather because things are working out. And if that's the case, then with the underlying strength of the economy, we get slowing from what they've already done, but we don't necessarily get a recession.

But if they do what they said they're going to do, which is wait until they see, basically in historical data, inflation on a year-over-year basis in the rearview mirror, where they want it below three percent, then they'll keep raising interest rates and create a recession. But that's not necessarily what they need to do to control inflation.

So it's all a matter of how they interpret the data, what data they would like to look at. And that's where we come down by saying, we don't know what they're going to do, and we don't think anybody else does. We don't think they do.

And so, yes, the scenario that Francis presented for the U.S., we disagree on California, but for the U.S., I think is one scenario that could well happen if the Fed continues very aggressive increases in interest rates. So that's something that we should watch. That's going to tell how 2023 plays out.

MR. MICHAEL: Okay, so one risk would be the Fed being too aggressive or making policy mistakes as they're very much at the center of the current forecast.

Somjita, do you have any other risks you'd point to?

MS. MITRA: A little bit tied to that would be how businesses and consumers react in anticipation of what they think the Fed is going to do. Because the Fed, you know, things -- when the Fed raises interest rates, it takes normally a few months for that to kind of, you know, transfer into the economy itself.

But if people -- you know, we always -- one of the fundamentals of economics is that people are rational. And I've learned in my life that that's not always true. And if businesses and consumers worry about the Fed's future actions, and they pull back or they tighten their spending now because, in anticipation, oh, the Fed's going to raise interest rates, I'm going to pull back now, they're going to actually also be part of the problem. It's not just the Fed. It's just how people are going to react to what they think the Fed is going to do as well. That's a worry for us. Again, you know, the Fed is probably the most important driver.

Also, if there's going to be another exogenous shock to our economy, just like what happened, not just like a public health pandemic, but something else that's going to shock us driven by international factors.

Actually, last year, I think the, you know, the G7 is like trudging along slowly, even with higher inflation rates than we have. I think Great Britain is the only country that actually shrank last year in the G7.

So we're all kind of like limping along right now. But if there's another shock, if Russia, you know, accelerates its, you know, attack on Ukraine, if other countries start getting involved, I know the U.S. and France and the UK have been thinking of sending weapons, if we get more involved in that, that could also be a result of a consequence of what's going to happen now.

Like I said, I think China's opening back up with their end of their zero-COVID policy. But, you know, if they have another outbreak there, that could disrupt our supply chain easings, which would help our inflation rate.

So those are the kind of things that I think would be happening, but it would really be very little about what the US and California could do in anticipation.

MR. MICHAEL: So that's a good lead into a question on the supply chain issues. That certainly has been a story in the sense of pandemic that has been underlying the economic performance and inflation to some extent.

How would you describe our progress towards resolving supply chain issues both here in California and nationally?

Maybe I'll start with Jerry on this one.

MR. NICKELSBURG: Great. So the supply chain issues that we were dealing with were twofold. One was during 2020, we ordered a lot of goods, and so we had a volume of goods coming in that we'd never seen before and that caused disruptions in transportation. You saw that in the cost of transpacific shipping. You saw it in rail cars being sidelined and in absence of containers, et cetera. That seems to be resolved.

The relocation and reallocation of supply chains to on-shoring and near-shoring, or to more diversification, such as moving some out of China to South and Southeast Asia, that takes years. And so, yes, it has started. You see all the investment in chip manufacturing in the U.S., but none of that's going to come online for a number of years. And that means that the fragility of supply chains that we saw in 2020, not entirely, but for the most part, is still there.

MR. MICHAEL: Great.

Somjita, anything to add here?

MS. MITRA: Yeah, I think as one thing that Jerry was mentioning, also the fragility of it, we are starting to see some easing now. People are kind of -- you know, a few years ago, right when the COVID-19 -- when things opened back up, you know, used cars and new cars were like the things that were backed up, like six months. But you know, once you buy a car, you're not going to buy a car for a few years. So like the push in that market kind of eased. And we're expecting that's going to ease across, you know, all sectors a little bit.

Of course, you know, with Ukraine and Russia being, you know, main exporters of grain to the Middle East and Africa, and oil to the rest of Europe, those are also challenges for us because that provides, you know, a potential market, less for California, but for the U.S. in terms of grain, oil and things like that that could affect us. Because we, even if the supply chain eases, we're dealing with, you know, different types of competition now that we wouldn't normally have to deal with.

But, you know, I think what's going to happen now is that it's going to slowly start easing for us, you know, driven a little bit by slow consumer demand with the high interest rates and less of a business investments because again, with the high interest rates. So it kind of gives us a little bit of breathing room to kind of wait till things normalize.

So it's a little bit of a double-edged sword for us. But I think it gives us a chance to kind of return to normal.

MR. NICKELSBURG: Yeah. One additional thought on that related to supply chains, the dollar, which strengthened so much this last year, has been weakening, and that means U.S. goods have become less expensive to foreigners and they're starting to buy more. And foreign goods are now more expensive to Americans and we're starting to buy less. And that means that you get a better balance in terms of getting containers back to origin. And so that's going to help on supply chains. How much is an open question, but there is something of sort of a correction going on there.

MR. MICHAEL: I'm going to shift now over to the question of inflation. And I think some of your previous comments set this up somewhat well.

You know, we've seen some prices come down in energy and supply chain issues starting to ease that have been beneficial. Jerry, though, mentions a weakening of the dollar that could have some, you know, mentions a weakening of the dollar that could have some impacts as well.

And lately, you know, you see the inflation numbers and, you know, typically reported as year-over-year numbers and, you know, inflation remains high. But many economists have been pointing to sort of the recent months, particularly the past six months that -- where the inflation data over the past six months looks like it's awfully close to the Fed's target. And some people are claiming that the inflation is largely abated.

So let's unpack the inflation question a little bit more. Fran, what's your view on the inflation data we've seen lately?

MR. HAGARTY: So it almost depends where you want to focus on these measures. As it's been mentioned, with energy prices coming down the way they have the past few months, it's very promising for that top-line CPI inflation where the year-over-year rate is moving in the right direction over the past six months.

But if you look at these past few months in the top-line declines, if you look at some of the elements of the core CPI inflation, I think they have a risk of remaining a little persistently high over the next year. Particularly, if you look at rent inflation, just through the measures that's used in the CPI basket, it's up nine percent at an annualized rate over the past three months, which is really propelling core services inflation up pretty high.

So over the next year, I think we might run into a situation where the headline CPI inflation is pretty close to or moving in the right direction of that Fed target where core and services inflation, in particular, remains a bit too high for that measure for the Fed's liking, which could reinforce their efforts with interest rates and moving more restrictive to get that core rate down where they want it to be as well.

MR. NICKELSBURG: So, you know, I think Francis is right. That's what the Fed is looking at. But there's finally some discussion about what is this shelter inflation, and that's 40 percent of that core, so that's really what's driving it. What is that 40 percent? It is, first of all, it's rents, so it only affects a third of Americans but it is applied to 100 percent of Americans, and so it is amplified by three.

The second is that it is not what is happening in prices for rental rates for rental units, rental homes today, which is what you have in all of the other measures. So for alcohol, for bread, for eggs, for bicycles, for everything else, it's what are today's prices for the rent part, which is such an important part of the CPI, and the PCE. The PCE is what the Fed looks at. It is the average of rents over the last 12 months. And so all of that nine percent that -- or not all, but the bulk of the nine percent that Francis was talking about is increases in rental rates that happened quite a while ago, not today.

So if the Fed listens to the commentary on how this is distorting the numbers as we come to a lower inflation era, then we're going to get Fed policy moving back. But measured inflation by the CPI and PCE, if the measurements don't change, will be, you know what Francis said, it's going to be reported as high year over year, but is not going to be impacting American households in the way that you would think given those numbers.

MR. MICHAEL: Great. Just a couple more questions on the economy, and we'll shift over to demographic discussion and get Walter a little bit more involved. But before we get there, I want to talk a little bit about regions and industries in California.

You know, California is a very diverse economy, which I think is a real benefit when we look at our prospects, you know, compared to the nation. But within the state, we can see very different paths. Fran showed some of the employment differences since the onset of the pandemic and, you know, some of those numbers are pretty dramatically different across regions.

Personally, I work primarily in the Central Valley and in Northern California. We see a lot of variation just within the inland California. Generally, we see really rapid, much stronger growth in the areas that are closer to the urban center. So you know, it's the Inland Empire, Stockton and Lodi have seen a really strong employment growth.

A lot of that's driven by two things. One of it is logistics, and not so much the global logistics but the expansion of e-commerce and distribution centers, which has just exploded. You know, Amazon is the largest employer in the North San Joaquin Valley now, and that's really been transformative. And you know, a lot of that work is going to serve the urban areas.

Those areas have also been somewhat attractive to remote workers, you know, through the pandemic. People are looking at hybrid schedules that they've received, residence as well.

In the Central Valley, though, we've been challenged by a drought that, hopefully, has been greatly mitigated by the recent floods, which should help a lot. Central Valley's done a pretty good job of managing its way through a severe water crisis.

One nice thing about the California system is unlike a drought to agricultural lands in the Midwest, we get a lot of -- you can see it coming here because of the way our system is managed. And so the agriculture sector does have a lot of time to adapt to a dry year in their planning, find alternative water supplies and adjust their planning.

And so as a result, while we've seen declines in the Central Valley, we've seen a loss of about $1 billion in agricultural production in the past two years, which is really only about two percent of the state's agricultural production, and a loss of about 10,000 jobs due to the drought. So while a loss is impactful, you know, the ability to mitigate that in the near term has been pretty good, but with each year, it gets harder to do that. And so, you know, the onset of the rains this year is certainly very good news for the Central Valley economy.

We also see some differences between some of the coastal urban areas in Northern California and Southern California. And you know, maybe I'll pass it back to our panel to talk about some of those observations between regions in California.

Jerry, do you want to start?

MR. NICKELSBURG: Okay, let me start with Los Angeles. So we've seen the demographics on Los Angeles, that it's losing population. Now, I'm talking about Los Angeles County, not the City of Los Angeles, so the metropolitan area. And some of that, maybe a lot of that, is a movement of lower-income Angelenos into the Inland Empire where you have this growth in logistics and where their skills kind of match the demand, as well as out-of-state.

You would think with that kind of decline in population, you would have what you saw in other cities with those kinds of decline in population, like Chicago and Detroit and Cleveland, et cetera, a decrease in home prices. You don't. You see exactly the opposite. And that means that somebody is coming in and demanding it.

And what is happening is a transformation of the population.

And what we have seen from Northern California, as well as outside of the state, are tech workers coming in. And the tech industry has actually been growing fairly dramatically in Los Angeles, but household size by tech workers is smaller, and maybe much smaller, than household size from industrial workers and the like. And so we've got a shrinkage of household size, a shrinkage of population, but not a shrinkage of demand for housing. And on a per capita basis, that means an increase in average incomes in the county of Los Angeles.

From an energy perspective, a smaller household size typically would mean lower energy use, at least everything else held constant, so not counting the fact that it's warmer here than it was when people are using more air conditioning, et cetera, and more electric vehicles. But in terms of what's happening in Los Angeles, that's kind of the way that you look at the numbers.

Orange County is growing. And in both Orange County and in Los Angeles, what we talked about earlier about tourism, foreign tourism, has been lacking. And so expect additional growth, particularly providing jobs for those who have fewer skills in both of those counties, in the North Orange County and in L.A.

And then San Diego, San Diego is med, tech, and defense, and some other technology, and housing for the people who are moving in. So the San Diego economy, we expect to be the strongest of those regions as we move forward through the next, really, through the next half decade.

MR. MICHAEL: Jerry made a really interesting observation. It would be a great opportunity to bring Walter into the conversation about the household size, and I guess the implication being that the households we see leaving the state are larger than the ones we see coming into the state.

Are you seeing that sort of trend in the demographic data, Walter?

MR. SCHWARM: Yeah, I mean, that has been a little bit of sort of this, you know, when I talk about this wind that comes ahead of us a little bit, in the sense that those individuals, particularly over the last -- and this is not a new trend.

In other words, the pandemic sort of helped, you know, sort of reinforce it after the pandemic with the change in telework, but it's not a new trend in population movement in the sense that in the last, so maybe four or five years, we have seen sort of families moving out. Many of them for a long period of time, we were talking about lower-income families and individuals with lower levels of education. But, you know, towards in 2018, 2019, you got a few colleges educated in that mix as well.

But it's important to note that these were individuals with more -- you know, with children or, you know, two persons plus perhaps a grandparent or something, households moving out. Whereas the majority of what we see moving in are either single individuals or, you know, just partnered couples. And therefore, you know, you've got four people moving out and you've got two people back into this home. Now this is either tech workers or working in, you know, biomed or something else like that, overall, household size goes down.

So we certainly see that in, as Jerry points out, in Los Angeles. We see that in San Diego, parts of the Bay Area. San Francisco is a little problematic because just the sheer number of individuals who have sort of left San Francisco in the last -- many of them not out of the state, but just elsewhere in California, so it's a little bit more difficult because the Bay Area has some different dynamics when it comes to that. But we certainly do see that household size seems to be shrinking a little bit there.

The only thing I would think about in the future about this, and this goes back to the ADUs and other types of, you know, sort of housing pieces that are really being relied on to provide future needs, you know, that also would be relevant. It depends on how they count; right?

If in the census or if in surveys which determine households, you know, somebody understands that that is a separate housing unit, i.e. it has its own address or something else like that, then once again, persons per household or overall household size should go down because you would have then -- you know, if it's truly a granny flat, you would have individuals, you know, parents or grandparents living in that unit, and that unit would then have only one person or two people in it, and the house would also only have two people in it as opposed to having a four or five person multi-generational household.

I suppose one of the energy benefits of sort of the ADU concept is, you know, as we're building more of them -- I mean, Los Angeles City built/finished almost 18,000 of them last year -- is that they need modern energy and modern, you know, sort of standards. We're not looking at a house from the '20s or something like here. These are new constructions and they have to meet modern building code and modern building requirements so, as such, they are more energy efficient.

But I think at least HCD, we all hope, and this goes to that baby boomer question as well, the way that traditional -- you know, the way we aged in the past is --

it will be impossible to age that way in the future because there is insufficient space in California to build the necessary long-term care facilities, nursing homes, retirement communities. We would be knocking down single-family homes to build these things, and we're not going to be doing that because we have a housing crisis.

So therefore, as we go forward, you know, by the time we get all of the baby boomers over 65 and many of them in the, you know, the first wave there over the ages of 75 and into their 80s, many more of them will be living either with children or in these sort of ADU, junior granny flats, some other type of living arrangement, because that's what they want, and fundamentally, that's what we're trying to do by policy and by, you know, sort of things that's where we're pushing them.

And secondly, there isn't going to be supply to give them any other options. And this is not just a California issue, this is pretty much nationwide. Baby boomers are just so large.

MR. MICHAEL: You mentioned a few things about the Bay Area economy, which is absolutely a critical regional economy. You know, the headline story is all these tech layoffs from the largest tech employers in the region that many people are talking about.

Bay Area data was pretty interesting through the pandemic recession where, in terms of GDP and income growth, it was leading the state and driving the state, but in terms of employment growth that is lagging. It’s still, you know, far behind its pandemic level. So we saw a divergence within sectors, the service sectors being very slow, the lower paying service sectors being very slow to recover in the Bay Area while, you know, some continued strength until recently in the tech sectors.

I heard people very optimistic about the tech workers' employment prospects, that these people won't stay laid off for long because there's a lot of demand for their skills. My question maybe for the panel is, while I tend to agree with that, how sticky do you think they are to the Bay Area and California when they're laid off?

MR. NICKELSBURG: Okay, so let me jump in on that. And first, the announcements that we've seen about tech worker layoffs have been big firms, firms that grew very rapidly. They have acquired other companies. They have started new lines of business and have, as Somjita said, become international. And so those big layoff numbers are not big California layoff numbers. You know, an example of this is Twitter laid off 5,000 people, but there were only 900 in the Bay Area, and Forbes reported that 300 of the 900 were reemployed in the first week. So this is not 2001, first of all.

Secondly, tech, and again, as Somjita pointed out, tech is now widespread. In 2001, it was very much concentrated in information technology. And so it is much easier to move into energy tech or green tech or med tech or aerospace, which is booming. And so there are many more options for these tech workers, but they may not be in the Bay Area.

And I mentioned in talking about Los Angeles that the Los Angeles tech industry is booming. Some of the labor force for that tech industry is actually coming from the Bay Area. And you know, we're seeing those migratory flows, so some in California. The good news for the country as a whole is tech is growing up elsewhere, so there is some attractiveness of other locations for tech workers outside of California.

MR. MICHAEL: Anyone else with thoughts on this sector?

MS. MITRA: Yeah, sorry. Yeah, what Jerry was saying, I think, you know, people -- I always say people want to live in California at the end of the day. If you can afford to live here, you want to live here. Whether we're making it very easy, that's a whole different question, but you know, so tech workers, if they can afford it, if they can find a job. Like I said, the housing reached almost $1 million. There's only a very few percentage of Californians that can afford it. But demand is still there, those houses are still being bought, and so somebody's living there. Somebody's living here and it has to be those high-income owners that want to stay and want to contribute.

Right after COVID hit, you know, in the first quarter of 2021, three quarters after COVID, our GDP had recovered and surpassed the U.S. at that point, and yet our unemployment was still really high. And we had not recovered any of it. Like most of the jobs that we had lost, we had not even recovered half of them. So what that tells me is those high output, highly productive workers are still contributing to the economy for California. And they'll continue to do so moving forward.

MR. SCHWARM: Yeah, I mean, I guess I would say that I kind of agree that the Bay Area might be currently having some sort of issues. But the agglomeration effects, the overall, those are still there. I mean, it's not like tech has disappeared. And there are many more small. And the venture capital is still there, even if it, you know, generally might have a little bit different focus in something else like that, venture capital is still around. So the ability to put together a startup relatively easily, you know, with those agglomeration effects is there.

And then to a certain extent, you know, as

Somjita points out, you're still talking about a very nice place to live with many other amenities. And so, you know, the draw will certainly still be there, it's just a question about, you know, how strong that draw will be over time.

But I think this is temporary. You know, San Francisco losing a bunch of population over two years in a row is a very temporary issue. I think that individuals will find other opportunities there.

MR. MICHAEL: Okay. Let's ask -- we've already started the demographic discussion a little bit but -- and some of this has already been answered, but let's actually answer this again, because I want to get it down clearly.

I mean, the population decline that we've seen for a few years in a row in California is certainly a pretty dramatic figure. What is your view on how long is this going to persist? When will we see population growth shift to a positive again? And will we ever see something like 1 percent population growth in the future, in your view?

MR. SCHWARM: I'll start with this one. But Jerry and Somjita and Frank can put in their points as well.

I mean, the one percent, would we want one percent growth? I mean, there's the question. That's 4 million people in a decade. That's a lot of people in California. I mean, sure, we had 2.5 percent growth in the '80s, year after year after year. It's the most any state has ever grown, you know, certainly in the 20th century, I think since 1850. I don't know if we want one percent growth, because it mitigates housing issues. You've got transportation issues. You've got energy issues, et cetera, all that.

So it's important to remember that we are a large state now. And to a certain extent, we're a maturing state. We don't necessarily have that ability to do that anymore. So in that sense, what is good growth? Whatever is good growth is whatever keeps up with the labor force needs for the economy. That's good growth.

That being said, I mean, I don't know what that is. Is that 0.2? Is that 0.25? And it really depends on where we are within, you know, this overall labor force requirement. Are people going to work longer when they're retiring? And what is the overall shift going on within, you know, automation and various other things?

I will say then, in the near term, and I mentioned this in my opening remarks, you know, the first time we had negative growth since, well, since finance has been keeping records, since 1905, probably since 1870, but of course, there's a census missing in the middle of their deal of fire, so we don't really know, but anyhow, so this first time California has lost population in over 100 years. That is, you know, troubling a little bit. But remember, this is not just people fleeing the state. This is a lack of immigration, a complete shutdown in immigration due to COVID and various other issues. And that is a huge driver to California.

And excess deaths. I mean, let's not forget that, you know, we have a reduction in fertility for about 30,000 fewer births than we would normally have had. We had over 105,000 excess deaths during that year beyond what kind of is average. And then we had no immigration. So these things easily come together to form pretty strong negative growth, followed on by a little bit of labor force readjustment as we look at telework and et cetera, that things like that, along with affordability.

I only say that we've got a little bit more headwinds because we still have very low fertility. And that's not going to change. In other words, there are plenty of papers out there and et cetera that sit there and point out the fact that there's no economic reason. It's not a problem with the economy. It's not a problem with any of those kind of secular things.

It's a problem, you know, it's problem -- it’s not really a problem. It comes from the individual opportunities and the individual fertility decisions of women and ultimately their partners. And individuals are postponing childbirth and they are choosing to do other things with their lives at rates which create less fertility. And is that going to change in the future? Who knows? But certainly not in the near term because we are getting the one thing that is a push, you know, a dampening for fertility as being a movement, so births being a movement that looks at growth is.

The baby boomers are -- not the baby boomers, sorry. They echo of the boom, so the Millennials are just about past -- you know, they've reached -- the vast majority of them are right now at their point where they would be having the most children. And we're at about 425, 430. So what's going to happen when this huge baby -- you know, the echo boom chunk gets into their late 30s? Well, probably the fertility is going to be lower. So we would see -- you know, if we start getting Gen Z moving in there and we start to have, you know, a little bit more births from them. But I don't think we're going to see half-a-million people being born in California on a regular basis anytime soon, so that's a drag.

Yeah, you know, with all the tech changes and various other things, if we have -- going back to trend and out-migration, which I do think is certainly the case, I think it's a real question about how strong the laborers', you know, ability to negotiate for having remote work and/or only being in the office on an occasional basis. If labor continues to be -- and this is weakening a little bit -- but if labor continues to be very strong in negotiations and can argue that, hey, I want to stay in my cabin in Colorado and only fly in, you know, four times a year to, you know, go to the thing, well, then they're not going to move to California.

If, on the other hand, this strength doesn't continue anymore and, you know, employers can be a little bit more, no, I want you in the office, you know, two times a week, then we'll see an uptick in domestic in-migration back into California. I think that's not clear yet at this particular point in time.

And so, yeah, I mean, I agree with Fran that it's negative this year. I mean, there's no way out of it to a certain extent because we still have excess deaths. We still have, you know, not as strong an in-migration, partially because of some issues. I do think it probably extends small into 2024 and maybe around zero mid-decade because we were already very close to zero prior to the pandemic; right? We were at 0.08, 0.11.

You know, it's pretty -- with a few excess deaths and a little bit, you know, as a little bit aging of the sort of fertility cohort, it's pretty easy to get into numbers that are really close to zero, and I think that is probably where we are for a little bit. There's certainly a strong push to being somewhere around that number, a little bit up, a little bit below.

Really, that's going to depend on international migration and how -- the piece that also fits in there is, remember, we've got to think about our -- you know, where we receive immigrants from, and certainly China's in the news. You know, the only places that really have a bunch of excess to a certain extent, really excess, India has a bunch of excess to a certain extent currently, we might see a pickup of immigration from there.

And then Africa has a fair amount of sort of population that could easily migrate. But we don't have a long-standing tradition of having immigration from Africa. So that might take some time to build the connections and et cetera for individuals to find themselves moving to California.

And as I mentioned, this is all a hinge on political issues, which who knows?

MR. MICHAEL: So to summarize, sort of mid-decade, about zero growth and not moving too much off of that in the future. So a one percent population growth is just not expected at all in the future?

MR. SCHWARM: No. I mean, I don't know. I mean, I don't see one percent ever again --

MR. MICHAEL: Yeah. Okay.

MR. SCHWARM: -- at least, you know, at least in the horizon of current projection series, which ends at 2060, the new one will end at 2070, maybe the 2060 and 2070, just because the base will already at that point have been sort of smaller.

MR. MICHAEL: Now, Fran, your forecast is just a little bit more optimistic than that, not tremendously so. But I think the zero this year and sort of incrementally trending towards the U.S. long-run growth rate of about a half a percent a year; is that correct?

MR. HAGARTY: Yes. Yeah. And I think -- (clears throat) excuse me -- where we differ from where, slightly from Walter, is where we see that return of where we see domestic out-migration level settling. I think we're probably a little bit higher is what it sounds like, possibly a bit higher on international migration to the state as well. But I think story-wise, we share a pretty similar view. And it's more just timing if we're off by a year between the two of us.

But yeah, we don't expect it to come close to that one percent number you mentioned from our forecast horizon. But, yes, moving closer over the next ten years or so to that U.S. average around 0.4 or 0.5 percent by the end of that horizon.

MR. MICHAEL: Jerry, do you see an end to the negative population growth trend? You're muted there, Jerry.

MR. NICKELSBURG: So, yes, in the following sense. One of the things that's driving out-migration is the cost of living in California. You expect, as others have mentioned, California homes to be more expensive than homes in Phoenix or in Houston because of all of the amenities, including natural amenities and weather, et cetera, that California has. But when that premium becomes very high, then you get out-migration. That's kind of the equilibrating factor.

And we've seen, for example, the premium over Austin, Texas drop dramatically, by around 20 percent, and so coming back to what you might think is normal. The premium dropped earlier with Dallas and we have basically net zero migration to Dallas. People are moving to Dallas, but people are moving from Dallas to Los Angeles. And so that process is going on and that will stem migration because of the cost of living migration for other reasons.

And you know, we've talked about family size. If you want to have a very large family, California is going to be a difficult place, so you would move for that reason. But at least that, which is driven by the higher price of housing in California, is becoming less and less an issue, still an issue but becoming less so each year.

MR. MICHAEL: I want to raise a new topic on the list and talk about it initially from a demographic standpoint, and this is the impact of wildfires that we've seen increasing in frequency and severity in recent decades. This most recent year was not quite as devastating as the previous one but still pretty impactful for some communities.

And maybe, Walter, I'll start with you. Do you see anything demographically that is linked to the wildfire risk?

MR. SCHWARM: Well, I mean, it's important to point out that, you know, in terms of communities most impacted by wildfires, and, you know, obviously, Paradise is our largest one, but they are relatively remote. They're in the forest. They're in relatively -- you know, they aren't particularly close to, you know, large metro areas. I mean, obviously Santa Rosa is a slight exception to there, in Sonoma County.

And, you know, as we go forward here, I mean, I guess here I'm a little bit optimistic, I guess, in terms of this. Yes, there's the smoke issue, and that's a huge issue for some people, and that may cause some changes and overall, you know, kind of decisions by some people to move. But in terms of the overall everything else, right, I mean, those homes that are being rebuilt in Santa Rosa are now fire-hardened and are significantly less likely to burn. I mean, after all, there were homes, but it was also a large mobile home park that was destroyed there. And you know, to the extent that that would no longer be permitted in that fire interface anymore under current rules, it would be replaced with something less likely to be burnt.

Similar for Paradise, right, in terms of what they're attempting to rebuild up, there are places that as, you know, we go along we would end up with less -- homes that are less likely to burn.

I mean, the biggest piece here is the burying of power lines and et cetera; right? I mean, considering most of the recent fires were related to, you know, electrical issues, as we continue to move forward with infrastructure improvements, hopefully the severity of the likelihood of fires go down, or at least the severity of fires go down, because force management, which we've put money into, and then infrastructure improvements, should bring fires back to something that looks more, I would say, normal but at least more rare, and to a certain extent, perhaps not burning so much of the forest that we would be, you know, really looking at strong, you know, smoke effects and et cetera like that.

You know, I guess it really depends on the population; right? I mean, if you're particularly adverse to, you know, particulate matter, if you have asthma, if you have other health conditions, yeah, that may -- if we have another bad fire year or two, you might consider moving. On the other hand, you know, once again, somebody's going to move in, I mean, particularly if we're talking about somebody moving from one of the places that are, you know, close to an urban area that are quite, you know, attractive, you will be replaced.

So in that sense, I don't think that fires by themselves are a major outward migration push for California. And I think it will get better as time goes on, even if we have more of them because of climate change.

MR. NICKELSBURG: I'd like to make a comment on that. Wildfires are not a California-specific phenomenon. Wildfires are all over the West. The air quality issues are the same in Oregon, Washington, Arizona, Idaho. So really the choice based on wildfires is a choice to stay in hurricane or polar vortex areas or not. And so I can't see that that has a big impact, except to the extent that the press back East might emphasize California wildfires more than Oregon wildfires. I don't know that that's the case or not, but certainly information would be important in that regard.

MR. MICHAEL: That's a good point. I took a trip to Montana a few years ago and was shrouded in smoke for most of the trip. I should have stayed in California, so it is a Western phenomenon. And you know, we've seen some places, like Butte County, have seen a real population loss, and they've lost a lot of housing and tragic fires. But it seems like some of the impacted areas are the places that had kind of unfavorable demographics and were losing population even before this most recent trend are very slow.

My own observation is that it might make these areas somewhat less attractive to these remote workers whom otherwise might, you know, want to decamp to some of these areas and maybe a little bit deterred by the risk or $15,000 a year homeowners insurance that I've seen in a few areas outside of Sacramento here.

MR. SCHWARM: Although, I will say that Paradise is counting on the remote workers and providing, you know, gigabit broadband. Because on the other hand, it has burned. It's now good for a period of time and you're probably unlikely to have another major fire rip through your area again, but that's certainly, you know, that's certainly where Paradise is, is trying to (indiscernible).

MR. MICHAEL: Yeah. I mean, that's their strategy, and we've seen some of that movement into those areas.

Let's turn a little bit to housing. You know, people, there hasn't been as much negative discussion on housing to date as I might have expected. When you look at housing prices, I've seen projections for, you know, California having a much larger decrease in home values in other places, and already seen a little bit in recent months, particularly in the Bay Area.

So maybe some -- any comments on the housing market and the potential economic and demographic effects that we might see?

MR. NICKELSBURG: Sure. First, on the price data, those are median prices. And the kind of building that's been going on in California with ADUs and duplexes and the like is less expensive than the luxury housing that was more dominant than it is today in the past. That's going to lower the median price. And the median price is down 10 percent. The latest Case-Shiller, that just came out, only has San Francisco with a decrease in home prices.

If we hadn't had these six bills out of Sacramento creating new housing products, I would say that California's housing market, new home construction, would be contracting probably at the same rate as you see across the country. But that's really what has buoyed that part of the home construction industry, is that we have these new products. We have easier, I'd like to say easier, not easy but easier permitting and that's all new. So I mean, that's where we come out with a higher housing forecast or lower decline in home construction than nationwide.

MR. MICHAEL: Anyone else with an outlook on home values and the connection to the economy?

MR. HAGARTY: Just to speak again to the Case-Shiller values that Jerry mentioned that came out today, we do expect weakness, that's already showing in San Francisco to continue, as well as in other larger areas covered by Case-Shiller. In Los Angeles, over the past six months, according to Case-Shiller, prices are down about six percent, San Diego about seven percent. So we don't see that trend reversing, a hard turn. We expect that weakness to kind of continue throughout this year.

In terms of the affordability issues that were talked about earlier, that'll help with the affordability somewhat. If incomes hold up, just a lower median price house, similar incomes should help with that. But yes, we see a particular weakness in some of these higher-priced areas, especially that saw big run-ups over the past two years following the pandemic.

MR. NICKELSBURG: Yeah, I mean, I would agree with that, that the weakness that we're seeing still leaves home prices year over year higher than they were before. So this is a kind of correction to the exuberance of 2020-2021 when you had people not knowing what the work situation was and bidding up larger places than they were currently living. So we are seeing that correction, as well as the impact of higher interest rates. But it's still up year over year, going to go down a little bit more probably, but maybe not much.

MR. HAGARTY: Yes. Yeah, to speak to that, we're not projecting a correction like the one seen in 2007-2008 just because of the circumstances. It was that run-up in incomes from the federal stimulus and the state refund checks rather than looser lending standards and kind of that mortgage risk that drove that 2007 crash.

MS. MITRA: One of the things I did want to mention is that Jerry talked about some of the bills that like the state's obviously very, you know, encouraging and wanting to incentivize building. We're still dealing with local jurisdictions and NIMBYism and homeowners in certain areas that are still very reticent about building, especially multifamily units. For some reason, you know, they think that's going to change their property values, it's going to change the characteristics of their neighborhoods. And they're the ones who go to the city council meetings and fight against, you know, permitting a building in their neighborhoods.

And so, you know, until there's like maybe a concentrated statewide effort, even at the local level, to really support and encourage housing. But these are all the same people who complain about traffic as well, not realizing that if people were able to live closer to places, they might not have to drive so much. But if we were able to do that, we might see some actual movement with the permitting and stuff.

The state can only do so much, so we're trying to, you know, encourage local jurisdictions, as well, to incentivize and support developers.

MR. MICHAEL: I think one observation I've had with the permitting data is -- and I think Jerry's right, you know, the mix of housing we see in the permits has sort of shifted in the direction of multifamily over a number of years. I think multifamily permits are going to be at or near a record when 2022 is finalized.

The single-family has declined in the second half of 2022. We saw a pretty dramatic decline in some of these inland and Central Valley areas in the second half of 2022, but they're just an overall smaller share of the product. And the multifamily appears to be pretty resilient to what we're seeing in the housing market right now.

Do we think that the multifamily market, the apartment market, in development is going to hold up or even grow further from where it is today?

MS. MITRA: I would think so, only just because there's just not a lot of land that's within a commutable distance to some of the job centers where you can have single-family homes. We just aren't, you know, especially like in Los Angeles. There's just not enough room for single family homes, you know, within a couple hours commute system, so I do see some growth in those multifamily units. Those tend to be more affordable. Those tend to be closer to public transportation, closer to jobs, just makes it easier for people, especially low-income/lower-income families that might be struggling otherwise to be able to live closer.

So you know, in terms -- and that's also part of the reason there's a lot of pushback from single-family homeowners for those multifamily units in their neighborhoods and things like that.

So I think that's the way to do it. I don't think we can build out. I think we need to build up in California in certain areas, but it's just how people are going to react to that. That's the issue.

MR. SCHWARM: I mean, in terms --

MR. NICKELSBURG: We did a survey of eight markets in California, and it's a survey of developers asking about questions that relate to what they're going to do over the next three years. And in multifamily development, with the exception of San Francisco, they are optimistic. They see vacancy rates going up a little bit, but rental rates going up much more, and they are planning on building.

MR. SCHWARM: I was going to say, the City of Los Angeles has certainly been, you know, destroying single-family homes in favor of multifamily homes over the last couple of years in our surveys, you know, a net loss of maybe 5,000 units last year of single-family, but a gain of over 26,000 multifamily units. So that's certainly been the trend for the City of Los Angeles.

MR. MICHAEL: Do you feel like the demand for that housing product is there? I mean, will it continue to be absorbed? You know, my vantage point is Sacramento, which has a sort of unprecedented amount of apartment construction now in the central area and it's coming online, and vacancy rates are rising a little bit. You know, most of it's being absorbed, but just in our local neighborhood here, I'm wondering how long it will take to absorb 3,000, 4,000 new apartment units in the central city, and are you optimistic statewide that the market will be there for this?

MR. SCHWARM: I mean, Sacramento is different than Los Angeles or the Bay Area in that sense.

MR. MICHAEL: Yeah, I mean, exactly. I mean, seeing this kind of multifamily development dominate in an inland area is sort of a unique experiment, in the coastal areas, though the demand is there for this.

MS. MITRA: I would just say, unless there's a recession or a significant economic downturn, I don't expect demand for housing anywhere in California to be down. I feel like we are in desperate need of housing everywhere. And you know, whether or not it's people's ideal homes, again, that's a different story, but I think people want to live in California. It's just a matter of trying to find a place that they can afford. So I just feel like at least the next few years, barring a recession and barring a downturn, we're going to continue to see strong demand for housing.

MR. SCHWARM: Yeah, even with weak to minimal population growth, there's sufficient pent-up demand that ---

MR. MICHAEL: So will this multifamily construction have an impact on rents? Will it help ease affordability or will they stay high?

MR. SCHWARM: Depends what that multifamily construction is. If it's expensive luxury lofts downtown, then probably not. It's a question of who's being catered to.

But on the other hand, that is one of the problems; right? We haven't had, you know, sort of the traditional transition of newer homes to -- you know, as we know it, kind of the filtering effect in California because of the housing shortage. So if we do, even if we do, you know, build expensive luxury lofts downtown, it will free up, you know, less expensive homes someplace else and probably help some affordability issue.

MR. NICKELSBURG: Yeah. I think, you know, it all depends on the elasticity of demand. And what we've seen in the past is that demand elasticity for housing in California is extremely high, meaning you have to build a very large quantity of homes to make much of a dent in affordability. So at the rate at which we're building homes now, it's not going to really move the needle on affordability.

MR. MICHAEL: What about office space? What's the outlook for office space, particularly as we move out of the pandemic?

MR. HAGARTY: So I think, to speak to that, the outlook is a little unsettled. All the stories 2021 and 2020 at the onset of the pandemic were, you know, the revolution of remote work, and then to hybrid. And the stories in the latter half of 2022 were about these bigger companies and firms kind of pushing for employees to come back to the office.

And looking at it that way, one thing that may change without the snapback and forth is the types of offices, firms looking for kind of smaller spaces going to a hybrid format. You don't need all of the office space for everyone to be there every day. You can have like transition spaces. But with those smaller spaces, they're looking to have, you know, higher quality amenities, either in location or what the office space itself, to kind of attract those workers to want to come in.

So the outlook from 2020 being the end of the office to this push recently that everyone needs to come back in, I think it's going to be somewhere in the middle looking at hybrid.

Talking about California, metro (phonetic) specifically, at the end of last year, they still had some of the highest price per square foot rates for office space in commercial real estate in the country. And planned projects in San Francisco and San Diego were at relatively high levels. So that's just a look at where these commercial real estate firms see the office going. There's definitely still some firmness in their outlook.

MR. MICHAEL: How does this change in demand for office space? How does it affect transportation sector and the demand for transportation? I suppose if I'm not going into the office every day, I'm not commuting, but on the other hand, I might tolerate a commute more if I don't have to go into the office every day. So sort of where does this play out for individuals, for businesses? What effect do we see on transportation demand?

MR. NICKELSBURG: Well, I think, you know, if you're hybrid and you're going in two to three days a week, let's say three days a week, Tuesday, Wednesday, Thursday, you can have the same amount of commuting time but only do it three days a week, and that means living further away, that makes the cities that you highlighted in the Central Valley much more attractive as places to live if you were working in the Greater Bay Area. Until there's more public transit, that's going to strain the transit of the highway system on those days, the people are going to go in.

MR. MICHAEL: Yeah, and I mean, the hybrid remote -- I mean, the hybrid environment is certainly more positive for the California outlook than the full remote work where people can leave the state entirely if you need to be, you know, you still need to be within reasonable distance to work these two and three-day week schedules.

MS. MITRA: We also are still trying to figure out, like Jerry you mentioned, like Tuesday, Wednesday, Thursday, Monday, Friday, do you come in two days a week, three days a week? All of those are still -- I think we're still trying to figure out. Businesses are still trying to figure out the right approach. Do they have shared office space? Do they, you know, hot desk or do they have individual offices? Do they keep their leases? Do they downsize? All of those things are still, I think, being worked out right now, and we probably will not see the full effects of that probably for another at least a couple years, maybe until we kind of settle into the new normal.

I think, you know, we just got out of like two years of almost 100 percent working from home environment; right? And so now it's like, okay, now that we are done with that, now what do we do? What's going to be working best? And it takes time to figure all of that out.

MR. NICKELSBURG: Yeah, I agree with that. And, you know, as Francis said, this is an unsettled area. So suppose you have a firm that has workers coming in Tuesday, Wednesday, Thursday. When you want them all to be together for all of the things that you need to do in the office, what do you do with Monday and Friday and Saturday and Sunday? Do you only rent it for three days? And how does that work? Who's going to rent those other days? Who's going to have a Friday, Saturday, Sunday work schedule rather than a Tuesday, Wednesday, Thursday? We don't know.

Maybe that is a transformation. Maybe not. But if you need the office space three days a week, the landlord's not likely to only rent you three days a week unless the landlord has someone who's going to take it on the weekends.

MR. HAGARTY: And I think both of those previous points, those two last points, speak to going back to the transportation question. At the public transit angle, how do these agencies plan for the shifting? If Tuesday, Wednesday, Thursday, most offices in a city are the days that everyone's coming in, how do you shift schedules? Monday, Friday, do you have lesser -- you know, less frequent trips? And how do you plan for those shifts and ridership if there's going to be these certain high-frequency days where Monday, Friday, conversely, pretty low?

So the driving, can you talk in hybrid or not, could just, as Jerry mentioned, maybe if I'm commuting three days a week, it will still be the same distance, just looking further away. Public transit, it's a different planning angle from that side of things.

MR. MICHAEL: So I think we're going to -- I'm running low on questions, and I think Commissioners may have some questions.

So at this point, I'd like to transition to see if the Commissioners have some questions for the panelists.

COMMISSIONER MONAHAN: Yeah. And I'd ask folks to come on the video if you have questions.

I'll start with one that you may or may not be able to answer. Actually, I'm curious about sort of within the economy, certain sectors, and particularly, I'm the lead for transportation, and I'm curious about for the workforce, issues with especially electrical workers. And you know, we're hearing, at least anecdotally, that there's a challenge in terms of having enough workers, and so some companies are leaving California because they just can't get the workforce that they want.

Can any of you talk about workforce issues and that area in the economy?

MS. MITRA: I would probably like Jerry to speak to that. But before he does, you know, we have 40 million people in California. We have the best, you know, public schools, some of the best private schools in the world. And so whenever somebody says there's a no good workforce, they cannot find people in California, I always ask what the underlying issue for that is. We have some of the most talented people in the world, and I'm not just saying that because I love California, like it's factually true. And so if they're not finding people, what is missing?

You know, most of the time it might just be a disconnect between the salary or the wages that they're willing to offer and what somebody's willing to take or, you know, some work conditions. We saw a lot of that during the COVID, where people were just, you know, trying. You know, when they talked about the great resignation, it was less to do with actually not wanting to work and more about trying to find a better place.

So if people are complaining about not being able to find workers, I always question like what the underlying issue is, because I find it really hard to believe the largest state in the country with the most diverse skillset and the most technical expertise, they cannot find people. Just, I mean --

COMMISSIONER MONAHAN: It is, I mean, it is a concern, just as we try to electrify more and more, we need that skilled workforce. And so --

MS. MITRA: The training issue, you know, there's a lot of workforce development where, you know, if they project, like it might just be transitioning people who are working in something similar that would require a lot of the same similar, you know, skillset, but maybe they transition over. And it just might be, you know, we're going to be electrifying now, moving forward from something else, so let's quickly -- or not quickly, let's like be able to transition these workers so that we don't lose them and they're not, you know, unemployed. We can actually use them. We do have this huge demand.

So it’s -- you know, maybe that's the issue, as well, is trying to figure out like what do they need to upskill quickly so they can jump into these new jobs more and so quickly?

COMMISSIONER MONAHAN: So I have more questions, but I want to make sure that everybody that showed up has a chance to ask questions.

so I'm going to pass it to Vice Chair Gunda.

VICE CHAIR GUNDA: Thank you, Commissioner Monahan. And just wanted to thank you for the panel.

We work on a bunch of dense material stuff here, but this is so, so dense and weedy in terms of the various pieces that you are tracking.

I think, you know, just fundamentally from an energy use, and you all discussed a number of different reasons that can contribute to the increased demand or lowering and such, you know, including family size, housing, all sorts of stuff. I just wanted to ask, you know, given your experience over the last, you know, decade and moving forward with the state's policy goals, what are some of the, you know, economic demographic variables that, you know, we ought to be weighing in more or considering that we haven't adequately considered?

You know, some of the -- you know, in the last couple of forecasts, for example, you know, the specific sectors, like data centers or crypto, you know, or something else kind of takes off in terms of demand. So just wanted to -- you know, we definitely have, I think, a better understanding and forecasting of the electrification based on the policies, and at least we can create scenarios; right? But, you know, what are the blind spots that you all see that, you know, we should be really focused on in elevating?

MR. NICKELSBURG: Okay, I have one. With the U.S. new industrial policy, we're going to see an expansion in technologically sophisticated manufacturing in California that might not have showed up if you are extrapolating from past data, so that could be a blind spot. Now that doesn't happen instantaneously. It takes a while to get that plant and equipment in place. But because of the highly skilled workforce that we have in California, this is an attractive place for very sophisticated manufacturing, so that may be something to look at.

MR. SCHWARM: Right. There's not only the highly sophisticated manufacturing but, you know, there's a question about, as we build a more, you know, a more sort of sophisticated logistics environment, right now we use a lot of people, would we be considering shifting that to automation or not if time was going on? I mean, you know, an automated McDonald's, okay, they exist, but who knows? But really large, you know, that may not shift the energy profile that much.

But certainly if we moved a bunch of warehouses in manufacturing, and et cetera, to higher degrees of automation, that might.

MR. MICHAEL: I see Commissioner McAllister.

COMMISSIONER MCALLISTER: Yeah. Thanks.

So you totally took the question that I was going to ask Jerry about manufacturing. And I was kind of, I was thinking about that from a perspective of self-interest from the sector that I work mostly on, which is the built environment, the buildings and builders. New construction, you know, it's intimately related with the housing problem. But, you know, we want -- so we are going to be creating demand for a number of technologies, electric technologies in our built environment, namely heat pumps but, you know, a number of others. And so this is maybe not fully the kind of manufacturing you're talking about in terms of truly advanced manufacturing that's linked more to tech.

But I guess I wanted to get folks ideas of how we can kind of -- with this sort of reset in industrial policy that we're seeing federally and would like to see at the state level, maybe it's sort of a normative question but what should we be doing or what could we be doing or how could we be encouraging manufacturing closer to the demand? I mean, we want to own as much of that supply chain as we can. We want that piece of our economy to grow. You know, we sort of touched on some of that sort of trade, you know, sort of blue collar aspects of this in terms of we ought to be able to match up the trades with the jobs when those come about, actually on the ground and buildings.

But I'm interested in how we can pull the manufacturing base into California and kind of capture as much of that supply chain as we can and have jobs up and down the chain and not just be purchasing equipment from elsewhere to install it in our buildings.

MR. NICKELSBURG: So, you know, when it comes to manufacturing, it depends on what it is. And a lot of what we used to do in California will never come back. And the reason is it is more labor intensive and more land intensive and two things that are expensive in California, and so they shouldn't be made here. And so we really are going to see the growth in manufacturing in the more sophisticated goods.

You know, one example is that the B-21 is going to be built in Los Angeles County. So that's a, you know, a new airplane. It's a minimum $80 billion manufacturing process. But those who build it are going to be more skilled than those who are fabricating aluminum panels or whatever for aircraft.

COMMISSIONER MCALLISTER: I wonder, I would kind of look at Commissioner Monahan on the transportation side, we're already kind of doing that on transportation and that's maybe a little bit of a hybrid between high-tech and traditional manufacturing.

In any case, I think this is a fruitful area I'd really like to have an impact on, but I don't want to -- I want to give everybody else a chance to ask questions, but thank you.

COMMISSIONER MONAHAN: Commissioner Shiroma, do you have questions?

COMMISSIONER SHIROMA: I do. I have two questions.

The first one, well, first of all, indeed, I was born and raised in San Joaquin County, so I am very bullish on California. And I started out life as a daughter of a farmworker. We were living in a barn. It had electricity, it had a propane stove, there was outdoor plumbing, and look at me now. So you know, I mean, in terms of the California dream, I'm living it.

Now here's my question: Can utility rates for manufacturing help in attracting manufacturing?

I was elected on the SMUD board. I was part of developing a policy saying, as an economic driver in the Sacramento region, we want to do our part to increase jobs in Sacramento County. And so the staff put together utility packages that included good rates. We also touted that in Sacramento County, transportation quarters, housing, good schools, these were all key elements that I think still sustain today. And so, you know, if you increase people coming into Sacramento County, you increase people paying rates, becoming SMUD customers, let alone the manufacturing.

So statewide, is this part of the economic driver in terms of utility rates? You CPUC oversees rates for the investor-owned utilities, which is the majority of the customers in California.

And I do have a second question, but anybody have any thoughts on that? Could we be doing more, or has anybody studied that? If not, that's okay.

MR. MICHAEL: How sensitive are manufacturers to electricity rates? And, you know, my understanding is that most sectors, it's not the top tier of cost drivers that they're looking at when they're thinking about location decisions. And that, you know, I don't think it's going to be tremendously impactful, personally, to California. I don't believe the more energy-sensitive manufacturing sectors are likely to be here with the limited exceptions of, you know, a food processor tied to a resource or something of that nature.

MR. SCHWARM: I mean, it might have perverse effects in the sense of drawing data centers and high-energy users, which maybe we don't want to meet our climate goals.

COMMISSIONER SHIROMA: Somjita, were you trying to say something? I wasn't sure. You were on mute. Okay. Okay. Alright. Alright.

Let me go into my second question, and that is this, it's related to Commissioner Monahan's question and Justice 40, Justice 40 Initiative. Insofar as, you know, I'm the assigned Commissioner for CARE for ESA. This is the low-income discount program for customers' bills and also for weatherization, appliances, and efficient lights, et cetera.

We transitioned the ESA Program to deeper treatments that there is a pilot for deeper treatments. It requires a different workforce than someone going house to house to determine if there are light bulbs and low-flow shower heads. And we encountered, you know, the need to provide that transition training. And, I mean, we're talking about office workers three days a week, okay, these folks, it isn't three days a week in the office, it is five days a week out in the community. Same thing with farmworkers and electricians and so forth.

So I guess my overall question is back to the Justice 40 Initiative where for the Investment Infrastructure Jobs Incentives Act, I think, if I've got the right acronym, that 40 percent of the federal monies needs to benefit disadvantaged communities, tribes, and so forth.

And I know we're talking more mile-high economic impacts and drivers for California and our economy but, you know, is there, I mean, is there a driver, is there a place for the investments that are being made in disadvantaged communities for jobs that is going to have a noticeable uptick in benefiting and attracting immigration to California?

MS. MITRA: Commissioner Shiroma, do you mean like domestic in-migration from other states or international?

COMMISSIONER SHIROMA: International.

MS. MITRA: So I think there is definitely a need, if we can transition some of those. You know, Commissioner Monahan also mentioned the shortage of workers and helping disadvantaged communities at the same time. I feel like there's a very natural connection in terms of upskilling some of those people that are looking for work and then helping them find that work that's going to be in the growth sectors of the next few years. You know, that would be a very attractive opportunity there where we could really, you know -- and again, I don't know the exact requirements for being an electrician, but hopefully, you know, like a certificate program or something where it's a relatively quick transition, especially for like high school grads.

And then you have, you know, you have to create a pipeline, a natural pipeline from some of those disadvantaged communities. And in that growth sector, once people start seeing, you know, there's these opportunities that provide a really well-paying job where you can support yourself and you support your family, even in a place like California where it's so expensive, it's a natural inducement, it's a natural attractor, not just for people from, you know, within California, like some natural movement, but also other states.

International is a little bit -- like Walter had mentioned, a lot of it depends on federal laws and federal regulations. We have traditionally depended on international in-migration into the state to keep our, you know, keep our population growing. And so, you know, if we continue as is, that would also be, you know, people are looking for, especially, you know, immigrants that are looking for, you know, high-value jobs that can help them, you know, support themselves and their families. I think that there's a really natural pipeline that, if developed, can really, you know, solve the issue that Commissioner Monahan had mentioned.

COMMISSIONER SHIROMA: Thank you.

MR. NICKELSBURG: I think this is one case where the notion of build it and they will come actually has been empirically demonstrated that these kinds of investments in underserved communities that raise the average skill level and allow them to work in higher productivity jobs and earn higher incomes will draw business. I mean, we've seen that again and again.

And so it's, yes, it's an investment in these folks, but it's also an investment in California.

COMMISSIONER SHIROMA: Thank you.

Back to you, Commissioner Monahan.

COMMISSIONER MONAHAN: Yes. Thank you, Commissioner Shiroma. Actually, thank you for sharing your story. I just think that we all come back to this idea that we want California to be a place where everybody can thrive.

And I just want to commend this panel actually for really diving deep into this question of housing and housing affordability and the fact that we have a real problem, a real crisis, one would argue. And I mean, to me, the most sobering part of this was to think about, well, you know, we're so proud of the fact that California is now the fourth largest economy, we're so proud of our tech industry, and yet, that's part of the reason why housing prices are high and going higher. And it's making it really difficult for people to afford basic housing.

And I think we all are trying to wrestle with this idea of as public servants, what is our responsibility for helping improve the unequitable situation in California? And I don't know if there's an answer, but I felt pretty dismayed, I guess, that the primary -- you know, we have to build more housing. And as Somjita said, we have to build it up because we don't have space to build it out. There are barriers that we have to overcome in order to do that. And growing the economy without building up means we're going to make California less affordable. And that's just, it seems like, that's just the challenge we're faced with.

Are there any other questions for the panel? Commissioner McAllister actually asked the question that I wanted to ask, so --

VICE CHAIR GUNDA: I mean, I don't know how much time we have, Commissioner Manahan, but I just kind of like wanted to go into the premise that you started with, with the interconnection and, you know, kind of like really building California's clean energy future.

One of the things we continue to hear, not just in California but in the West, as, you know, as Commissioner Manahan raised and Commissioner McAllister and Shiroma raised, on just the workforce issue, I mean, it's like the real implication in kind of completing, you know, some of the technical studies required. Because, you know, all around the West, we’re all buildings.

And so I think I just wanted to see, you know, in terms of your understanding of the migration, especially around the clean energy technology development and deployment in the West, you know, are you watching any specific trends in terms of either construction, you know, pipefitting industry, labor-specific labor sectors, you know, any trends that you're watching in terms of growth, the decline, or have they been pretty steady from your observation?

MS. MITRA: I'm sorry, do you mean construction, employment, construction sector, or --

VICE CHAIR GUNDA: Yeah. Like, I mean, you know, like the single biggest thing, you know, I think we are trying to hit multiple things; right? We are doing the housing part. We are typically behind the meter, whether it's PV, you know, or storage. You have the EV sector that's growing. But you also have the bulk sector, whether it's transmission, large solar projects, wind projects.

And one of the things that keeps coming in terms of our inability to really kind of grow as fast as we want in those constructions, you know, bulk grid, is the lack of, you know, resources and workforce across the pipeline; right? So given that, you know, California is definitely starting to wave, but all the West is doing it, right, I mean, the entire West is trying to grow the clean energy market, are you watching any trends in specifically the labor force movement in the energy sector specifically?

MS. MITRA: Not specifically in terms of those growths. As Jerry had mentioned, if you kind of build it, they will come. So if there's growth happening, if there's projects that are happening, you know, we do tend to see growth and employment in those sectors that we can tie to those projects.

So one of the things, like you mentioned, is in the West. So you know, it could just, you know, be some migration movements within these Western states where, you know, once a project is finished in California, maybe, I don't know, a group moves up to Oregon and Washington. Because once it ends here, like we're also trying to find opportunities for them for the long term. So that might be something.

But in general, you know, it comes first. So first, the projects have to come and be like online, and then the need for those people come and then those businesses in those projects start hiring, and then we see growth in the labor market for those sectors. So it kind of works in tandem for us. We don't organically see growth and then they just happen to move into those jobs.

COMMISSIONER MONAHAN: So I want to make sure there's time for audience Q&A. So I'm hoping we can -- is everybody okay with me moving to -- okay.

Mark, can you take over?

MR. PALMERE: Hello. Hello, Commissioners and panelists. Thank you. I'm Mark Palmere with the Energy Commission, as well, and I'm just going to be asking some questions from the audience. It looks like we have two, which I think is good timing because we're hoping to break for lunch soon, but I'll ask pretty quickly. They're kind of related to topics we've talked about, but just a little more detail that these participants are looking for.

Our first question from J.P., who has a follow-up on housing:

> "Do any of you foresee any regulation that would restrict the ability of private equity firms and hedge funds to buy up swaths of single-family housing that is contributing to the housing shortage?"

If anyone wants to take that one, feel free.

MS. MITRA: I don't know if there would be, from the state level, if there would be any kind of restriction, unless there's some concentrated movement that will -- you know, for the governor or the legislators to come in and step in. And Jerry can like correct me if I'm wrong, but this seems like it would be more of a local jurisdiction issue in terms of limiting that type of purchases.

MR. NICKELSBURG: Yeah, I don't have any visibility into anything of that nature, and I think it would be very difficult legally as well, not being a lawyer, but just, you know, trying to think through restricting some buyers as opposed to others.

MR. SCHWARM: Right, yeah, I second that idea there, Jerry, that it would be very difficult, at least the way the current laws are done, and I don't think we're prepared to that.

Now, you know, Airbnbs or vacation homes, obviously there have -- you know, local districts or local municipalities have indeed done something about that, but that's a very different thing sort of than what you're asking.

MR. NICKELSBURG: Right. That's regulating use rather than the ability to sell your home to whomever you want.

MR. PALMERE: Yeah, thanks, Jerry and Walter. Yeah, that makes sense. I think that's probably a good answer.

And then just moving on to the other question we have from A. Rios who wants to know about,

"The DACA and Dreamer population, most of whom are already part of the California workforce and tend to be younger workers in all sectors, yet their status continues to be at risk. As nothing has been done to fix their status, would this risk of removal affect California's growth?"

Oh, sorry, I think you're muted, Somjita.

MS. MITRA: Yeah, I can't comment on that. I haven't looked at that specifically.

MR. SCHWARM: I mean, we do have the most of them, but as to what proportion of overall in any sector, I don't think that -- I think we have a good clue on that one.

MR. PALMERE: Okay. Yeah. Well, you know, thank you. Yeah, that's, I guess, more of a certainly complicated issue. But, yeah, I guess some of the numbers, we don't have quite readily to know exactly what's going to happen.

And it looks like we do have one final question. And it's from Ana Garza Gutz (phonetic), I hope I'm pronouncing that right. She wants to know if folks on the panel have studied the work of Jennifer Hernandez?

"Her work finds that single-family dwelling is cheaper and that high-rise buildings are more expensive. Converse to conventional belief, high-rise expensive apartment housing depresses homeownership and is thus detrimental to low-income population as it further limits the main form of wealth building."

So I guess, I don't know, she wants to know if you're familiar with that or if that theory is something any of you have experienced or if that's something that any of you have any insight on?

MR. NICKELSBURG: So a little bit, because there are lots of inferences that are drawn from that.

If you are comparing the cost of a stick and battenboard house to a steel and concrete high-rise building with elevators and all of the other things that you need for that, then you get a square footage cost that might, in some circumstances, be greater, particularly with earthquake reinforcement, but not necessarily true with low-rise multifamily housing.

So I think it's a complicated issue, but it's not straightforward that one is less expensive than another. It depends on the project you're looking at and what the materials are that are going in and what the square footage is of the comparative homes.

MR. SCHWARM: Yeah. And then I guess I would add, it depends also on, you know, whether we're relying on filtering or not; right? I mean, are we? But there's a question; right? I mean, the problem with the coast is it's attractive, so filtering may not happen in the sense that people move to the high-rise that's expensive but open up a single-family home of lower quality and can be therefore rented or bought more cheaply.

MR. PALMERE: Great.

MR. NICKELSBURG: If you think about a three-story apartment building that is also wood-framed, then you have fewer walls, you have a much smaller workforce per unit and you have some shared resources, so that's not going to be the case. But I think the study is referring to a 20-story steel and glass multifamily unit.

MR. PALMERE: Yeah, that's kind of my interpretation, as well, that, yeah, a building like that would tend to be more expensive. But yeah, I haven't studied this particular author either, but thank you for your insight. I think, yeah, I mean, I think as you can tell, too, the questions we've got around housing, so that’s like -- I know that's a big thing on everyone's mind, understandably. So thank you all for answering those questions.

And I think, with that, I think we're going to break for lunch. Thank you to the panel for all your insight.

I don't know if anyone on the IEPR Team has anything to say, but I think we're going to come back at 1.30. Sorry.

MS. RAITT: Oh, thank you, Mark. Yeah. Thank you.

And I just want to briefly thank Jeffrey and Walter and Jerry and Francis and Somjita so much for being on this panel and contributing your time and expertise, and to all the attendees who have participated and listened.

So Commissioners, unless you had any closing remarks, we'll just break for lunch and we will be back at 1.30. Okay.

(Off the record at 12:09 p.m.)

CERTIFICATE OF REPORTER

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

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IN WITNESS WHEREOF, I have hereunto set my hand this 29th day of March, 2023.

Martha L. Nelson

MARTHA L. NELSON, CERT**367

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

Martha L. Nelson

MARTHA L. NELSON, CERT**367

March 29, 2023