BEFORE THE
CALIFORNIA ENERGY COMMISSION

In the matter of,	)	
	)	Docket No. 11-IEP-1C
	)	
Preparation of the 2011 Integrated	)	
Energy Policy Report	)	

2011 Integrated Energy Policy Report Staff Workshop
California Economic Outlook

CALIFORNIA ENERGY COMMISSION
HEARING ROOM A
1516 NINTH STREET
SACRAMENTO, CALIFORNIA

WEDNESDAY, JANUARY 19, 2011
9:30 A.M.

Reported by:
Kent Odell

COMMISSIONERS:

James D. Boyd
Jeffrey D. Byron

STAFF:

Mary Heim
Bill Junker
Chris Kavalec
Ivin Rhyne

PANELISTS

Panel 1:

Steve Cochrane, Moody's Analytics
Jim Diffley, IHS Global Insight, Inc.
Jerry Nickelsburg, UCLA Anderson Forecast
Steve Levy, Center for the Continuing Stud
of the California Economy
Dennis Meyers, Department of Finance
Jeffrey Michael, University of the Pacific
Business Forecasting Center

Panel 2:

Steve Cochrane, Moody's Analytics
Jim Diffley, IHS Global Insight, Inc.
Jerry Nickelsburg, UCLA Anderson Forecast
Steve Levy, Center for the Continuing Stud
of the California Economy
Jeffrey Michael, University of the Pacific
Business Forecasting Center
Brad Williams, Genest Consulting

Panel 3:

R. Sean Randolph, Bay Area Council Economic Institute
Jack Stewart, California Manufacturers and
Technology Association
Karen Mills, California Farm Bureau Federation
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P R O C E E D I N G S

JANUARY 19, 2011 9:30 A.M.

MR. JUNKER: Good morning. Welcome to the 2011 Integrated Energy Policy Report Proceedings Workshop. I have some brief housekeeping instructions to share with you. The restrooms are off the atrium to your left. There is a café on the second floor, look for the white awning. If there's an emergency and we need to evacuate the building, please follow the staff to Roosevelt Park, located diagonal to the building, and wait there until we're told it's safe to return.

The workshop today consists of three discussion panels that will proffer various aspects of California's economic and demographic future. After each panel, there will be a question and answer period. If you have questions, please write them on an index card and give them to either Kate or Robbie, and I was hoping that they would be here – there's Robbie in the back, please? Thank you. And Kate is milling around here. Index cards are available on the table in the lobby. During the public comments portion of the agenda, we'll take comments first from those in person, and then we'll turn to individuals participating via WebEx. For those present, please use the center podium microphone, which I'm not seeing – well, this one – to make your comments. Please give the transcriber you're business cards so we can make sure your name and affiliation are reflected correctly in the transcript. WebEx participants can use the chat function to let the WebEx Coordinator know that you have a question or comment, and will open your line at the appropriate time.

Finally, today's workshop is being broadcast through our WebEx Conferencing System and parties should be aware you are being recorded. A recording will be available on our website a few days after the workshop, and a written transcript will be available within about two weeks.

At this point, I would like to invite the Commissioners to make any opening comments.

COMMISSIONER BYRON: Thank you. Commissioner Jeff Byron, I am the Associate Member of the Integrated Energy Policy Report Committee. I'm very interested, and have been, in this workshop. I'd like to thank the gentleman and others that are going to be here participating in the other panels. I'd also like to give credit where credit is due to our former Commissioner Weisenmiller in his foresight in setting up this important topic and its importance to forecasting energy demand. And I make no secret of the fact that I'd like very much for the Governor to consider putting Commissioner Weisenmiller back on this Commission so that I can very gracefully retire from it, as well. But I was somewhat hoping that he might be here this morning, but I'm sure he’s listening in.

There’s a great deal of public interest in this topic. I applaud the staff on bringing experts together to help guide us and provide some insights in understanding the economic situation in California and where it’s headed. I certainly look forward to being here as much as I can today. Commissioner Boyd.

VICE CHAIR BOYD: Thank you, Commissioner. Let me add my welcome and thanks to all of you for being here. This is an incredibly important topic to California for obvious reasons, the state of our economy. It’s particularly important, at least from my perspective, because I have been on this Commission longer than any other Commissioner here now, as Vice Chair and Chair of the Transportation Committee and involved in so many other issues, and I know only too well that it really does take a healthy economy to underwrite all the programs that feed to a healthy economy, that this agency is in charge of administering. So, it’s extremely important that we understand the economy and that we know how to make contributions to the continued growth of that economy. The Integrated Policy Report, of which I am not on the Committee, having done four of them in the past, I got a break, but we are down to three Commissioners at the moment, so I’m not sure, and one of them half way out the door here, trying to leave. So we're grateful to Commissioner Byron for sticking it out. In any event, it's important that we take the economy into consideration as we prepare the Integrated Energy Policy Report, which really is the State's Energy Policy Report, and we want to get more people to pay more attention to it as just that. And we are starting with a new Governor and a largely new Legislature, whom I think we can approach on that basis. But, "it *is* the economy, stupid," that some politicians learned painfully in the past, and we want to make sure that we contribute to it, not take actions that end up with a negative overall effect. But we need to understand it, and the staff has done a marvelous job of assembling panels and speakers today to give us the insights that I think we as a commission need to have in order to continue to move positively forward. So, with that, I guess thank you for the opportunity to welcome you all, and I will turn it back to Bill.

MR. JUNKER: Thank you, Commissioner Boyd, Commissioner Byron. It is my pleasure now to introduce forecaster, Chris Kavalec.

MR. KAVALEC: Good morning. I am Chris Kavalec. I just want to make just a few comments to sort of motivate our discussion today and talk briefly about why we're here. When we forecast electricity and natural gas demand at the Commission, we take into account a variety of phenomena. We are interested in capturing the impacts of efficiency through utility programs and Building Codes and Standards. We’re interested in capturing the impact of rate changes and we’re interested in capturing the impacts of increased self-generation, for example, rooftop photovoltaic systems. But when it comes right down to it, the fundamental driver of our demand forecast is still the economy, which I will attempt to demonstrate with a couple slides here.

The first slide shows Statewide Electricity Sales and Gross State Product in current dollars, Electricity Sales in blue, using the left scale, and Gross State Product in red, using the right scale; starting from the left-hand side, you will notice Gross State Product flat or declining, resulting in flat or declining electricity sales during that period. The boom years of the late ‘90s, GSP is increasing, bringing electricity sales up with it. A little hiccup in 2001-2002 with a mild recession, electricity sales drop, although most of that comes from our electricity crisis in California in 2001. Resumption of growth in GSP in the mid-2000’s, electricity sales increasing. And finally, we have a nosedive for GSP after 2008, which brings electricity sales along for the ride.

This slide shows the same thing, except with Employment, and you’ll notice basically the same relationship between this economic indicator and electricity sales - Employment in red, using the right scale – so that you see basically the same pattern of the recessions and the booms, and the movement of the two series.

As you probably know, output/income in California is recovering at a faster rate than is employment. And today we're going to talk about why that is and whether we expect that to continue. But from a forecasting point of view, we have, on the one hand, GSP recovering, and expected to continue recovering in the next couple of years, and on the other, we have continued high unemployment. So, from one side we're getting a push up in sales hopefully in the next couple of years, but, on the other hand, continued high rates of unemployment are going to keep dragging sales down.

In terms of purpose, we today obviously want to gain some insights on California's economic and demographic future, insights that should be useful for anyone involved in energy planning; from a forecasting perspective, insights that we don't necessarily get when we simply take forecasts from Economy-dot-com, or Global Insight, or UCLA, apply it to our models, and crank out a forecast. Second, too many planners and forecasters, myself included, don't have a full understanding of what it takes to generate an economic forecast; it's sort of a black box for us. And today we want to try and make that black box a little more transparent. And also, third, we want to bring in the business community to the conversation and get their perspectives and insights because, ultimately, it’s the business world through their decisions and expectations that will ultimately determine where our economy goes.

So, without further ado, I would like to introduce the Moderator of our first two panels, Jed Kolko. Jed is an Economist and Research Fellow at the Public Policy Institute of California, which is a nonpartisan, non-advocacy, research think tank based in San Francisco. So, welcome Kit.

MR. KOLKO: Thanks very much. Can you hear me? This way? Excellent. Thank you, Chris. As you mentioned, I’m an Economist and Research Fellow at Public Policy Institute of California. For the next four hours or so, in addition to lunch, I and the assembled panel, which will change only slightly, will be covering a wide range of topics about what is likely to happen with the economy both in the near term and in the longer term. As you see on your agenda, there are two panels, one now and one immediately after lunch that will look at the future of the economy in California. In consultation with the panelists, we’ve slightly rearranged some of the topics between these first two panels in order to make what I think will be an even better discussion. And here is how it will work: In this first panel from now until roughly noon, we’re going to focus on the recovery in the short to medium term – what is likely to happen in California as the state continues to emerge from the recession, and how long will it take. These are the questions, as well as all the factors that affect the answers to these questions, that will be part of the first panel. And the second panel, the one that will happen at 1:00, right after lunch, will focus on the longer term – what will California look like after the recovery is completed, once we are back to normal? And what is normal? How is this similar to, or different from, California prior to the recession? And what are the answers to all the perennial questions about the California economy that we faced even prior to this recession.

As part of this day, the panel will look almost exactly the same, there will be one change, and I'll introduce the panelists both at the beginning of this panel and at 1:00. I'd like to explain what will happen in each of the two panels. The steps in the panels will be the same for the two. What I will do is say just a few words at the beginning of each panel, just to make sure that we're all starting from the same historical knowledge. Then, each of the panelists will speak for a couple of minutes, up to three minutes, giving a point of view or an opening statement about where they think the economy is going, first, in this panel, in the short-medium term, and then in the panel after lunch, in the longer term. Some of them will have some slides to give you a visual sense, as well. After that, I will start a discussion with the panelists, trying to probe especially on areas where either they disagreed, or might have different assumptions underlying their forecasts; and then, as well, ask the Commissioners if they have any questions or comments that they'd like to ask directly. After that, we would like to open up the discussion to all of you, both here in this room, in the other room, and joining us on the WebEx. And just to clarify, the way we're going to do Q&A will be entirely after the Commissioners ask their questions and make comments, entirely on the cards. So, throughout the morning and throughout the first panel of the afternoon, if you have a question, please write it down on an index card. These will be collected throughout the two panels, giving everyone a chance, both sitting here, elsewhere, or in cyberspace, an equal chance to have a question asked. And please keep in mind that good questions tend to be brief and they end in a question mark. So, Kate will start passing out those cards, so at any point feel free to write down as many questions as you like, one per card, and I'll try to get to as many of these as possible.

I want to add my thanks to the Commissioners and to the staff for having us here, both moderating and presenting what we know or believe to be coming for the California economy. I want to stress that we are all experts about the economy, but not necessarily about energy. To the extent possible, we can draw on our knowledge and understanding of the economy to answer questions about energy as they come up, but please be patient and forgiving with us in understanding that we are experts on the economy, but not all of us specifically about energy, as well. And, again, just to add to the reminder, this is being both taped and Webcast, and therefore your words will be memorialized forever, so, whether you’re speaking or writing, choose them carefully.

Let me start just with a moment or two of background before I turn the panel over to the panelists. And this is just to give us a uniform, consistent view of what has happened in the recent past. Again, this first panel is going to focus on the recovery, both what it will continue to look like, and how long it is likely to take, so I would like to take a view of the recent past. And you see on this slide what has happened to employment growth for each of the past 20 years in California and in the U.S. California is in the dark, if you can’t see the colors, you can tell which is California because it is recession, is worse than the U.S. in the most recent couple of years. You see a couple of things when we look at employment growth, and this is annual for 2010, this is annualized through November, you see a couple of things. First of all, what strikes you most is how similar growth is in California and the U.S. We will certainly talk today ways in which California differs from the U.S., both in terms of short-run fluctuations, and long-run trends. But when we look at the past 20 years, for employment growth, at least, you largely see that, when the U.S. does well, so does California; when the U.S. does poorly, California does, as well.

California tends to exaggerate somewhat, both in terms of economic growth and, of course, lots of other things, doing typically better than the U.S., overall, in good times, doing somewhat worse in bad times. And this is clearly true when we look at 2008 and 2009, the years when the recession affected employment growth the most. In 2010, employment growth has gone back up to the year immediately preceding the recession, 2007, though growth in California, which, of the first 11 months of the year, was about half a percentage point, is still roughly about a percentage point below what California’s typical long-term employment growth rate is. And keep in mind, of course – and this will be echoed many times throughout the panel – for unemployment to go down, employment growth in California needs to exceed the growth of the labor force. So, employment growth by itself getting back to normal wouldn’t be sufficient for unemployment to be dropping back to California's long-term normal levels. So, standing here at the end of 2010, this is where we are.

And, with that background, I would now like to turn it over to our panelists, who are much more fearless than I am, I tend typically to look backward, whereas they are all in the business of looking forward, forecasting what is going to happen in California, its regions, and beyond.

What I'd like to do first is just do a very brief introduction of everyone on the panel, and then turn it over to them for their brief points of view and opening statements. You see our first panelist, your eyes are not deceiving you, he is not here yet, we know he is going to come in roughly half-way through this first panel. He is Jerry Nickelsburg. He is a Senior Economist and Lecturer at the UCLA Anderson School of Management, a course known for the UCLA Anderson Forecast. He is Director of the California Forecast Team. Steve Levy is at the Center for the Continuing Study of the California Economy and we are going to be hearing from the panelists in order, first, going away from me, from your left to right in this first panel, and then in reverse order in the second panel, so everyone has their chance to be first and last. So, we'll hear from Steve next. And then, just to confuse you, next to Steve is Steve, Steve Cochrane, who is Managing Director at Moody’s Analytics. He leads the Economic Research staff and specializes in analyzing the Regional Economies of the U.S. Now, on this panel, we have some collaborators and some competitors, and so next to him is Jim Diffley, who has been Chief Regional Economist at IHS Global Insight, previously WEFA; for the past 13 years, he has led both its California State and Metro Area economic forecasting process. Next to him, we have Jeffrey Michael; he will be speaking just before Dennis Meyers, who wraps up the panel. Jeffrey Michael is at the University of the Pacific Business Forecasting Center. And Dennis Meyers is at the Department of Finance.

What I’d like to do now is turn things over to Steve. And, Steve, and all the panelists, if and when you want to use any slides, just let me know, and I will pop them up here so you can stay put. Steve.

MR. LEVY: Okay, I’ll probably want to use the first two. It’s been a long time since I’ve been here. I worked with a whole different set of staff and Commissioners in the ‘70s and ‘80s and ‘90s, helping on the Economic and Demographic Inputs that go into the Energy Forecast. I’m going to defer on this panel in terms of the short-term for the California economy to the rest of them, but I want to start out with one message. When we thought about the Energy forecasting, when I think about the future of the

California economy, you want to think about industries and regions. Could you do the slide next? Okay. I think the first point that Jed started with is that, if you ask what the direction of the California economy is, you first look to the direction of the national economy. If you ask, however, how will the growth rate in California differ from that in the nation, you look to the sectoral make-up of the California economy, and if you look back and you have a memory, when we've had unemployment worse than the nation, it's at a specific sectoral reason, like today. After the Vietnam War, it was the build-down from that huge war effort. In the 1990's, it was an aerospace contraction, base closing, and an above average housing downturn. In 2000, when we did worse, it was the dot.com bubble, which hit my region, well, Southern California was saying kind of a recession. And in this recession, contrary to what a lot of people hear, it is almost exclusively that we had a differential construction downturn. Do you want to turn to the next one?

If you look at where 600,000 of the jobs were lost, and this goes to the difficulties we're going to have in recovery, they were lost in construction and construction-related manufacturing, in retail trade related to construction, in finance, in real estate; almost half of the jobs we lost were related to this. It was the one area with

Nevada and Florida and Arizona where we were differentially bad. I will show another chart later, but if you can read that chart, it was not businesses leaving the state, it was not a below average performance in manufacturing, actually we did a little bit better; it was largely about construction. If you then ask about the next three or four years, there is one set of positives, industries where Jerry, when he gets here, will argue that we have comparative advantage, the Ports are now filling up again because we sit on the Pacific Rim, tech is blossoming in Silicon Valley, we get still one out of every two dollars in venture capital, we have the highest share of motion picture production in the past 30 years, so we have a number of creative and innovative sectors that probably, in the third, fourth, and fifth year from now are going to push our growth rate up. But for the next couple of years, I think the good factors are going to be offset by the continuing deep construction-related recession here. It is unlikely that we’re going to see any huge plus there, and we also, as you all too painfully know, we have probably a differential negative impact in State and Local Government employment because of the budget deficit, because of the difficulties. And so, I think for the next couple of years, looking at an industry perspective, we’ll probably track the nation, and then the longer term positives will come back in. We can talk later about how that works out for energy, but I really throughout this am going to stress looking at industries and regions.

MR. COCHRANE: Thank you, Steve. I’m Steve Cochrane with Moody’s Analytics. I agree very much with what Steve was saying. My approach in my three minutes here will be to look really at the very near term and then focus more on the long term in the afternoon session. I have four basic points that I want to make, the first is that the California economy actually is in recovery now, and I don’t think that’s up to too much debate, even though the pace of recovery is slow. The near-term outlook, I really do think, as Steve mentioned, that California will lag behind the U.S., again, for at least one more year in terms of job growth and output growth, although I do think that things will get better in 2012. The third point is that, actually, I have raised my forecast for California for this year, for 2011 just in the last month, largely because of changes in Federal Fiscal policy, which will have some differentially positive impacts on California. And fourth, the big factor that will govern the pace of recovery over the next few years is housing, as Steve mentioned. So, those are my four main points.

If I go back to the first, which is the state is in recovery, go to the next chart, we really have to look at it from a spatial point of view, and this chart illustrates the U.S. by metropolitan areas, and the colors illustrate my assessment of where the metropolitan areas are in the business cycle. First of all, if I had this just for states, California would be green, meaning it would be recovering right now. And this business cycle indicator looks at four factors, it looks at employment, it looks at industrial production, it looks at house prices as a proxy for household wealth, and it looks at home building as a measure of local investment. Some of these are just proxies for the local economy. When we look at states and metropolitan areas, we kind of have to work around the lack of the breadth of data that is available for the U.S.

So, the state is recovering and you can see it is hardly uniform. The red metropolitan areas, largely focused in the San Joaquin and Sacramento Valleys, are still in recession, and these are areas that are still largely depressed because of their housing markets. And there are a few that I'm calling "at risk," it's largely the Inland Empire and a few of the – actually, the Inland Empire, LA, and the East Bay – and these are areas that are recovering, but have slowed lately, and are at some risk of slipping back into recession because their labor markets have slowed down, their housing markets have slowed down from the first half activity.

I think the probability of dipping into a second recession, though, for the state and for most metropolitan areas, is somewhat slim now, perhaps a one in five chance of a state falling into a second recession, largely because – my second point – is that Federal fiscal policy will have a better than average impact on the State of California. First of all, there will be a longer than expected extension of emergency unemployment benefits available, and that really does support incomes and consumer spending in the states that have the highest unemployment rates, that of California, of course, is one of those with a double-digit unemployment rate. So, there will be some additional stimulus just coming through from a bit more consumer spending than we might have expected before. The second is that part of the Obama GOP tax compromise is that there are some pretty strong incentives for business investment spending through calendar year 2011. And the California economy is very very closely tied to the pattern of U.S. domestic business investment spending that factors through to the tech economy and other manufacturing industries in the state. So, from a forecast a couple months ago of looking at job growth of less than one percent for this calendar year, our forecast now looks at job growth of maybe about 1.4 percent is the figure that we have for this year. The main risk to the outlook is the housing economy. If I go to the next chart, this is my last chart for my three minutes here, it just illustrates how extraordinary the situation is here in California, this chart shows the number of homes in foreclosure as a percent of the owner occupied housing stock, and the yellow line is California and, just for comparative purposes, I put it next to the northeast, Midwest, and south averages, and you can see that California is just in a world of its own in terms of the weakness of the housing market and the mortgage credit crisis. Now, I had exaggerated a little bit by comparing it with regions, if I looked at Arizona, it would look almost exactly like California; if I looked at Florida, it would almost look exactly like California; if I looked at Nevada, it would be about twice as high as California. But those are really the four states, those and Michigan, that are really extraordinary, and California certainly is one of those. And so, the pace of improvement in the housing market will have a lot to do with the recovery because it means so much for household portfolios, for how one measures one’s own wealth, and then what that means in terms of consumer confidence and consumer spending, and then home sales and home improvements, as well.

My guess is that the large number of homes in foreclosures will be an added weight on house prices and we will still have a house price decline in the state at least through the third quarter of this year, and our guess is that we may see prices on average in the state fall by another six to seven percent, something light that. That’s coming off of a little bit of a rebound the first half of the year with the Federal tax incentives that drove the housing market.

But once we get beyond that low point in the housing market, I’m actually fairly optimistic that there are some very positive factors to bring the housing market back in a rather strong fashion, one is that there is considerable pent-up demand for housing in California. Housing had been so unaffordable for so long that many households who could not buy into the market before, I think, will once there is a sentiment that the housing market has stabilized. And also, demographics are in the state’s favor; the population growth continues to grow at a very stable pace right through the recession, unlike places like Florida where population growth slowed considerably, and that the age composition of the population in California also is stable because of the younger age structure in California. So, there is growing demand for housing because of the age structure.

So that actually helps the 2012 forecast that, as the national economy turns around and, then, as the housing market stabilizes, we get a pretty good recipe for recovery in 2012. And in 2012, I see California growing at a pace about equal to the U.S. for the first time since the recession began. Just a couple quick notes, then, in terms of a couple of numbers, it is probably 2015 before we get an unemployment rate back to a long term rate, somewhere in that 5-1/2 to 6 percent rate. We will probably get total employment returning to a previous peak, it might not be until about 2014 or so, late 2014, or into 2015, before we get up to the roughly 15.1 million jobs, which was the peak before the recession. So, with that, I think I used my three minutes. Thank you.

MR. DIFFLEY: Good morning, all. Let me open by outlining the IHS forecast for California and the U.S. The U.S. economy has, in our view, regained momentum now after a very soft patch in the middle of last year, talking about 2010. And moreover, it will get more help in 2011 from the fiscal stimulus embedded in the December tax package out of Washington. Our 2011 forecast for GDP growth in the U.S. is 3.2 percent, followed by 2.9 percent in 2012, a little slower because the stimulus is removed in 2012. These numbers, though not typical of recovery year expansions - its higher rates in past recessions, in previous business cycles – do begin, though, an expansion that is sustainable and will boost employment levels. The unemployment rate, however, is still likely to linger very high, about 9 percent by year-end, this year, only getting down to eight percent by the end of 2012. Housing remains a key downside risk. There remains a fundamental over-supply of houses for sale and prices can be expected to fall a bit more. We expect housing starts to improve only gradually. Indeed, another sharper home price decline could reignite a financial crisis, particularly for households.

Now, in this environment, California is indeed on its way to recovery, with business spending and export demand leading the way. We expect the state to gain jobs at a slightly faster pace than the U.S. over the near term, in fact, for the next few years, at a 2 percent plus rate beginning this spring – comp down the annualized rate. But, of course, the recession was deeper here, much deeper here, and the state will not regain its 2007 level of employment until 2014. You see my graphic up on the slide, and you can see the blue dotted line the decline from over 15 million jobs in 2007, the beginning of 2008, only returning above that line by 2014 on the graph.

Gross State Product will expand by 3.1 percent in 2011 and roughly the same amount, 2.7 percent, in 2012. Regionally within the state, expect the strongest gains in the near term to occur in the Bay Area. Generally, the coastal metros have proven again to be the State’s economic drivers. The Inland Empire and Central Valley will remain muted because of the continued overhang of the housing cycle. I look forward to your questions later.

MR. MICHAEL: I will be brief so that I'm not too repetitive with the other panelists. I agree with most of what they're saying. You know, when I talk to a lot of folks around California, I have to keep – you know, they're so tired of hearing about housing, but as an Economist, I can't stop talking about housing because it's so much at the center of our problems here, and people are searching for another answer, or another solution, or another story because they've been hearing about it for so long. So, it's good to be able to hear on a panel of Economists where they all say that housing is our biggest problem, so I'll be a little bit repetitive and say that it's hard to overstate the extent to which the construction and housing decline is at the center of what's happened in California. Certainly, well over half of the job losses are either very directly or indirectly related, as Steve pointed out, to the downturn in construction, the collapse of this industry. I mean, you have an important industry that has shrunk by 80-90 percent on the residential side now, about 50 percent on the non-residential side. You know, it's been devastating. And because of that, you know, the good news is that this is not an industry that sort of off-shored and disappeared forever, there are some positive demographic drivers in the long-term. I don't think our supply stock is as over-built as what you'll see in some of the other housing states. And so these are good things to keep in mind. But, you know, we're really not going to have a robust recovery until this sector gets back on its feet again, and by "gets back on its feet," I'm talking about probably a tripling of housing starts from where they are currently.

I haven't – we bumped up our forecast about a quarter percentage point in response to the Federal fiscal policy, and I will defer to some of the gentlemen on my right on this a little bit, we haven't been quite as optimistic, I think they've probably spent a little more time modeling it than we have. We're very focused on the debt that California households are under and are somewhat skeptical of how much consumption this is really going to drive here. Regional differences are very important, particularly the Bay Area has been a little bit puzzling and a little bit disappointing, you know, I keep waiting for the Bay Area to take off and it really hasn't, with the exception of the Silicon Valley area, and even that area has sort of disappointed my expectations a little bit when you look at the rebound that we've seen in business investment and tech spending in the national level, and actually would have expected even a little bit more juice in the San Jose economy than we have. Other parts of the Bay Area have been very disappointing, in San Francisco, in the East Bay, in particular. And certainly, that is having ripple effects out here in the Northern San Joaquin Valley and Sacramento area. So, with that, I'll close my comments.

MR. MEYERS: Okay, well, it's about housing, so I think they've all said it. But we have a very similar outlook, I think, to what you've already heard, probably a year or two of subpar to almost approaching normal growth, although we don't really know what that is anymore because of all the ups and downs we've been through. But to bring it to a different dimension, to that idea of the importance of housing, and why the near-term outlook is pretty modest, is that we're kind of dealing with a changing sort of environment, generally, with the labor force. You kind of alluded to this idea of demographic changes. But we have a generation of sort of mid-career, late career workers who have been hit pretty hard with the housing crisis, both with the job losses, the equity losses, the stock market losses, that hits the retirement plans and everything else like that, so you've got sort of lingering workforce that might otherwise be retiring and moving on, who are now having to keep working and, more importantly, they have to keep saving more than they probably would have before, so they're not generating the kind of demand that you might expect to see in a more normal recovery. And, in addition to that, you've got to throw in this whole new army of new workers who are just coming out of college and things like that, who are not seeing the opportunities they had in the past recoveries and things like that, so both of these trends are sort of working against strong growth, they're putting more emphasis on savings, less emphasis on borrowing which, you know, is going to be good in the long-run, but in the very near term, it's not going to lead to a very big robust recovery in the housing and construction industries which, as you all know, it's really the key to a strong recovery, at least historically. So the good side of that, as we've already pointed out, that's a lot of potential pent up demand, that there really is a lot of people who are multi-generational cohabitation now at greater rates than before, less household formation rates than historically, that represents possibly a lot of new demand for housing if and when some economic dam breaks and they all get to run out and buy houses. But, for right now, it's a pretty minimal job growth that is showing up out there because of this desire to save, this lack of job opportunities to go out and buy new homes and things like that, plus you add to this the public fiscal problems in the Government sector throughout the state, which is kind of pulling back some public sector demand that would normally be there, which is going to take a few years to work out, as well. So you've got sort of a gaggle, sort of near-term dampening effects that are going to stop this from being a really robust recovery, so our outlook is kind of pretty meager growth for jobs in 2011-2012, getting something back to a more sustainable rate by 2013. So, the upside is definitely there, I think, in a few years from now, but in the next couple of years, I think we've still got some issues like these to work through. And we do have strengths, as the previous moderators have indicated. You know, California is really a pretty strong economy, generally, there's a lot of good points out there, but working through these near-term fiscal issues is going to be the tricky wicket of how we get through this.

MR. KOLKO: Thank you all very much. What I'd like to do is probe out a couple of things that have come up. There is, of course, the long-running joke that, you know, five Economists equals eight opinions; in fact, sometimes it turns out that five Economists give us one big opinion about the importance of housing to the economic recovery. I'd like to get to that in a moment. What I first want to do, though, is just do a quick check. I think Steve Cochrane was the one who mentioned 2015 as the time when the unemployment rate in California would likely be sort of roughly normal levels. I want to just do a quick check of whether that's pretty much consensus viewed among those on the panel, or if anyone has a significantly different view about when we might expect back to normal.

MR. LEVY: Jed, I think it’s in part the wrong question for the Energy Commission. I think Chris showed, and Steve said, that if you look only at employment, you get a fairly sloggy, dismal picture. But if you look at output, which may be a more important driver of energy, the recovery is going faster, will exceed previous levels sooner, I don’t know enough to know what that means for energy; from a human point of view, I think 2015 might be where we get back all the jobs, but from an energy point of view, the economy might be growing further. And, Jed, one of the things we might want to talk about is the wedge, the productivity, and business cost consciousness is driving between output and economic growth and job growth.

MR. MICHAEL: What’s –

MR. KOLKO: Sorry, can I interrupt just for a second? For those who are with us virtually, they would like to hear your name each time you speak, just so they know who is talking. Thanks.

MR. MICHAEL: Sure. This is Jeff Michael. I’m not sure what normal unemployment in the future is going to be, if we’re talking about 5.5, 6 percent unemployment, you know, we’ve got a five-year forecast horizon and I don’t see it in the whole horizon. We have got a half million people that have left the labor force in California, that are going to be streaming back in as things recover, and I see unemployment rates probably 8.5 – in the high 8’s, probably, in 2015 and we’ve got a very long way to go. You know, jobs are recovering probably in 2015 to their previous peak, but, again, probably a million jobs below where we need to be still at that point. So, I’m a bit more pessimistic, but maybe that’s the view from Stockton, sometimes it clouds your judgment.

MR. DIFFLEY: Jim Diffley now. Yeah, we have – I mean, technically, we have jobs returning, that is, as I mentioned in my opening, the previous levels of jobs returning in 2014. That means, because there’s been plenty of Labor Force growth over that time from 2007 to 2014, the unemployment rate is still going to – I agree with Jeff – cloaked around 8 percent. We don’t have the unemployment rate getting below double digits until 2013, for instance, literally, that is how slow the slide is, although it is coming down.

MR. MEYERS: Well, I guess I would echo that, too, although I think the unemployment rate is a measure that attracts sort of undue attention, it’s a nice concept and everybody latches onto it, but really it is the job growth numbers I think you need to look at because, like Jeff mentioned, there’s different factors that reflect labor force growth, migration, and things like that, so to look at that ray and see where it’s going to go, you know, we probably all have some pretty pessimistic outlooks for the rate, itself. But I think it’s the job growth numbers you’ve got to look at. And we’re currently on probably the pessimistic side, I think, in regaining those jobs by 2016, but with an unemployment rate that still stays pretty high throughout that period – in a relative sense, I mean, like you said, there’s this deficit of jobs being created for several years now, vis a vis the labor force, so you’re probably going to see that rate kind of high, and it’s probably not the best indicator of how well the economy is going, generally, anyway, and you need to sort of look at a broad range of measures.

MR. KOLKO: I think that’s important, whether we’re talking about the labor market, the housing market, or any other factors we’re looking at, that there’s a range of measures. When it comes to energy demand, for instance, as Steve Levy mentioned, growth rather than the unemployment rate may be the most important measure to look at first. When we want to understand how the typical household is doing, and what stress that puts on social services and the state budget, unemployment may be in some ways a more important measure. So it depends on what the goal that we’re trying to understand that colors the measure we look at. When we were talking about housing, in fact, there were several different measures that came up and, in fact, several different explanations for why housing and the housing market and the housing industry are so important to the economy. Some of you mentioned the importance of construction and related industries as engines for the economy, others mentioned the importance of housing in supporting or driving consumer spending. There are also arguments that some have made that the depressed housing market makes it harder for people to leave their homes and move to other areas where there may be more job opportunities. So, there are lots of ways in which housing and the construction industry might affect the economy. So, I'm curious for your point of view on what the most important mechanism is and what that implies for the most important housing or construction-related measure you watch, to see how the housing industry is doing and what that means for the economy. And anyone feel free to begin. And, again, please say your name as you talk.

MR. LEVY: I looked at two measures – we lost $60 billion in direct construction spending between 2005 and 2009, with virtually no change in 2010. We went, as part of that, from building 200,000 units to 40,000 units a year. And with that, as Jeff said, about half the jobs, 600,000 to 700,000 jobs were lost, related to that. So, those are the – I agree with everything everybody else said, but when I look at impact on the economy, it's the dollars and the jobs that are related to the dollars.

MR. COCHRANE: This is Steve Cochrane from Moody's Analytics. In my view, sort of the broadest impact of the housing market on the outlook for the economy is its role in household wealth. If we look at the wealth effect of housing and look at measures of what creates wealth, in general, you know, broadly speaking, we can look at wealth that's created through housing, through home price appreciation, which has always been an important part of individuals' portfolios, and it's usually the largest piece of any household's portfolio. The other side of wealth is gains from equity markets. And the gains from equity markets have already been regained to a certain extent, with the turnaround in the equity market. And, so, when we look at the broad wealth effect and what it means for consumer spending and driving the economy, you know, upper income households are already spending, again, pretty well. That's one reason why we see places like Silicon Valley doing well, not only because of the tech economy is doing well, but that household income per capita income is higher in a place like Silicon Valley. But the low to moderate to middle income households, who have less of their portfolio in equities and more simply in their house, haven't felt that return, or rebound, yet and, in fact, still may be feeling that their portfolios are still shrinking today, in general. And it's so critical for the housing market to stabilize for that to help stabilize how individuals feel about their own financial well being and their willingness to spend. Part of that is willingness to spend on their own house, in that home improvements account for a large part of consumer spending and contribute to construction employment. And when homes sell, it also generates a tremendous multiplier effect in terms of buying furniture, of improving homes, adding on a room, things like that. So, I think when we think of housing as being a broad factor in the economy, we have to think of it in these really really broad terms.

MR. KOLKO: I would like to introduce one more aspect of the housing market that is something that distinguishes California in this recession and recovery even from other states where house price declines have been very large and where foreclosure rates are quite high. When you look at the other states most hurt by the burst of the housing bubble, in addition to California, Nevada, Arizona, Florida, Michigan, and some other states in the Midwest and the south, foreclosure rates are very high in all those places, but California stands out among all these states in that, in all these other states, vacancy rates are also very high. But throughout this recession, residential vacancy rates in California have been among the lowest in the country, higher than prior to the recession certainly, but still among the lowest in the country, and far lower than all the other states with high foreclosure rates. Is that a good thing? Is that an important thing? Does it suggest that California's path out of the housing crisis and recession might look very different? Or, does that not matter very much? So, let's keep the conversation going. And, again, please introduce yourself.

MR. DIFFLEY: Jim Diffley. I suppose I'll take a stab at the first one, or your direct question, and then I want to go back to what the two Steve's said before that. You know, California, if you look at the demographic, first of all, the California demographics are unique compared to those other states, relatively. If you look at data closely, if you look at the number of households, or the average household size in California, the flip side of the vacancy statistic they mentioned is that California always has, in a measured sense, a much higher number of people per household. Right? And I think that relates to the difference in the vacancy rates that you measure, and the vacancy data itself is, shall we say, subject to a lot of errors having to do with vacation homes and the like. So, I don't take that as a really robust indicator, so I'll pass and let others comment on that. I wanted to come back, though, I fully agree with Steve Cochrane's view that, in this cycle, and in thinking about the recovery from it, it's the equity position that households have in their home that really is the driving effect on the economy, and is very important to California. Now, Steve Levy points out, though, correctly that the reason that California – a big reason in terms of numbers of jobs and activity that California underperformed the nation so much, or the recession hit it so much harder, was in fact the building industry, right, irrespective of the price changes, of course, they're related – the loss of the building jobs. But I think we're making a little mathematical mistake here, we have to keep in mind the mathematics of recovery, or the mathematics of growth. With building all ready below a 40,000 unit pace in the last two years in California, the fact that it stays there a little longer, we don't have it hitting 100,000, for instance, again until 2012, and it just barely makes that, the fact that it stays there is not a drag on growth anymore, right? The growth rate can still be high, or relatively high, or higher coming off that, because you're not losing construction jobs anymore. So, mathematically, return to normal growth rates is not really driven by the construction side of housing; return to a normal healthy economy is, though.

MR. KOLKO: And just to update with some recent facts from this year, construction employment in California has actually continued to fall this year, looking through

November of 2010, though at a much less dramatic rate than in 2008 or 2009. Construction remains, when we look across all the broad sectors of the economy, the one where the employment picture is worst, employment in percentage terms fell more in construction than any other sector so far this year. But, again, that is just poor performance rather than disastrous performance compared to the previous two years. Jim – sorry, Jeffrey.

MR. MICHAEL: Yeah, Jeff Michael. Just a comment. The vacancy rates is, I think, I put a little more stock in that, and I've spent some time living in some of these foreclosure capitals, personally. The vacancies aren't what they're portrayed in the media. Most of these households are occupied, often times with multiple generations in the same household that will create new household formations. You know, if there are ghost towns, it's in the developments that were being built that just sort of stopped, you know, with the streets and the lamp posts and the finished lots, and things just sort of stopped. The wealth effect is important in how it feeds consumption. One thing that hasn't been discussed and, again, this may be sort of my view from Stockton, is sort of what we like to call in my center the Squatter Stimulus, actually something that has been holding up consumption a little bit, particularly in inland California, although the wealth has declined, there is really a staggering number of people who, in order to prop up their income by completely eliminating their monthly housing expenses, and this is not a – this is not a small thing, we're talking about regions where we've got 15, 18, 20 percent of households more than 90 days delinquent, you know, cash for keys just isn't to get rid of the delinquent households, but it's actually squatter households more and more that are living in places free. PG&E is kind enough to leave the lights on for them, frequently. But this impact is really, I mean, it's equivalent in some of the harder hit communities of as much as a 2-3 percent of personal income. And, as housing recovers, it's going to have important effects, but people are going to have to start paying for their housing again. The second thing I'll point out is that, where I'm optimistic about vacancies, you know, rents have held pretty firm in California. It could still be hard to find a decent place to rent in some of these areas that are still hard hit by households, and the rents have very effectively, I think, placed a pretty solid floor under further price declines particularly sort of for the middle class and lower housing stock. I think there could be some room to give on the higher ends, still. And then, the last thing about housing, and how it impacts the economy – and maybe this is for the later term – it really is an important factor on the cost of doing business in California. Maybe we'll hold that for the long-term discussion later.

MR. KOLKO: Great, thanks. Let me move on from housing to one other topic, and then I'd like to open it up to any comments or questions from the Commissioners and also the questions that you have been, and please continue to be, writing on the index cards that you have and are making their way up to me.

So far, I think this hour, this morning, has been perhaps the longest conversation in Sacramento this month that has not mentioned the State Budget, except for one brief mention by Dennis. What I would like to hear is whether either the State's fiscal situation, or any other policy factors in California are likely to affect either the speed, or the extension of recovery in California. Basically, is there anything either for good, or for bad, that the State Government can do to affect the recovery. And, Dennis, maybe you are free to start since you were the one who inspired this, or you're welcome to let others go first.

MR. MEYERS: Everything we propose is just perfect, so everything is just fine. Well, this is a long running kind of a debate of, you know, what policies are helping the economy or not helping the economy, and things like that. And, certainly we want to do everything we can at the State and local level to promote the economy, but the California economy is really predominantly tied to the national economy and, even more importantly, to the Pacific Rim economies. We benefit a lot from exports, disproportionate to most other states, so the health of the nation as a whole, and the health of like China and Japan, countries like this, is really very important to the state, as well. So it’s hard to say that there’s a policy or a change that we can make that’s really going to lead to really significant changes. I think, at least from our perspective – and this is more of a longer term issue than the near term economic issue – but, you know, getting the fiscal house in order just leads to a lot of better perception of California that are bond ratings, or borrowing costs, it just will make the state’s sort of financial picture look better, and thus a better place to invest your money, to lend money to state and local governments, and things like that. So, you know, I think we put a lot of attention on that here in Sacramento, but I think the real drivers of the economy really lie in a lot of other places out there, but certainly having a more stable public financial sector is going to return benefits in the long run.

MR. MICHAEL: This is Jeff Michael again. I guess I would agree with Dennis that, in terms of state policy, getting the fiscal house in order is probably the best thing that can be done to help the California economy, but the state policy is somewhat limited in its short-term ability to boost the economy. It's really federal policy and local policy that I think has more to do with the short run dynamics in the California economy. The Federal policy through Federal fiscal policy, as we've talked about recent tax cuts there. And then, also, as we talk about the importance of the housing market, there's not a lot the state can do here. The Federal Government can help on the financial side if they'll ever – and this is unlikely now, but they never really came up with an effective foreclosure mitigation program, or a way to attack the financial side of that, it had to come from the Federal side. And then, when you're talking about construction and the ability to get sort of the construction economy going again, there's not a lot the state can do about that, but local governments have the ability to impact that because that is where permitting happens, that's where the biggest regulatory bites are, that's where the big public facility fees and impact fees that drive costs so much in the state, where those decisions are made. And so I think the ability for policy to really accelerate the recovery based on what happens here in Sacramento is limited, most of it is really about distributing the pain and who is going to feel it the most.

MR. DIFFLEY: Jim Diffley here. That last point, I wanted to follow-up, that's the point, there is pain and this is not only happening in California, it’s happening in almost all states. The fiscal crisis has resulted in a situation, and will for a couple more years, where the state and local government sector is a drag on the economy and that’s one of the reasons why this recovery will be slow compared to other recoveries. Now, I agree there is not much the state can do, and it’s not a criticism of state actions to balance the budget, but it’s simply the nature of the beast if you’re cutting spending and/or raising taxes, that’s a negative in terms of demand for the economy.

MR. COCHRANE: Steve Cochrane. A couple of points, first just sort of directly in terms of the outlook and Steve Levy had talked about the difference of looking at employment vs. output, and when we look at the forecast, the state fiscal crisis has its biggest impact on employment and mostly at local government employment, and continued declines in local government employment would be one reason why the jobs recovery will be a little slower than, say, the output recovery in the economy. The public sector will be the weakest in terms of job creation going forward. In terms of, you know, taking care of the budget and the state deficit, I mean, in a sense it’s important from a perceptual point of view that business investment, business confidence, is dependent on stability, dependent on the lack of foreseeable uncertainty or shocks. And simply the more rapid improvement of the deficit and the improvement in terms of reducing uncertainty for state spending, I think, improves the business climate and improves business confidence. In terms of what the state can do directly, you know, one of the things the state can do is just make sure that the process of foreclosure resolution is as speedy and transparent as possible. And the state has an advantage here, at least in that it is a non-judicial process, as opposed to, say, in Florida, which is a judicial process. So, in Florida, it can take over a year to take care of a foreclosure, whereas, in California it's a matter of months. And as long as it's transparent and fair to all parties concerned, you do want to make that as fast as possible, so that households either maintain control of their house, or the house is sold and occupied again and becomes an occupied unit once again.

Finally, more long-term, in an economy like California where it is a high value added economy, where it is a high tech economy, where it's a economy that focuses, in many cases, on research and development and the like, education is just so critical. And education is still the – the primary domain of education policy is at the state. And, of course, it really hurts now with the cutbacks at the universities and the state colleges and, indirectly, K-12, but as soon as possible, you know, policy in terms of stabilizing education and making sure that there are opportunities for the entire population across K-12, and at higher education, to keep California competitive over the long-term. In my view, that's really what it's all about.

MR. KOLKO: As you've probably figured out, since you're all such close watchers of what goes on, we're joined by Jerry Nickelsburg, the UCLA Anderson Forecast, glad you could be here. We are – Steve Levy wanted to say something, as well, about this question about the state budget and California policy.

MR. LEVY: Let's get to the folks' questions. I'll pass.

MR. KOLKO: Okay, so I want to welcome Jerry, and we will rope you into questions, the big stack of questions that we've got here.

MR. NICKELSBURG: Okay

MR. KOLKO: What I'd like to do first is invite Commissioner Boyd to make any comments or ask any questions that he has before we turn to some of the other audience questions.

VICE CHAIR BOYD: Thank you, Jed. I'll try to be quick. I'm going to go backwards on my list because at the beginning I wrote a lot about employment, demographics, changes, but you discussed that quite a bit, so I'll save that. I want to go to the bottom of my list, which was this discussion about what the state and the State Budget and the state government can do – not much – and yet there was a reference to how important local governments are going to be in effecting a re-stimulation of the economy, permitting, and what have you, and my perception as local government, hurting as bad as, if not worse than, state government, and a lot of the talk in Sacramento now is to maybe change that situation, a situation that I personally have felt it kick that can down the road for years, and I'm going to say something very impolitic here about Prop. 13, but to me, ever since that, the trends have changed significantly. So, I kind of think, you know, fixing the state budget and shifting money down in the non-existent money that we have to raise somewhere, down to local government, probably will help in some degree with the economy. But I wanted to ask about economies. Not mentioned at all here, well, there was a passing mention to the word "Energy," but, of course, as an Energy Commissioner, I worry about the cost or price of energy to the economy and whether that's a problem or not. Nobody so far has said it's a problem, that's music to my ears, but I don't know if it's true – particularly in the transportation infrastructure, and we've talked a lot about electricity and natural gas as primary fuels of economic growth, but so is transportation and fuel and we've got oddities happening now with – the price of oil is reasonably high, the supply of finished fuels is extraordinarily high, the price of fuel is high and going higher, which is, to me, a little hard to explain. But I'm wondering if that, in your mind, has any impact we need to worry about in the near term on this economic recovery, and does addressing other things the state is interested in, such as climate change and building a green economy, does that figure into where we need to go? Or is climate change just a little static right now that we worry about later? There has been a lot of talk about it being negative, that people have spoken it's something they want addressed, you know, will we be able to grow economic growth through creating more green jobs, or more green tech economy type jobs?

MR. KOLKO: Jerry, if you want, you've got the prerogative to go first, unless you'd like to defer to someone else.

MR. NICKELSBURG: No, sure, I'll do that. First, I want to apologize for being late, I had a speaking engagement this morning in Sonoma, which was scheduled months before this, but I do want to apologize to everyone for being late. The question of cost of energy is kind of a double-edged sword for California, you know, a little different here than elsewhere. The higher cost of energy obviously raises the cost of production, raises the cost of transportation, and is a negative for economic growth. On the other hand, California is an innovative economy, it's a knowledge-based economy, and we see investments, venture capital investments, in green technology and trying to find that next energy saving device, or energy efficient device for automobiles, for homes, power plants, for more general energy generation. You know, the investments are coming here. So, the higher the price, sort of the bigger the reward for finding that next great thing. If you look at green jobs, whether you're thinking about climate change initiative or the move towards renewable energy, and you kind of add up those jobs, there's actually not many of them in the planning. There are some, there are some construction jobs and there are some maintenance jobs, retrofit, and so on, but it's not the Internet all over again, it's not the PC all over again. But, a higher price of energy may well generate the innovation that creates that next engine of growth for California. So, you know, it's kind of a mixed bag.

MR. LEVY: Yes, and I've always seen this commission and the ARB and the AQMD as pushing California faster into the future. I mean, I think the number used to be $50-75 billion in savings from the efficiency measures, and so we have high rates and low usage, and the overall cost push us into the future with great savings to people who are using more energy efficient cars and refrigerators and lighting systems, partly through Title 24, partly now through the AB 32. I think there are bumps on getting to the future, but I can’t think, as an Economist, of any reason that we don’t want to get to the future before China does, that getting to the future first in terms of either the gold ring of developing the next battery, or the next grade electric car that we’re trying to do, or simply pushing the cost curve down through efficiencies like we’ve been doing, isn’t the right way to go. I think it’s an “invest or die” world, I think we have a chance not for zillions of jobs, but for huge amounts, I think, of cost saving for energy use in California, and maybe we can invent a product or a service that will entice customers around the world through these regulatory efforts.

MR. KOLKO: Thanks. Commissioner Boyd, any follow-up questions or comments in response?

VICE CHAIR BOYD: No, I’ll let it go. Let’s hear from some of the audience questions.

MR. KOLKO: Okay, thanks very much. A show of hands, folks who have listened at least a couple times to, “wait, wait, don’t tell me.” Yes? Because it’s a reasonable assumption. They have their speed round toward the end where suddenly the pace of questions gets much faster, everyone has to answer just in a few words, maybe just one – we’re not going to go quite that radical here, but there are a lot of great questions that people have suggested for the panel. What I'd like to do for these questions now is have one person from the panel respond, then ask if there is anyone that has a very different or dissenting view, and try to keep it to a couple responses per question, just so we can cover the range of questions that I've seen. And please continue to write down questions on the cards that will make their way to me.

So, one question, just continuing the connection between energy markets and the economy, "How will current economic conditions impact both energy demand in California and energy supply?" So, the conversation we just had was focusing on what's the effect of energy prices on the economy, but this question is, what's the effect of the current economy on energy demand, energy supply, or both? Who would like to start out with that? Dennis?

MR. MEYERS: Oh, well, I guess, I mean, whenever the economy slows, obviously, energy demand diminishes. I think it's – the other side of the coin is what will those low prices do to the development of new energy sources and things? In a weak economy, you're not going to see a lot of new development of new sources of energy, it's going to be kind of slowed down somewhat, so it may take a while to catch up to that at some point. Also, as Steve mentioned, low prices also tend to not make people look for new efficiencies and things, too. So that could be a longer term drag on that. You know, typically you see – or, atypically right now – we are kind of seeing some higher energy prices in spite of lack of demand, but I think some of that you need to start thinking about, you know, oil energy, in particular, is a global marketplace, you've got to look at the global economy, California is kind of an outlier for the nation and the global economy, too, so that is part of what's going on there, we are kind of suffering from strong growth in Asia and China, as well.

MR. KOLKO: Any very different or dissenting views on effect of economy on energy demand or energy supplies?

MR. COCHRANE: Steve Cochrane. I think the way to look at the future demand for energy is by looking at two sources of demand, one is rising output and the other side would be expanding household formations. Demand from both sides was reduced during the recession. Demand has begun to increase now in California because of simply rising output that the economy is improving. We're not seeing much of a rise in demand yet from the acceleration of household formations that will add to it in 2012-2013, as the economy gets back on its feet and the housing market gets back on its feet, so there should be accelerated demand, if not this year, then in the next several years. And then, of course, with the rise in demand, there should be some price pressure, there should be some renewed interest in new investment, as well.

MR. KOLKO: Thanks. Another question: "Can anyone speak about the consumer balance sheet in California, what's happened to consumer debt, consumer balance sheet, and how is that likely to change during the recovery?" Who would like to have a first crack at that?

MR. DIFFLEY: Well, I'll take a bit of a negative, we don't have good data on state level balance sheets such as that, per se. But I'll reiterate the point Steve was making in terms of home equity being so vital, and the valuation of homes being so vital in consumers' balance sheets and their outlook for further spending and savings, etc.

MR. COCHRANE: I can add just a little bit to it. If you look at some of the data from some of either the firms that follow home foreclosures, or the firms that follow consumer credit, the consumer rating – the credit rating bureaus, pardon me – one of the interesting things is that consumer balance sheets deteriorated the fastest in California of almost anywhere else, so that delinquencies on all sorts of consumer loans peaked very quickly, but very early back around 2007, early 2008. They've actually been a little more quick to recover. I think it's still – when you look at consumer credit balance sheets in California, the conditions still look worse than elsewhere, but the gap is narrowing quickly. Again, I think some of this is that the housing market is beginning to resolve itself a little bit, and also, at least the relatively high share of high income households in California helps, that they've been able to get through this crisis better. So, I think actually broadly speaking that, when we look into the future, that California has some advantage in terms of more rapid improvement. I think we'll see a more rapid improvement both in terms of consumer credit difficulties and in terms of housing credit difficulties, and that is one thing that will help, again, not this year, but maybe 2012, the economy may surprise on the upside.

MR. MICHAEL: This is Jeff Michael. The data I've seen on consumer credit per household puts California at the highest per capita levels of consumer debt in the nation. This is not a new thing, though, this was true 10 years ago and it's true now, it's something like $80,000 of consumer debt per capita. Now, a lot of that is driven by mortgage debt and the high cost of housing that we have seen here in California and the amount of debt that people incur in order to purchase a home. But we also have relatively low home ownership rates here, so it isn't just that. We're substantially higher – the U.S. average is something like $50,000 per capita of consumer debt, we're at about $80,000, and we're not the top income state in the nation. So, I'm very concerned about this. It's going down faster than other parts of the nation, so that's an important point, that it's improving rapidly, but there is a long way to go and I think it's a very large impediment in our recovery.

MR. KOLKO: There have been several questions about housing, so we clearly did not exhaust that topic in the conversation so far, two very similar questions that really want to understand where new housing construction is likely to be. One person asks, "Do the panelists see new home building on previously undeveloped land as a sustainable economic force?" And very similarly, "If or when housing construction resumes, will "abandoned projects" [in quotes] pick up again? Or will either demand forces or policy measures like SB 375 change where new construction tends to be in the state?" So, in short, where is the growth in housing construction? Jerry, first.

MR. NICKELSBURG: So, one misconception about California housing is that we are over-built in the State of California. The fact is, we're under-built, but where we are built is in the wrong place. And so there is potential demand, which is going to be felt in the state as soon as we start getting job generation, and that potential demand is two things, 1) demographics tells you that it's more heavily tilted towards multi-family housing than before, and second, that it is along the coast. And so the question of, you know, where is the housing going to be, it is going to be on unbuilt land, well, along the coast, there is not that much unbuilt land, and so the inland parts of the state are going to really have to grow into their housing stock before you get much of a rebound of housing, and that’s going to take quite some time. But on the coast, you’re actually seeing projects that were – I don’t know if “abandoned” is the right word, or put on hold, getting going again, not necessarily with construction, but getting the work done, you know, the pre-construction work done, in San Francisco in multi-family housing, in LA, in parts of Orange County. There is also some unbuilt land in places like Orange County in the Great Park area, and that’s going to be single-family detached, as well as multi-family, and in North San Diego County. So, I think what you’re going to see is, along the coast, more multi-family, and that’s where you’re going to see construction happen because that’s where the potential demand is. And it’s going to take a while to really burn off the excess supply in the more inland parts of the state.

MR. KOLKO: Steve Levy.

MR. LEVY: Steve Levy, yeah. We’re in the beginning of a massive transformation in the demographic demand for housing. As I’ll show later in the long-term panel, virtually all of the growth in households is in households age 55 and above, and young adult households, 25-34. The growth in the single-family, age 35 to 54, is over for the next 15 years, plus that's where a bunch of the excess supply, either through projects not built or foreclosures, lie. This is, I think, extremely important for the Commission technical staff simply because we're coming off an age where people were building large and very energy intensive homes in warmer parts of the state, and now the market and SB 375 and the demographics are all pushing toward an era of smaller units, probably multi-family for a larger percentage, and in the cooler areas of the state. I think it's going to be a very large transformation not only for housing, but for the energy use associated with housing.

MR. KOLKO: Any very different or dissenting views?

MR. MICHAEL: Very different, no, I agree that multi-family coastal housing can be back where it was next year, it's coming back. Multi-family housing in the inland areas, the demographics are there, but the economics aren't there. And a lot of that has to do with the local government policies. It's extremely – a lot of the cost of building, particularly in the inland areas, are fixed costs that are related to policies that require sort of new development to pay for itself, and when you've got to pay $50,000 to $60,000 in fixed fees upfront for public facilities to build an apartment, the rents just don't cover that in areas where annual family income may not even reach those levels. So, I don't see that type of housing coming back in the inland areas for a while, even if there is consumer demand or desire for it.

MR. KOLKO: Thanks. There's a question that actually picks up on the conversation that Steve Levy just now started about demographics, asking about demographics in the short-term, in the recent recession. "What explains the stable population growth throughout this recession? Is it high birth rates, foreign migration, or something else?" Population, indeed in California has continued to grow throughout the recession and, when we look at a couple facts, in the most recent year, California has actually been a net gainer of college educated people from the rest of the country, which is a big change from what has been true over many recent years. So, who wants to take up this question about demographic trends during the recession?

MR. LEVY: I would love to, but I will defer to Dennis if you want to –

MR. MEYERS: Well, actually, I'm not privy to all those details about those specific things. I think – do you want to, Mary?

MR. KOLKO: Mary, do you want to have a cameo here? Let me – can we get the mic, the portable mic on?

MR. LEVY: That's not fair, you give her a mic and it's not on.

MS. HEIM: Most recently, California's population growth – oh, I mean, we are growing at less than one percent, and I have to say that we haven't been growing at less than one percent except in the mid-1990's was the last time it was that low. So, it is, percentage-wise, low. But we're still gaining, you know, 350,000 residents a year. Most recently, and I think maybe this is also recession driven, we've seen births in California plummeting, they're just going down, down, down. And whether that is recession driven and will go back up again, we'll see. I think the population trend to consider is that migration has really slowed down. It's not that there's fewer people leaving California, or more people coming in, it's just that people have stopped moving and so the migration rates, at least domestically, are pretty flat. We're losing some people to other states, but there's just not the big dips like there were in the mid-1990's, or the big gains like there were in the early 2000's. So we are still gaining due to immigration, we still get over 200,000 immigrants every year, but undocumented migration by the estimates of Homeland Security have really dropped off to nothing these days.

MR. KOLKO: Thanks. That was Mary Heim from the Department of Finance, who was our sort of stealth demographic expert for the day. So, thank you, Mary. Other insights about demographics during the recession/recovery that anyone wants to add?

MR. DIFFLEY: Well, I will just add that the housing cycle, itself, was a big factor in the slowdown in migration, people could not sell their homes, right? The home sales went down a lot. The broad-based nature of the recession also left a situation where, if you're looking for a job, unless you're willing to go to Fargo, North Dakota, you really had no place with very low unemployment to relocate. The whole migration slowdown that we've seen is related both to the housing cycle and to the recession.

MR. MICHAEL: I'll just make a brief comment about regional differences, too, that it's been relatively stable in California, but there have been big, dramatic changes within regions, in fact, population growth has really picked up. If you look at Northern California, it's really picked up in the Bay Area from where it was in the earlier part of this decade, whereas it's fallen back dramatically in the Inland areas. Overall within Northern California, it's been much more stable.

MR. NICKELSBURG: So just one quick comment to add to what has been said. And I don't think the data yet really fully captures this, but in former recessions, we had out-migration from California to places like Nevada and

Arizona and Oregon, where things were better. In this recession, things aren't better there, in fact, in many cases they're worse. And you know, what happens is, if you're unemployed and you can't afford your rent, and you have family in California where you came from a decade or two ago, you often move back and there's at least some evidence from U-Haul traffic rates of in-migration to California from places like Las Vegas and Arizona. So, you know, that may be kind of – some of that may be picked up, that may be part of why you're not seeing what we've seen previously, which was a lot of out-migration.

MR. KOLKO: And the research has suggested that there really are two main drivers of migration among states, one is employment opportunities, and the other is housing costs. Given that, in this recession, housing prices in California have fallen more than in almost any other state, the gap in housing prices between California and the U.S., though still much higher in California, has nonetheless narrowed relative to where it had been earlier in the decade. And, all else equal, that's going to contribute to migration into the state relative to what we've seen in the past.

A couple questions about consumption driving the economy and driving the housing market. Do you think that we can still rely on household consumption to drive GDP growth? And related to that, how will lower job growth, but higher output growth enable housing growth? Isn’t employment growth the factor that really drives the ability of households to consume, and therefore to help the housing market recover? So, the question is, how important is consumption? And how much of a risk is there that we have output growth without the employment growth that contributes to consumption?

MR. COCHRANE: Maybe I can start, Steve Cochrane. Consumer spending will be a driver of growth, but it will not be the outsized driver of growth that we saw over the last decade. When you look at where jobs were created in California, aside from construction which was so important and was related to consumer spending, but it was in retailing and in low wage services and the like that created the huge gain in jobs. Now, in many cases, those jobs weren’t that well paying, but at least they were jobs, they kept the unemployment rate down, and so forth. I think this is where we see a little bit of a structural shift in the kinds of jobs that we’ll be creating, there won’t be an over-dependence on retailing, retailing will not expand in the way it did over the last 10 years. If consumer spending had been growing at a rate faster than overall GDP over the last 10 years, consumer spending -- gross state product in California -- consumer spending will be lagging GDP growth perhaps maybe by 25 basis points over the next 10 years. Now, that doesn’t sound like a lot, but because consumer spending is such a large piece of the economy, it does matter. So, what’s left? If it’s not consumer spending, then it is either investment spending, or it is export demand. And this is where the California economy will have to grow and, of course, California is very well-positioned in terms of export markets. And California has to continue to keep a really positive investment climate and, again, this goes back to keeping human capital very high, keeping the education system functioning at a very high level here, and attracting the human capital which also attracts investment capital.

MR. KOLKO: Any different points of view on consumption and its role in recovery? Let me then turn to a couple questions about policy, budget, and taxes, and so on. So, someone listening carefully noted that the Federal tax cuts/unemployment insurance extension package affected some of your forecasts, while at the same time others said that there’s little the state can do to affect the pace of recovery. So someone says, “If tax cuts stimulate the national economy, would it have the same effect if California were to cut state taxes?”

MR. LEVY: No. Kind of Policy 101, the stimulus is created by running a deficit whether you do that through fiscal policy and tax cuts, or whether you do that through a stimulus package of direct spending. The state cannot run the deficit. The economy created the drop in income that created the drop in revenue. And what the state budget does is allocate how the drop in economy is allocated through either cuts in government spending, or increases in revenue, which transfer spendable money from private consumption to public consumption. Without the ability to run a deficit, there is no short-term stimulus. Now, you can argue that having lower taxes over the long-run will create an incentive for firms to locate here, which I think is a subject for the second panel, and wildly overrated, but in the short-term, if you can’t run a deficit –- and also, in the short-term, it’s kind of brain dead to think that corporations are going to pick up within six months or nine months and make massive changes in their investment or location decisions because of a series of tax policies that can’t possibly be adopted or implemented for six or nine months within election, so, no, the state has no fiscal power in the short-run, it can’t run a deficit.

MR. DIFFLEY: I agree completely with that – Jim Diffley here – I’ll add one, moreover, that at the federal level, one of the boosts from cutting taxes comes in the following way – people have more money to spend, they spend it on the local economy, or the U.S. economy. If you give

California households a tax break, a lot of what they spend is going to go outside the state.

MR. KOLKO: Any dissenting views on this? A couple people asked about forecasts, how it is you do this, what assumptions go into it, and what sort of uncertainty is embodied in economic forecasts. So, those of you who are most deep into the forecasting world, how much confidence do you have in your forecasts? And also, maybe a fairer question is, what’s the biggest source of uncertainty in your short to medium-term forecasts?

MR. MEYERS: Oh, I’ll take a stab at the general forecasting philosophy; I won’t speak for everybody else. But, you know, typically when you forecast, you tend to – I shouldn’t say “we,” I won’t speak for everybody – we tend to under-estimate the boom times, we never think it’s going to get as good as it ultimately gets, and we never quite think it’s going to get as bad as it ultimate gets during the bad times, and a lot of that is a function that we rely on models that are based on historical precedents and history and looking at sort of the average response to different things as they heard in the past, like with the stimulus, you know, we’re going to look back at what previous tax cuts and stimulus spending can do for the economy and, you know, come up with sort of an average, what do these things typically do. But, of course, the near future is never going to exactly be like the average past, right, there are things that are going to go on in the next few months, or next couple years, that we can't anticipate, we try to, and you try to factor those in, but we're always somewhat of a slave to the data of the past. So we have to sort of make a best guess about the stimulus, it is somewhat of a different stimulus than in the past, it's similar to previous tax cuts and things like that, but it is different, it's not exactly the same. You know, California's situation vis a vis as far as we talked about the housing crisis being worse than in the past, and trying to make an estimate of how we'll dig out of that, or how fast home prices will return, well, this is an unprecedented event, really, we've not gone through this really before, so we have to sort of try to tweak and adjust our models and assumptions to take that into account, but you're always sort of dealing with a certain amount of uncertainty or something that is just different this time. So, we are kind of hampered by relying on past history and somewhat with making guesses about things, we don't really know where they're going to go exactly. So, you know, we try to not miss the mark by too much is kind of the goal we have.

MR. NICKELSBURG: Let me add a couple things to that. The early 20th Century economist, A.C. Pigou, talked about forecasting and said that, you know, in boom times --

so this is exactly what Dennis said –- in boom times, we make the error of optimism and, in contraction times, in recessions, we make the error of pessimism, but he said the error of pessimism we tend to – I think his exact words were something like “it’s born not an infant, but a giant.” So, as forecasters, we have to guard against both being overly optimistic and overly pessimistic, particularly overly pessimistic as we go through this. The way that we do this at the Anderson Forecast is we have statistical models, it looks at past data, tries to interpret how past data can explain what might happen in the future, and this is really a matching of the past to the future; if certain things line up in the same way, then you expect more or less the same outcome. So, that’s the first step. But the second step that we take is to look at the assumptions that underlie the models and the equations, and simply ask the question, “Well, are those assumptions valid?” Do those equations really hold? Or is something different going on now? And try to use economic theory to try and understand if the models are not valid and, often times, particularly in this recession, we found that our data doesn’t go back far enough to pick up recessions that are coincident with financial panics, we then have to interpret how those model coefficients might change, how the mathematics might change in the new circumstance that we’re in, and so we make modifications for our forecasts based on that.

MR. COCHRANE: I think just to add to that, this is Steve Cochrane, it’s a very good description of how this science of forecasting is done. Just to bring that down to the state level, or the local level, you know, two incredibly important components of forecasting sub-nationally are 1) demographics, and 2) industrial structure. And I think, actually, these are things we’re going to be talking about this afternoon, but these are so critical in terms of our assumptions that we make about whether demographic patterns will shift from where they were before, and fortunately, at least demographics have kind of a long lead time, you can kind of see what’s coming from year to year. And then, industrial structure is a little harder to foresee because, of course, that depends on changes in technology and changes in patterns of investment, the global economy, and the like.

MR. DIFFLEY: Yeah, I certainly agree with what you guys all said, nice descriptions. Let me step back a little further. I think Chris started the day talking about the black box, and we started with the graph that showed how similar the time series experience of the U.S. was with California. So you literally go a long way, think about basic, the start of the model building; you go a long way by modeling the state economy as a function of the U.S.

economy, right? But, at the same time, you take the industrial structure, and Steve Levy started out the day by mentioning this as determinant of what the differences are between U.S. and California growth rate, and as Steve Cochrane just alluded to. You also have an industry by industry forecast – by industry, not by state – you apply that to the state industrial structure and that gets you pretty close – that's a pretty good starting point, and then you can talk about the assumptions and the econometrics and other local factors. So, that's the black box, really – it's not that black, is it?

MR. KOLKO: Let me pose one last question for all six of you before we break for lunch. What do you think is the single most important factor affecting California's recovery that has not been mentioned at all yet this morning? Jerry, since you don't know what was mentioned when you weren't here, you get a bit of a pass on this one, so, you know, take your guess at what hasn't been mentioned; everyone else, you know what's off limits. But, Jerry, why don't you start and we can go in order from Jerry to Dennis.

MR. NICKELSBURG: I was hoping to hear what other people thought had not been mentioned. So, we're looking for the single greatest impediment to California's recovery.

MR. KOLKO: The factor affecting the recovery most strongly. It could be an impediment, it could be a boost.

MR. NICKELSBURG: So this has been probably mentioned, but I think it’s important. The California labor force is going through a structural change, and it’s a huge structural change, and sort of reasonable estimates would say that it’s 300,000 to 400,000 Californians are currently unemployed, were previously employed in one way or another in supporting residential construction in this decade will not be employed in those industries. They have to first of all recognize that, second, figure out what they want to do, and they’ll dabble in a number of things, and what happened to aerospace workers in the ‘90s is a real good object lesson for this, and then decide what they’re going to do, get trained to do that, and move into those fields, whatever they are. That process historically takes a long time, and that’s probably the slow growth, the slow adjustment part of California because, if you look across California in the balance, it actually does not look too bad right now.

MR. KOLKO: Jerry, thanks. So, again, that hasn’t been mentioned. Steve.

MR. LEVY: Potential success in reducing the growth in retirement benefits nationally and controlling healthcare costs, on the one hand, and second, I don’t know whether it’s been mentioned, but certainly for us, we’re tied to the world economy and either very much above average or below average growth in our major trading partners, I think, could make a substantial difference to California.

MR. COCHRANE: You stole my thunder, Steve. This is Steve Cochrane. I was going to talk about the global economy and maybe I could just be a little more specific. Two specific risks for the global economy, one is that if the European debt crisis were to really explode, it would probably have a very direct impact on U.S. Equity markets, which would then multiply through the pace of investment spending around the country, that would certainly hurt California. And then, at the other side of the globe, you know, the assumption is that the Chinese economy will, you know, slow down to a sustainable six to seven percent rate from its eight, 10, 12 percent rate over the past. If the Chinese are a little – if the slowdown is a little more bumpy, there is some difficulties there, then that could affect California through trade, as well.

MR. DIFFLEY: Okay, honestly, first I’m going to add a California condition that is less important, I mean, clearly what is going on in Washington, D.C. now, in terms of macroeconomic policy could have a huge effect if Congress and the President do something [quote] “stupid,” that would be something – and I don’t want to focus on that since it’s about California, but one thing that wasn’t mentioned, and I don’t consider this a big factor, but I’m actually surprised it wasn’t mentioned because it’s actually a big issue back east, in the eastern half of the country, and that is the opening of the expanded Panama Canal. Believe me, all of the Ports along the East Coast are assuming all that shipping that is coming in to LA – Long Beach is going to be coming around to their side, and they're getting ready.

MR. MICHAEL: I'll connect it to the earlier question about uncertainty in your forecasts and we haven't talked a lot about innovation and its role in driving the California economy, it's something that sort of vexes me as a forecast, is inherently unpredictable and it's going to be important to our recovery. You know, we observe the venture capital continuing to flow into California, we know that we have entrepreneurial climate and lots of smart people here, but innovation is going to be very important to our recovery.

MR. MEYERS: Can I have a different question. I think they've all answered it. I'll echo a little bit of what Jeff said, actually, I think it could be a big issue, could be a small issue, hard to know where it's going on, but California, I think, has a unique combination of skills and industries here to capitalize on this whole communication infotainment revolution we're going through. We all know it's happening, right, we all know that you can see movies a thousand different ways from every spot in the state, and this is causing some really dramatic transformations in the telecommunications field, the entertainment industry, in the computer technology and computer services industries, you know, that’s going to have global consequences. And California really is the focal point for a lot of those developments, a lot of brain powers here, a lot of research is done here, all the companies are headquartered here, and it’s hard to see where that’s going to go because we’re in the middle of it, you know, but I think there’s a potential there, and it may not be a next year thing, or a two-year thing, but that’s an area where a lot of good things may come the next few years and California could capture a lot of that, potentially, given our educational background, our existing industries, and the business environment here. This is actually really very good for those kinds of industries. So, that’s sort of, I think, a little wild card out there that might blossom someday.

MR. KOLKO: Let me thank all of you for those answers and audience for questions. It is 12:00, we’re going to break for an hour for lunch. When we come back, we will be five or 10 years into the future, which is a neat trick, talking about the long-term California economy. A couple of logistics. For those of you that have pre-ordered lunch, it should be waiting for you in Hearing Room B. I assume most of you know what that means probably better than

I do. But that's where that is. And I believe it is still the case that the Energy Commission will be taking written comments until February 2nd, and that process is announced in the workshop notice for additional comments based on anything you've heard so far today. I also want to mention that many of the questions that people have written down on cards will come up in the panel right after lunch because many of those are at least as relevant to the long-term as they are to the short-term future of the California economy. So, particularly questions about climate change, cap-and-trade, AB 32, several questions on that, we'll be sure to get to that after lunch. So, thanks, and see you at 1:00.

(Off the record at 12:02 p.m.)

(Back on the record at 1:05 p.m.)

MR. KOLKO: Welcome back. In this second panel of the day, we'll be focusing on the long-term future, so in the first panel we focused very much on the short and medium-term future, so what was likely to happen with recovery in California and beyond, and how long that would take. For the next hour and half, we're going to focus on the longer term view, what is California likely to look like once recovery is complete, whatever that turns out to mean, and what does normal mean as we think about getting back to normal. We'll have the same format as before, so I'll say a couple more things, turn it over to each of our panelists to give some two or three-minute opening statements, and then I will start a conversation going, open it up to questions and comments from Commissioners, and then continue with questions that you’ve put on index cards. You’ll be getting index cards again if you haven’t already, as before. Please write down anything you’d like to ask on those cards. Those who are joining by WebEx, we’re getting your questions over the WebEx, and including those as well.

So, in thinking of the long term California economy, I’d like to begin as before with a view of the recent – in this case, not so recent past. When we think about what has happened in the recent past, the data that you saw was a picture that California looked an awful lot like the U.S. In good times, California did well, in poor times, California does poorly, as well, but roughly rose at the same rate, when we look at job growth, as the U.S. overall. While this has been true for several decades, it wasn’t always true and, in fact, the difference is quite striking. When we look at the three decades immediately after the second World War, from 1950 to 1980, job growth in California significantly exceeded job growth in the U.S. overall. California is the lower bar, as you’ll see in a minute, the green bar, where growth over this three-decade period was roughly 3.7 percent per year, well above the national annualized growth rate over these three decades of about 2.2 percent. Now, when we look at the most recent 30-year period from 1980 to the present, growth has been roughly the same in California and in the U.S. overall, but clearly much less rapid, both for California and the U.S. Now, I don't mean to imply that something sudden happened in 1980 that caused a change, I'm choosing 1980 somewhat arbitrarily in order to divide this into two roughly equal time periods. There are, of course, things that happened around 1980. We could play a bit of a game trying to assess which policy factor or global development, or whatever else might have contributed to this difference, but the bigger point is that, even though in some sense California's economy relative to the U.S. may not seem so bad compared to those who argue that California has a terrible business climate that causes lots of firms to leave the state, the fact is, over several recent decades, growth in California has looked a lot like the U.S. But, if we have in mind this heyday period of post-World War II, when California's growth consistently exceeded the U.S., then the most recent 30 years, just keeping up with the country does indeed look like a disappointment and perhaps not as well as California should be doing long-term.

These are the types of questions that will inspire a lot of the discussion in this panel for the next hour and a half – what is California's economy like, what it will look like longer term, what are the factors that will affect jobs and other types of growth as we look beyond the recovery, how will demographics affect this, how will sectoral change affect policy factors of this, as well.

I'd like to start first with Brad Williams, who is the one person on this panel who wasn't with us in the morning. He is now with Genest Consulting and we're delighted to have you here for the second panel. We will start with him and then go down the panel to your left, hearing just a brief opening statement from each. And if you have slides that you want me to turn to, just let me know as you go.

MR. WILLIAMS: Okay, well, thank you, Jed. I think I'll just work off of your slide for my opening presentation. It's very interesting, I talked to Jerry Nickelsburg at lunch and one of his predecessors at UCLA, I remember about 20 years ago, said if you wanted to have a Nickel forecast of California and don't want to spend a lot of time, just take the national forecast for employment growth and add about a percent, and that was in the 1980's. So when we got into the 1990's, I think our rule of thumb kind of changed to maybe half a percent, and now, as you can see, I mean, over that whole period and certainly recently, we're perhaps about even. I think there's no question that California's heyday is long gone. I mean, back in the '50s and – 1950 to 1980 period – you know, population was 10-15 million people on average, now we have 38, there is simply less developable land, we have more water constraints, we have more people, more infrastructure constraints, and so it's unrealistic to ever expect that we're going to go back to anything remotely like what we looked at in that earlier period. But I think over the next few years, and perhaps over the next decade, I think we probably can do as well, or perhaps slightly better in the nation, part of that is simply, you know, I heard the panel this morning, it's where we stand in our economic cycle, California lost so many jobs, I think there is some potential on the up side for a little bit more growth in the near term, but kind of standing back and looking at it over a longer period of time, what's sort of interesting to me is, when you look at like California the last 15 or 20 years, it's really hard to kind of see what the underlying trend in the economy has been because the last 15 or 20 years have been so dominated by extraordinary events. You know, I think starting in 1990, you had the defense bust. I mean, California had built-in economy around aerospace and defense, that changed forever, and we lost a tremendous amount of jobs in the early 1990's that we've been struggling to replace, and we have to some extent, but that was kind of a permanent downsizing of a very very big part of our economy. Then, you get into the late ‘90s, you had the stock dot-com boom, the stock market boom, that created a tremendous amount of wealth in the economy, followed by the bust and the downturn that happened. And then, of course, over the last decade, the extraordinary real estate cycle. I think just one example – and we talked about this, this morning, about how much the real estate cycle has affected the overall growth – I was just looking at, if you looked at the share of GDP and you look at construction, real estate, construction-related manufacturing, and finance, it counts over the whole period from about 1997 to today of about eight percent of the overall economy. It accounted for 34 percent of the growth in the economy between 2001 and 2006, and 34 percent of the decline between 2006 and 2009. So, I think what, kind of, you know, looking ahead and looking kind of what the potential is for California, I think you have to try, and it’s very difficult to do because of all the ripple effects of all these bubbles, to look at what California’s underlying economy is doing when you take away those bubbles and those extraordinary sectoral changes. But, when I look at it, and I look at kind of how we’ve been doing sector by sector in a lot of different industries, my sense is that we haven’t been doing all that poorly, even over the last 15 or 20 years. If you look at GDP, the estimates, which I understand the data isn’t great, but we’ve actually gained market share relative to the country from 1997 to 2009, even though 2009 was, you know, the end of an extraordinary recession in California. And even within industry, manufacturing, high tech services, business services, we've seen some increases. It's partly a reflection of our industry mix, we have a lot of high value added industry, so the fact that they've been growing nationally, the fact that we have a lot of those, the industry mix has sort of favored us. But I think, even when you get down to very individual sectors, the picture doesn't look all that bad. It doesn't look as good for employment as it does for output because these high value added sectors are the ones that have seen incredible increases in productivity. So, businesses have met the increases and output primarily through capital investment and increased output per unit of labor. But that's generated a lot of wealth in the economy and I think that's a trend that we hope will continue. You know, there certainly are some big questions as we move ahead, you know, positive – we certainly have an innovative economy, a very creative economic environment, world class universities, companies, net works of venture capital and financing, and a lot of talented people with great ideas, and those are certainly key positives. I think one question, among many is, you know, we have a reputation as not having the best business climate in the world, we have tremendous challenges at the state and local governments right now, which were talked about this morning. And so I think it’s going to be a challenge for the state to kind of maintain or enhance its infrastructure, maintain a tax system that is friendly, skilled workforce, functioning public sector. And I think that goes back, I think, a little bit – a key is how we grapple with the fiscal price that is facing the state here in the near term, I think that is going to have implications not only for economic growth over the next couple years, but perhaps in the longer term. So, I think those are my opening comments.

MR. KOLKO: Can I just remind everyone to introduce yourself each time you talk, so those who are joining us virtually know who is saying what.

MR. MICHAEL: Hi, I’m Jeff Michael from the University of the Pacific. Looking at your graph there, the first thing that I noticed, you know, I always think of the ‘80s as the rapid growth period in California and part of that is, you know, I can’t remember life before Bon Jovi and Madonna, I’m in that generation, so I tend not to think earlier that much, and I think if we were to split that off in just the last 20 years, I think it would be even smaller -- or even slower growth. And I think that’s important because I think, the more we get the ‘80s out of our – I say the ‘80s out of our models of California, and even the periods before that, and come to grips with the fact that we're a slower growing state in the long term, and we need to bear that in mind when we make our plans. So, being a slower growing state isn't necessarily a bad thing, it doesn't necessarily mean we're going to be less prosperous. In some ways it could improve our quality of life, you could think of it as a maturing state. But it does have implications. And I'm sure we're going to talk a lot about those implications here, but one of them that concerns me is that I think it means that we need to be very careful about debt. Debt is a lot easier thing to manage when you're growing jobs at 3.7 percent a year and GDP at 10 percent, or whatever comes along with that. Certainly, rolling over long-term debt is a lot easier. I'm concerned our state is going in the wrong direction when it comes to debt, and we need to bear in mind this long-run growth when we get involved in these things. Second, I know we're going to talk a little bit about infrastructure later on, so I won't get deeply into that, but you know, we need to think a little bit about some of where we're investing and I'm very concerned about some of the mega projects that are being discussed in a state that is shortening its school year and what that means about our future. And I think we need to look at this slower long-run growth rate, not so much in the energy area, but in some of the other areas, and the big ones that are headlines now, in particular, are the high speed rail, and water, and take another look at these things with sort of a different projection of how fast we're growing in the future, and make sure they still make financial sense, and that we don't get ourselves into serious debt trouble.

MR. DIFFLEY: All right, Jim Diffley from IHS again. I thought your graph from decomposing the period from the 1950 to 1980 would open you up to the obvious political – and you could view it that 1980 was when Ron Reagan went to Washington, right? I ended earlier by emphasizing the robustness of the coastal economies of Los Angeles and the Bay Area and San Diego. Nevertheless, there, relatively -- in this relatively superior performance during housing cycle, seems to me leaves them, the coastal California, as very expensive places to live, nonetheless, right? As such, California remains at a competitive disadvantage with other states in the U.S. in terms of cost of living and, hence, cost of doing business, particularly with respect to much of the sunbelt where home prices fell so dramatically. So, we project moderate gains for California over the long term, about 1.1 percent job growth annualized, if you think about it over – talk about a 10 or even 20-year horizon, with business services and leisure spending actually leading the way in terms of jobs. We have about five percent – very close to 5.0 percent average income growth over that time, about 3 percent growth in real Gross State Product, just to put the forecast out there. Housing construction, we think, when it comes back, which will take a number of years yet, at a bit over 150,000 starts per year, with fully a third of them multi-family starts, which may or may not agree with some of the things that others said this morning. What are the big issues, though, going forward? Water, especially in the light of – or possibly even more severely in the light of climate change, congestion and infrastructure, generally, environmental both concerns and advances, I mean, dealing with environmental problems, but also taking advantage of green job or green technology opportunities where, obviously, California is well positioned to lead. Asian trade – Asian trade both in goods for reasons we've discussed, but also in people. The migration, the immigration into California of knowledge workers, in particular. Those are positives. The universities and training of California residents and the entrepreneurial vitality of the state, the continued entrepreneurial vitality of the State. If you think about doing a long-term forecast, the way we do this, we assume essentially, you know, the implicit assumptions in our forecast are that these problems are solved to the extent they're problems, like water and congestion, or continued to be solved in the sense of the Asian economies being strong, and entrepreneurial vitality and venture capital, etc., continuing to be drawn to the Bay Area and elsewhere in the state. So you remain with these comparative advantages over the rest of the U.S. if you think of the distribution of the U.S. growth. Regionally, the long-term growth in California in terms of numbers of people in jobs, and we alluded to this earlier, will be higher in the interior sections for a number of structural reasons, but the higher value added contribution to the economy will continue to come from the coastal areas. Thanks.

MR. COCHRANE: Thanks. Steve Cochrane from Moody's Analytics. When I started thinking about this, the introduction to this section, my thoughts were similar to Jeff in sort of thinking about when my preconceived notions of California were all about. Now, it happened about a decade earlier for me, back in the 1970's, maybe, and actually my recollection of the economy then was pretty bad in that, when I graduated from UC Davis in 1974, there were no jobs to be had in 1974, so I was thinking, "Well, geez, is that really what California is about?" And actually, of course, it's not, it's much better than that, but that was sort of my first beginning of thinking about this place as an economy and not as a place. I thought, given that looking at the 1970's isn't really enough, and looking at the 1980’s isn’t really enough, independently, but very similar to what Jed did, I put a chart together that actually goes farther back to help me sort of look at how, if we’re looking at the long-term outlook, we need to be looking at – if you go down to – if you’re trying to look forward, you need to look back a long way. So I went back a century, actually. And when looking really long term, again, I tend to return to demographics, but I look at a population, and what I did, we just have a new figure for a population for 2010, so I wanted to look at the 10-year intervals of population growth, California vs. the U.S., as a way of sort of defining California’s economy. So, that bar that you see there, it’s not the growth rate, it’s the difference between the growth rate of population in California over a 10-year period, and the growth rate of the U.S. So, you know, looking at relative performance. And the figure above that bar is the actual population growth rate for that 10-year period, not an annualized percent, but an actual percentage change. So, California’s strongest decade was the 1920’s, the population grew by 60 percent in the 1920’s, and that was about half again as fast as the U.S., that bar going up to 50. And so, I looked at this and I saw that, really, there’s three different periods that we can view California, and one is that California certainly had a long period where it was a pioneer economy, where people were moving to California in droves, and in good times and bad, even during the Depression, you know, of course it was very weak, but still pretty good in terms of California out-pacing the U.S. And then, that lasted, in my view, right through the 1950’s after the war, and a lot of servicemen moved here, and kept that pioneer mentality. Things seemed to change in the ‘60s, ‘70s, and ‘80s, where California still out-paced the U.S., but not be so much, I call that the expanding period when the economy was expanding and growing and becoming what it is today. And then you look at the 1990’s and the last decade, the first decade of this century, and that bar, you can barely see it, and that is indicative of the fact that California’s population is just growing right about at the U.S. growth rate, very very little difference. And rounding off numbers, we can say that, you know, one percent growth on average in California is about the same as one percent growth in the U.S., it has been slowing a little bit, but just to round numbers off. Now, if we think of California as being a mature economy, though, that’s really not all that bad, and the key for California is that it can at least continue to keep up with the U.S. If you look at other mature economies in this country, if you looked at New York, Illinois, Michigan is not a fair comparison, but many of the older mature economies, you know, they’re lucky to get .2,

.3, .4 percent per year rather than one percent per year, population growth. So, if California can maintain that, that's great, and that means it's still fairly good, long-term pace of growth over the next 10 to 20 years, and I think there's good reason to think we can for the reasons that you mentioned, in terms of immigration being an important driver, that California doesn't depend, like places like Florida, Arizona, Nevada, for huge waves of in-migration to support population growth, it's much more endogenous here. So, if we can assume that, then I think it's also, when we look at the combination of labor force growth and productivity growth, that we can assume that, over the long-term, California has the potential of beating the U.S., although given certain structural constraints in this economy, maybe we don't beat the U.S., but we're about the same. If population growth can continue to be .8, .9, one percent per year, my assumption is the labor force growth, at least in California, can outpace the U.S. because of the demographics, because of the young population, so that California has a comparative advantage in terms of growth of its labor force. Also, if we assume – and this is a big assumption because this depends on state policy, education policy, investment, and so forth, but if productivity growth can modestly outpace the U.S., as well, then you've got a good mixture of pretty good long-term growth because if you think of what the long-term potential rate of growth of the economy is, a quick back of the envelope method is to take labor force growth plus productivity growth, add those together, and you get sort of long-term rate of growth of the economy. So, if we can assume that labor force growth is something at one percent or slightly above per year, and if we can assume productivity growth being at a historical trend of maybe about one and a half percent per year, which is slightly above the U.S., and again, based on continued investment, continued attraction of well-educated folks, and development of well-educated labor force here, then we get a long-term rate of growth of maybe about two and a half percent, which, again, if we compare to the U.S., I would say, it would maybe be 2.2, 2.3, by a narrow margin, but over the years that compounds to be something significant over the long-term. So that's just to give you sort of a broad framework of my thinking of the long-term economy. In terms of industrial drivers, my just one quick point, we've been talking about technology, we've been talking about high value-added services, and so forth; the other driver that I think is very positive for the California economy, and we don't want to forget it, is agriculture. Now, maybe it's the Cal Aggie in me that makes me look at agriculture, but given the potential for global growth and what that means for demand for commodities, and particularly some of the specialty commodities that are produced in California, I think it produces another very important driver for the economy longer term and is a positive for the inland areas of California.

MR. LEVY: Jed, I want to show one of the population charts. I'm Steve Levy from the Center for Continuing Study of the California Economy. One more, one more, one more, okay. Three points, one, that the pattern of population growth, and these are actually Mary Heim's numbers from earlier this year, the pattern of population growth by age is pretty set in stone. Those percentages could go up or down a little, depending on how well we do in job creation as a share of the nation, but the pattern of that growth and its implications for energy demand are pretty stark. One we talked of before is that the demographics suggest people wanting smaller units because there's very little growth in the family household formation age groups, that you have two groups of people, kind of young professionals and retiring baby boomers who so far seem to be choosing to live in the more expensive, but more active amenity rich urban areas. I would also suggest that, as the Commission staff looks at the transportation demand going forward, that we get the level of detail necessary to really think about what a bunch of 75-year-olds and 85-year-olds are going to be doing in terms of VMT per capita, or auto use, or their car preferences, rather than just merging it in a blob. So, I think this point is pretty much written in stone. Go to the next chart and if we could just look at that for a moment. The second piece, and I think we're all agreeing, that will determine the relative rate of population growth compared to the nation is the strength of what Economists call our Economic base, those sectors that primarily export goods and services around the country and around the world. We have two of them that are not really in what you call the creative, innovative economy, Steve just mentioned one, Agriculture, where probably the outlook is for fairly sustained output growth as we export around the world, and the second is the ports, and I take what Jim said about the Panama Canal opening up, or whoever said that, very – it's well spoken, but the growth and demand from the people who trade with us is very large, so I think we're going to continue to see ports. But once you get beyond that, and you ask this question of economic strategy or competitiveness strategy, or business climate, or whatever, we live or die on creativity and innovation, whether that's the entertainment industry, or creativity in the design of furniture, or apparel, or buildings, or the many varieties of technology, our one dollar out of every two in venture capital, our competitiveness policy is about attracting very talented entrepreneurs and people, and having communities and infrastructure and schools that say, “Come and live and work in Palo Alto.” We can’t be everything to everybody and it’s unlikely that the return of auto plants, or paint manufacturer, or low cost manufacturing is in our domain of possibilities, so I think we’re building a state for the kind of economy we have. This is just a couple of fun things. I like to push back on the “California is terrible, everybody is leaving” idea, so you have Nevada ranked fourth by the Tax Foundation in Business Tax Climate, but they are actually better than fourth, they’re first, they have the highest unemployment rate, the highest foreclosure rate, and the highest percentage of budget deficit. Or, you could take Florida, which is ranked fifth by the Tax Foundation, which has the fourth highest unemployment rate, the fifth highest foreclosure rate, and I’m not quite sure where they are on the deficit. Go to one or two more. Go one – oh, you’ve also got New York ranked 50th in Business Tax Climate, having the same unemployment rate as Texas, who is ranked 13th, while Maryland, who is ranked 44th as having the worst Business Tax Climate, actually has an unemployment rate a percentage lower than both Texas and New York. But here is the one that Steve talked about that’s important. Somehow this economy, despite average job growth, which is not so bad, has had productivity gains, which has led to real Gross

State Product per capita above the national average and tripled what they had in Texas. And so, I’m suggesting that this whole issue of what makes a state competitive, of knowing your industries, of tailoring policies for your industries, and not the industries in Mississippi, is pretty complicated if you actually look at some numbers, it’s not absolutely clear that low tax rates, or low regulatory policy, have saved Nevada, as opposed to having a huge decline in housing and a huge decline in the tourist industry. I think it’s better thought about as your industries, in addition to your policies.

MR. NICKELSBURG: Thanks. Jerry Nickelsburg, UCLA Anderson Forecast. The nice thing about going last is that my colleagues have given all of my opening remarks, except, sorry, Jeff, I go back to the Mamas and Papas and Beach Boys. So, what I’d like to do is talk about long-term trends in industrial structure in California. And if you look back at the last three recessions, it looks like California has done a lot worse than the U.S. The unemployment rate really has jumped up to two, even close to three percent higher than the U.S., and there are lots of reasons that we can point to – aerospace, dot-com, housing bust, and so on. But underlying that, California has been in the process of change, a very fundamental and profound change, over the last 30 years. And you saw the demographic slides kind of going way back, and I thought that was great, the way the periods were characterized. What really happened was, in the ‘80s, which was a time of enormous immigration to California, California kind of filled up. So, it wasn’t the case that we no longer had cheap land, we started to have competition for the California lifestyle, particularly along the coast. That got built into the price of land, and that changed what we economists call comparative advantage because, basically, the concept of comparative advantage is you do what you’re best at, and that has to do with your natural resources, with the people who are attracted there, and the skills they have, and the cost of land, and transportation infrastructure and all of that. And so, what happened was that, when California filled up, we lost our comparative advantage in large, metal bending, riveting factories. And we used to do a lot of that, we were second only to Detroit in the manufacture of automobiles, and if you go back in the ‘60s and look at the forecasters there, they’re saying, well, California is going to surpass Detroit. It’s why Los Angeles has a huge auto show every year, even though you can’t find any automobile plants in Los Angeles anymore. We used to manufacture the majority of the airplanes in the world, commercial aircraft. We don’t do that anymore, we don’t do that kind of activity and that’s part of the change. And is that going to come back? Are we going to start making Barbie Dolls and commercial aircraft and all of the tires, all the things we used to? It's not coming back. It's not coming back because our comparative advantage has changed. Now, if you take this concept of the way in which jobs sort themselves out between regions, depends on what's in the different regions. And you look at, for example, Texas will be our whipping boy, I guess, for today because everybody likes to compare Texas with its better performance in this recession to California with its worse performance. So, if you take the jobs that have been created in Texas and compare those to the jobs that are created in California, and if you assume that the business climate were identical between the two, and you went to just economic theory and said, "What jobs do you predict would happen," you're going to get a match. Texas is creating the jobs that is their comparative advantage, they have cheap land, ample supply of labor, good transportation, they're doing the metal bending. That's not a California function anymore. But we're not losing jobs wholesale, we are gaining jobs and doing better than Texas in those things where we have a comparative advantage – the high value added technology, knowledge-based, trade-based jobs. And that's kind of a fundamental change. And so that's going to affect how energy is used, and how much energy is used in California, and where, and it's going to affect and has been affecting kind of the shape of the state. So, as we come out of this recession, we're closer to the completion of this transition, but historically major transformations in industrial structure takes decades and we've been at this for about three decades and we're starting to get close to kind of the end of this, and some people spoke of this as a maturing economy. It's really kind of a changing economy, which is an economy with a lot of dynamism in it. So, I'm not pessimistic about the future of California, I think it's been sort of a rough go making this change, but that's what's kind of dictated by the way in which the comparative advantage works.

MR. KOLKO: I'd like to start out the discussion by going deeper into this question about industrial structure, the shift both in the U.S. overall, and in California from manufacturing to services, understanding that both manufacturing and services are extremely broad categories, each of which includes some very high weight, some very low weight, some skilled, some unskilled, types of professions and industries. But the shift from manufacturing to services has gone on for decades, it has gone on in essentially every region of the country. In fact, the only exception was during the period of 1950 to 2000, LA's share of manufacturing actually went up, but that's the only metropolitan area in the country where that was true. It's been a long-term trend. So, two questions for all of you. One is, will this trend continue, and even more importantly, what does that mean? What does that mean for employment prospects? What does it mean for energy? What does that mean for the population? Anyone who would like to begin, please do. Steve.

MR. LEVY: Go back to –

MR. KOLKO: Yes. And while we're switching back slides, I just want to remind everyone here and online to please be writing down questions on cards or over the WebEx, that we'll be getting to in a little while.

MR. LEVY: Back, back one more. I'll defer to Steve and Jim, I think my reading of their long-term models is that there is no future revival in manufacturing jobs, that we'll be lucky to hold the losses to moderately long numbers, small numbers over the long-term. I think everybody here will agree that manufacturing output is rising, the productivity, however, is rising faster, and that we're producing more with fewer people. And so, whether you say manufacturing is less important than it was depends on whether you're looking at jobs or output and exports, and value added. It's not something that would rank high on my list of activities to chase, unless you're talking about the potential for developing some new product. Think of Tom Friedman in can we be the ones that invent the next battery, or something related to energy. But the routine products – I have to just throw this in because I looked it up the other day – China has fewer manufacturing workers than they did in 1996, productivity is worldwide in this sector. But even more important, if you look and ask what are the high wage, high growth areas of potential for California, it hasn't been manufacturing for a long time, it's the information sector, the folks around the Internet, the folks at Facebook and Google, doing the Internet applications and the social networking, it's the folks in professional and business services – show the next chart – those were good across in roughly the last couple of years, except for the recession, they're going to cross fairly soon when you talk about venture capital in my region in Silicon Valley, there is some early manufacturing, but mostly you're talking about people in computer services, and research and scientific services, R&D labs, who are developing the prototypes, it's my iPad designed in Silicon Valley, made in China, it's why in Southern California every global auto firm has an auto design center, even though we don't make cars. They pay really really well. The entertainment sector pays really well. So, it's a history to equate manufacturing with the path to high wages. The places where manufacturing is going in the country, in the world, are no longer paying high wages relative to what they did in the past, that's why some of the jobs have moved from Detroit or from California to other states. It is, as I think we're all saying about industries and the high growth industries here, there are plenty of them outside manufacturing. So, no, I'd like to say we invented the next battery here, and the Tesla took off and we manufacturing 200,000 electric vehicles, maybe, but the mature products are just going to get ground down by productivity and jobs are going to go lower.

MR. KOLKO: I'd actually like to shake this up a bit because, so far, it's been – maybe this is a post-lunch phenomenon, but there is a lot of acceptance of how things are in this discussion so far. I'm wondering, does anyone have any concerns from this picture? I expect, by the way, the third panel today will have a very different sort of answer to this, and so, you know, that's fine if you're forecasting different things, but for right now, what are the concerns with this picture?

MR. NICKELSBURG: So, the concern that I have with this picture is not that these trends are reversible or irreversible, it's what they really mean about the path to the middle class for Californians. And so, I'd like to kind of illustrate that, you know, it used to be that what you would do is, as a kid, you would go into the garage with your dad while he was fixing your car, and you'd learn a lot about mechanics. And then you'd go to a factory and ask for a job, and you know, "What do you know about mechanics?" "Well, I fixed a car." "Great." You can't do that today, you can't go to the hospital and say, you know, "I'd like a job running an MRI machine, I saw my dad run one in the garage." So, that's really a fundamental change. We don't address that at home because we can't. And we don't address it in our education system because our education system today is really a 20th Century education system, it's predicated on the same thing, that you learn the mechanical skills to get into the middle class and to get a good paying job at home, and here, you're going to learn how to go to college. And there's a huge middle road which I think we're neglecting. I think that's the scary part of this picture, is that that road to good paying jobs, which there are going to be quite a few, is not being paid very well in California.

MR. MICHAEL: This is Jeff Michael from Pacific and I spend most of my time interior in California, and so when I hear people talk about manufacturing, a lot that I hear about is, "Don't worry about it, we do other things here, we're high value added," and I spend a lot more time worrying about the interior California, so I do worry about it. You know, we have a huge unemployment problem there, we have a workforce – I think if we look at a macro level of this decade, I think we're going to see some transformation and some growth in manufacturing in the United States. I don't know whether that's going to occur in California or not and one of the problems is energy costs. There's no doubt that it's one of the constraints, as well as housing costs, and all these things that it's very difficult to make a good life in California on what manufacturing wages are in 2010 and will be in the future in the United States. But I don't want to – I think it would be a mistake to turn our back on this sector, I think it's for the regions in the state that we're looking to for growth, it's important they haven't – interior regions haven't been able to generate much of a manufacturing base beyond food processing and things that support the building industry. Sacramento is an example of a region which has very little manufacturing base, but probably has the potential for that to grow, and I don't want to write off this sector, I think it's important that we think about it.

MR. KOLKO: I'd like to follow-up with something that Jeff just mentioned and that was about the regional view, when we think about sectors. One of the ways in which manufacturing industries as a generalization are very different from services industries is that many manufacturing industries tend to be very concentrated in one place, and when we think of the big company towns, or places that center on a single industry, those tend to be around manufacturing industries. And as manufacturing declines as a share of employment, that has meant that there have been many individual places that have been very reliant on a single industry, that have been disproportionately hurt. Typically, most service industries exist embedded in a network of lots of other local service industries, whereas, often a manufacturing industry may be the only game in town. And, so, when we think at a local or regional level, often the most extreme cases that we see of places losing employment is due to the decline of a particular manufacturing industry, not always, there is recently, of course, Las Vegas, but often. Other comments. Steve.

MR. LEVY: Back to the last one. Okay. I consider what I'm saying a fact-based economic strategy, not turning my back on anybody. Texas, which probably did the best of any state, only lost 200,000 manufacturing jobs in the last 10 years, right? I don't want to chase the 20th Century. Jerry had a really good point, I sit on a work force Board for the past 10 years, I wrestle with that point all of the time, there are two points, 1) job growth is different than job openings. Over the next decade, I know it's hard to see now, there are going to be huge numbers of baby boomer retirements, carpenters, and plumbers, and auto mechanics, and repair people, all of the people who repair computers.

The way to a middle class job, and most do – Jerry was calling mechanical jobs you now do, even if it’s auto repair, you do with computers, so Puget Sound and our Community College has an auto mechanic program, but you better have good math and learn how to use a computer in diagnosing things. I think there are a lot of middle class job opportunities for people that don’t have to graduate from a four-year college. I think – I was talking at lunch with Tim Rainey about the workforce boards, I think, are way behind on making this adjustment. And I make the comments about manufacturing so we can move forward and give middle school counselors and high school counselors a correct message to tell their students who don’t want to be a rocket scientist, or aren’t going to graduate from U.C. how they get a good middle class job, not applying for something that’s not in the cards.

MR. KOLKO: Let me add one more question to the discussion. And then I’d like to see if there are questions or comments from the Commissioners who are here. But first, I’d like to tackle a related question to the manufacturing that actually came up in many people’s comments in the first panel, and that is the effect of long-term growth in California of climate change and other environmental policies. So, several people wrote on the cards. What do you expect to be the long-term effects on economic growth in

California of climate policy, in general, or cap-in-trade and other elements of AB 32, in particular, again, looking long-term. So, anyone who would like to start with that.

MR. LEVY: I've been talking a lot, but I've actually studied the issue for the ARB, so I'll defer, but –

MR. KOLKO: Anyone else – Brad looks ready to go.

MR. WILLIAMS: You know, when I think about AB 32, I kind of divide it into three general categories of effects and I think the first two, we can sort of identify and we might be able to quantify, the third one, I consider to be the wild card, the first two, I think, upfront, you know, the added investment that fossil fuel, using industries are going to have to make, the compliance with regulations. I think standard economic theory says it's increased cost on a business, it's going to result in reduced profits, perhaps reduced output, perhaps higher prices of their products, some modest negative impact. I think in the longer term, you get the benefits of perhaps less reliance on fossil fuels, more reliance on alternative fuels, better air quality, fewer emissions, those kinds of things. I think the real wild card in the long term is this hope that we have that, you know, by being a leader, California will be in a position to attract the new green technologies, the new green industries. We obviously have a lot of competition in this area from other states, and certainly from China, and you know, I think we can hope that this will happen. My sense is, in terms of policies, that if we have the right kinds of policies that continue to spur innovation, entrepreneurship, that we might have breakthroughs in this area that will enable us to kind of capture this industry. it might be, though, that we capture other industries that we don’t know about yet.

MR. MICHAEL: One impact of climate change policy, I think, is going to be to sort of – its impact is going to be to marginally slow growth in California, and I think is going to reinforce some of these trends we talked about earlier about having a slightly slower growing economy, but it doesn’t necessarily mean that it’s economically devastating, I mean, slower growth can be associated still with prosperity and a better quality of life. So, I’m in favor of our climate policy, but I do think it slows our long-run growth path. What does concern me about it is there hasn’t been enough, and I hope we see more discussion of the regional impacts of climate change policy and how it hits across California. I’ve seen some analysis of sectoral – industrial sectoral impacts, and what I see is, this isn’t a bad thing for the service sector, but it’s a bad thing for construction, it’s a bad thing for transportation and logistics industries, and potentially a risky thing for agriculture and some manufacturing activities. And these are a lot of the activities that are really at the heart of the economic base and a lot of interior California, some of the places that are suffering the most right now. These are also the areas where, you know, people need to use their air-conditioning, they don't have BART to ride around town. So I think I'd like to see, as we move forward in implementing our climate change strategies, I'd like to think a little bit about the regional differences. And one of the reason why I think it could potentially slow growth and, again, I think I'm talking about population growth and sort of the big picture of growth, not just the growth in incomes or prosperity, is because I think those growth slowing impacts are going to be in inland California and those are the very same places where we're all counting on that we think are going to grow like gangbusters because that's where the land is.

MR. DIFFLEY: Could I ask a question – Jim Diffley, by the way. Could I ask a question back to you, Jud? Because I noticed we're talking about the impacts, not of climate change, but the impacts of climate change policy change. Which is your focus here?

MR. KOLKO: So I had said policy, but answer either way, the effect of either climate change policy or climate change, itself.

MR. DIFFLEY: I'll just briefly then, and I haven't thought about the policy. It seemed to me, the question is very much dependent on what policy decisions are made, which is a wide open field, I'm sure. But the point I was going to bring it back to water concerns and the biggest concern, looking regionally at the U.S., at the western part of the U.S. is water going forward. Under a global warming, or even a moderately global warming scenario, that is a big negative risk for California, I am sure. I can't imagine how it's not. I mean, that's the underlying forecast, essentially. And Steve can respond. The biggest question I get when I represent the 30, or 40-year forecast – and we do this, but the way – is how are you modeling water demand in Nevada and Arizona and California? And, boy, I don't have a good answer.

MR. LEVY: You know, the modeling work that was done on the impact of AB 32 using, I don't know, either *Global Insight* or Economy.com, or both, we had a bunch of models, show negligible macroeconomic impacts over a 10-year period, you know, a half percent of the economy one way or the other, that's well within the margin of error. This is a race to the future and how you look at it depends on whether you think the future embodied by the policies of the Commission and of AB 32 is a cost-effective, environmentally friendly, better future for California, and whether you think, as Brad said, there is some advantage of being the state that gets to the future first. There's no question – well, there's a little question now because of the recession that our energy and emission use is so much lower than it was before, that the transition might be easier – but, initially, there was no question that the policies we're adopting are asking or inducing certain industries to cut back on their production. I mean, you're not going to be able to reduce immediately the emissions from a cement or petroleum refinery, or even automobiles, without cutting back until the efficiencies come in, so there are going to be some cutbacks. There will potentially – and the Commission went back and forth and eventually decided to give away the allowances free on this leakage issue of whether activity would move out of state – there is some potential loss of economic activities in certain sectors, but if you stop the policy every time a sector got hurt, rather than basing your policy on what happened to the whole economy, you'd be running around chasing your tail.

After 2020, the models show, much like the healthcare reform, that if you are on a path to success, the economics changes after 2020 because you've absorbed the cost because petroleum-based products are going to be fairly expensive, then, and you're into the only benefits period. And so, the only question is whether this state wants to absorb what the models say are some very small short-term restrictions in activities and slightly higher prices to induce us to get to a period where lower prices kick in because the economies of scale in the alternative energy generation become larger if we get to the targets. Whether we're willing to do that – Jim's question is a really good question because it raised the question of what's the alternative. And if the alternative is that climate change, if not mitigated, or local emissions, if not mitigated, are going to eat us up eventually, then it becomes a no choice situation. Whatever the short-term economics are, the economics in the long-term of not doing it are terrible.

MR. KOLKO: Let me now turn to the Commissioners and ask if either Commissioner Boyd or Commissioner Byron has questions or comments.

COMMISSIONER BYRON: I do, but I'm going to defer to the Economist on our Commission, and that would be Commissioner Boyd. My interest is certainly around the clean tech, and I guess it has to do with – I think the opportunities as to how it affects our economy from a policy point of view, but, of course, most of what we're doing here has to do with how – did I get the crummy microphone?

VICE CHAIR BOYD: No, this is it.

COMMISSIONER BYRON: So, from how growing the Clean Tech industry can affect us from an economic point of view, but also how will it affect our energy demand. And I think

Commissioner Boyd and I were just whispering to each other – I'll defer to him to ask some questions. I also see that you're getting a lot of cards, so I'd like to hear from our audience on their questions, as well.

MR. KOLKO: Thank you.

VICE CHAIR BOYD: Thank you, Commissioner, but I want to hear your questions, too. I want to engage in the dialogue just a tiny bit on climate change, which I've been studying for a decade and a half, back in the days when it was unsafe to say "mitigation." There was no AB 32, so we talked about "adaptation," or "adapting to what is going to happen because it's too late to do anything about it." You'll never mitigate what's happened so far, and we still don't talk much about the cost. And water is a key thing. I've spent eight years of my long working life in water and I've always seen the water system as very vulnerable, and it is in all the climate studies, and the Delta is a disaster waiting to happen. So, adaptation to continue delivering that scarce and necessary resource, water, is going to be an expense that we don't talk about much. The adaptation people within government were having a tough time standing on the same plateau as the AB 32 mitigation people were for some time, and it's going to come back, and it's going to have – the Natural Resources Agency did an Adaptation Plan, finally, and not enough attention is being paid to it, but it will be. But I agree that water has always been gold in California, and it’s going to be a serious issue. And I don’t have any disagreement with what I’ve heard. I’ve watched, and I think of poor Jack Stewart every time I hear what’s happening to manufacturing, but he is the CEMTA now, and he’s got to really emphasize the “T” part of that, the technology. But manufacturing has been slipping away from us over the years and I go back to the Limelighters and stuff like that. I was just wondering, we’ve got this push on Green technology, this agency is investing a hundred million dollars a year in alternative vehicle and alternative fuel technology incenting, and of that, we’ve spent $30 or $40 million in workforce development and training for that industry. And I’m just wondering, is California, in your opinion, going to do any manufacturing of green technology? Or are we just going to invent and China is going to build? I don’t know the answer to that, but I thought green technology development – and you can hear a lot of politicians are depending on developing a green technology and manufacturing capability in California, I don’t know if you see it has much of a future, and I come from a family that was in Ag and have always been a fan of Ag, and I think that’s Interior California’s last great hope if they don’t build houses on all – well, they’re not building anything right now on all the Ag land, but, in any event, I guess, except for the green tech, it's just kind of a comment on my part, I am curious about whether we've got any prayer of green technology manufacturing in the state, or whether you just don't think our labor costs can handle it and we're going to invent it all, and then it's going to be outsourced for manufacturing.

MR. NICKELSBURG: So, let me try to give an answer to that – it's Jerry Nickelsburg, UCLA Anderson Forecast. The answer is really yes and no. We did the innovation, the invention, and we do the manufacturing so long as that manufacturing needs to be close to the engineers and the designers and the scientists. Once it becomes routine manufacturing, then our high cost of labor and high cost of land means that you're better off not doing it here. And I think the perfect example of this – this is not green technology, but it's really illustrative – is Northrop-Grumman's Global Hawk. They designed it as a very sophisticated unmanned aircraft and they designed it in Southern California, they tested the prototype, they did the first production run, and then it became, at least part of it became, routine manufacturing. So, they manufactured the very sophisticated parts, it's all shipped off to Moss Point Mississippi, the assembly is done, it's brought back to California to Palmdale for final integration. That's really the model that we're going to see. So, again, you're not going to see the large factories with Rosy the Riveter in there making green technology devices, but you are going to see smaller factories as these products grow and they're manufactured. And there's going to be a turnover, and that's what we're seeing continually in California is this kind of turnover in manufacturing. As soon as it gets large, as soon as it gets to be routine activity, it goes elsewhere.

MR. COCHRANE: I would just add, this is Steve Cochrane, you know, you mentioned high labor costs. When you look at labor costs from the point of view of a unit labor cost, how many hours of labor to create one dollar of output, unit labor costs in California are actually just about average, but they're average because the things that we produce, the fiscal goods that we produce, and the service, are a very high value. And so, I'm only reinforcing, really, what's been said about this constant turnover in the manufacturing industry and, indeed, it's services, as well, it's not limited to manufacturing. But anything that becomes a commodity and prices then drop, all of a sudden unit labor costs soar if the value drops of that product. So it is the constant reinvention of itself that keeps California going, and that's sort of how I think of Silicon Valley and Orange County and San Diego, these places that are sort of the innovation leaders, is that they reinvent themselves with every single business cycle, just about. I mean, there's a reason why we have business cycles as old technologies kind of go by the wayside and new ones come on board. But I think you have to think about it as how can we keep reinventing goods and services, rather than how do we just expand – target one product to be a growth engine. How do you manage that? It's the turnover that really counts, and that's what keeps this economy going. So, I basically do agree with you.

MR. KOLKO: Thank you for those questions and comments. Are there other questions and comments, Commissioners Boyd or Byron?

COMMISSIONER BYRON: Open it up.

MR. KOLKO: What I'd like to do, as we did in the first panel, is try to cover a range of topics, and so I would ask if one person could sort of handle the answer for each question and, then, if anyone has strong alternative feelings or dissent, in that case, speak up. So, one question is about regional growth in California, long-term. What regions in California will see the fastest and slowest growth, and why? And, again, we're talking long-term.

MR. WILLIAMS: I'll just make a quick comment – Brad Williams. You know, I think listening to this panel today, when you talk about what is the key to our growth, you know, continued innovation, a lot of high value added, it seems like you're talking about the coast. And you know, you have the coast, then you have the inland sector, or part of the state, they're all sort of subject to the same overriding tax system, regulatory system, but you do have the prevalence of the high valued industries and the location of most of the workforce, and so forth, on the coastal regions. So, that would suggest pretty clearly the next 10 years, coastal doing better than the inland.

MR. KOLKO: Is that consensus or are there any dissenting views on that?

MR. MICHAEL: I think the economy will do better in the coastal areas than the inland. Some of the things we're talking about, I think, are going to slow the rate of inland growth. I think five years ago, some people were talking about some pretty crazy growth rates for the Central Valley that were kind of unrealistic in terms of two, three, four percent growth for some of the metro areas, they said, "It's going to be nothing like that," yet they will still be the fastest growing areas in California just by the force of demographics, alone.

MR. KOLKO: But let me ask this regional follow-up question and, again, I might sort of rely on Mary Heim from Department of Finance for demographic insight, are we at risk of a mismatch, where the fastest economic growth is on the coasts, where the factors that we talked about, like innovation, are most prevalent, yet the fastest population growth is inland? And if there is that sort of mismatch, does that mean very big differences within the state around employment rates? Does it mean very long commutes where the fast growing population inland commutes to the faster growing economies on the coast? Or is there some other solution to this puzzle? And before I turn that question over, I'm going to ask Mary if there's anything on the demographic forecasting side you want to add about where population is expected to grow in the state. Okay, so mismatch where economic growth is and where population growth is in the state, long-term problem, or not?

MR. LEVY: Most of what we call the inland areas are commute residential areas for the coastal economy. The Inland Empire lives or dies on the Central LA/Orange County economy, it's not a separate area. The locust of economic activity within the regions has been shifting eastward, and so western Riverside and San Bernardino County, Ontario, now have huge labor markets and office and industrial complexes, and so the regions have been accommodating that way. In the Bay Area, there's been an eastward movement, and so all of the East Bay activity is now actually fairly close to what we call Inland Empire folks in Tracy and Stockton and Los Banos, so the regions are adapting with an internal mix of activities. My guess is that the differential between the

Inland Empire, the inland areas that used to be cheaper, and the coastal areas that are expensive, is going to be counterbalanced by this demographic factor where all of the new housing growth is for folks over 55 or 65, and in the young adult category, where those folks are not primarily driven by cheap, large single-family homes, that the existing stock of single-family homes in places like Stockton and the outer parts of Riverside and San Bernardino Counties may be sufficient to house the demand in the future. So, all of the new growth may have a tendency, along with SB 375 to move in. I think we'll adapt to that.

MR. DIFFLEY: I would add, you know, the story of Regional Economics is a matter of jobs and people moving in both directions of causation, right? Migration will be the equilibrating factor. The reason why growth projects in the Central Valley started going up, say, 10 years ago, was the observation that migration was going up there in response to high housing prices on the coast. So, you know, one thing Americans are, and certainly Californians are, is mobile.

MR. KOLKO: Jerry, were you –

MR. NICKELSBURG: Yeah, I just wanted to add that this is actually a very difficult question and the reason why is that, you know, where we find the bulk of the unemployed construction workers is in the inland parts of California. And they're the ones that are going to redefine what they’re doing, they’re going to be inventing their new jobs, we don’t know what those are going to be, first of all; second, the Inland Empire has been driven for a long time by a logistics industry. As the U.S. grows, as U.S. consumers buy more and more goods, a wider Panama Canal notwithstanding, the Inland Empire is going to grow because the Inland Empire is where you have the transportation network and less expensive land. And then, we’ve had some talk today about the demand factors revolving around agriculture and California supply of agricultural products and processed foods, to the burgeoning countries of Asia, and we don’t know how that’s going to change. So, all of those things are really going to affect the inland parts of California. If those jobs don’t grow, and grow fast enough, exactly as was pointed out, the migration is not going to be there, these won’t be the fastest growing areas. We’re kind of projecting based on past experience that they’ll be the fastest growing areas from a demographic point of view, but it really depends on, you know, are the jobs created there. And I think that’s a very hard question to answer at this point in time.

MR. MICHAEL: Yeah, I would generally agree with that, you know, the incremental difference in the population growth could be quite a bit less than we’ve been thinking about for the last decade here in California, but one of the

– the challenges for these regions is, I mean, education, we have young populations, they don't have a strong education achievement, and it's really probably the biggest deterring factor from the development of other industries in the region. It's going to be interesting to look at some of these different areas and some of them are better positioned to take advantage of these things, and one of them is actually right here in Sacramento. Sacramento economy, you know, for the last 12 months has been horrid, potentially the worst in the State. And when you think about these long-run trends, and I think about these inland areas that have lower land costs, potential to take advantage of some of these trends, Sacramento is one of them that has got a little bit better educational infrastructure, much of that leads to the State Government, it has a lot of the advantages that other Central California areas have with respect to housing costs and available land. So, I think there are some areas in inland California that do better than others, and I think Sacramento is going to be one place to watch, especially when – I think some of the clean tech, green tech stuff is a little bit – you know, we can get a little carried away thinking about the scale that's going to get to, but there are some areas that have some potential there and I think Sacramento, again, is one of the areas that has potential to develop that industry.

MR. KOLKO: So, we have about 10 minutes left in this second panel. I'd like to ask a question that ties the first panel to the second panel a bit. Somebody asked, "How much of the high unemployment that we see right now is transitional vs. permanent?" And I'd actually like to expand that question to be a broader question of what, if any, do you think will be the permanent effects to the State economy of this recession? Permanent high unemployment might be part of your answer, something else might be, instead. So, permanent effects of the recession, if any.

MR. DIFFLEY: Let me start, then. Jim Diffley. I think essentially all of the increased unemployment is cyclical and not structural. I forget – how did you phrase the different – transitory vs. permanent? But that's not to say that we don't have a very big problem with people who have been very long spells of unemployment, and then make themselves -- and that becomes a situation whereby skills erosion, etc., they themselves become structurally unemployable, you might argue, as an effect rather than a cause.

MR. KOLKO: I'm sorry, Jeff?

MR. MICHAEL: I would agree with Jim, I mean, a lot of it is cyclical, unfortunately, it is a very long cycle, so this housing industry isn't a factory that off-shored to China or something, I mean, there will be some recovery there.

MR. NICKELSBURG: So, I'd like to disagree a little bit on that and say, you know, I think more of it is a structural and, of course, it may be just a definitional thing. The large number of people who are unemployed now, who were previously employed in the last decade in building homes, when we were building homes like crazy, at a rate above our average home requirements, you know, it's cyclical in the sense that, if they wait around long enough, eventually the housing market will grow as California's population grows, but I don't think they can wait around long enough. I think we do have a skills mismatch in California, where there are people with one set of skills and there are jobs opening up with other sets of skills. And that kind of unemployment, you know, lasts a long time, and that's what I call structural unemployment. There's a second piece to structural unemployment and that is, if you look at the duration of unemployment in the U.S., it's been rising over time, not just with recessions, it has a secular rise to it. And one actually fairly good explanation of it, although we Economists are looking at this and trying to find better data and really understand it, is that Americans are becoming more skilled, and more narrowly defined in their skills. And that means that, when you're unemployed, your duration of unemployment is longer because you try to protect that investment and those skills, and then you go out and you search, and you have to find out, well, maybe I need kind of a little bit different, so I'm going to lose some of the return on that investment. And so, I think we've got those things going on. There is certainly a big component of cyclical unemployment associated with this recession. In September 2008, basically consumption collapsed, that's all cyclical employment. But I think that which is related to the housing sector, particularly in California, and the growth in jobs which is not in the housing sector creates this mismatch of skills for what I call structural unemployment.

MR. COCHRANE: I think the – Steve Cochrane – I think the structural shift in unemployment goes to the shift in growth by industry that we talked about earlier, that in past years or decades, there was always kind of a safety net for employment in that, if you lost your job, well, you could always at least go get a job in retail somewhere; or, if you were skilled with your hands, you could go get a job in construction, there was some kind of a safety net in going to those industries that depending on either the demand for housing, or demand for consumer services. And over the next 10 years, again, the growth just isn't going to be there, that safety net of alternative employment, even if it's at a lower wage just isn't in there. If you look at unemployment rates for skilled labor, and for the high value occupations, the unemployment rates are remarkably low, very very low. But this is where some of the mismatch comes in, is that the structure of the economy now is a little bit different than the structure of the labor force, and that's where all sorts of policies in terms of education, labor force development, and economic developments intersect.

MR. MICHAEL: I think one quick comment, just a 10-second comment about agriculture, the people talking about it in the Central Valley is important; it's important to realize, though, for unemployment and job generation that there is a structural component of unemployment related to that and also that, you know, it's really been a good decade for agriculture, but we have not seen any job growth in this area, it's very much like manufacturing, that the labor is being pushed out of the process. So, while it's a good sector for investment and certainly a promising sector for our future, we shouldn't look to it or expect it to create the jobs that are going to solve some inland unemployment problems.

MR. KOLKO: One last question. I would like to be sure everyone has a chance to answer, and we'll start with Brad and go that way to Jerry, what would it take for California to grow once again faster than the U.S. in a permanent long-term sort of way?

MR. WILLIAMS: Well, you know, this is Brad Williams, I think that, again, going back to what I had talked about earlier and what I think Steve had talked about, I feel that our current mix of industries, our focus on high value added industries, means that, if you look at output as a benchmark measure for how we're going to be doing relative to the U.S., I think that, you know, if we get through this recession, the State balances its budget, and that no longer becomes a major drag on the economy, we perhaps undertake some more meaningful long-term reforms in terms of our State tax system, maybe our State and local system of government, we will create a positive environment that we can have an economy that will grow at or slightly better than the national economy, certainly in terms of output. In terms of employment, what would it take for us to get significantly above the national average? Hard to say. I think if one were to look at the next four or five years, I could construct a scenario where simply housing has been so low, so long, that even if it doesn't come back at historical levels, that a rebound creates little bit more growth and that we have high tech industries that are – right now, we have a lot of stock values, we see more stock option type of income, that reverberates through the economy. I can see that in the near term. I think, over the longer term, though, you kind of go back to some pretty basic constraints. We're more crowded than we used to be, we have resource constraints. It's going to be hard to put together a scenario where we have a lot more growth than the nation in terms of jobs and population.

MR. MICHAEL: And I think, as we get out after next year and into the future, we're likely to grow a little bit faster than the U.S. for reasons that have already been discussed, and people will continue to discuss, to get back to those extreme levels where we're really outpacing the U.S. I mean, that would have to be generated by low cost housing and a complete transformation of local land use laws, which is not going to happen.

MR. DIFFLEY: Jim Diffley. I agree, demographics will prevent such an experience, as you saw from 1950 to 1980. But the answer, quickly, to the question is Clean Tech, or, what I really mean, is *the next big thing* coming out of California.

MR. COCHRANE: I think it's almost impossible to expect that California will outpace the rest of the country, just the structure of the economy right now in California is, in a sense, a mature economy, and keeping pace with the U.S. is good, an average growth for California is good. I think the demographics are just so, at this point, against California in terms of being able to compete with some of the faster growing states in the Southeast and the

Southwest, but it goes back to how do you create that productivity growth. And you create that productivity growth, again, by (1) making sure the education system is there. How do you do that? I think there has to be a wholesale transformation of tax policy in the state so that it's more transparent, and easier to make real policy rather than go along in some proscribed nature that was proscribed maybe 10, 15 years ago, based on a collection of laws and referendums. In an economy like California, too, it's so much about quality of life, that if California can't deliver on quality of life, there are plenty of other places to turn to. And again, that goes to primary education, can a family move to California and expect that their kids are going to get that great education that we all expected when we were kids? I think I keep coming back to education a lot, and I'm a little bit like a broken record, but that is one very important aspect of quality of life and of long-term productivity growth.

MR. LEVY: I don't know whether you all can read this "invest or die," it's really what Steve said, we are in an economy whose only potential to do well, much less outpace the nation, lies in a set of creative industries and you can throw in the Ports. So you ask what do you do to succeed with creative industries? I can say "invest or die," or I can say make California a place that people want to live and work, live and work, we compete for people and companies, so Sarah and Jose have to find a school that their kids can go to that isn’t a private school, and a house that they can live in that doesn’t require a two-hour commute or a public transit system that gets them there, so we’re a world class economy. You want great schools, you want world class infrastructure, and you want communities that say, “Come here and live and work,” and that’s going to take some investment, they key to which I think is what Brad and, before him, Dennis and all of us have said, is that that’s why getting the budget balanced and started again on a growth path is the key because, without that, we’re simply not going to have the money or the trust to ask Californians to make the investments that are critical.

MR. NICKELSBURG: So, in thinking about this question of how could California grow faster than the U.S., one of the things that occurs to me is that California needs something that is going to stimulate it more than the rest of the U.S., and we’ve heard a lot of kind of the things that might do it, that might happen internally, but if you think externally, the free trade agreement that looks like it’s going to go through with South Korea is going to benefit California more than the rest of the U.S. And more of that, more international trade, we sit here in California and we tend to forget this, but we sit here on the edge of the Pacific Rim and we're, in fact, the capitol of the Pacific Rim, that throughout California, our large ethnic communities with deep economic, social, and language ties to every single country in the Pacific Rim, and not just Asia, but also in Latin America, and the more we are opened up, we, the U.S. are opened up, to international trade, the faster California will grow. So, that can be an external engine of growth. It will be good for all the U.S., but it will be especially good for California. And then, kind of along those lines, one of our major trading partners is Mexico, and if Mexico could ever solve their political and drug war problems, and the Mexican consumer could start earning more income and buying goods, that would be certainly a big boost to California's growth.

MR. KOLKO: Let me once again thank the panel. We started the day with near consensus about what was happening in the short run, and ended these first two panels with a range of visions from the very local, talking about the cost of housing and local land use laws, to the most global. So, clearly, the answers are diverse, you lived up to the set of Economists having at least as many opinions as there are Economists. So, thank you, and thank the Commission for organizing these first two panels. We're taking about a 10-minute break, back here at a quarter to 3:00 for the last panel where we focus more on specific industries. Thanks.

(Break at 2:37 p.m.)

(Reconvene at 2:55 p.m.)

MR. RHYNE: Well, good afternoon and welcome back. This is Panel 3. Our panel topic this afternoon is the Economic Downturn Impacts and Recovery Prospects for California Business and Industry. My name is Ivin Rhyne and I’m a staffer here at the California Energy Commission, I’m also an Economist and, in a previous life, worked out in the industrial sector in food processing and some other things. Joining us today is a panel of experts who bring to the table something slightly different than what our first two panels did, they are representatives of the business and industrial sectors in California and I will try to coordinate here the introductions from right to left. We have Bob Raymer with the California Building Industry Association, to his right is Iris Andre, is it, of CB Richard Ellis, to her right is Jack Stewart of California Manufacturers and Technology Association, to his right is Robert Callahan with the California Chamber of Commerce, and then, to his right is Karen Mills, California Farm Bureau Federation, and then, on the end is Sean Randolph with the Bay Area Council of Economic Institute. Today the panel structure will follow a similar structure to what we had this morning, we will open with about a three-minute introduction from each of the panelists, and we have some slides available that they brought to kick off the discussion. After that, we will have a discussion led by myself, I have some questions here, some areas of interest, some questions, part of which have been talked about to some extent through the first two panels this morning, but we will bring a new perspective to that, we will also invite questions from the Commissioners and, following that, we will have questions from the audience. I will remind the audience that if you have questions for our panelists, that we have the index cards that are available and going around, you can raise your hand, we have some staff members who can collect those, pick them up, they will be brought up to me and we'll include those in the discussion later this afternoon.

Again, as was mentioned this morning, our panelists today are here not necessarily as energy experts, but as experts in the economic questions at hand that relate to the energy sector. And so we will be kind of focusing on the economics, we'll be focusing on the business aspects of what we have here, and what we are discussing today, touching to some extent on energy questions as we get through the discussion later. So, with that, I think we'll start with Bob. I think you have some opening remarks.

MR. RAYMER: Yes, I do. If you could go to the first slide, the California Housing Production, last six years? There you go, thank you. I’m Bob Raymer, I’m Senior Engineer and Technical Director of the California Building Industry Association. And today I’ll be focusing my introductory comments on the state of the housing industry, and that’s not an Olympic ski jump up there, that’s the state of the California housing industry. And we’ll be covering that chart in depth. To put things in perspective, the home building market in California is experiencing its worst economic downturn since we began keeping statistics in 1955. Quite frankly, it probably goes back before that, probably to the Great Depression, but it’s just that’s when we started keeping statistics. Although the graph doesn’t show it, 2004, the graph starts at 2005, 2004 was actually slightly higher than 2005. We want to give you -- just simply look at the downturn here – in 2005, we had 209,000 units, that includes both multi-family and single-family, and we took a significant drop in 2006 to 164,000, and then, in 2007, we were down to 113,000 units. Now, given past practices, at the end of 2007, this is when you would normally have expected to see either a leveling off or an upturn in the economy. It’s also why columnists like Dan Walters with *Sacramento Bee* was indicating that revenue projections that the Governor at that time was using were somewhat rosy, and the same thing with the Legislature. Well, the fact is, past practice shows that we would have been leveling out, or starting to move up. In fact, when we went to 2008, the bottom had dropped off. We only did 65,000 total units in 2008. Instead of a recovery, we had seen a 40 percent drop over the last year. At that point in time, and once again, because no one would ever anticipate five years of reduction, the Legislature and the Governor were looking at rather rosy revenue projections for 2009; unfortunately, the bottom dropped out yet again, and we went to 36,000 units, another 40 percent drop, making 2009 the worst year on record. We then go forward to 2010, we’ve gone up, way up, to a total of 44,000 units. And, you know, I’m being facetious, that makes 2010 the second worst year on record, back to 1955, at least. Now, let’s talk for a moment about 2011, what’s coming. Our analysts with the Construction Industry Research Board used to do three to four-year outtakes of projected construction. He’s backed that off, he only does the one-year projection now, and he doesn’t like being all that public about this, but our internal office, we get these reports. Back in August, his projection for 2011 was 76,000 units for 2011, but in September, he downsized that by 2,000 units, to 74,000. Then, in October something rather remarkable happened, it was downturned yet again by 10 percent, he was now projecting for 2011 67,000 units, a 10 percent drop in projected production in just one month. In November, it dropped again to 64,000, and just recently, the December report came out, we're looking at 62,000 units for 2011. Now, given past practice, that is probably a rosy projection. We usually see a drop from the projection to actual construction. I anticipate we'll probably see anywhere between 50,000-55,000 units done. Now, according to the Department of Housing, what does all this mean in job loss? In 2006, we had 960,000 jobs related to residential construction. By 2010, that had dropped to 179,000. We have effectively seen 81 percent of our workforce go to the wind. A great many of these individuals have found alternative jobs outside of the construction industry, going into building rehab, a whole lot of them are still unemployed and collecting unemployment. Governor Brown and the Non-Partisan Legislative Analyst's Office are projecting a return to the normal job market occurring in the third quarter of 2016. So, in no way, shape, or form, are we going to see a rapid increase here within the next, I would say, two to four years; it's going to be very slowly, very gradually heading back up. It would be great to beat that 100,000 units of single-family homes by 2016, as one of the previous panelists was talking about. Simply put, we're at an economic abyss here that is as historically deep as it is wide. I guess later on we can get into some of the key factors inhibiting the return to the housing industry, the areas of norm, but I guess we could just go ahead and let the other speakers go ahead.

MS. ANDRE: Hi, my name is Iris Andre, I'm with CB Richard Ellis, and I'm the Managing Director. I oversee both on the brokerage side of our business, and we cover an area from the San Joaquin and Fresno boundaries, all the way up to the north state line with Oregon and over to and going to the Reno area, so we have a little over 200 employees that we work with, and obviously the larger company CB Richard Ellis, so I utilized here on our graphs that I'm showing – sorry if you guys can't see it, and if anybody would like any of this information, I can definitely forward it to you – but we have a group that is a sister company with our office, and it's called Torto Wheaton, and it's our Econometrics group, and they basically analyze data across the United States and across the world, and can piece in what is going on in each of the regions, both on forecasting for vacancy on the office, industrial, manufacturing, multi-family divisions, and they basically take that information from each market and then create forecasts and modeling of what they see going forward. What I've done here is I basically showcased on the top graph showing the projections, where we stand today on forecasts, and what average vacancy for the office market is, I only took one segment of our business, which is office, and I showed that, where we stand on vacancy across the United States, which is in that 17 percentile, so 17 percent of the market shows the average vacancy in an office building. Obviously, certain markets have higher and lower vacancies, but that is an average across the United States, and what we’re forecasting is that we probably won’t get back to an average, what would be a forecasted average, until 2014 or 2016. Obviously, certain segments of the market will be more successful and some will be less successful, depending on where they sit across the United States. Some of the pressure that you’re seeing here is that the pressure on lack of tenancy, or having tenants that are going to occupy the office buildings create a pressure on your rent, and so you also have now rent pressure by the landlords, so the landlords are seeing a squeezing of what they would normally collect in rent, as your average rent, and that is being pressured down, and we don’t see any normalcy of that coming back, and we don’t see that coming back to the high that we saw in years past, so we believe that it will come back to a normalcy back in 2016, but not to the levels that you saw at the high point. If you also see a pressure that we’re getting that we’re concerned about more negative pressure by lenders, many of you are probably seeing that the buildings that were sold two to three years ago were at their peak, and they weren’t sold on the economics of it making rent, so they were sold on a price per square foot, and you may see a building trade at a price of $50 million alone of maybe $43 million. What we're seeing is those same buildings are actual physical costs right now if you were to go and rebuild them, they're probably at one-third of that cost. And so, someone could go and build a new building for what that building doesn't show to pay back for that loan, and then, if you were to go out and value it on income stream, we're seeing that, again, you're probably at maybe 50 percent of that cost. So, lenders are putting pressure on the borrowers to do something with the buildings and, in the end, it may be a give back and the banks will be taking back the buildings. We're seeing increased opinions of values by our lenders, and putting pressure on the leas ability and whether or not these buildings will be taken back. So, it will again kind of put pressure on where we see this comeback of the economics of rent and whether or not there's going to be tenants to fill that space. On that second graph, it's just talking about – and if you can't see the colors, the bottom two are showing where the west and south sit – I'm sorry, the west and the Midwest sit – on the comeback of the economy, and they're showing to be lagging behind the other parts of the United States, and the reason for that is that we have a little more pressure on our labor cost here in the Midwest, so those things put pressure on it. Do we want to go through the balance of those slides real quick? Can I go to the second slide?

MR. RHYNE: We can go to the second slide, sure.

MS. ANDRE: On the top one, I'll go ahead and read through that if you can't see that. If I took the California statistics, just really quickly took the California statistics just for office, we have a little over 171 million square feet vacant in office across California. So, of that, we had negative absorption of 1.3 million square feet, so we went backwards last year and so that's where we're showing is that, for us to get back and caught up, it's going to take a long time to fill up that 171 million square feet. And then, the second part of that, which you may or may not see, it's just the state climate, it shows where California ranks and where businesses are looking to relocate. So, most businesses right now are basically looking at their labor costs, looking at a variety of costs, and basically trying to make good business decisions to relocate across the United States and some of them, this is just showing the trends and California doesn't come up in the trends of where they want to relocate. So, we definitely need to see that change, we'd like to see that, and for them to locate in our markets. Thank you.

MR. RHYNE: Thank you.

MR. STEWART: Hello, I'm Jack Stewart, I'm with

California Manufacturers Technology Association. And boy, weren't all those Economists depressing? Let's start off with that. You know, it just seems to me that, to write off manufacturing as an important part of our industry mix in California is a mistake and I just really can't take it that simply and say it's not going to be here, I think we have to work to keep it here. In the past, California's manufacturing has been dynamic because we've always had a churn of manufacturing jobs. We invent products here, we innovate products here, we scale up to production, and then we sell them to Californians and other customers around the world. Certainly, what's happened in recent years is that that equation has changed. We're doing innovation here, but we're not – and once we come to scale, it's not happening in California, it's happening someplace else, not necessarily in China. A lot of it happens in China, but it happens all other places in the United States. Just since the first of the year, I think there were three solar manufacturing – solar panel manufacturers with California headquarters, who have announced manufacturing facilities in other states, South Carolina, Mississippi, and I think Wisconsin. And these are, I mean, hundreds up to a thousand jobs that are related to a California company, but we're not getting the value of the middle class jobs that are being created, so it's not all going off-shore, it is going to some other states. In fact, one of the CEOs of one of the companies, it’s ATQ Solar, the CEO’s name is Michael Bartholomeusz – I think that’s right – said that, you know, California is a great place to incubate new products, but when it comes time to scale up to production, then we have to go look other places because – he didn’t say “because,” but it is because of the cost structure is so high in California. We did work with the Milken Institute and know that manufacturing operating costs are 23 percent higher in California than the average of the rest of the country. Our industrial electricity rates, alone, are 50 percent higher than the average of the other states. And, really, it’s been low, plentiful electricity or energy, actually, not just electricity, has really allowed economies to grow both in this country and in other countries around the world. And if we took off that plentiful and low cost energy in California, it’s definitely going to have an impact on our growth and our economy going forward. Some of the slides I have, let me just start off with those, higher pay scale sectors are declining in California, this is a snapshot – none of this is original research, it’s stuff that comes off from the other sources, this comes from EDD, EDD’s Database, Jobs Database, looking at sectors of the economy that are growing and shrinking, and this particular chart looks at 2001 through 2008, and as you can see, there are sectors of the economy at the top, including manufacturing, that were shrinking over those years, and also at the bottom of the chart are the growing sectors of the economy, basically the service sector. The sad part about this is, the really concerning part, is that the jobs we lost during those eight years were valued at about $69,000 a year. The jobs we created were valued at about $43,000 a year. And that has a direct impact on not only the individuals who suffer those wage losses, but on the state. We asked Milken to do just kind of a quick back of the envelope calculations on what that meant to state revenues, and basically, at $43,000 a year, an individual family of four doesn't pay state income taxes, they are pretty much exempt at that level. But you pay these state income taxes above $43,000 a year, and up to that $70,000 a year, and that turned out to be about $5 billion a year revenue hit to the state just on income tax, alone. So, it does have a really direct impact on the ability of California to balance its budget when we lose these high wage jobs. You can go to the next slide.

COMMISSIONER BYRON: And, Mr. Stewart, I just note this only through December of 2008, so it might be a lot worse.

MR. STEWART: Oh, yeah, it does get worse. The reason we cut it off at 2008 is we wanted to capture the trend of this decade and, once you get into the recession, it really skews those numbers because of the layoffs and losses of jobs in various sectors. But we fully believe this trend will continue into the future unless we figure out a way to make California more hospitable to business creation. Again, this is not a downhill slalom course, this is actually the loss of manufacturing jobs in California, thank you, Bob. As you can see, in the early part of the decade when we had the first recession of this century, we lost quite a number of manufacturing jobs, but the interesting thing that happened is, unlike other post-war recessions, we didn't see a return or rebound in jobs, they continued to fall off during the recovery of the middle part of this decade, and then, when you get into 2007 and beyond, you lose more manufacturing jobs. The total loss now is 34 percent of our manufacturing jobs we had in December of 2000 are now gone, that's 34 percent of our industrial workforce has been displaced. Now, that is not all because companies have moved out of California, some of it is, part of it is the high cost of doing business here requires companies to be more productive, and California certainly has a higher rate of productivity than other states. We rank at the top of that, and I always tell my companies – my members – that you congratulate them because they are the most productive manufacturers in the world and the most efficient; if you're not, you can't be here, you can't succeed, and you can't be competitive in California. Go to the next slide. Mr. Levy, Steve Levy, talked about the VC investment in California and I think that’s important, and California does get a lot of venture capital, in fact, over the last 20 years, we’ve received somewhere in the neighborhood between 40 and 50 percent of all venture capital has ended up in California. This particular slide is the work of a magazine or an organization called Conway Data that produces a magazine site selection, and what they do is they track for all manufacturing start-ups and expansion, nationwide, by state. What we did to create this chart is, then, we normalized that for population and this chart shows how many start-up or manufacturing start-ups or expansions you have per million workers in the various states. As you can see, the national average is 28.7 start-ups per expansions for manufacturers, for the average in the country. California is getting 3.7 of those. And so, we’re getting 3.7 per million. Or, as that turns out, we’re getting 1.3 percent of industrial start-ups and expansions in California, vs. the rest of the country. And with 12 percent of the population, you’d think we’d get somewhere near that fair share, but we’re not getting it. And I think it goes directly to the fact that we don’t have a predictable investment climate in California. California has become very regulatory – a high regulation state. And, you know, maybe that’s fine, I think there are a lot of very important things that we’re addressing – environmental, workplace regulations, etc., that are there, but what we’re missing is we’re missing some common sense in how we apply regulations in California. We really think we need to get a process called – what I call – “Smart Regulations,” so that we know upfront what regulations are going to do to the economy, to jobs, and to the state revenue before they’re implemented. I think it will have a positive effect on the regulatory agencies if they know there has to be an economic analysis done, and I’m not talking about an economic analysis done by the individual agencies that are writing the regulations, I’m talking about an economic analysis done by an independent body, so we can have confidence in the results. While the Energy Commission, I’m sure, does very good economic analysis, I really would prefer to see somebody else do that so that we have a better idea. And I think the Legislature also needs to have that information because they have to understand what it’s going to do to the long term viability of our tax system and our revenues to California. We have played a game, a game of Russian Roulette, almost, with regulations. We have a lot of good ideas, we implement regulations, and then suffer the consequences once the regulations are implemented. I just think there’s a smarter way to do it and I think that California needs to move in that direction. And then, go to the final slide. And this is – I didn't do this slide, this came from SCAG, Southern California Association of Governments, and they used Dunn and Bradstreet to look at business locations out of California from '07 to '09, this is the – all states were in the same recessionary period, the same economy we were, and I think there are 2,500 plus businesses that have actually changed locations from California in that period. This is a trend that can't continue. We need to preserve our quality of life without high income jobs, high salary jobs, and to just say that we just need to write that off and figure out what we're going to do next, I think it's incumbent on all of us to try to figure out how we're going to get more of the production back in California. So, I'll stop, I'm sure I'll have more to say later. But, for now, that's fine.

MR. RHYNE: All right, thank you, Jack.

MR. CALLAHAN: Well, thank you. I'm Robert Callahan with the California Chamber of Commerce, and I'm slideless today, so bear with me. I think I agree with a lot of what Jack has just stated and a couple of things jumped out at me, the conversation of the previous panel, and I think Commissioner Boyd asked a question, as well. Really, what are we doing when so much of our economic rhetoric coming from policy-makers in the state in 2009-2010 has been the reliance on green jobs, green facilities, green manufacturing, and the future really helping to carry our economic recovery, and sort of the scenarios that Jack just highlighted of solar panel companies leaving the state, you know, domestically or internationally. That should be very concerning to all of us. It is to us. The prospects of recovery for California, as the earlier panel noted, there's a lot of forces outside of our control that are going to play into that, but what can the State do to really, on the margins, improve the strength and depth of that recovery through sound policy making? And we see, you know, at the Chamber of Commerce, we've kind of come up with what we call the "Five Pillars to Economic Recovery," you know, Governor Brown has a very heavy task ahead of him, he has to focus like a laser on economic recovery in no small part because economic recovery is vital to fixing the incessant budget problems we have. We always talk about our budget deficits as being a symptom of the down economy and not vice versa, so what can you do, really, to improve that? Broadly, our five pillars of economic recovery as we see them, 1) reducing the regulatory and litigation costs for the job creators, the businesses in the state, to hire new employees and keep them on the job; 2) ensuring certainty and stability for private investment, that gets to our regulatory environment in terms of stability and certainty for those investors, so they know that their investments in

California are going to have long term payback and be sound investments; 3) the third pillar, investing in public works, including expanding our state's energy infrastructure, we think, is vital as the population increases, if we want to build our economy again, you know, there is an artificial low demand for energy right now due to the recession; as the state rebounds in the future, you know, that's going to increase again as we look more towards renewable energy, renewable portfolio standard, how are we going to get that transmission in order to achieve a 33 percent renewable rate in California? There are myriad issues of delivering those renewable energy sources to the places that need them, not the least of which is environmental regulations, the California Environmental Quality Act, we've seen the controversy surrounding the Sunrise Power Link, there are many California policy priorities that are constantly sort of running into each other, butting heads, if you will, as we try to protect our environment, protect our land use, endangered species, etc., but at the same time we want to build transmission for renewable energy sources, wind and solar, as we want to infill, develop to meet our SB 375 sustainable community strategy goals, but at the same time have environmental justice concerns in those same areas. It's very complex and there are a lot of issues that need to be addressed. I think, in order to invest in the public works that we need to maintain the attractiveness of California it’s going to require some regulatory reform of some kind; 4) a couple of the panelists, I think Steve, really hit on this several times, which was education, maintaining and providing a world class education system that can really help our students be geared toward the needs of employers in California. High skilled jobs, career technical education, etc., it’s a tough issue, but it’s one of our top 5; and 5) ensuring transparency and accountability in government, which Jack just alluded to. Economic analyses of regulations, economic analyses of legislation, currently policy-makers, legislators, only bills go to Appropriations Committee and Appropriations Committee looks somewhat artificially only at the impact of the State coffers. Again, if you recognize that our robust times financially were when the economy was booming, you have a situation where it’s really – it’s not a complete picture if you’re not looking at the effects on the economy and jobs, as well. Primarily, I specialize more in environmental regulations and legislation for the Chamber, you know, uncertainty is a big issue currently for employers, and that’s because there are several large 800 pound gorillas in the room, regulatory things coming down the path that we have to be cognizant of, AB 32, green chemistry and, again, the ongoing issues with CEQA. AB 32, you know, in the past five years we have two massive unprecedented undertakings in green chemistry, in AB 32, we have not yet implemented AB 32 to where we are – we haven't ascertained full consequences economically or on the regulated entities. Cap-and-trade, a lot of important policy decisions will be made this year, which will really determine what that impact will be. It is dependent upon State policy-makers to really keep the economy in mind. The EAAC Committee, Environmental -- Economic Allocation Advisory Committee, which Steve Levy sat on, and which was part of the Air Resources Board, the AB 32 analysis team, their own independent study showed that, if we did a 100 percent auction of allowances in the cap-and-trade program over nine years to 2020, we'd have a $143 billion impact on the regulated entities, that's $143 billion just to continue operating at existing levels. The LA Department of Water and Power would have incurred anywhere between $200 and $400 million annually just to continue operating. These unmade policy decisions, when you're an investor of a business, private investment, trying to consider moving to California is going to be a threshold issue, and we don't know what it is yet. The same goes for Green Chemistry. Green Chemistry, the previous Administration failed to meet a deadline for adoption of that new regulation, so it's up to the Brown Administration now to really rescue that regulation, which is supposed to provide a level of science and certainty and be deft to those who want to politicize the chemical management process which was what we were seeing at the Legislature. The two most recent draft regulations under the Schwarzenegger administration were so open-ended, we cannot look a certain member of our 15,000 members in the face and say, “You will or will not be regulated by the Green Chemistry Program.” We just couldn’t, it was so much discretion left to the department on how they would regulate those companies, you couldn’t tell. So, again, just hitting on the theme of certainty and stability being important to economic recovery, that’s kind of our mantra, going to be this year, in what we think as far as what California policy makers can control for economic recovery in the near term, things that will be vital to a not lagging recovery with the nation, but hopefully leading.

MS. MILLS: Good afternoon, I’m Karen Mills with the California Farm Bureau Federation. I appreciate your including the Farm Bureau in the discussion today and, with all the talk about green jobs, I’d like to point out that I think agriculture is probably the original green industry in California, and we like to continue to think of it that way. I’m not an Economist by training, education, or avocation, but you really can’t represent anyone in any of the business sectors without a cognizance of the bottom line, and the policies and regulations that impact the members' bottom line. I've provided a handout that provides some important facts about California Agriculture. You can see, and if you scroll down a little bit, it has some more facts, as well, that it's a significant segment of California's economy and actually very unique from the rest of the nation in terms of agriculture, the crops grown and the value of the crops, as well, and it also provides a significant job multiplier effect in the State. The farms and ranches in California represent steady and important contributors to the economy. We've heard some of the bad news, and in the last few years there was a bit of a dip for the agricultural sector, but it bounced back very quickly and it continues to remain strong and provide some high value crops and important export value to the state, as well. The farmland in California is a vital, important resource, and California's strength is based on its resources that it has available, and that includes land and water. And water, of course, continues to be a key issue for farmers in the state. It's the system in the state stretched beyond its limits, it continues to have a great deal of demand placed on it, and the availability of water and the impacts continue to affect the rural communities and their economic recovery, as well. You know, I would also like to point out that food security is becoming a more important issue and its availability and that affects how we view the strength of what California has to offer in terms of the diversity and strength of the agricultural products. And so the importance in terms of the energy focus, the importance of this information and the impacts to agriculture in California for the purposes of the IEPR, as we're talking about today, is it's an important driver of California's energy policy decisions. The IEPR refers to the number of venues that the PUC has relied upon in terms of what the projections are when we're talking about infrastructure being built, and also affects focus on how rates are to be set because of the revenues that will be approved for the utilities. And so, the energy rate saw a big driver for inputs to our sector in Agriculture and the focus on those, but also there is long-term impacts on California Agriculture from some of the decisions that are made on energy policies, and those include large-scale renewable resources that are being considered in the State, and have been approved, and impacts on land resources and transmission infrastructure, as well, which was mentioned earlier. So, as the rates go up and the impacts on land continues, California Agriculture will continue to look for innovative ways to grow their crops and produce new sources, but they will also look for innovative ways to grow their own energy, as it were, and there is a great deal of interest by our members in looking for ways to provide for on-site energy, whether that's bioenergy, which the Commission is involved in looking at, or solar, or wind, or other opportunities for that, even micro-hydro electricity, we have members who are interested in very small hydro opportunities. But as we continue to focus on that, there will also be a need to look at how the structure of moving forward with on-site generation is played out because there are some difficulties right now in getting it on the grid, as it were, in interactions with the utilities that are required. So, there's a lot of opportunities for change and improvement when it comes to the industry as a whole, and also as it relates to energy innovation on-site. Thanks.

MR. RANDOLPH: Thanks very much, Commissioners. I'm Sean Randolph with the Bay Area Council Economic Institute and I won't speak from an industry-specific standpoint, more toward how the economy is looking from the Bay Area, and while it's anything but rosy, I would say that the Bay Area is probably doing a little bit better and looking a little bit better than the rest of the State, and to the extent that the Bay Area sometimes leads where California is going, that might be taken as a little bit of good news. I've got some slides, but in the interest of time, won't necessarily go through them, but I'll rattle off just a few data points that would be relevant. The Bay Area Council did a survey of 500 CEOs in December and a reasonably positive outcome; about 40 percent thought that Bay Area economic conditions at the end of the year were better than they were six months previously, and that was six points better than the previous quarter survey, so that was a trend. More than half, 53 percent, felt the economy would be better six months from now, which was up nine points from the previous quarter, so, again, a trend there, 56 percent expected their workforce to remain the same, but 27 percent planned to increase hiring, which was good. Half the companies, 50 percent, with more than 10,000 employees, expected to increase hiring within the next six months, that was a 41 point increase over the preceding quarter, and the optimism that business conditions would improve in the coming six months was especially to note for business and professional services, manufacturing, IT, financial services, and hospitality, in particular. So, that only looks ahead about six months, but if we look back over the previous two quarters into mid-2010, we’re seeing a growing optimism from the middle part of 2010, at least looking ahead into the middle part of 2011. Part of that moderated optimism is based on a sustained revival in global and national technology markets, which is of course very important for our economy. In the region, and is really driving growth in Silicon Valley right now, last year global PC shipments were up about 14 percent, corporate and government IT spending and IT products rose about eight percent. And I think semiconductors are a pretty good stand-in for where tech is going because they're incorporated into virtually any tech product you can put your hands on, whether it's very high, or very simple things, and last year the global semiconductor market grew about 30 percent. The Semiconductor Industry Association is expecting a continued rise this year, powered especially by markets in Asia as they've powered the industry for quite a few years, which is good for us because a lot of what we've produced is sold in Asia. And to the extent that one company can be seen as a stand-in for where the industry is going, it would probably be Intel. Their last quarter of 2010 saw a 48 percent jump in profits and 8.4 percent increase in revenue. A lot of that was powered by sales of servers to support growing Internet traffic and they're looking now to a 73 percent increase in spending on new plants and equipment to keep up with chip demand. So, I think all of that bodes reasonably well for continued growth and recovery in technology, which is good for California and it's especially good for the Bay Area. Hotels and tourism, which is another big one, especially in San Francisco, it is well below its last high in 2008, but last year saw recovery in both occupancy levels and daily average room rates, a modest recovery, nothing spectacular, but a recovery there that's being reflected in hospitality across the board. And I think there's optimism that that's going to continue to improve this year, as well. Commercial real estate, sort of a mixed picture, but looking a lot better than last year. Right now, we have seen a pretty significant pick-up in commercial real estate activity in Silicon Valley, and in the second half of 2010, a lot of new leases, a lot of lease renewals, trends are decreasing vacancy rates, expectation that there will be more than a million square feet of net absorption in the Valley this year, compared to about 75,000-feet of negative absorption the first half of 2010. So, the Valley is picking up. The City of San Francisco, itself, vacancy rates will probably stay in the 12-15 percent range, which is better than 18-20 last year, so we are a little bit better. A lot of the good news there is being driven South of Market where tech firms like SalesForce and Zynga and Facebook and Google are expanding, in Silicon you have a lot of space very quickly, which will probably expand into the Financial District later on in the year. Last year, downtown rents grew about two percent South of Market, a lot of the tech stuff going on about seven, so commercial real estate not flying, but coming back and it should continue to come back again this year. I think, consistent with what we were hearing earlier, housing is really a mess and that may not come back to prior valuations until 2015 or 16, depending a lot on where you are, the City or the County you are in, tremendous variation, so San Francisco is wildly different from Contra Costa County. It’s very location specific. But nevertheless, at the end of last year, as from November, new and resale home and condo sales were down 11.2 percent from the previous year. Median price was down 1.8 percent from the previous year, and that was, let’s see, $380,000; our peak was $665,000 in 2007. So, a long way to go and so far not bouncing back, although, again, you have to look at the specific city and county to get your real answer. Foreclosure sales, almost 30 percent of the market, and one reason we don’t think housing is going to be coming back any time soon is there’s a huge inventory of foreclosed homes, homes that are two months delinquent and will go into foreclosure properties; banks have been holding off the market, they’re going to put on the market, and a lot of banks held off foreclosures for a number of months last year because of processing issues, but they’re going to pick that up again. So, I don’t think we’re going to see any relief in the housing market this year and it’s a slow crawl-back for the next three years, at least. So, not great for construction, and even the pick up, I think, in commercial occupancy is not at a scale that’s going to stimulate commercial construction for several years, at least. So, that takes us to unemployment. Right now, San Francisco, it’s 9.1 percent, up a little from last year. Oakland-Fremont up a tenth of a percent from last year, so it’s not really going down, but better by half a percent in San Jose, Sunnyvale. So that means Silicon Valley is actually coming back pretty well. Again, I think a lot of the net issues are in terms of sustained unemployment, I think, as Steve Levy has written, are due to the lag in construction activity. The rest of the economy is actually doing reasonably well. The last thing I would mention is venture capital because it’s a pretty good indicator of where the economy is going, and tech. The number of funds is shrinking, the size of funds is shrinking, it’s getting harder to raise capital. Nevertheless, despite there being contraction, I think a lot of VC firms will tell you that’s not a bad thing, there are probably too many VCs spending too much money. The better firms are surviving and investing and they’ll do just fine. The good news is that the number of venture exits right now, either through M&A and IPOs is actually getting close to the number of the last peak in 2007, so they’re coming back. Venture companies can make money now. The bad news is the figures are far far below the net in 2007. They were $39 billion last year, they were $69 billion in ’07. A lot less money on the exits, but at least companies are being sold or exiting, and that's good for venture firms, and the latest polling or survey of venture firms found that, and I think this is, again, pretty good news for us, more than half the VCs surveyed expect to increase their investment in 2011, and two-thirds of VC's, 40 percent of venture-backed CO's expect to increase the number to see more venture companies going public this year, and also expect to see more hiring by venture-backed companies. So we're seeing growth and new activity on the venture side of the equation. International trade is good for us, too, this was probably discuss a bit earlier, but it fell dramatically in '09, that's bad for us, it's about 60 percent of everything we make is sold outside the U.S., trade through the region fell 10 percent last year in '09, but it grew 15 percent in 2010. So, that's going to be good for the economy, we think if the global economy recovers faster than ours, that's going to be helpful on the trade side. Lastly, we're seeing pick-up in airport activity, partly domestic, primarily international traffic, international cargo is up, so, again, another good indicator of what's going to be coming. And, finally, clean tech, a lot of optimism about clean tech, but I think, you know, the numbers for clean tech hiring are wildly disparate, they range from 120,000 to 500,000 in California and you can't even define what a clean tech job or a green job is, it's a little bit hard to say what the impact is going to be, except that we are concerned that we're probably not growing the production jobs the we could and should to benefit from our advantage in R&D and venture investment, we think it's a great long-term play for California, but not enough to move the ball very much in terms of the current recession, or the recent recession. So, I think long-term, we're seeing – I think we're out of the woods in the Bay Area, we're seeing positive growth, positive trends, except for employment and residential real estate, but real concerns about some long-term issues, including under investment in infrastructure and under investment in education.

MR. RHYNE: All right, thank you. So, we're going to move into the part of this where I get to ask a little bit and get some responses. So, one of the keys to this panel is that I think that industry has what I'll call "skin in the game" in the sense that forecasts aren't just an interesting number, that they must make investment decisions, business decisions, and actually take risks based on those forecasts. And so, I'm going to ask the members of the panel, first of all, what do you think the strategies are for your particular industry or for your region for businesses in the short-term to deal with this uncertainty? In other words, how robust is the recovery going to be? How prolonged will the drop in demand for different products or services continue? And so, what are the strategies being taken to deal with that? And then, when do you expect this to kind of turn to a more optimistic or, if it is optimistic, to an even more robust outlook? And we'll start, again, with Mr. Randolph here.

MR. RANDOLPH: Well, again, I don't think we're going to see anything in the way of good news on construction of any kind for at least three years, and there's not very much to be done about that. I think housing construction will be the slowest. Again, I think there's a lot of optimism about green tech, certainly there is a good amount of venture capital going into it, lots of R&D going into it, lots of federal money that got poured into R&D, and loan guarantees, a lot of it through the Federal stimulus program, that's making its way to the system, some of that is going to pay off, new companies, more production. I think the question is not all that will work, or survive, but how to capture that. Again, I think for us, you know, so much of our economy is also linked to global markets, and to the extent that we can continue to benefit from that, things like passing the U.S. Free Trade Agreement, a big trading partner can help, what happens with access to China's market can help. More than half, or about half of all that we sell in the Bay Area, which is true of the entire state, goes to Asia, so our interests are already frontloaded in Asia, and I think that gives us something to work with because right now, aside from a few other places like Brazil, Asia is where the growth is, and where the growth is likely to be for the foreseeable future, much more so than in Europe or anywhere else in the world.

MR. RHYNE: Thank you.

MS. MILLS: Yeah, for Agriculture, I think one of the important things to keep in mind is the difference between permanent crops and annual crops, and so, as growers look at inputs and whether it's water, and what their decisions are going to be made based on water availability, I know here are increased allotments this year, but it will help annual crops, but not so much permanent crops, and that has an impact in certain parts of the state. And that applies to the dairy industry, as well, other types of permanent crops or segments of the industry. Obviously, when you're not sure about what's going to happen in the future, based on inputs, your changes go slow, and certainly that's the case for some of the inputs, whether it's water, or fuel costs, and labor availability, of course, is a big issue for many of the segments of agriculture in California, so if the outlook doesn't – isn't set and assured in those areas, folks will be slow to change what they're currently doing.

MR. CALLAHAN: Robert Callahan. Just real briefly, we represent a broad, diverse business as we don't represent a particular industry. I think, generally though, the feeling of economic and regulatory uncertainty has been an impediment to investment in the short-term, and I’ll give you a quick example. AB 32, we had several member companies who had money and were profiting, ready and willing to make energy efficiency investments in the short-term; however, due to regulatory uncertainty, didn’t know how they would be treated and if those energy efficiency upgrades would be used against them in the future under an AB 32 regime. So, that’s an issue in terms of investment. Green chemistry, we don’t know how any innovative new products, greener products, less toxic products, what sort of protection those products have for confidential business information, or trade secrets under the program, we don’t know what level of micromanagement the Department of Toxic Substances Control could have in regulating those products. So, with that uncertainty, we see even those with the capacity a bit unwilling to invest in the short term due to all the uncertainty.

MR. STEWART: For manufacturers, I think orders are up slightly, but there is a great deal of caution into whether or not we’re going to actually invest more dollars in California plant equipment, one, and in new workers. I think the question is, as we’ve stated several times now, there’s a predictability of what the costs are going to be.

Certainly, AB 32, looking forward, although we decided to distribute the emissions credits this first go around, three years after that, there will be another process used for that, whether it's an auction, or they decided to issue them free again, that could happen. But, for a business who is looking at investing in California, that is a huge unknown, and you have to make your decisions on what your costs are going to be. And when you don't know what your own energy costs are going to be, except you know that they're going to be 50 percent higher than the rest of the country already, with some added costs on that in the next 10 years, then I think you're going to hold back and wait until you see. And I think we all thought that the clean tech industry was going to do much better in California. I mean, my guess is that most of the modeling that was done by CARB and by others factored in a growth and manufacturing in clean tech products.

MR. RAYMER: They did.

MR. STEWART: And unfortunately, we're not seeing that some. In fact, there was a study that was released last month by UC Berkeley looking at green jobs, clean tech jobs, over the next 10 years, and I think the number was somewhere just north of 200,000 total jobs in the economy, in California, I mean, that's about the growth of our work force in one year, not really as a salvation or a solution to our unemployment problems. And I think this all kind of comes back to – the economists talked about – the Economists talked about construction, well, you're not going to get construction until you have workers who can afford to buy houses, and can afford to invest, and you're not going to get workers who can afford to invest until you do some predictability and some certainty in the investment climate in California. And so, I think it's a multiple piece equation and we have to start by looking at how we're going to encourage investment in California beyond just the VC investment of innovation and for the start-ups, and how we're actually going to get those companies to come here. A couple months ago, I was at a conference and heard the CEO of a company called Blue Fire Renewables talking about they have a cellulosic ethanol process by which they use the waste stream to create ethanol. They're a start-up company based in Irvine, California. They spent two years and $9 million trying to cite a plant in California, and they wanted to cite in California, Lancaster, California, and finally realized it just wasn't going to happen. They switched their focus to Mississippi, and in nine months, they had their permits and they're ready to break ground in Mississippi, and the plant will produce five times as much ethanol as the plant they were looking at in California. We've got to get our priorities straight. Do we want jobs here? Or do we want a clean environment? I believe you can have both, I really do. But I think there has to be some better consideration used in how we get there, it's – we talked earlier in the earlier panel on AB 32, you know, the difference between policy costs and adaption costs. Well, California is likely to get both hits, one is the policy cost first, and then the adaption cost coming behind it, and it just seems that we need to be more realistic about how we go forward on global warming in our policies when we really don't have a very clear view, or – I guess we do have a clear view that California going it alone will not solve the problem, it's not going to fix global warming. How do we make sure that our economy doesn't suffer the unattended consequences of a policy that is really not going to make a dramatic difference in the worldwide climate, the worldwide economy?

MS. ANDRE: You know, what our clients are doing is they're looking to keep their tenants, they're doing everything in their power to keep the tenants that they have. If tenants have to downsize or there needs to be rent adjustment, there's rent adjustments that are being made. There's rent abatements. In retail, we can look at the cost of their business and make determination of how to abate the rent and get the rent to something so they will continue to survive. So, our clients are doing everything in their power, but all of it is a cost to the landlord. The landlord is having to take a hit on their books and their profitability, and basically keep tenants. At the same time, what they're doing is looking at ways to reduce operating expenses. We've gone through and done everything we can to implement energy and energy efficiency controls, we've gone through everything that we can to be able to equate to anything that's out there, but beyond that, that cost was small in comparison to where we see our largest operating expense changes is going back to the end-user, the vendor, and asking the vendor to make cutbacks. When the vendor makes cutbacks, he's making cutbacks to his labor pool, to effectively do the same sweeping, the same janitorial, the same services, at a lesser cost because he wants to keep his business. I think the biggest concern is, in the end, we're all hurting ourselves because we're all being impacted by the fact that we're asking everybody to do more for less, and I think we all feel that in our daily workforce that we're doing more for less, and we're asking our vendors to do that, our tenants are asking us to do that, to give them more, and get less, and we're having to all adjust our mindset of what we're doing to do business here in California. And I think it's hard to see where the success is of this. I mean, I see every single lease transaction that takes place, and where I see a number of lease transactions taking place, but are they successful lease transactions? Are they better than what they were? No. They're basically resetting. If you go back 10 years, we're back at rents that were 10 years ago. And this reset is something that's hard for most people who are doing business here and buying businesses here, and buying buildings, to say, "Is this a new normalized level? And should I re-expect this as my future?" And I think there is going to be a reset point, and I think everybody has put this downward pressure on all of our operating, and we need to see that as something that everyone is going to continue to have to feel, that pressure, because just like at home, if you can't afford the dry cleaning and some of the other services, you find other ways to do it, and our tenants are doing that, and our vendors are doing that, so we're all trying to skinny up as much as we can. I think you were asking for what would be the success, I think at the same time where the successes are is that we're seeing that businesses will look at California again, once that number and that cost to do business in here is met to that number where they can sell how many pieces of t-shirt it takes to sell and that rent equates out to a number that they can sell again. So, it's that resetting that number to a cost where they can do business here in California. And we are starting to see that, but it's at a terrible hurt to everyone involved.

MR. RAYMER: Okay, Bob Raymer with CBIA. Looking at sort of the growth industries in California, the residential sector and, to a certain extent, the commercial sector, there's most definitely the rehab and remodeling of the existing homes and condominiums out there, to a much lesser degree apartment buildings. Why is this so key at this point in time? We've got 13.5 million dwelling units in California, that's a combination of both multi-family and single-family. Of that 13.5 million, two-thirds of them were constructed prior to the effective date of the first set of energy efficiency standards. So, effectively one out of three homes in California was built to some level of energy efficiency mandated by local and state government. And so, given the inability or the tightening of lending regulations that the lending institutions have put forth for both builders, developers, and home buyers, the home buyers are in many cases staying in the home, they're trying to figure out a way to increase the value of that home, they're also trying to figure out a cost-effective way to reduce the monthly energy bill. And so we're definitely seeing a lot of the unemployed workers from new construction move directly into rehab and remodeling. In addition, in the next three or – by the way, all of these have an asterisk that I'll cover at the end – local government, we're going to see, not that you would think that's a growth industry, but right now, they have had staffs decimated, the local building departments in the 500 cities and counties in California have seen their staffs reduced significantly. A case in point is we were doing training for the new energy Regs and the new Green Building Standards, we're doing training down in the San Diego area. What used to be a large jurisdiction had two representatives there. They used to have a staff of 23; their entire staff of two was there in 2010. And one of these guys was a transfer from Planning and Land Use. So, the people that would normally be doing plan check and out in field inspection in this jurisdiction for both residential and commercial, they're the whole show. And one of them has no experience in this area. As the economy starts to slowly increase, we're going to have to see this local government sector sort of increase along with it. Tied to that is third-party entities performing plan check and inspection. This has been sort of a relatively new phenomenon over the last 15 years, we have seen private sector entities set up firms that effectively assist in contract with local government to take over some or all of their plan check and inspection duties. This first started with structural requirements in the Codes, certain fire safety, disabled accessibility, and then, of course, energy efficiency in the late 1990's. Now, we're seeing these companies look at green building, as well. We've also got other companies that are out there that do green building only, and the local jurisdictions can, if they don't have the in-house staff, can go ahead and contract out with these private sector entities for some or all of their other duties. In addition, given the fact that we've got well over 9 million units out there that were built to no energy Regs, they may have had some type of retrofit over these many years, but we're going to see a huge increase in residential energy audits and commercial building benchmarking. There are requirements that are either already in place, or are going to be in place, it's simply – this is where the state is headed. And we're going to have to have competent people that can go into either residential, commercial facility, have the understanding of how these energy systems are supposed to work, and how they can ascertain whether or not they're doing the job that they're supposed to do, that they were designed for. And so all of these are sort of tied together and we'll see growth in them providing that people, homeowners, either those in the existing homes, the ones that want to buy new homes, can get the loan and that the builders and the developers can also get the loans to go forward with the project. For those of you in the audience who have tried to buy a home in the last year, it probably hasn't been a pleasant experience; it's certainly been a very expensive one in terms of out-of-pocket. We've seen the upfront down payment that is required by both builders and homebuyers rise substantially, depending on your credit rating and your relationship with the bank, developers have seen this down payment go up between 20 to 50 percent. For homebuyers, it's not uncommon to see major lending institutions requiring, instead of a two and a half, or five percent down payment, now requiring a 20 percent. Last week, Wells Fargo announced that they're thinking about going to 30 percent for a home. So, just do the math, a $300,000 home, you're getting very close to an out-of-pocket expense upfront of $100,000, just to purchase that new home. So, with that, one of the things that needs to happen is we need to get the lending institutions to embrace both energy efficiency and distributed generation. They have been, I would say, talking a good talk for the last 15 years over at the Legislature, but they need to get down to it and do it here in California. Unfortunately, what is considered an energy efficient home in Mississippi is much different than an energy efficient home in California, and the fact is, the banks look at things somewhat similarly throughout the States. And what we need to be able to do is explain to them clearly in a way that they can understand that there is value to the home that will be built to the standards that take effect in 2014, vs. the home that was built to the 2010 standards. And that is a very difficult task. The lending institutions need to embrace that, they need to embrace the fact that, by trying to go to zero net energy, we're not going to have one or two kilowatts on the roof, we're going to need six to seven kilowatts on the roof, and that's going to be a $40-50,000 price tag in today's dollars. That's going to knock a whole lot of homebuyers out of the market, but if the lending institutions begin to embrace this and understand that an individual purchasing that style of a home is basically going to have anywhere from $100 to $150 per month freed up for other expenses, that loan ratio should go up accordingly; right now, we're not seeing that happen. So, these are things that can help kind of get us into the next step of energy efficiency and distributed generation. Right now, we've got a heck of a hurdle to climb.

MR. RANDOLPH: May I add something very quickly? Not to be a chorus, but on AB 32, it is a significant issue that the Bay Area Council was the principal business organization in the state that initially supported AB 32 when it was signed, and was very active opposing Prop. 23, so we've been completely on board behind the AB 32, but even with that said, I think there's a recognition in the business community that supports it, that there's a lot of uncertainty out there, there's just a lot of blanks to be filled in which did contribute to this issue Jack raised of unpredictability and uncertainty in the business climate. So, I think that is going to be a big one that needs to be addressed. There are other issues of CEQA and things out there, and the regulatory issues, but that is maybe the biggest unknown for the next few years. And that's even among people who strongly support the policy and the strategy. On the clean tech side, I think it should be noted that there are some companies coming into California from outside the U.S. and elsewhere in the U.S., we are finding that they're coming in to be close to the innovation, to be close to the R&D labs and the universities and to where markets are growing, and things like Green Tech, so quite a few Clean Tech related companies from China, from Germany, from elsewhere in the U.S., biotech companies coming into be close to what's happening in the Biotech world, so there is in-migration of some companies in those highly innovative cutting edge places where they feel they need to be here because this is the cutting edge. I doubt that offsets the out-migration of companies that Jack was referring to, but we have leverage points to attract companies to come in. And finally, how are companies reacting to the last couple of years, and even now? I think a lot of them just became necessarily very very lean. They cut back, they reduced staff, their minimum, they used this as an opportunity to shed deadwood, and they were maybe low productivity, they could get rid of, and then they shed other people, and they've ended up, as often happens with recessions, with a much smaller workforce, often, but in the end a more thinly stretch, but high productivity workforce. And I think they will stay with that as long as they possibly can because it's worth it – not great, but it's working. They will start to hire when they see sustained growth in the economy and a level of predictability where they can follow where the revenues are going to come from. So, they have been holding back on that score, so I think employment is being held by a lot of things, but I think one of them is companies have become very lean and efficient and the longer then can get away without doing new hiring, especially when there's unpredictability in the business environment, they're going to continue to do that.

MR. RHYNE: Well, thank you. So, the next question and I have a series of questions here from the audience, and I'll throw it out to whoever would like to answer. There was some discussion earlier about what the Bay Area and Northern California looks like. Could someone maybe speak to what the regional differences are, just Southern California, San Diego and the LA area, possibly.

MS. ANDRE: This is Iris Andre. The LA region and

Orange County region are struggling, probably more similar to the Valley, in what we see. They have large office vacancy and are continuing to struggle. San Diego is also struggling. The Bay Area has always been kind of the fair haired child. I think a lot of people like the Bay Area because of that, the Silicon Valley, and Stanford University and a number of other institutions that sit there, have been the seed bed of a number of the venture capitalists, and where the technology is, and that is a beautiful place to be, and to be located. It's not been – it's always been our nice liaison that we've had with that Bay Area because, as the Bay Area grew, the Valley grew, because at some point, they always came to a point of saying, "We could go and put our manufacturing, we could put our office over into the Valley at a cheaper cost, and be only two hours away to get back there." But the Southern California is definitely probably more similar to, you know, the Sacramento area, than the Bay Area.

MR. RANDOLPH: Sean Randolph again. I think an area that is looking better in Southern California is trade. Again, I mentioned it is improving for the Bay Area, but international trade is a much bigger deal for the economy of the LA Basin, between the Ports of LA and Long Beach and the logistics industry there, so as international trade has come back, especially trade with Asia, I think you will see a boost to the Southern California economy. Now, all the ports in California are facing some pretty serious costs related to emissions compliance in the vicinity of the ports, so they're going to have to absorb that, but the longer term trend, I think, is that trade is going to be a net contributor in the Southern California economy, too.

MR. RHYNE: So just a follow-up question to that. So, to what extent, then, is the economy of Southern California tied to the economies of the Pacific Rim and, therefore, partially determined by the movements there, rather than being solely tied to the larger U.S. economy?

MR. RANDOLPH: Others may be able to speak to this better than I can, but in terms of the distribution of the state and relative dependence on, say, markets in Asia as compared to Europe or Latin America, or other places, across the board in California, Asia is the number one market, so Southern California is like Northern California in that respect, with the difference that San Diego is more focused on Mexico, comparatively. I think trade is probably a somewhat – it's a bigger deal for the LA Basin from a logistics standpoint, just because the ports are so much larger than Northern California Ports. I think from a physical export standpoint, it's probably a bigger deal for Northern California because Northern California companies on average tend to export more to global markets because it's more technology, and a lot of the Ag exports out of the State go out through the Port of Oakland, so I think it depends whether you're looking at logistics or whether you're looking at the physical export of product.

MS. MILLS: This is Karen Mills. For the Farm Bureau, and for Southern California, specifically for the San Diego area that has a tremendous greenhouse nursery production, they've been hit very hard by the housing downturn because they grew a lot of product for landscaping and for those purposes, so that part of the agricultural economy down there is slow to recover and had a big impact, and then, also, of course with water being the issue, there continues to be significant impacts on prices and availability of water both in the San Diego area, Imperial County has a big impact, so those issues continue to be strained.

MR. CALLAHAN: Robert Callahan, California Chamber. Just to echo the importance of trade and international trade in Southern California, the impact it has on the economy and jobs down there, the Ports of LA and Long Beach are hugely important and, just to remain cognizant as a state in terms of policy about the increase in competitive pressures that California ports are facing to international ports on the west side of North America, those are increasing. And 2009 was a bad year for trade, but that is spiking up again. But that competition is going to increase in the near future.

MR. RANDOLPH: Sean Randolph. The competition will be not just with West Coast ports, but east coast and gulf ports, when they expand the Panama Canal, there is likely to be more shipment going through the Panama Canal, but it has been coming to California for transshipment by rail across the U.S., so I think we're dealing with competition not just from the Pacific Northwest, but Ports in Mexico, Ports in British Columbia, but I think the bigger challenge for us is going to be market share vis a vis gulf coast and east coast ports in the future.

MR. RHYNE: Thank you. We're coming close to the time when we would wrap up. I still have just a couple of questions here from the audience and I'll look to the Commissioners, and with you indulgence, we'll just close out some of these questions here and make sure that we have them kind of on the record. There was a mention earlier about the loss of manufacturing jobs not being strictly to movement out of state, but also to improvements in productivity. Would anyone like to maybe try and estimate or speak to what they think the percentage split is, in other words, the percentage of jobs lost to movement out of state vs. jobs that are lost to productivity increases and perhaps try to address that question?

MR. RANDOLPH: We looked at this question four or five years ago and in some depth, and concluded that there are more jobs [quote] “lost to productivity gains” than out of state movement. But that was, I think, 2004-2005. I think it would take another look today to see what’s going on currently.

MR. STEWART: I think most – and I don’t know what the percentage is, but I think most of the technology companies who manufacture here in the ‘90s and early 2000’s have not – there are not very many high tech manufacturers left in California. The only products, I mean, whether it’s an iPad or a Smart Phone, that manufacturing is all done someplace else – designed here, probably, but manufactured in other places.

COMMISSIONER BYRON: So that pick-up in air travel that Dr. Randolph has noted out of San Francisco, they’re all one-way tickets?

MR. STEWART: No, they’re actually round trip tickets because you have the corporate headquarters still here, they fly over there, and manage their operations, and then they fly back.

MR. RANDOLPH: I actually was once in a house tour and saw the basement and there was this amazing high tech set-up, and the owner there actually was managing a factory floor in China from his basement, meeting every day with his foreman and all the rest. I think some of that traffic is, you're right, Jack, people moving back and forth to supervise operations in China and elsewhere.

MR. CALLAHAN: And real fast, just to hit on this point of manufacturing in California and how it has decreased so much, I agree with Jack, we don't want to give up on this sector of the economy, not just because it is vital to the economy, but because there are environmental concerns with having things manufactured in China and elsewhere, when you talk about we're very into cumulative impacts of activities these days -- the cumulative impact of producing something with cheap labor, cheap facilities, etc. in China, developing in California, manufacturing it there and shipping it to California, are very expensive when it comes to the environment, and we can't forget that when we try to analyze these – the various special interests tend to look at things through their own lenses and we need a more holistic view of it, and I think that's where we're going, and there's value to that because there are costs and tradeoffs that will need to be addressed.

MR. RHYNE: Thank you. So, another question, I'll ask you to put on a little bit of a forecasting hat of your own; when you look at California out over the next decade, the mixture of houses, whether they're single-family, or multi-family, has been changing to some extent and there's some debate right now whether or not that's driven primarily by the recession or perhaps some more fundamental change. When you look out over the next decade, what do you see as the split between single-family and multi-family homes? And how does that differ from today?

MR. RAYMER: Yeah, Bob Raymer with CBA. It'll be a two to one split. Historically, that's sort of been where things have been and that's where it's heading back. We had two anomalies in that chart that I showed you earlier. There were two years where multi-family and single-family were the same, that's extremely rare. And so we'll go back to that two single-family, for everyone, multi-family. But we are going to see some significant changes. The square footage of the single-family home will be dropping. About three years ago, the average was around 2,400 to 2,500 square feet, that will be dropping to 1,900 to 2,000 feet. We're already seeing those types of designs popping up all over. And then, a great many of the single-family home projects will largely be going vertical. If you go back 20 years, it was not uncommon to see most of the single-family homes in a new project being one-story, they're going to be two and three story, and they're going to be tightly packed. For environmental purposes, you're going to see the minimum distance between lot lines, which has just recently changed from five-feet to three-feet, we're going to see homes packed that tightly, just like they were a few years back before that regulation changed, and that's for environmental purposes, that you want to see more productive use of the land. You'll see for many of these types of designs where the garage, and perhaps a family room, will be located on the first floor, you'll have the kitchen, maybe the dining room, living room on the second floor, possibly a bedroom or den, and then sleeping quarters up on the third. That will be a very common high density style design. We're also seeing a big push by local jurisdictions for industry to go vertical in terms of multi-family, and that is high-rise, but then again, this has a problem; a lot of lending institutions want to phase their financing of residential projects. You can't really phase a high-rise building, you can't say, "Well, I'm going to build five stories today and 10 stories down the road," you've got to do it all at once. And so, while that can be very environmentally friendly, trying to pack that amount of humanity into a small area, it's going to be very difficult to get funding for that. And, of course, for SB 375 and AB 32 purposes, the larger companies are looking at designs that incorporate entire communities into a single proposal and, in essence, you're going to be mixing your residential with commercial and school facilities. Many jurisdictions will say that they want to see that school facility not only funded, but breaking ground before you start pouring the concrete for the pads for the residential dwellings, they don't want to take a chance of that residential project going to completion without that school facility being up and running, ready to go. And so, you're going to see a more holistic type design where you're looking at large communities. I'm not sure where this is going to put the small business person in the future. Given the recent downturn in the economy, we've seen the larger production builder companies, particularly those that do business all out the country, and in some cases, other countries. They've done major contraction. A case in point, a very large company here in Sacramento pretty much dissolved their Sacramento division of 180 people and shipped four of the best employees to the Bay Area division, which they also contracted. A lot of small builders aren't building anymore, they're gone. And they're going to be looking out for start-up capital down the road and, once again, that's going to be hard to do. So, there's a very strong possibility that, as we go forward, the major buildings in California will be losing well over – I would say 90 percent of single-family homes in California. Small builders are getting pushed out.

MR. RHYNE: All right, thank you. So, the last question, and this is for the entire panel, I'll ask you to briefly – and it actually is a synthesis of a couple of questions and some of you have started to address some of this in your earlier remarks, I'll ask you to be brief with this, but what specific recommendations would you make to an energy-related policy-making organization as a way to help make California more business friendly? In other words, what changes in energy policy would make California more business friendly, keeping in mind that we are not going to throw away our environmental goals, our commitment to improving the environment we live in here in the state?

MR. RAYMER: Bob Raymer with CBI again. Having worked a great deal with the Energy Commissioner for the past three decades, and with a whole lot of agencies that produce regulations impacting housing in the commercial sector, there has been a great deal of emphasis put on the development and adoption of regulations and, quite frankly, it's sexy. Adopting more stringent regulations, that gets headlines. Going out to 500 jurisdictions, training plan checkers, inspectors, subcontractors, site superintendents, that's not sexy, but it's absolutely vital that that happens if that regulation is going to work well. More importantly, if we're going to have a series of transitions from one set of regulations to another, regardless of whether it's the Energy Commission's regulations, or 8CDU of the Fire Marshal's, or whatever, the agency, as it is developing those regulations, needs to take account for how we are going to make the transition. That’s one of the things that we don’t hear talked about a lot at ARB right now with AB 32. I realize it’s very controversial. But small businesses, in particular, have been testifying at these hearings on AB 32, “You’re telling us that in 2020 everything is going to be great, maybe it will, but what about the time period between 2008 and 2020?” The Latino Chamber of Commerce from LA, the Black Chamber of Commerce from LA, and the Asian Chamber of Commerce from LA all drove up here because they couldn’t afford to fly, they drove up to several of these hearings, indicating that they had a great deal of fear over the development of AB 32’s regulations and the fact that no one at ARB could really tell them with any kind of certainty how this is going to impact them during this transitional period. And that raised a lot of fear in their minds. To the extent that the agency, as it develops and adopts regulations can focus on not only transition, but making sure that transition runs smoothly, that would really help the business community. Case in point with the Energy Efficiency Standards, we recently had a circumstance where we were able to get a hold of the compliance – well, the Performance Compliance tool for the Energy Regs only two weeks before the effective date. Well, the good news is the economy was in the tank, we weren’t really building anything, and so by getting that compliance software that late, it didn’t really have an impact. But what if the economy had been doing better? What if it had been 2002 and 2005 when the last series of standards had taken effect and we couldn’t get our hands on compliance software so we could design these units, so they’re going to get built down the road? That’s a disaster waiting to happen. We need to have the tools to implement new regulations at least six months prior. I mean, that’s an absolute cut-off. It would be best to have it a year to a year and a half. A house that you start construction on today was probably designed 18 months ago, and so, once again, fortunately the economy was in the tank, otherwise we would have had a huge problem back in January 2010 with the last set of Energy Regs. Now, I understand the Energy Commission staff has already taken a step to make sure that never happens again, we’ll work with them on that. But there has to be smooth transition from one set of Regs to another, where it’s energy efficiency, or any other building code. Thank you.

MR. RHYNE: Thank you. Iris.

MS. ANDRE: Well, you know, I think that when you motivate somebody with tax credits, and you look at it both from two sides, you look at it from the business owner, and the operator that’s in the building, if you motivate them with a tax credit to say, “I want you to be in a greener building, and I'm going to give you a tax credit if you go and lease in a greener building, it also then motivates the landlord to say, "I want to make my buildings greener," and you find ways to give them credits, I think you motivate in a positive fashion, you'll get where you need to go, and you'll find that people will be more embracing of that kind of plan because people are all looking for efficiencies, we're all looking for ways to clip our coupon and check it in, and I think that's exactly how you kind of have to motivate this plan and this moving forward.

MR. STEWART: Well, let me, both for the Energy Commission and other regulatory agencies, and really for the State as a whole, I think what we really need to have is to put jobs in California on the same level as our regulatory process. So often, when a business – businesses in California, as I said earlier, are very competitive, and any time there's an increase in taxes, an increase in energy cost, fees, regulatory costs, the first thing that gets squeezed is the human resource, the individual, nobody out there is making money that they can absorb these costs anymore. So it's the individual, it's the worker that gets hit first. So, I think what California really needs, just as we have a long-time energy policy looking out 10, 15, and in the case of AB 32, until 2050, 40 years on emission reduction, we need to have a plan of what we want our economy to look like in 10 years or 15 years, and then, once we get that, what kind of mix of industries do we want, and what kind of mix of jobs do we want, what kind of growth do we want to see over those years? Then, you figure out what the barriers to getting there are, and then do your best to fix those barriers. And if part of that is putting some economic and job requirements on new regulations, or at least making sure that the new Regs aren't hurting the economy to the extent that we really believe it has over the past 10, 15, 30 years, what we need to do is we need to move forward – I hate that word, move forward, I'm sorry I said it, we have to figure out how we're going to create the economy of the future of California and somehow reduce the unintended consequences that come with new costs that are imposed, all with good intention, but often with very disastrous results.

MR. RHYNE: Thank you.

MR. CALLAHAN: A very brief answer. I think business-friendly energy policies will consist of a focus on technological feasibility, cost-effectiveness, and the regulatory agency being very cognizant of the upfront costs facing those implementing it on the ground. We do not believe that environmental protection and economic growth are mutually exclusive concepts, so….

MS. MILLS: Karen Mills for the California Farm

Bureau. I want to support what Iris said about incentives, I think that’s a really good point to make because if you set the incentives right, you get the type of investment and behavior that you’re looking for, and also in terms of – Jack has mentioned a couple of times about trying to assess what’s going to happen in the future, it’s important to put some effort into that and try to predict and estimate it accurately. But, when that fails, as it has in the past because I think with some of these aggressive goals that we’re setting for ourselves, you can’t predict accurately all the inputs and the outcomes that will result from it, I think it’s very important for policy makers to recognize the need for off-ramps when things go haywire, we saw that with the restructuring of our electric industry, and things don’t always go the way you expect them, so there needs to be off-ramps and the renewable energy and the push for renewable energy is driving a lot of our policies, and a lot of where our rates are going, and I don’t think we know yet what the cost of those will be because we don’t really have any large scale renewable energy, at least solar, on and being paid for yet by the ratepayers. So, thank you.

MR. RANDOLPH: I think I agree with everything that everybody has said up until now. The only thing I might add is, companies will to a large degree choose to move here and expand here and invest here based on the perception that there is a significant and growing market that they can make money in California, especially of clean tech-related companies. And so, whatever can be done to help sustain and grow that market to the point where it becomes commercially self-sustainable is going to be a helpful thing; I think there is a lot of opportunity in California in the medium to long-term to create jobs, including manufacturing jobs and to make California a global center for clean tech industries across the board. We have a lot of competition, though, a lot of competition from China, a lot of competition from Europe, not to mention elsewhere in the U.S., so we don't own it by any means, and we don't own the growth that's going to occur in the future by any means. So, it's very much up to grabs, despite our R&D, and despite what we do in venture capital. And so, policies that can help to grow and sustain that market will help in the end grow companies here and attract companies here to California.

MR. RHYNE: All right, so thank you very much. I want to thank the panelists this afternoon. I want to remind the audience before we go to closing comments, and I'll ask the Commissioners for their closing thoughts, that written comments can be submitted, they are due, I should say, by February 2nd, so those comments can be provided to the Dockets Office and the Energy Commission website has information on how to file those comments. So, with that, I'll ask the Commissioners if they have any closing thoughts.

VICE CHAIR BOYD: Well, first, I just want to thank everybody who came today and participated on panels, I want to thank the, still, pretty good sized audience, who has been with us for most of the day. A lot of us came into this hearing and I think I, for one, and others probably, will leave this workshop, rather, knowing full well the economy is very important to the future of California, a healthy economy is necessary, I'm glad to have heard so many references to the desirability for and almost the necessity of a healthy economy and a healthy environment going hand in glove, I think California has proven historically that that's true. Certainly, a health economy is necessary to address California's quality of life goals, and I was glad one of the panelists referenced, because I think this has been a key goal to California since some of those charts started in the 1950's, I think that's what led to what I hope is not the late great Golden State, the building of an incredibly big and strong middle class that wanted a quality of life, and thus supported so many of the mixed goals of the state. That quest, in turn, feeds the collective desire to support challenging and innovative programs, and that's been very historical in this state – education, which I think we heard a lot of comments about, that maybe has suffered some, taking care of our infrastructure, be it transportation, water, and various public works, the environment, of course, and I guess trust is suffering a lot these days. Sitting in the seat I now occupy, it’s been pretty obvious for quite some time that energy fuels the economy engine, if I can call it that, its price, it’s availability, the reliability of that availability are important to the success of keeping this engine going. I think we heard today an awful lot about housing and what’s happened to housing and how that’s hurt California so much, it dominated a lot of the discussion this morning. And to me, and I may be wrong, housing relies – I mean, for housing to be healthy again, in my mind, relies on other components of the economy, and if you want to look at this as some giant multi-wheeled vehicle, fueled by energy that moves California forward, a lot of these other smaller wheels have got to get turning first for housing to get the push start; it’s perhaps housing – they are the biggest set of wheels, but they don’t have a starter of their own, they need everything else to feed in, in my consideration. So, it’s pretty obvious, we’ve got to get the whole thing moving again. This is the Energy Commission; one of the things I hoped for was a lot of discussion about energy. I thank this panel for talking about energy the most, we couldn’t tease it out of most of the other panels much, albeit your concern was the high cost of energy in this state, and I guess that’s been some of our concern for all of our tenure on this Commission, certainly I am an artifact of the energy electricity crisis in California, and that is – I paid little attention to it until then and learned more than I ever wanted to know about it, and got punished or rewarded with two terms as an Energy Commissioner. But, in any event, this agency has to spend an awful lot of economic stimulus money invested in energy savings and efficiency in this state, in an effort to drive down the cost of California’s energy, and I think most of the regulations we pass are intended to meet that same goal, no matter how painful they may seem to the affected industry in question. And, Bob, to your point about lack of lead time, CEC does a lot of unsexy work, also, and we’re hurting just like all the rest of you are hurting, we don’t have a fraction of the staff we used to have, and we’re not even a General Fund agency, so I get to whine a little bit in this forum, too. There was no transportation energy discussion to speak of, and I’m personally disappointed in that fact, but I couldn’t tease it out early on and I gave up, but I do think that’s the third leg of the energy stool in California, and we obviously as an agency talk about it a lot in other forums, and staff will have to tease out what it can from those forums in order to provide input to the Integrated Energy

Policy Report, or IEPR, as we call it. We were dominated by electricity, the CEC to me sometimes stands for the California Electricity Commission, not the California Energy Commission, but that’s important to us, and natural gas is carried along, both those tracks and trails. So, we will take and the staff will take from what they’ve learned here, and perhaps meld it with California’s long history of leadership and challenges to conventional wisdom and conventional views in order to make energy recommendations for our future. And I think I’ll let it go at that. A lot of talk about climate change and AB 32 and that’s something multiple State agencies will have to continue to deal with. A thought as a pseudo-economist, the push to do cradle-to-grave full fuel cycle analyses or develop carbon footprints that AB 32 is pushing is doing two things, it’s making multiple government agencies talk together like they never have before and realize some of these adverse consequences to other people’s programs that you were hoping that will be envisioned, and the other thing it’s doing on an international basis is focusing more attention on that factor, and the point that was made about pushing things off to China only to have it come back and haunt us here is something we have to live with and deal with, and nations are going to have to talk about more because I would tend to agree that the transportation carbon footprint of moving things over and bringing them back, or shoving everything to China so it can be made with coal- borne electricity, needs to be taken into account, but now I’m dealing in international relations and we’ve got two world leaders in Washington now who will struggle to even deal with that question, I’m sure. But I guess we’ll all do what we can. But, you know, California finds itself on the cutting edge, I don’t think because it’s sexy, just because there’s such a long history of California being on the cutting edge and leading us to what has been the Golden State, that I think there is still a desire to maintain that, and we just need to find the balance and the strength. We got burned by our heavy dependence on Defense and Aerospace, and it fed us well, and we are still working to recover from that, and I think a lot of people are capable of dealing with that. So, again, I thank you all, and that’s kind of my reflections on what I’ve heard today and how it fits into what we do as an agency. Commissioner.

COMMISSIONER BYRON: Thank you, Commissioner Boyd. I certainly would like to thank you all for being here today, the trouble that you went to, to come and participate in these discussions, it is very helpful, but I thought the Economists were a fun group this morning, and you guys are a barrel of monkeys. Let me – there is some ironic good news I would like to share with you that I saw in the newspaper just this morning. San Diego Gas & Electric sold less electricity than expected to homes and condos and apartments last year, not unexpected. The story goes on to say that meant that it took in less money than it planned. So, what’s it going to do? They’re going to raise their rates to recoup those expenses this year. So, not every company hurts as a result of this downturn. There’s a little irony in that, I know. But, on a more serious note, this was some very excellent discussion and insights and, you know, the broad brush summary, as we certainly learned that construction is this recession’s nemesis. There is obviously some optimism that the recovery is underway and we can expect job recovery by 2014, according to our Economists this morning, although I don’t know particularly why. It seems to me that, I take it, there is some light, but it’s mostly tunnel ahead for a long time. And this commission will certainly look to the conclusions in a couple of different ways; we’re going to want to think more about how we set our energy policies in light of the economic recovery. We’re also going to need to draw some conclusions about energy demand, and I have to say, coming into this workshop, I was thinking that would be most of the emphasis. And so we’ll be looking to staff to a great extent for that help. I’m inclined to conclude that energy intensity, or that is the use of energy as a result or during the recovery, will be less, less manufacturing obviously and more information and services. But because we do a forecast that is long-term, we need to be prepared for that recovery. We saw this coming out of the energy crisis in 2001 that there was a great deal of – how I think of it is load with the switch “off,” a lot of real estate that is unoccupied, a lot of shadow real estate, a lot of manufacturing that had been turned off, and of course, after seeing Mr. Stewart’s slides, I’m not sure it ever turned back on again. So, as Mr. Rhyne has indicated, we are certainly interested in your written comments by February 2nd. Remember, the purpose of this workshop was for us to better understand the economy’s potential effect on energy use and environmental planning in California over the next decade. We welcome that written input, we’ve already gotten some of it, and obviously this record is being kept for us today. I look forward to staff summarizing all that information and its synthesis, as well. I’d like to thank the staff for pulling together this workshop, and my thanks really goes out to the participants here today. Mr. Rhyne, do you want to close us out?

MR. RHYNE: Well, I think with that, unless Bill or Kate? So, with that, I want to again extend my thanks to the panelists, thanks to the audience for attending, and those online, as well. I look forward to written comments and I’m sure that we’ll make the best use of it we can with regard to our own demand forecast. So, thank you very much.

[Adjourned at 4:48 P.M.]