

STATE OF CALIFORNIA - THE RESOURCES AGENCY  
BEFORE THE  
CALIFORNIA ENERGY COMMISSION (CEC)

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

**Energy Research and Development Division**  
**IEPR Staff Workshop on Benefits Assessments**

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

WEDNESDAY, MAY 25, 2011  
10:00 A.M.

Reported by:  
Peter Petty

STAFF

Bill Junker, Demand Analysis Office, California Energy Commission  
 Chris Kavalec, Demand Analysis Office, California Energy Commission  
 Chris Ann Dickerson, Coordinator, Demand Analysis Working Group  
 Don Schultz, Demand Analysis Office, California Energy Commission  
 Mike Jaske, Electricity Supply and Analysis Division, California Energy Commission  
 Tom Gorin, Demand Analysis Office, California Energy Commission

Also Present (\* Via WebEx)

Presenters

Athena Besa, San Diego Gas & Electric (SDG&E)  
 Sierra Martinez, Natural Resources Defense Council (NRDC)  
 Cynthia Mitchell, The Utility Reform Network (TURN)  
 Phillip Toth, Southern California Edison (SCE)  
 Carmen Best, California Public Utilities Commission (CPUC, PUC)  
 Richard Aslin, Pacific Gas and Electric (PG&E)

Public Comment

Sharim Chaudhury, SCE  
 Alan H. Sanstad, Lawrence Berkeley National Laboratories (LBNL)  
 Timothy Tutt, Sacramento Municipal Utility District (SMUD)  
 Tamara Raspberry, Sempra Energy Utilities  
 Manuel Alvarez, SCE  
 Monisha Gangopadhyay, CPUC Division of Ratepayer Advocates  
 Johanna Benson, SCE

## INDEX

	Page
Introduction and Opening Comments	
Bill Junker	5
Updated Forecast	
Chris Kavalec	6
Efficiency, the IEPR Forecast, and the Demand Analysis Working Group	
Chris Ann Dickerson	26
Energy Commission Staff Paper on Historical Efficiency Program Activities and Impacts	
Don Schultz	40
Chris Kavalec	54
Preliminary Econometric Estimates of Historical Efficiency Program Impacts	
Chris Kavalec	65
Break (12:15-1:15)	
Stakeholder Presentations on Treatment of Efficiency Programs in the IEPR Forecast	
Athena Besa, SDG&E	87
Sierra Martinez, NRDC	99
Cynthia Mitchell, TURN	111
Phillip Toth, SCE	126
Carmen Best, CPUC	134
Richard Aslin, PG&E	144

## INDEX

	Page
Panel Discussion	151
Moderated by Mike Jaske, Electricity Supply and Analysis Division	
Athena Besa, SDG&E	
Cynthia Mitchell, TURN	
Sierra Martinez, NRDC	
Phillip Toth, SCE	
Carmen Best, CPCU	
Richard Aslin, PG&E	
Chris Kavalec, CEC	
Don Schultz, CEC	
Tom Gorin, CEC	
Public Comment	207
Adjournment	211
Certificate of Reporter	212

1

## P R O C E E D I N G S

1  
2 MAY 25, 2011

10:06 A.M.

3           Mr. Junker:    This is Bill Junker, I'm a manager  
4 at the Demand Analysis Office. I'd like to welcome you  
5 to the Historical Energy Efficiency Estimates and  
6 Updates to the 2009 California Energy Demand Forecast  
7 Workshop. I have some housekeeping issues to go over  
8 with you first. And they are brief -- if there - if you  
9 need to go to the restroom they're out the double door  
10 to the left. If you need to get something to eat or  
11 drink, it's out the double door to the right and up the  
12 stairs. If there's an emergency, like a fire or  
13 something like that, go out the double doors and to the  
14 left and to the park that's diagonal to this location.  
15 And please wait there until we're told that it's clear  
16 to come back in the room.

17           This is a WebExed -- hopefully -- meeting, so your  
18 comments are going to be recorded, possibly be used  
19 against you later. If you do make a comment or  
20 presentation, or have a question or a suggestion, it  
21 might be helpful to give the court reporter your  
22 business card -- there you go. Thank you very much.

23           Today's workshop has two purposes. The first purpose  
24 is to go over the 2009 IEPR forecast. Staff will  
25 present an update to that forecast, which is intended

1 mainly for internal purposes. A full 2011 IEPR -- a  
2 preliminary forecast -- yeah, 2011 Preliminary Forecast  
3 will be released in August of 2011. And a workshop on  
4 that has been scheduled for the end of August. Most of  
5 our time today, however, will be spent on issues  
6 surrounding how energy efficiency is incorporated in the  
7 IEPR forecast. And we have been discussing this in  
8 debates in recent Demand Analysis work -- is it work or  
9 working? -- group -- the DAWG meetings. To address  
10 these issues we'll have a staff presentation, followed  
11 by six stakeholder presentations today. After the  
12 presentations, a discussion panel, including staff and  
13 those stakeholders will discuss the issues in more  
14 depth, with the goal of attempting to find common ground  
15 on issues where there are differences. Are there are  
16 advisors present? Commissioners?

17 (Whereupon Paul Feist, advisor to Commissioner  
18 Douglas identifies himself)

19 Mr. Junker: Do you have anything that you'd  
20 like to say this morning? Okay. And welcome.

21 At this point I'd like to introduce Chris Kavalec.  
22 Thank you.

23 Mr. Kavalec: Good morning. I'm Chris Kavalec  
24 from the Demand Analysis office. As many of you know,  
25 we have extended the schedule for our 2011 IEPR

1 forecast, so that -- a preliminary -- full preliminary  
2 forecast is going to be released in August, and then a  
3 revised forecast at the beginning of 2012. Um, but in  
4 the meantime there was a need for an updated forecast  
5 for internal analyses going on in the Commission. So,  
6 we are providing this -- what we're calling an update to  
7 the 2009 IEPR forecast, or update to CED 2009. We use  
8 the terms California Energy Demand, and IEPR forecast  
9 interchangeably. They mean the same thing. Uh, so this  
10 forecast, as I said, is mainly for internal purposes.  
11 It's electricity only, no natural gas included. And it  
12 includes what we call only committed efficiency. That  
13 is, efficiency from initiatives that are -- have been  
14 finalized, approved, have firm funding and a specific  
15 program plan. So, for example, the 2010-2012 IOU  
16 programs are considered committed efficiency.

17 Uh, since we wanted to develop this forecast fairly  
18 quickly we used only our econometric models, rather than  
19 our full end-use models. And we produced three  
20 scenarios -- a low, mid and a high -- that are based on  
21 differing economic outlooks.

22 (Off-microphone) I don't think that's right --  
23 it seems to be doing it on all of them. You know what --  
24 I wonder why it's doing that.

25 Mr. Kavalec: Okay, so, for this presentation,

1 I'm going to first provide a summary of results at the  
2 state-wide level, talk a little bit about the method we  
3 used to develop the forecast, and some of the key  
4 inputs, and then give some planning area results. We  
5 forecast for eight planning areas: Imperial, Burbank,  
6 Glendale, LADWP, Pasadena, PG&E, Southern California  
7 Edison, San Diego, and SMUD. And I will compare this  
8 forecast with the most recent forecasts that we've  
9 gotten from the utilities.

10 Okay, first graph here shows state-wide electricity  
11 consumption, forecast in historical. The 2009 forecast  
12 is in red -- CED 2009 -- and below that are the three  
13 different scenarios, high, mid and low. The general  
14 result that we get with this forecast is that we're  
15 starting at a lower point, because the -- basically  
16 because the recession was worse than had been envisioned  
17 in 2009. But the growth rate after that between 2010 and  
18 2020 is higher than it was in the 2009 forecast in the  
19 mid and the high scenarios, and for that matter, in the  
20 low scenario after about 2012. And I'll explain what's  
21 driving that in a minute. Ah -- uh -- same thing for the  
22 peak. When we measure the growth of peak versus the last  
23 historical year, in this case 2010, we weather-normalize  
24 the last historical year. And that's because the  
25 forecast -- in the forecast we use average temperatures

1 to project future peak. So rather than use the actual  
2 2010 peak we weather-normalize it, so we're estimating  
3 what that 2010 peak would be had we had "average"  
4 weather that year.

5 Uh, same pattern, as I said. Lower starting point,  
6 higher growth between 2010 and 2020. Same thing for  
7 residential, as well as commercial, although the growth  
8 rate versus the 2009 forecast is not quite as high in  
9 the commercial case as in the residential case. And the  
10 wild and wacky industrial sector. This is industrial  
11 including construction and resource extraction, and you  
12 can see by the historical path there in black what a  
13 challenge it is to forecast for this sector. But  
14 basically, the message here is that we have an increase  
15 in energy consumption coming out of the recession, but  
16 then we revert back to a long-term trend of decline.  
17 Again, a significantly lower starting point for the  
18 three scenarios, versus the 2009 forecast in red. You  
19 see the high forecast in green goes above the 2009  
20 forecast in around 2016 -- 2017 -- and continues upward.  
21 However, if we were to extend this forecast out another  
22 5-10 years, the green forecast would eventually begin to  
23 decline, so in the long-term the main driver is the  
24 continuing decline in the manufacturing sector in  
25 California.

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1       Okay, for this work we updated the residential and  
2 commercial econometric models that -- and peak models --  
3 that we estimated for the 2009 forecast. And we also  
4 estimated new models for the industrial sector and for  
5 the construction and mining sector. Also included is a  
6 new forecast for the transportations, communications,  
7 utilities, and street-lighting sectors that we developed  
8 with the trend analysis. Our focus here in developing  
9 this forecast is to take a look at the impacts of a  
10 changing economic outlook versus the 2009 forecast,  
11 although we've also incorporated new electricity and  
12 natural gas rate forecasts. Otherwise, the assumptions  
13 are the same as they were in the 2009 forecast, in terms  
14 of efficiency, self-generation and the number of  
15 electric vehicles. Those assumptions will change by the  
16 time we get to the preliminary forecast in August. And  
17 the results from the econometric models are benchmarked  
18 to the 2009 forecast because we want to make the same  
19 assumptions about efficiency, and so on. So that means  
20 that we ran the econometric models, not only with the  
21 new econ-demo data, but also with the same data we used  
22 in -- for the 2009 forecast. And then we applied the  
23 differences between those to the 2009 forecast to get a  
24 final result. So, for example, if the econometric  
25 results using the mid-economic scenario, or mid-energy

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1 case, were two percent below results using the  
2 econometric models with 2009 input data, then we would -  
3 - the mid-case would be two percent below the 2009 --  
4 the final 2009 final forecast. And these models use  
5 cross-section and time series data for their estimation.  
6 Cross-section meaning the eight different planning  
7 areas, and the time series being annual data from 1980  
8 through 2009. And I'll just say a little bit about the  
9 individual models. Residential econometric model is  
10 done at a per-household level. It includes economic  
11 weather, demographic size of households, and electricity  
12 rates. A problem you sometimes run into in estimating  
13 econometric models for energy consumption is that it's  
14 hard to include both income and employment because  
15 they're so highly correlated, so it's hard to get  
16 precise results for the two coefficients when the two  
17 variables are included at the same time. But in this  
18 case, using pre-capita income and then the unemployment  
19 rate rather than actual employment, I was able to get --  
20 use two variables and get reasonable coefficients.

21 The commercial econometric model uses total output as  
22 an indicator -- general indicator of economic activity.  
23 Also commercial floor space that comes to us from Dodge  
24 McGraw-Hill. I included as commercial employment  
25 divided by floor space as an indicator of the intensity

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1 of the use of commercial floor space. Cooling degree  
2 days -- and in all these models I initially included  
3 both electricity and natural gas rates. The idea being  
4 that all else equal, the lower the natural gas rates the  
5 more likelihood there would be to be substitution  
6 between the two fuel types. And in the commercial  
7 sector was the only sector in which I found a  
8 significant coefficient for natural gas rates as well as  
9 electricity rates. For industrial, of course,  
10 manufacturing output. Also I used manufacturing output  
11 divided by manufacturing employment as an indicator of  
12 productivity, and the results show that as the  
13 industrial sector has become more productive, all else  
14 equal, energy consumption declines. Also, as an  
15 indicator of the energy intensity of industry in a given  
16 planning area and year, I used the output of three  
17 fairly energy-intensive sectors divided by a total  
18 manufacturing output, and that gives you a positive  
19 coefficient. The more intensive -- the more energy-  
20 intensive the manufacturing sector is in a given  
21 planning area, the more energy consumption there will  
22 be, all else equal. And, for construction and mining,  
23 it's driven by employment output as well as rates.

24 And finally, the peak model, which is sensitive we  
25 found not only to weather, but also to per-capita

1 income, the unemployment rate and electricity rates.  
2 The number of household divided by population is meant  
3 to be an indicator of the size of the residential sector  
4 -- the relative size of the residential sector in a  
5 given planning area, since we know the residential  
6 sector tends to be peakier. The temperature variable  
7 that we used, MAC 631 -- what that means is sixty  
8 percent of the current day's high temperature plus  
9 thirty percent of the previous day's high temperature,  
10 plus ten percent of the high temperature two days  
11 previous. And what this is meant to do, is to get at  
12 not only heat build-up effects, but also because we've  
13 noticed that, especially in the residential sector, it  
14 takes time -- there's a little bit of delay between when  
15 it gets hot and customers actually start using more  
16 cooling. So if there's a sporadic hot day, there may  
17 not be as much of a reaction in terms of cooling as in  
18 the case of three hot days in a row.

19 Our key inputs -- the econ-demo data come from  
20 Moody's and Global Insight. Specifically for the low --  
21 for the mid case we used Moody's, what they call their  
22 Most-Likely, or Base Case. The low case was Moody's  
23 Protracted Slump Case, they call it, which means the  
24 recession continues a year or two longer than in the  
25 base case. And then for the high-growth case we used

1 the Global Insight Optimistic Case. And we chose those,  
2 basically the high and the low around the mid case  
3 because it gave us the biggest spread for the key  
4 economic variables between high and low. The  
5 electricity rate scenarios we generated with a E3  
6 calculator and I presented this -- these scenarios in a  
7 workshop we had back in February. Natural gas rates  
8 projections come from a combination of EIA forecast  
9 Bentek and combining in futures prices -- current  
10 futures prices for natural gas. And our commercial  
11 floor space scenarios are generated with another  
12 econometric model that projects floor space using  
13 economic and demographic variables.

14 So, here are the input scenarios. On the low case,  
15 low economic growth, as I said the Protracted Slump  
16 Case, combined with high electricity and natural gas  
17 rates. And then the reverse in the high case -- there's  
18 a type-o there, it should be high economic growth and  
19 low rates -- ok, that's the high case. And then in the  
20 mid scenario, assumptions falling in between the two.  
21 Brief look at the key inputs. Employment in, again the  
22 2009 forecast -- or the projections used for the 2009  
23 forecast is in red. Employment in the mid and high --  
24 or the mid an low scenarios stays well below employment  
25 projected in the 2009 forecast by 2020. However, the

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1 high -- in the high scenario employment reaches the 2009  
2 forecast 2020 level by 2019. Or it reaches the  
3 projections used in 2009 by 2019. Um, the projections  
4 for person income are more optimistic. You see that the  
5 mid and the high scenarios go above the income  
6 projections used in the 2009 forecast fairly early in  
7 the forecast period. And personal income is also an  
8 indicator of total output. So this is what is driving  
9 the results that I mentioned earlier, the general result  
10 that growth after 2010 is higher than it was in the 2009  
11 forecast, although we're starting from a lower point,  
12 okay. It's because of higher income growth in 2009, so  
13 that's pushing up -- basically pushing up the newer  
14 forecasts closer and closer to the old forecast in 2009.  
15 Electricity rates -- this shows the percentage increase  
16 for each of the scenarios. In the high energy case,  
17 meaning the lower rates, we have an increase over 2011  
18 by a little bit more than five percent, okay. And in  
19 the low -- the low energy case, meaning high rates, our  
20 rates increase by almost 25 percent above 2011 rates by  
21 2022. So these percentages are applied to each sector  
22 and each planning area, okay, the same percentages.  
23 What's driving an increase in rates using the E3  
24 calculator, are things like higher amount of  
25 photovoltaic, a higher percentage of renewables reached,

1 and in the highest case here we had a cap in trade  
2 assumed.

3 Okay, so onto some planning area results. As in the  
4 State case, projected consumption and peak growth starts  
5 at a lower point but grows at a faster rate between 2010  
6 and 2020, versus the 2009 forecast. And there's a few  
7 cases where in the mid scenario, the 2020 projections  
8 are actually higher than they were in the 2009 forecast.  
9 And also in the mid scenario consumption and peak demand  
10 typically surpass the 2009 forecast in 2020 by 2021 or  
11 2022. So, in other words, all the planning area  
12 forecasts reach the 2009 level, if not in 2020, then in  
13 the next couple years after that. And the highest  
14 growth for, um, energy demand is in San Diego and SMUD;  
15 San Diego, because of relatively high employment  
16 projections, and SMUD because of relatively high  
17 population projections. And the lowest growth in energy  
18 is projected for LADWP, and that's because of relatively  
19 low population growth.

20 And finally I did a comparison of our results with  
21 the latest forecast for -- from the utilities. Utility  
22 forecast in blue, this most recent forecast in red.  
23 It's not a perfect comparison -- uh in the case of PG&E  
24 and Southern California Edison, our planning area that  
25 we forecast for is a little bit different from the

1 service territory forecasted for by Edison and PG&E.  
2 Um, this is, again, committed efficiency in our  
3 forecast, so I compare this to utility forecasts that do  
4 not incorporate CPUC efficiency goals out to 2020. So  
5 in the case of PG&E and SMUD, we're relatively close,  
6 this is average annual growth between 2010 and 2020. A  
7 little bit higher than LADWP, but what really stands out  
8 here is that we're significant -- significantly below  
9 growth forecasted by Edison and San Diego forecasters.  
10 Okay, peak -- in this case we're higher than the most  
11 recent forecast from LA, San Diego and SMUD. Again,  
12 we're relatively close in the case of PG&E, and again  
13 significantly below the forecast -- the most recent  
14 forecast by Edison.

15 So, where do we go from here? The next steps, I  
16 suggest that through our DAWG process -- DAWG meetings,  
17 we forecasters sit down and talk about the differences  
18 between our forecast and your most recent forecast.  
19 Attempt to understand -- reconcile, and if not  
20 reconcile, understand why we have the differences in  
21 preparation for the 2011 IEPR forecast -- our  
22 preliminary forecast in August. And as a reminder,  
23 we're -- our preliminary forecast is being released in  
24 the middle of August, and -- with the workshop at the  
25 end of the month. So, with that, I'll ask if there are

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1 any questions before we get to the main topic of the  
2 day?

3 Yes -- ask you to come up to the microphone --

4 Mr. Chaudhury: This is Sharim Chaudhury, from  
5 Southern California Edison. Uh, just general question,  
6 given that we'll discuss about these differences in the  
7 DAWG working group, the only question is if you were to  
8 use a single forecast, I imagine you'll be using the  
9 base -- uh the mid case, right? If somebody asked you  
10 to give us your forecast, a single-point estimate --  
11 Chris, would you recommend the mid case?

12 Mr. Kavalec: If someone asked for a single  
13 point estimate, yes, we would most likely give the mid  
14 scenario, yeah.

15 Mr. Chaudhury: I'm just curious that you  
16 mentioned that this is for internal use. Uh, for  
17 example, if some other proceedings, say CPUC, wants us  
18 to -- tell us use the most recent CEC forecast, is this  
19 the forecast we're supposed to use going forward? No.  
20 We still wait IEPR managed load -- whatever --

21 (Anonymous off-microphone response)

22 Mr. Chaudhury: Okay. That -- that is my  
23 question. Okay, thank you.

24 Mr. Sanstad: Alan Sanstad, Lawrence Berkeley  
25 Lab. Chris, could you go back to the sales forecast

1 comparison? I have a question about interpreting this.  
2 So, this is, uh -- on the part of the Commission -- this  
3 does or does not include the PUC targets?

4 Mr. Kavalec: It does not.

5 Mr. Sanstad: Uh, and the utility forecasts do  
6 not, either?

7 Mr. Kavalec: Right.

8 Mr. Sanstad: Okay, so, uh -- are you saying  
9 that -- is there utilities applying their own  
10 interpretation or concept of committed here --

11 Mr. Kavalec: Yeah, that's why I said it wasn't  
12 a perfect comparison, but --

13 Mr. Sanstad: Well, I'm -- what I'm wondering is  
14 if, uh, the input assumptions are such that the, um --  
15 what's interesting here is the difference across the  
16 service territories, I think. And, so I'm wondering if  
17 there's -- what might be driving the -- the contrast in  
18 Edison and Southern -- in San Diego. It's not the  
19 difference in committed assumptions, uh -- they're both  
20 mid-range. Do you have any thoughts about that?

21 Mr. Kavalec: Um, I think in the case of Edison  
22 they have some electrification included that we don't,  
23 transportation electrification. Um, and also, um --  
24 correct me if I'm wrong -- did you use Global Insights  
25 econ-demo data in your forecasts or Moody's?

1 (Anonymous off-microphone response)

2 The Reporter: I can't hear that, um, so if you  
3 want that on the record I need her to come to the  
4 microphone or you can just recapitulate her answer.

5 Mr. Kavalec: Okay. Go ahead, finish please.

6 (Anonymous off-microphone response)

7 Mr. Kavalec: Okay, so the answer was that, um,  
8 Edison uses a combination of both the Moody's and the  
9 Global Insight forecast to generate their econ-demo  
10 data. So that's another difference, I think because the  
11 Global Insight base case -- I assume you're talking  
12 about their base case when you mention combining the two  
13 -- um ,is higher -- significantly higher than the  
14 Moody's base case. So that would be another reason.  
15 And I think, uh -- Tim are you here? -- San Diego also  
16 uses the Global Insight.

17 (Anonymous off-microphone response)

18 Mr. Kavalec: But before you -- before you go on  
19 Tim -- so the answer was that San Diego uses the Global  
20 Insight econ-demo data, except for one of the variables  
21 where you did an average of the two? Moody's and Global  
22 Insight? Okay. I'm sorry, go ahead.

23 (Anonymous off-microphone response)

24 Mr. Kavalec: Okay, and that -- that would  
25 explain why our peak forecast is higher than San

1 Diego's.

2 (Anonymous off-microphone response)

3 Mr. Kavalec: Well, Tim's response was that, um,  
4 in their peak forecast they used the actual 2010 peak  
5 weather -- rather than a weather-normalized peak. And  
6 we used a weather-normalized peak, and that's one reason  
7 why our peak forecast is -- is higher than San Diego's.  
8 The actual 2010 peak is higher than the weather-  
9 normalized 2010 peak.

10 Mr. Sanstad: So, is it in -- back to the sales  
11 forecast -- is it known, then, if it's possible that  
12 they difference in these -- Moody's and Global Insight  
13 assumptions -- could account for a large proportion of  
14 those differences?

15 Mr. Kavalec: Yes.

16 Mr. Sanstad: Okay, is it -- is that comparison  
17 ever been done explicitly?

18 Mr. Kavalec: Pardon?

19 Mr. Sanstad: Has that comparison ever been done  
20 explicitly?

21 Mr. Kavalec: Um --

22 Mr. Sanstad: Or I shouldn't say -- not the  
23 comparison, but has that ever been examined?

24 Mr. Kavalec: You mean why they're different?

25 Mr. Sanstad: No, the -- the extent to which the

1 differences that were just described in the input  
2 assumptions account for the differences in the forecast.

3 Mr. Kavalec: Uh, well, I can only speak for  
4 myself. I haven't actually sat down and created a table  
5 of a graph comparing the two. But in -- for the key  
6 economic variables there's quite a bit of difference,  
7 it's up pretty obvious.

8 Mr. Sanstad: Thanks.

9 (Anonymous off-microphone comment)

10 The Reporter: May I suggest we just come up to  
11 a microphone so we can capture all this for the  
12 transcript?

13 Mr. Chaudhury: Okay. Another reason could be  
14 that the SC load forecast vintage is as of October 2010,  
15 and we are in the process of updating it now, and in a  
16 month we'll have. And the preliminary shows that our  
17 new numbers -- the growth rate is not -- is lower than  
18 what we have shown here. It's also a function of the  
19 vintage, you know --

20 Mr. Kavalec: Okay.

21 Mr. Chaudhury: -- when we did the forecast.

22 Mr. Kavalec: And when's that going to be  
23 released?

24 Mr. Chaudhury: I'm hoping --

25 Mr. Kavalec: Or completed?

1 Mr. Chaudhury: -- the end of next month.

2 Mr. Kavalec: Okay. Okay, thanks.

3 Mr. Tutt: Chris, Tim Tutt from SMUD. I was  
4 wondering if you could give us some examples of what  
5 kind of internal purposes you'd be using this forecast  
6 for? Thank you.

7 Mr. Kavalec: Uh, the renewable short analysis,  
8 natural gas forecast, or PROTS forecast analysis, that -  
9 - our internal needs assessment work, are three that I  
10 can think of.

11 Okay, anything else before we move on? Okay --

12 (Anonymous off-microphone question)

13 Mr. Kavalec: The question was why was SDG&E's  
14 energy demand growth projected to be higher, and the  
15 reason for that was relatively high projected employment  
16 growth.

17 Mr. Aslin: Richard Aslin, Pacific Gas and  
18 Electric Company. So um, I just wanted to know in terms  
19 of the process for developing a final version of this  
20 update to the 2009 IEPR forecast, what did you have in  
21 mind there?

22 Mr. Kavalec: Um, I'm sorry -- for -- for --

23 Mr. Aslin: The process for finalizing this?

24 Mr. Kavalec: As -- as far as I know, this is a  
25 final version, unless we receive comments after the

1 workshop that spur us to change something. If there is  
2 some mistake we've made or some assumption that a lot of  
3 folks disagree with, we might go back and re-do it.  
4 Otherwise, for all intents and purposes this is a final  
5 version.

6 Mr. Aslin: And, uh, the process for providing  
7 those comments is through the DAWG group?

8 Mr. Kavalec: No, it's through our regular  
9 comment process here at the -- through dockets.

10 Mr. Aslin: Okay.

11 Mr. Kavalec: And so, we would need comments by  
12 -- I should announce this -- by, uh June 8<sup>th</sup> I believe is  
13 the deadline for comments.

14 Mr. Aslin: Okay, then I would have an  
15 additional question, and that is um -- just the process  
16 for putting together the econometric equations, did you  
17 specify one equations, estimate that equation, and then  
18 simulate that estimation of that equation over the  
19 carious different inputs? Or did you, just out of  
20 necessity, have to go back and estimate different models  
21 -- even if they have the same variables -- but estimate  
22 different models over the different vendors' historical  
23 data?

24 Mr. Kavalec: Well, I'm using one set of  
25 historical data. Basically the historical data that

1 comes from Moody's, as well as historical population  
2 data from DOF. I'm not sure what -- I understood your  
3 question --

4 Mr. Aslin: Well generally speaking, the vendors  
5 even though they have similar series, they're not the  
6 same.

7 Mr. Kavalec: Yeah, so --

8 Mr. Aslin: So, if you're gonna --

9 Mr. Kavalec: Global Insights historical series  
10 is a -- is a little bit different from Moody's. But I  
11 used Moody's historical series for all the variables.

12 Mr. Aslin: To use that you estimated the model,  
13 and then your model just keyed off of growth rates, or  
14 something, so you were able to normalize all the  
15 vendor's inputs in that fashion?

16 Mr. Kavalec: Um, yeah -- so if there was a  
17 difference, for example, between Global Insights  
18 forecast for 2010 -- or historical estimate for 2010 --  
19 and Moody's, I scaled the Global Insight projections to  
20 Moody's so that they matched in 2010.

21 Mr. Aslin: Okay. Alright, thanks.

22 Mr. Kavalec: Uh-huh. Okay, so with that we  
23 will move on to our efficiency festivities. And our  
24 next speaker will talk a little bit about efficiency and  
25 our forecast and the discussions we've had through our

1 Demand Analysis Working Group. The coordinator of this  
2 working group, Chris Ann Dickerson.

3 (Off-microphone conversation setting up Power  
4 Point)

5 Ms. Dickerson: Hi, my name is Chris Ann  
6 Dickerson and I'm the Working Group Project Manager for  
7 the Demand Analysis Working Group. And, first of all,  
8 I'd like to thank everyone for being here today, and in  
9 particular to thank the Energy Commission for sponsoring  
10 this working group, uh, and also all of the stakeholders  
11 who have been participating so effectively in our group.  
12 It's really great to see all of you here today. I'm  
13 going to make my comments brief, since I think most of  
14 you in this audience are familiar with the DAWG, but I  
15 do want to be on-record mentioning a couple of things.  
16 And, so this first couple of slides just talk a little  
17 bit about the history of the integration web, the demand  
18 forecast with the energy efficiency, um,  
19 accomplishments, and a little bit about how we've come  
20 to have our Demand Analysis Working Group, or the DAWG.

21 Um, so a key critical time -- a key critical issue in  
22 this timeline is the decision by the Public Utilities  
23 Commission to use the IEPR forecast -- the adopted IEPR  
24 forecast as the basis for procurement decisions. And  
25 that -- that decision came in 2004, and the upshot was

1 that in order to conduct the procurement hearings so  
2 that the IOUs could purchase power, um the Public  
3 Utilities Commission is going to be relying directly on  
4 the adopted IEPR forecast. So that really upped the  
5 ante in terms of linking the IEPR forecast with the  
6 procurement process. And, as a result, it became even  
7 more critical than before to get the energy efficiency  
8 correct in the forecast. And that also -- that  
9 timeframe also coincides with a very big run-up of  
10 efficiency spending in the state. So between those two  
11 things, it's become very critical to understand where  
12 the energy efficiency fits into the forecast, and to get  
13 that right. So, as a result of several of these  
14 processes coming together in different iterations, we  
15 have our working group, sponsored by the Energy  
16 Commission. As many of you know, our former name was  
17 the Demand Forecasting Energy Efficiency Quantification  
18 Project. It rolls nicely off the tongue. And our old  
19 acronym was the DFEEQP. Most people didn't like that  
20 acronym, so last year we changed our name to the DAWG.

21 So, the DAWG has been active since the 2009 IEPR  
22 cycle. We began in about 2008, so this means that we're  
23 into our third -- second and a half year, basically.  
24 This is our second IEPR cycle. Um, the DAWG has, at  
25 this time, about a hundred members, and what that means

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1 is people who have expressed to me at one point of  
2 another that they would like to be receiving the  
3 mailings and the notices that come out from the DAWG  
4 working group. So, basically in the span of two and a  
5 half years, we've gotten, you know, a following of about  
6 a hundred influential folks in the demand forecasting  
7 and/or the energy efficiency realm. Um, and I'd say  
8 that in terms of members that are very active and very  
9 engaged, maybe we have about 30 to 35 people. So  
10 that's, I think, quite a good turn-out for this type of,  
11 uh, you know, nerdy working group. We've got a lot of  
12 people who are very interested, and again we really  
13 appreciate your participation.

14       Something that's special, and perhaps unusual about  
15 the DAWG, and in fact the reason that the working group  
16 exists, is to bring together members from different  
17 parts of the -- different parts of organizations that  
18 don't typically -- or didn't until this time -- have a  
19 good connection with one another. So, for example, even  
20 within -- we have different organizations, the Energy  
21 Commission, the CPUC, the IOUs -- the investor-owned  
22 utilities -- the publically owned utilities, and also a  
23 number of regulatory agencies and other interveners.  
24 But what I think what's very special is that we bring  
25 together both the energy efficiency and the forecasting

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1 and procurement topics. And the DAWG sort of is the  
2 area where, um, these types of issues can be discussed  
3 together and they're the kind of issues that tended to  
4 fall through the cracks before we were able to have a  
5 working group like this.

6 So the overarching mission of the DAWG is to  
7 contribute to California Demand Forecasts. Um, and we  
8 have a number of objectives, and I think perhaps the  
9 most important objective is transparency. It's a word  
10 that, you know, some say is over-used. But it's -- it's  
11 a good word. I think that all of the members,  
12 especially those that participate often will agree that  
13 we've been able to really expand and enhance people's  
14 understanding of both forecasting processing and  
15 procedures and data, and also the energy efficiency side  
16 of the equation. So these are -- just continuing on  
17 here -- this is -- these are missions that we've  
18 approved in our DAWG purpose statement. Something I  
19 wanted to point out is that right now we deal with load  
20 forecasting and energy efficiency in the demand  
21 forecast. But something that the DAWG has, uh, decided  
22 to do, is make sure that we're paying attention to all  
23 load-modifying activities. So we have in mind that we'd  
24 like to be reaching out to the distributed generation,  
25 um, components of the member organizations. And we

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1 basically have gotten a little bit too busy this year to  
2 actually make that happen. Um, we've made initial  
3 contacts with them, and that's certainly on the table as  
4 the DAWG rolls forward and we begin to expand our per-  
5 use, because we'd like all of the forecasting and  
6 analyses for all of the load -modifying activities to be  
7 on the same basis and to -- and to enable to forecasters  
8 to use data coming from those sources most effectively.

9 So, technically-speaking, the DAWG has a full working  
10 group. And that includes, both the demand forecasters  
11 and the energy efficiency folks, and as well as other  
12 stakeholders and interveners. And eventually as we see  
13 it, folks from the distributed generation side of the  
14 house. Uh, last year in 2010, we kind of reorganized  
15 the DAWG, and as you can see from this slide we have in  
16 theory, four sub-groups. Someone -- I don't remember  
17 who -- but immediately noticed that the sub-groups could  
18 be called puppies and they've remained the pups from  
19 then on.

20 So really, actually only two of these sub-groups have  
21 been active this year. Uh, the Demand Forecasting Sub-  
22 Group, and that's a forum where the demand forecasters  
23 from the utilities -- the investor-owned utilities and  
24 the publically-owned utilities -- can interact with the  
25 demand forecasters from the Energy Commission, and I

1 think we've seen that that's a very productive venue for  
2 people with, uh, you know, a very special expertise,  
3 some of the leading demand forecasters, quite literally,  
4 in the planet. And for them to be able to meet this  
5 closely with one another and share information and data,  
6 I think we can all agree that that's really been a very  
7 effective and helpful group.

8 We also have the Energy Savings Sub-Group. Um, and  
9 gosh we're confronting a lot of topics in that group.  
10 Some of you are laughing because, um, you know there are  
11 a lot of topics in energy savings and energy efficiency  
12 and, as we know, it's very difficult to -- you know,  
13 energy savings is the quantification of something that  
14 doesn't happen. So it's an inherently difficult  
15 activity to undertake, and I think that's been reflected  
16 in the lively discussions that we have with the Energy  
17 Efficiency Sub-Group.

18 So these last two sub-groups, or the two other  
19 puppies that aren't really quite active yet have to do  
20 with the Energy Efficiency Potential and Goal Study, and  
21 the CPUC is just now launching its Goals and Potential  
22 study, and so, we will be working with them to find the  
23 appropriate role for the DAWG within that study. And  
24 eventually we hope to get to, as I mentioned reaching  
25 out to the distributed gen folks.

1        So, uh, I think I've mentioned already, and you --  
2        and this -- by virtue of this presentation people can  
3        have a record of some of the topics that we discuss in  
4        our different sub-groups. But as you can see, the  
5        demand forecasters are really able to share in  
6        particular a lot of technical expertise, and, uh,  
7        expertise on modeling issues in our Demand Forecasting  
8        puppy. So in the Energy Savings pup, or sub-group, uh,  
9        it's a chance for us to, in particular, interact and  
10       understand the evaluation results, and how those  
11       evaluation results can be and are used for forecasting  
12       purposes. And we're able to make a feedback loop  
13       between the evaluations and the forecasting. And I  
14       wanted -- since we're going to spend a lot of the day  
15       today talking about an area where there is some  
16       disagreement among the stakeholders I wanted to be sure  
17       and point out that, uh, we've actually been able to  
18       achieve a lot of agreement on a number of topics in our  
19       Energy Savings sub-group. Uh, and those are topics that  
20       won't be on the table today because they are places  
21       where we've been able to already reach agreement. So,  
22       uh, we've -- you know, some things that have come up are  
23       identifying a consistent metric for peak savings, uh,  
24       and then we also talk about how to handle measure decay.  
25       Something else that's coming up is the macro-consumption

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1 metrics. Today we'll be talking about historical  
2 impacts, but there are a number of other topics that  
3 we've been able to discuss in the, uh ES pup, and to  
4 make a lot of progress on. Um, so again, some of the  
5 outcomes from our sub-group -- again I've used this word  
6 transparency -- we've made a lot of progress on being  
7 able to, sort of, interact with the measurement and  
8 evaluation that's going on at the utilities, and have  
9 early inputs to make sure that that evaluation research  
10 is crafted in a way that it can effectively be used for  
11 forecasting. We have achieved agreement where possible,  
12 uh, but there are still some sticking points where all  
13 of the stakeholders can't agree on certain topics, and  
14 we're going to spend the rest of the day on one of those  
15 topics, which is a treatment of energy efficiency  
16 history. And, you know, uh, Id' again like to say about  
17 that, that today we're going to be having a very  
18 detailed and technical discussion on energy efficiency  
19 history, and if it were not for the -- having the  
20 working group, we would never be able to have the  
21 conversation at this level, because, you know, prior to  
22 being able to have these discussions in the DAWG, none  
23 of the organizations exactly understood how the other  
24 organizations were treating these topics. So now we've  
25 been able to greatly advance everyone's understanding,

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1 but at the same time that's highlighted some new  
2 questions, and as a result, yielded some areas of  
3 disagreement, and we're bringing these to the Commission  
4 today.

5 Uh, this slide is just something I wanted to leave  
6 you -- leave you all with. Uh, today you're going to  
7 hear a lot about energy efficiency program data and  
8 about the quality of that data over time, and I just  
9 wanted to point out that this was one of the first  
10 issues that we identified in, uh, in this working group,  
11 back when it was called the DFEEQP. And I was looking  
12 back through my old presentations and found a slide, uh  
13 that we put before the Commission a couple of years ago,  
14 right at this time of the year, talking about how, you  
15 know, the program data, are really not available in a  
16 clear and usable form, and in fact information is  
17 distributed into literally hundreds of regulatory  
18 documents that would need to be pulled together if we  
19 were to create a consistent time series of energy  
20 efficiency history for the IOU programs. So that's  
21 something you'll hear about today.

22 So I guess in sum, really I'd just like to wrap up  
23 here, and talk about some of the successes of the DAWG.  
24 As you'll see in the staff paper that the Energy  
25 Commission has developed, some -- the Energy Commission

1 is proposing a much more nuanced treatment and  
2 discussion of energy efficiency in the demand forecast  
3 than we've ever seen before. And I think that the, you  
4 know, the ability to understand what the stakeholders  
5 might care about, and how and where to describe those  
6 nuances, these are -- this is a great result that has  
7 come out of the DAWG, and I think it's something we're  
8 really happy about. And again, the fact that we're  
9 going to be able to have this technical discussion today  
10 -- even though what we're going to see is that some of  
11 the stakeholders don't agree -- the fact that we can  
12 even have a discussion at this level of detail is, I  
13 think -- represents a lot of progress, and it's  
14 something we're very proud of. So again, the -- you  
15 know, our goals in the DAWG are to, sort of, bring  
16 organizations together, and at the same time break down  
17 some of the silos even within the organizations, so that  
18 the different areas of expertise are able to find a home  
19 where we share information. And that's it, unless there  
20 are any clarifying questions.

21 Ms. Raspberry: Hi, Tamara Raspberry, Sempra  
22 Energy Utilities State Agency Affairs. Can we go back  
23 three slides? Yeah that one -- sorry, one forward. So  
24 at the end you said key policies where stakeholders do  
25 not agree are now being put in front of the Energy

1 Commission. So, uh, just a history refresher -- is that  
2 a concern that these issues haven't been worked out  
3 through the DAWG, and are now going before the Energy  
4 Commission still unresolved, or is there any room in the  
5 DAWG to those -- whatever those keys policy issues, and  
6 I don't know if you're able to just delineate what those  
7 are, or --

8 Ms. Dickerson: I think that's a good question.  
9 I can tell you what we have in mind. We wanted this  
10 opportunity to enable stakeholders to put their thoughts  
11 and concerns into writing, which all of the key  
12 stakeholders have done, and those are posted on the  
13 Energy Commission website. And those same key  
14 stakeholders are going to be giving presentations today,  
15 as well as participating in our panel. It is our plan  
16 to then summarize -- summarize stakeholder comments, as  
17 well as areas of agreement and disagreement -- with all  
18 of the stakeholders, including Energy Commission -- into  
19 a final document and to put that document before the  
20 Commission. So it's our expectations that we're going  
21 to be able to resolve some issues but that there's --  
22 it's likely going to be the case that there are other  
23 issues that are unresolved, and those specific issues  
24 will be put before the Commission. Chris -- is that our  
25 -- that's our intended process.

1           Ms. Raspberry: Okay. And those unresolved issues  
2 will be resolved by the Commissioners themselves, or  
3 through other staff workshops?

4           Mr. Kavalec: Uh, if we, after today, remain  
5 with unresolved issues, we'll clarify what those issues  
6 are for the Commissioners and we'll ask for their  
7 guidance going forward. So it will be up to them, they  
8 may make a decision immediately, say okay we're going to  
9 go in this direction, or they may decide we'd like to  
10 hear a little bit more about the debate, and think about  
11 this for a month or two. So -- but anyway the idea is  
12 we're putting it in their hands and it will be up to  
13 them and the next steps that we take.

14           Ms. Raspberry: Thank you.

15           Ms. Dickerson: Are there any other questions?

16           Mr. Alvarez: Good morning, this is Manuel  
17 Alvarez, Southern California Edison. I guess I'm  
18 curious of whether the group has actually categorized or  
19 organized the disagreements in any fashion, or in other  
20 words, are they matters of opinion, are they matters of  
21 analytical techniques, are they matters of lack of data  
22 or information, or are they matters or interpretation of  
23 information?

24           Ms. Dickerson: Uh, that's a really good  
25 question, and that's a really good way to think about

1 organizing this material. So, it's been the case that  
2 the stakeholders have, you know, produced their  
3 documents, including, you know draft-written comments  
4 and some answers to questions, as well as our Power  
5 Point presentations, and these have all come in in the  
6 last week or so, so we're still getting -- although  
7 because of the DAWG and the working group we have an  
8 understanding of one another's positions, we haven't  
9 gotten quite to the level of being able to organize the  
10 material in the way that you suggest, but I think that  
11 would be a really good idea for our summary document.

12 Mr. Alvarez: Okay. Thank you.

13 Ms. Dickerson: Oh, and actually this -- you  
14 know, perhaps I should say a little bit about the  
15 questions and the format for stakeholder --

16 Let me describe just for the moment and for the  
17 record a little bit about how we've organized the input  
18 on this topic. The topic that we're going to spend the  
19 rest of the day discussing has to do with how to  
20 characterize energy efficiency that historic -- the  
21 effects of historical energy efficiency in demand  
22 forecasts. And so, the Energy Commission has prepared,  
23 I guess what we call the set-up piece, which is -- and  
24 all of this material is posted on the Energy Commission  
25 website for today's workshop. And that piece describes

1 in very significant detail how the Energy Commission  
2 handles the historical energy efficiency in its  
3 forecast. And, in addition to that, we worked with our  
4 stakeholder group to prepare a list of questions that  
5 all of the stakeholders would address. And so, all of  
6 our -- the key stakeholders who were interested in  
7 submitting papers responded to all of those key  
8 questions, and so you'll see that their answers -- it's  
9 -- we're able to compare their answers because they  
10 responded to a question and answer format that we  
11 developed. We didn't limit what anyone wanted to say,  
12 there was always an opportunity to say more, but at  
13 least in terms of eight specific questions -- some of  
14 them with follow-ups -- will have specific responses  
15 from all of the stakeholders. So, what you're going to  
16 see today is the presentation from Energy Commission on  
17 the treatment of historical energy efficiency. Then  
18 we're going to have follow-up presentations from the key  
19 stakeholders who elected to submit comments. And then  
20 we're going to have a panel in the afternoon, moderated  
21 by Energy Commission staff, where we're able to ask  
22 follow-up questions of the stakeholders. So something  
23 that I wanted to point out is that we're planning to  
24 entertain clarifying questions only after the  
25 presentations, and save substantive and -- substantive

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1 questions for the afternoon panel.

2 Did I miss anything? Alright, thank you very much.  
3 Oh, and our next -- do you want to be introduced right  
4 now? Okay, and so our next speaker -- back to the  
5 future -- is going to be Chris Kavalec, of Ener -- oh --  
6 oh, is Don Schultz, Energy Commission staff.

7 (Off-microphone conversation setting up Power  
8 Point)

9 Mr. Schultz: Good morning everyone, my name is  
10 Don Schultz. I'm currently serving as a retired  
11 annuitant at the Energy Commission, and back in the  
12 Demand Analysis office, where I used to work when I was  
13 a kid. Anyway, so what I'm going to do now is give a  
14 brief summary in a few slides of what was presented in  
15 text and table in more detail submitted in a paper that  
16 is posted also. And I'll be around for the moderated  
17 panel session to get into more detail, if necessary.  
18 Uh, my own view -- again this is obviously my own view,  
19 but it's what it's all about -- my history and the  
20 history of the treatment of energy efficiency goes back  
21 to the early 1980's, as best described in an obscure  
22 that some of you, hopefully are familiar with -- *Dynamos*  
23 *and Virgins* by David Roe from Air Metal Defense Fund,  
24 1984. The reason why in my mind -- in my experience, my  
25 career -- this book and the time period that is

1 described in this book, which I think is fiction -- non-  
2 fiction -- it is non-fiction -- describes the origins in  
3 the United States and in California, in particular, of  
4 what has more recently become known as integrated  
5 resource planning, where you try to treat and assess and  
6 decide whether or not -- from a decision-makers  
7 standpoint in various proceedings -- whether or not the  
8 cumulative effect of energy efficiency or reductions in  
9 demand, is sufficient enough to avoid building central  
10 power plants. That's the essence of integrated resource  
11 planning, it still is, and it's still contentious. And  
12 it's still contentious, I believe as you will see, for  
13 the reasons which Chris Ann, among others, have noted,  
14 and that is extremely difficult to measure on a reliable  
15 basis -- something that did not happen, which is what  
16 energy efficiency impacts represent. The key here on  
17 this slide, or one of them is, is in this time period,  
18 and what the origins of the foundation from which IRP  
19 was born in California, was when the utilities --  
20 largely using econometric forecasts, because there  
21 weren't any end-use forecasts except at the Energy  
22 Commission at the time when they were in the beginning  
23 stages -- were projecting a seven percent annual growth  
24 rate in peak and energy. That's -- as you know about  
25 compounding -- that's a big -- that produces a need for

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1 dozens of central power plants. And at that time it was  
2 coal and nuclear. But anyway, that book is basically a  
3 documentation of the inside story of what was going on  
4 at the PUC and at the Energy Commission, and I think I  
5 highly recommend it if you haven't read it.

6 Just by way of person disclosure here, in terms of  
7 what I have done -- this is basically a summary of my  
8 career where I've seen these issues beaten up and  
9 described and litigated and -- yadda, yadda, yadda -- in  
10 various forms, beginning back in 1980 when I joined the  
11 Energy Commission in the Conservation Division, and then  
12 switched -- in 1983 -- to the Demand Assessment office,  
13 where I worked on -- with the same -- some of the same  
14 characters that are here now. And it was in that  
15 context that I learned about the end-use forecasting  
16 models and the difficulties in trying to incorporate the  
17 energy efficiency reported savings that were being  
18 reported at the PUC. Whereas the models, as you all  
19 know, were specifically engineered to more reliably  
20 quantify the effects of the CEC Title 24 and Title 20  
21 standards, which is built into the Warren Alquist Act,  
22 so the models were built for that. The models were not  
23 necessarily built very well to sort of accommodate these  
24 sort of exogenous factors that are being reported at the  
25 PUC, as far as additional energy impacts.

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1 I guess the basic conclusion here is -- summarize my  
2 somewhat pessimistic conclusion is -- the collective we  
3 have really not had much success in dealing with this  
4 conundrum, because it is such a tough issue to do, and  
5 try to get some resolution on. And we're still  
6 disputing those things now. This is -- this is a  
7 summary of -- actually the paper that I think you --  
8 that is posted -- this is a PDF version of a matrix that  
9 was on one page. It's hard to read on one page so this  
10 basically chronological description of the different  
11 eras, as I chose to define them in terms of what was  
12 going on, in terms of types of the types of dominant  
13 programs, the characteristics of reporting and the EM&V  
14 requirements, and the CPUC proceedings which were  
15 addressing the resolve -- attempted to resolve the  
16 disputes. There's been a big evolution the last --  
17 since the early '80's on these various important  
18 matters. The one thing that I think cuts through this,  
19 that's important to recall -- I don't have it stated as  
20 a summary, but the -- from my experience it was not  
21 until 1990 that the PUC got around to establish what are  
22 known as reporting requirements, and most of those  
23 reporting requirements, when the utility efficiency  
24 programs dealt with standardizing and accounting for the  
25 costs of the program, and some very loose guidelines in

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1 terms of how to quantify the benefits. The focus  
2 necessarily at the PUC at that time was on cost, because  
3 they were concerned with these monies being spent --  
4 that the money was not being spend necessarily on energy  
5 efficiency. It has been spent on other things, and  
6 there were some instances where that was proven to be  
7 the case. There's a famous Edison fraud case, I don't  
8 know if any of you were around in the 1990's when --  
9 anyway that's neither here nor there. The point is,  
10 before 1990 -- and that means all the program impacts  
11 that reported -- before that there were no reliable,  
12 meaningful impact, uh on either the cost or the  
13 benefits, and that's why our position in the forecast is  
14 that most of the impacts that were -- may have been  
15 attributable to or associated with those -- that program  
16 error pre-1990 -- basically are unverifiable. They  
17 don't exist; you cannot go back and figure them out.  
18 And that's why at the core of one of my recommendations  
19 is that we should not spend much more time dealing with  
20 those. It's -- those of you who remember the other  
21 important events at the PUC in 1990 as a result of the  
22 so-called collaborative program spending ramped up.  
23 There was a first attempt to have a shareholder  
24 incentive mechanism. It lasted a couple of years before  
25 the Commission just had to get more serious, and went

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1 into the core of expenditures and much more -- this is  
2 where -- this era here, 1993-1997, probably represents a  
3 collective effort and a lot of money was spent in trying  
4 to do the best available estimation of what actually  
5 occurred as a result of the expenditure of these energy  
6 efficiency dollars. A lot of money and a lot of time  
7 and a lot of regulatory effort was put into creating  
8 this complete set of policy rules, reporting  
9 requirement, EM&V, and -- yadda, yadda, yadda -- and  
10 that's where I spent my career, and that's why I'm as  
11 grey as I am -- my hair is -- because of the damage that  
12 was done and trying to sort out the conundrum.

13 Any case, after -- as all of you know -- with  
14 deregulation and AB 1890 and 1998 came into effect from  
15 program years, therefore, that time period of '98 to  
16 2001, there was again, a period of almost no oversight  
17 at the PUC of these programs. The money was being spent  
18 that was required to be spent by AB 1890, but there was  
19 no real serious oversight in terms of regulation, no  
20 real serious measurement in evaluation, you know, it was  
21 ad-hoc, it was -- basically because the State of  
22 California and elsewhere had drunk the DE-reg Kool-Aid  
23 and basically said, you know, these programs will just  
24 do fine, and the Markets will take care of everything  
25 else. Well, we all know that that didn't exactly work

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1 out the way it was supposed to. But it was after the  
2 energy crisis, then, in 2001-2002, there was a  
3 resurrection as the PUC and at the CEC to try to restore  
4 some level of effort to try to account for and measure  
5 and determine in an integrated resource planning  
6 context, how much these programs not only cost, but what  
7 are the benefits. So, this brings us full circle then  
8 to where we are now, in terms of the on-again, off-  
9 again. So I guess the basic pattern is it's hard to --  
10 looking back and looking at all the reports that have  
11 been done, all the studies and in these different eras  
12 and the context within which the -- there was  
13 regulation-heavy, regulation-light, regulation-none in  
14 terms of EM&V -- it's hard to -- it's hard to put much  
15 faith in the effort in terms of every getting anything  
16 close to truth in terms of the historic. The question  
17 now, is the DAWG and the Commission and everyone else is  
18 going to have to -- is what -- where do we cut off  
19 backwards and say just forget about it, right? It's  
20 being captured in the forecast and focus on what kinds  
21 of ways can we do a better job, hopefully, in the future  
22 in terms of trying to account for that. So, with that,  
23 any questions?

24 Mr. Aslin: It's Richard Aslin again from  
25 Pacific Gas and Electric Company. And I just wanted to

1 say thanks very much for putting together this history.  
2 I found it very informative. I've spent most of my  
3 career on the demand forecasting side and over the last,  
4 I would say five to ten years, demand forecasting has  
5 increasingly become all about understanding energy  
6 efficiency. And, but this sort of effort really helps  
7 out a lot in understanding the history, the whys, and  
8 everything that was behind it, so I do really appreciate  
9 that. And I do think that -- moving on something that  
10 Chris Ann said, that there are a lot of ancillary  
11 benefits to the DAWG group, and that's certainly one of  
12 them. But I wondered on slide three, you had this term  
13 -- the utility energy efficiency conundrum --

14 Mr. Schultz: Yes.

15 Mr. Aslin: And I'm just wondering what was it  
16 that you meant by that specifically? Was it referring  
17 to this idea that what we're trying to do here is  
18 estimate something that didn't happen?

19 Mr. Schultz: That's at the core of the problem.  
20 That doesn't mean we can't make an estimate, it doesn't  
21 mean these programs weren't any good, didn't have any  
22 benefit. It just means that if you want to -- which is  
23 sort of what and IRP is supposed to do -- if you want to  
24 get the credibility up in terms of decision-makers, to  
25 avoid power plants based upon what has been reportedly

1 installed, in terms of its change in demand, that's a  
2 tough -- that's a tough conundrum. And like I say, at  
3 some point I don't know if we'll ever get it good enough  
4 for some people to say, okay these programs that came  
5 out in the last five years are sufficient enough to  
6 avoid building program -- uh, power plant "X". Right?  
7 But that's what happen -- was supposed to happen in the  
8 LTT process at some point. And that's going to be a  
9 tough call.

10           Mr. Aslin: And thanks, because what you said  
11 there in clarifying that really came right to the point  
12 that I wanted to make sure I understood from your point  
13 of view, and that is that just because it's difficult to  
14 estimate what the savings may have been in this  
15 historical period, it's not your opinion that there were  
16 no savings.

17           Mr. Schultz: No.

18           Mr. Aslin: Okay. That's I just wanted to  
19 clarify that.

20           Mr. Schultz: Well, and again it goes back to  
21 forecasting too, because as you know the forecast is not  
22 just -- it's not just difficult - well, let's put it  
23 another way -- in part because it's so difficult to  
24 measure the effects from programs that are currently  
25 underway or previously -- it makes it even tougher to

1 forecast what those programs effect from five more years  
2 of program expenditure you'll be seeing. That's sort of  
3 historic, current and forecasting components here, which  
4 is what IRPs are about.

5 Mr. Aslin: Okay. Thanks.

6 Mr. Schultz: Uh-huh.

7 Mr. Toth: Hi this is Phillip Toth, with  
8 Southern California Edison. And I agree with you at  
9 some point cutting off the analysis about effects of  
10 energy efficiency in the demand forecast is warranted,  
11 because as you go back further in time the effects and  
12 actual forecast is very limited. I was wondering your  
13 opinion on when does the effects of historical EE --

14 Mr. Schultz: Right.

15 Mr. Toth: -- and the impacts on the low  
16 forecasts become small enough not to worry about. I was  
17 wondering what time periods those were.

18 Mr. Schultz: Um, I mean, the obvious grey area  
19 to me is -- okay, the easy ones we can say, what's pre-  
20 1990 for all those reasons, you know, whatever effects  
21 were there are probably not -- whatever measures were  
22 installed, the effects are probably not likely to still  
23 be measurable or showing up because of decay and changes  
24 in housing stock and everything else. Beginning with  
25 the -- let me back up -- we made a -- we in the Demand

1 office in IEPR in 2008 decided that before 1990 --  
2 before '98 was not worth accounting for in the forecast,  
3 in our energy efficiency impacts. And that was because,  
4 uh -- again the stuff that was being installed has  
5 probably been decayed or replaced by this time. And,  
6 again the further out you go the less effect it's going  
7 to be. Then you get into other measurement interaction  
8 issues of, well what did those customers who installed  
9 measure "x" in 1998 or '97, when it wore out what did  
10 they do? Did they participate in a new program, same  
11 idea? Or did they just do it on their own? I mean,  
12 these are -- this is an on and on-going list of elements  
13 of the conundrum, of -- we don't know those kinds of  
14 things, and it's almost impossible to know. I -- right  
15 know, I guess I'm thinking that prior to 1998 is not  
16 worth trying to rehash. Um, the problem with program  
17 errors in 1998 through 2001 -- the lack of data, because  
18 this was during the heyday of something, I'm not sure  
19 what -- I guess it was the CBEE -- um, there was  
20 nothing. There's not much data that can be retrieved.  
21 So, what -- you know -- why can't we -- what are we  
22 supposed to do about that? So we have to make some  
23 gross judgments -- gross judgments about crude  
24 relationships, and use professional judgment. And  
25 that's -- that's, you know, we're getting closer to

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1 current time period now, and, you know, we've spent a  
2 lot of time and we'll be revising this looking at the  
3 Energy Division's reports that cover the 2006 and 2008  
4 and '9 period, which we will use to revise our estimates  
5 on realization rates and stuff for that era or program.  
6 That's one of the things we're going to do for the final  
7 forecast. Then the question is how -- how  
8 extrapolatable -- or whatever the word is -- how useful  
9 were those kinds of relationships that were, to our  
10 mind, fairly well-documented and demonstrated, and were  
11 studied to hell, I mean as best as you can do. How much  
12 can we use those relationships, those kind of adjustment  
13 factors to go back to 2001? See what I'm saying? So  
14 that's why breaking it into these eras has, at least  
15 forced me or encouraged me to rethink, well what was  
16 going on, right? In terms of oversight, in terms of  
17 EM&V studies, in terms of -- of verification, and you  
18 know, our office, I guess has to take a pretty hard core  
19 stand in terms of if it's not verified, or even  
20 verifiable -- these loading packs -- it's tough to say,  
21 okay well, just take it in and adjust it off the  
22 forecast. It doesn't make sense.

23 Mr. Toth: Thanks.

24 Ms. Best: Hi, my name's Carmen Best, I'm with  
25 the Energy Division, uh, CPUC Energy Division, the

1 evaluation section. Thanks, Don, for putting this  
2 together. I just had couple points of clarification  
3 that I wanted to note on slide six --

4 Mr. Schultz: Slide six?

5 Ms. Best: Right. For the period that is 2002  
6 through 2005, the characteristics of EM&V requirements  
7 is Energy Division and their consultants assume dominant  
8 role in conducting and overseeing EM&V --

9 Mr. Schultz: Right.

10 Ms. Best: I just wanted to point out that  
11 during that period it was the -- the IOUs were  
12 conducting those studies and Energy Division was  
13 providing some -- some review of results, etcetera --  
14 but that didn't start until about 2004, 2005 period.  
15 Um, and then generally the word dominant, dominate, is  
16 not one that we find very appealing. We were given this  
17 responsibility by our Commission, and dominate seems to  
18 indicate that we were -- it was a power grab of sorts.  
19 So --

20 Mr. Schultz: Okay.

21 Ms. Best: -- anyway I just wanted to clarify  
22 that. And then I also wanted to note that for -- if one  
23 was to look to the future for ten-twelve, as you all  
24 know we are in a collaborative process of EM&V planning  
25 and conducting studies that are much more -- or much --

1 very, uh, sensitive to all stakeholders' needs and doing  
2 studies that will be reflecting input from all kinds of  
3 parties.

4 Mr. Schultz: Right.

5 Ms. Best: Including the DAWG and -- and other  
6 groups.

7 Mr. Schultz: Right.

8 Ms. Best: So, thanks.

9 Mr. Schultz: Well, just another insight --  
10 reflection on this -- why I chose those words and stuff  
11 -- and as you may or may not recall that during the --  
12 before DE-reg, DRA was given a dominant role in the  
13 AEAP, see what I'm saying? And we did do a lot of  
14 verification of the consultants' reports -- of the  
15 utility reports, okay?

16 Ms. Best: Yeah.

17 Mr. Schultz: So this is really -- this is not  
18 meant to be -- it's just that DRA never got that role  
19 back --

20 Ms. Best: Uh-huh.

21 Mr. Schultz: -- okay, I'm not saying they  
22 should.

23 Ms. Best: Right.

24 Mr. Schultz: I don't think they want it. But  
25 the point is is that that did change the forum, in my

1 mind -- the venue by which differences and disputes were  
2 resolved. And it -- well we don't need to get into the  
3 inside story of why it is difficult for you to -- you,  
4 and your division, and your staff -- to participate in  
5 an evidentiary hearing, as opposed to the old days --  
6 good or bad -- where DRA was a -- was given a dominant  
7 role by the Commission in terms of overseeing this kinds  
8 of stuff. So, that's -- that's all that's there.

9 Ms. Best: Uh-huh. Just a slight edit that I  
10 would recommend.

11 Mr. Schultz: Okay. Fair enough. Anything  
12 else? Okay.

13 Mr. Kavalec: Uh, for the record -- Chris  
14 Kavalec from the Demand Analysis office. Uh, so in the  
15 -- the staff paper that Don Schultz talked about, we  
16 also describe our general approach to estimating  
17 historical efficiency impacts, with a focus being on the  
18 1976 through 1997 period. And the reason that we  
19 focused on this period, is because it has generated the  
20 most controversy. There are parties that claim that our  
21 estimates of program savings during this era van --  
22 vastly underestimate the "true" efficiency savings that  
23 occurred. And also, because we spent a lot of time  
24 during the last IEPR estimating efficiency program  
25 impacts from 1998 forward, and we've edited -- we've

1 edited this through the forerunner of the DAWG -- the  
2 DFEEQP -- as well as through the IEPR process. So I'm  
3 not going to talk about the early -- or the later  
4 historical period, but of course stakeholders in their  
5 presentations, and in the panel discussion later, are  
6 free to talk about -- make comments about our efficiency  
7 estimated for the later historical period, but I'm  
8 sticking to the earlier historical period in this  
9 presentation. And, next I'm going to make some staff  
10 recommendations for moving forward. I'm also going to  
11 talk about a little bit of work that we have done on  
12 consumption metric of efficiency program impacts, and  
13 that basically means using an econometric analysis to  
14 tease out the impacts from efficiency programs, taking  
15 into account econ-demo growth, changes and rates, and so  
16 on.

17 Uh, first a general review of savings included in our  
18 IEPR forecasts. Three basic types: codes and standards  
19 that are introduced into our models through changes in  
20 average consumption at the end-use level; what we call  
21 naturally occurring savings, but for practical purposes  
22 is basically price effects -- impacts from changing  
23 rates in terms of conservation and efficiency. And this  
24 is handled through our model price elasticities; and  
25 then efficiency programs, which are probably the most

1 difficult, as we've talked about, and the most objective  
2 in terms of analysis. Uh, during our DAWG discussions  
3 we developed this table that was meant to summarize the  
4 differences in treatment of efficiency over different  
5 time periods, and as I said the white area there in the  
6 middle, we spent a lot of time talking about that in the  
7 last IEPR process, so I'm not going to go into that  
8 today. The right col -- yellow column summarizes what  
9 we did for the incremental, uncommitted efficiency  
10 analysis that we did after the 2009 forecast. And the  
11 yellow column on the left is what I'll be talking about  
12 today, the '76 through '97 period.

13       Okay, so if we look at our last forecast, we find  
14 that the amount of program savings that was reported  
15 with the forecast is given by the amount in darker blue  
16 at the bottom of this graph. But, meanwhile, there are  
17 a lot of other claimed reported savings that occurred  
18 during this period that were not included in the  
19 forecast. The sum of these two blue areas here  
20 represent, uh, an accumulation of first year *ex ante*  
21 claimed program savings, accumulated using estimated of  
22 expected useful lives of the measures, as well as your  
23 typical exponential decay function. So I'm referring  
24 this accumulation of first year savings as *ex ante*  
25 claimed program savings. So the question is, you can

1 see the -- compare the darker blue with the whole area  
2 there -- why is there such a big difference between, uh,  
3 total claimed savings and what actually ended up in the  
4 forecast? Well, the first reason is that our typical  
5 practice has been to report, uh, savings only in the  
6 residential and commercial sectors because of the way  
7 that our models operate. For residential and commercial  
8 models -- these are end-use models and they require that  
9 you explicitly specify an amount of program savings when  
10 you're developing your historical back cast. In the  
11 other sectors, these are econometric -- or trend  
12 analysis type models -- that are geared off of actual  
13 historical data -- historical consumption data. So they  
14 don't require you to specify historically an amount of  
15 program savings in order to do a forecast. And, uh, one  
16 of the recommendations that I'm going to offer later  
17 deals with this -- this particular issue.

18 And this table here basically summarizes what I just  
19 said, in terms of how efficiency is handled in the  
20 different models. Our residential and commercial models  
21 are end-use or bottoms-up type models that require a  
22 specification of efficiency program savings. Where, the  
23 other model's a more aggregate, or top-down type models,  
24 and they're -- they run off of actual historical data,  
25 so they don't require that explicit specification. So,

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1 uh, by the way, what I'm doing here is going through a  
2 general process that our staff historically went through  
3 in going from total claimed savings to program savings  
4 that were included in the forecast. I'm not going to  
5 try to convince you that this was the right way or the  
6 only way, I'm describing what was actually done. We can  
7 talk about the appropriateness of the method later when  
8 we get into the panel discussion.

9       Okay, so removing non-residential, non-commercial  
10 savings, or the lighter blue area, that leaves us with  
11 the two darker blue areas at the bottom of the graph.  
12 Uh, and those two areas together being total residential  
13 and commercial claimed program savings, an accumulation  
14 of first year residential and commercial program  
15 savings. But that still leaves a lot of savings that  
16 could have been included in the forecast for these two  
17 sectors but were not. So we still have the question,  
18 why the big difference in what we ended up with, and the  
19 total residential and commercial claimed savings. Uh,  
20 typical practice by staff has been to exclude  
21 information and education-type programs, because these  
22 are considered the most shaky, and have little verified  
23 savings associate with them, especially in the early --  
24 earliest historical period. Also, we typically folded  
25 residential appliance rebates into the ramping up

1 process of appliance standards. Uh, typically the way  
2 it would work is you would have an appliance rebate  
3 program followed shortly thereafter of a new standard,  
4 or a ramp-up of an existing standard targeting those  
5 same appliances, or end-uses. Once the standard was in  
6 place there were no more savings associated with the  
7 appliance rebate programs. And the period before that,  
8 before the standards are in place and we have the  
9 appliance rebate programs, those savings were folded  
10 into the ramping-up process for the standards, okay? So  
11 here's a clear case where you could say that some  
12 savings that should have been assigned to program  
13 savings were assigned to standards. Okay, that's an  
14 attribution -- thorny attribution issue. Uh, so it's  
15 possible we could go back and back out the appliance  
16 rebate savings from the standards, although it wouldn't  
17 amount to a whole heck of a lot of additional program  
18 savings. Okay, now if we exclude those -- information,  
19 education and appliance rebate programs -- we're left  
20 with the two blue areas at the bottom of the graph. The  
21 sum of those two blue areas at the bottom represent the  
22 total residential and commercial claimed program savings  
23 considered to be incorporated in the forecast, with the  
24 area in the middle representing the amount of those  
25 savings that were excluded, or not included, in the

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1 forecast. So, basically what we are ending up with here  
2 is a certain amount of residential and commercial  
3 savings considered -- the two blue areas at the bottom -  
4 - and the actual amount that was incorporated in the  
5 forecast, representing around a third to a half of that  
6 considered total. And the way that we went from the sum  
7 if the two bottom blue areas to the final darker blue  
8 area at the bottom, was a matter of staff judgment, part  
9 of developing a realistic back cast for historical  
10 consumption, and basic reality checks. We would --  
11 staff would run into cases where claimed savings, if you  
12 estimate that at a per appliance level were actually as  
13 high, or higher, than our estimated of average usage of  
14 that appliance. So we didn't think that was very  
15 realistic, so we would make some adjustments, discount  
16 that amount of supposed savings.

17 Uh, so, to summarize, we are starting with a total  
18 amount of *ex ante* claimed savings, we're not reporting  
19 non-residential, non-commercial, we're excluding  
20 information, education and appliance rebate programs,  
21 making some final adjustments, and that's how we end up  
22 with our bottom slice, okay, that was actually included  
23 in the forecast.

24 Uh, as I referenced earlier, part of the problem we  
25 have in estimating program savings is attribution, or

1 overlap among the different types of savings. And I  
2 gave an example of an overlap -- appliance rebate  
3 programs versus appliance standards, okay. There's also  
4 overlap between naturally-occurring, or price effects,  
5 and program savings. For example, in the face of a rate  
6 increase customers may take advantage of an efficiency  
7 program in order to save electricity costs, so the  
8 availability of that program in the face of a rate hike  
9 increases the amount of savings. Now, typically what  
10 happens is the -- those savings are assigned to  
11 naturally occurring, or price effects, but you could  
12 easily argue that some of that savings should be  
13 assigned to programs. Uh, following up on this point,  
14 I'm basically showing two things here, that number one,  
15 the sum of residential and commercial program savings  
16 reported in the 2009 IEPR forecast plus the amount of  
17 naturally occurring, or price effects, in the  
18 residential and commercial sectors. The sum of those  
19 two gives you the dark blue curve at the top, and the  
20 red curve shows the total *ex ante* accumulated claimed  
21 savings that we've been talking about, and you'll see  
22 the sum of that -- what we've included in programs and  
23 the naturally occurring, is higher than the total *ex*  
24 *ante* claimed program savings. So one way to look at  
25 this is that it's not that we're not reporting a lot of

1 savings, it's that the savings are being assigned to  
2 naturally occurring, rather than programs.

3 A natural question is that what impact of  
4 specification, or mis-specification of historic program  
5 impacts have on our forecast? Is it important? Uh, well  
6 the impact that -- it will have an impact, even going  
7 back to this early historical period. And the impact  
8 comes through the way that we calibrate our residential  
9 and commercial end-use models. Uh, to simplify it  
10 slightly, basically what happens is the raw forecast  
11 output from these models is multiplied by the ratio of  
12 actual consumption in the last historical year divided  
13 by predicted consumption in the last historical year.  
14 So if we're including an estimate of program savings  
15 that is lower than the "true" amount, that means our  
16 predicted amount will be higher than it should be, okay,  
17 because the predicted means the raw model output and  
18 then you subtract off the program savings. So if  
19 program savings are too low, predicted is too high, then  
20 that ratio, actual over predicted -- the calibration  
21 factor -- is too low. That's being multiplied by the  
22 raw forecast output, so that means you're biasing your  
23 forecast downward. Your calibration factor is too low,  
24 okay. However, as Don mentioned, we're talking about a  
25 period here that ends in 1997, so the impact, or this

1 bias should be minimal, because we shouldn't see a  
2 significant amount of remaining effects from, uh --  
3 going back to 1997 and before. So there is a bias, if  
4 we mis-specify the amount of program savings during this  
5 period, but it's fairly minor.

6 Okay, with all this in mind, that brings me to the  
7 recommendations that we're making. And these are  
8 recommendations that we can discuss during our panel  
9 discussion later on today, and stake holders can comment  
10 on in their own presentations this afternoon.

11 Recommendation one, we don't believe it's worth doing a  
12 reanalysis of program savings during this early  
13 historical period. And by reanalysis, I mean sitting  
14 down, going through all the individual programs and AMNE  
15 studies associated with those programs. We don't think  
16 there's a lot of value added in that, it's not going to  
17 have much of an impact on the forecast, as I mentioned.  
18 And there's no reason to believe that a reanalysis is  
19 going to give us a significantly different result.

20 However, this doesn't mean that if new information or  
21 analysis becomes available and that analysis shows that  
22 our prog -- uh, historical programming packs are way  
23 off, and we think this is a quality, credible analysis,  
24 we would certainly incorporate this analysis into our  
25 historical savings, okay. Speaking of possible other

1 analysis, the CPUC is embarking on this consumption  
2 metric effort, uh, that we're also involved in, and this  
3 effort is meant to -- as part of this effort through the  
4 econometric work, we should have, or it will require,  
5 estimates to be made of historical program savings. So  
6 that could be incorporated sometime in the future, okay,  
7 to replace what we currently have.

8 Second recommendation, as I mentioned we have  
9 reported on the residential and commercial program  
10 impacts. We propose that in the future, in our future  
11 forecasting reports, we also add in an estimate of  
12 program savings in the non-residential, non-commercial  
13 sectors, okay. And this will, by itself, increase  
14 significantly the amount of program savings that we  
15 show. Uh, also these other sectors have naturally  
16 occurring, or price effects, that also haven't been  
17 included, so we propose to also include naturally  
18 occurring from these other sectors, in addition to  
19 residential and commercial.

20 Recommendation three is how we propose to deal with  
21 the attribution issue. Because of potential significant  
22 overlap among the savings sources that we've talked  
23 about, we propose that whenever we report savings, we  
24 report it as a lump -- as a single lump -- without  
25 attribution. This is our estimate of total savings that

1 impact the forecast. Only after that is reported do we  
2 break out the savings into the individual three sources  
3 and that discussion is qualified and includes a  
4 discussion of the overlap issue and other uncertainties.  
5 So we first report a lump, then we make an attribution  
6 estimate, but it's qualified and -- with a discussion of  
7 the uncertainties involved. Uh, and also as Don  
8 mentioned, we think our focus in terms of efficiency  
9 analysis should be the recent past and near future,  
10 rather than going back to the ancient period, okay.

11 And --

12 (Anonymous off-microphone comment)

13 Mr. Kavalec: The good old days. Uh, and in  
14 addition, we want to start taking a look at potential  
15 indirect effects from program savings, including rebound  
16 and take-back, that we haven't spent a lot of time on in  
17 the past.

18 And, finally, number five, uh, we -- as we have been  
19 doing -- propose to work with stakeholders through the  
20 DAWG process to ensure that we report efficiency impacts  
21 in the most useful and user-friendly way possible.

22 Okay, so we have done a little work on this  
23 consumption metric idea, teasing out savings from the  
24 consumption data, using an econometric analysis, and our  
25 preliminary work, which I will show you here, indicates

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1 that actual program savings are significantly lower than  
2 the accumulated *ex ante* claimed savings that I've been  
3 showing in previous graphs. So we -- we did two  
4 analyses, and in the first analysis the indicator for  
5 efficiency program impacts was DSM expenditures. This  
6 is data that I collected from EIA, going back to 1990,  
7 and I think some of us know that isn't the greatest  
8 data, but it's the data I had available. So this is a  
9 regression where the dependent variable is total  
10 consumption per capita. And you have logical  
11 explanatory variables, like per capita income, weather,  
12 rates, and you see towards the bottom there, uh, the  
13 coefficient for DSM expenditure per capita is negative,  
14 as one would expect, and has a statistically significant  
15 coefficient, a T greater than two and absolute value.  
16 The second analysis that we did --

17 (Anonymous off-microphone question)

18 Mr. Kavalec: Uh, whatever you want. If you  
19 want to ask a question you should probably come up.

20 Mr. Chaudhury: Back to your previous equation,  
21 and I do have a couple of questions here on this stuff.  
22 Now, over here, what do you think time trend is  
23 capturing? Do you think time trend could be capturing  
24 some of the DSM expenditure effect also?

25 Mr. Kavalec: It could, and you know there's

1 correla -- there's correlation among all these things.  
2 But it's also reasonable to suggest that it's  
3 incorporating the standards impacts.

4 Mr. Chaudhury: Okay.

5 Mr. Kavalec: Uh, so one way of looking at this  
6 is this time trend, using both time trend and DSM  
7 expenditure per capita is a way -- is an attempt to  
8 separate the impacts from standards and from, uh,  
9 efficiency programs.

10 Mr. Chaudhury: Uh, if you go back to page ten,  
11 I have a question on that.

12 Mr. Kavalec: Okay. Well, let's hold that one  
13 to the -- to the end.

14 Mr. Chaudhury: Okay, wait?

15 Mr. Kavalec: Yeah.

16 Mr. Chaudhury: Okay, thank you.

17 Mr. Kavalec: Thanks. Okay, the second  
18 econometric estimation, it was similar -- a cross  
19 section of the eight planning areas. This time the  
20 historical data was 1990 -- uh, 1980 to 1997, so it  
21 coincides roughly with the historical period we've been  
22 talking about. Again the dependent variable is total  
23 electricity consumption per capita, and this time the  
24 indicator variable for efficiency programs is total  
25 claimed savings -- that I've been showing in previous

1 graphs -- per capita. And you look down towards the  
2 bottom, claimed savings per capita -- again it has the  
3 expected negative coefficient, which is significantly  
4 significant, T above two. Now if we were to use these  
5 econometric equations, and estimate what historical  
6 savings were, we would end up with the results shown in  
7 this graph. So the total *ex ante* claimed savings that  
8 we've been talking about is at the top in dark blue.  
9 The estimate of historical savings, using econometric  
10 analysis II, that is using claimed savings as an  
11 indicator, is shown in red. Uh, the estimate of program  
12 savings using econometric analysis I, with DSM  
13 expenditures per capita, is shown as -- in black.  
14 Remember that started in 1990, so it doesn't go all the  
15 way back to the beginning of the -- all the way back to  
16 1980. And you can see that's more erratic, and that's  
17 because the DSM expenditure data is erratic. Uh, and  
18 finally at the bottom there, in purple, is the total  
19 residential and commercial savings that was reported in  
20 the 2009 IEPR forecast. Uh, so if we were to take our  
21 current residential and commercial savings included in  
22 the forecast, shown in purple there, and add to that a  
23 reasonable estimate of non-residential, non-commercial  
24 savings, we would be in the neighborhood of the  
25 estimates given by the two econometric equations, okay.

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1 So I'm proposing here that our preliminary econometric  
2 work suggests that or program savings, uh, if we add in  
3 an estimate of non-residential, non-commercial, gives a  
4 pretty decent representation of historical savings.  
5 Much -- a much better representation than using total ex  
6 *anti* -- *ex ante* claimed savings. Okay so, hopefully  
7 only clarifying questions, uh we can talk about this  
8 more in the panel discussion, but clarifying questions  
9 before we go to lunch?

10           Mr. Sanstad: Uh Alan San -- Alan Sanstad,  
11 Berkeley Lab again. Uh Chris, I have a clarifying  
12 question, but not -- somewhat indirect. Uh, the last  
13 time I looked in detail, I think it may have been the  
14 2007 IEPR, the Commission's historical estimates of the  
15 combined impact of utility programs, appliance centers,  
16 building codes, and other, uh, demand side programs  
17 added up -- I think I recall in the year 2000 -- to  
18 something like on the order of 12 or 13 thousand  
19 gigawatts savings in that year from the, you know, the  
20 one year and the cumulative effect. In other words, the  
21 curve of all this added up together in 2000 was around  
22 that much, now --

23           Mr. Kavalec: That -- that sounds a little low.  
24 Tom, you remember that --

25           Mr. Sanstad: It changed, you know, it may have

1 been a little higher, but it was in that order of  
2 magnitude I think.

3 Mr. Kavalec: Okay, I have --

4 Mr. Sanstad: Well, anyway, I -- maybe I'm --  
5 maybe it wasn't maybe I'm confusing numbers. In any  
6 case, my question is if you now incorporate the work you  
7 just described into that, sort of -- the combined  
8 retrospective estimate, how does it change?

9 Mr. Kavalec: Uh, if we were doing corporate  
10 econometric result, you mean, or --

11 Mr. Sanstad: Well, just whatever your new best  
12 retrospective estimate of the program savings for  
13 residential/commercial, combine that with all -- your  
14 estimate of building code impacts, appliance standards,  
15 some, uh, some other miscellanea I guess, and then how  
16 does that change what has been reported in previous  
17 years?

18 Mr. Kavalec: All else equal it's going to be  
19 higher, because we'd be adding in program savings we  
20 haven't reported in the non-residential and non-  
21 commercial sectors.

22 Mr. Sanstad: Okay.

23 Mr. Kavalec: As well as price effects from  
24 these other sectors. So the total amount, all else  
25 equal, would be higher.

1           Mr. Sanstad: Well if you take -- well I guess  
2 the point is if you take out what you're now calling  
3 naturally-occurring -- if I understood part of what you  
4 just said is that you have reassigned some of the  
5 historical savings from program impact to naturally  
6 occurring.

7           Mr. Kavalec: No. We haven't -- we haven't  
8 reassigned it, I'm just saying that there is overlap  
9 between the two so you could make a case that some of  
10 the naturally occurring should be reassigned to program  
11 savings.

12           Mr. Sanstad: Okay. I'll follow up after.  
13 Thank you.

14           Mr. Kavalec: Okay.

15           Mr. Aslin: So it's Richard Aslin again, Pacific  
16 Gas and Electric Company. Uh, could we go to slide  
17 three? Oh and by the way, thanks very much, Chris, for  
18 putting this together and for all of your efforts  
19 throughout the last IEPR cycle, and this one. I think  
20 it's -- we've made a lot of progress -- I know I  
21 understand the modeling much better than I did  
22 previously. And I really appreciate your willingness,  
23 you know, to work with a larger group and I have to say  
24 that every time I have sent you an email or called you  
25 on the phone I've gotten a response back within, you

1 know, and hour or two, and I really, really appreciate  
2 that, so just wanted you to know that.

3 Mr. Kavalec: Well thank you for remaining  
4 engaged in this process Rick.

5 Mr. Aslin: I -- I enjoy it. Uh, I just wanted  
6 to clarify on these -- these three elements, codes and  
7 standards, naturally occurring savings, and efficiency  
8 programs. I just want to make sure I understand exactly  
9 where these are coming from. So, I'm going to use this  
10 term *ex ante*, and when I use that term what I mean is  
11 it's based on some sort of modeling. It's not *ex post*  
12 which has been verified by some sort of, you know, visit  
13 to the site or anything like that. So *ex ante* means  
14 it's projected via some sort of modeling.

15 Mr. Kavalec: A projected amount, yeah.

16 Mr. Aslin: Right. Okay, so, codes and  
17 standards -- in the history that you're using -- the  
18 codes and standards, are those -- would you consider  
19 those to be *ex ante*?

20 Mr. Kavalec: I would, yes.

21 Mr. Aslin: Okay. Naturally occurring savings -  
22 - would you consider that to be *ex ante*?

23 Mr. Kavalec: Um, uh --

24 Mr. Aslin: Projected by a model? Not verified,  
25 not --

1           Mr. Kavalec: Not in the same way, because it's  
2 -- the naturally occurring savings come about through  
3 applications of price elasticities that are based on  
4 actual historical data.

5           Mr. Aslin: But they're estimated from the  
6 historical data, and we don't have any verification that  
7 this is the actual price elasticity that  
8 consumers --

9           Mr. Kavalec: That is true. But it's an  
10 estimate of the way people respond to prices, on  
11 average.

12          Mr. Aslin: Okay, but -- alright, so not quite  
13 *ex ante* in the same way codes and standards, but  
14 projected via some sort of assumptions made from a  
15 model.

16          Mr. Kavalec: Yes.

17          Mr. Aslin: And not verified *ex post*.

18          Mr. Kavalec: Uh, not verified *ex post*.

19          Mr. Aslin: Okay. And then, and that's the case  
20 for the history that we're talking about here?

21          Mr. Kavalec: Right.

22          Mr. Aslin: Okay, and also, codes and standards  
23 -- that's cumulative in the history, right? We're  
24 saying this is the savings from codes and standards all  
25 the way through the history --

1 Mr. Kavalec: Yes.

2 Mr. Aslin: Okay. And same with naturally  
3 occurring savings?

4 Mr. Kavalec: Yeah --

5 Mr. Aslin: It's cumulative --

6 Mr. Kavalec: -- it's an accumulation, right.

7 Mr. Aslin: Okay. So, let's talk about energy  
8 efficiency programs then. Energy efficiency programs is  
9 what you're proposing also to treat them, on the *ex ante*  
10 basis, or to give them some other treatment in the  
11 history?

12 Mr. Kavalec: Uh, well, my -- if I understand  
13 your question, my -- my recommendation, uh  
14 recommendation one, is for this particular historical  
15 period to leave savings the way they are, to not do any  
16 additional work.

17 Mr. Aslin: Which would be to leave them on the  
18 *ex ante* basis?

19 Mr. Kavalec: Adjusted *ex ante*.

20 Mr. Aslin: Adjusted -- adjusted via --

21 Mr. Kavalec: The process that I talked about.

22 Mr. Aslin: Which employed the *ex post* analysis  
23 that was done in the 2006/2008 EM&V studies?

24 Mr. Kavalec: No, uh, let's stick with the  
25 earlier historical period --

1 Mr. Aslin: Okay.

2 Mr. Kavalec: -- '76 through '97.

3 Mr. Aslin: Uh-huh.

4 Mr. Kavalec: That came from -- the starting  
5 point was *ex ante* claims and then adjusted by staff  
6 before it was incorporated in the forecast. So you can  
7 call that an *ex post* adjustment, if you want, but it was  
8 an adjustment made by staff here, uh, to develop a  
9 realistic estimate of efficiency program impacts to  
10 include with the forecast.

11 Mr. Aslin: Okay, I'll -- I'll think about that  
12 a little.

13 Mr. Kavalec: It sounds like maybe we need to --

14 Mr. Aslin: Yeah, we'll -- we'll do that  
15 later --

16 Mr. Kavalec: Yeah.

17 Mr. Aslin: -- but my other clarifying question  
18 is, uh, in the forecast how are codes and standards  
19 treated? I mean, they're based on *ex ante* modeling?

20 Mr. Kavalec: Yes.

21 Mr. Aslin: So, for the codes and standards --  
22 the historical treatment, the forecast treatment -- it's  
23 both *ex ante*?

24 Mr. Kavalec: Yes. And I should say there's  
25 also an adjustment process that goes on with standards.

1 We get numbers, um, from our efficiency division for,  
2 uh, expected savings from a new version of standards,  
3 but we don't just plop that into the models, we make  
4 adjustments if we don't think it's realistic. And we  
5 also apply a compliance rate.

6 Mr. Aslin: Okay, and you do that both in the  
7 historical period and the forecast period?

8 Mr. Kavalec: Yes.

9 Mr. Aslin: For the naturally occurring savings  
10 -- so those are generated via the price elasticity in  
11 your model -- in the history -- and you're applying that  
12 same price elasticity going forward?

13 Mr. Kavalec: Yes.

14 Mr. Aslin: So that's also a consistent  
15 treatment between the history and the forecast. So,  
16 what I'm concerned about is that for the energy -- the  
17 IOU programs, or any sort of programs -- that there's  
18 sort of this inconsistent treatment in the forecasting  
19 process between how the history is treated, which is  
20 it's heavily adjusted from the *ex ante* -- and but then  
21 when we go to the forecast period it seems like we're  
22 using things that come out of the potential studies and  
23 the goal studies, and those are clearly *ex ante* based,  
24 so I'm just wondering, you know, how -- how your -- what  
25 you think about how to deal with that sort of disconnect

1 between the historical IOU program savings, and the  
2 future, where in the history it's some sort of very  
3 heavily-adjusted *ex ante* and in the forecast period it's  
4 a much more pure, sort of, modeling approach.

5 Mr. Kavalec: Uh, let's -- maybe we're going a  
6 little bit beyond the scope when we start talking about  
7 the potential.

8 Mr. Aslin: Right. I went beyond clarification  
9 there, so --

10 Mr. Kavalec: Yeah. So -- so I would say that  
11 in the more recent historical period and the early  
12 forecast period, what we're doing it taking the best  
13 estimates when available of efficiency program impacts  
14 adjusted -- uh, with *ex post* adjustments. Um,  
15 unfortunately, you don't have a lot of that available to  
16 work with for the '76 through 1997 period. So, we're  
17 forced to -- or I'm saying we should stick with  
18 adjustments that staff made back -- back in the day,  
19 which wasn't really an *ex post* study, but constitutes  
20 and *ex post* adjustment to -- so it's consistent in that  
21 way, there are *ex post* adjustments. It's just in the  
22 more recent historical period and the forecast period  
23 we're basing those on actual *ex post* studies, whereas in  
24 the early historical period it was based on staff  
25 judgment.

1           Mr. Aslin: Okay. And uh, I have to say I was  
2 kind of struggling with your recommendation number one.  
3 SO I wonder if we could -- can you go there? So this  
4 recommendation says that no staff time or resources  
5 should be used in re-estimating historic residential and  
6 commercial energy efficiency load impacts, and --

7           Mr. Kavalec: And that should say for the early  
8 historical period, through '97.

9           Mr. Aslin: Right, but isn't that exactly what  
10 has been done? I mean it seems like that's sort of how  
11 we've, in large part, a lot -- gotten to this point, is  
12 that there was this effort to, you know, sort of re-  
13 estimate, re-characterize the historical energy  
14 efficiency savings.

15           Mr. Kavalec: Beginning in 1998.

16           Mr. Aslin: Well, was it beginning in 19 -- I  
17 thought it was beginning in 1976, but --

18           Mr. Kavalec: Uh, okay. Maybe I do not  
19 understand the thrust of your point, but what I'm saying  
20 is that we should not spend any further time re-  
21 evaluating program savings up through 1997. From 1998  
22 on, we have spent a lot of time, as you know in the last  
23 IEPR, developing revised estimates of program savings.

24           Mr. Aslin: Uh-huh.

25           Mr. Kavalec: So I'm not talking about that

1 period.

2 Mr. Aslin: Oh -- okay, so this recommendation  
3 is really talking just about this very early period.

4 Mr. Kavalec: Yeah, it's -- it should -- we  
5 really should put years in there.

6 Mr. Aslin: Okay, thanks, that was the  
7 clarification that I needed on that one. And um, I just  
8 wanted to also clarify -- make sure I understand this --  
9 that naturally occurring, as we're going to talk about  
10 it later, is primarily price impact.

11 Mr. Kavalec: Ninety-nine percent price effects.

12 Mr. Aslin: And what is the price elasticity  
13 that is assumed in the, let's say, residential model?

14 Mr. Kavalec: Uh, I can tell you overall, across  
15 the sectors, it averages around six percent.

16 Mr. Aslin: The negative point zero six?

17 Mr. Kavalec: Yes.

18 Mr. Aslin: Okay. Okay, and do you know the  
19 commercial?

20 Mr. Kavalec: The commercial is a little higher,  
21 it's around 15 percent, I think?

22 Mr. Aslin: Okay, so negative point one five?

23 Mr. Kavalec: Yeah.

24 Mr. Aslin: Okay. Alright, and then, uh, maybe  
25 we can talk about this later, but in your econometric

1 analysis you had price in there twice. So, both of your  
2 regressions had price in there?

3 Mr. Kavalec: Uh-huh.

4 Mr. Aslin: And when I'm looking at those  
5 regressions what I'm seeing when I look at those  
6 regressions is that price is not significantly different  
7 than zero in either one of those regressions, or just  
8 very slightly significantly different from zero.

9 Mr. Kavalec: Yeah, and that's -- that's not  
10 unusual. Let's see here -- well, in the -- in this  
11 second one, it's significant at a five percent level, T  
12 is above two.

13 Mr. Aslin: Well, significantly different from  
14 zero, but it's going to be --

15 Mr. Kavalec: Very small --

16 Mr. Aslin: -- at that ninety percent confidence  
17 level it's imperceptible.

18 Mr. Kavalec: Yeah.

19 Mr. Aslin: Okay. And then the other one it's -  
20 - it's interestingly -- it's also not very strongly  
21 significantly different from zero, but the -- from the  
22 expected value is quite a bit different than it was in  
23 the previous --

24 Mr. Kavalec: Yeah.

25 Mr. Aslin: -- it's almost twice as high.

1           Mr. Kavalec: And one of the reasons for this  
2 maybe that -- well you have different explanatory  
3 variables in there too, and also it's a different  
4 historical period, so --

5           Mr. Aslin: Right. So, and I guess my only  
6 point there is just to ask you -- just this clarifying  
7 question is to -- you know, how strongly do you feel  
8 that the estimate that you're making of the naturally  
9 occurring that occurs because of the price elasticity  
10 that's embedded in your forecast model -- how strongly  
11 do you feel about that? Do you feel that's spot-on? Do  
12 you feel it could be --

13          Mr. Kavalec: Nothing is --

14          Mr. Aslin: --half of that level, or --

15          Mr. Kavalec: -- nothing is spot-on.

16          Mr. Aslin: Okay. Alright, thanks. Alright,  
17 well thank you very much, and I'm sure the panel  
18 discussion will be interesting.

19          Mr. Kavalec: Okay. Sharim --

20          Mr. Chaudhury: Sharim again from Southern  
21 California Edison. Chris, uh, if you go back to chart  
22 ten -- uh, chart ten.

23          Mr. Kavalec: Page ten?

24          Mr. Chaudhury: Yeah, page ten. So where do you  
25 have a chart there -- okay I was wondering, have you

1 looked at -- for example, if you gave the utility  
2 programs the credit for some of those, uh, overlap? You  
3 know, for example, when the standard came in, as you  
4 mentioned, and some of the naturally occurring, like,  
5 price effect, there is some overlap as you mentioned,  
6 that this -- this program also increased the retail  
7 rate, so in theory you can give them some credit for  
8 that. So if you give the -- gave the utility programs  
9 the credit for the overlaps that you didn't give here,  
10 and also if you gave some credit for the information and  
11 educational program, how would your forecast look like -  
12 - I mean, it seems like you have a, sort of a, minimum  
13 case. It would be nice if you have, okay, range, for  
14 example.

15 Mr. Kavalec: Yeah, I wouldn't call it a minimum  
16 case; I would call it an adjustment based on staff  
17 judgment in an effort to develop a realistic forecast.

18 Mr. Chaudhury: Okay.

19 Mr. Kavalec: Uh, but you could easily double  
20 it, you know, if you made some reasonable transfer from  
21 -- overlap from -- made some reasonable assumptions  
22 about overlap between programs and standards, and  
23 programs and naturally occurring, you could easily  
24 double it, I'm sure.

25 Mr. Chaudhury: Okay, my next question is with

1 respect to the calibration that you do. Do you have a  
2 forecast that you take out the -- sort of the energy  
3 efficiency forecast, subtract out, then you compare that  
4 sort of forecast with historical data to come up with  
5 the calibration factor, right?

6 Mr. Kavalec: Yeah it's the ratio of actual  
7 consumption in the last --

8 Mr. Chaudhury: Right.

9 Mr. Kavalec: -- historical year to predicted.

10 Mr. Chaudhury: Right. Uh, and historically,  
11 I'm just wondering how big was that calibrations factor.  
12 First of all, is it bigger than one, less than one? Is  
13 it one point two, or point eight? Do you recall  
14 offhand?

15 Mr. Kavalec: Um, it's usual -- I would say  
16 usually it's somewhere between point nine and one point  
17 one. Um, but we have instances for a given forecast in  
18 a given planning area for a given sector where it can be  
19 very small or very big, because the input data isn't  
20 that good.

21 Mr. Chaudhury: Now, uh, given -- I'm just  
22 curious about your level of confidence in, sort of, your  
23 overall forecast, other than the energy efficiency  
24 forecast, versus the -- just the energy efficiency  
25 forecast alone -- which part are you more confident

1 about your forecast?

2 Mr. Kavalec: The -- comparing the general  
3 forecast versus efficiency, you mean?

4 Mr. Chaudhury: Yeah.

5 Mr. Kavalec: The forecast.

6 Mr. Chaudhury: Uh, the general forecast?

7 Mr. Kavalec: Yeah. The efficiency, as I  
8 mentioned, is a lot -- especially when you get to  
9 programs -- is a lot more subjective. And also the  
10 attribution of savings to different sources is somewhat  
11 subjective.

12 Mr. Chaudhury: Okay, so you -- in that case it  
13 seems like, uh, you are sort of more comfortable with  
14 the general forecast compared to the energy efficiency  
15 forecast. However, in terms of the calibration purposes  
16 you basically give a weight of one to the energy  
17 efficiency forecast, but you -- but the remaining  
18 forecast you basically move up and down to adjust to the  
19 historical data.

20 Mr. Kavalec: Well, it's -- when we're  
21 predicting for the last historical year that -- uh, the  
22 denominator in the calibration, the scaling term, that's  
23 meant to be an estimate -- uh, our best estimate from  
24 the models of consumption in the last historical year.  
25 So that means you're taking the raw model output that

1 doesn't include all the efficiency programs, and just  
2 subtracting that off. So it's just an effort to get a  
3 better estimate of actual consumption in the last  
4 historical year.

5 Mr. Chaudhury: Okay.

6 Mr. Kavalec: It's not treated any different --

7 Mr. Chaudhury: No, but I'm -- the point is  
8 that we have sort of two type -- two forecasts -- energy  
9 efficiency and sort of the non-energy efficiency part  
10 that's in the general forecast. And, uh, we subtract  
11 the energy efficiency part out then we compare this  
12 forecast against historical data, and to the -- we match  
13 it through this calibration factor --

14 Mr. Kavalec: Right.

15 Mr. Chaudhury: -- and I was wondering, uh --  
16 another way of to do it, that maybe our energy  
17 efficiency forecast was not as good, we can adjust that  
18 so that we don't have to just adjust the non-energy  
19 efficiency part of the forecast. Just a thought.

20 Mr. Kavalec: Okay, so you're talking about a  
21 modification in the way that calibration is done?

22 Mr. Chaudhury: Yeah, yeah.

23 Mr. Kavalec: Yeah, we can -- let's talk about  
24 that afterwards.

25 Mr. Chaudhury: Okay, thanks.

1           Mr. Martinez: Hi, Sierra Martinez from NRDC.  
2 Thank you, Chris, for the presentation. I just wanted  
3 to clarify, where did the price elasticities for the  
4 commercial sector of 15 percent come from, and what  
5 other price elasticities were considered in deciding  
6 which to use?

7           Mr. Kavalec: Um, that goes back quite a ways,  
8 the commercial elasticity. I believe it was from  
9 empirical studies done during the nineties. Um, and --  
10 I'm sorry what was the second part of your question  
11 about?

12           Mr. Martinez: If there were other price  
13 elasticities considered. And, it sounds like -- could  
14 these studies from the nineties be provided with a  
15 source?

16           Mr. Kavalec: Um, yeah, if we can find them in  
17 our vault of old reports. I'm sure they're around  
18 somewhere. They might not be electronic, but um -- but  
19 also I should mention that we are spending some time re-  
20 estimating our price elasticities for this forecast.  
21 So, for example, I think the residential price  
22 elasticity will be a little bit higher this time, and I  
23 think we're going to adjust the commercial price  
24 elasticity downward a little bit based on more recent  
25 data and estimation of price elasticities.

1 Mr. Martinez: Thanks.

2 Mr. Kavalec: Okay, are we ready for lunch? We  
3 have a phone -- someone on the phone? Okay, I guess we  
4 don't, so we'll see you back here about 1:20?

5 (Break for lunch 12:21 p.m.)

6 Mr. Junker: First up is going to be Athena Besa  
7 from -- is that correct, Besa? -- from San Diego Gas and  
8 Electra -- Gas and Electric. Thank you.

9 Ms. Besa: Thank you. I'm Athena Besa with San  
10 Diego Gas and Electric, and I also represent Southern  
11 California Gas Company, although they're not  
12 intrinsically, uh, involved in this. It's always great  
13 to be the first speaker after lunch. But if I was gonna  
14 be late, I was gonna blame it on Don Schultz. So, but  
15 anyway, uh in my presentation -- I think there's a  
16 handout out there with my presentation, and I think that  
17 Chris Ann had given us a certain template or format to  
18 use to do the presentation, but rather than do that I  
19 kind of answer all the questions in less slides as much  
20 as I can.

21 (Off-microphone conversation setting up  
22 presentation)

23 Ms. Besa: One of the primary questions that the  
24 draft report panel was asked to respond to was what is  
25 the importance of historical perspective on the EE

1 program accomplishments? And as, uh, we were talking  
2 about earlier, we talked about what's in the historical  
3 perspective and the methodology by which it was  
4 constructed by the CEC; however, we really never talked  
5 about why is it important, and to the different powers,  
6 I'm sure they'll all come up and they'll talk about why  
7 it's important to them from their perspective. And one  
8 of the things about the energy efficiency programs is  
9 that, you know, California is recognized, not only in  
10 the Country, but across the world as one of the leaders  
11 in energy efficiency, and this comes about because we  
12 are the aggressive state when it comes to programs in  
13 our Codes and Standards. I mean, we change Codes and  
14 Standards every three years, so -- I mean my thing's not  
15 broken yet, but there's a new code already, just in case  
16 it breaks 15 years later, I'm already covered by maybe  
17 five other codes by the time that happens. Um, the  
18 other thing too, is, you know, we recognize that some  
19 effort needs to be put into establishing what the  
20 historical perspective is, because it is an intrinsic  
21 part of the IEPR. And, therefore, it is important that  
22 we represent it accordingly.

23 Another purpose for doing historical perspectives on  
24 EE accomplishment, and -- you know I'm sure those of you  
25 who have scanned the literature on this, there's a lot

1 of sources for reporting savings. But in general, most  
2 of them had to, you know, more or less be in about the  
3 same magnitude, so we don't really quibble about the  
4 source -- where the source is. I mean, the PUC, as Don  
5 alluded to earlier, has very, very precise regulatory  
6 reporting requirements. Most of the -- all of the  
7 utilities -- at least the IOUs -- report in some  
8 consistent fashion, so it's easy for folks to put  
9 together their own way of characterizing the history,  
10 depending on what you want to do. I know, for example,  
11 that NRDC regularly asks -- when the annual reports are  
12 available -- you know, what are your results? So  
13 they're compiling their own history. I remember DRA --  
14 DRA also had a compilation report that took all these  
15 results and they just cumulatively added them. And so  
16 now we have one more that is available to us today,  
17 which is the historical perspective that the CEC staff  
18 had constructed. Now, one of the interesting things is,  
19 once you find this wealth of data -- and we all do  
20 policy, or we design programs, or we're doing forecasts  
21 and so forth -- you want to take this and use it. And  
22 so, based on that information, definitely public policy  
23 is influenced by what that historical perspective is,  
24 and the future is also impacted. Not only -- I mean we  
25 talk about it in the context of IEPR, which is really

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1 the general resource plan for the utilities and for  
2 California, for the most part. But from a programmatic  
3 perspective the history is important. You know what's  
4 worked, what doesn't work, where is the next generation  
5 going to lead to, and more importantly, how much money  
6 do you need to continue to do this. And depending on  
7 the perspective that you're putting forth, it will drive  
8 the policy in many directions. One of the interesting  
9 things that we are currently in is that AB-1890, which  
10 was supported by AB-995 for the electric PPP, is  
11 currently sunseting by the end of this year. So  
12 there's a big policy discussion, both at the State and  
13 at different agencies, about whether or not to continue  
14 to support that. Should we continue to support energy  
15 efficiency?

16 Another issue that's popped up recently is the issue  
17 of the natural gas PPP. Is it -- I mean, not talking  
18 about the legality of it, but what happens with the mon  
19 -- when the money is not there anymore, what happens to  
20 these programs? Do we care? Should we continue them?  
21 Maybe it's not important, so never mind, right? So it's  
22 really important to look back and see where we've been  
23 as we've moved forward, I mean, isn't that what our  
24 parents tell you? It's always important to see -- look  
25 at your past to move forward. And that's why it is

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1 critical for us to come to a common understanding of  
2 what it should be, and since we are all California, we  
3 have the same goals. We should agree on a certain way  
4 of how we present our history -- this is our history.  
5 Everybody in this room has been here, for what -- at  
6 least ten, fifteen years doing this? So this is our  
7 common history that we're talking about. And one of the  
8 questions in the -- about the report was what version of  
9 utility EE program history should be used? And I think  
10 that Chris Ann, who has been very gracious in terms of  
11 coordinating and keeping us organized, put some of these  
12 pieces of our history into certain categories. You  
13 know, it's like prehistoric history, middle -- Dark  
14 Ages, Middle Ages, those kinds of things. And sometimes  
15 if you listen to some of the descriptions early, its  
16 sounds like we were in the Dark Ages at some point. And  
17 at other points we were in the Renaissance period. And  
18 so, I -- we're putting forth here as -- yes, a lot of  
19 them are IOU reported savings, but there's different  
20 methodologies that were used to report these savings at  
21 different times. And so, when we talk about the pre-  
22 1990 -- I mean everything back to the 1980's or '70's,  
23 whatever those years were -- up to 1993, the IOU  
24 reported their savings as it was. There wasn't a lot of  
25 sophistication in measurement and evaluation, although

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1 it was the beginning of that period in time when, you  
2 know, we were thinking about new M&E protocols and how  
3 to measure these programs. And so, towards the 1993 we  
4 were getting a little more sophisticated, and so forth.  
5 But, you know, to the point that some of you were making  
6 earlier, that on the average measure lives of these  
7 energy efficiency equipment are between -- the longer  
8 ones are like between 15 to 20 years. So at this point  
9 in time, maybe it's not that important anymore.

10 Now, between 1994 and 1998, uh, this is when I met  
11 Don Schultz, along with Sharim Chaudhury here, and --  
12 yes we were in the middle of the measurement and  
13 evaluation protocols for California, which was  
14 administered by, then, the CalMAC group, and these  
15 protocols for measuring are available still on the  
16 CalMAC website. And, you know, at that point in time,  
17 this was like state-of-the-art, wouldn't you say Sharim?  
18 These were state-of-the-art, uh, types of protocols in  
19 order to measure these -- these savings. And, you know,  
20 Don pointed out that at this point in time there were  
21 earnings mechanisms associated with them, and therefore  
22 it was important to make sure that the reports submitted  
23 by the utilities were verified by then, the dominant  
24 agency DRA -- sorry Carmen. But, uh, because there was  
25 a lot of emphasis on -- and a lot of interest, actually,

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1 -- besides the earnings mechanism -- there was a lot of  
2 interest in the science of develop -- the development of  
3 the science of measuring these programs. Again,  
4 California was ahead of the country, maybe even the  
5 world in terms of these types of protocols. And they  
6 were subjected to scrutiny -- from my perspective it was  
7 a lot of scrutiny, in spite of the characterization that  
8 because of the constraint in resources, probably not  
9 everything was subjected to as detailed review as  
10 possible. But I would think that for the most part, the  
11 biggest programs -- commercial and residential -- were -  
12 - probably had a lot of in-depth evaluation and  
13 verification. So I would suggest -- okay we always talk  
14 about reported, but there are nuances when we talk about  
15 reported. All of these M&E protocols, and there were  
16 four different cycles of measurement associated with  
17 each of these years. So that's a lot of work to do in  
18 one program year, and that's why it took about ten years  
19 to finish one cycle. Um, a possible alternative to  
20 using the historical on this is to actually update based  
21 on the M&E verified results. And that is not -- which I  
22 personally can attest to -- is not easily available.  
23 These were in complicated tables that you manually had  
24 to actually take your little calculator at the time and  
25 multiply x-y-z to get what the new adjusted total

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1 program savings were. So it's not as simple -- so if  
2 you were cursory looking for information to compile,  
3 it's always easy to go to the first report, which is the  
4 *ex ante*, which is clear and easy to follow in the annual  
5 report. Not so easy with the M&E protocol results. But  
6 it can be done, and that's subject to, in my estimation,  
7 pretty rigid protocols. Now, from 1998 to 2005 --  
8 probably more like one or two -- 2002 -- a lot of these  
9 results were based on the 1994 to 1998 period. And not  
10 a lot has changed in that short period of time, so  
11 they're still pretty reliable.

12 So now we get to the fun part, which is '06/'08,  
13 including '09, I think. Uh, so now we have a current  
14 debate -- and maybe we have different opinions about  
15 that -- but we have a current debate going on about  
16 which results to use. And, um, at this point in time,  
17 we would recommend that the CEC, by virtue of  
18 potentially adopting these numbers, inadvertently  
19 resolves a debate that is currently going in the  
20 Commission. So we hesitate to bring that at this point  
21 into the IEPR forecast that is just being accepted and  
22 adjust the forecast. Now, I think one of the things  
23 that sort of also was interesting, but I no longer find  
24 it in the draft report, it must have been in some  
25 earlier version of it -- but there are three sources of

1 energy efficiency savings, which was laid out in the  
2 report.

3 Now, with respect to codes and standards savings, the  
4 programs -- the IOU programs never promoted standards.  
5 It was always above the standard. So, the program  
6 savings that are being reported are incremental to the  
7 codes and standards. Now, you move to the naturally  
8 occurring piece, and again, there's -- there's  
9 potentially a discrepancy in terms of what is the  
10 definition of naturally occurring? The way Chris  
11 defined it from the CEC's perspective is primarily based  
12 on pricing, or price elasticities. Natural -- naturally  
13 occurring for the EE programs for the IOUs was primarily  
14 free-ridership -- people who would have done it in the  
15 absence of the program. That's a much broader topic  
16 than just price elasticity. And so, there's a lot of  
17 overlap in these types of results. Now, one of the  
18 other things that I meant to ask Chris when he was  
19 talking was, when he picks up the program results from  
20 the utilities, a lot of times these reports are already  
21 net, so I don't know if you are using net or the gross  
22 results. And the net results, if your -- if you happen  
23 to use that -- already accounts for naturally occurring.  
24 So, it's been adjusted for that. And so, in general,  
25 there's a lot of overlap between these three categories.

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1 So in addition to that naturally occurring as we define  
2 it in energy efficiency is actually defined as free-  
3 ridership. And there's a lot of debate about what is  
4 the appropriate way to do that. Now, one of the -- one  
5 of the things that we propose to sort of resolve some of  
6 these issues of attribution -- and I think at some  
7 workshop in -- three years ago in IEPR -- way past then  
8 -- I also advocated to not -- for the CEC not to focus  
9 on attribution. In general, we fit in to the forecast,  
10 the forecast which is much bigger than the programs.  
11 And when you look at it from that perspective, we're a  
12 small sliver off that, and so to dissect a small piece  
13 into finer pieces, kind of like in the end, you know,  
14 when you chop up a piece of chocolate that's little, all  
15 you get are crumbs, and you don't get the same  
16 satisfaction out of eating the crumbs. So, we propose  
17 that we just remain with the total and not worry about  
18 which piece belongs to who. I mean, we are California,  
19 we should just be proud of the entire program that we  
20 have promoted, which includes both the standards and the  
21 different programs, both IOU and the PLU.

22 Now, on the savings decay, which we didn't really  
23 talk about much, the -- you know, there's measure lives  
24 and they have been researched a lot, we spend a lot of  
25 money -- and actually the DEER database was originally

1 the CEC's database, that we supported back in the '90's.  
2 And it does determine life cycle in equipment, it's  
3 updated on some regular basis -- maybe not in its  
4 entirety -- but some regular basis, depending on which  
5 priorities need to be done. And at the same time the  
6 PUC is investigating what is the appropriate way to  
7 actually carry credit into the future, past the so-  
8 called measure life. And so in the end, with respect to  
9 decay, as the PUC is ramping up that process we  
10 recommend that the CEC -- as they were interested in  
11 doing -- be a lot more integrated into that process. So  
12 that the methodology that's developed works for the  
13 IEPR.

14 We have a recommendation for different scenarios of  
15 how to handle '06/'08, I won't go through that, since I  
16 think some of my colleagues also promote the same ideas.  
17 But in the end, I think that whatever work the CEC does,  
18 needs to continue to support the great work that our  
19 state has done for energy efficiency. And it -- and  
20 realize the impact of the -- of these reports on  
21 policies and programs for the future. The historical  
22 estimated of the total energy savings pocket is  
23 adequate. It's -- we're only quibbling because we're  
24 talking about attribution, and so -- yeah, we have  
25 issues with the pieces and how they're developed, and

1 that's why we make that recommendation. And in the end,  
2 we are, as Carmen said, embarking on a new world for  
3 figuring out '10 to '12, new metrics for developing  
4 savings estimates, and I think that we should all -- all  
5 stakeholders should be vested in that -- in that  
6 process, as opposed to trying to figure out what was our  
7 past. We all have a proud past, and let's not keep  
8 dissecting it. Thank you.

9 I guess I can take questions. Or not? Do you have a  
10 question Chris?

11 Mr. Kavalec: Thanks, uh. I just wanted to  
12 answer your question from before --

13 Ms. Besa: Okay.

14 Mr. Kavalec: The numbers I showed for the '76  
15 to '97 period were gross; there was no net to gross  
16 adjustment.

17 Ms. Besa: Okay.

18 Mr. Kavalec: And also I had a question. Um, I  
19 wasn't quite clear on your recommendation for using the  
20 '06 to '08 EM&V results. They should be used in a  
21 forecast, or should not be used, or should both be --

22 Ms. Besa: Uh, I think that we would recommend  
23 at this point, scenarios, and I think part of the  
24 exercise that we're going through with the PUC long-term  
25 resource planning involves creating scenarios. And we

1 could work with that process for now until the  
2 Commission, hopefully, ultimately decides the  
3 disposition of the '06/'08. I mean, I don't have a  
4 particular direction at how they dispose of it, but I  
5 would rather wait until the Commission does that.

6 Mr. Kavalec: Okay, thanks.

7 Ms. Besa: Thank you.

8 Mr. Junker: Alright, next is Martin -- uh,  
9 Sierra Martinez, with the Natural Resources Defense  
10 Council. I said it right, right?

11 (Off-microphone conversation setting up Power  
12 Point)

13 Mr. Martinez: Hi, my name is Sierra Martinez,  
14 representing the Natural Resources Defense Council.  
15 Thank you for the opportunity to speak here today on  
16 historical energy efficiency. Today I'm going to be  
17 covering three main sections; first taking a look at the  
18 problems with the 2009 IEPR demand forecast attribution  
19 graph, then offering some solutions that I think we all  
20 can agree on, on ways to move forward, and last  
21 addressing the staff questions.

22 The major problem with the 2009 CEC attribution graph  
23 is that it drastically reduces the amount of historical  
24 savings attributed to efficiency programs. Here we're  
25 looking at a comparison between the original CEC graph

1 published in 2005 in the Energy Action Plan, in 2003 and  
2 numerous other CEC documents. It's the graph that Alan  
3 Sanstad was referring to in his question -- the original  
4 CEC graph showing about half the savings in California's  
5 history coming from efficiency programs, and about half  
6 from codes and standards. On the right, we're looking  
7 at the revised graph that the CEC published in the 2009  
8 California Energy Demand. In 2009, the CEC revised how  
9 it portrayed cumulative amount of energy efficiency  
10 savings over the years. In numerous prior publications,  
11 the CEC had published the original graph and provided  
12 data, and the sources of those data. But in 2009, as I  
13 mentioned, it drastically reduced those estimates.  
14 Comparing these two graphs, the CEC's new version  
15 drastically reduces savings attributed to efficiency  
16 programs by over 75 percent.

17 In the 2005 Energy Action Plan, estimated of  
18 cumulative utility program savings were 17,579 gigawatt  
19 hours for the most recent year, leading up to 2003. The  
20 revised 2009 IEPR reduced that amount down to 2,273  
21 gigawatt hours. This amounts to a reduction well over  
22 75 percent. In some historical years, the savings  
23 attributed to efficiency programs were reduced by as  
24 much as 92 percent. That is, the CEC only used eight  
25 percent of what was originally reported. These revised

1 vary sharply from the CEC's official record of energy  
2 savings during those years. The CEC's extreme  
3 reductions were made without a full public process and  
4 in the absence of any further evaluation studies, by the  
5 CEC or on behalf of the CEC. After two years of the  
6 DAWG proceedings, the CE staff cannot point to a single  
7 evaluation study more recent that has been conducted for  
8 the years 1976 to 1997 for those program years to  
9 support its reduction. Further, the basis for most of  
10 these reductions is simply the judgment of CEC staff.  
11 Although professional judgment is often necessary, and  
12 valuable, to the CEC's work, it would not replace well-  
13 documented information that has already been formally  
14 adopted by an agency following a thorough public  
15 process.

16 In summary, the revised version of history is a  
17 problem because it undermines our support for efficiency  
18 programs, it reduced the cumulative estimates over 75  
19 percent, and in some years, reduced estimates of savings  
20 by up to 92 percent.

21 The second big problem with the CEC's revision of  
22 history in 2009, is that it is incommensurate with other  
23 estimates of savings, particularly the sister agency of  
24 the CPUC's evaluating energy efficiency savings, as well  
25 as the agencies around other regions close to

1 California, which have been estimating savings from  
2 utility programs over a similar period of time, with a  
3 similar programmatic history. Here we're looking at the  
4 original CEC graph on the left hand side. This is  
5 extending to its full years. On the right hand side,  
6 we're looking at the Northwest Power and Conservation  
7 Council's graph of savings. On the left hand side in  
8 the original graph the CEC estimated about half the  
9 savings were coming from utility programs and about half  
10 from codes and standards. In the northwest -- the  
11 Northwest Power and Conservation Council estimates  
12 similar attribution of savings between utility programs  
13 working in conjunction with codes and standards. The CE  
14 staff made adjustments from the graph on the left, to  
15 program savings that were reported by the CPUC, or by  
16 utilities to the CPUC, using established CPUC evaluation  
17 measurement and verification protocols and reporting  
18 requirements. The CPU -- the CPUC has supported and  
19 required EM&V of efficiency programs for many years.  
20 The CPUC historically evaluated efficiency programs  
21 savings and determined energy savings estimates  
22 following rigorous *ex post* evaluation through its annual  
23 earnings assessment proceedings. The CPUC has a long  
24 history of protocols, and reporting and evaluating  
25 savings, as well as requirements for *ex ante* assumptions

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1 in reporting. The California Measurement Advisory  
2 Council, CalMAC, established to assess savings provided  
3 over 800 research reports, research studies that date  
4 back to 1990. Saving estimates at the CPUC were adopted  
5 following formal public proceedings and its  
6 inappropriate for the CEC to drastically reduce and  
7 rewrite those savings estimates, particularly without  
8 transparent and thorough public process.

9 The revised CEC estimates, also, are incommensurate  
10 with how our neighbors in the Pacific Northwest estimate  
11 savings, as I mentioned. The Northwest has implemented  
12 similar efficiency programs over a similar period of  
13 time as California. The Northwest Power and  
14 Conservation Council estimates cumulative savings from  
15 the similar types of categories, codes, standards and  
16 efficiency programs. The NPWCC transparently and  
17 publically provides this data to the public for historic  
18 energy efficiency on their website, which is how we got  
19 the data for this graph itself. The NPWCC estimates  
20 that about half is coming from utility programs and half  
21 from codes and standards, similar to the original CEC  
22 graph. However, the CEC's 2009 graph uses drastically  
23 lower values. We recommend that the CEC consult with  
24 the Northwest Power and Conservation Council to compare  
25 methodologies and assumptions, to improve how California

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1 accounts for the impacts from efficiency programs.

2 In sum, the second largest problem with the 2009  
3 graph is that it's incommensurate with savings estimates  
4 from the California Public Utilities Commission, and  
5 it's incommensurate with similar agencies in our  
6 neighboring regions, that have been offering similar  
7 programs over a similar period of history.

8 The third large problem with the 2009 revision of  
9 history is that it sends a counterproductive policy  
10 signal. The idea that savings are coming from  
11 "naturally occurring" categories and would occur without  
12 efficiency programs undermines our ability to actually  
13 all cost effective energy efficiency. It undermines the  
14 ability to advance these programs going forward to meet  
15 our climate change goals. It also contradicts the  
16 notion of market barriers. It's well documented in the  
17 economic literature that there are numerous market  
18 barriers and market failures out there that prevent  
19 people from adopting energy efficiency and achieving  
20 those energy efficiency savings. It's not a friction-  
21 less world out there, and the free market won't solve  
22 our efficiency problems on its own.

23 In addition to undermining our ability to meet our  
24 climate change goals, and undermining utility programs,  
25 it's counterproductive to the CEC's own work with POU's.

1 At a time when POUs are now ramping up their energy  
2 efficiency programs and have a mandate to procure energy  
3 efficiency as a top priority resource, and the CEC has  
4 been providing helpful guidance in expanding these  
5 energy efficiency programs, and the POUs are ramping up,  
6 sending a message that energy efficiency programs don't  
7 deliver savings is counterproductive. And in general,  
8 this inaccurate graph provides the message to policy  
9 makers that utility programs are not necessary, which is  
10 counter to the history of California, and the fact that  
11 there are market barriers out there.

12 The first solution -- there will be two solutions to  
13 solve our problems and provide a way forward. The first  
14 of which is rescinding the 2009 aberration revision of  
15 history. The CEC has, for year, published a graph that  
16 is commensurate with other agencies and regions, and  
17 acknowledging that the 2009 graph misrepresents the  
18 historical savings, and the fact that it revised prior  
19 data without a sufficient basis will allow us to move  
20 forward in a new direction. Sorry I jumped on to  
21 solution number -- sorry about that.

22 Uh, over the past several years NRDC has raised  
23 serious concerns about the 2009 IEPR graph and  
24 historical energy savings and asked numerous questions  
25 about how the CEC attributed energy savings among the

1 various possible sources, including codes, standards and  
2 utility programs. The current working group process has  
3 shared information that reinforces our concerns and  
4 demonstrates that CEC's demand forecasting model is not  
5 capable of determining the sources of historical energy  
6 efficiency among those categories. The Public Utilities  
7 Commission is the agency responsible for evaluating  
8 savings from investor owned utility programs. Over the  
9 years the CPUC estimate -- has estimated savings from  
10 utility programs through EM&V protocols, reporting  
11 requirements, and through formal proceedings. The  
12 program savings estimated under the CPUC auspices are  
13 commensurate with the CEC's original graph. It became  
14 apparent that there were no substantive reasons for the  
15 CEC to revise the CPUC's historical record of savings  
16 through the DAWG process. The CEC's revisions were not  
17 based on new or improved technical information or  
18 substantive analyses. Instead, the adjustments were  
19 made based on the staff's judgment. Moreover, the CEC  
20 information did not provide a public record for those  
21 revisions, nor their rationales. And the detailed  
22 revisions were not discussed or vetted through a public  
23 process.

24 During the DAWG, CEC staff acknowledged that it made  
25 many of the reductions for modeling purposes, but not

1 based on new technical information about historic  
2 savings. For example, 100 percent of the industrial  
3 savings were removed from the original graph. It  
4 patently is not a representation of total amount of  
5 savings if 100 percent of industrial savings are  
6 removed. CEC staff explained that because those savings  
7 did not work with the model -- or were being used in the  
8 industrial model, which is a different type -- an  
9 econometric model, instead of the end-use model used for  
10 commercial and residential -- the 2009 graph would  
11 represent zero savings from the industrial sector. For  
12 residential and commercial savings the CEC staff stated  
13 that they simply assumed those savings did not occur.  
14 The result of numerous of these unsubstantiated  
15 adjustments of the 2009 graph that dramatically  
16 misrepresents the history of energy efficiency program  
17 achievements in California. Not only does this do a  
18 disservice to the state, by providing inaccurate  
19 information, it threatens the CEC's excellent reputation  
20 as a source of reliable information on California's  
21 energy industries. NRDC strongly urges the Commission  
22 to disclaim and retract the 2009 graph.

23 The second solution to move forward is to publish a  
24 single total estimate of the savings. The Commission  
25 should adopt a single graph depicting the state's total

1 energy efficiency. We strongly urge the CEC to only use  
2 its total amount of energy efficiency savings and not  
3 claim to determine the causes of the savings, until a  
4 further process is developed to specifically address the  
5 historical attribution of California energy savings.  
6 The present demand forecast model was not intended to  
7 determine past causation of total savings and should not  
8 be presented as such. Instead, the demand forecast  
9 model was intended to predict future demand, as  
10 accurately as possible. Given this objective, savings  
11 can be either embedded inside the model or incremental  
12 to the model so long as future demand is accurately  
13 predicted. However, all the savings embedded within the  
14 forecast do not get represented in the 2009 graph, only  
15 those that are incremental. Further the amount of  
16 savings attributed to various causes changes depending  
17 on the order in which the model is run. Thus, the  
18 demand forecast does not intend to determine the various  
19 causes of the total amount of savings. Using a single  
20 total estimate of energy savings to adjust the demand  
21 forecast will provide a temporary remedy to avoid making  
22 the same errors made in 2009.

23 I'm running low on time, so quickly we'll go through  
24 the staff questions. Why is this important? I'll  
25 incorporate by reference all my previous comments, but

1 it's essential for us to increase energy efficiency and  
2 meet our climate goals, that the CEC not publish a graph  
3 that undermines efficiency programs.

4 Which versions to use? The CEC should be first  
5 looking to its sister agencies' estimates that were  
6 thoroughly vetted for historical years at the California  
7 Public Utilities Commission, and supplement with the  
8 best estimates at the time that were reported according  
9 to CPUC reporting protocol where there are not CPUC  
10 estimated itself. For 2004 to 2005, should use Energy  
11 Division's evaluation of savings, and for 2006 to 2009  
12 the CEC should reflect the uncertainty that is ongoing  
13 at the Public Utilities Commission and provide a range  
14 of estimated for those savings. The CPUC refuse to  
15 adopt Energy Division's results in the incentive  
16 mechanism proceeding, there's still controversy over  
17 those results, and it hasn't been resolved by the CPUC  
18 but NRDC is pushing vigorously to get it resolved. That  
19 uncertainty should be reflected here, and not attempted  
20 to be resolved at the Energy Commission.

21 Three and four -- um, we present an option to  
22 provider savings for a single total estimate of total  
23 savings. Uh, we think there should be a process forward  
24 to refine the demand forecast. I've already spoken to  
25 2006/2008. The low range for 2001 to '12, uh, should be

1 the 2009 IEPR adjustments that were done to '10 to '12,  
2 the mid-range should be the CPUC goals, and the high  
3 range should be utilities' projected savings approved in  
4 their compliance filings. For the decay, we defer to  
5 the CPUC here, but would like further process in how  
6 decay is defined. And I'll open it up to questions.  
7 Thank you. No -- any questions? Alright.

8 Mr. Junker: Thank you Sierra. Oh, I'm sorry.  
9 Thank you.

10 Ms. Gangopadhyay: Hi this is Monisha from --  
11 Monisha Gangopadhyay from the Division of Ratepayer  
12 Advocate. Um, I just wanted some clarity on the focus  
13 on this presentation. Uh, were you specifically  
14 speaking to the energy efficiency historical attribute  
15 question, or is anything that you're saying in conflict  
16 with, or does it stray from the CEC's recommendations as  
17 presented earlier this morning to move on from the  
18 attribution question and to incorporate non-residential,  
19 non-commercial savings in their forecast -- I guess  
20 historical non-commercial, non-residential savings in  
21 their forecast.

22 Mr. Martinez: Thank you, that's a great point.  
23 And it definitely is addressing what was presented this  
24 morning, and what was presented this morning was a  
25 repeat of 2009, insofar as it only uses that small

1 amount of utility savings that are incremental to the  
2 model, as opposed to the total amount, which is embedded  
3 and incremental in their model. So, yes, my -- NRDC's  
4 concerns apply both to what's being presented for 2011,  
5 as well as 2009. And with respect to adding in the  
6 estimates from industrial and Ag sectors, uh, that is a  
7 good step forward, however it doesn't change the fact  
8 that those savings were omitted from the 2009 graph, and  
9 that graph didn't represent the total amount of savings.

10 Secondly, the amount of total savings that might be  
11 included from those sectors, uh, I'd have to see them to  
12 -- in order to analyze them as to see what they look  
13 like.

14 Ms. Gangopadhyay: I'm going to need to talk to  
15 you at another point to get some more clarity on that.  
16 Thank you.

17 Mr. Martinez: Sounds good. Any other  
18 questions?

19 Mr. Junker: Thank you again, Sierra. Uh, next  
20 up is Cynthia Mitchell with the Utility Reform Network.

21 (Off-microphone conversation setting up Power Point)

22 Ms. Mitchell: Well, how's everybody doing in  
23 the rain, huh? My name is Cynthia Mitchell and I'm  
24 consultant with TURN, and this presentation that we're  
25 going to go through is assisted by Dr. Court and Dr.

1 Deumling, that are associates, uh, with my firm. And  
2 what I want to do is talk about, just directly, why do  
3 we have so much controversy between these two  
4 presentations here? Why does this matter so much? And  
5 it gets right to the heart of these issues --

6 The Reporter: Talk straight from the microphone  
7 please, I can't hear you.

8 Ms. Mitchell: -- gets to the heart of this  
9 issue, which is up until recently -- or even still  
10 currently -- there's a tremendous correlation, or cause  
11 and effect, put on the -- what's the old historic  
12 savings as being then attributable to how California has  
13 had a different scenario path on per capita consumption.  
14 And, so back in 2007 my firm, Energy Economics, we  
15 decided to look into this and what we found first and  
16 foremost was that there were no studies that  
17 demonstrated the strength of this relationship, okay?  
18 Uh, all we could find was the statements that it  
19 occurred, but no studies or analysis, and we all know  
20 that this has been in numerous California documents, but  
21 it's been also all around the country and all around the  
22 world. It's, you know, one of the more recent events  
23 was in Al Gore's book *Our Choice*, I know Gore's not on  
24 the, you know, the frontline speakers bureau now, but  
25 it's indicative of the amount of play this has had, not

1 just nationally, but internationally. And this is  
2 largely the basis of -- you know, California is the  
3 leader nationally and internationally in energy  
4 efficiency.

5 Well, so this is from our paper, Energy Economics  
6 Inc., and I'm stressing that because this was not a TURN  
7 funded project, uh, this is something that we sponsored  
8 and it was published in Public Utility Fortnightly March  
9 of 2009. Prior to that, though, it was also in the  
10 ACEEE Summer Studies Program, and to get into that we  
11 went through a pretty rigorous peer-review process where  
12 our regression results and regression analysis full data  
13 sets were handed over to the CEC staff, who -- a couple  
14 of the individuals who were on the peer review, they  
15 went through everything, we did additional regression  
16 analysis and such. This has been very heavily  
17 scrutinized. But what we did was we looked to try to  
18 determine the association of energy efficiency savings  
19 with the change in per capita consumption. And, uh, Dr.  
20 Court ran the regressions in numerous ways, trying to  
21 get the correlation as high as possible, uh, and the  
22 best we could get is something under 20 percent. And  
23 what we found was, though, that there was a very high --  
24 or relatively high -- correlation to price, uh,  
25 electricity price and per capita consumption. That's

1 what's shown here, and then secondarily we were able to  
2 look at, just in one year, 2004, across all the states,  
3 this was about a correlation of about 40, this is about  
4 a correlation of about 45 percent.

5 We also looked at some other factors such as cooling  
6 degree days, household size, housing mix, industrial  
7 shift, the decline in manufacturing. And you can't  
8 really understate, uh, the discrepancies in the price of  
9 electricity in California relative to the balance of the  
10 U.S., uh -- oh and the one thing I want to point out --  
11 this per capita electricity use, it appears in a lot of  
12 official documents. This is total per capita, and so  
13 you've got blended in here the shift in industrial mix  
14 over time, okay?

15 So, uh, this is a result of our analysis, but as we  
16 went through this, at one point I said what happens when  
17 you flip that California chart? What do you really  
18 have? And what's so interesting about this is that then  
19 you realize -- and I'm stepping away from the mic -- is  
20 that when you're in this early period here, '95 to '85,  
21 you essentially get 90 percent of the California run-up  
22 in energy savings, okay? And, uh, I -- that's very,  
23 very key in the discussion and the analysis. And what  
24 you see leads this then to a couple of the CEC  
25 documents, this just shows the, then, texture or

1 underlying quality or composition of the programs that  
2 were being booked at the time. And what you see here is  
3 that in the early years, it was information audits,  
4 education programs. And then we didn't get into our  
5 first cash rebates until about 1983. We started getting  
6 into the verified, some level of EM&V savings, into the  
7 mid-eighties. Another thing I wanted to say about this,  
8 uh, whether you're looking at it this way, or if you  
9 want to look at it this way -- whichever is your choice -  
10 - know that these represent utilities' recorded annual  
11 savings that are just then added over time, okay? And -  
12 - let me clarify that -- that's for that first block in  
13 particular, and then as we go forward in time we start  
14 to get some EM&V and some protocols and all of that in  
15 place and we start to put in some adjustments for decay  
16 and energy useful lives and net-to-grows. But it's that  
17 early block that gives us the 90 percent run-up that is  
18 -- is, uh largely what the CEC backed up. So, here's  
19 another look at the savings, and you can see the growth  
20 in savings, how it just -- how you get almost all the  
21 run-up in the first ten years.

22 Another way to think about this, then, is what really  
23 came first? Did we have energy efficiency programs --  
24 utility energy efficiency programs, or was there  
25 something going on in California, in the country, in the

1 world that gave us a broader context? And, uh, we have  
2 to remember that there was, you know, the OPEC --  
3 '73/'74 price of the barrel of oil went from -- in  
4 October '73 -- a dollar a barrel to 5-6 dollars a  
5 barrel, and we had tremendous price shock. Then we had  
6 that Iranian war, uh, and then more price shocks in the  
7 1980's. And then when you compare the changes in per  
8 capita consumption to when we started to have the  
9 logging of utility efficiency programs, you see that we  
10 started to have -- we had the price effects first, and  
11 then the utility programs following. And that's -- that  
12 fits with the larger context.

13 Uh, this is -- this is, uh -- back to the NRDC  
14 presentation, and I want to discuss the similarity  
15 between these two graphs, and Sierra referenced these as  
16 similar programs, uh with similar history. And this is  
17 taking the Northwest graph on the right, and re-ordering  
18 it in the same way that we re-ordered the California  
19 data. And then what you see when you compare these two  
20 is that they're really not similar at all. And it's  
21 really not similar programs at all. What you see is  
22 that the Pacific Northwest had a very modest incremental  
23 run-up in what they are booking, or claiming as utility  
24 EE program savings, but then they have then -- you, know  
25 from about 1990, 1992 on -- they're growing that wedge

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1 of utility programs, and then they've got the -- the  
2 NEEA is their market transformation component. And  
3 that's distinctly different from the California  
4 representation, where you have, you know, 90 percent of  
5 the savings being booked in the first decade, and then,  
6 you know, another quarter -- quarter of the savings  
7 thereafter. So, you know, it's felt at times that for  
8 energy economics, or for TURN to take this position, or  
9 to raise this -- to bring this analysis forward -- that  
10 somehow or the other we're being unpatriotic, because  
11 we're undermining the State's support for energy  
12 efficiency, and we're undermining the State's ability to  
13 meet its AB-32 goals. Well, this is the per capita  
14 consumption data updated. The original graph that we  
15 were looking at earlier only goes to 2004, and I think  
16 at this point in time, with the EA -- EAI data we can  
17 add on probably the 2009, we just haven't done that yet.  
18 But what you see is that on total consumption -- total  
19 per capita consumption -- California is actually, uh,  
20 ahead of the rest -- the balance of the U.S. And then  
21 this is the same data, but just with residential, and  
22 the change in California is even more dramatic here.  
23 2004 to '08 is 6.4 percent to the balance of the U.S. at  
24 2.5, and then when you look at it over the 2000 -- 2008,  
25 the -- California and the balance of the U.S. are a

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1 little bit closer. And I'd note that this is -- you  
2 know the distinction here with the 2004 to 2008 data,  
3 either for the California in total, or the residential,  
4 this is markedly at the time when we went to utility  
5 portfolios at two billion, you know, for the three  
6 years.

7 So, I'll leave you with a couple of interesting  
8 quotes, and if there's any time for questions I'll take  
9 those.

10 Mr. Aslin: It's Richard Aslin, Pacific Gas and  
11 Electric Company.

12 Ms. Mitchell: Hi Richard.

13 Mr. Aslin: Hello. Hey, uh, I just wanted to  
14 say thanks very much for all the work that you did. I  
15 have looked at that Public Utility Fortnightly article  
16 several times, and some other articles that came after  
17 that --

18 Ms. Mitchell: Right, and we gave you our  
19 data -- we gave you our data sets --

20 Mr. Aslin: -- and thanks very much --

21 Ms. Mitchell: -- too, right?

22 Mr. Aslin: Yes -- and thanks very much for  
23 that --

24 Ms. Mitchell: Okay.

25 Mr. Aslin: -- I do appreciate that. And I do -

1 - I think that these kinds of discussions are very  
2 useful, so um -- I wanted to, though, definitely clarify  
3 something which I have been unclear on --

4 Ms. Mitchell: Okay.

5 Mr. Aslin: -- and that is if you go back to,  
6 um, any of those -- that graph right there -- or just go  
7 back to slide one, maybe. Two -- three -- sorry --

8 Ms. Mitchell: Four.

9 Mr. Aslin: Yeah, we'll try that one.

10 Ms. Mitchell: Okay.

11 Mr. Aslin: Alright, now, the part of that  
12 graph, on the left hand side that says Utility Energy  
13 Efficiency Programs -- uh, my understanding of that  
14 graph is that it is not reported *ex ante* first year  
15 savings cumulated through time, but rather it is  
16 reported *ex ante* cumulative savings reported through  
17 time which are also adjusted for significant amount of  
18 decay, is that the case?

19 Ms. Mitchell: And that's -- that's a good  
20 point, Richard, and you cannot make -- you cannot make  
21 one statement about this data, okay? You have to look  
22 at it in periods or eras or vintages, okay? This  
23 portion right here of the first, say, six, seven, eight,  
24 nine, ten years -- you shouldn't even call that *ex ante*,  
25 okay? That is simply utility reported first year

1 claimed savings. *Ex ante* means something more precise  
2 in our EM&V lingo now, right? *Ex ante* means that it has  
3 been reviewed, it's been vetted, there's been some sort  
4 of agreement, or disagreement about that data, and it's  
5 being, you know used for planning program design,  
6 etcetera, okay? The first portion, there is no *ex ante*,  
7 there are no adjustments, it's just a block of savings.

8 Mr. Aslin: Okay -- I'll lop off the *ex ante*  
9 part --

10 Ms. Mitchell: Okay.

11 Mr. Aslin: My -- the bigger point is I just  
12 wanted to understand whether that was cumulative with  
13 decay --

14 Ms. Mitchell: No, and I thought I said that --  
15 Don and other people in the room are better -- uh, Chris  
16 -- about addressing that. But the -- this matter of --  
17 or Tom, as well -- we didn't start -- or the CEC -- you  
18 have to remember that this was just data coming into the  
19 CEC, it wasn't being used for the forecast at all. It  
20 was just data that was coming into the CEC and being  
21 filed somewhere early on, at least for the first decade.  
22 And this, as energy efficiency started to gain  
23 prominence and we were recognizing, not just as this  
24 state but as a country that we really needed to  
25 something to give consumers a way to more meaningfully

1 respond to prices, rather than just cut consumption and  
2 suffer --

3 Mr. Aslin: I -- and I -- I just -- the clarity  
4 I wanted to get was around whether that utility energy  
5 efficiency program slice there is with decay --

6 Ms. Mitchell: And I'm saying, Richard, you  
7 cannot make one universal statement about this slice.  
8 You have to talk about it in vintages, and Tom's better  
9 to do that.

10 (Off-microphone comment)

11 Mr. Gorin: Tom Gorin from the Energy Commission  
12 Demand Analysis Office. And I probably have most of the  
13 written history for all this stuff back to 1978  
14 somewhere.

15 Mr. Aslin: Okay, well we only have two minutes,  
16 so --

17 Mr. Gorin: Okay. The decay, as I understand it  
18 in that first chart is based on program lifetimes when  
19 they were reported. And they are all over the map.  
20 Some of the industrial programs that I finally dug up  
21 had a 40 year lifetime.

22 Mr. Aslin: Okay. But I -- the -- I just wanted  
23 to make sure -- okay so that number, it includes decay,  
24 and in large measure that's why, when you reverse the  
25 graph -- which I thought was very, very insightful and I

1 am going to do that every time I get a graph from now on  
2 because I think it was very enlightening when you did  
3 that -- when you reversed the graph, that -- it's the  
4 decay is the reason why you get the flat. It's not that  
5 utilities haven't been out there, you know, implementing  
6 programs that every single year, you know, result in  
7 energy efficiency savings, it's because over time the  
8 energy efficiency savings that are in programs -- which  
9 are only the part that's above code -- end up getting  
10 usurped through improved codes and standards. So, the  
11 savings are still there, they're just in another portion  
12 of that graph. And I think we heard Chris allude to  
13 that earlier, so -- just wanted to, you know, clarify  
14 that part of it.

15 The second question I had was on price elasticity.  
16 So, in your -- when you did your estimates, I don't  
17 recall -- what did you have for you estimate of price  
18 elasticity?

19 Ms. Mitchell: We didn't have an estimate of  
20 price elasticity.

21 Mr. Aslin: Oh. You just had the correlation --

22 Ms. Mitchell: We just read the correlation --  
23 yeah.

24 Mr. Aslin: Okay, and you --

25 Ms. Mitchell: Yeah, and then I think that Cy

1 Goldstone had -- did some implicit price elasticities  
2 off of our work, and said that it's -- he determined  
3 that it was actually a very high price elasticity, you  
4 know, because we were looking at long-term data.

5 Mr. Aslin: Okay, and I -- you know, later I  
6 think I'm going to try to use this as a thought  
7 exercise, so I just wanted to -- in your opinion, what  
8 would be a reasonable price elasticity for, let's say  
9 residential or commercial?

10 Ms. Mitchell: I'm not going to answer that, I  
11 mean, because there's all different context of that, as  
12 to whether you're talking about short term, long term --

13 Mr. Aslin: Uh, I would be thinking long-term.

14 Ms. Mitchell: And that's -- that's outside of  
15 the scope of clarifying.

16 Mr. Aslin: Alright.

17 (Anonymous off-microphone comment from the audience):  
18 There will be an opportunity for panelists --

19 Mr. Aslin: Yes, yes absolutely, okay. Yes,  
20 thanks very much.

21 Ms. Mitchell: And I still won't answer it then,  
22 because I don't have an answer to that.

23 Mr. Aslin: Okay, perfect.

24 (Anonymous off-microphone comment from the audience)

25 Ms. Mitchell: Chris --

1           Mr. Kavalec: Thanks Cynthia, I just wanted to  
2 be clear -- what is your suggestion regarding our  
3 recommendation that we not revisit the program savings  
4 in the earliest historical period --

5           Ms. Mitchell: Well, it would be ridiculous to  
6 revisit it, because, you know, that first ten years is  
7 education audits and information. Um, number one,  
8 there's very little information on that. What Tom has  
9 is, you know, just a bundle of papers on that, if I  
10 recall, because we came and got that several years ago  
11 when we were doing our work. And we all know -- or I  
12 sure hope as heck we know -- that education information  
13 and audits, that's where we began, and not just  
14 California, but the country as a whole. And we were  
15 chasing after, you know, tremendous price effect and  
16 trying to give consumers a way to meaningfully respond,  
17 and it was, you know, it was our first shot out of  
18 the -- out of the gates at this, and, um there's nothing  
19 there to fiddle with. And I guess we should recognize  
20 that the Energy Division, with their EM&V protocols --  
21 and Carmen can speak to this -- we don't count savings  
22 or credit as direct savings activities and expenditures  
23 from, you know -- from education audits and information.  
24 They're supportive of programs.

25           Mr. Kavalec: And do you have any feeling one

1 way or another about attribution -- whether I should be  
2 made or --

3 Ms. Mitchell: Well I -- you know I think we  
4 should, because I think it's -- I think, you know  
5 it's -- I think this is interesting data right here,  
6 right? I think that's interesting. I mean, and I would  
7 -- I mean we have the BPA utility program data here, and  
8 whether that is -- has veracity to it or not, you know,  
9 that's interesting -- as interesting as this is. And it  
10 all tells stories, and, you know, I think what TURN is  
11 most interested in, is we're interested in a discussion.  
12 You know, we want to get to those AB-32 goals, and we're  
13 a -- you know, whether you go with this data, or you go  
14 with this data, we're far from those goals, because  
15 remember the CPUC's energy efficiency goals are  
16 incremental. The 2004/2013 goals are designed to reduce  
17 65 percent of incremental load growth. AB-32 is an  
18 absolute reduction in CO2 -- you know the electricity  
19 sector is 25 percent of the problem, or the defined  
20 emissions, but we're giving -- at least current policy -  
21 - 40 percent of the responsibility to the electricity  
22 sector, and whether you're going to do it through  
23 renewables, or energy efficiency is still to be seen.  
24 But we're putting a lot of emphasis on energy  
25 efficiency.

1           Mr. Kavalec: Okay. Thanks.

2           Mr. Junker: Thank you, Cynthia. Next up, Phil  
3 Toth from the Southern California Edison. Thanks.

4           Mr. Toth: Well, uh, Chris -- uh -- before I  
5 plow into the presentation I have, uh, about ten minutes  
6 and this is designed to be about a twenty minute  
7 presentation, so I'm going to have to plow through this  
8 and skip a few things, if you bear with me. But before  
9 I get into this I'd like to commend, uh, Chris and Chris  
10 -- Chris squared -- Chris Ann Dickerson and Chris  
11 Kavalec -- on their efforts. These kind of  
12 conversations would not have happened just a few years  
13 ago, and I think they make our product better, and it  
14 really goes a long way.

15          Why is EE important? It is embedded in many  
16 different proceedings, and -- I'm not embarrassed  
17 getting in front of you guys, but taking my picture  
18 makes me laugh -- sorry. Uh, and so it's embedded in  
19 many different proceedings and it's -- and venues --  
20 within the CPUC, and the ones that I'm involved with --  
21 the Energy Efficiency Proceeding and the Long-Term  
22 Procurement Planning Proceeding -- within the CEC, the  
23 IEPR -- not only that, it's embedded in a ton of  
24 different policies with the State of California. Some  
25 that are, uh, directed directly towards EE programs,

1 such as the public utilities codes. Other goes -- go  
2 into the direction for planning and policy for moving  
3 forward, and that's the California Energy Action Plan,  
4 and AB-32 and the global warming thing uses energy  
5 efficiency to help reduce greenhouse gas emissions, and  
6 so it's embedded throughout California. And it's really  
7 intertwined in many things we do, so it's very  
8 important. Now the next page here -- things you think  
9 about on the airplane -- I put CPUC and CEC's headings  
10 here -- that very much -- that could be the same as  
11 energy efficiency and load forecasting without naming  
12 names and putting them up here. But the point of this  
13 is to illustrate the difference between how energy  
14 efficiency comes up with -- comes up with or calculates  
15 their savings -- versus how the CEC does it. Uh, the  
16 CPUC, in a simplistic sense, starts with goals, program  
17 designs are made to meet or beat those goals -- and the  
18 program designs depend on DEER and program level savings  
19 -- and then through different products and delivering  
20 the products and services we get to our *ex ante* reported  
21 savings. And on the CE side -- CEC side -- uh, Chris  
22 mentioned some of this, and simplistically speaking,  
23 they start with IOU *ex ante* savings, they discount those  
24 program savings for select programs -- for example  
25 audits and those kind of things -- and they further

1 discount those savings first on the EM&V results, the  
2 realization rates, and then they discount historic  
3 savings to fit back-casting efforts. Now, at the end of  
4 the day, uh, both of these estimates are right --  
5 depends on what they're being used for. And the  
6 important part is to realize what they're being used  
7 for, and how these are used are very important. And --  
8 the next page here -- that's two pages -- I was  
9 searching for a nice concise way to explain the  
10 difficulties of attributing savings within the CEC's  
11 forecast, so I delved into CEC CED forecast archives and  
12 I came up with this -- difficulty arises in correctly  
13 distinguishing EE impacts from market effects, standard  
14 effects, and savings from public utilities, or utility  
15 programs that are captured in forecasting models. And  
16 that attribution and being able to put these things in  
17 mutually-exclusive buckets is of issue. And we've spent  
18 most of the day today discussing what to do about that.  
19 And, uh, this argument has changed drastically from what  
20 we did in the 2009 IEPR, which from the time I joined  
21 the DFEEQP that Chris talked about earlier -- we were  
22 working on distinguishing the amount of overlap between  
23 the energy efficient goals and what's already embedded  
24 in the CEC forecast. That was very clear and very  
25 direct on what we were going to be doing and what our

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1 objective is. When we started moving forward in  
2 distinguishing that overlap we ran into some issues, and  
3 most of them were a result -- some of the bigger issues  
4 was changes to -- to the energy efficient goals because  
5 that impacted a different proceeding and at different  
6 impacts of that. And something we were going to talk  
7 about earlier is what is reasonable and what should go -  
8 - what should be put into the forecast moving forward --  
9 at a high, medium, and low thing. So what we ended up  
10 doing -- I'm moving on -- is moving from determining  
11 overlap between EE goals in the forecast to determining  
12 overlap between model components. That's even harder.  
13 Now let's -- I've gotta move forward.

14 Representing IOU savings and impacts is misleading.  
15 Now we've talked about this, and on the left here we  
16 have data from the 2005 Energy Action Plan, as you know,  
17 it's utility savings --

18 (Anonymous off-microphone comment)

19 Mr. Toth: Thank you. Uh, on the left, uh we  
20 have on the top utility energy efficiency savings,  
21 building codes and standards and appliance standards.  
22 On the right, is from the 2009 CEE forecast. And what  
23 occurs is -- the problem I just talked about -- is  
24 attribution between the different components, and  
25 getting each component mutually-exclusive. The IEPR

1 analysis is extremely misleading when it purports to  
2 allocate EE savings among mutually-exclusive categories  
3 in utility public programs, naturally occurring savings,  
4 and State and Federal programs. So, in essence, what I  
5 was talking about earlier -- about which is right, the  
6 EE savings or the demand forecasting savings -- in  
7 context these -- both of these graphics are right. But  
8 taken out of context it could be said that the impacts  
9 of IOU programs here are minimal. And that's not the  
10 case. And, uh, what it does show is the attribution  
11 within the modeling effort. And so we've got to be  
12 careful on how we present this stuff and, because  
13 abusively, well it can, it will, and it has been taken  
14 out of context for proof that IOU savings contribution  
15 is minimal. And that would be wrong.

16 Uh, one thing we talked about in the bottom graph  
17 here, moving forward -- SEU suggests the depiction of  
18 savings in total without attribution. You know, Chris  
19 mentioned this earlier -- we support that. I think  
20 that's a good thing because it's going to be difficult  
21 given the graphic on the right, to depict savings in any  
22 meaningful way that won't be taken out of context in  
23 some different venue, whether it be AB-32, the EE  
24 proceeding or some other proceeding.

25 Next steps. Uh, I'm going to skip around here and,

1 uh -- Expending time and resources to further define  
2 historic EE savings should be re-examined as actual  
3 impacts on the load forecasts is minimal. I would like  
4 to concentrate on savings that impact a load forecast,  
5 and if it's not impacting a load forecast, let's not  
6 show them.

7 Adjustments made for modeling purposes should not be  
8 portrayed as actual EE program impacts; they should be  
9 portrayed as load forecasting impacts. Data augmented  
10 for load forecasting purposes can be taken out of  
11 context and wrong conclusions can be drawn about EE  
12 program effectiveness.

13 And, this is where I address the questions, and I  
14 know I have very, very little time, so I'm going to skip  
15 the introduction. Uh, slide two of this presentation  
16 addressed why energy efficient important, I won't need  
17 to go through it again. This is the fun part, uh, what  
18 should be included in program history within the  
19 forecast. Edison has two main things -- we want to use  
20 the best available data, and we want it to be clear and  
21 transparent. Now this is going to -- this -- those two  
22 things are going to be -- we've been through the rest of  
23 the presentation, hopefully so the other three sides --  
24 so bear with me -- so prior to 2006 we support using ex  
25 post data. Where clear, concise -- well not concise,

1 but where EM&V data is available to augment the *ex post*  
2 data we support that. In cases where professional  
3 judgment was used, SCE suggests vetting those decisions,  
4 and that's only within the time period that impacts the  
5 CEC forecast. Now in 2006 to 2010 this is, uh, a point  
6 of contention. Edison strongly believes that IOU *ex*  
7 *ante* estimates for 2006 to 2010 program years represent  
8 the best available data and they should be used. The  
9 2006 to 2008 EM&V studies are very contentious, and  
10 given where they CEC forecast is going to be used to  
11 determine long-term procurement plan, uh, we feel the  
12 best available data is what we filed. Move forward with  
13 that. And I will -- well there's two more slides here  
14 and then I'm out of time, but -- uh 2011 to 2012 we  
15 suggest using our program plans as approved by the CPUC.  
16 And here's the fun one -- 2013 and beyond. This is  
17 where we suggest using high, medium and low ranges. And  
18 the high, medium and low ranges that we chose are based  
19 on being able to achieve the goal. And we achieved the  
20 big goal -- the EE strategies. And it's not based on  
21 EM&V results and what percentage is realized or that  
22 kind of thing. We think that most of the uncertainty  
23 can be found within components of the goals, especially  
24 moving forward. So the low EE case is the total market  
25 growth's goals with the 2004 peak to energy ratios that

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1 I mentioned earlier, with modified big bod EE strategies  
2 -- I'm sure that's going to be a question either --  
3 basically that's a continuation of our current -- wrap  
4 up? Uh no problem, two more. The mid-case is total  
5 market gross goals with 2004 peak to energy ratios. And  
6 the high EE case is total market gross goals with the  
7 2004 peak to energy ratios. Now the graphic on the  
8 bottom here denotes, uh, Edison's savings compared to  
9 goal. We meet or exceed our goal, and have over time.  
10 And -- Chris -- and -- and -- and it will continue to do  
11 so, and we feel that that's the best data to do. Uh,  
12 since I'm out of time, uh, I guess it would be best that  
13 I just wait for questions. Uh, others can read the  
14 comments in the presentation, so I'm open for questions.

15 Mr. Kavalec: Chris Kavalec from the Energy  
16 Commission. I wasn't clear on your proposal for the  
17 efficiency in the uncommitted period. Uh, I understood  
18 the low case -- what was the high case?

19 Mr. Toth: High case is the total market gross  
20 goals -- you're talking about this slide here?

21 Mr. Kavalec: Uh, I think it was the previous  
22 one, when you were talking about the scenarios --

23 Mr. Toth: That's -- that's for, uh, 2001 and  
24 2012?

25 Mr. Kavalec: Oh no, for -- beyond 2012. You

1 mentioned three scenarios --

2 Mr. Toth: And that would be this one here --

3 Mr. Kavalec: Okay.

4 Mr. Toth: So the high case would be the total  
5 market gross goals with the peak to energy ratios, and  
6 basically what that does is assume that all of the total  
7 market gross goals are captured.

8 Mr. Kavalec: And then I -- it looks like you  
9 have a mid-case in there that you didn't mention.

10 Mr. Toth: Yeah, uh -- okay I'm sorry I thought  
11 I did. Uh, the mid-case is total market gross goals  
12 with the 2004 peak to energy ratios with a low big bold  
13 EE strategies case as we were directed in the long-term  
14 procurement plan.

15 Mr. Kavalec: Okay. Okay thanks.

16 Mr. Toth: You're Welcome. Thanks.

17 Mr. Junker: Thank you, Phil. Next up is our  
18 good friend Carmen Best with the California Public  
19 Utility Commission -- Utilities Commission, sorry.

20 (Off-microphone conversation setting up Power  
21 Point)

22 Ms. Best: Hi everyone, this is Carmen Best, I'm  
23 with the CPUC Energy Division Energy Efficiency  
24 Evaluation Group, and I would like to focus on a few  
25 items. I didn't prepare my presentation to cover all of

1 the questions. We did submit written comments if you  
2 wanted to dive into those as well. But I was just going  
3 to focus on a handful of issues here, and, um, and then  
4 I'll leave more time for questions.

5 First of all, the basic premise of the comments that  
6 we filed are that the CPUC Energy Division believes that  
7 our evaluation-based estimates from the '06-'08 period  
8 should be used in updating the IEPR and in the future  
9 long-term procurement proceedings. We believe that  
10 evaluation-based estimated of energy efficiency  
11 accomplishments provide a more accurate reflection of  
12 savings than planning assumptions do. The reported  
13 energy savings have historically been higher than  
14 evaluated energy savings estimated over time. Uh, we  
15 also wanted to point out that the CPUC staff has already  
16 provided the Energy Commission staff with very detailed  
17 evaluation-based results for the 2006, 2008 and 2009  
18 program periods. Uh, we believe the reliability of  
19 these estimates were statistically robust at the  
20 portfolio level, and the details of that are included in  
21 our comments -- or in our comments that were in response  
22 to SCE's comments. I can point to the specifics of  
23 where that can be found. Uh, and we also are -- wanted  
24 to point out that the detail of the data that is  
25 available for the 2006 through 2009 time period is

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1 really unprecedented in the history of California's  
2 energy efficiency programs. There has been a lot of  
3 talk today about how the historic record has been  
4 preserved, and there's lots of evaluation results on  
5 CalMAC, etcetera. That is all true and that's a great  
6 part of the history of California's energy efficiency,  
7 but one of the challenges has been how to aggregate that  
8 information and have some really granular level  
9 information that can be segmented in ways that are  
10 consistent with the demand forecast and that are done in  
11 consistent -- with consistent methods and are  
12 comparable. So we believe we've made a -- there's a  
13 significant push forward in just having all of that data  
14 in one place, consistent by -- for all four utilities,  
15 and available from one place.

16 As a tutorial for folks who aren't familiar with eval  
17 -- the distinction between an evaluated result versus a  
18 reported savings result -- uh evaluated savings really  
19 represent updates to planning assumptions, which are  
20 included in reported savings, and they're based on field  
21 assessments, which include the verification of claimed  
22 measure installations -- so going out to the field and  
23 seeing which bulbs were installed or which units were  
24 upgraded. It also does a -- *in situ* savings are  
25 estimated based on the field conditions and compared to

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1 baselines that are either in place, or a standardized  
2 baseline for the program. Uh, and finally, the  
3 influence of the program in leading to the measure  
4 installation or the action being taken, and this is  
5 discussed as program attribution or net-to-gross ratios.  
6 And that is another factor that's been brought up today  
7 for forecasting and procurement purposes that third  
8 element is debatable as to whether or not it should or  
9 shouldn't be included and where that belongs. But the  
10 first two are really how you get at what the actual  
11 savings on the ground were.

12       The -- there have been a couple citations of  
13 D1012049, which was the financial incentives risk reward  
14 mechanism that awarded payments for the 2006/2008  
15 period. And I wanted to point out that while that  
16 decision did adopt a different methodology for awarding  
17 the incentives, it also acknowledged that -- and I'm  
18 going to read this straight from the slide -- "for  
19 purposes of determining the actual impacts of energy  
20 efficiency programs in reducing demand and obviating the  
21 need for supply-side resources, it is clearly incumbent  
22 on the Commission to update the assumptions used to  
23 quantify the impacts of utility efforts." And I think  
24 that is a -- a very important statement that the  
25 Commission made that's relevant to this proceeding and

1 states very clearly the value of an evaluated result.

2 I also wanted to point out that historically, when  
3 you look at reported savings versus evaluated savings,  
4 when you go back to the 2002-2003 period -- which is the  
5 first version of an aggregated report that I was able to  
6 find -- you see this declining impacts of the evaluated  
7 result compared to the reported result. So, since 2002-  
8 2003 we've seen an increase in the reported savings and  
9 a decrease in the evaluated savings and, more  
10 importantly, the distance between those two has grown.  
11 So I think that's important to keep in consideration  
12 when we're deciding what is the best available  
13 information to use.

14 Uh, I don't have a lot of time left, so I will wrap  
15 this up. I just wanted to reemphasize again the  
16 importance of evaluation results -- evaluated results to  
17 know what was actually available on the grid, in the  
18 field. Uh, we don't believe -- uh, Energy Division  
19 doesn't believe that one program period can necessarily  
20 be reflective of another program period for making those  
21 adjustments, and would recommend a very cautionary  
22 approach in doing that. Uh, the best available  
23 knowledge from evaluation studies should be used to  
24 adjust planning -- adjust planning *ex ante* energy  
25 efficiency savings estimated for used in forecast and

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1 procurement activity, so the evaluation results should  
2 continue to update *ex ante* estimates. And the  
3 Commission has not adopted a process to address any of  
4 the remaining "uncertainties", that have been cited  
5 today on the 2006-2008 results, beyond what has already  
6 been adopted by the Commission, which led to over 1700  
7 comments being processed by staff.

8 Uh, okay, so, and then finally just to reiterate our  
9 position -- we don't believe that it's worth a lot of  
10 extra resources to dive into the refining the historic  
11 savings estimates. Much like the CEC had mentioned,  
12 there's very limited data and when you go farther back  
13 in the time period the impact on future forecasts is  
14 very limited. Uh, and finally, I just wanted to note  
15 that the PUC needs to complete an accurate fore -- and  
16 use needs complete and accurate forecast information to  
17 continue to ensure a reliable and cost-effective  
18 electricity supply, and that is the guiding principle  
19 for our long-term procurement proceedings. Uh, that's  
20 all I'll say. I'll just open up for questions. Hi  
21 Phil.

22 Mr. Toth: Thank you, Carmen.

23 Ms. Best: You're welcome.

24 Mr. Toth: Actually I have an EM&V clarification  
25 question for you.

1 Ms. Best: Okay.

2 Mr. Toth: Sorry. My name's Phil Toth with  
3 Southern California Edison. Uh, in looking through some  
4 plans that I've seen from Chris and others, and taking  
5 results of an EM&V study -- any EM&V study -- and  
6 applying it retroactively, or into the future, uh, is  
7 problematic as EM&V studies are for a period of time.

8 Ms. Best: Uh-huh.

9 Mr. Toth: And I was wondering what you thought  
10 on that subject, on whether you would suggest using EM&V  
11 studies applied retroactively or for future programs,  
12 and what you think. And it's more of a research  
13 question or your opinion.

14 Ms. Best: Right. Well I think there's some  
15 core factors that you have to look at when you do that.  
16 First, is what are the similarities in programs in a --  
17 where -- so if you have results from a certain time  
18 period, the other time period that you're planning to  
19 apply them to, what do the programs look like, what's  
20 the mix of programs, what was the program trying to  
21 achieve, what measures were included in those  
22 activities, etcetera. And they have to be very closely  
23 correlated, I would say, to be able to apply one set of  
24 results to another time period. Uh, the other, of  
25 course, is what the market was looking like in that time

1 period. And that mostly applied to net-to-gross  
2 adjustments, because if the market was more mature in a  
3 later time period, the chances for free-ridership would  
4 likely be higher, which is really a good thing for the  
5 whole market, but maybe a not-so-good thing for that  
6 program's influence. Uh, so I think that if that is  
7 going to happen, it should never be a -- a, uh, entire  
8 program cycle realization rate applied to another total  
9 program cycle realization rate -- or apply that  
10 realization rate to another program cycle. I think  
11 that's bad practice from an evaluation perspective. Uh,  
12 I think it needs to be at a program or measure level in  
13 which you can make some reasonable justification that  
14 they're similar, the markets during those times were  
15 relatively similar, the approaches were relatively  
16 similar in how they were going about doing that. But I  
17 also think that there is some room for making some  
18 general assumptions that it's probably not going to be  
19 100 percent, you know. Have we reached our goals on  
20 evaluated basis? No. I wouldn't say so. So making some  
21 conservative -- some estimates -- some conservative  
22 estimates on, uh, lowering those I think is prudent  
23 given the historic record.

24 Mr. Toth: Uh, if they're comparable -- sorry --  
25 so if they're comparable you suggest to do it? The

1 issue becomes when savings, like in DEER are adjusted or  
2 the net-to-gross ratios are adjusted, that becomes  
3 problematic retroactively or forecasting into the  
4 future, is that correct?

5 Ms. Best: When DEER changes?

6 Mr. Toth: Yeah, when the measure level savings  
7 change --

8 Ms. Best: Right.

9 Mr. Toth: -- and they're about to change  
10 again --

11 Ms. Best: Uh-huh.

12 Mr. Toth: -- and, which just makes it a problem  
13 applying the different EM&V studies over time, correct?

14 Ms. Best: It -- well it depends on how you  
15 define what's the bigger problem? Is having an estimate  
16 that's continually out of date or taking the time to  
17 update your forecast to get closer to what is happening?

18 Mr. Toth: Thank you.

19 Ms. Best: Other questions?

20 Mr. Martinez: Sierra Martinez from NRDC. In  
21 the mid-case recommendation for 2010-2012, I think it  
22 was the 2009 IEPR. And in the 2009 IEPR I was wondering  
23 -- and this might be a question for the CEC -- did they  
24 apply a gross realization rate at 70 percent forward at  
25 the portfolio level, or was it measure-by-measure,

1 program-by-program as you articulated?

2 Ms. Best: I'll have to ask the CEC to field  
3 that. We gave them the data to do it on a measure-by-  
4 measure basis for the, uh -- let's let them answer.

5 Mr. Kavalec: So, your question was what we did  
6 in the 2009 IEPR, is that right?

7 Mr. Martinez: Yeah, Carmen's mid-case  
8 suggestion was the 2009 IEPR, yeah.

9 Mr. Kavalec: Okay, yeah, so that -- that was  
10 the case where we applied, uh, realization rate of point  
11 seven across the board. It didn't vary by end-use.

12 Mr. Martinez: Thank you.

13 Mr. Kavalec: And by the way I'm -- we are  
14 suggesting for this next forecast, uh, three scenarios  
15 for the committed period, similar, but not the same, as  
16 those proposed by Sierra earlier. Our high case would  
17 be the total utility reported savings, mid-case would be  
18 what we did in the last IEPR, and the low case would be  
19 the -- using the results from the '06 to '08 EM&V  
20 studies, so --

21 Mr. Martinez: Just a point of clarification --  
22 our mid-case wasn't the 2009 IEPR, that was our low  
23 case.

24 Mr. Kavalec: Right, I said it was not exactly  
25 the same, yeah.

1           Mr. Martinez: Okay, thanks.

2           Mr. Junker: Thank you, Carmen. Next up is  
3 Richard Aslin from Pacific Gas and Electric.

4           Mr. Aslin: Right, well, uh thank you very much  
5 for inviting me today. And, uh, I'll try to stay within  
6 my time limit. So, I did mark this presentation for  
7 discussion purposes only, and that's really how I do  
8 view it, so it -- just for discussion purposes. Uh,  
9 what I had hoped to do -- uh-oh -- yeah -- uh -- okay --  
10 so what I did was I sort of structured this presentation  
11 knowing that I was going to go last. Uh, just start  
12 with a little executive summary, which is just kind of  
13 what our big ask would be. Secondly, I have some  
14 background slides. In those I hope to just reinforce  
15 some statements that people made earlier, maybe point  
16 out one or two things that I found, you know, very  
17 interesting in the discussion. And then, lastly, I do  
18 have an Appendix A and Appendix B where there is written  
19 to both the staff's recommendations and to all of the  
20 questions that were proposed earlier for written  
21 response, and if people want to, you know, as about  
22 those during the Q&A part, I'd be happy to, you know,  
23 call those up and look at those at that point.

24          Uh, this is the only slide that has a whole bunch of  
25 words that I plan on presenting, but since I chose these

1 words very carefully I am just going to read this. So  
2 what PG&E would request is that the Commissioners advise  
3 staff that depictions of the historical aggregate EE  
4 savings be consistent with those that have been filed,  
5 reported and depicted previously by the IOUs, the CPUC,  
6 the California Energy Commission and other state and  
7 federal agencies, until such time as those historical  
8 savings are revised through a rigorous and independently  
9 verified process. Depictions should be consistent with  
10 those shown in the 2005 Energy Action Plan, in which IOU  
11 programs, building standards and appliance standards are  
12 all shown on a consistent *ex ante* modeled and reported  
13 basis. So that's our big ask. Essentially if there's  
14 going to be a graph that's going to show the historical  
15 energy efficiency savings then it should be consistent  
16 with the graph that was in the 2005 Energy Action Plan,  
17 because that's the only graph that's depicting the  
18 various parts of the energy efficiency savings on a  
19 consistent *ex ante* basis, so they're comparable in that  
20 graph. Whether they're right or wrong, I don't know.  
21 But what I do know is that's the graph where they're  
22 comparable.

23 So, anyway, PG&E has no objection to the staff  
24 showing the portion of the historic and future energy  
25 efficiency savings that is actually used as an input

1 into the forecasting models, provided that the  
2 depictions are clearly labeled and the intent of the  
3 depiction is to provide transparency into the  
4 forecasting process. So, for example, the graphs that  
5 Chris is proposing to show that he showed earlier in his  
6 write-up that showed here's the total ex ante reported  
7 filed savings, here's the portion of the residential  
8 savings, and here's the further of the portion of the  
9 residential savings -- or commercial savings are  
10 actually used in the model -- uh, PG&E doesn't have any  
11 difficulty with that at all. In fact, I found those  
12 graphs to be very informative and, you know, I think  
13 they really helped me to understand the logic of the  
14 end-use models and the forecasting process in general.  
15 So, I actually encourage those. Uh, and lastly I just  
16 wanted to thank the Commission, Commission staff, DAWG,  
17 and everyone else for providing this open forum to  
18 discuss this issue.

19 So, uh, here's the two graphs, you've seen them three  
20 times, at least. And uh, this is what's really  
21 triggered the discussion, but I think there's one thing  
22 that I do want to make sure people understand is this  
23 discussion is really a little nuanced because it's  
24 really happening in two levels. So, on one level  
25 there's a discussion about whether the aggregate

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1 historic energy efficiency savings should be depicted in  
2 a certain way, okay? And there's this other, you know,  
3 kind of more technical issue, which is, uh, how are  
4 energy efficiency savings actually used in the  
5 forecasting model and what impact do they have on the  
6 demand forecast. And, uh, I would say about half of the  
7 presenters so far have been really presenting on that  
8 first issue -- the more global, sort of, aggregate --  
9 you know, how are energy efficiency savings  
10 characterized in the history, and what does that mean?  
11 And then the other half of the people that have  
12 presented have been really looking at the technical part  
13 of it. So, I'm going to do both, in five minutes or  
14 less.

15 We find, uh -- first of all, even the graph that  
16 you're looking at on the right, the 2005 Energy Action  
17 Plan graph that shows the utility efficiency programs as  
18 the sort of beige slice, uh -- you know I think, I just  
19 want to be really clear here, that even this depiction  
20 of energy efficiency savings by IOU programs has already  
21 been decremented quite a bit through the assumption of  
22 program decay. And so, you know, many of the savings  
23 that are showing up in the buildings standards and the  
24 appliance standards are actually, you know, savings that  
25 were previously in the IOU programs, and then they're

1 sort of migrating to these other things. So there's a  
2 significant amount of decay in there already. Uh,  
3 secondly, what I'd like to do is the graph on the left -  
4 - and I think this portion that's in the orange that's  
5 the naturally occurring savings is really, sort of like  
6 a key issue that many people have brought up so far, and  
7 I think what Chris said earlier -- and I just want to  
8 make sure that we all have the same understanding on  
9 this -- that this orange slice is really what the CEC's  
10 forecasting model would project is the decrease in  
11 energy consumption that comes from increase in electric  
12 prices. Okay, so that's what that is, and that is very  
13 sensitive to whatever assumption you make about price  
14 elasticity. Okay, so over this period of time, from you  
15 know if we went all the way back to 1976 to 2003, or now  
16 if we go all the way to 2011, uh, electric energy prices  
17 have actually increased quite a bit. And so, if you  
18 apply and elasticity to that you will get a fairly large  
19 decrease in energy consumption that's due to the  
20 increase in price. But, I think what's happened in the  
21 modeling process here, is that -- and Chris please  
22 correct me if I'm wrong, and I'm sure you will -- that  
23 essentially what's happened is that three of these four  
24 slices in the left hand graph are being taken as given.  
25 Okay, so we're sort of taking the slice appliance

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1 standards as a given. We're taking building standards  
2 as a given, and we're taking naturally occurring savings  
3 as a given. And then the question is, how much do we  
4 have to reduce the IOU program savings in order to make  
5 the, in particular, residential end-use model, you know,  
6 calibrate correctly when you go back in to the history?  
7 So, it sort of, you know we have these four slices, we  
8 take three of them as given, and then one of them, you  
9 know, has to take the impact in order to make the  
10 calibration routine to work. And I think that's where,  
11 uh, we start to get into this, sort of, question about  
12 what happens if you -- for example one question I would  
13 have that maybe we can talk about in the panel  
14 discussion, is what happens if you assume a higher price  
15 elasticity? Do you get no utility program savings at  
16 all? And if you assumed a high enough price elasticity,  
17 maybe you don't even get any savings from building  
18 standards or appliance standards. I mean, it's kind of  
19 -- you have to balance all of these slices and right now  
20 I think, for me when I look at this and the discussions  
21 that I've been in, I think that's really where we need  
22 to really focus is, you know can we take a more balanced  
23 approach because one thing I think I heard Chris say  
24 earlier in response to a question was that you could  
25 have a set of reasonable assumptions, and use those

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1 assumptions and this slice that says Utility Efficiency  
2 on the left hand graph could double. Just because we  
3 made another set of what were probably very reasonable  
4 assumptions. And I'm not even going to touch on this  
5 because a couple talked about this already. And I just  
6 wanted to point out here that this kind of graphical  
7 representation I think is, you know, very much  
8 appropriate for the California Energy Demand Forecasting  
9 Report because I think it's very instructive to  
10 understand, you know, here's what the total savings  
11 were, here's the portions that we did not use in the  
12 model for various reasons, and here's the part that we  
13 actually did use in the model. And I think that's a  
14 good area to discuss. And here's the famous Rosenfeld  
15 Curve which we can discuss at length later, I suppose.  
16 And with that, I think other than -- everybody's sort of  
17 reinforced the same issues, so I'll open it up for  
18 questions.

19           Mr. Kavalec: I'll just answer your earlier  
20 question about, um -- I didn't mean to give the  
21 impression that we use program savings as a residual in  
22 order to adjust our back cast. It's one of many factors  
23 that we look at when we develop a forecast. So, as I  
24 also mentioned we adjust the codes and standards savings  
25 that we get from the Efficiency Division in order to get

1 a more realistic back cast. In the past we've changed  
2 our income and price elasticity slightly in order to get  
3 a more realistic back cast. So it's, basically a -- you  
4 know, it's a very complicated process, we're not  
5 singling out energy efficiency as the straggler that we  
6 need to adjust up or down to get a realistic back cast.

7 Mr. Aslin: Okay, and hopefully we can discuss  
8 that a little bit further as to how -- how that's done.

9 Mr. Junker: Thank you Rick. Uh, before we go  
10 on to the next section, uh, there's been an idea put  
11 forward -- do we want to break for about five minutes or  
12 go straight through? I'm seeing a lot of heads going up  
13 and down. How about five minutes, come back -- uh, make  
14 it eight minutes. Seven minutes. Fifteen minutes  
15 after. Thank you. Uh, Cynthia Mitchell -- thank you  
16 Cynthia -- Sierra Martinez -- I assume Sierra -- Phillip  
17 Toth, Carmen Best, Richard Aslin, Chris Kavalec, Don  
18 Schultz, and Tom Gorin. And I'll go try to find Sierra.  
19 Thank you.

20 (Break 3:09 p.m.)

21 Mr. Jaske: Okay, so, what we're going to do  
22 this afternoon is -- closer to the mic -- we're going to  
23 have our previous speakers serve as panelists. There's  
24 some questions that were developed and posted, possibly  
25 only yesterday, so the panelists have had a bit of time

1 to look at them. They're not totally foreign to the  
2 materials that they were asked to speak to earlier.  
3 Part of the idea is to figure out if we can get some  
4 convergence, if at all possible, and also where there  
5 are interesting points that one has of the other that  
6 weren't clarifying and raised earlier, that they can go  
7 at each other a little bit. Uh, we are probably running  
8 a little behind schedule, but given that everyone's  
9 spent their valuable time traveling here and you're  
10 mostly still here I think we're going to try to spend  
11 about an hour on this, so that's an average of about ten  
12 minutes per question. It may be a little difficult to  
13 confine ourselves to that timeframe if people really get  
14 into it. And then at the very end of the day we'll have  
15 some opportunity for audience of the panelists.

16 So, uh, I think it's worth just setting a few words  
17 of context here. Uh the PUC -- Carmen and her final  
18 page of her presentation, her very first bullet on that  
19 page highlighted, you know, the expectation of the PUC  
20 that an accurate forecast be delivered by the Energy  
21 Commission. And it's used at the PUC in resource  
22 planning sort of context, LTPP proceeding in particular.  
23 That same forecast is used at the ISO for transmission  
24 planning, for reliability planning, so, while fighting  
25 about energy efficiency amounts and attribution is a

1 nifty thing to do, it should be in the context of a  
2 long-run forecast. Uh, and I'm also going to, just for  
3 the purposes of letting you panelists know -- I'm not  
4 going to take the questions in the same order that they  
5 were in the agenda. I'm going to change them around a  
6 little bit, and I have a particular person I'm going to  
7 use to sort of be the lead off for each set of  
8 questions.

9 So for question one, which is, what is PUC policy  
10 regarding preference for *ex post* evaluated energy  
11 efficiency program claims versus *ex ante* claims? Which  
12 of these is preferable for resource planning? Carmen,  
13 would you, uh, sort of highlight the PUC perspective?

14 Ms. Best: The -- like we've heard from many of  
15 the panelists today, we want to use the best available  
16 data for the -- for planning purposes, or for the  
17 forecasts, etcetera. And, uh -- do you want me to get  
18 into each vintage etcetera, or --

19 Mr. Jaske: You can -- you can hit the  
20 highlights of your previous statement.

21 Ms. Best: Okay, I'll hit the highlights then.  
22 Uh, when we have *ex post* evaluated results that are  
23 available, and have been -- that are in a form that can  
24 be used in the forecast, we believe that those should be  
25 used. Uh, when and where reasonable adjustments can be

1 made to *ex ante* or forecasted results that reflect the  
2 assumption that they don't usually come in at a hundred  
3 percent, based on our evaluated experience, we believe  
4 that those are reasonable adjustments to make but need  
5 to be done with caution. And otherwise we support using  
6 the best available *ex ante* estimates that are based on  
7 historic evaluation findings and updates to DEER and the  
8 other systems that we have in place to make *ex ante*  
9 assumptions.

10 Mr. Jaske: Okay, thank you. Athena?

11 Ms. Besa: Yes, okay. Uh, you know, I agree  
12 that we should use the best available data. What does  
13 that mean, though? In the 2004 goals decision that the  
14 Commission adopted, there is a directive, or an ordering  
15 paragraph, that directs the utilities that in any supply  
16 management proposal that they submit to the Commission  
17 they must use the goals. So, from that perspective --  
18 from a forecasting perspective -- the Commission  
19 requires that we use goals. So how do you input best  
20 information in goals? So, it's not as easy, I believe,  
21 to take just *ex post* results from '06/'08 and then just  
22 say plop it in there. For historical purposes we can  
23 debate about what those numbers are because they're  
24 either *ex ante* or *ex post*, but for forecasting purposes,  
25 those -- that information -- the best level detailed

1 information -- really needs to feed into an intermediate  
2 process that we haven't talked about. Which is, the  
3 Commission has a process also -- the PUC has a process  
4 by which it takes these latest and greatest *ex post*  
5 evaluations, and updates the potential in the goals.  
6 That information is what should be going into the  
7 forecast, because that is the latest and greatest  
8 information that the Commission has bought off on and  
9 all stakeholders in that process have provided input.  
10 So, it's not as easy to just say we should use *ex post*  
11 results, we should use *ex ante*. The current context of  
12 this afternoon's conversation was back casting. All of  
13 that information exists and so you try to figure out  
14 what to do. In the forecast, though, it's a totally  
15 different perspective of how you take this information,  
16 apply it, put it in the context of the Commission's  
17 directive to always use the goals that they have adopted  
18 for the utilities for future forecasting.

19           Mr. Jaske: Uh, I guess I have to say that that  
20 statement is outdated by the 2010 LTPP Scoping Memo, and  
21 the actions that the Commission has directed the IOUs to  
22 take, and so the notion of taking the goal numbers has  
23 been superseded by explicit direction of the assigned  
24 Commissioner. Maybe we don't have a final 2010 LTPP  
25 decision yet, but we certainly have an entire thrust of

1 activity that is not what you just articulated.

2 Ms. Mitchell: Well, and I want to follow up on  
3 that, Dr. Jaske, because let's talk about that then in  
4 the context of forecasting, let's talk about that as it  
5 relates to the 2010/12 portfolios, or the 2013 bridge  
6 year. And so what you're suggesting as I understand it,  
7 Athena, is that the 2004/2013 goals, the underlying  
8 parameters and data, should then be used for forecasting  
9 at this point in time? Is that what you're suggesting?

10 Ms. Besa: I think that because of the time  
11 periods that are going on and the different levels of  
12 work that has to be put in there -- and I see Dean is  
13 sitting over there -- she's actually instituted the  
14 beginnings of the new next potential study, which will  
15 lead into the goals, which -- you know we all have this  
16 timing issue --

17 Ms. Mitchell: Well, let's just talk about it in  
18 terms of -- let's just look at the context of if we take  
19 20 -- 2004/2013 and the parameters that underlie that  
20 for the goals decision and discuss it in terms of the  
21 2010/12 portfolios, and let's say that you have used  
22 essentially the same parameters that underlie the goals  
23 for your '10/'12 portfolios, or you would prefer to do  
24 that to the extent possible. That's in essence saying  
25 that you're going to make decisions about a billion

1 dollars of investment -- of ratepayer money -- annually  
2 based on data in parameters that is five, six, seven  
3 years old. And that would be akin to me taking ten  
4 thousand dollars or fifty thousand dollars of my money  
5 and saying I'm going to invest that today. I'm going to  
6 invest it today, though, by going back and looking at  
7 five year old data. And I'm only going to make that  
8 decision on how to invest today's dollars based on  
9 market activity five years old.

10 Ms. Besa: But I think we've all been on the  
11 record saying that we want all these numbers updated in  
12 time for that planning process. I mean, we've talked  
13 about this in a variety of workshops at the PUC, about  
14 the sequence of events that should lead to the planning  
15 process. And first and foremost of those things is  
16 getting a potential study updated because we do agree --  
17 information is old. But let's go down that path, let's  
18 reevaluate what's still out there and set goals based on  
19 that, so --

20 Ms. Mitchell: And TURN disagrees with that  
21 argument that the basis -- the data that underlies the  
22 potentials and goals analysis is then the data and basis  
23 that underlies the next cycle portfolio. I don't think  
24 that it's a consistency that discussion or logic of we  
25 have to have consistency is -- let's see, it's kind of

1 like a poached egg -- a soft poached egg. It's not  
2 fully formed. I was thinking about my chickens there  
3 for a second --

4           Mr. Jaske: Okay, we're not going down the  
5 chicken path any further. So, back to Carmen's summary  
6 statement about the basic question -- is there anyone  
7 who wants to respond, you know, to that particular view  
8 about how to make use of *ex post* data, and if not  
9 available, etcetera, etcetera, that she made?

10           Mr. Aslin: Well, I would just have a couple of  
11 things here. One is I don't know if it's possible to  
12 have accuracy in forecasting. But I think it is  
13 possible to have a reasonable forecast that's  
14 transparent and consistent. Okay, so I think that  
15 really is the goal in forecasting -- is something that's  
16 reasonable, something that's transparent, and something  
17 that's consistent. So, what my concern is about  
18 adjusting the history so much is just what impact it  
19 does have on the forecast, and on, in particular,  
20 consistency in the forecast period, so -- I think I  
21 alluded to this earlier, but, one of my big concerns  
22 with the notion that the IOU program savings were  
23 actually quite low in the historic period is that the  
24 projected IOU savings are actually quite high in the  
25 forecast period, which leads to this idea that there is

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1 going to be this very large incremental jump in energy  
2 efficiency savings in the forecast period relative to  
3 the history. And I'm concerned about that, I'm not sure  
4 that's a reasonable assumption, so that's what I would  
5 like to see. I would really like to see an effort made  
6 on looking at the consistency between the treatment of  
7 energy efficiency savings in the forecast period and in,  
8 you know, whatever historical period is necessary in  
9 order to get, sort of, this frame that tells me, oh is  
10 it going to be much bigger in the future, is it going to  
11 be the same, or is it going to be smaller? That's  
12 really my objective.

13           Mr. Jaske: At the risk of trying to put words  
14 in everyone's mouths, I think I heard almost everyone,  
15 either as their primary or secondary position, subscribe  
16 to something like what Carmen said. There can be some  
17 quibbles about what level of data exists to support, you  
18 know, adjustments when formal *ex post* studies don't  
19 exist, but is it possible for this group to more or less  
20 nod your heads that the general approach that Carmen  
21 outlined is the reasonable way to tackle this long sweep  
22 of history for which there is lots of different degrees  
23 of formalism to what was reported and how it was  
24 evaluated?

25           Mr. Toth: So moved.

1 Ms. Mitchell: Seconded.

2 Mr. Aslin: I'm going to need a little  
3 clarification on that, because, uh, I think a lot of  
4 people said that for the 2006/2008, you know, EV&M  
5 studies that there's still a lot of controversy around  
6 those studies. You know, those are *ex post*, so I didn't  
7 hear consensus around, you know, accepting those results  
8 from those studies just because they're *ex post*. There  
9 is this other element, which is that people have to buy  
10 into it, have to accept it.

11 Mr. Jaske: Respond.

12 Ms. Best: I guess -- you know we've seen the  
13 seventeen hundred thousand billion comments, uh, but the  
14 remaining uncertainties, and I guess getting buy-in on  
15 any of those -- which element does that go to that you  
16 had outlined, the reasonableness, the transparency or  
17 the consistency? I mean, what is -- what's the big hang  
18 up on those in your opinion?

19 Mr. Aslin: Uh, for forecasting purposes only it  
20 would be -- and this is just in energy demand  
21 forecasting -- portfolio construction and all that kind  
22 of stuff that's -- I'm not going into that area -- but  
23 just in terms of the energy demand forecasting I think  
24 it's the consistency element.

25 Ms. Best: Consistency with how they were

1 measured, consistency with the availability of the data?  
2 Consistent -- which part of consistency?

3           Mr. Aslin: So, uh, so my basic, you know,  
4 thrust of the logic that I have is that the goals that  
5 are set, and also the portfolio designs, are all done on  
6 the basis of *ex ante* modeling. And to the extent that  
7 the prior EM&V studies show that there was a very large  
8 discrepancy between the results from *ex ante* modeling  
9 and what is actually realized, then somehow we need to  
10 be factoring that into this whole process, and I'm not  
11 sure, you know, how we should be doing that, but I --  
12 that's how we -- I think that's really where I don't  
13 want to see the big disconnect, where, you know, on --  
14 all of a sudden we're saying oh the *ex ante* modeling's  
15 results are significantly wrong, and on the other hand  
16 we're just going to use them for the forecast anyway.

17           Mr. Toth: I don't need both of them. Uh, it is  
18 important that we use the best available data, and I  
19 agree wholeheartedly with, with Carmen on that. And  
20 also I agree that any adjustments to that should be  
21 clear and transparent. But, best available data? I'm  
22 not sure who gets to make the choice that this is a best  
23 available. And it's -- look how many different opinions  
24 we have up here. And so it gets difficult to determine  
25 a best available, and you kind of seek comment on, you

1 know, what to do and try to make the best choice, but  
2 it's a difficult thing. It's not something that's just  
3 clear and concise to say I agree with it wholeheartedly.

4 Ms. Mitchell: The Commission's decision  
5 September 2005 returning the utilities to Energy  
6 Efficiency Administration 0509043, specifically stated  
7 that there should be separation between those who  
8 evaluate and those who implement. It was very clear  
9 that in returning utilities to the Administration that  
10 there was going to be independent EM&V, because of this  
11 matter of there being a vested, or a biased, interest in  
12 the utilities with the results or the outcome. And so I  
13 think it is very clear by Commission policy who has the  
14 final word in EM&V results, and it is the Commission and  
15 they placed that responsibility and that trust in Energy  
16 Division and their -- and it's -- I don't see that there  
17 is a -- you know we talk -- the U.S. utilities keep  
18 bringing up oh we're just still, you know, upset about  
19 these results and confused about these results, and  
20 we're debating these results. Well, you're the only  
21 ones debating it, you and NRDC. The other parties,  
22 including the Commission and Energy Division, it's a  
23 done deal, and it's time to integrate that data and  
24 mover forward. You know, because what we're doing is  
25 we're staying in the same program designs, the same key

1 end-uses, the same key measures, the same market  
2 strategies, and what's happening is that we're seeing  
3 over time that the realization rates are deteriorating  
4 and that's because the portfolios remain inconstant, but  
5 the markets are moving forward. And it's time for us to  
6 move forward with the markets.

7           Mr. Kavalec: Let me ask a follow-up to that, to  
8 Rick and Phil. Carmen made a more general statement  
9 during her presentation that EM&V results have  
10 continuously showed that realized savings are lower than  
11 reported. Do you agree or disagree with that statement?  
12 Or is the studies that she's referencing in order to  
13 make that statement, uh, is there a problem with those  
14 studies?

15           Mr. Aslin: Well, the EM&V studies make a lot of  
16 assumptions about what savings should be counted. And  
17 so, yeah, yeah that's the purpose of them. And so as  
18 those assumptions change through time, you know, then  
19 the results change through time. So, the more strict  
20 the assumptions are, then you know, the less verified  
21 savings there is going to be. So, you know, just like  
22 in all modeling and estimation it all has to do with how  
23 restrictive your assumptions are or how, you know,  
24 generalized the assumptions are as to what the results  
25 you get. That's my -- you know, I don't think there is

1 a right here. There's just different versions of, you  
2 know, how people modeled and estimated.

3 Ms. Best: Um, can I address that? I apologize  
4 for laughing a little bit at Rick, but the reaction that  
5 came to me when I had that minor outburst -- I apologize  
6 -- is that, um, when you're looking at the -- an *ex ante*  
7 assumption there is, you know, there may be -- there is  
8 frequently some historic evaluation that's behind that  
9 estimate, as well. But the *ex post* is, by its very  
10 nature, a function of research that has gone into the  
11 field -- investment in answering questions, etcetera --  
12 and it is designed to reduce the uncertainties around  
13 the estimate. So, I guess that's where I have -- I  
14 would have put -- I thought when I asked you that  
15 question about which bucket you thought was the problem  
16 -- I was guessing that you were going to say  
17 reasonableness. Okay. But because, like I was trying  
18 to point out in my presentation, I think the  
19 reasonableness, assuming that our *ex ante* assumptions in  
20 the future are going to be 100 percent realized -- or  
21 that our goals are going to be 100 percent realized --  
22 is not a reasonable assumption.

23 Mr. Aslin: Well, that is the point I was trying  
24 to make about consistency. In the forecast period, I  
25 believe that is fairly close to the assumption that is

1 being made, because the goals are based on the *ex ante*  
2 and the idea is, okay you're going to make those goals.  
3 But if we know that those *ex ante* models are already  
4 outdated, or we have some strong feeling about that,  
5 there's this inconsistency between how you're treating  
6 the historic period and how you're treating the forecast  
7 period. And I would -- I just want to understand how  
8 does that impact the forecast? And, you know, I think  
9 it could impact the forecast fairly dramatically. If  
10 you really believe that there were very low savings from  
11 IOU programs in the historical period, but you also  
12 believe that there will be very high savings from IOU  
13 programs in the future, then that is going to impact the  
14 forecast.

15 Mr. Kavalec: There's nothing wrong with that --  
16 saying that by itself. I mean, there could be reasons  
17 why we would expect a lot more savings in the future.

18 Mr. Aslin: In this case I don't think there  
19 really -- I think the reason is because the goals are  
20 out there and they're been set by this *ex ante* modeling,  
21 and even the adjustments that were done in the  
22 incremental uncommitted analysis portion, you know,  
23 still used *ex ante* modeling to get the results.

24 Mr. Jaske: Alright. Is there -- on this  
25 specific question, as opposed to the dialog we've been

1 having, is there someone who is burning to say  
2 something?

3 Mr. Martinez: I just want to correct the record  
4 on Cynthia's comments when she said that the CPUC is in  
5 agreement on the 2006/2008 evaluation report. The  
6 Commission did not adopt the report. It did adopt the  
7 2006-2007 Interim Verification Report, but it's not just  
8 the IOUs and NRDC that have concerns with this report.

9 Ms. Mitchell: That's true. And the Commission  
10 did not have to issue -- or did not issue a ruling on  
11 that, but they're standing behind -- I think they're  
12 standing behind their Energy Division issuance of the  
13 final report, because they haven't taken deliberate, uh,  
14 affirmative action to throw it out in any shape or form,  
15 given all the *ex parte* communications on the fifth floor  
16 and lobbying against it.

17 Mr. Martinez: They said they would not use the  
18 numbers in the incentive mechanism because of the  
19 extreme controversy over the magnitude and accuracy of  
20 the results.

21 Ms. Mitchell: And they wanted to be sure and  
22 give the utilities some money, so they did, and then  
23 Carmen read that it's still very much the basis for  
24 forecasting planning, good program design, etcetera,  
25 etcetera. And it was just deals that were cut in the

1 earnings.

2 Mr. Jaske: Okay. Call it into --

3 Mr. Martinez: Last -- just the photos are  
4 somewhat distracting, if we can hold off on them.

5 (Anonymous off-microphone response)

6 Mr. Martinez: They're kind of distracting.

7 Mr. Jaske: Alright, so we're going to do  
8 question four now. So question four has to do with this  
9 preliminary work that Chris Kavalec talked about just  
10 before lunch. Would an econometric approach, such as  
11 that shown in the Kavalec presentation, serve as a  
12 suitable estimate for early historical efficiency  
13 savings until such time as a more full consumption  
14 metric analysis is available? So, Chris, give us sort  
15 of the one minute version of what you did there and how  
16 you think it's an assistance to the issue.

17 Mr. Kavalec: Oh, okay, well the idea was I  
18 first wanted to see if there was -- if it was possible  
19 to tease out efficiency program impacts with all the  
20 other variables. And the work I've done so far seems  
21 pretty promising. So, and it could be refined to  
22 include more years and do it on a per sector basis, more  
23 variables could be added. But it's a way of identifying  
24 program savings in a period where there isn't a lot else  
25 to base estimates on, in terms of AMNE and so on.

1           Ms. Mitchell: I had a clarification -- when you  
2 say early historical efficiency savings -- how far back  
3 are you talking, Chris, with that?

4           Mr. Kavalec: Uh, well, it -- I think we're  
5 limited with our data to going back to 1980.

6           Ms. Mitchell: Okay.

7           Mr. Kavalec: Yeah. And so I -- but this could  
8 be done for the entire historical period, it doesn't  
9 have to end at 1990 or 1997. It could be done for  
10 different -- for all the way up to the present.

11          Mr. Jaske: So my next question to the group is,  
12 after that stage setting, uh I thought I saw something  
13 in one of your very last slides, Rick, that talked about  
14 the use of energy efficiency indices, you know, as a way  
15 of trying to come to grips with a host of phenomenon,  
16 and bringing them into models. Is this work that Chris  
17 has put out as a teaser compatible with that kind of  
18 thinking? So he's using a measure -- two different  
19 measures, actually I think -- an expenditure measure and  
20 then a reported savings measure, both on a per capita  
21 basis.

22          Mr. Aslin: Uh, I think what I was thinking of  
23 in terms of the energy efficiency indexes was something  
24 more along the lines of using the *ex ante* models and the  
25 things that come out of the potential and goals studies

1 to put together energy efficiency indices by end-use,  
2 that could also possibly be rolled up to customer class,  
3 and then people could have this kind of consistent view  
4 of, you know, how certain end-uses evolved over time, in  
5 terms of their energy efficiency. So I don't think it's  
6 -- I don't think it's compatible with what, you know,  
7 Chris is putting together here. I think what Chris was  
8 trying to do was just do a little experiment -- can I  
9 put together specifying econometric model, you know, in  
10 which I could get some sort of non-zero parameter  
11 estimate for an energy efficiency input variable. And  
12 I'm not sure how successful he was in doing that in his  
13 first attempt, but, you know, I think it's an  
14 interesting approach. But, you know, I've done work  
15 with econometrics enough to know that, you know,  
16 basically every model is mis-specified, and the question  
17 is just how. So, uh --

18 Mr. Kavalec: So you would recommend not using  
19 econometrics at all for this?

20 Mr. Aslin: I guess -- I think there is -- I  
21 think there might be a kernel there -- you know, there  
22 might be a kernel there, but you know, even looking at  
23 Chris' model, uh -- you, know so when I look at the --  
24 which I have to admit I only looked for about ten  
25 minutes last night, but I thought it was interesting.

1 But the first thing that struck me was the parameter  
2 estimate -- oh sorry -- the parameter estimate on the  
3 input variables for energy efficiency -- you know the  
4 spending and then the reported savings -- was, you know,  
5 it wasn't very precise. Well the first thing that's  
6 struck me was 18 data points. Doesn't really make a  
7 regression for me.

8 Mr. Kavalec: Well 18 data points by eight  
9 planning areas.

10 Mr. Aslin: OK, I see -- so you had a little  
11 panel thing in there --

12 Mr. Kavalec: Yeah.

13 Mr. Aslin: Okay, well that's better. Uh, so  
14 the parameter estimate had this T statistic of two, you  
15 know, which means that they're within this 95 percent  
16 confidence interval. Essentially whatever you estimated  
17 at the expected value could be twice as high, so you  
18 can't rule out the fact that whatever you estimated  
19 based on even this particular specification would be,  
20 you know, twice as high as what was shown in that graph.  
21 So, you know, and then there are all sorts of  
22 interactions -- it's very hard to estimate things when  
23 they're all moving together, for example, so you have a  
24 lot of cumulative data, they're all tending to trend  
25 together. You've got to figure out how to break that up

1 through differencing. You did use logs, but then some  
2 things entered in as log linear -- I'd have to, you  
3 know, understand that better.

4 Mr. Kavalec: Yeah, I think the question was not  
5 so much that particular estimation, but the concept  
6 itself as a way of teasing out program savings.

7 Mr. Aslin: Yeah, I like econometrics as a  
8 concept.

9 Ms. Mitchell: Well, I think that we're -- the  
10 CPUC at least -- is interested in moving to something  
11 like this if in -- if not in whole, at least in part, to  
12 be at least sort of a top-down and still have in place  
13 some of this bottom-up widget counting that we're doing.  
14 To the extent that we still have portfolios that are  
15 largely stand-alone measures that are being installed, I  
16 think we've got to keep the widget sort of based EM&V  
17 that we're doing, but the approach that Chris is taking  
18 here is one that get away from trying to specifically  
19 assign a kilowatt hours savings to a specific action,  
20 and looking at it more in aggregate. So, to that  
21 extent, I think that is the direction of where we hope  
22 that energy efficiency is moving. We're getting so many  
23 savings so quickly across so many different types of  
24 market actions, that the attribution becomes less  
25 important, and just understanding how consumption is

1 being changed from efficiency price effects, etcetera.

2 Mr. Jaske: Carmen, could you give us a sense of  
3 where the PUC is on that top-down study?

4 Ms. Besa: Sure. I was just -- I just put that  
5 note on there. Uh, our lead analyst on the Macro --  
6 we're calling them the Macro-Consumption Metrics Project  
7 is Ayat Osman, and I think she was listening in today  
8 for part of this session. And they're -- they have  
9 hired three contractors, I believe, that are preparing  
10 proposals on how to do this independently. Each one of  
11 them is coming up with ways to do it. Looking at the  
12 data that's available, what they -- how they would  
13 specify models, limitations to what they'll be able to  
14 do, and they should have some proposed methods ready, I  
15 believe in the June/July period. So, even this summer  
16 there's -- we'll be hosting workshops on those  
17 preliminary ideas and concepts and then get comment on  
18 those and proceed with more detailed analysis and data  
19 crunching. Oh, I was just going to make a note though,  
20 that the workshops will be notified definitely within  
21 this group, it's also part of our post-2012 EM&V  
22 proceeding over at the PUC. And also part of our  
23 general outreach for '10/'12 EM&V. Thanks.

24 Mr. Jaske: Everyone can come to the party.

25 Mr. Kavalec: And can we hear from Sierra on

1 this idea of using econometric approach to estimate  
2 these savings?

3 Mr. Martinez: Sure, it sounds like an  
4 interesting idea but it shouldn't supplant previous  
5 evaluated estimates of energy savings. I'd be  
6 interested in learning more -- I've only seen the  
7 results today. Again, I think it's interesting but we  
8 should use the best available information at the time  
9 for constructing the history of energy efficiency.

10 Mr. Toth: Uh, Chris, uh I've just seen this  
11 here, today. I wasn't able to view your slides. In  
12 your slide did it have a comparison to what we're  
13 currently doing vis-à-vis what you estimated? How close  
14 were they?

15 Mr. Kavalec: Um, yeah, it -- well it actually  
16 showed the -- I don't know where it is now -- but it, uh  
17 -- so it showed the total *ex ante* claimed and the nit  
18 showed where we are now in terms of a  
19 residential/commercial savings. So these estimates come  
20 out with both equation much closer to what we're doing  
21 now than the total *ex ante* claimed.

22 Mr. Jaske: Chris can you cite the slide number  
23 please, just for the record?

24 Mr. Kavalec: Uh, slide 23. My last slide, in  
25 fact on that one.

1           Mr. Martinez: And in creating this metric is it  
2 your intention, then, it would supplant previous  
3 evaluated estimated from the CPUC.

4           Mr. Kavalec: Not where good EM&V data is  
5 available. Uh, but it could work in periods where there  
6 was no EEM&V to speak of, or it was very inconsistent.  
7 A perfect period would be 1976, or 1980 to 1990, before  
8 we started on the real EM&V efforts.

9           Mr. Martinez: Would the intent or this metric  
10 be to replace CPUC reporting protocols that were  
11 developed over those decades?

12          Mr. Kavalec: No, there weren't any then.

13          Ms. Mitchell: He didn't even bring that up.

14          Mr. Jaske: So, it is maybe the time to shift  
15 the question to --

16          Mr. Aslin: Could I just --

17          Mr. Jaske: -- it's exactly where we are about  
18 to have this conversation --

19          Mr. Aslin: Could you indulge me for 15 seconds?

20          Mr. Jaske: Fifteen seconds.

21          Mr. Aslin: Okay, so earlier Sharim from SCE  
22 made a really good observation I think that -- you know,  
23 kind of one good thing about regression is that you can  
24 put around it a confidence interval, and I think really  
25 the confidence interval is very, very interesting to

1 look at. So, in some sense that's a big advantage of  
2 doing things, you know, at this macro level through  
3 regression, as opposed to doing the through some sort of  
4 engineering analysis where you just get this one point,  
5 you know, and there's a lot of uncertainty analysis done  
6 around it. And so in that respect I think these kind of  
7 macro consumption approaches can be very revealing,  
8 because they can show that - they can just -- I think  
9 one thing that we should all be cognizant of as possible  
10 is how much we don't know, relative to how much we do.  
11 So, it usually points that out.

12           Mr. Jaske: So I think that that's now the segue  
13 to question two. And I'm going to very slightly, you  
14 know, revise the question. Is it appropriate to  
15 consider pre-1990 utility -- strike *ex ante* -- reported  
16 energy efficiency program -- insert savings -- as the  
17 best available information for resource planning  
18 purposes. And I think it's become clear that we didn't  
19 have *ex ante* in any sense of what we now understand that  
20 word to be in the pre-1990 period. We have utility  
21 reported, we know that the DEER process, you know,  
22 started in that early 1990's era, specifically because  
23 there were inconsistencies in how measures were being --  
24 what savings were being attributed to them, and so  
25 forth. And so, I think it is -- at least is someone

1 wants to correct me -- I'll assert it is a fact that we  
2 don't have *ex ante* reported numbers, let alone *ex post*  
3 in that period.

4 (Anonymous off-microphone response)

5 Mr. Jaske: Either. We do not have *ex ante*. We  
6 have utility reported. We do not have *ex ante* in the  
7 sense of following a protocol. We have whatever  
8 utilities chose to do. So, given that, is it -- how do  
9 we deal with that period?

10 Ms. Besa: Could I ask a clarifying question?  
11 Maybe I should know this, but when we talk about the  
12 past, how far into the past do we keep talking about? I  
13 mean, we have eras where we have absolutely no data, we  
14 started in the '70's, and how important is the '70's  
15 relative to where we are today and to the future that  
16 we're looking at. Because then -- I mean we talk about  
17 the vintages and the quality of the data available, but  
18 how far do we have to keep back-casting -- and maybe I  
19 should know this and I should have asked my forecasting  
20 folks about how important is 1970 relative to, maybe  
21 1990 or 1994. Because we are in 2012, or '11 -- that  
22 seems so long ago, my children weren't even born yet,  
23 and yet I'm forecasting their future.

24 Mr. Jaske: Well, Athena, that's the next  
25 question. So you know, let's for the moment, let's

1 focus on this pre -- 1990 and earlier period. And what  
2 can be done was reasonable to do to it, and then we'll,  
3 you know, move onto a broader discussion of the  
4 different eras.

5 Mr. Martinez: Sure. Sierra from NRDC. We  
6 should use the best available estimates at the time,  
7 which were the utilities reported estimates to the CPUC,  
8 which is the agency that has the long history of  
9 assessing utility efficiency program savings.

10 Mr. Jaske: Don?

11 Mr. Schultz: The data that was reported in the  
12 annual reports up until 1990 was bogus. Just because it  
13 was reported didn't mean the PUC did anything with it.

14 Mr. Martinez: The, the data that the CEC  
15 revised was conducted without a public process, without  
16 any protocols and without new evaluation studies.

17 Mr. Toth: I just have a contextual question.  
18 We're talking prior to 1990 right here, right? And  
19 we're talking for forecasting purposes, which will be  
20 used in a procurement planning process. Is my  
21 understanding right? Is that context right? And if so,  
22 my understanding of questions earlier and presentations  
23 earlier, prior to 2000 - or is it 1998? -- that the  
24 impact on this forecast is minimal, and I'm wondering if  
25 it's worth even discussing.

1           Mr. Kavalec: Let me attempt to answer that. I  
2 don't want to put words in Sierra's mouth, but the idea  
3 -- the importance of the historical period, as I  
4 mentioned, for us -- the early historical period for us  
5 is not real important in terms of our forecast. But in  
6 terms of establishing a record for California, the  
7 success, or lack thereof, for past efficiency programs,  
8 and in terms of learning from past experience to guide  
9 the future, it's a good idea if you have the time to put  
10 it together to get a quality estimate of historical  
11 program savings.

12           Ms. Mitchell: And it's okay to be able to take,  
13 for instance, that first ten years, plus or minus, and  
14 to say look we think during this period of time the  
15 California utilities collectively spent X-amount of  
16 dollars in a variety of education information and paper  
17 audit type programs, and it was in response to, you  
18 know, severe price shocks that happened in this state  
19 and around the country, and this was the beginning of  
20 energy efficiency as we've started to come to know it  
21 today. But there's no long-run sustained savings that  
22 were realized out of that period of time. It's not  
23 something that you say we started to save in '75 and as  
24 a result it's carried through today in X-number of 500  
25 megawatt power plants. It's the context of how it's

1 used, and that's why I showed the 2003 savings graph  
2 relative to the Rosenfeld per-capita consumption  
3 reduction. If we didn't have that kind of correlation  
4 out there floating around the country and around the  
5 world, you know, I don't think we'd be having this kind  
6 of debate. And the issue is how it's been applied and  
7 how it's been interpreted, and how it's been used to  
8 represent that California has saved more energy than any  
9 other state or country in the world. California was out  
10 there doing education information and audit programs,  
11 and other states and regions were doing that as well.  
12 As your data shows, Sierra, from the Pacific Northwest,  
13 they had their run-up in those sorts of activities, as  
14 well.

15 Mr. Martinez: With regard to education and  
16 information programs, there do exist non-price market  
17 barriers that prevent people from adopting energy  
18 efficiency technologies. There's imperfect information  
19 out there. And all these barriers need to be addressed  
20 in order to achieve all cost-effective --

21 Ms. Mitchell: Absolutely --

22 Mr. Martinez: -- energy efficiency.

23 Ms. Mitchell: -- absolutely, Sierra, but to  
24 take that chart, that graph, and to try to say my gosh,  
25 '75 to '85 was X-gigawatt savings that is equivalent to,

1 you know, two 500 megawatt power plants today, that's  
2 ridiculous. We need to stop saying that.

3 Mr. Martinez: To take that graph and reduce it  
4 by 92% is ridiculous.

5 Mr. Jaske: Let's attempt to move on. Question  
6 three. Did Energy Commission staff spend time  
7 reevaluating energy efficiency program savings during  
8 the historic period to incorporate *ex post* evaluation  
9 work as much as possible? So, Chris, uh perhaps you can  
10 answer that, or perhaps you can answer that in terms of  
11 different segments of program history.

12 Mr. Kavalec: Yeah, I think I -- as I alluded to  
13 earlier the more recent energy efficiency activities are  
14 the more important it is to us as forecasters. Uh, so I  
15 have no objection to going back to, I think the year we  
16 used was 1998, and refining our estimates further. What  
17 I do object to is going back beyond that and the  
18 historical period '76 to '97 and attempting to  
19 reevaluate what was done back in the day, if it's not  
20 going to have a -- if it's going to have a minimal  
21 effect on our forecast.

22 Mr. Jaske: So just a clarification of why it is  
23 you're making that statement. Is that because there are  
24 other things for Energy Commission staff to devote their  
25 time and energy to, or just you don't think it's going

1 to pay off, you know, even on some sort of absolute, you  
2 know, public benefit sort of calculation?

3           Mr. Kavalec: Well, there's other more important  
4 things for us to do, both that have nothing to do with  
5 efficiency in putting together a quality forecast, and  
6 having to do with efficiency. The more we can learn  
7 about the recent and near-future efficiency activities,  
8 the higher quality our forecast is going to be. So  
9 that's where we should spend our time. Both on more  
10 recent efficiency and other issues related to  
11 forecasting. Those are more important than going back  
12 in the early historical period to me.

13           Mr. Jaske: Carmen?

14           Ms. Best: I was just going to second that.  
15 From a CPUC staff perspective, uh, we would probably be  
16 bearing a lot of the burden to dig up the boxes from our  
17 historic record, and I just don't think it would be a  
18 good use of time. We would rather spend our time  
19 focusing on new research questions to better understand  
20 where potential lies for the future, and refining  
21 savings estimates to be used both in figuring out what  
22 happened and what might happen going forward.

23           Mr. Martinez: I wholeheartedly agree that it  
24 would not be viable to re-estimate historic savings now,  
25 just as it was not viable to revise and re-estimate

1 historical savings as done in the 2009 graph. We should  
2 just go with the original graph.

3 Ms. Mitchell: The original graph had no  
4 analysis applied to it in those first ten years, Sierra,  
5 it was just the utility tallies. That was all it was,  
6 so, I think what Energy Division, or CEC did with -- in  
7 2009 -- was apply some analysis to that early period.

8 Mr. Jaske: Is there a magic cut-off point to  
9 where there's some cost-effective benefit that could be  
10 expected to come out of digging into *ex post* studies and  
11 other kinds of assessments, even if they don't rise to  
12 the level of *ex post*, is it -- Chris has suggested '98.  
13 I think, Carmen, in your written statement you said  
14 something about 2000 or maybe you used 2001 as a cut-  
15 off.

16 Ms. Best: I think I said 2002, because I know  
17 that was one of the last aggregate reports on evaluated  
18 results.

19 Mr. Jaske: Are there other reviews about where  
20 the body of data, you know -- seemingly is there  
21 retrievable enough, still warm enough, you know, that  
22 something useful could come out of it?

23 Ms. Mitchell: I think Don's addressed earlier  
24 that you really can't go back further than 1998 because  
25 it's 1998 where we started the AEAP. You know, that was

1 further. Okay. That was just still reported, wasn't  
2 it?

3 Ms. Best: No.

4 Ms. Mitchell: And --

5 Mr. Schultz: That was the closest we or anybody  
6 else in the world, as far as I know, came to a complete  
7 set of protocols, and evaluation and *ex post* and all  
8 that kind of stuff. Uh, it's that body of knowledge, if  
9 you will, coming out of that is a massive amount of  
10 studies, some of which were never really verified by DRA  
11 or anybody else. Some of which were -- and litigated --  
12 some of which settled, which leaves you with a very  
13 uncomfortable, sort of *ex post* resolved, formally  
14 adopted -- that's the only times that I'm aware of that  
15 the Commission was forced to formally adopt an explicit  
16 set of estimates of impacts of an identifiable program  
17 for an identifiable utility, and that's what the AEAP  
18 was all about. But that produced an enormous amount of  
19 data in studies, which is somebody had, you know, way  
20 too much free time help yourself. But, uh the  
21 suggestion we're coming back to here is whether or not  
22 the Energy Commission staff should waste any time going  
23 back into that or anything prior to that, so --

24 Ms. Besa: So, I mean, I guess that's the  
25 circular back to my original question -- how far back

1 are we thinking? And so if the start of the forecast  
2 year is 2012 and you assume, you know, maximum of 15  
3 years there were measures in 15 years, and you back  
4 cast, well that source of the 15 year savings comes  
5 around 1997. So 1997, 1998 to Chris' thing is probably  
6 the closest and that's probably where you have a lot of  
7 data.

8           Mr. Jaske: For those utilities doing the  
9 econometric modeling, how far back, you know, in general  
10 do you go in order to, you know, capture a period that  
11 seemingly has relevance for all the unexplained factors  
12 that don't have actual variables?

13           Mr. Toth: I'm going to look over here at Sharim  
14 and Johanna, but my understanding is 2000? Can you  
15 correct me?

16           Ms. Benson: Currently we use a CE data going  
17 back to 1990; however for forecasting purposes with the  
18 way our models have progressed it probably won't be too  
19 long we'll be chopping off part of that history, and not  
20 including it, because we don't need it.

21           Ms. Besa: I think for SDG&E, our forecaster  
22 assessed that we do 1990, but for the purposes of  
23 filling out the IEPR forms with respect to the energy  
24 efficiency savings, we at least -- we continue to drop  
25 off as our measure lives cut off, for the purposes of

1 energy efficiency. So if I count 15 years we are down  
2 to 1997 at the latest -- at the earliest.

3 Mr. Jaske: So, a topic that hasn't explicitly  
4 come up before, at least as I heard it, but one that's  
5 been discussed at length from -- in the working groups,  
6 both the DFEEQP, as well at this one, is the idea if  
7 trying to develop a consensus of energy efficiency  
8 history. And once developed, sort of stick with it.  
9 Rick, I know that you've talked about that idea from  
10 time to time. Does it seem like PG&E would be  
11 interested in participating in an effort that would, you  
12 know, take us back to say '98 or '99 or whatever the  
13 magic cut-off is in trying to come up with something  
14 that mined history as best one could, and assemble, you  
15 know, a savings pattern at some level of this  
16 aggregation that was useful for all these purposes we're  
17 here discussing?

18 Mr. Aslin: Uh, yes, I think PG&E would be  
19 interested in the notion of trying to go back and  
20 develop an energy efficiency index for the key end uses  
21 or for key customer classes that could then later be  
22 used to inform our forecasts, and which would give us at  
23 least an opportunity to all work together to try to  
24 understand -- for example, how does a residential house  
25 in, you know, an interior area in California -- how has

1 its energy profile changed over time. So, sort of  
2 taking, you know, some of the best things out of the  
3 end-use model and trying to incorporate those into sort  
4 of a mixed modeling forecast, where you're using  
5 regression primarily, but you're using elements from the  
6 end-use modeling. So that's what I would be interested  
7 in doing.

8 Mr. Jaske: Uh, any other views around the table  
9 about, you know, a consensus creation of history?

10 Mr. Gorin: Are you talking just about -- just  
11 about back to 1998 or prior to that.

12 Mr. Jaske: No, just -- assuming there is some  
13 useful cut-off year, whatever it is, from that point  
14 forward.

15 Mr. Toth: I'm uh, looking over at the -- my  
16 forecasting crew, my partners in crime and they have --

17 Mr. Chaudhury: This is Sharim Chaudhury,  
18 Southern California Edison, and cutting it short I agree  
19 with Rick, we'll be glad to participate in an effort to  
20 get there.

21 Ms. Dickerson: And this is Chris Ann Dickerson,  
22 and I have a question for the IOU members of the panel.  
23 Do any of you have a sense about whether or not your own  
24 internal utility planners have a better record of the  
25 adjusted *ex post* history than we've been exposed to in

1 the DAWG. So, in other words, I'm thinking of the Mike  
2 Wans of the world, the Tory Webbers --

3 Mr. Toth: Funny you ask -- one thing that I  
4 wanted to do was get away from looking at Chris and  
5 saying Chris, you know, we don't like what you're doing,  
6 and get into let's look at what you're doing and see how  
7 reasonable it is, getting back to the best available  
8 data thing. And I went down to our EM&V department, and  
9 I said here's what they're doing, is it reasonable or  
10 not. She looked at me and scratched her head and said  
11 we're going to have to go back and build this and look.  
12 And they're in the process of building it, so to answer  
13 your question, there's nothing ready-made off the shelf  
14 that says here you go, here's what we have. And so it's  
15 being looked at right now.

16 Ms. Dickerson: To build a history of  
17 accomplishments adjusted by -- to reflect *ex post* --

18 Mr. Toth: Yeah, and we're focusing on the area  
19 with -- you know, the era with the best data. And I was  
20 like, well let's start somewhere and let's see what we  
21 have, and so you know when you're talking about going  
22 way back into history right now, that's not even on the  
23 table.

24 Ms. Dickerson: That's great. Thanks Phil.  
25 Athena, what about San Diego & Southern California Gas?

1           Ms. Besa: Well, let me see, I think that would  
2 be me.

3           Ms. Dickerson: Oh, okay.

4           Ms. Besa: Since I did go up against Don Schultz  
5 on the these things and the E-3 tables. So, I mean, we  
6 do have detailed information for each year back to 1994,  
7 which was updated four times over the span of its  
8 lifecycle. Because we have three verification periods  
9 for one year and each year it is updated. So you would  
10 go to the last one -- it is kind of tedious to do, but  
11 the data does exist.

12           Ms. Dickerson: Are you saying just '94 through  
13 '98, or are you saying all the way back from 2006 or  
14 2005, let's say, through --

15           Ms. Besa: No, '94 to '97 is very detailed.  
16 There's four updates per year. After that we went into  
17 a lot of assumptions on market transformation and net-  
18 to-gross ratio of one, and reporting became -- and you  
19 know you change the different types of program  
20 categories which throws everything off, so you have to  
21 do, like -- for like -- so once you start moving into  
22 the vintages there's different things you need to do,  
23 and you need the people who understand it at that point  
24 in time, like Tory Webber and Mike Wan, who understand  
25 these vintages. And you apply the appropriate way to

1 calculate the data so you can get consistent data moving  
2 forward, understanding that there's difference over  
3 time. So it can be done, but then again, in our copious  
4 spare time we could do this, just for the heck of it --  
5 hey we have interns, we could have interns do this --  
6 but why, because my whole point about why I'm confused  
7 about what we're doing, and whether or not I -- you  
8 know, as Sempra Utilities want to join in the effort to  
9 do this, you know, macro- metric method with Chris. I  
10 mean, methodologies are designed to address a specific  
11 question, so just for the intrinsic value of the  
12 methodologies there's always intrinsic analytical value  
13 to doing something, but what that thing is doing, and  
14 answering, we should set up properly. And then respond  
15 with the appropriate modeling to the extent that there  
16 are econometric variables that need to be adjusted,  
17 added, subtracted, the length of data that you need in  
18 order to answer that question. I mean you don't go  
19 doing analysis not knowing what the question you're  
20 trying to answer. And so the methodology by itself is  
21 intrinsically appealing, that's the standard way of  
22 doing these kinds of analysis, but I would want to know  
23 what the specific study question we're answering before  
24 we go down the path of actually doing this.

25 Mr. Jaske: Well, let's take it as an example

1 how Rick responded to an earlier question that was  
2 having to do with Chris' sort of very simplistic  
3 aggregate kind of metric technique. Rick's answer, as I  
4 understood it, was he'd be interested in having  
5 efficiency indices at some end-use kind of level -- not  
6 all end-uses, but some key end-use levels -- in various  
7 customer classes. So it implies to me a mapping of  
8 measures across programs into end-uses, and trying to  
9 them gather, you know, across all of the very detailed  
10 data into some, maybe a few dozen, you know, indices  
11 overall. And that would have value from the perspective  
12 of some kind of a -- I think people talk about hybrid  
13 kinds of forecasting models that are sort of at the end-  
14 use level for some things but then they're kind of  
15 econometric in the sense of being not just calibrated,  
16 but actually fit to, you know, recorded sales data. And  
17 so it's a synthesis of very detailed end-use models and  
18 econometric models in a way that would bring, you know,  
19 energy efficiency more directly into play. So, I gather  
20 that, you know, suppose that were decided, that that was  
21 a kind of model that everyone wanted to support, do you  
22 think San Diego's data -- program data could be, you  
23 know, mapped into those kind of indices?

24 Ms. Besa: If it's just a question of whether we  
25 have the data or not, I think all four utilities had the

1 same kind of data over time, because that's part of the  
2 reporting requirement. So, whether they're in filing  
3 cabinets, on a disk is a different question of the  
4 availability of the data and how -- what the facility it  
5 in order to feed it electronically to models is a  
6 different question. But it brings to mind for me that,  
7 you know, over the many years the utilities have been  
8 supporting the CEUS and the RASS surveys, which  
9 intrinsically develop end-use models that develop per  
10 unit energy consumption intensities or measures of end-  
11 use usage, and because it is done over time, it does  
12 reflect the varying changes in codes and standards, the  
13 impacts of programs, and so forth. And so in trying to  
14 figure out this new model that we're trying to do to  
15 feed the end-use model we do have this other area that  
16 we have been consistently working on with the CEC in  
17 providing data on, so it's kind of like to me why are we  
18 reinventing so many things when there's a lot of these  
19 kinds of things that exist already. Maybe we didn't --  
20 you know when you talk about end-use modeling I don't  
21 know if we're talking about the same end-use modeling  
22 that's being used when we do RASS and we produce the UEC  
23 studies and the CEUS studies that provide intensities  
24 for different types of end-uses. So there's all of that  
25 and we're talking about doing some other effort here,

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1 I'm not clear about what is the connection between all  
2 of that, because we do spend a lot of effort and money,  
3 and now we're working with the PUC to sort of help  
4 direct that effort. It seems duplicative to me without  
5 me understanding really what's the difference.

6 Mr. Aslin: Yeah, what I was thinking of would  
7 launch off of those RASS and CEUS studies -- yeah  
8 definitely it would launch off of those. But then the  
9 question is those are all historical, right, so you just  
10 -- you're looking back to see what happened at various  
11 points in time so you have these snapshots in time of  
12 what the various end-use intensities were. And then the  
13 question is, given that we have potential studies and we  
14 have portfolio filings, and we have, you know, all this  
15 information about what we might do in the future, how  
16 can we project how those intensities will change going  
17 forward, you know, given all that additional information  
18 that we have. And then I think the key thing is what  
19 Mike was saying, is that is you put that into a  
20 different modeling structure, then you're fitting these  
21 indices to the historical data, and I think that's a  
22 very powerful thing. And also you get out of it -- you  
23 get a lot of statistical properties that allow you to  
24 understand, not only the expected value, but also the  
25 range of uncertainty around your estimates.

1           Ms. Besa: So from that perspective, it seems  
2 like we should have a lot better convergence between,  
3 you know, the Title 20 requirements to do all this data  
4 collection and surveys, and end-use analysis tied to  
5 moving forward in the potential studies, because they  
6 also use the same information, and that's a forecast  
7 also of what still is out there. And so we should  
8 probably -- we spend a lot of money on EM&V that we  
9 should converge and not create separate models, and in  
10 the meantime the CEC and PUC is trying to figure out how  
11 to do their potential study, and so forth. So I'm all  
12 for that, but I think that we should sort of integrate  
13 our efforts so we're using our money efficiently.

14           Mr. Jaske: Uh, any other thoughts on that  
15 before we move on to --

16           Mr. Gorin: Can I ask a question about that?

17           Mr. Jaske: Sure.

18           Mr. Gorin: Do the utilities have copies of  
19 their RASS surveys prior to 2000?

20           Mr. Jaske: You mean RASSs and CEUSs?

21           Mr. Gorin: Yes.

22           Mr. Jaske: The survey results?

23           Mr. Schultz: You don't have it?

24           Ms. Mitchell: It's not in your vault?

25           Mr. Gorin: Part of them are in our vault,

1 but --

2 Mr. Jaske: On a nine track too?

3 Mr. Schultz: Well, an extension on this -- the  
4 thing that we keep dodging is the industrial sector,  
5 which everybody is very confused about, and there's been  
6 a lack -- there's been a gap as I understand it for a  
7 number of years in doing an industrial sector end-use  
8 survey. And I don't know how to kick that going again,  
9 or I don't know, Chris, whether or not you think that  
10 would be useful to do, but it seems to me that that  
11 would be an extremely useful -- if there is an interest  
12 in finding out more information and developing a time  
13 series of consumption by end-use in industrial sectors  
14 and we go back to Edison's failure to deliver in the  
15 past again -- sorry to bring that up but -- so Phil, the  
16 question is for you. Are you willing to get that going  
17 again?

18 Mr. Toth: Well I know it's on the EM&V schedule  
19 for this year, and I know the IUOs and the CPUC are  
20 involved, but I'm not sure if it's gotten underway yet,  
21 so I kind of looked over at Carmen and went --

22 Ms. Best: Yeah -- um, this is Carmen at the  
23 CPUC. Uh, the -- and I happen to be the person who's  
24 supposed to be following up on the IEU study -- the  
25 industrial end-use study -- and it's essentially stalled

1 within the -- my understanding is that it's been on-  
2 going for about four years so far, and proposals for  
3 doing it have come up to the CEC. The CPUC hasn't  
4 really been involved to date, but we're still debating a  
5 little bit about how we can appropriately get involved,  
6 because there's some other under-riding issues about the  
7 how and the why. So, I don't have a -- it is on our  
8 radar for addressing it, but it is -- when we -- I don't  
9 know how to put this -- we -- when we -- I don't think  
10 we understood the barriers that existed when we took  
11 that on, if you will. Um, so there's lots of barriers  
12 that are being worked through and we need to work in  
13 collaboration with the CEC to make that move forward,  
14 so --

15 Mr. Jaske: Welcome aboard.

16 Ms. Best: Yeah.

17 Mr. Jaske: Okay, so let us move on to question  
18 five. So, staff has proposed reporting the large  
19 aggregate of all sources of energy efficiency savings  
20 and then, as step two summarizing -- or identifying --  
21 its notions of how those can be attributed to particular  
22 sectors or clumps of programmatic activity. N What  
23 reaction is there to that, and are there difference of  
24 opinion among you?

25 Mr. Martinez: Sierra Martinez, from NRDC, and

1 it sounds like a good idea that we can start to coalesce  
2 around. I just wanted to clarify what it would look  
3 like. Would it be a -- up front this totally energy  
4 savings graph followed by a verbal description of the  
5 entangled nature between codes and standards, utility  
6 programs, market effects, etcetera?

7 Mr. Kavalec: Yeah, that's basically it. And  
8 the point is that you're always starting with the total  
9 lump and then discussing all the thorny issues related  
10 to attribution, and then only after that, showing our  
11 estimates of attribution among the savings sources.

12 Mr. Martinez: Given that the fact that the  
13 demand forecast model isn't intended to determine  
14 attribution -- that's the work of evaluation studies --  
15 I think the first part of the solution sounds excellent,  
16 but portraying -- drawing lines in the sand or lines on  
17 this graph -- when the demand forecast model produces  
18 different lines depending on the order in which it's  
19 run, different results depending on the assumptions that  
20 go in, I think is inaccurate to put it out there as if  
21 it were determining attribution.

22 Mr. Kavalec: Yeah, and -- let me slightly  
23 correct what you said -- the end-use models are designed  
24 to attribute savings sources in that they were built to  
25 incorporate standards. That was one of the primary

1 purposes of end-use models. And given -- so that you  
2 have that, and then assuming reasonable price  
3 elasticities, that gives you a reasonable estimate of  
4 price effects. It's the efficiency program part that's  
5 squishier.

6 Mr. Martinez: Using price elastic -- I defer to  
7 the CEC in its estimate of what codes and standards  
8 impacts are -- but in using price elasticities to  
9 determine causation of what historically was attributed  
10 to utility programs is a misapplication. Price  
11 elasticities are useful for projecting future demand and  
12 correlating historic events; however they don't  
13 determine causation, and using that naturally occurring  
14 wedge to supplant utility programs is inaccurate.

15 Mr. Kavalec: Well, I mean, admittedly it's  
16 imperfect. So what I'm hearing from your answer is that  
17 we should make no attempt at all, no matter how  
18 qualified, to make an attribution.

19 Mr. Martinez: Unless -- using the historic --  
20 the best available information at the time for estimates  
21 of utility efficiency programs would be a good way to  
22 estimate the effects from utility programs. That would  
23 still be possible.

24 Mr. Kavalec: So attribution is okay as long as  
25 efficiency program savings are higher?

1           Mr. Martinez: According to the officially  
2 adopted results.

3           Mr. Kavalec: Well, it's hard --

4           Ms. Mitchell: It's not efficiency adopted  
5 results, it was just utility reported, particularly in  
6 those first ten years.

7           Mr. Martinez: The Commission adopted Annual  
8 Earnings Assessment Proceedings Results --

9           Ms. Mitchell: Oh Sierra, 1975 before you were  
10 even out of grade school probably through 1985 --

11          Mr. Martinez: That's rude.

12          Ms. Mitchell: Hey, listen, Sierra, '75 to '85  
13 education information and audits that were just reported  
14 by the utilities and thrown in a desk drawer at the CEC,  
15 that's what we're talking about. And you want to put  
16 the big wedge back in there from the 2003 graph and  
17 you're not going to budge until you get the 2003 graph.

18          Mr. Martinez: Can we hold off on the character  
19 attacks, Mike?

20          Mr. Toth: Maybe we can redirect this -- from  
21 Edison's perspective it's -- the hard part becomes when  
22 it leaves the forecasting shop and interacts into  
23 different proceedings and different aspects, and  
24 everything's kind of jumbled together and intertwined,  
25 and the concern is that something might have been --

1 might be taken out of perspective it is portrayed like  
2 it currently is portrayed, regardless of the  
3 qualifications. And that is the worry, and so, how do  
4 we go about and take that worry away, I'd love to talk  
5 about different things with you on that. But, you know,  
6 for forecasting purposes I see what you're doing and it  
7 makes total sense.

8           Mr. Kavalec: This issue may be a little beyond  
9 our pay-grade, in that the powers that be, I think, at  
10 the Commission are going to demand some sort of  
11 attribution. I don't think we can avoid that. What I'm  
12 trying to do is provide that -- as a forecaster, what's  
13 important to me is the total savings that affect the  
14 forecast, that's what I'm really interested in. But  
15 others want to see attribution, no matter how uncertain  
16 that attribution is, so my proposal is to make sure that  
17 everybody understands that the -- relative to the total  
18 amount of savings -- the attribution among the three  
19 savings sources is much more uncertain.

20           Mr. Jaske: Athena?

21           Ms. Besa: Um, you know, historically  
22 attribution's always been a problem. We've spent  
23 millions and millions of dollars trying to find this.  
24 We had a professor from UC Berkeley, Dr. Ken Train, who  
25 developed discrete choice models to adequately describe

1 net-to-gross ratios way back in the '90's. And yet, we  
2 still question it. One of the interesting things when  
3 you talk, for example, about codes and standards  
4 relative to the IOU programs, in 2006 the Commission  
5 acknowledged that the programs do influence codes and  
6 standards and gave us the ability to take some credit  
7 for the impact to codes and standards. So right off the  
8 bat there's an overlap there. The utility reports  
9 include codes and standards, the codes and standards are  
10 also reporting codes and standards, so there's an  
11 overlap. Naturally occurring -- there's naturally  
12 occurring if you want to talk about free-riderships in  
13 codes and standards. There were people who would have  
14 done whatever they would have done regardless of whether  
15 there was a code or a standard. So there is also free-  
16 ridership in -- built into the codes and standards. And  
17 then there's just the plain naturally occurring people,  
18 trying to discern anyone's decision-making process,  
19 which what discrete choice models were all about, is  
20 never certain. And so, when I listen to you, Chris, I  
21 like the part about the wedge, and I think we were clear  
22 about we did not have a problem with the big giant lump  
23 of savings. But when you come down to the attribution,  
24 I hear you -- and maybe that's not what you're saying --  
25 that you have a specific methodology that you will

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1 continue to use to develop those dissections of the  
2 wedge. And you're willing to put caveats on top of it,  
3 but I just laid out a variety of issued that are not  
4 covered specifically by the caveats. And people will  
5 still take a graph, no matter what caveat you put,  
6 because there's no room in the Power Point presentation  
7 to put all those caveats, and it's just like a number on  
8 the back of a napkin that somehow creates its own life  
9 and lives beyond all of us. So, if we want to do  
10 dissection off that wedge, and because it's going --  
11 again to my point about answering a different  
12 question -- let's not force the same models to create an  
13 answer to a different question. So, if we want to do  
14 the attribution we agree on the total value, let's work  
15 together as stakeholders and try to develop a reasonable  
16 methodology that we can all agree on, regardless of  
17 whether we earn or not. A reasonable way to estimate  
18 this so we can all move forward, and say this is a  
19 reasonable way to do it. I mean, part of the discussion  
20 with code -- with EM&V is net-to-gross ratios, right  
21 Carmen? And so, we'll continue to do this, you just  
22 came up with a different methodology of how to do it  
23 than -- again we're all sitting here saying we don't  
24 necessarily agree. Sierra's used the words transparent,  
25 and publically vetted for your models. So, if we're

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1 going to go down that path, and to answer somebody  
2 else's question not necessarily related to the IEPR,  
3 then let's go do that, and let's do it together, and  
4 have buy-off.

5           Mr. Jaske: Uh, at the risk of further  
6 prolonging this discussion, it seems to me in an era of  
7 goals being total market gross, that it necessitates  
8 bringing price effect, naturally occurring, market  
9 transformation, all of those extremely fuzzy, squishy  
10 things into the picture, because they're all counted in  
11 a total market gross goal. And so EM&V, despite all its  
12 difficulties in dealing with just IOU programs up to  
13 this point, is, you know about to have to transform  
14 itself to encompass everything, so as to have any chance  
15 of saying does the grand total actually satisfy an total  
16 market gross goal. So, there's a, yet, larger challenge  
17 -- or maybe the PUC construct has already imposed an  
18 answer to the question about what things can we count  
19 and not count, and figure out how to move on to do some  
20 analysis that supports that.

21           Mr. Aslin: Uh, I think from PG&E's point of  
22 view, just on this topic is certainly we have no  
23 objection to showing the total as one lump. And in  
24 terms of the attribution, I -- my biggest concern is the  
25 size of the naturally occurring piece that gets

1 estimated because of the program errors that are in the  
2 model, they're just assumed, and how that tends to crowd  
3 out the IOU program savings. So, I mean, maybe there's  
4 some middle ground we can, you know, come to here, which  
5 is that we start the depiction in 1998, and that you can  
6 show codes and standards as different slices but you  
7 have this other big slice which is IOU programs and  
8 market transformation, or something along those lines,  
9 where -- or IOU programs and other market effects, and  
10 then you can just describe how, you know, so hard to  
11 separate out in the modeling framework that you have,  
12 that you can't really realistically separate them.

13 Mr. Kavalec: Uh, let me address part of that.  
14 Uh, one of the reasons that these price effects appear  
15 so large in our charts, is that most of them occurred in  
16 the late '70's and early '80s when there were pretty  
17 major price hikes. And the way that we show these  
18 savings is accumulative starting in 1975, so I think  
19 you're idea about showing effects from 1998 on would  
20 give a very different picture of price effects versus  
21 the other sources of savings.

22 Mr. Martinez: One problem with starting to  
23 delineate some attribution in the total wedge graph is  
24 that codes and standards are completely independent of  
25 the utility programs, and as programs decay they get

1 folded into the codes and standards, so it still would  
2 be misleading to start drawing these lines just carved  
3 out for codes and standards.

4 Mr. Jaske: I look forward to this group --

5 Mr. Chaudhury: This is Sharim Chaudhury again,  
6 and Chris, even within your methodology if you were to  
7 break the wedge into these three components, okay  
8 utility program, naturally occurring conservation, and  
9 the codes and standards, I wouldn't mind seeing instead  
10 of one number for the utility program or any of these,  
11 it could be a sort of range. For example, in your  
12 presentation earlier you had a number for the utility  
13 programs, but you can say that if some of the overlaps  
14 were attributed to the utility programs, okay, how much  
15 that savings could be.

16 Mr. Kavalec: Uh-huh.

17 Mr. Chaudhury: Okay, so instead of one number  
18 it could be a range.

19 Mr. Kavalec: Yeah, and I think that would be  
20 useful, it's probably beyond the scope of this next  
21 coming forecast, but it's something to think about in  
22 the future. I think in this forecast it would be more  
23 of describing that qualitatively.

24 Mr. Chaudhury: Okay, now I want to ask a  
25 question I am dying to ask, and it basically related

1 to -- Mike, you talked about EM&V total market goal, and  
2 early in the day Rick asked a --

3           The Reporter: Can you speak directly into the  
4 microphone?

5           Mr. Chaudhury: -- Rick asked a very -- a  
6 question about *ex ante* and *ex post* and now I understand  
7 the difference between utility reported numbers versus  
8 *ex ante* versus *ex post*. I understand it now better.  
9 Now, Rick, you had asked to, I guess Chris, is that this  
10 notion of *ex post* and *ex ante* -- we really have it  
11 applied only to the utility programs , okay, and given  
12 this TMG paradigm, should we be talking about *ex post*  
13 and *ex ante* for other two components of energy  
14 efficiency also? I mean, naturally occurring and codes  
15 and standards?

16           Mr. Jaske: No, that's an excellent question,  
17 and in fact the Energy Commission posed that question to  
18 Commissioner Grunig in the post-2013 EM&V proceeding and  
19 in effect said, if you're going to have a TMG goal, then  
20 you're going to have to have a TMG EM&V process. And as  
21 I rudimentarily understand the decision that she  
22 authored, and the PUC adopted last fall, the PUC in  
23 effect agreed. And so, how to pursue that in specific  
24 hasn't yet been undertaken, really. The 2010/2012 EM&V  
25 process is still, you know, getting itself organized and

1 moving, but there are supposed to be some workshops that  
2 start during this calendar year sometime about that next  
3 whole tranche of EM&V activity, and how to bring  
4 evaluation of standards into the picture, how to bring  
5 even reporting from all the public agencies that are  
6 doing energy efficiency related things through ARRA  
7 monies, or any other reasons that they do these things.  
8 You know, there's a -- there's just this enormous scope  
9 broadening that the TMG goal, you know, sort of at least  
10 conceptually brings to the floor. How to manage the  
11 participation of many other entities has yet to be  
12 determined, but it's been understood as an issue, and  
13 sort of PUC said we understand in collaboration with  
14 others we need to go there.

15 So I want to turn to question six, and I'm hoping  
16 that after I read the question, for the record, you're  
17 all going to nod yes --

18 Mr. Kavalec: We don't seem to have a question  
19 six.

20 Ms. Dickerson: He made it up.

21 Mr. Kavalec: Oh.

22 Mr. Jaske: Here's the question six, it's on the  
23 last page. And once you all nod your head yes and you  
24 don't need to say anything verbally, then we'll have our  
25 audience -- give them the final opportunity of the day

1 to ask some questions. So, do stakeholders agree that  
2 they should work within the Demand Analysis Working  
3 Group to develop approaches to portray an energy  
4 efficiency savings? And they all nodded yes. Okay,  
5 thank you. At this point if there are any questions  
6 from our audience, come forth.

7 (Off microphone) Are you wearing a mic? She's  
8 wearing a mic or something.

9 Ms. Dickerson: This is Chris Ann and we're  
10 going to take a couple of questions from the audience  
11 who is here in person, and then we are going to open up  
12 to the phones, so if you are on the phone and you have a  
13 question, you will have an opportunity to ask.

14 Mr. Sanstad: Thank you. Alan Sanstad, from  
15 Lawrence Berkeley Laboratory. Uh, I have two questions  
16 for clarification from Mr. Aslin. Uh, first was on the  
17 question that Chris posed to you about realization --  
18 uh, *ex post* versus *ex ante* in realization rates. If I  
19 understood the question that you frames it was do you  
20 agree that there has been historically a general pattern  
21 of realization rates of less than 100 percent in the --  
22 with *ex post* evaluation. And if I understood you answer  
23 it was that you did not agree that that was the case,  
24 and that you did say that what you find depends on model  
25 assumptions. Am I understanding correctly your answer?

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1           Mr. Aslin: Though I do not dispute Carmen's  
2 data that if you look at the *ex ante* models and then you  
3 look at the *ex post* evaluation results that the *ex post*  
4 evaluation results tend to be lower than what the  
5 savings were suggested by the *ex ante* models. There was  
6 a second, sort of, level of the question which was that,  
7 you know, it gets -- they get increasingly further away  
8 as you go through time, and I think, you know, in  
9 particular with this latest round of EM&V studies, my  
10 understanding is that many of the comments that  
11 stakeholders had as to why they did not like the  
12 evaluation results, or they thought they were too low,  
13 was because the assumptions that were made were very  
14 restrictive -- much more restrictive than they were in  
15 previous studies. And that is why you get this, so to  
16 the extent that you ratchet up the restrictive of your  
17 assumptions as to what is verifiable through time, you  
18 tend to get this result if you don't also really improve  
19 the *ex ante* modeling, at least that same rate or with  
20 those same assumptions. So, you know, to me this is  
21 kind of an artifact of the process, it's -- you know,  
22 you have this *ex ante* model, you do the forecast, you  
23 get this projection of what the savings are going to be,  
24 you do everything you can to make that happen, you  
25 install all the widgets, you do all the programs, you do

1 the best job you can, later people come in and evaluate  
2 it and they have a set of assumptions in their  
3 evaluation, and the results are different that's fed in,  
4 at least in theory, to the next round of *ex ante* models  
5 and, you know, that's how the process works. And so  
6 that's why my concern is, in terms of the forecasting  
7 context here, that we make sure that whatever we're  
8 thinking about for the history, we're also kind of  
9 thinking about it in that same context for the future.  
10 So I don't want people to be using, you know, the *ex*  
11 *post* results for the history and then using the *ex ante*  
12 results for the forecast, because if we think the *ex*  
13 *ante* results are not right, then we need to be adjusting  
14 both ends of that. That's really my concern.

15 Mr. Sanstad: So your -- okay, thank you.

16 Mr. Aslin: Alright.

17 Ms. Dickerson: So step into the mic. I just  
18 wanted to ask you if there are any more questions from  
19 the floor? So then we're going to turn to the phones.  
20 If you're on the telephone and would like to answer the  
21 question -- or ask a question, now is your opportunity.

22 Are we done? Alright. I think in this case we're  
23 done. Are there -- I think everyone really did a  
24 fabulous job, and I'd like to thank our hosts very much,  
25 and our panelists, and our speakers, and our audience,

1 both in person and on the phone. This has been a really  
2 wonderful panel. I hope that -- well I know as an  
3 absolute fact that we've covered a number of very  
4 valuable topics, and I think we've opened up a lot of  
5 avenues to pursue some solutions.

6 Mr. Kavalec: And let me just mention next  
7 steps -- we talked a little bit about this before. You,  
8 the panel, like it or not, are gonna help us develop a  
9 summary paper listing everyone's positions and then on  
10 those issues where we haven't yet reached agreement,  
11 posing those questions to our Commissioners. And we  
12 need to do this --

13 Ms. Dickerson: And actually --

14 Mr. Kavalec: -- need to do that relatively  
15 quickly within the --

16 Ms. Dickerson: --panel, after we thank  
17 everyone, will you stay in your seats because we're  
18 going to pick a day for our meeting.

19 (Anonymous off microphone question): When can  
20 we expect that summary paper?

21 Mr. Kavalec: Well, I don't know if it would --  
22 if they'll want to release it externally or not, that's  
23 yet to be determined. But it'll be within the next  
24 month, hopefully.

25 Ms. Dickerson: Okay, everyone thank you so

1 much. Panel, we're going to pick a date.

2 (Thereupon, the Workshop was adjourned

3 at 4:50 p.m.)

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