

INTEGRATED ENERGY POLICY REPORT STAFF WORKSHOP  
BEFORE THE  
CALIFORNIA ENERGY COMMISSION

In the Matter of: )  
)  
Energy Efficiency Program ) Docket No.  
Measurement and Attribution And )  
Proposed 2010 Peak Forecast )  
\_\_\_\_\_ )

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

THURSDAY, MAY 21, 2009  
9:00 A.M.

Reported by: Kent Andrews

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**COMMISSIONERS PRESENT**

Jeffrey Byron, Chairman

**ADVISORS and STAFF PRESENT**

Kelly Birkinshaw

Chris Ann Dickerson, CAD Consulting

Tom Gorin, Demand Analysis Office

Mike Jaske, Electricity Supply Analysis Division

Chris Kavalec, Demand Analysis Office

Suzanne Korosec, IEPR Lead

Lynn Marshall, Electricity Supply Office

Don Schultz, Demand Analysis Office

Michael Wheeler, California PUC

**ALSO PRESENT**

Mike Messenger, ITRON

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

2 9:00 A.M.

3 MS. KOROSSEC: Good morning, everyone. I am Suzanne  
4 Korosec. I lead the Energy Commission's Integrated Energy  
5 Policy Report Unit. Welcome to today's Workshop on the  
6 Energy Commission's Demand Forecasting activities, which is  
7 being held under the direction of the Integrated Energy  
8 Policy Report Committee. Just a few housekeeping items  
9 before we get going, the restrooms are out the double doors  
10 and to your left; there is a snack room at the top of the  
11 stairs on the second floor under the white awning; and if  
12 there is an emergency and we need to evacuate the building,  
13 please follow the staff out the doors to the park that is  
14 diagonal to the building, and wait there for the all clear  
15 signal.

16 Today's workshop is being broadcast through our  
17 WebEx Conferencing System and please be aware that it is  
18 being recorded. Parties who are listening in on that system  
19 who would like to speak during the public comment period, we  
20 will be opening the phone lines during that time, and you  
21 can also ask a question at any time by sending a chat  
22 directly to the WebEx Operator.

23 Just a little bit of context. The Energy Commission  
24 is required to develop an Integrated Energy Policy Report,  
25 or IEPR, every two years. It provides an overview of major

1 energy trends and issues that are facing California, and  
2 also provides policy recommendations to help the state meet  
3 its energy goals. In the 2007 IEPR, we identified the need  
4 to improve how energy efficiency savings assumptions are  
5 measured in the Energy Commission's Electricity and Natural  
6 Gas Demand Forecast and, then, as a follow-up in the 2008  
7 IEPR Update, we presented a plan for making these  
8 improvements. Today's workshop is going to discuss the  
9 progress made in implementing that plan, and a related issue  
10 will also be presenting the Staff Proposed 2010 Peak Demand  
11 Forecast that will serve as a reference case in the  
12 California Public Utilities Commission's 2010 Resource  
13 Adequacy Process.

14 We will have a number of presentations today,  
15 followed by opportunity for public comment later in the day.  
16 For parties in the room who wish to speak during the public  
17 comment period, we do ask that you fill out a blue card,  
18 they are on the table out in the lobby, you can give those  
19 to me throughout the day, with your name and affiliation.  
20 When you do come up to speak, it is also helpful if you can  
21 give the Court Reporter a business card, so we can make sure  
22 that your name is spelled correctly in the transcript. For  
23 folks using WebEx, as I said, you can send questions  
24 directly to the host, or wait until we open the phone lines,  
25 which we will do after we hear from the people in the room.

1           So with that very brief introduction, I will move on  
2 to Commissioners for opening remarks.

3           COMMISSIONER BYRON: Thank you, Ms. Korosec. Good  
4 morning, everyone, and welcome to a staff workshop, as Ms.  
5 Korosec indicated, on Energy Efficiency Program Measurement  
6 and Attribution, and also our Proposed 2010 Peak Demand  
7 Forecast. I would characterize this as the good, the bad,  
8 and the ugly, with all due respect to Clint Eastwood. The  
9 good is that energy efficiency is continuing to reduce  
10 overall usage and the staff, I believe, has made significant  
11 strides in better understanding energy efficiency  
12 measurement and also how to attribute for it, maybe most of  
13 all on how to communicate this. The bad is that we have  
14 been dealing with this issue at least for the last three  
15 IEPRs, and it is not easy, and will likely never be fully  
16 settled; it is complex, and because there is money involved,  
17 there is going to be continued dispute. And the ugly is  
18 that the peak forecasts for energy demand are down; of  
19 course, they are down because of the penetration of energy  
20 efficiency programs, but they are also down for another  
21 reason, the economy is in the proverbial toilet. I suppose  
22 the good side of that is that we also know that the demand  
23 is out there, and just because the economy is down, we have  
24 seen it rebound rather quickly when the economy returns.

25           I ran into some of the staff this morning. This is

1 a big day, as many of our IEPR Workshops are. This is one  
2 in a series of a number of workshops that are being used to  
3 provide input to the IEPR Committee, which consists of  
4 myself and Commissioner Boyd, who unfortunately is not here  
5 today, he is in Washington, D.C., but he is represented by  
6 his advisor, Kelly Birkinshaw. I would like to thank all  
7 the attendees for being here and, for those that are on the  
8 Web, and I would like to also welcome your input here today,  
9 particularly your written input; I believe June 1<sup>st</sup> is the  
10 deadline that we are looking for, for written comments. And  
11 if I am incorrect there, the staff will correct that date.

12 I have learned a great deal about this subject since  
13 I have been Chair of the IEPR Committee. I can tell you  
14 that energy efficiency is viewed quite differently by the  
15 regulator and the policy-makers, and the service providers,  
16 than the end-use customer. It has its own terminology and  
17 it is a very complicated subject, but it is the cornerstone  
18 of California's energy policy and the loading order.

19 So we have a couple of major challenges that we have  
20 to continually deal with, one is the measurement, and the  
21 second is the attribution to all the various sources, the  
22 utility programs, the market effects, building and appliance  
23 standards, and those naturally occurring sources of energy  
24 efficiency. I believe the staff does a very thorough and  
25 unbiased evaluation, but nevertheless, we welcome the

1 feedback on their methods and their forecasts, and that is  
2 why we are here today. I fully expect that we will have  
3 some disagreement, I suspect the staff recognizes that as  
4 well. And perhaps we will even have a little of that  
5 elusive commodity that we call "new insights" coming from  
6 today's workshop.

7 I think you also know that the results from this  
8 work is used in many places at the Public Utilities  
9 Commission in their Long-Term Procurement Proceedings, their  
10 Energy Efficiency Proceedings, it is used in our  
11 Transmission Planning, it is used in the Development  
12 Analysis of the Impacts of Energy Efficiency Strategies in  
13 the A.B. 32 Greenhouse Gas Emissions Reduction Proceedings,  
14 it is used in a number of places. And energy efficiency,  
15 broadly, as well as energy efficiency captured in our  
16 forecast, is fundamental to the goals and the  
17 responsibilities of the Energy Commission, the PUC, and the  
18 Air Resources Board. Our goals and our successes are  
19 intertwined in this process. And I look forward to hearing  
20 from those sister agencies here today, as well as staff, the  
21 investor on utilities, and hopefully some of the publicly  
22 owned utilities will be represented here today, and the  
23 progress and the needs in all these complimentary programs.  
24 I will stop there with my introductory remarks. I will ask  
25 if Mr. Birkinshaw has any on behalf of Commissioner Boyd.

1 MR. BIRKENSHAW: No, I do not believe so.

2 COMMISSIONER BYRON: Okay. So let's go ahead and  
3 proceed. Ms. Korosec, I see Dr. Jaske is up first.

4 MS. KOROSEC: Yes. First, we will hear from Dr.  
5 Jaske from the Energy Commission Staff.

6 DR. JASKE: Commissioner Byron, everyone in  
7 attendance, my name is Mike Jaske with the Commission Staff.  
8 My role today is to give some background and perspective.  
9 You have touched upon a number of the same points, so I will  
10 try not to repeat those, and add a little more detail where  
11 appropriate. And following me on the program is Michael  
12 Wheeler of the PUC Energy Division staff who will give also  
13 some comments. So I am going to basically do some  
14 background, how we got here, progress since the last formal  
15 event that brought us together, which was August 12<sup>th</sup>  
16 workshop as part of the '08 IEPR Update process, talk about  
17 mostly how energy efficiency is being treated in this  
18 forecast, which will be the majority of the presentations  
19 today, talk just a very little bit about plans for the  
20 incremental impacts project, and the schedule for all of  
21 this going forward.

22 So, as noted, the PUC's '06 LTTP proceedings  
23 surfaced these questions about how uncommitted energy  
24 efficiency that the PUC was requiring the IOU's to include  
25 in their portfolio analyses might duplicate what was already

1 embedded in the Energy Commission's demand forecast, and I  
2 think this is one of the first instances where this clash of  
3 perhaps policy and methodologies, you know, rose to the  
4 surface of policy-makers. That was sort of exacerbated by  
5 the fact that the Revised Demand Forecast in the '07 IEPR  
6 process surfaced quite late in that process, and there was  
7 not an opportunity to really discuss all of the energy  
8 efficiency analysis the staff had done and documented as  
9 part of that revised forecast. So those two threads  
10 resulted in the focus in the '08 IEPR Update process,  
11 workshops of March 11<sup>th</sup> and 12<sup>th</sup> that tried to frame the  
12 issues, put forward an approach, and to execute that  
13 approach as it was broadly embraced within the '08 IEPR  
14 Update.

15           But one of the key criticisms that was included in  
16 the '07 IEPR was the lack of transparency, and I think a  
17 good portion of that is not so much the lack of  
18 documentation, but rather the communication aspects of  
19 transparency, so stakeholders suggested that we form a  
20 working group, provide an opportunity to both communicate  
21 what staff is doing, and learn from others about their  
22 approaches. We took that effort to heart, we hired Chris  
23 Ann Dickerson to facilitate such a group, she is here today,  
24 she will give two different presentations about her efforts  
25 to foster this kind of communication. We have been meeting

1 periodically since December of last year.

2           One of the key dimensions of improving the staff's  
3 efforts in this area is to acquire energy efficiency program  
4 data, which seems obvious, well, why had we not had that  
5 before? But, really, to do the kind of in-depth analysis of  
6 potential double-counting, we needed to acquire data at a  
7 level beyond that which we had been used to doing, not just  
8 at the program level, but to sort of dive into the end-use  
9 and even measure level in some instances. Acquiring this  
10 data proved to be a lot more difficult than we anticipated,  
11 so, in fact, a number of the working group meetings sort of  
12 circled around various aspects of what is available, how  
13 consistent is it from one era of measurement and evaluation  
14 process to another, can we actually string together a  
15 consistent time series of the kind of data staff believed it  
16 needed.

17           I mention ITRON here because PUC was gracious in  
18 providing the resources of ITRON through an amendment to a  
19 major contract they have with ITRON to provide support to  
20 energy efficiency work at the PUC, so ITRON has directly  
21 benefited the staff's effort by helping to bring a core  
22 piece of data together and, more particularly, to help in  
23 this dissection down to the end-use and measure level.

24           Of course, one of the significant motivations the  
25 staff had, having acquired this kind of data, how can we

1 improve our models, not just make more transparent what is  
2 already in the models, and it had been obvious that the  
3 focus on lighting necessitated that lighting be treated more  
4 specifically and with more detail in the staff forecasting  
5 models. And at least the beginnings of that have been  
6 accomplished and Tom Gorin will get into the details of that  
7 later today.

8           There are some improvements in the treatment of  
9 lighting and the interaction between the focus on building  
10 standard requirements vs. utility program impacts that are  
11 part of commercial building forecasting models that also are  
12 a high priority, but have not yet been accomplished for the  
13 preliminary forecast. Staff is making plans to make changes  
14 in the future.

15           One of the key dimensions of what we are trying to  
16 do here is to bring together all of the threads of energy  
17 efficiency that you mentioned in your opening remarks --  
18 standards, utility programs, customers' own responses  
19 through price, price elasticity, the traditional features of  
20 a lot of forecasting and econometric modeling, market  
21 effects that may be different than any of those other three,  
22 try to see how these things can be reconciled.

23           Let me turn now to the subject of incremental energy  
24 efficiency, and I think probably what I will say in these  
25 next few slides is about all that we will focus on in this

1 workshop, but our overall project and the deliverables that  
2 the PUC wants necessitates that we prepare incremental  
3 energy efficiency impact by the, well, in time that it can  
4 be used by the PUC in the 2010 LTPP proceeding. And the  
5 timing of the IEPR and the timing of the PUC's intended  
6 schedule for that process leads us to need to produce  
7 something at the staff level probably around the end of  
8 August, and to have a discussion in the IEPR forum in  
9 September, and I believe there is a scheduled workshop now  
10 somewhere around September 20<sup>th</sup> or so. One of the rationales  
11 for this focus is that, as documented in the 2008 IEPR  
12 update, the Energy Commission is continuing to rely upon  
13 this notion of a distinction between committed and  
14 uncommitted energy efficiency, but the PUC wants to use a  
15 managed forecast. So the PUC is going to be asking the  
16 IOU's when they do their resource portfolio assessment to be  
17 using the Energy Commission's Final 2009 IEPR Forecast  
18 decremented further for whatever impacts from uncommitted  
19 energy efficiency are truly incremental to the base Energy  
20 Commission forecast. We have clearly learned through the  
21 work of the last year that there is no way that incremental  
22 energy efficiency analyses, or the impact of uncommitted  
23 energy efficiency can be done in isolation from the base  
24 forecast, simply absolutely necessary that those two efforts  
25 be closely coordinated so that, whatever energy efficiency

1 is embedded in that base forecast is not double counted in  
2 estimates of what further potential or further goals is  
3 actually available. And so we are working with the same  
4 methodology that the PUC used in its 2008 Goal Study, using  
5 a model called SESAT that is also something developed by  
6 ITRON; we are going to adapt that input into SESAT to  
7 reconcile it to the Energy Commission's forecast, and run  
8 SESAT in at least two scenario modes with and without these  
9 specifications of the uncommitted scenario, and then that  
10 increment will be at least within the time frame and data we  
11 have of this cycle, the best estimate of incremental effects  
12 that we can get. We go back, then, to describe the two  
13 scenarios that we are intending. We are going to use two  
14 scenarios out of the 2008 Goal Study that the PUC ultimately  
15 adopted; we are going to use the High and Mid one, we will  
16 adapt those for whatever change has already happened, for  
17 example, at the time those scenarios were developed there  
18 were no 2009-11 program proposals, we now have those, the  
19 PUC is reviewing them. Some time in the summer, the plan is  
20 the PUC will make at least its preliminary decision on how  
21 to select between the proposals that have been submitted.  
22 We will need to be deducting those from the characterization  
23 of the Goal Study scenarios because they will already be  
24 within the base Energy Commission forecast.

25 Throughout this effort, both on improving what is in

1 the base forecast and trying to develop this incremental  
2 energy efficiency capability, we are using the Working Group  
3 to improve communication in both directions, both what staff  
4 is doing and try to learn from what IOUs and the larger POUs  
5 are doing. PUC staff has been intimately involved in this  
6 and this has been extremely helpful to sort of learn what  
7 processes are already underway, and how the historic EM&V  
8 processes can be adapted to serve the needs of forecasters.  
9 It is clear that the PUC staff had in mind some improvements  
10 to EM&V on a sort of going forward basis, to be implemented  
11 as part of the '09 to '11 process, but the forecasting world  
12 needs to have a firm understanding of the consequences of  
13 the programs that have already been run because the measures  
14 that have been introduced by those programs have lives that  
15 continue, well out into the future, and we need to really  
16 understand the impacts of those historic programs. And so  
17 adapting what had been the EM&V focus in earlier eras and  
18 supplementing it with additional analyses to provide the  
19 needs for forecasting is an ongoing process that we hope to  
20 benefit from, not only in the remainder of this cycle, but  
21 also going forward.

22           So let me conclude with a slide that gives the broad  
23 schedule. You can see at the top where we have already  
24 been; here we are in the '09 IEPR, the demand forecast, the  
25 preliminary demand forecast is about to be released, we will

1 have another workshop in June to talk about the specifics of  
2 it, we may talk about energy efficiency included there more,  
3 there is a schedule for a revised demand forecast and a  
4 revised demand forecast workshop and, then, as I indicated,  
5 the incremental impacts will be a subject of a workshop in  
6 September. At that point, we will sort of come to the close  
7 of this IEPR cycle, but that will not be the end of the  
8 story. As you indicated earlier, these are difficult  
9 subjects, we anticipate improvements that will be surfacing  
10 later in 2010, and perhaps even beyond. One of the  
11 fundamental issues of energy efficiency is that it is not  
12 really very well measured. It can be estimated, but it  
13 cannot be counted. It cannot be counted like power plants  
14 where we can name them, locate them, understand their  
15 characteristics. Energy efficiency and its positioning in  
16 the broader world of understanding consumption, sales by  
17 utility, loads provided by customers through self-generation  
18 technologies of various kind, all of that is a function of  
19 estimation and it is driven by the availability of data,  
20 analysis of data, reconciling various kinds of what  
21 seemingly are disparate data, so we will be endeavoring to  
22 improve upon all of those analytic dimensions, and rolling  
23 them into not only base forecasts, but estimates of the  
24 remaining potential for energy efficiency in 2010 and  
25 beyond.

1           With that, I am concluded. Are there any questions  
2 from the Committee? Thank you very much.

3           COMMISSIONER BYRON: Thank you, Dr. Jaske.

4           MS. KOROSEC: Next, we will hear from Michael  
5 Wheeler.

6           COMMISSIONER BYRON: Mr. Wheeler, as you are coming  
7 up, thank you very much for being here today. I forgot to  
8 mention that Commissioner Grueneich and Commissioner Bohn  
9 were very interested in being here at the workshop,  
10 unfortunately, there are only so many days on the calendar  
11 that we can schedule all these workshops. And they have a  
12 business meeting today, so they could not be here. I also  
13 failed to introduce my advisor, Laurie Ten Hope, who has  
14 joined us here. Sorry, Laurie.

15           MR. WHEELER: Well, good morning. My name is  
16 Michael Wheeler and I am pleased to be here. I am glad to  
17 see so many of the public and parties are here at this IEPR  
18 Committee meeting. I am lead staff on Residential Sector  
19 Programs for the Energy Efficiency Planning Section. And I  
20 apologize; I do not have a presentation today. I am here to  
21 report sort of the status of the adoption process for  
22 utility program portfolios, 2009-2011, and it is updating on  
23 almost a daily basis, so just bear with me for a moment for  
24 no presentation.

25           As you know, the portfolios have not been adopted

1 yet, and the assigned Commissioner is committed to a target  
2 date for portfolio adoption this August, likely late this  
3 August, but we recognize that these programs need to get out  
4 considering that it is the 2009-11 portfolio cycle, and here  
5 we are nearly half-way through 2009. These portfolios that  
6 we are currently reviewing are a re-file. They were re-  
7 filed in March, March 2<sup>nd</sup>, and the re-file included both a  
8 mandated scenario and a preferred scenario, the mandated  
9 scenario being programs in a portfolio in accordance with  
10 all of our current policy rules; the preferred scenario, we  
11 invited utilities to propose policy adjustments that would  
12 make it easier to implement the California Energy Efficiency  
13 Strategic Plan, and they applied those policy scenario  
14 adjustments to their proposed scenario -- about 10 proposals  
15 for policy adjustments.

16 Staff completed its initial review in the first week  
17 of April and we received comments from parties and held a  
18 workshop on the topic, on some of the topics that have been  
19 brought up. I should say that neither the mandated scenario  
20 nor the proposed scenario is acceptable to staff as  
21 currently filed; we see something in between the two being  
22 the likely final product. This is because the mandated  
23 scenario focuses on -- necessarily focuses on more short-  
24 term savings, and is a little lighter on strategic planning  
25 activities. This is in order to achieve our cumulative

1 goals from 2004 through 2011. The proposed scenario, which  
2 takes into account some adjustments to cumulative savings  
3 goals and other attribution methodologies is much stronger  
4 on Strategic Planning activities, but it also -- it proposes  
5 some liberal changes to attribution and shareholder earning  
6 decisions, past decisions on attribution and shareholder  
7 earnings. And so, again, staff sees something sort of in  
8 between the mandated and the proposed scenario being the  
9 final product. The process ahead of us is to work with  
10 parties and with the utilities to decide what from both  
11 portfolios should be in that final product.

12 In total, though, the two portfolios represent a  
13 suite of programs which, I would say, from my own personal  
14 perspective, rise to the challenge of implementing most of  
15 the strategies within the California Energy Efficiency  
16 Strategic Plan. They scale down upstream CFL Program  
17 dependency and it significantly increased the savings from  
18 HVAC systems and generally represents a shift from the  
19 programs implemented in 2004 and 2005, and then the 2006  
20 through 2008 cycle; however, many of the programs  
21 representing this significant shift, they are dubbed non-  
22 resource programs. And that, such as workforce development  
23 and program infrastructure building efforts, and these are  
24 unlikely to generate much savings during the 2009-11 period,  
25 but they prepare for a more market transformation focused

1 portfolio in 2012.

2 I can give you some high-level portfolio details.  
3 The total budget for the mandated scenario was proposed for  
4 all four utilities at \$4.2 billion, with PG&E coming in at  
5 about 43 percent of that, \$1.8 billion, Edison - 32 percent  
6 of that, \$1.3 billion, and then Sempra, the SPG&E and the  
7 gas company representing about a billion dollars, or a  
8 quarter of the total. And then, in conclusion, I just  
9 wanted to say that the Energy Division is extremely  
10 interested in coordinating the program logic and the  
11 implementation plans within these IOU portfolios, the final  
12 IOU portfolios, with the program logic and the  
13 implementation plans that are within the State Energy  
14 Program, the Weatherization Assistance Program, and the  
15 various Workforce Development Programs, and the Energy  
16 Efficiency and Conservation Block Grant Programs, and all of  
17 the programs really that are receiving funding from the  
18 American Recovery and Reinvestment Act; it is really  
19 leveraging somewhere between \$3.5 and \$4.2 billion that we  
20 plan on spending in 2009 through 2011 with these millions of  
21 dollars coming from the ARRA funds, a coordinated approach  
22 to making sure that those programs work together is really  
23 the best path forward for energy efficiency in California,  
24 and impacting these load forecasts as significantly as we  
25 can. Thank you. If you have any questions from the

1 Committee, I would be happy to take them.

2 COMMISSIONER BYRON: No. Thank you very much. But  
3 if I may comment, clearly, California is the U.S. leader in  
4 this regard and I agree with you, the ARRA funds are going  
5 to add enormously to the spending that we are going to do on  
6 energy efficiency, so it is incumbent upon us to spend this  
7 money well and be very successful in how it is done. Will  
8 you be with us for the day, Mr. Wheeler?

9 MR. WHEELER: I will.

10 COMMISSIONER BYRON: Good. Thank you. We look for  
11 further input from you.

12 MR. WHEELER: Thank you.

13 MR. KAVALEC: Good morning, I am Chris Kavalec from  
14 the Demand Office at the Energy Commission. I am going to  
15 give a brief presentation on our Draft Forecast basically to  
16 put the energy efficiency impacts that we are going to be  
17 discussing today in perspective relative to total  
18 consumption in the state, and also to provide some  
19 background for Lynn Marshall's 2010 Peak presentation.

20 Some notable dates. The three forecasts that Mike  
21 Jaske talked about, preliminary, revised, and uncommitted or  
22 incremental forecasts -- the preliminary forecast, we will  
23 have a workshop on June 26<sup>th</sup>; for the revised, the workshop  
24 will be on August 17<sup>th</sup>; and for the incremental forecast,  
25 released at the beginning of September, and a workshop on

1 the 21<sup>st</sup>.

2           So, as I mentioned, this is only to provide some  
3 background for our later presentations. On June 26<sup>th</sup>, we are  
4 going to go in-depth into the forecasts. But today we want  
5 to focus on the energy efficiency impacts we have estimated,  
6 with the exception of Lynn Marshall's peak presentation.  
7 These are not final numbers by any means, our estimates of  
8 energy efficiency impacts. And we want to hear suggestions  
9 and comments that we can incorporate in the revised forecast  
10 today.

11           Okay, Changes in the Demand Forecast. Statewide  
12 projected electricity consumption in the draft forecast is  
13 down almost 10 percent by 2018, compared to the previous  
14 forecasts. And not surprisingly, this is due mainly to the  
15 economy, both in the short run, the current recession, and  
16 slow or long-term growth predicted by Economy.com who  
17 provides our economic projections. In addition, efficiency  
18 impacts are higher relative to previous forecasts, as we  
19 will discuss. This is what it looks like. The black dashed  
20 line shows the previous forecast, and the blue line under  
21 that shows the 2009 Preliminary Forecast. And note the  
22 pattern you see there, an initial drop due to the current  
23 recession, slower long-term growth in consumption -- you  
24 notice the blue line is flatter, slightly, than the black  
25 line.

1           So the economic inputs that are driving these  
2 results -- projected real personal income from Economy.com  
3 is down almost 6 percent relative to the last forecast by  
4 2018; the same with projected total employment, and as I  
5 mentioned, key economic indicators show a short-term drop  
6 followed by slower long-term growth.

7           And this is what personal income looks like, down 6  
8 percent by 2018, by almost 5 percent by 2010, compared to  
9 the forecast that was used for the 2007 IEPR.

10           Similarly, for statewide employment, it drops to  
11 over 4 percent below the previous forecast for employment by  
12 2010, as I mentioned 6 percent by 2018. Okay, so that is  
13 the situation, that is the summary for our econ demo data.

14           Turning to Efficiency Program Impacts. What we set  
15 out to do for this forecast was to re-estimate both  
16 historical electricity savings from utility programs, as  
17 well as to measure the impacts from the '09 to '11 program  
18 plans, the idea here being to incorporate program savings  
19 that had not been previously included in our forecast.  
20 ITRON provided valuable assistance that fed into our staff  
21 work, supplemented by the Demand Forecasting Energy  
22 Efficiency Quantification Working Group, and we will hear  
23 more about both of these efforts later today.

24           So upcoming presentations will delve into staff and  
25 ITRON work and the role of the working group. To handle

1 these new estimates, some were incorporated in the model,  
2 others through post-processing, which means subtracting  
3 directly from model output. A couple of disclaimers -- as I  
4 mentioned, these are preliminary estimates. Most of the  
5 time spent on this so far has been just gathering the data  
6 itself, and putting it in a coherent form that was useful,  
7 and further examination of the numbers could change these  
8 results. And, as Michael Wheeler just mentioned, the 2009  
9 to 2011 programs are not finalized, so what we are  
10 presenting today represents our best guess, given the  
11 information that we have now. Not surprisingly, the impact  
12 of the -- oh, and one other thing here, the efficiency  
13 program impacts, we have only estimated thus far for the  
14 IOUs, we have not done the POUs yet. So the impact of the  
15 IOU utility programs reaches a maximum by 2011, the end of  
16 the three-year cycle, and then declines as the effects  
17 decay. The reason for this is we do not go beyond the 2011  
18 programs because our forecasts include only committed  
19 impacts, that is, funded and/or implemented. So there is  
20 nothing beyond 2011 beside the decay from measures already  
21 in place. And the biggest difference in impacts relative to  
22 the previous forecast happens in 2008 and beyond.

23           This next graph is meant to show the impact of the  
24 Energy Efficiency Impacts that we estimated on the  
25 forecasts. The black line is meant to show what the

1 forecast would have looked like, had we not added additional  
2 energy efficiency impacts to this forecast. In other words,  
3 if we had used the same energy efficiency impacts that we  
4 used last time, the forecast would have looked like the  
5 black line. So the difference between the black line and  
6 the bottom line represents additional energy efficiency  
7 impacts from programs for this forecast.

8           The 2007 forecast at the top, the top green line, is  
9 scaled, I should mention, to this actual historical 2007  
10 value so we could start at the same point. There are, of  
11 course, other impacts on the forecast, economic, as I  
12 mentioned. Additional lighting savings beyond what was  
13 estimated for the programs. We assumed that folks continued  
14 to purchase CFL lighting beyond the '09-'11 program period.  
15 We felt that this was more realistic, particularly given the  
16 Energy Act of 2007. We also assumed a higher rate of  
17 compliance for commercial lighting standards for existing  
18 buildings, and we will talk about that more on June 26<sup>th</sup>.

19           So this next graph attempts to put all these impacts  
20 in perspective, to give you relative magnitudes. Starting  
21 from the bottom, our current draft forecast, the black line  
22 above that, what the forecast would have looked like had we  
23 not added additional energy efficiency impacts; that was on  
24 the previous graph. The red line above that shows what the  
25 forecast would have looked like had we not added the

1 additional efficiency impacts plus the additional  
2 residential savings that we assumed from CFLs. The blue  
3 line above that shows what the forecast would have looked  
4 like without the energy efficiency impacts, additional  
5 savings and increased commercial compliance rate assumed.  
6 The purpose of this graph is to show the impact of the  
7 economic projections vs. the efficiency impacts. By 2010,  
8 roughly 65 percent of the difference between the old  
9 forecast and the new forecast comes from the economic  
10 projections, and by 2018 that percentage goes up to 80  
11 percent, as the impacts from the energy efficiency programs  
12 decay away.

13           And a couple things about the Revised Forecast. We  
14 are continuing to refine these energy efficiency program  
15 estimates and how they impact the forecast; in other words,  
16 the amount of, or whether there is overlap with other  
17 savings impacts already included in the forecast like  
18 standards and market and price effects. And given the huge  
19 importance of the economy that is obvious in its impact on  
20 the forecast, we are going to do our best to look at  
21 scenarios using different economic projections for the  
22 revised forecast. Economy.com provides, I think, five  
23 scenarios. We are currently using what they call the base  
24 case, but they have everything from what they call complete  
25 collapse of the economy all the way up to their most

1 optimistic forecast. Okay, and that concludes my  
2 presentation. Are there any questions from the Committee?

3 COMMISSIONER BYRON: Yes, Mr. Kavalec. Thank you  
4 very much. I know we have discussed some of these things  
5 before, there is a lot of dependence upon Economy.com. I  
6 have done a little research on them and they are, of course,  
7 it seems, the predominant source of information these days  
8 in U.S. economic forecasting. But do we look at other  
9 forecasts, particularly for California?

10 MR. KAVALEC: We have recently purchased Global  
11 Insight's forecast, as well. They provide forecasts for  
12 California and they also provide different scenarios. There  
13 is also a UCLA forecast, but they have not done a long-run  
14 forecast in the last year, so they are sort of behind the  
15 curve on what is going on right now.

16 COMMISSIONER BYRON: And I would like to emphasize,  
17 of course, that your slide 7 and 8 are not Energy Commission  
18 forecasts for personal income and employment, but those  
19 certainly are depressing, particularly that one, to see the  
20 reduced slope on employment. And of course, my  
21 understanding is that is the primary input to your electric  
22 consumption forecast on slide 5. This is not very  
23 optimistic, this is pretty depressing given that I would  
24 expect some rebound of the economy to take us back up a  
25 little bit. But be that as it may, this is the ugly part,

1 of course, I think, of what we are presenting here today. A  
2 couple of questions, on slide 10, why haven't we done energy  
3 efficiency program impacts for the POUs yet?

4 MR. KAVALEK: This, as I mentioned, we, at start, we  
5 went into this naive about the data and what form it was in,  
6 so most of our effort -- it took us most of the time just to  
7 put together impacts for IOUs, so we have not even gotten to  
8 the POUs yet. And it was basically a matter of resources  
9 and time.

10 COMMISSIONER BYRON: And when will you be able to  
11 get to that?

12 MR. KAVALEK: For the Revised Forecast, we will make  
13 it our initial attempt.

14 COMMISSIONER BYRON: And, of course, as we heard  
15 from Mr. Wheeler, and as you indicated at the bottom of that  
16 slide, the '09 to '11 programs are still in the approval  
17 process. Can you give me a sense of what the impact of this  
18 delay is on your analysis for the efficiency program  
19 penetration?

20 MR. KAVALEK: Well, I guess I am not sure -- in what  
21 sense?

22 COMMISSIONER BYRON: Well, because it is delayed and  
23 you only included committed programs, you have had -- I  
24 think you said you had to make some sort of estimate or  
25 guesstimate as to the impact that that has on your forecast.

1 So I am just trying to get a sense of how significant that  
2 delay is.

3 MR. KAVALEK: Well, I think we have a pretty good  
4 sense, in general, of what the programs are going to look  
5 like. Unfortunately, we will not be able to refine it, it  
6 looks like, by the time of the Revised Forecast. I mean,  
7 most of -- I mean, these programs are in, you know, in the  
8 rough form they are going to be in finally, but there are  
9 still details to be worked out, which -- so, in other words,  
10 what is in the revised forecast is going to be an  
11 approximation, unfortunately, without more -- without the  
12 final approval process being complete.

13 COMMISSIONER BYRON - I will give you a sense of  
14 where I am coming from in all of this. Having been on the  
15 receiving end, or on the end-use consumer side of this  
16 process and IOU service territory about four years ago, and  
17 looking for these programs to be funded so that the funding  
18 could be committed, and then going to Management within our  
19 companies to get a budget approval, this slows things down  
20 significantly and I think, as policy makers, and as  
21 regulators, we really do not take that into effect. So it  
22 adds to a great deal of the uncertainty, I would think, as  
23 to when these programs are committed, when they are  
24 implemented, when we begin seeing the efficiency  
25 improvements from them. And I do not expect you to have all

1 the answers to that, but I was just trying to get a sense  
2 from your forecasting and modeling how much it affects you,  
3 how much it affects your thinking. I am not sure that you  
4 can really answer; my guess is that you are probably a  
5 little more optimistic as a result than those delays really  
6 -- than the impact of those delays in reality.

7 MR. KAVALEK: Well, in the realm of uncertainties  
8 related to efficiency impacts, this does not bother me as  
9 much as other uncertainties, I guess.

10 COMMISSIONER BYRON: Very good. All right, thank  
11 you, Mr. Kavalec. Okay, next up is Lynn Marshall, who is  
12 going to present the Proposed Staff 2010 Peak Forecasts for  
13 the Resource Adequacy Process.

14 MS. MARSHALL: Hi, I am Lynn Marshall and I am  
15 responsible for implementing the Resource Adequacy Load  
16 Forecasting Process jointly with the PUC and the ISO. So,  
17 annually, we collect from the PUC jurisdictions their  
18 proposed load forecasts for the following year, monthly peak  
19 demand forecasts. And we go through a review and adjustment  
20 process where we adjust some of those forecasts to within 1  
21 percent of the Energy Commission Peak Demand Forecast for  
22 each of the IOU service areas. So to implement that  
23 process, we need to establish the 2010 Monthly Peak Demand  
24 Forecast. Earlier this year, because the ISO was working on  
25 its Local Capacity Requirement Study last winter, and we saw

1 because of the economic situation that the demand forecast  
2 would likely be coming down, we made a limited adjustment to  
3 the Edison Forecast for the purposes of that study. But we  
4 said at that time that we would use the draft forecast  
5 prepared for the IEPR to establish the 2010 system  
6 requirements. So that is why we are here talking about the  
7 2010 Peak Demand Forecast, even though the IEPR Forecast is  
8 really still a work in progress.

9           So we will establish for each of the PUC  
10 jurisdictions monthly peak demand forecasts for next year,  
11 it is used in several contexts; first, it is used in their  
12 year of Fall showing that they have got 90 percent of their  
13 year ahead resources, it also would be used for calculating  
14 load shares for import allocations, then in their monthly  
15 compliance filings, it is used in their monthly resource  
16 adequacy showings, and now under MRTU, their corresponding  
17 non-coincident peak forecast also serves as, in effect, an  
18 upper bound on the amount of congestion revenue rights they  
19 can request in the ISO's monthly CRR process. So it has a  
20 number of implications for what they are required to do next  
21 year.

22           So generally, I guess we have to get our comment  
23 dates scheduled. I had for this aspect of the materials we  
24 are presenting today, I have proposed accepting comments up  
25 until June 5<sup>th</sup> just to give us additional time. We have

1 already started having some back-and-forth with the  
2 utilities, which is always very useful. We may do some  
3 revised results between now and then, so I guess we will  
4 have to decide on that. Following comments, staff will  
5 decide what adjustments we may want to make. We have  
6 already got some suggestions from the utilities of some  
7 improved data we want to incorporate, for example, and we  
8 would take that to our mid-June Business Meeting for  
9 adoption, complete the revised adjusted forecasts by the end  
10 of June when they need to go to the ISO and the PUC, and the  
11 PUC takes those and we compile their Demand Response  
12 Allocations, as well. And that has to go out by mid-July.  
13 So that is the general schedule.

14           Okay, I am using here -- you saw Chris Kavalec  
15 presented the Statewide Energy Consumption Forecast and you  
16 saw the depressing economic forecasts, and the energy  
17 efficiency impacts, so those are the two big effects in  
18 talking about our 2010 forecast, of what is going on here.  
19 Here is the big picture at a control area level. Out in  
20 2010, we are down -- different areas are down between 5 and  
21 10 percent, and I am going to go through the IOU areas each  
22 in more detail, but this is just the big picture. And also,  
23 we have for the rest of the state, these are the non-ISO  
24 balancing authorities, and similarly, down quite a bit, I  
25 notice LADWP is not down that much, I think Economy.com has

1 always had a depressing forecast for L.A., so not as much  
2 change there.

3           So now this table represents -- you saw in Chris'  
4 presentation, he had backed out the various efficiency  
5 effects out of the statewide consumption forecast to show  
6 the increment to the forecast from programs and the  
7 increased Title 24 compliance. So this is the peak version  
8 of those numbers, broken down for the IOUs. And these are  
9 not out of the peak model, these are estimates, but they  
10 should be, I think, right order of magnitude and reflect the  
11 approximate impacts. So, for example, in PG&E, all of those  
12 additional efficiency adjustments we are making are lowering  
13 the forecast by 2.6 percent compared to what the forecast  
14 would be without those additional effects.

15           So overall, and as Chris said, I think about one-  
16 third -- it is about two-thirds economic impact and one-  
17 third efficiency -- that varies a lot by utility, the effect  
18 is somewhat bigger in PG&E in terms of a bigger  
19 proportionate effect of the efficiency programs. It is more  
20 than one-third.

21           So here is our end-use peak demand forecast by  
22 sector and the major sectors. So you can see the two big  
23 impacts on the residential and commercial sector, in 2010,  
24 both of those peaks are down about 7.5 percent, about 2,000  
25 megawatts each. So that is the combined effect of the

1 economic impacts, additional standards, and efficiency  
2 assumptions.

3           So now I will turn to the individual utility area  
4 forecast results and I will talk about San Diego first. And  
5 this graph has a number of things going on with it, we have  
6 the upper line showing our 2007 IEPR forecast, and you  
7 notice on there a red dot, and maybe on your print-outs,  
8 that is not labeled, but that red dot is our estimate of  
9 weather-adjusted 2008. So actual, it was cool in San Diego  
10 the summer of 2008, so the weather-adjusted is quite a bit  
11 higher. So if you look at the starting point of our  
12 forecast in '09, it is more than 3.5 percent below that  
13 weather-adjusted 2008. So the combined effects of the DSM  
14 and the economic situation are contributing to a big drop in  
15 '09 demand. And we have also shown on the blue line there  
16 with the DSM effects backed out, so that would shift it up a  
17 bit. Also on there, in the middle, we have got the  
18 forecasts that San Diego submitted in our 2009 IEPR process.  
19 That was submitted in April, so it is a fairly current  
20 forecast from them. And we have pretty similar growth rates  
21 in the short-term, they have got a higher growth rate in the  
22 long-term, but in the '09-'10 timeframe, both of us are  
23 forecasting less than 1 percent growth. So the big  
24 discrepancy or disagreement is in the impacts -- the DSM and  
25 econ impacts in 2009. So --

1 COMMISSIONER BYRON: Ms. Marshall?

2 MS. MARSHALL: Yes.

3 COMMISSIONER BYRON: Sorry to interrupt, but it  
4 looks as though your slide is more current than the ones  
5 than I have.

6 MS. MARSHALL: Well, it is the same slide. I  
7 noticed in the print-outs that the label for the weather-  
8 adjusted 2008 did not, so I just re-pasted it so that, on  
9 here, it is the same slide.

10 COMMISSIONER BYRON: Okay, thank you.

11 MS. MARSHALL: But we lost one of the labels there,  
12 so that red dot is not labeled on your print-out, I think.  
13 All right, so to evaluate whether -- that is a drop in 2009,  
14 okay, the second quarter of 2009. We took a look at the  
15 loads in ISO for each of the transmission access areas.  
16 This is San Diego, so what we have here is the daily peaks,  
17 daily afternoon peaks, and this particular scatter plot is  
18 April and like the first two weeks of May, or pretty close  
19 to date, against the daily maximum temperature statistic  
20 that we used for San Diego, which is a three-day weighted  
21 moving average. So the purple stars there are 2009 loads,  
22 and you can see they are generally in that 60-70 degree  
23 timeframe, they do appear a bit lower. And I estimated a  
24 weather-adjusted peak for each month for January through  
25 April, and the average was about down 1 percent. On the

1 other hand, we did have one hot day if you look up in the  
2 upper right-hand quadrant, there are a couple of purple  
3 stars up there where it got above 80, and one day above 90,  
4 and those points do not appear to be a lot lower than  
5 comparable days in 2008, the red blocks. So while it seems  
6 like maybe there is some base load drop, it is not obvious  
7 that the temperature sensitive part of load is really  
8 declining. And at some point I hope we will hear maybe from  
9 San Diego and each of the utilities on their perspective on  
10 what kind of trends and current loads they are seeing. In  
11 fact, do we want to have -- I could ask if San Diego, who  
12 may be online wants to comment at this point? Or we could  
13 wait -- would you like to do that? Okay, do you want to see  
14 if someone from San Diego is on, either Tim Vonder or Greg  
15 Katsapis? See if they made it. They were unable to get  
16 flights that worked out for them.

17 COMMISSIONER BYRON: Are you going to request  
18 similar feedback from Southern California PG&E?

19 MS. MARSHALL: Oh, yeah. And we have shared the  
20 initial numbers and I already had some initial discussions  
21 with each of them. We can come back if --

22 COMMISSIONER BYRON: We can go ahead and proceed and  
23 you have given them notice, and if they are there, we can  
24 come back.

25 MS. MARSHALL: Yeah, I will just keep going and then

1 we will come back when they get that worked out, we will  
2 come back and do all the comments. Okay.

3 So we will move on to the Edison Planning Area and  
4 because of the more severe economic forecast, I think, this  
5 drop is larger even than the San Diego, so again we have our  
6 previous forecast from the 2007 IEPR, and I have on there as  
7 -- I wish I had a pointer -- the purple diamond represents  
8 our estimate of the 2008 weather-adjusted peak. So, again,  
9 it was a mild summer, so the actual point for 2008 is quite  
10 low, but we need to adjust that up to one and two  
11 conditions. So taking that into account, our forecast for  
12 2009 is 5.5 percent below 2008 weather normalized. Again, a  
13 pretty big drop. We have on there, the green line is the  
14 forecast that Edison submitted in our IEPR process, and I  
15 think they prepared that in January, I believe they are  
16 preparing an updated forecast, but we have not seen that  
17 yet. So we are now below that Edison forecast and, again,  
18 our growth rates for the 2009-10 timeframe are very similar,  
19 nobody is forecasting much rebound in 2010. After that, I  
20 think there are some different views. So again, the big  
21 discrepancy between our forecasts is the magnitude of the  
22 drop in 2009. And this graph is of our Edison Planning Area  
23 which does not exactly match the ISO Edison TAC area, so we  
24 take our planning area and break it down, and add DWR in  
25 Pasadena, that is a normal part of our forecast tables

1 process. So here are the Edison TAC area loads, and again  
2 we have the purple stars on the bottom, and you can see that  
3 the trend, the load temperature relationship of the 2009  
4 loads is really noticeably lower than 2008, and certainly  
5 2007. That looks like about a 580-megawatt drop in base  
6 load for April and I estimated a weather-adjusted decline  
7 year-over-year of about 3.7 percent. So that is a big drop,  
8 it is not quite as large as the drop we have at our  
9 forecast, but then this is the second quarter, so I think  
10 that is something for us to think about as we try to  
11 finalize these numbers and get input from the utilities on  
12 this.

13           And then I will talk about PG&E Planning Area  
14 Forecasts. Now, I only have a dot for the aggregated PG&E  
15 forecast because not all of the utilities in our PG&E  
16 planning areas submit 10-year forecasts, and our PG&E  
17 planning area includes a lot of POU's that are not in the  
18 ISO, so I am going to focus on a comparison at the PG&E  
19 service area, so we have our service area forecast and what  
20 they submitted in 2009 IEPR. And the red dot, which is our  
21 estimate of weather-adjusted 2008, and I think actually the  
22 value I have there for actual 2008 is sort of a model  
23 output, so it is probably not accurate, but we can refine  
24 that. So once again, this is comparable to the Edison area.  
25 The 2009 forecast is 5.5 percent over 1,000 megawatts lower

1 than our estimate of 2008 weather-adjusted load. I think  
2 PG&E has a higher estimate of weather normalized 2008, which  
3 means it is even a bigger drop. But, again, not a big  
4 discrepancy in the growth rates.

5           Okay, so here are loads and temperatures for the  
6 PG&E transmission access area, and it does again look like  
7 2009 we are seeing actual loads down. There was no much  
8 temperature variation, so for even in April it was very  
9 difficult to get a real good weather normalized estimate.  
10 But it seems clear that base load, I estimated, was 500  
11 megawatts lower, which is maybe 2.5 percent. So, again,  
12 what we are seeing here in the second quarter is not as big  
13 a drop as we have in our forecast.

14           COMMISSIONER BYRON: Ms. Marshall, when was PG&E's  
15 forecast? Do you recall?

16           MS. MARSHALL: Is it a spring -- early -- what is  
17 the vintage of your 2009 IEPR forecast?

18           MR. KAVALEC: January 2009.

19           MS. MARSHALL: January 2009.

20           COMMISSIONER BYRON: Thank you.

21           MS. MARSHALL: All right. So I will just circle  
22 back to what the implications of this are in our Resource  
23 Adequacy Process and then we will go to the utilities. So  
24 we take our monthly peak forecasts and we are estimating a  
25 monthly weather normalized load shape, and to come up with

1 our monthly service area peaks, and the red line is our  
2 staff draft, the blue line above it is the sum of all the  
3 forecasts that were submitted to us for the 2010 Resource  
4 Adequacy process. So as it stands, this would imply some  
5 pretty significant adjustments downwards because we have to  
6 prorate -- adjust everyone's down. So it would be on the  
7 order of a 10 percent reduction in PG&E, this would be for  
8 the August peak, and 6-8 percent in the South.

9 So I think I will open it up to the utilities now,  
10 to get their comments. So who wants to go first? Okay,  
11 Jacqueline Jones from Southern California Edison.

12 MS. JONES: Good morning, Commissioners, CEC staff,  
13 and the audience. As everybody probably knows, Art Canning  
14 is our expert on demand forecasting at Southern California  
15 Edison, but unfortunately he could not be here today, so  
16 they sent me. He did provide me with information to provide  
17 today, so hopefully I will do okay. One of the things is  
18 that we have taken a preliminary look at the information, we  
19 still have more detailed work to do and, actually, as I  
20 speak, I am going to request more information in different  
21 areas.

22 As Ms. Marshall was saying, we agree with the fact  
23 that the 2008 planning area peak seems a little low. And  
24 that starting point being low would affect the entire  
25 forecast after that. So we think that is something that

1 could be looked into with a bit more detail. Also, on --  
2 can you flip to page 10? It has a statement of the  
3 forecasted demand being 5.6 percent below the weather-  
4 adjusted peak of 2008; I believe that this is from a July  
5 kind of timeframe, but if you look at what is on page 12,  
6 the average between January and April is 3.7 percent, and  
7 between July and April, that seems like a really large  
8 reduction. So we believe that is something that could be  
9 looked at, as well. In talking about the decline, we  
10 suspect that daily energy is declined on an average basis of  
11 about two percent, and that is what they are using. They  
12 are currently preparing a forecast for June, so we expect to  
13 have more data in a month or so. And also, we would be  
14 interested in getting more information on what was used for  
15 the long-term energy efficiency assumptions. We only have  
16 what was provided through 2010, and so understanding more  
17 detail on what the incremental or uncommitted forecast that  
18 was used would be very helpful. And that is all I have.  
19 Thank you.

20 MS. MARSHALL: Okay.

21 MR. ASLIN: I have a couple of questions.

22 MS. MARSHALL: Okay.

23 MR. ASLIN: Hello, my name is Richard Aslin. I work  
24 for the Pacific Gas and Electric Company. And I had a  
25 couple questions and then maybe a couple of comments. And I

1 had one question for Chris, too, but I guess I will ask that  
2 -- can I ask that first? It was a pretty straightforward  
3 question. For the Draft Long-Term Energy Demand, what year  
4 is it that projected energy demand crosses over and is  
5 higher than it was in 2008?

6 MR. KAVALEC: Are you asking what year projected  
7 consumption increases above 2008 levels?

8 MR. ASLIN: Yes, that is the question. Because I am  
9 looking at slide 14, and it looks like it is 2010.

10 MR. KAVALEC: Yes.

11 MR. ASLIN: It is 2010?

12 MR. KAVALEC: Yeah, not having the actual numbers, I  
13 am guessing based on this graph, but it is either 2009 or  
14 2010.

15 MR. ASLIN: That it is above 2008 levels.

16 MR. KAVALEC: Right.

17 MR. ASLIN: So we get a dip in 2009, get a rebound  
18 in 2010, and then 2010-2011, it is pretty much above the  
19 level of energy consumption that we observe in 2008?

20 MR. KAVALEC: Yes.

21 MR. ASLIN: Okay. And Lynn, can I ask you that same  
22 question on the Peak Demand Forecast?

23 MS. MARSHALL: Well, it looks much farther out.

24 MR. ASLIN: Yeah, I would submit to you that it is  
25 never -- it does not. And that is something to think about.

1 There does seem to be a very big inconsistency between the  
2 Energy Forecast in the longer term and the Peak Demand  
3 Forecast in the longer term, and I understand this is a  
4 draft, and your focus was more on 2010, but --

5 MS. MARSHALL: No, this is the same -- the model  
6 output -- our peak models run with that energy. One issue  
7 is that graph is statewide, and here we are looking  
8 specifically at PG&E. So --

9 MR. ASLIN: Right. If you look at the statewide, I  
10 think you see the same exact thing. I think it is even  
11 exacerbated because the Southern California Edison decline  
12 is more than the PG&E decline, it is more than the San Diego  
13 Gas and Electric decline, and it keeps declining further and  
14 further and further. I am just saying that is a big comment  
15 that I have after just reviewing this overnight. I did not  
16 quite understand the slide that said additional energy  
17 efficiency.

18 MS. MARSHALL: Okay, this is the parallel -- Chris  
19 had a slide where he was backing out the programs and  
20 commercial compliance out of the forecast, so if you back  
21 those out, it shifts the forecasts up. These are the  
22 megawatt version of that delta.

23 MR. ASLIN: Okay. And the question is, if we go to  
24 the total, let's just say PG&E, so 2008, it says 301, 2009,  
25 it says 455, 2010, it says 595, do you see that?

1 MS. MARSHALL: Yeah.

2 MR. ASLIN: Are those cumulative numbers?

3 MS. MARSHALL: Yeah, so 2008 is an incremental  
4 value, that is first year, but the 2010 is cumulative, 8, 9  
5 10.

6 MR. ASLIN: So if I was to look at the difference  
7 between 2008 and 2009, for example, so it is roughly 155  
8 megawatts, is that the amount that is not already captured  
9 within the models? Or what is that? Is that the --

10 MS. MARSHALL: That represents adjustments that were  
11 made relative to the last forecast, so in the 2007 IEPR  
12 Forecast, there were 9-11 programs and we had lower  
13 compliance with Title 24, so these are the incremental  
14 effects of making those changes to the model in this.

15 MR. ASLIN: Okay, thanks. I was not quite clear on  
16 what that was. In terms of just feedback from PG&E on what  
17 we have experienced in our own, looking at loads, because we  
18 are also very concerned about the economic decline and its  
19 impact on our customers, what we have seen is very similar  
20 to, I think, what Edison talked about. So we have seen, in  
21 terms of billed energy sales, we have seen that our sales  
22 are down by approximately 1 percent through the end of  
23 April. But really, an interesting feature of it, though, is  
24 that residential sales are actually up by approximately 1.5  
25 percent, commercial sales are pretty much flat, and

1 industrial sales are down by 5 percent, so it is very  
2 interesting. I think it is one thing to think about here  
3 is, Lynn, you had broken out the peak demand forecast by  
4 sector, and I think what you showed was that the peak demand  
5 model is showing a pretty severe decrease in residential  
6 peak use. And I am just wondering if that will actually  
7 play out that way because, if you think about it, if more  
8 people are unemployed, there are more people at home, it is  
9 very likely that they are going to use more energy. So, for  
10 example, just as a thought sort of experiment here, if we  
11 all decided that, as a reaction to the economic downturn, we  
12 were all going to take Wednesdays off, would that lead to  
13 higher energy consumption, the same energy consumption, or  
14 lower energy consumption? And then I would submit that it  
15 would be at least the same or higher.

16 COMMISSIONER BYRON: Well, isn't the per capita  
17 energy use for Californians much higher in the commercial  
18 and industrial sectors than it is in the residential sector,  
19 meaning, if they are home, they are going to use a lot less  
20 energy than they would at work?

21 MR. ASLIN: Well, they are going to use more energy  
22 for space cooling and space heating than they would when  
23 they are at work because it is more efficient for people to  
24 be in an office building and to be cooled there, than to be  
25 cooled in individual sites where, you know, everybody has

1 1,500 square feet that they need to cool. So I agree with  
2 the production part of it to the extent that California was  
3 sort of a highly energy-intensive economy than the sort of  
4 drops that are being projected might be realistic. But  
5 because California's economy really is not in a highly  
6 energy intensive economy, you know, I am of the mind, just  
7 like Edison, that the drop is too severe. I just do not see  
8 how you can get that kind of a drop that is associated with  
9 the type of economic downturn that we are seeing now. I  
10 think you could get it if this economic downturn lasted for,  
11 you know, another 12 months, if it lasted for another 18  
12 months or 24 months, because where you really start to see  
13 those impacts is when people start to leave, when they start  
14 to leave a state, then you start to see really big impacts  
15 in the peak usage.

16 COMMISSIONER BYRON: Well, do you develop your own  
17 economic forecasts for your service territory? Or do you  
18 depend on others?

19 MR. ASLIN: We also use Economy.com, but we also  
20 subscribe to Global Insight, to UCLA Anderson School  
21 forecasts, as well.

22 COMMISSIONER BYRON: That is why those organizations  
23 exist.

24 MR. ASLIN: Yes, well, they do a really good job.  
25 We used to do it in-house, we had a staff of many many

1 people who took the U.S. Macro forecasts that were produced  
2 and tried to parse them out into our counties, but we found  
3 that to be less effective than having a group of highly  
4 educated economists to study the regional economies and have  
5 a very complicated -- not complicated, but very  
6 sophisticated model that does it. So -- but I do think it  
7 is good to look at various points of view on the economy  
8 because there is a lot of uncertainty as to what is the  
9 structure of the recovery, whether we come out of it  
10 quickly, or whether we come out of it slowly, and that has  
11 very big implications for energy demand.

12 COMMISSIONER BYRON: Sure.

13 MR. ASLIN: But just this sharp decline, to me, it  
14 seems inconsistent with the idea of the California economy,  
15 in general.

16 COMMISSIONER BYRON: Mr. Aslin, could you explain a  
17 couple of things you said as to why you do not think -- as  
18 to why you think both peak demand and the overall demand --  
19 let me try to state it correctly -- why is it that you think  
20 the peak demand has to eventually return back to 2008 is one  
21 question; and why is it that you do not think peak demand --  
22 why is it that you think peak demand and normal demand  
23 cannot -- both have to be consistent?

24 MR. ASLIN: I will take the first question. The  
25 reason is because, over this period of the forecast horizon,

1 so from 2008 to 2015, in PG&E service territory, our  
2 projection is that we will add an additional half a million  
3 households and that the underlying economy will product an  
4 additional \$100 billion in real output.

5 COMMISSIONER BYRON: One hundred billion?

6 MR. ASLIN: One hundred billion dollars in real  
7 output, that is PG&E service territory. I do not see how  
8 that can be accomplished without --

9 COMMISSIONER BYRON: So it is all predicated upon  
10 what you expect the economy is going to do.

11 MR. ASLIN: Yeah.

12 COMMISSIONER BYRON: Because my emphasis here is  
13 that the programs that we are implementing along the lines  
14 of energy efficiency and DSM do not necessarily require we  
15 have to return to the same levels of peak demand.

16 MR. ASLIN: I agree with that completely. But even  
17 after you net out aggressive energy efficiency programs, I  
18 do not think that you get to the situation where you have  
19 absolutely no growth in the peak over a 10 year period. We  
20 have never experienced that in the past. I think it is a  
21 good vision, but I just do not see it as being a realistic  
22 forecast. And that is how I am approaching it. The other  
23 thing I wanted to also say, like San Diego, and Lynn  
24 mentioned this earlier, we also -- what we saw was that our  
25 temperature-normalized April peak when we had that little

1 mini heat storm in April. That actually did exceed our 2008  
2 peak on a temperature-normalized basis. And I will be the  
3 first to admit, the temperature normalization, it is not a  
4 hard science, so there is a lot of part to that, but I think  
5 the notion that, even if the base load is lower, that if you  
6 experience warm temperatures you could get peaks that are  
7 nearly as high as they were in 2008 by the end of the  
8 summer, is something that we do need to give a lot of  
9 consideration to, because we had that one experience and it  
10 seems like, for San Diego Gas & Electric, it zoomed up on a  
11 hot day; for PG&E, it zoomed up on a hot day. And I am not  
12 sure what happened with Edison, but... So that is kind of  
13 the comments I have right now. I actually did prepare a  
14 brief presentation, so I am hoping maybe at 3:30 I could go  
15 through that.

16 COMMISSIONER BYRON: All right.

17 MR. ASLIN: Thanks very much for letting me have  
18 this input. And did you have any additional questions? All  
19 right, thanks.

20 MS. MARSHALL: Can we see if San Diego is available?

21 MR. VONDER: Can anyone hear me?

22 MS. MARSHALL: Yes, Tim.

23 MR. VONDER: Okay, good. I tried to respond to your  
24 request earlier, but I do not think anyone could hear me.

25 Anyway --

1           COMMISSIONER BYRON:  Could you identify yourself,  
2 please?

3           MR. VONDER:  Oh, I am sorry.  This is Tim Vonder  
4 with San Diego Gas & Electric.  And Lynn's presentation for  
5 our service area was pretty much on.  We do have a few  
6 concerns, though, and that is with regard to the economic  
7 scenarios that were used by the CEC staff to procure their  
8 forecast.  Our understanding is, you know, Economy.com was  
9 the primary and really the only economic forecast that was  
10 included in the forecast, and our concern is that Global  
11 Insights at UCLA, now, they also provide other views, and I  
12 think in this case, at the time that CEC was doing their  
13 forecasts, we were doing our forecasts, the Economy.com was  
14 actually the low ball in the mix; the others were a bit  
15 higher.  And so I guess the concern is that, in the revised  
16 forecast, maybe there is a possibility of looking at the  
17 Global Insights in UCLA and maybe giving them a little  
18 weight, and including them in the econ demos.  So that is  
19 one suggestion for revised forecasts.  And like Rick pointed  
20 out, the chart that was on page 9 of Lynn's presentation did  
21 show that, on warm days, our system responded, or our demand  
22 responded like it did in 2008 and 2007, so I think that is  
23 pretty important to take into consideration, too.  So those  
24 are our comments.

25           MS. MARSHALL:  Okay, any other questions or

1 comments?

2 COMMISSIONER BYRON: Ms. Marshall, do you care to  
3 respond to any of those?

4 MS. MARSHALL: Well, I think we are going to  
5 continue to look at the data and review the assumptions we  
6 are using to validate the results we are getting, and we  
7 have gotten some good -- you know, San Diego suggested some  
8 of the historic data we are using needs to be revised, so we  
9 will continue to look at these issues. But any additional  
10 -- because I am in a tight timeframe, any additional -- I  
11 did not hear you say a lot about the specific megawatt  
12 impacts of the efficiency program, so if they have  
13 additional reactions to those, or assessments, that would be  
14 useful because we are continuing -- as Chris said, those are  
15 somewhat of a work in process, so we are continuing to look  
16 at our own results.

17 COMMISSIONER BYRON: Are you looking for responses  
18 now or in writing --

19 MS. MARSHALL: Any time over the next several weeks.

20 COMMISSIONER BYRON: Well, I think we got some good  
21 comments there. It is certainly, I mean, we know the  
22 housing market, residential housing market, has been  
23 depressed for a while, fewer housing starts, but to see an  
24 increase in residential housing load would certainly  
25 indicate that more people are home, and dissecting that and

1 whether or not it is a significant part of the load is  
2 important to compare to the downturn on the industrial and  
3 commercial side. But there are some other good points, too,  
4 that I think we need to look at as well on the data side.  
5 Again, we will welcome the written comments to staff. Those  
6 are very important. And let's see if we can clear up the  
7 discrepancy on the date. I took the June 1 date for  
8 comments right out of the meeting notice.

9 MS. MARSHALL: Yeah, and that was probably my fault  
10 because I was not looking at what Chris was requesting for  
11 the larger energy efficiency process, and looking at it in  
12 terms of the specific resource adequacy peak. I was hoping  
13 to give additional time for us to kind of hash things out  
14 before we wrapped things up.

15 COMMISSIONER BYRON: All right, we will let Ms.  
16 Korosec settle all that for us. Thank you, Ms. Marshall.

17 MR. KAVALEC: Okay, through the tireless efforts of  
18 Mike Jaske, we have put together this Efficiency Working  
19 Group that he discussed, that includes the utilities, CEC  
20 staff, CPUC, ARB, NRDC, and we have been delving into  
21 various efficiency-related issues, and we were lucky enough  
22 to get as our coordinator for these activities Chris Ann  
23 Dickerson from CAD Consulting, and she will now discuss the  
24 role of the working group, what we have accomplished and  
25 what we hope to accomplish. So Chris Ann.

1 COMMISSIONER BYRON: Welcome, Ms. Dickerson. We are  
2 way ahead of schedule, so do not feel rushed in any way.

3 MS. DICKERSON: Thank you. And thank you, Chris.  
4 Well, I have been introduced. My name is Chris Ann  
5 Dickerson, and it is a pleasure to be here. I would also  
6 like to note that I have been hired through the Aspen  
7 Environmental Group Technical Support Contract, and I would  
8 like to acknowledge that mechanism. And I would also like  
9 to acknowledge the Demand Forecast Team with whom I work,  
10 they are really an exceptional set of individuals and it has  
11 been quite a pleasure. As Chris was saying, we have put  
12 together the Demand Forecast Energy Efficiency  
13 Quantification Project Working Group. And it is a fabulous  
14 group, the only complaint I ever receive is a complaint  
15 about our acronym, it is unpronounceable.

16 COMMISSIONER BYRON: No, not an acronym.

17 MS. DICKERSON: Or, I am sorry, an acronym, thank  
18 you. We have had most people be tattooed, so we are not  
19 likely to change it soon. All right, so just a little bit  
20 of background and I think Mike Jaske went through some of  
21 this, this morning. The issues about quantifying energy  
22 efficiency, in particular, the uncommitted energy efficiency  
23 in the forecast, have percolating up through proceedings for  
24 a couple of years, and we have made progress at several  
25 different steps. In the 2007 IEPR, the Energy Commission

1 proposed a process to delineate the assumptions more  
2 clearly, and in the 2008 IEPR Update, several workshops were  
3 held in preparation for development of the working group,  
4 and here for the 2009 IEPR Update, we have had our working  
5 group fully active.

6 I will tell you what this slide says. This slide is  
7 a simple one, and it just shows that we have had several  
8 workshops and several working group meetings, and we meet  
9 about every six weeks or so, the group gets together.

10 COMMISSIONER BYRON: Just because we are having  
11 problems with the presentation, let me just check on a  
12 couple of things with Ms. Korosec. Is this going out over  
13 the WebEx, as well, so the people are having this difficulty  
14 seeing this?

15 MS. KOROSEC: It looks like it is, yes.

16 COMMISSIONER BYRON: Okay, and most people in the  
17 audience, do you have the hard copy of this from the back  
18 table? Okay, Ms. Dickerson, you will just have to be a  
19 little more descriptive on each slide, but that is okay, we  
20 have the time.

21 MS. DICKERSON: Okay. So let me just back up a  
22 slide, then. This slide, it is a simple slide and it just  
23 shows that we have had two workshops in 2008, we had two  
24 full working group meetings in 2008, and we have had four  
25 and we have another meeting planned in 2009. So this slide

1 is just showing that the working group has been initiated  
2 and we have been meeting.

3           The next slide mentions some of the members of the  
4 working group. We, of course, have a number of Energy  
5 Commission staff. We have PUC staff. What is interesting  
6 is that we have a group of people here who come from  
7 different areas of the picture, so we have energy efficiency  
8 people, people from procurement, and from DRA, in terms of  
9 the PUC staff. We also have some CPUC consultants, both  
10 from the Energy Efficiency Goals types of projects, as well  
11 as from the Energy Efficiency EM&V data, that is Evaluation  
12 and Measurement Data types of projects. From the IOUs, we  
13 have members both from the Energy Efficiency side of the  
14 house and the Forecasts side of the house. From the POUs,  
15 we have members who actually tend to come from forecasting,  
16 but blend skill sets in, both energy efficiency and  
17 forecasting. ARB is a member and NRDC. And we have some  
18 membership from Lawrence Berkeley National Lab, as well as  
19 TURN. And I put those two in parentheses because they do  
20 not attend quite as often, but they have let me know that  
21 they are monitoring activities and that they are interested  
22 in the group.

23           So we have about -- I believe I had 50 or so people  
24 on the mailing list who have requested to receive  
25 information about our group, and we regularly have maybe 25

1 to 30 people attending each meeting, so it is a fairly large  
2 group. And as I mentioned, most of these people have come  
3 to me and requested that their name be added to the list, so  
4 we have people actively participating.

5           Okay, this next slide talks about working group  
6 topics. Since this slide is hard to see, I will just run  
7 through the topics quickly. And what is interesting about  
8 this group, and I believe the reason why so many people are  
9 interested, is that we tend to cover such a wide variety of  
10 topics, and in particular we cover the relationship between  
11 topics that are frequently addressed in disparate ways in  
12 this -- what we like to call the soloed environment. So we  
13 are really about crossing silos here. So what the slide  
14 says for those of you who might not be able to see it is  
15 that we cover forecasting issues, including demand  
16 forecasting, energy efficiency program impacts, standards  
17 impacts, the effects of the energy efficiency goals, topics  
18 related to committed and uncommitted energy efficiency, and  
19 that is something we spoke about a little bit earlier, there  
20 is a distinction made in the demand forecast between those  
21 two types of efficiency. We also cover the role of energy  
22 efficiency in the procurement process. We talk about both  
23 IOU goals and POC goals and policies, and in particular  
24 there are data and there are energy efficiency data. We  
25 talk about the AB 32 goals for energy efficiency. We cover,

1 of necessity, topics related to evaluation, measurement and  
2 verification, inasmuch as we need to use data and output  
3 from those kinds of studies in order to input the  
4 information into our forecasts. And we are also working on  
5 developing a Taxonomy of Terms that are commonly used  
6 between all these fields. And as we will see later, those  
7 terms are not always used the same way in the different  
8 fields.

9 MS. TEN HOPE: Chris, can you clarify the relevance  
10 of the goals since this is principally on measurement and  
11 attribution, I would think it was looking back and then you  
12 can clarify the goal aspect?

13 MS. DICKERSON: Yes, well, we are doing the  
14 forecasts going forward and into the future. And the amount  
15 of energy efficiency that we are identifying as likely to  
16 occur becomes relevant in the context of the CPUC goals  
17 because those goals are also likely to occur, or expected to  
18 occur, but they are coming from a slightly different  
19 regulatory angle, so we are sort of monitoring the  
20 intersection between those two issues. Something I should  
21 also say and that I will get to later, but since the  
22 question arose, there is an issue that we have talked about  
23 in our group about whether or not such goals as the CPUC  
24 policy goals should be included in the forecasts. So, for  
25 example, the IOUs and the POUs interpret some of the

1 regulatory mandates to achieve goals to mean that those  
2 goals should be incorporated into their demand forecasts.  
3 And that is something that we have been talking about in our  
4 group, and the Energy Commission has a different take on how  
5 that process should unfold. And it is matter of concern  
6 because, in some cases, the utilities are not sure that they  
7 can meet those goals. And that can be one issue of concern.  
8 And for the bodies who are attempting to promote the goals,  
9 it is not clear how helpful it is to have forecasts that  
10 include goals of a necessity because that is perceived to be  
11 a regulatory requirement if in fact the goals might not be  
12 met, when the policy-makers may be looking to those  
13 forecasts to see whether the goals will be met. So there is  
14 a little bit of an issue of circularity.

15 All right, so the first slide talks about some of  
16 the activities -- this next set of slides talks about some  
17 of the activities that we are undertaking in the group. And  
18 our very first task has been to assemble the Energy  
19 Efficiency Program Accomplishments Data, as well as other  
20 studies and information that have been undertaken around the  
21 programs over time. And you have heard this issue come up  
22 in several presentations, and I would like to emphasize it  
23 here. It certainly has proven to be a challenge to assemble  
24 this accomplishments data over time. And some of the  
25 reasons for that are that there are multiple iterations of

1 the CPUC program data for each program cycle. So the IOUs  
2 file information with their program accomplishments. Those  
3 tallies are revised on several occasions throughout the  
4 year. Later, there is an EM&V process where the results are  
5 evaluated, and those evaluations tend to be conducted at  
6 different levels of aggregation than the program reporting  
7 is done. And so, as a result, the results are spread out in  
8 a number of reports that accumulate over time. And these  
9 reports are indeed available, but assembling the pieces, the  
10 information from the reports, and tracking that back to the  
11 initial reported program accomplishments is a very  
12 challenging task, indeed. The Energy Commission staff, with  
13 some assistance from ITRON, assembled data for the 2009 IEPR  
14 Preliminary Report and they did a wonderful job, but we can  
15 certainly see that there are improvements to be made in this  
16 system going forward, and that is something that we would  
17 like to do. And I think an excellent outcome from this  
18 working group process is that we have had involvement from  
19 all of the stakeholders, looking at this situation. And, in  
20 fact, it is very helpful for the PUC and the ED staff to see  
21 how some of these data can be used for forecasting purposes,  
22 and they have a much better idea going forward of some of  
23 the formatting issues and reporting requirements that will  
24 be useful to have for the EM&V Data. An activity that we  
25 have done through this working group is to work through the

1 California Measurement Advisory Council, that is the group  
2 called CALMAC, that is a stakeholder group for the  
3 Evaluation Measurement and Verification activities underway  
4 in the state. And we have a project there underway to  
5 improve the reporting processes to achieve more consistency,  
6 so that the evaluation data can be used in the forecasts.  
7 Another big step that we have undertaken in CALMAC is to  
8 expand membership of the group beyond just the IOUs and  
9 their regulators, to include the POUs. So that is an  
10 important step forward for evaluation in that we hope to be  
11 achieving greater consistency of evaluation results going  
12 forward. And CALMAC has traditionally addressed only the  
13 evaluation of energy efficiency for the IOUs and now CALMAC  
14 has agreed to start looking at addressing issues related to  
15 evaluating load impacts from distributed gen and demand  
16 response, as well as efficiency. And as a result, we can  
17 start getting all of these sort of demand-side load impacts  
18 on the same footing as our hope, so that these results can  
19 be included more effectively into the forecasts.

20 A second line of action that we have engaged in for  
21 this group is development of a taxonomy of terms. And this  
22 is an activity that is a follow-on from work done by ITRON  
23 for the Public Utilities Commission, for Michael Wheeler,  
24 who spoke earlier this morning. And as part of comparing  
25 the ways some different forecasting models worked, it became

1 clear that there are a number of terms used in sort of the  
2 interstitial territory between energy efficiency, energy  
3 efficiency evaluation, measurement and verification, and  
4 forecasting, where the same terms are used by the people in  
5 these different groups, but they are not necessarily used  
6 with the same meaning. And in some cases, there were some  
7 new terms that needed to be developed. So we have -- ITRON  
8 did a first draft of this Taxonomy of Terms and now the  
9 DFEEQP Group has taken over development of this draft. Some  
10 examples of the terms where consistency is important,  
11 especially for communicating with Regulators would be market  
12 effects and price effects, are actually very different  
13 concepts, and we found that some of our models were using  
14 the same terms to describe them. So, for example, in some  
15 cases price effects has to do with rate increases, and in  
16 some cases price effects can have to do with the pricing  
17 differences in the purchase of energy efficiency goods and  
18 services. So it is very important to get those kinds of  
19 things clear. Market effects is another example, where in  
20 some cases market effects have to do with changes in prices,  
21 and in energy efficiency EM&V, market effects tends to have  
22 to do with stocking and distribution practices and the  
23 actual market share of goods and services that are being  
24 provided. We have ex ante and ex post. Those are terms of  
25 art used in energy efficiency evaluation. "Ex ante"

1 assessments are sort of the preliminary estimates of program  
2 savings, and "ex post" estimates have to do with  
3 measurements that come after evaluation has been conducted.  
4 And those terms were not necessarily completely familiar to  
5 the forecasters, but has very much to do with the energy  
6 efficiency data that can be used in the forecast. So this  
7 is another example of the kinds of terms that we are going  
8 to be including. And "futures growth" is an example of a  
9 new term that had not previously existed explicitly in the  
10 terminologies and dictionaries that were being used, it is  
11 more of a forecasting term that the EM&V people are not  
12 really aware of, used to describe situations, for example,  
13 when we have energy efficiency occurring; an example would  
14 be that refrigerators become, in fact, more efficient over  
15 time, but the units that are being sold have more features,  
16 or are larger than the prior units, so you have a  
17 combination of growth in energy use, and additional  
18 efficiency at the same time. So we need to have ways to  
19 talk about that type of change in energy use and change in  
20 efficiency.

21           So the progress on development of the Taxonomy of  
22 Terms, as we said, ITRON prepared the initial draft. The  
23 DFEEQP Working Group put together a special committee who is  
24 interested in working on this topic, and we reviewed the  
25 draft and had several meetings. There was a point of

1 reassessment when the Energy Commission and the Public  
2 Utilities Commission staff made a determination that they  
3 would actually be interested in moving this activity  
4 forward, they found it to be very useful, and so we have  
5 designated now an Energy Commission Lead Author and a PUC  
6 Lead Author, so this will be a joint staff product when it  
7 is finished. And the idea is that we could begin to include  
8 these definitions in existing documents as they revise; for  
9 example, the Public Utilities Commission Evaluation  
10 Protocols and some other types of documents where  
11 definitions tend to reside.

12           And probably the third primary activity that we have  
13 undertaken in this group is to do a comparison of the  
14 forecasting methods for all of the stakeholders who are at  
15 the table, so this includes the IOUs, the Energy Commission  
16 staff, and the POUs, and we asked members of the group if  
17 they would put together some high level information about  
18 the way they construct their demand forecasts. And in  
19 particular, how they go about incorporating energy  
20 efficiency impacts into their own forecasts. And we had  
21 several meetings on this topic, and we were able to do sort  
22 of cross-wise comparisons, across the different  
23 stakeholders, and it certainly proved to be very interesting  
24 to observe the similarities and differences in methods, and  
25 then to share ideas. So here, this slide talks about the

1 meetings that we had. And I wanted to acknowledge the work  
2 that the stakeholders put into preparing these  
3 presentations, and we noticed a number of issues with the  
4 forecasts where the different entities are using slightly  
5 different styles and approaches, and actually that will be  
6 coming up in a later presentation this afternoon. But as a  
7 result, there has been some interest expressed by some of  
8 the utilities in developing a common forecasting  
9 methodology, and possibly sharing some data to reduce the  
10 labor burden on the utilities in producing individual  
11 forecasts. So that is another activity that we will be  
12 examining in this group.

13           So some of the benefits of the DFEEQP Group. I  
14 think the biggest benefit is the transparency. The  
15 inclusion of energy efficiency in the demand forecasts is  
16 certainly a high priority issue and with this stakeholder  
17 group, people are very active, and there is a great deal of  
18 discussion and sharing of information about how the Energy  
19 Commission is planning to include impacts into their demand  
20 forecasts, and also, as I mentioned, sharing about how the  
21 utilities include energy efficiency in their own forecasts.  
22 And I think it has been a very productive group. I get a  
23 great deal of positive feedback about the group. And  
24 something I should say is that, you know, the material that  
25 we discuss at each meeting tends to be very technical and

1 very challenging, and I am always a little surprised and  
2 certainly pleased, people -- we have 25 or 30 people who  
3 stay for a day long, a full day to address these topics, and  
4 even by the end of the day, you know, people are still very  
5 engaged and very interested. And it is just gratifying to  
6 see and I think it speaks to the fact that there are not  
7 quite enough opportunities to talk about issues that relate  
8 to all of these topics at the same time. And this is a very  
9 effective way to do that.

10           Some of the ideas for our next steps. We are still  
11 working on -- well, the Energy Commission staff is still  
12 working on their revised forecasts, and then development of  
13 a forecast for the incremental energy efficiency, so those  
14 are two steps where this group will be involved. Certainly,  
15 there is a great deal of interest in both the revised  
16 forecasts, but in particular, the uncommitted energy  
17 efficiency and the methodology for capturing those  
18 uncommitted effects.

19           We feel like we have made a lot of progress for the  
20 2009 IEPR cycle, but we certainly see that there is plenty of  
21 work to do in this arena, and are planning to continue the  
22 working group beyond the 2009 cycle. We are working to  
23 monitor and effect developments in energy efficiency program  
24 reporting at the PUC for the IOUs and also for the POUs, so  
25 that over time we can get, as I mentioned, better

1 consistency in reporting of these results, and in a manner  
2 that facilitates forecasts.

3           We are looking at possibly conducting a project to  
4 reconcile some of the historic energy efficiency program  
5 impacts over time at the PUC. So, in other words, program  
6 accomplishments earlier than about 2004 are very difficult  
7 to identify any other than the most aggregate level for the  
8 PUC programs, so there could be value in going back to  
9 assemble that information in a more consistent format over  
10 time; it does exist, it is just not easily accessible. So,  
11 as I mentioned, we are interested in possibly developing a  
12 common forecasting methodology and we are going to continue  
13 development of the Taxonomy of Terms. Thank you very much.

14           COMMISSIONER BYRON: Thank you, Ms. Dickerson. I  
15 hear periodically about the DFEEQP from staff and I  
16 appreciate your assessment. As I was listening to some of  
17 your presentation, a couple of questions came to mind, in  
18 particular, back on slide 9 where you were talking about the  
19 staff determined additional attention to this issue could be  
20 beneficial, and the co-authors have been selected for this  
21 Taxonomy Report. Have definitional problems contributed to  
22 inaccuracy of the measurement or the attribution in the  
23 past?

24           MS. DICKERSON: I do not think so. Well, I do not  
25 know. Chris, may I ask you a question about price effects.

1           COMMISSIONER BYRON: Have definitional problems in  
2 all these terms that we use contributed to inaccuracy of  
3 measurement or attribution in the past?

4           MS. DICKERSON: Actually, you can maybe help you.  
5 My guess is that I do not think so.

6           MR. KAVALEC: Yes, I was just going to say that the  
7 idea for a Taxonomy of Terms came from the last IEPR process  
8 where staff had a lot of trouble communicating with the  
9 committee and others at the workshop all of these concepts  
10 and how they were measured because people had different  
11 definitions of the concepts sometimes.

12           COMMISSIONER BYRON: Sure. And I appreciate it for  
13 that reason, but I am just wondering, you know, as this  
14 group has met, has it become pretty clear that has  
15 contributed to some of the inaccuracies associated with the  
16 attribution and measurement?

17           MR. KAVALEC: The measurement, no. It is more of a  
18 communication problem.

19           COMMISSIONER BYRON: Thank you. And Ms. Dickerson,  
20 you also talked a lot about the membership and the benefits  
21 of the DFEEQP, and you identified the organizations, but are  
22 some of the same members of this -- I will use the acronym  
23 again -- DFEEQP Group represented here today, particularly  
24 from the investor-owned utilities?

25           MS. DICKERSON: Yes.

1           COMMISSIONER BYRON: Okay, so we have consistency  
2 amongst our workshop participants and members of this  
3 organization?

4           MS. DICKERSON: Yes.

5           COMMISSIONER BYRON: Good. Let's open it up, there  
6 is plenty of time. Any other questions from anyone else in  
7 the audience or on the WebEx?

8           MS. GEORGE: I have a question.

9           COMMISSIONER BYRON: Please come forward and  
10 identify yourself.

11           MS. GEORGE: Yes, my name is Barbara George and I am  
12 with Women's Energy Matters. I was in the procurement  
13 proceeding in 2007 where some of these issues were  
14 discussed, and where the Commission ended up only counting  
15 20 percent of the goals because there was so much in the  
16 future procurement, in other words, that only 20 percent of  
17 energy efficiency was available to reduce the demand because  
18 there was so much confusion about what the attribution of  
19 the savings between CEC's codes and standards vs. the IOU  
20 Energy Efficiency Programs, that was one of the issues. But  
21 then the second issue was how much was embedded in the  
22 forecast rather than visible, as a resource. And there was  
23 a misunderstanding, apparently, or the models did not fully  
24 take into account, at least in the testimony in that  
25 proceeding, that the problem was that the CPUC and CEC had

1 agreed that only committed savings would be buried,  
2 embedded, in the demand forecast, and then future programs  
3 would not be there because they would -- because there was  
4 no certainty about what the amount of them was going to be,  
5 they could be higher, they could be lower; and so it also  
6 enables the resource planners to look at energy efficiency  
7 as one resource out of a number of resources that could fill  
8 that particular hole. So what I was wondering, and I asked  
9 Lynn Marshall in the hallway, but I am still not quite  
10 satisfied with the answer is, Chris Kavalec's testimony said  
11 that they had only included the committed savings through  
12 2011; of course, those actually are not committed yet  
13 either, but what I am wondering is why isn't there a bump up  
14 in the energy after 2011, which would represent the impacts  
15 of the energy efficiency programs? I mean, they are not  
16 visible. Now, Lynn's answer was that there are ongoing  
17 impacts from the past programs -- you stick a light bulb in  
18 the socket and it lasts for a certain number of years, well,  
19 unfortunately those years in the commercial setting, they  
20 only last for a year and a half, and so you would fall off a  
21 cliff in the middle of the program cycle, you do not even  
22 get to the end. And in residential, they are claiming nine  
23 years, I do not think that is really true. And CFL's are  
24 about half of the savings from the program, that is why  
25 CFL's are so important. So anyway, I think there are

1 questions that I am having about what are their assumptions  
2 about decay. The assumptions that the Energy Commission has  
3 made in terms of customers replacing light bulbs after the  
4 first one burns out are different from the CPUC assumptions.  
5 The CPUC said we are only going to count the first bulb, the  
6 one that was incented by the program. In this case, from  
7 Lynn's decision, she said -- and I think this was mentioned  
8 here -- that the CFL's were assumed to be replaced by the  
9 customer, going forward. And the question I have is whether  
10 there is, you know, is there evidence for that? Maybe yes,  
11 somewhat, but certainly not 100 percent. So anyway, you  
12 know, my major question is why doesn't the graph show a  
13 little bump up after 2011? Or don't the IOU programs make  
14 much of a difference?

15 COMMISSIONER BYRON: I do not know that Ms.  
16 Dickerson is the right one to answer that. Are you?

17 MS. GEORGE: Well, I assumed we were able to ask  
18 questions off of the whole morning presentation, so --

19 COMMISSIONER BYRON: So let us look to staff for an  
20 answer.

21 MS. GEORGE: Yeah, okay.

22 MR. GORIN: I am Tom Gorin from the Energy  
23 Commission staff and this might be dealt with a little bit  
24 in my presentation of how we developed the lighting you  
25 receive -- the lighting end-use for the residential

1 forecast, and it may go to some of the attribution problems  
2 that you were talking about. In some cases, there is a bump  
3 up for savings that we decayed from the utility programs  
4 that are not in the models, that we subtracted after the  
5 fact from the models. In the case of lighting, there are --  
6 in the residential sector, we made assumptions which I will  
7 go into -- after 2011, there is the federal standards which  
8 effectively prohibit incandescents from being sold after  
9 2012 or 2013, and the Huffman Bill, which requires that  
10 residential lighting be 50 percent of a 2007 value by 2018,  
11 which we did not fully incorporate, but figured at some  
12 point in time we are going to have to start getting to that  
13 level of detail, that level of lighting reduction. In the  
14 commercial sector, there are existing standards for lighting  
15 which could conceivably overlap with utility programs, and  
16 that is a aggregation problem that we are going to have to  
17 deal with for the Revised Forecast, where retrofit lighting  
18 has to conform to existing, more restrictive building  
19 standards, which we discounted in the 2007 IEPR, but  
20 increased the compliance rate for the current draft  
21 forecast. So there could be conceivably an overlap or, when  
22 the utility programs go away, they are going to be replaced  
23 by a similar measure which meets the building standard. So  
24 that is why there is not a specific bump-up for lighting  
25 after 2011.

1 MS. GEORGE: So you are assuming that there is a  
2 greater compliance? Or you said a different program. Whose  
3 program was that?

4 MR. GORIN: It is -- I would say that, in some  
5 cases, with the changing rules at the Public Utilities  
6 Commission and credits that the utilities get for standards  
7 and codes compliance, there could be a significant overlap  
8 between -- a utility could help commercial customers comply  
9 with the code and so, at some point in time, the program  
10 savings goes away, but the code savings stays, and it is the  
11 same energy use over that longer period of time, and that is  
12 something that we are still wrestling to just aggregate,  
13 whether it is a program savings or a codes and standards  
14 savings, it cannot -- they are not additive.

15 COMMISSIONER BYRON: Well, and if I can interrupt  
16 for a moment, Ms. George, I want to make sure we try and  
17 answer your question. If he has, great, but it is kind of  
18 interesting, you have not seen his presentation yet. My  
19 guess is your question relates back to one of the  
20 presentations that you saw earlier this morning. Was it Mr.  
21 Kavalec's presentation?

22 MS. GEORGE: Yes, it was. Well, there were a couple  
23 of remarks this morning that had to do with this issue. I  
24 mean, this is what I came to hear and I have thought about  
25 it a lot and talked to other people, so I understand some of

1 what Tom is saying, even though I have not seen his  
2 presentation yet.

3 COMMISSIONER BYRON: So we will get into some more  
4 detail there. I am wondering, was it a specific slide that  
5 you were looking back in the earlier presentation, and then  
6 we could get to it a little bit --

7 MS. GEORGE: I do not know if it was actually in a  
8 slide. I was making notes and, you know, it went by me, and  
9 that was what I was waiting to hear, you know, what were  
10 they doing in terms of whether they were embedding things in  
11 the model in the future, which they were supposedly not  
12 going to do, except that the codes and standards are still  
13 embedded. I mean, the CEC work is still embedded in the  
14 forecast, and I guess whatever you want to call "natural  
15 effects," you know, is embedded in the forecast.

16 COMMISSIONER BYRON: Correct.

17 MS. GEORGE: But the IOU programs are supposed to be  
18 broken out after 2011 and so I was interested in seeing, you  
19 know, well, does 2011 -- there are no impacts of losing the  
20 IOU programs, that is kind of an amazing thing for the CPUC  
21 to understand, is that they have no impacts, apparently --  
22 according to those graphs, unless I am not understanding  
23 what has been done, or it is not fine enough detail to see  
24 whatever the impacts are.

25 COMMISSIONER BYRON: Okay, let's give Mr. Kavalec an

1 opportunity to respond and then maybe this will come up  
2 again later in Mr. Gorin's presentation.

3 MS. GEORGE: Okay.

4 COMMISSIONER BYRON: I am sorry, Chris, I said your  
5 name incorrectly -- Mr. Kavalec.

6 MR. KAVALEK: Thanks. One of the points that I  
7 attempted to make was that the impacts of energy efficiency,  
8 although they have an impact on the change in the forecast  
9 relative to the 2007, their absolute impact is relatively  
10 small. So you are not going to see a big rebound in  
11 consumption as soon as the 2011 programs end. But there is  
12 -- and you mentioned it is in the minutiae, I do not know if  
13 you can see it here or not, but once 2011 ends, notice there  
14 is a small bump, and then the line flattens out. Hopefully  
15 I am not just imagining this.

16 MS. GEORGE: I guess I could sort of -- now that I  
17 know that you say it, I think I could kind of see it.

18 MR. KAVALEK: Yeah, so that is basically what it  
19 looks like, and it is relatively small, but it is there. It  
20 is relatively small because of the decay of the accumulation  
21 of previous programs, so it does not all go away at once.

22 COMMISSIONER BYRON: Good. It may not have been  
23 what you expected, but it looks like it is there.

24 MS. GEORGE: Okay, thank you. And what number slide  
25 is that?

1 COMMISSIONER BYRON: It is number 5.

2 MR. KAVALEK: Number 5, yeah.

3 COMMISSIONER BYRON: Ms. Ten Hope, I know you  
4 indicated you had some questions, please.

5 MS. TEN HOPE: I just have one question for Chris  
6 Dickerson, and Mike Jaske made the same comment, that there  
7 is a different perspective from the Energy Commission and  
8 the PUC, and whether to incorporate the policy goals in the  
9 forecast or stick with a more traditional committed vs.  
10 uncommitted, and if you could discuss a little bit more the  
11 underlying differences there and what the implication would  
12 be, that would be helpful.

13 MS. DICKERSON: I think I could do that. And  
14 perhaps the question also could go to some of the Utilities,  
15 themselves, but I will do the best I can to answer. So we  
16 have heard from several of the Utilities that they believe  
17 that they have been ordered in regulatory proceedings to  
18 incorporate the effects of the energy efficiency policy  
19 goals from the PUC into their demand forecasts. So as they  
20 are making their forecasts, after 2012, their forecasts,  
21 then, includes the effects of the goals from those programs,  
22 and that is opposed to, for example, forecast effects of  
23 programs based on prior program experience. So that could  
24 be -- so those things could be the same, or they could be  
25 different, but the point is that they are including a goal,

1 rather than an assumption about what might actually occur,  
2 although, to be fair, those two concepts are presumed to be  
3 converging -- what might be expected to occur is assumed to  
4 be the PUC's goal, but that is an issue about incorporating  
5 a policy goal as a demand forecast. We have heard similar  
6 lines of thought from the POUs, where they have goals from  
7 AB 2021 or from their own boards, and the forecasters  
8 wrestle with whether or not they should be including those  
9 goals in their actual demand forecasts going forward,  
10 particularly in instances where they feel that, from the  
11 forecast perspective, those goals may or may not be  
12 achievable.

13 MS. TEN HOPE: And regardless of whether they are  
14 achievable, they may or may not be achieved, so those are  
15 sort of different --

16 MS. DICKERSON: Yes. Now, Energy Commission staff,  
17 I think, have determined that that is not the appropriate  
18 path to take for the IEPR and for the Demand Forecasts, so  
19 that is not the path that the Energy Commission follows.

20 COMMISSIONER BYRON: Good, thank you. Are there any  
21 other questions from audience members or on the WebEx?  
22 Please come forward.

23 MR. ASLIN: My name is Richard Aslin and I work for  
24 the Pacific Gas and Electric Company. And one thing is I  
25 would just like to have a comment on the working group, and

1 that is that I think it has been very very useful. And one  
2 of the things that I think has come out of it that has been  
3 very important is something that I think a lot of us might  
4 take for granted in forecasting, but is absolutely the  
5 single most important thing, and that is to have a  
6 consistent and a well-documented history. And that is one  
7 of the things that has been lacking for trying to  
8 incorporate the different trend in the future of energy  
9 efficiency savings vs. the history. So I think that has  
10 been a really critical component of the working group. The  
11 other thing I would like to comment on is -- was it Barbara?  
12 I would like to say that Barbara did hit on something and I  
13 do not think we should let that go quite so easily because,  
14 since the 2003 IEPR, and in the 2005 IEPR, and the 2007  
15 IEPR, and again, now in the Draft Forecast for the 2009  
16 IEPR, I think all the IOUs have exactly that same  
17 observation -- where is the hockey stick. Where is the  
18 hockey stick in the forecast? Because there should be a  
19 hockey stick in this forecast at 2011. Energy efficiency  
20 programs are offsetting about half of the growth in energy  
21 demand and in peak demand. So the growth rate in these  
22 forecasts should be twice as high after 2011 as it is before  
23 2011. But we never see that in these forecasts, and that is  
24 the very reason why, in the last long-term procurement plan,  
25 this issue came up about there must be a tremendous amount

1 of embedded energy efficiency in the forecast, just in the  
2 models themselves. That was the very genesis of the whole  
3 issue, that this working group was put together to answer.  
4 And that is still a question. I still do not see that.  
5 When I look at the peak load forecast, it is a lot easier to  
6 see in the peak load. So PG&E's energy efficiency programs  
7 are designed to offset in the period 2009 to 2011 roughly  
8 250 to 350 megawatts of peak demand. And according to the  
9 Energy Commission's, you know, modeling, none of that is  
10 included after 2011 -- yet. We do not see an increase in  
11 the growth rate and peak demand after 2011. How can that  
12 be? I still do not understand that. And it has never  
13 really been fully explained, and that is why we have the  
14 controversy, and why, we said, it must be 100 percent. That  
15 is the only logical explanation, you know, not knowing the  
16 models, not having access to the models, the end use  
17 modeling being sort of a black box is still an issue. But  
18 if you just look at it logically, it must be the case that a  
19 very very high proportion of the energy efficiency savings  
20 are included in the models in some fashion because,  
21 otherwise, you would see this differential growth rate after  
22 2011. And I would like to have that explained further, why  
23 we never see that. The third thing was that PG&E does  
24 support the notion that, in order for the IEPR forecast to  
25 be usable in planning exercises such as procurement planning

1 and transmission planning, that it needs to incorporate as  
2 committed the current goals that flow from the potential  
3 studies and are adopted by the Public Utilities Commission,  
4 and for which the IOUs are ordered by Commission decision to  
5 include in their long-term planning forecasts. And what has  
6 happened in the long-term procurement plan is that, somehow,  
7 a decision was made in the scoping memo that said that, in  
8 the long-term procurement plan, we will use the CEC's IEPR  
9 forecast. That had a lot of logic to it -- it is a  
10 statewide forecast, it is an integrated forecast, you know,  
11 it does all three IOUs at the same time, so on and so forth,  
12 so there was a lot of reason to think of that as a logical  
13 thing to do, but where it started to fall apart was that  
14 there is a difference in this definition of what is  
15 committed energy efficiency savings vs. uncommitted. So  
16 from PG&E's point of view, and something that we have been  
17 saying for a while, is that we think that the base case IEPR  
18 forecast should include as committed the current CPUC  
19 adopted goals and, if there is anything above that level  
20 that is achievable, then there should be a scenario that  
21 says, you know, "Here is the uncommitted energy efficiency,  
22 the amount of energy efficiency that is achievable, that is  
23 above the current targets, and the current targets being set  
24 based on the potential studies." So, I think -- I thought I  
25 saw in somebody's presentation that I looked at, that that

1 is something that the staff is considering. So I would hope  
2 that they would follow through on that. And that is all the  
3 comments I have.

4 COMMISSIONER BYRON: Good. I would like to hear  
5 from staff on some of these points that Mr. Aslin brought  
6 up, please.

7 MR. KAVALEC: On the hockey stock issue, I think  
8 that is very very pertinent, this has come up before, and it  
9 is hard to deal with that now, looking at statewide results.  
10 I think what would be useful for the preliminary forecast is  
11 to take a -- to focus in on 2011 and beyond to show exactly  
12 what is happening, and what it is that are causing the  
13 different effects, and where that hockey stick is. So it is  
14 a matter of presentation, then, and we will work on that for  
15 the preliminary forecast workshop.

16 COMMISSIONER BYRON: I am not sure that answers it.  
17 I know you have got statewide data up there, but I believe  
18 Mr. Aslin said we should see significant growth beyond the  
19 2011 in the forecast. And, of course, IOU service  
20 territories are about 75 percent of the statewide, so we  
21 should see that effect there. So are we properly accounting  
22 for it is the ultimate question.

23 MR. KAVALEC: Well, yeah, I mean, the proper  
24 accounting has to do with what you assume after 2011, the  
25 useful lifetime of the measures and the decay rates, and so

1 on, which we are going to talk about more this afternoon.

2 COMMISSIONER BYRON: Okay, what about the other  
3 point, the base case IEPR forecast should include the CPUC  
4 goals for -- I believe you said -- both committed and  
5 uncommitted energy efficiency programs?

6 MR. KAVALEK: We want to keep the distinction  
7 because we think it is important between committed and  
8 uncommitted, but we are also providing, as we mentioned  
9 before, an uncommitted forecast after the revised forecast.  
10 And in future IEPR cycles, probably not this one, we want to  
11 look into what Richard was talking about, potential savings  
12 beyond the goals.

13 COMMISSIONER BYRON: Okay, any other comments,  
14 questions?

15 MS. TEN HOPE: Well, I am still trying to  
16 understand. So the reasons you do not see a significant  
17 rebound or that some of the programs from 2009 and 2011, the  
18 impacts are continuing into the future, so you do not see an  
19 immediate hockey stick, it is more gradual? And I think a  
20 second that I have heard you mention before was that some of  
21 the efficiency measures that were covered in programs would  
22 be purchased in the market and reflected in market effects,  
23 and so you would not see a dramatic increase? Are those the  
24 two principal --

25 MR. KAVALEK: Yeah, I guess there are three things.

1 We are looking at a macro level, the effects die off  
2 gradually, and there are additional savings that continue in  
3 the residential sector, beyond the programs that are  
4 reflected in the consumption. I mean, it is a combination  
5 of those three factors, and I think breaking it out and  
6 focusing in and showing what effect each one has for the  
7 next workshop would be very helpful to understand what is  
8 going on here.

9 COMMISSIONER BYRON: Please.

10 MR. ASLIN: So, for me, the biggest question of all  
11 that I would like to have answered at the end of this  
12 process, of the 2008 IEPR flowing into the 2009 IEPR, I  
13 think this is the same thing that the Public Utility  
14 Commission would like to have answered, is exactly how much  
15 of the currently adopted CPUC goals are captured in the base  
16 case forecast? That is really what we want to know, and we  
17 want to know that very clearly -- how much is in there, and  
18 how much additional adjustment will we need to make in order  
19 to get to the goals? Because the goals are not just utility  
20 programs.

21 MR. KAVALEK: And that is exactly our goal, too.  
22 And that is -- and why we are spending so much time on these  
23 committed effects, so that we are able to then break out the  
24 incremental part of the uncommitted, having a much better  
25 handle on what is in the forecast in the first place.

1 MR. ASLIN: And -- okay, so we have the same goal,  
2 but what is the probability of achieving the goal, in your  
3 opinion, by the time we get to the end of this cycle?

4 MR. KAVALEK: Well, I guess that -- if defining the  
5 goal is an estimate of the incremental portion of the goals,  
6 then, I mean, there is 100 percent probability. How  
7 accurately, how precisely we can do it is another question.

8 MR. ASLIN: Okay, fair enough. Thanks.

9 COMMISSIONER BYRON: Perhaps that was going to be  
10 his next question. Thank you, Mr. Aslin. Anymore  
11 questions? Do we need to ask WebEx, or do they pop up and  
12 you will be able to tell me? Okay.

13 MR. KAVALEK: Okay, so we are a little bit ahead of  
14 schedule, so I think we will put in our first presentation  
15 after lunch, a 15-minute presentation. We will have that  
16 now, and then we will take an early lunch.

17 COMMISSIONER BYRON: All right.

18 MR. KAVALEK: So, as I mentioned before, the way we  
19 incorporated these efficiency impacts was through the models  
20 themselves, and through post-processing of the model output.  
21 And Tom Gorin is going to talk about what we did in the  
22 modeling arena with regards to energy efficiency, so Tom?

23 MR. GORIN: I am going to talk about the types of  
24 refinements that we are currently in the process of  
25 implementing and the first is developing a new end use from

1 existing model end uses, where we are splitting lighting out  
2 of the current miscellaneous residential end use. That has  
3 had a fairly major impact on the residential output,  
4 residential model, which I will go through. Other  
5 refinements are looking and reexamining historical forecast  
6 end use inputs from saturations from the recent RASS, and  
7 starting to look at saturations in commercial end uses, and  
8 both unit energy consumption estimates from the RASS surveys  
9 and the EUI estimates from the commercial surveys --

10 COMMISSIONER BYRON: Mr. Gorin, I am going to ask  
11 you, I am sure everybody here is familiar with the  
12 residential survey and, of course, you turned the acronym  
13 into a word, but if you will just state it out the first  
14 time so that way everybody will know what you are talking  
15 about.

16 MR. GORIN: The Residential Appliance Saturation  
17 Survey is the RASS Survey, the Commercial End Use survey is  
18 the CEU Survey. When we talk about unit energy  
19 consumption, it is Residential Use Per Clients, it is a UEC,  
20 in the commercial sector it is Energy Utilization Index,  
21 EUI, is used per square foot. Estimating both saturation  
22 and energy use components from these surveys is a little bit  
23 like weather adjustment, it is a highly sophisticated art  
24 from, buried in econometric analysis. Using different  
25 individuals or different people can look at the same data

1 and come up with different results. Prior to restructuring  
2 from the residential standpoint, the utilities were in  
3 charge of developing their own surveys, and we had a much  
4 larger sample size from the IOU utilities in the '90s than  
5 we currently have at a statewide level, so there is some  
6 differences in precision estimates between old surveys and  
7 the newer surveys. So we are in a sense trying to get a  
8 consistent history of usage patterns from those surveys.  
9 Another refinement is trying to develop DSM savings, or  
10 efficiency savings, Demand Side Management savings, to  
11 eliminate all the double-counting and some of the double-  
12 counting, maybe Mr. Aslin was talking about. And deciding  
13 whether to subtract whether a program can be conceivably  
14 counted as being captured within the model, or not captured  
15 within the model and needs to be subtracted exogenously.  
16 One example is the lighting was never in the residential  
17 model, it was part of miscellaneous, "miscellaneous" was  
18 developed based on income, household size, and electricity  
19 price. There was never any reductions for incremental  
20 lighting efficiency. In the commercial model, there is a  
21 specific lighting end use, both exterior and interior, and  
22 those decreased over time due to various standards; now, to  
23 the extent that there is double-counting between the  
24 standards and the programs, we have to make a determination  
25 how large that is, so that has become a question.

1           I guess I am going to try and explain what we did  
2 with residential lighting and it may cause more questions  
3 than answers, but... It was previously part of  
4 miscellaneous, we essentially subtracted it out prior to  
5 2004 for miscellaneous so that the summation of lighting and  
6 miscellaneous energy use prior to 2004 is the same as the  
7 old miscellaneous end use was. We chose 2004 as the base  
8 year because that was what ITRON based the Goals Study and  
9 asset runs on for their lighting end uses. The UEC values  
10 for lighting that we used were based on data supplied from  
11 ITRON from various sources. They went back to early or mid-  
12 '80s in citing their sources. We made some adjustments to  
13 their analysis in the older years to fit the assumptions we  
14 had on miscellaneous use in the model at those times. For  
15 the 2005-to-2011 programs, we essentially took the utility  
16 reported savings in program plans and put those into the  
17 model as reported. We also made the assumption -- and this  
18 may go to some of the hockey stick question -- that lighting  
19 levels would remain at the 2011 level throughout the  
20 forecast. We did not make the assumption that, once the CFL  
21 burns out, it was going to be replaced by an incandescent  
22 because there are different legislation and laws in the  
23 works that would preclude that from happening. There is  
24 also legislation that would incrementally lower lighting  
25 levels after 2011, and those are going to be determined to

1 be uncommitted savings currently because there is not in  
2 place yet an enforcement mechanism for those lower lighting  
3 levels. From 2004 on, the lighting levels were subtracted  
4 from our previously calculated miscellaneous UEC from the  
5 2007 value -- I mean the miscellaneous UEC that was  
6 developed in the 2007 forecast. We used as a starting point  
7 for lighting which, I think, is consistent with what ITRON  
8 uses in their studies, which is in the ballpark of other  
9 estimates currently, of 1,800 kilowatt-hours per year for a  
10 single-family house, and 1,000 kilowatt-hours per year for a  
11 multi-family house. We reduced those levels back to 1980  
12 because of smaller houses and older homes, and our back cast  
13 goes back through 1980. The 2005-to-2011 programs were from  
14 the utility program submittals and the base submittals for  
15 the 2009-to-2011 programs. This is a normalized value of  
16 lighting over the history in the forecast period. You can  
17 see that it is one in 2004, there is a big drop to 2011, and  
18 the values past 2011 are held constant. I guess my question  
19 is whether the utilities would think that the values after  
20 2011 should go back up towards one. I think there is enough  
21 -- there are other arguments that would mark a  
22 transformation, that maybe the 2011 value that we are using  
23 for the forecast period should remain constant. This is the  
24 annual lighting UECs that result from these assumptions, so  
25 you can see from 2004 and 2012, it goes from 1,800 to 1,323.

1 They are different for utility programs, they are different  
2 by utility because of differing assumptions on the 2009-to-  
3 2011 programs that the utilities are providing for CFLs.  
4 This has a basic reduction and use per household compared to  
5 their 2007 forecast of, for PG&E, about 500 kilowatt-hours  
6 per household in single-family, and 265 for multi-family,  
7 about 600 in Edison for single-family, and 300 kilowatt-  
8 hours a year per household in San Diego. And this  
9 effectively drops use per household about 5 percent for the  
10 forecast, which is a large part of the drop in residential  
11 forecasts.

12 For future considerations, we are going to look at  
13 additional lighting surveys. Some of the newer lighting  
14 surveys may provide differing answers to some of the inputs  
15 that we have used. There is a new lighting survey that  
16 should be out next year, it is not going to be available in  
17 time for this forecast; both the PUC and the Energy  
18 Commission are conducting lighting surveys. There is a new  
19 RASS that is in the field right now that we are asking a  
20 bunch of lighting questions about, that will be available  
21 for future analysis. Some of the difficulty of the existing  
22 surveys is that they are done on a statewide level and we  
23 would try to do some of this work, look at impacts, by  
24 utility and housing type. And if you have 800 participants  
25 state-wide, it is hard to look at something like mobile

1 homes in San Diego County because there are maybe three or  
2 four of them represented in the survey. Another item that  
3 we are going to examine more for the revised forecast is to  
4 try and account better for overlap between utility programs  
5 and federal and state building standards, and existing  
6 legislation to try and eliminate double-counting of savings  
7 where possible. So that is it. If you have any questions...

8 COMMISSIONER BYRON: Do we have any questions from  
9 audience members?

10 MS. JONES: This is Jacqueline Jones again with  
11 Southern California Edison. I just wanted to ask about your  
12 last statement about the refined interaction among standards  
13 -- have you done any work at all, or have any detailed plans  
14 on what you are going to do with respect to that?

15 MR. GORIN: We are going to look at in the  
16 commercial sector the continued reduction of lighting EUIs  
17 and how that would be maybe double-counted with existing  
18 utility programs, and probably in the residential sector we  
19 would do that also. That is kind of an attribution problem.

20 MS. JONES: Yeah, which is kind of the meat of the  
21 problem.

22 MR. GORIN: The crux of the matter. If, as we  
23 increase the compliance rate with the commercial lighting  
24 standards which covers all retrofit buildings, or remodel  
25 applications, it is conceivable to me that the utility

1 intervention with the people doing the remodel could be  
2 accounting for the same savings that you would get from the  
3 standards, but the way the accounting is now, the utility  
4 gets credit for those codes and standards compliance. What  
5 we want to do is try to make sure that we are not counting  
6 that savings twice from a forecasting perspective. And we  
7 are going to have to do some greater in-depth analysis that  
8 we have yet to determine that.

9 MS. JONES: No kind of time frame?

10 MR. GORIN: We expect to get that done by the  
11 Revised Forecast.

12 MS. JONES: Oh, well, I will definitely be  
13 interested. Are you going to be working with stakeholder  
14 groups, the DFEEQP?

15 COMMISSIONER BYRON: The working group.

16 MR. GORIN: We will solicit comments from all the  
17 stakeholders on this. And that will probably be a topic in  
18 the June 26<sup>th</sup> workshop, I would guess.

19 MS. JONES: Thank you.

20 COMMISSIONER BYRON: Ms. Jones, before you leave,  
21 maybe you or Mr. Gorin know why is it that Southern  
22 California Edison seems to do so much better in savings from  
23 these lighting programs?

24 MS. JONES: We are very efficient.

25 COMMISSIONER BYRON: You mean your customers are

1 very efficient? Any idea? Tom?

2 MR. GORIN: Not really, but it would seem to me that  
3 they put more emphasis on their savings from their CFL  
4 program than the other utilities. I mean, this is -- to my  
5 knowledge -- is based on the programs as filed with the PUC  
6 now for the 2009-to-2011 anticipated programs, and those  
7 savings are based on the savings for CFLs that are derived  
8 by those programs.

9 COMMISSIONER BYRON: Uh huh, well, that is good.  
10 And, of course, it applies to SCE, as well as all the other  
11 utilities whether or not the assumption that you make in  
12 your analysis that those lighting levels will remain  
13 constant after 2011, whether or not that is true will remain  
14 to be seen. Yes, Ms. Jones? Thank you, Ms. Jones.

15 MS. TEN HOPE: Could you explain the relationship  
16 between slide 8 to slide 9? Slide 8 has the annual lighting  
17 UEC per household, and then slide 9 is the reduction from  
18 the 2007 forecast. So is the slide 8 before or after the  
19 adjustments that you made to the 2007?

20 MR. GORIN: Slide 8 is after the adjustments. Slide  
21 9 is the --

22 MS. TEN HOPE: Isn't slide 9 the subtractions that  
23 you made from the assumptions in 2007, and then that  
24 resulted in the numbers that you show in slide 8?

25 MR. GORIN: Yeah, these are the current lighting use

1 per household numbers that we were using, that we are using  
2 in the current forecast. This is a -- this represents the  
3 reduction from the 2007 forecast in use per household  
4 because of more efficient lighting, so we are assuming from  
5 2011 on that every single family household and PG&E is going  
6 to use 477 kilowatt-hours a year less than they did in our  
7 2007 forecast, because of the proliferation of CFLs.

8 MS. TEN HOPE: But you have numbers going back to  
9 2005, so aren't -- these are adjustments made based on --

10 MR. GORIN: Based on analysis of the 2005-to-2008  
11 program filings that were not included in the 2007 IEPR  
12 forecast.

13 MS. TEN HOPE: Okay, it is getting muddier, but I  
14 will stop there.

15 MR. MESSENGER: Mike Messenger with ITRON. I just  
16 have a quick question for Tom and then a general point about  
17 the DFEEQ with respect to that question. On slides 5 and 6,  
18 you refer to lighting levels and I am assuming that the  
19 words "lighting levels" means UECs. Is that correct?  
20 Because I got lost -- to me, lighting levels means something  
21 different, so...

22 MR. GORIN: In slide which?

23 MR. MESSENGER: Slides 5 and it says, "It assumed  
24 that lighting levels will remain at 2011 levels through  
25 2020."

1 MR. GORIN: Probably since I did not go through the  
2 Taxonomy paper, but...

3 MR. MESSENGER: My next point is going to be related  
4 to the Taxonomy paper precisely for this reason.

5 MR. GORIN: I assumed that the UEC is basically  
6 constant after 2011, which is -- you are saying is different  
7 than lighting levels.

8 MR. MESSENGER: Yeah. Commissioner, earlier you had  
9 asked the question, do some of these differences in  
10 definition make any difference in terms of the bottom line  
11 of the forecast or the accuracy, and I think -- and  
12 unfortunately maybe I am a minority opinion, I think in some  
13 cases it does because people use terms differently and this  
14 is just a good example -- I am not trying to pick on you,  
15 Tom -- but if I were in a different audience and I was  
16 talking about lighting levels over time, they would assume  
17 things like the level of fixtures in the house, or the  
18 amount of --

19 COMMISSIONER BYRON: Lumens.

20 MR. MESSENGER: -- lumens that fall on a different  
21 task, and that type of thing. So "lighting levels" would be  
22 seen as an indicator of structural growth. Here, Tom is  
23 using levels as the total usage per household, which is the  
24 sum of structural growth and any changes in efficiency that  
25 happen over time. So the bottom line point is that, because

1 we have different terms that we use loosely, I think people  
2 misunderstand what is in the Energy Commission's forecast  
3 and the thing to me that is the most important thing to  
4 weigh as a policy maker for the lighting UEC, paradoxically,  
5 is not what is the future penetration CFLs, it is whether  
6 the observed increase in fixtures per household over the  
7 last 20 years, which has gone from something like 15 to 40,  
8 whether that huge increase in the number of fixtures in a  
9 typical house is going to increase post-2012, or whether it  
10 is going to saturate, whether -- I think the current figures  
11 are something like 48 fixtures per house on average for a  
12 new single-family home in California, whether that is sort  
13 of the limit and we are not going to continue to see growth  
14 in the number of fixtures or not. So I would suggest that  
15 it is important to separate out these terms so that you  
16 know, if you are interested in finding out things like  
17 attribution and overlap, to what extent our forecasts have  
18 increased growth in things like the size of the house or the  
19 number of fixtures of both, and how much is there a change  
20 in energy efficiency. This, also, is I think the key to the  
21 answer of the hockey stick question. I think the reason  
22 that you do not see any hockey stick is because the economic  
23 growth effects are swamping the energy efficiency effects in  
24 that period, 2010, 2011, 2012. And depending on what you  
25 assume about how fast the economic recovery is going to

1 happen, you will either see a hockey stick, or you will not,  
2 because the economic effects are bigger in magnitude than  
3 the energy efficiency effects at the margin. So if you had  
4 an indication of exactly what the structure of growth was  
5 there vs. how much changes in efficiency, you would be able  
6 to figure out whether the sought-after hockey puck factor,  
7 or the hockey stick effect, exists or not. But we cannot  
8 tell with the existing data because we do not have, I would  
9 think, a common set of terms that we are using to define the  
10 problem. So that is just my suggestion.

11 COMMISSIONER BYRON: That is good. Mr. Gorin, do  
12 you want to respond? I will take that as a no? And it may  
13 be that the economic effects -- the economic recovery, or  
14 lack thereof in our forecasting, is really swamping a lot of  
15 this hockey stick effect that we are looking for.

16 MR. GORIN: Well --

17 COMMISSIONER BYRON: Oh, going to respond?

18 MR. GORIN: The question of whether the growth after  
19 2011 would be -- would overwhelm the increased efficiency of  
20 new light bulbs is not one that is easily dissected.  
21 Because I notice now, when you go to Costco, there are LEDs  
22 on the shelf, which are purportedly more efficient than  
23 CFLs, so the going from 15 to 48 fixtures and, you know, if  
24 fixtures continue to increase in houses, you would have to  
25 assume that the increase is at a disproportionate rate to

1 the efficiency of the new lighting that is available to get  
2 a higher number after 2012.

3 COMMISSIONER BYRON: Shall we move on?

4 MS. GEORGE: Yeah. Barbara George from Women's  
5 Energy Matters. My question was what factors are you using  
6 for the compliance with codes and standards. Do you use a  
7 across-the-board figure, or do you divide that up in any  
8 way?

9 MR. GORIN: Not currently. We assume that the  
10 penetration level of lighting would be consistent with the  
11 number of CFLs in lighting fixtures that the utilities  
12 provided in their programs. There is still discussion over  
13 how we are going to attribute the new -- the lighting codes  
14 and standards.

15 MS. GEORGE: I see, okay, I actually was thinking in  
16 terms of the other side, the CEC side, not just the IOU  
17 program side, in fact, take the IOU programs away. And you  
18 just, you know, you have got state and federal standards.  
19 Are you assuming 100 percent compliance with those  
20 standards?

21 MR. GORIN: Not currently.

22 MS. GEORGE: What is your factor?

23 MR. GORIN: I do not think we can currently  
24 calculate it to the way this is derived. I mean, basically  
25 the factor we are using is these factors here from 2011,

1 which would be maybe, for residential, it would be what?

2 Twenty to 30 percent compliance?

3 MS. GEORGE: And you are looking at this chart here?

4 MR. GORIN: Yes.

5 MS. GEORGE: Well, there are other -- I mean,  
6 lighting is certainly a big part of it, but what about other  
7 codes and standards?

8 MR. GORIN: Other codes and standards, we are  
9 assuming 75 to 85 percent compliance.

10 MS. GEORGE: Okay. But you cannot come up with an  
11 answer on that for lighting because there is so much that is  
12 broken up in so many ways?

13 MR. GORIN: Compliance is a hard thing to define,  
14 especially for lighting.

15 MS. GEORGE: Yeah.

16 MR. GORIN: Customers have the ability to change  
17 their lighting fixtures after the inspector gets there.

18 MS. GEORGE: That is true.

19 COMMISSIONER BYRON: And does the RASS, the  
20 Residential Survey Data, really limit our understanding of  
21 that, as a result?

22 MR. GORIN: The previous RASS did not ask very  
23 specific lighting questions, the current RASS asks the  
24 number of CFLs and incandescents by room type, so it should  
25 give us a better inclination of what is currently out there,

1 along with some of the more recent studies that are being  
2 done by consultants for the PUC, and consultants for the  
3 Energy Commission through the analysis of the Huffman Bill.

4 COMMISSIONER BYRON: All right. And if there are no  
5 other questions at this time --

6 MS. KOROSSEC: Actually, Commission, we do have a  
7 question on the WebEx.

8 COMMISSIONER BYRON: Go right ahead.

9 MS. KOROSSEC: So we will open up the line.

10 COMMISSIONER BYRON: On the WebEx, can you identify  
11 yourself and ask the question? Are you there?

12 UNIDENTIFIED SPEAKER FROM WEBEX: Oh, am I on the  
13 WebEx here? Okay. I was going to ask --

14 COMMISSIOENR BYRON: Excuse me, would you please  
15 identify yourself?

16 UNIDENTIFIED SPEAKER FROM WEBEX: Oh, I am sorry.  
17 [Inaudible] I was wondering if the staff had factored in the  
18 findings, the preliminary findings, from the CADMUS Study  
19 that pertain to the effects of the nationwide Energy Star'd  
20 partners' CFL Program.

21 MR. GORIN: Not currently.

22 COMMISSIONER BYRON: All right. Mr. Gorin, you have  
23 gone ahead and put us back on time, I see. So Ms. Korosec,  
24 I think we are going to take a break at this point. Do you  
25 need to add anything else?

1 MS. KOROSEC: No, I think let us go ahead and break  
2 for lunch and return here at 1:00 by the clock in the room.

3 COMMISSIONER BYRON: Okay, thank you.

4 [Noon recess.]

5 [Back at 1:00]

6 MS. KOROSEC: Before we start with the next  
7 presentation, we did have one last question on the WebEx  
8 that we did not get to, just before we broke for lunch, and  
9 I will read that real quickly and then have Chris answer  
10 that. From Mohan Niroula, "Will the CEC need further  
11 forecast data submission from the IOUs or POUs for the  
12 Preliminary Forecast that will be released on June 12<sup>th</sup>, or  
13 the Revised Forecast that will be released on August 3<sup>rd</sup>?"

14 MR. KAVALEC: The answer to that is no, we are not  
15 requiring any further forecast submissions. But to the  
16 extent that the utilities revise their forecasts from what  
17 they presented us back in March, we will certainly be  
18 talking to them about their results and comparing them to  
19 our results.

20 Okay, as we discussed a little earlier, this putting  
21 together of the data was a long process, involving a lot of  
22 people, and to put together final numbers in a cohesive  
23 fashion that we could use in the forecast, we relied on Don  
24 Schultz and Nick Fugate, and Don will now discuss the work  
25 that they did to give us final numbers, or at least

1 preliminary numbers that we are using in our draft  
2 forecasts. So, Don.

3 MR. SCHULTZ: Good afternoon, Commissioner. I  
4 cannot resist one first and final déjà vu, it was about 25  
5 years ago when I was in this room, or involved here at the  
6 Commission at the same office, doing similar kinds of  
7 things, and then came back, as you may know, as retired last  
8 fall, and taking a fresh look at stuff from a 21<sup>st</sup> Century  
9 perspective, recognizing that the huge difference, of  
10 course, is of the consequences of the treatment of energy  
11 efficiency and the demand forecasts now are much greater,  
12 much more important than they were back in the day.

13 Okay, Chris did indicate that Nick Fugate is helping  
14 me with this presentation and my agreement with him is that  
15 he will have a chance to take the mike if and when I falter,  
16 but I do not plan on faltering, so...

17 All right, let's see here. Okay, just in general  
18 here, I think these numbers are correct because we kept  
19 adding a few things here and there, but the first three,  
20 just going to show generally the results of the treatment of  
21 energy efficiency just from the IOU programs, as was  
22 mentioned earlier in terms of their impact on the 2009  
23 Preliminary Demand Forecast and, again, this is on a  
24 statewide basis, so although there are a few slides later  
25 back that will show some utility specific data and, in the

1 future, we hope to develop utility specific data for all of  
2 the slides and numeric presentations that we have, but we do  
3 not have those available at the moment. Slide 5, then.  
4 Later, we will start to show, in terms of the energy  
5 efficiency IOU programs, in terms of the impact for each of  
6 the three major IOUs, that is the one slide I said that had  
7 some utility-specific data. Six through 12 gets into the  
8 media things, in terms of trying to communicate, if you  
9 will, to try to describe the process by which we took the  
10 estimates for reductions from various sources, and then  
11 applied our own series of adjustment factors so that we felt  
12 that they fit into the overall demand forecasting modeling  
13 exercise in a manner that will reduce the potential for  
14 either bad results, or misleading, or inconclusive results,  
15 or double-counting, some of the other evils that we are  
16 always trying to avoid. And the final slide, then, has a  
17 few next steps in terms of what we are hoping to do in terms  
18 of improving our treatment. This slide, some of you may  
19 recall from various forms. This is a general overview going  
20 back to some earlier things this morning in terms of the  
21 hockey stick, or the blip, or what happens to our definition  
22 of committed vs. uncommitted, and then there is a trailing  
23 effect of -- there is this blue stripe here -- in previous  
24 demand forecasts, that would have been fairly flat in terms  
25 of the IOUs, similar scale relative to the price effects or

1 to the other types of effects that are captured in our  
2 models. This is considerably larger, this bump here does  
3 reflect our definitional treatment of committed in the sense  
4 that, after 2011, there is assumed known additional funding  
5 for the IOU programs. The reason why it does not drop off  
6 back to zero is for reasons which were mentioned before, is  
7 lingering effects from the measures installed in these  
8 programs here in this time period with -- lights off, again,  
9 but anyway, there is a lingering effect as we apply, or you  
10 see the results of the decay function as we have  
11 characterized it here, so they are continuing into the  
12 forecast period. That is, again, why you do not see until  
13 you start looking at it closer, which is where we are moving  
14 now, the kind of things that you were looking at, at the  
15 larger level, or at the higher aggregated level.

16 This, again, is a blown-up version of that blue  
17 stripe from the previous slide. And this suggests that  
18 there basically were four types of reported effects,  
19 "reported" meaning utility reported to the utilities, and  
20 some of them we captured in different ways through the  
21 approach that we used this time to try to minimize double-  
22 counting, and to accurately estimate the impact on demand  
23 that we are seeing with, again -- and if you look at -- the  
24 reason why there is a big jump, of course, is because, as we  
25 have talked about, as everybody knows, there is a big jump

1 in funding for most of the utilities for the '09, '10, or  
2 '11 period. This is a little bit, well, I do not know, I am  
3 getting into details, too much, at one time; but the point  
4 is that there are four strata here that are represented in  
5 terms of cumulative energy effects from these different  
6 types of different aspects of the utility programs, this one  
7 being those that are subtracted in the summary model, and  
8 this is the post-processing part that was talked about  
9 before. This stripe in here are those that we feel are  
10 incorporated in the sector models and that we tried to  
11 capture in terms of changes in UECs, the important ones.  
12 This rather ominous-looking one here that says "Deferred  
13 Treatment", I will explain that a little bit later, but it  
14 basically means that we are going to -- we did not know  
15 quite what to do with it, but we think those impacts --  
16 which we will talk about later, exactly what fits into those  
17 -- is probably captured in the models, but, you know, it is  
18 going to require some further analysis in terms of better  
19 understanding what the programs were, as well as how they  
20 interact with participation, if you will, interacts with the  
21 programs or with the models.

22 COMMISSIONER BYRON: Mr. Schultz, before you go on,  
23 this may have to do with definitions and Taxonomy, but I do  
24 not know what all these categories are. Can you go into a  
25 little bit more detail and describe what these are?

1 MR. SCHULTZ: These here?

2 COMMISSIONER BYRON: Well, you have got the four  
3 categories on Figure 4.

4 MR. SCHULTZ: Here?

5 COMMISSIONER BYRON: Yes.

6 MR. SCHULTZ: Yes, that is what I was trying to say.  
7 Okay, we are going to come to these a little bit later, but  
8 I can start off here now. This first one here, this top  
9 bar, or this shaded area, it is identified there in a rather  
10 cryptic fashion, says it is the results of the application  
11 of the results of, the application of stats realization rate  
12 to the IOU reported data; in other words, utilities report  
13 their information to the PUC on a regular basis, and that is  
14 sort of the raw data that we have been looking at, they have  
15 done that on an annual basis for quite some time, but it is  
16 reported in a different form and a different time and  
17 everything else. But one of the things that we are doing  
18 now is applying a realization rate to some of that -- to all  
19 of that data, and we will talk about what those realization  
20 rates were. The effect is to reduce the reported utility  
21 impacts down to something more what we believe is  
22 reasonable. And just as an example, and will see later, for  
23 many of the program years, in recent years, we used a  
24 realization rate of .85, which means that 15 percent of the  
25 reported first-year load impacts -- that is another term we

1 will get to -- was discounted, if you will. And so it was  
2 reduced. In the years prior to 2009, we used a .75, I  
3 think, discount rate, or realization rate. And, again, we  
4 will see -- so that the data that the reductions in demand  
5 that are reflected in here, is the results of the  
6 application of that CEC staff factor, if you will, to reduce  
7 the impacts on the demand forecast.

8 COMMISSIONER BYRON: So that is what you used  
9 throughout there, then, now, is 85 percent realization?

10 MR. SCHULTZ: For these three program years. You  
11 will see some other charts that show that we use a .75 for  
12 -- .7 or .75, I forgot which, for the previous years?

13 MR. FUGATE: .7.

14 MR. SCHULTZ: .7, thank you.

15 COMMISSIONER BYRON: Well, of course, I am curious  
16 as to why the utilities might be over-reporting this data,  
17 but --

18 MR. SCHULTZ: Yeah, well, that gets into a long part  
19 of the story of what we did to develop this whole approach,  
20 and that is that what we were doing is we reviewed recent  
21 studies, actual load-impact studies -- is another term of  
22 art -- that actually goes in and takes a look at utility  
23 reported participation and looked at actually how much was  
24 realized as opposed to what was expected when they reported  
25 their first year, or when they reported their targets, or

1 whatever; and there were a number of factors that go into  
2 the realization rate, and those factors, as you will see  
3 later on, we want to refine and apply them on an end use  
4 basis, we had to take some general shortcuts for lack of  
5 time. The general idea was that there seemed to be recorded  
6 data from post-implementation studies, in other words, a  
7 year or two or more after a program was implemented. And  
8 then got people to participate, but consultants were hired  
9 by the Energy Division at the PUC, they went back and looked  
10 critically at the results to see how much of it was  
11 realized, how much of those reported savings. And that is  
12 sort of the conceptual origins of the concept of the  
13 realization rate. It seemed to be, to us, based upon our  
14 review of those many many studies that were done over four  
15 program years, covering this time period, I believe, here,  
16 led us to believe that it is unlikely to be as -- they are  
17 not unlikely to get what they, "they" meaning the utilities,  
18 are unlikely to get in terms of realized reductions in  
19 demand from the programs relative to what was reported.

20 COMMISSIONER BYRON: And does the Public Utilities  
21 Commission -- do they accept those utilization rates? Or is  
22 this an area of dispute?

23 MR. SCHULTZ: The realization rates --

24 COMMISSIONER BYRON: Realization rates.

25 MR. SCHULTZ: Conceptual, I think it has been --

1 well, this is a matter of dispute, quite frankly, as I  
2 understand it, between the Energy Division staff and some  
3 Commissioners. I do not know, Michael, if you want to  
4 elaborate on that at some point -- you do not want to  
5 elaborate? And a lot of this -- well, I mean, we can get  
6 into that if you want to later in terms of what, at least  
7 from an outsider -- I used to be an insider over there, but  
8 now I am an outsider -- anyway, in terms of what is involved  
9 with that dispute. It is one of the reasons why, I think I  
10 can say objectively, there has been a delay in the final  
11 adoption of the program budgets and portfolios for this year  
12 is because there was so much dispute associated with how  
13 much was realized in the prior cycle of '06-'08. Is that a  
14 fair statement?

15 COMMISSIONER BYRON: If you would not mind going  
16 ahead and just briefly describing the other three  
17 categories, too?

18 MR. SCHULTZ: Yeah. The other one, again, which was  
19 mentioned before and we will get into a little bit later  
20 here, we took the -- depending on the end use and the  
21 program, and everything else in the year -- we took the  
22 reported impacts, and "impacts" in this case would be sort  
23 of first-year impacts, which is basically a function of how  
24 many widgets were installed and what those widgets were, and  
25 how much per widget was reduced, or was saved, if you will,

1 and in some cases, to the extent we could incorporate those  
2 impacts as reported through our end use forecast models, we  
3 would try to do that; and we would incorporate them by  
4 increasing the penetration of the measures to change the  
5 UECs -- as going back to some of the earlier presentations.  
6 And in other cases, we were confident that that was the best  
7 way to treat these reported impacts, so we put them on a  
8 different dataflow processing, which we will talk about a  
9 little bit later, and we subtracted them off of the raw  
10 model results, or through the summary model; in other words,  
11 terms that Chris, for example, is using as post-processing  
12 kind of thing. There are different ways to have the same  
13 effect, and that is to account for them, but accounting for  
14 these effects in a different way than what -- than the other  
15 way. Now, which of these is more superior or more credible,  
16 again, gets into -- involves a lot of complex issues about  
17 the interaction of how the models work and how the end uses  
18 are developed, and how they change as a result of other  
19 factors such as price and market and such, as building in  
20 standards. So this is, again, another detailed area that  
21 you will get a little bit better idea, hopefully, as we go  
22 through the flowcharts here, in terms of how we were  
23 processing them. And if you have some further questions, we  
24 will take another crack at it then.

25           Okay, this is another look at the differential

1 treatment by utility, the three categories, and that is  
2 through the summary model, through the sector models, or  
3 deferred. Okay? And it is the sum of those three lower  
4 from the previous charts, so again we are sort of drilling  
5 down from the larger things into more specific type of  
6 results here. You can see that we made fewer adjustments,  
7 or fewer reductions, if you will, or a more fuller  
8 accounting of the reported impacts from San Diego Gas and  
9 Electric relative to the other two utilities. Again, there  
10 are a lot of reasons for that and some of which we may be  
11 revising when we get into more precise application of some  
12 of these concepts in our approach when we do the revised.

13           Okay, let's get back to some explanatory notes, so  
14 maybe a review of what we just talked about, as well as  
15 maybe some additional terms that we have not talked about.  
16 So these are explanatory notes for charts on slides 4 and 5.  
17 And, again, this is just a summary of the way in which the  
18 conventions at the PUC are and how energy savings loosely  
19 described, in addition to costs, which is what their budgets  
20 are all about, how they typically report these things, and  
21 then there is this term in the energy efficiency world known  
22 as free riders, it is not just energy efficiency, but this  
23 gross vs. net, and there has been different ways to measure,  
24 or account for, or to estimate, or to adjust growth, and  
25 that is if you multiply, like I said in my earlier example,

1 the number of widgets installed, if you can tie the dollars  
2 spent to those widgets, that would be a gross number, right?  
3 Then there is a question of, well, how many of those  
4 participants in that program year for that particular  
5 program would have done it anyway, and then you get sort of  
6 the free riders, and then you end up with net, and that  
7 would be gross minus the free rider, which is typically  
8 expressed in reporting conventions as a net to gross ratio,  
9 which typically has been about .8, which means that 80  
10 percent of participants, as an example, that has not been a  
11 universally applied net to gross ratio, but this is one way  
12 to capture or reduce the effects of what most people from a  
13 common sense standpoint know as free riders, but nobody that  
14 I am aware of in a purely scientific or rigorously applied  
15 study has been proven to be shown what that free ridership  
16 factor is on a regular basis, or how universally it should  
17 be applied. Anyway, so these are just some of the terms  
18 that did enter into it when we reviewed the reported  
19 impacts. You know, one of the things that we look for is  
20 whether they reported on a gross or a net basis, and that  
21 then would help to shape which process, how we processed  
22 them through which aspects, which of our approaches, in  
23 combination with some of the other things we looked at.  
24 This first year, I mentioned before, and that is something  
25 that is, I think, self-explanatory, but it is the estimated

1 load impacts -- again, if you multiplied whether it is on a  
2 net or gross basis the number of widgets installed times the  
3 impacts per widget, which is supposed to be a value that is  
4 carefully scrutinized, then you would get the first year  
5 impacts. Then, if you wanted to know how long those impacts  
6 would last, conceptually you would multiply that by the  
7 useful life, if you wanted a lifecycle; if you really wanted  
8 to know what the lifecycle benefits of this, and most people  
9 understand as opposed to, for example, some demand response  
10 programs where there is no real lifecycle impact, it is one  
11 year, for energy efficiency measures, everybody -- most  
12 people would assume that the installed measures will last  
13 for some period of time. Right? We also know that in some  
14 cases, some of those measures will be thrown away, some of  
15 those measures will burn out at some point, all those other  
16 things come in here. But the term of art here is the  
17 "useful life" or "effective useful life," and if you wanted  
18 to just take a straight -- and if you wanted to account for  
19 the full benefits over time, from measures installed in Year  
20 1 or Year 2, or whatever the year it is, then you would do a  
21 simple mathematical or conceptually you would get what is  
22 known as the "lifecycle impacts" and that is the impacts  
23 over the life of the measures, multiplied by the first year  
24 impacts. These are again conceptualized in simplified terms  
25 here. "Ex ante" or "ex post" is another term of art that

1 you will see in regulatory filings, or comments by parties  
2 on filings. And again, I go back to some of the other  
3 terminology. I used to think this was clearly understood  
4 and clearly used, and consistently used; I am not so sure  
5 that that is true much anymore, it is just maybe my own lack  
6 of paying attention to recent years. But, to me, "ex ante"  
7 was, and maybe still is, correct me if I am wrong and  
8 whether there has been a change in a convention of the  
9 meaning of these two terms, "ex ante" used to be what the  
10 utilities would report when they applied for funding for a  
11 particular year, and this is "ex ante" by definition, by  
12 using -- I guess it is Latin -- what they think is going to  
13 be the impact before they actually implement the programs.  
14 "Ex post" comes in various shades and we will talk about  
15 that in different kinds of it, but "ex ante" used to be sort  
16 of what they estimated at the beginning of the year, what  
17 the impacts would be at the time that they estimate what  
18 their budgets are necessary for. "Ex post" gets into  
19 another little murky area, in some cases it mean -- the  
20 distinction there, it used to mean there could be different  
21 kinds of -- maybe it still does -- different kinds of ex  
22 post reporting. And again, typically a year, either during  
23 the course of the year, or in the annual program year  
24 context, at the early part of any given year, the investor-  
25 owned utilities have been required to report what they

1 accomplished in the prior year. Now, that is based only  
2 upon where they can document spent money, right? In other  
3 words, that is a first part or first dimension of ex post.  
4 That does not mean -- and one could, and there are some  
5 cases now, verification that the money -- that they say they  
6 were spent -- was spent on those widgets, okay? That is  
7 something that has been done at the Commission and various  
8 regulatory proceedings on a regular, but sometimes ad hoc,  
9 basis. That is different from a full-on doing a very  
10 verification report, or a study which may involve, for  
11 example, anything from an on-site study or to an actual  
12 detailed load impact study which measures pre- and post-  
13 consumption, for example, of a group of participants. So  
14 verification is the final dimension of ex post, but there  
15 could be adjustments made at each stage of the ex postness,  
16 if you wanted to, we did not get involved with too much of  
17 those kinds of nuances, and I am not sure whether or not  
18 they are still relevant. But it is the verification studies  
19 that I referred to earlier, that were completed and that  
20 have been completed for different program years and  
21 different times. When we get to some historical charts, we  
22 will talk about when those studies were done, when they were  
23 not done at all, and the nature of those as the terms and  
24 conditions, or the rules and regulations for measuring the  
25 effects of these things have ebbed and flowed over the

1 years.

2           So once we sort of gathered all this data from a  
3 variety of sources and, again, ITRON was very helpful in  
4 terms of collecting this and converting it into a form that  
5 we could further assess. In other cases, for different  
6 program years, we went beyond what they had given us, as we  
7 will talk about later. And then we had to make a decision  
8 on how to treat those reported effects. Realization rate  
9 was step one, we get into the deferred treatment kind of  
10 thing if we think it is an overlap with whatever else, and  
11 then we get into the net vs. gross considerations, and then  
12 we get into, finally, some decay functions associated with  
13 the reported savings, which we will get into more detail in  
14 terms of how that works.

15           This category, as you go back, if you remember, if  
16 you go back to this chart here, you will see the deferred  
17 treatment, that is that green area, that is fairly large.  
18 And we basically -- I am not going to use the word  
19 "ignored," we did not ignore it, we just deferred judgment,  
20 if you will. And one of the things we hope to do is to try  
21 to figure out better how to account for those, if they are  
22 not already accounted for, through our modeling procedure.  
23 This, again, is the part of the analytical process that is  
24 started, but not complete. But if we decided that those  
25 were, for example, instead of deferring them, if we decided

1 that everything else being the same, if we took those  
2 deferred treatment impacts, which we will see later are  
3 fairly substantial on a quantity basis, and said, for the  
4 final forecast, they should be included as something  
5 incremental to, something that we did not get in the models,  
6 then that would further reduce the demand forecasts,  
7 everything else being equal.

8           Okay, this is just sort of a stepwise-type  
9 description or summary of what I was trying to describe  
10 earlier, just to show you which pathway it goes, and this  
11 here is where the deferred treatment, or treatment deferred,  
12 is. And the "yet" there suggests that we may, upon further  
13 review, or a review that will be underway, continue to put  
14 it into one of these other two categories -- or for  
15 treatment. This gives you an end use by end use sort of  
16 accounting for what fit into those three approaches, and you  
17 can see the end uses here that we felt were best treated by  
18 increasing the penetration of the measures associated with  
19 those end uses in the models themselves. The ones in the  
20 middle category, which is a fair amount, again, is those  
21 that we felt are best done by subtracting the impacts that  
22 we had collected and then discounted by reducing in the  
23 summary model. Then we have the not accounted for category  
24 here on the right-hand side again.

25           Okay, this is in tabular form, a matrix for those of

1 you -- we are on slide -- where did the numbers go -- we are  
2 on slide 10, thank you. This again tries to summarize  
3 pretty much everything I think I said before, or alluded to  
4 in the flowcharts, puts it in the matrix and aligns it with  
5 different program years to show them more completely in  
6 document the sources that we started off with, the ones in  
7 the kinds of adjustments and assumptions we made in order to  
8 get to the final effects that we put into, and that are  
9 reflected in, the preliminary demand forecast. And you can  
10 see here how it is sort of a patchwork, but it is a  
11 systematic, we hope, and fairly comprehensive and thorough,  
12 and we are quite sure it was reasonably done in terms of why  
13 we decided to use which of these ratios, or which of these  
14 factors, or which of these sources for these program years.  
15 So that is just in a matrix form a summary of what the  
16 documents -- the process that we undertook and the  
17 assumptions that we used at various stages of the adjustment  
18 process.

19           This is, again, a little bit more detailed, or  
20 reconstructed information here, to show again maybe more  
21 clearly, it breaks it out in different ways, basically to  
22 distinguish them between residential and non-residential,  
23 and the type of a treatment we used, and then the end uses  
24 that fit into those treatment categories and sectors. So,  
25 again, the struggle is to get as much -- an accurate and

1 accounting at the end use level as possible, because that is  
2 the virtue of the end use demand models, is that they can  
3 account for changes that are going on in other areas,  
4 whereas a larger, sort of econometric-type model will, by  
5 definition, not have that type of granularity. So this is  
6 our summary, again, of how we have evolved to this point.  
7 This is a general summary at this point, again, of where we  
8 are in terms of the different types of treatment by sector  
9 and by end use and measure category.

10           This is the same matrix -- I guess we are on, what,  
11 12 now, whatever we are -- I do not know why the page  
12 numbers are not showing up here -- in any case, this puts  
13 some data for program years 2003 through 2007 using this  
14 previous structure that shows which -- so this gives you  
15 some general idea; again, it is aggregated by statewide, you  
16 can get the relative importance of different end use  
17 categories and how they were treated. So if there are  
18 persons out there who think that we maltreated your favorite  
19 end use through this time of summary chart, please, those  
20 are the kind of comments that we like to have, and tell us  
21 how to treat it better. We do not want to maltreat any end  
22 use. Anyway, so those end uses, by the way, that you see in  
23 the middle category there, say, I think are a complete  
24 accounting of the end uses, it is not a perfect match with  
25 the end uses that are embodied in our model, although in

1 some cases, for example, these are combined. So like CFL  
2 and lighting, non-CFL at the top, residential, the sum of  
3 those two would go into and be taken into account for in our  
4 newly created residential lighting end use. So that is why  
5 we have got sort of a cross-walk here going on between  
6 measures and end uses. But most of the end uses identified  
7 here would pretty much line up with the end uses, or the  
8 sub-models, if you will, that are treated in the demand  
9 forecasting modeling exercise.

10           And then one final chart. This is just a summary,  
11 but let's go back to this. I added this as an Appendix  
12 here. This was not in the original posting, but it is  
13 included here. This is a blown-up version of the one we  
14 just looked at before, and hopefully we will be providing  
15 even more detailed versions of this. This is the same  
16 structure in terms of our treatment by category, or by  
17 sector, and by end use, a measure category again, but it has  
18 got some data here. So, among other things, for example, at  
19 the bottom we have got some totals here that break out  
20 residential vs. non-residential. This is for program years  
21 '98 through 2011. So it includes -- and this again is to  
22 again remind everybody, the title says it is gigawatt-hours,  
23 it is just the first year impacts, it is not the cumulative.  
24 So you will see them go up and down. You will see them  
25 disappear. If these were all cumulative, you would not see

1 much, if any, kind of sharp drops up and down, depending on  
2 -- this is all reported first impacts after applying the  
3 realization rates. So, again, if any of you out there who  
4 have your favorite end use, and you think we are maltreating  
5 it, and you want to know where we started from, from the  
6 original unadjusted non-realized whatever else, multiply  
7 these by the realization rates that were mentioned before,  
8 and you will get the full-on same so you can get an idea of  
9 the magnitude of the kind of reductions that are going  
10 through, as well as how they were treated. Like I say, we  
11 were hopefully in the near term will continue to break this  
12 down, for example, this kind of detail, and re-think it, and  
13 develop more refined improvements for the various factors  
14 that we talked about before. For example, this table can  
15 and should be reconstructed a lot of different ways. This  
16 is all done at the statewide level and that could be  
17 misleading. There could be some problems, if you will, that  
18 will appear, and certainly -- my guess is, not "certainly"  
19 -- I would hope that all you energy efficiency program  
20 managers at the utilities would recognize how realistic  
21 these, and necessary these adjustments are, but if, per  
22 chance, you think they are not, we will be providing data  
23 hopefully soon, that will supplement this, for example, this  
24 by utility program, and for these program years. And also,  
25 at that point, people can start to reorganize in whatever

1 they want, for example, focus on just the lighting component  
2 if the lighting is what you really care about. And the CFLs  
3 -- I should mention maybe a little bit about what non-CFL  
4 lighting is, particularly in the residential sector, or in  
5 the non-residential sector, which is where it is. It is  
6 typically and predominantly has been, and is basically  
7 replacing fluorescent tubes in commercial buildings, from  
8 going to T-12 to T-8, or T-10 to T-6, I am not sure what the  
9 various standards are, or the various technologies that are  
10 available. But this is an ongoing thing that is happening  
11 in terms of technology evolution, particularly for  
12 commercial buildings. All the fluorescent tubes that are in  
13 there. These are fundamentally different than the compact  
14 fluorescents, as you can all imagine, just from common sense  
15 in terms of their durability, how long will they last. You  
16 can pretty much assume that, once some energy facility  
17 manager goes in and does a replacement of the T-8s, let's  
18 say, as opposed to what was in there before, that they are  
19 probably going to stay there until that building is  
20 demolished or renovated, or that floor space is, or whatever  
21 else, as opposed to compact fluorescents which may appear  
22 one day and disappear the next. So this is an inherent  
23 difference between CFLs and -- I mean, these are fluorescent  
24 technology, but they are not compact fluorescents and they  
25 are much more built into, they have a longer useful life,

1 whereas CFLs post-insulation studies shown have a rather  
2 dubious history of either staying or not staying. People  
3 take them out or not. That kind of thing does not happen as  
4 much with non-CFLs, particularly in commercial buildings.

5           Okay, let's go back here to the summary again, just  
6 by way in terms of what might consider these, or add these  
7 to the list of next steps that we are hoping to undertake in  
8 the very near term. So hopefully these will serve for a  
9 subsequent discussion, even today, and for your post-  
10 comments in terms of if you have comments and if you can  
11 organize them along the lines of what we are suggesting  
12 here. These are the areas that we are looking for comments  
13 on. And the top of the list here is, again, what we are  
14 hoping to do, this is not going to be an easy exercise  
15 because of the ever-changing reporting requirements over the  
16 years at the PUC, but we hope to develop end use specific  
17 adjustment factors, whether that is a realization rate, or  
18 any of the others, but especially realization rates. It  
19 could very well be that the data will show, if we get some  
20 more time and resources to review the completed verification  
21 reports, it could be that something more specific to end use  
22 or a utility for a group of program years is more effective,  
23 or more reasonable, whatever word you want to use there, in  
24 order to put it down the right path there, or to get the  
25 more predictable outcome, or useful outcome, I should say --

1 more reliable outcome.

2           Again, as mentioned before, that we have not done  
3 much -- we have not done anything relative to 2007 IEPR in  
4 terms of trying to account for the POU programs. And we do  
5 intend to get something in that. Whether we apply, or how  
6 we apply, or if we apply the various types of adjustment  
7 factors we did for the aggregate programs, if we apply them  
8 to the POU programs, this is again going to be a significant  
9 area of activity, and it is not clear whether we should use  
10 all of them, or the same ones, or none of them. But this  
11 is, again, another area of investigation we are hoping to  
12 turn to soon. We have not done anything to account for the  
13 low income energy efficiency programs for either the IOUs or  
14 the POUs in the demand forecasts. So if, for example, we do  
15 get around to re-thinking what those impacts from  
16 weatherization, or whatever it is, in low income programs,  
17 in the proposed budget cycle, or recent ones, then the  
18 demand forecasts would be reduced further than what it is  
19 now, accordingly. We have not done much, or we have not  
20 shown the results of what we have done or could account for  
21 in the other demand site category of the California Solar  
22 Initiative, or the Self-Generation Center Program. We were  
23 hoping to make some improvements there in terms of how we  
24 treat those impacts in the historic, as well as the forecast  
25 period.

1           Okay, I think that is pretty much it in terms of the  
2 general comments. Any questions?

3           COMMISSIONER BYRON: Mr. Schultz, you left yourself  
4 -- I should say -- there is a lot of time on the agenda,  
5 assuming that there was meant to be some lively discussion  
6 around this topic.

7           MR. SCHULTZ: Oh, I cannot imagine it is  
8 controversial.

9           COMMISSIONER BYRON: So I will remain out of it, and  
10 you go right ahead and let's see if we get some questions,  
11 and you can provide some answers here.

12          MR. SCHULTZ: Okay.

13          MS. TEN HOPE: I will ask a couple of questions just  
14 to get people warmed up here. You were talking about the  
15 POU programs and there was a question of whether realization  
16 rates would be applied or not --

17          MR. SCHULTZ: Or whether the same realization rates,  
18 or whatever, yes, right.

19          MS. TEN HOPE: Okay, so there is a plan to do  
20 realization rates? I guess that is my first question.

21          MR. SCHULTZ: No, I guess what I am trying to  
22 suggest is that is an important adjustment factor, as you  
23 can see, it is right at the top and it is, as we have used  
24 it, potentially a big hit. The question that we have to ask  
25 ourselves, and we are only at the beginning stages, we want

1 to look at the comparability in program design, let's say,  
2 between -- take SMUD, really, those are the only two big --  
3 not the only two, but the two big POU's, right? And SMUD has  
4 actually some history of some programs that may or may not  
5 look almost identical to PG&E's programs, okay? If we used,  
6 for example, a realization rate for PG&E's CFLs, and it  
7 looks like the same program design and everything else was  
8 going on for SMUD, and SMUD is not applying the realization  
9 rate, then we may say, "Well, what is different about --  
10 what makes SMUD so special?" And then I guess we probably  
11 might be tempted -- and this is just an example -- might be  
12 tempted to apply the same realization rate for CFLs to SMUD  
13 program as we did for the PG&E program. Again, that is just  
14 an example. It is not going to be easy, there is always  
15 danger in transferring kind of things, but the realities are  
16 that the POU's do not have a solid history of doing the kind  
17 of ex post load impact studies, ex post verification  
18 reports, they just do not. It is a whole different kind of  
19 set of rules and protocols for measurement and evaluation  
20 that applies to the POU's as opposed to the IOU's. So on the  
21 one hand, in terms of the demand forecasts, and wanting to  
22 make it as utility-specific as possible, and as useful as  
23 possible, and if we have reason to believe that in the  
24 investor-owns for comparable programs the savings need to be  
25 adjusted downward in order for reality to be approximated

1 better, then we would be remiss in not doing something to  
2 make similar adjustments to the POU programs. But, like I  
3 say, this is at the very beginning of that process and it is  
4 going to take a long time to come up with some reasonable  
5 adjustment factors, and hopefully this will be worked  
6 through so that we will have something better, or some kind  
7 of comparable treatment, if you will, between the POUs and  
8 the IOUs in the absence of a convincing argument that we  
9 should not.

10 MS. TEN HOPE: Thank you.

11 MS. KOROSSEC: I think we have a question on the  
12 WebEx from Rob Rubin. Rob, go ahead.

13 MR. RUBIN: Hi. Can we go back to slide 3, I think  
14 it is, Don? Yeah, that one, thanks. Okay, so the blue  
15 line, the IOU EE Programs that seem to trail off beginning  
16 about 2009, and because of decay, the new rules with the PUC  
17 are we have to maintain that cumulative effect if the new  
18 goals come out, you know, that just gets us to zero, right?  
19 And it is over and beyond that for the future goals. So  
20 even if you were to assume funding for these programs were  
21 to stop in 2012, it seems to me we could have in 2011, it  
22 would still be there throughout. I mean, and that is  
23 probably not true, that we will stop EE in 2012.

24 MR. SCHULTZ: When you say the "new rules", Rob, are  
25 you talking about the rules that are pending for final

1 adoption for '07 -- I mean, '09 through '11?

2 MR. RUBIN: No, beginning with the [inaudible] cycle  
3 is when this cumulative effect --

4 MR. SCHULTZ: When?

5 MR. RUBIN: The 2006-2008 cycle.

6 MR. SCHULTZ: Right.

7 MR. RUBIN: Is when this cumulative concept came  
8 apart. And what happens, so, let us assume -- I cannot tell  
9 what that number is in 2010, but whatever you give us for  
10 that, okay, great, so --

11 MR. SCHULTZ: No, but -- go ahead, finish.

12 MR. RUBIN: Yeah, I understand those are first-year  
13 impacts, but so let's just say in 2008 that top number is,  
14 what, 1000 [inaudible], let's just say for discussion, let's  
15 say that was the all IOU programs; what would happen is, in  
16 2009, if our annual goal for the utility is a 50, we would  
17 have to -- anything that decayed in that 1002 would have to  
18 be made up in 2009 before you started counting towards that  
19 50.

20 MR. SCHULTZ: No, I understand the concept, and let  
21 me use your question as a way to zero in on something,  
22 hopefully, illuminating kind of things. This table, again,  
23 does not account for the decay. But if you look at these  
24 three columns here, the most recent ones that are up for --  
25 they are all constant. Right? This assumes that the annual

1 budgets that are up for whatever they get to be, are going  
2 to be implemented successfully, as predicted, every year the  
3 same. We know that ain't going to happen. But we do not  
4 have any basis for an alternative assumption. We know the  
5 participation rates for most of these programs are going to  
6 be different. Excuse me?

7 MR. RUBIN: I am with you on that.

8 MR. SCHULTZ: Okay, but hold on, Rob, a minute.  
9 Just a second. If you looked, then, at the previous cycle,  
10 the one that you say that you had this obligation to  
11 whatever else, this is '06 through '08, and now look at the  
12 totals if you will. There is a very uneven -- you will see  
13 that '06, the first year of that cycle, is 1,000 gigawatt  
14 hours, and the third year of that, when you were catching  
15 up, presumably, in various forms, was 3,000. The annual  
16 average probably would have been, you know, somewhere, well,  
17 average them by 3 if you want. Okay, so I am not quite sure  
18 how we could, or should -- and this is, again, if you have  
19 some suggestions -- how we could or should account for the  
20 phenomena that we know every year is going to be different  
21 than what is budgeted for. And I have lost track of the  
22 funding flexibility rules that you may be operating under.  
23 Go ahead.

24 MR. RUBIN: Would you go back to that graph on 3?  
25 Maybe I am misreading that graph. Isn't that graph

1 cumulative?

2 MR. SCHULTZ: Yes, it is.

3 MR. RUBIN: It is, okay. So what I am trying to  
4 suggest, and maybe I am missing your point here, Don, is in  
5 2011, we are at some level, right?

6 MR. SCHULTZ: Yeah.

7 MR. RUBIN: Okay, so we need to maintain -- if that  
8 is what you are suggesting that the IOUs are going to be  
9 bringing in, anything -- that is going to be a minimum going  
10 forward as long as there is energy efficiency --

11 MR. SCHULTZ: Okay, so you are saying that top part  
12 of the shaded blue line should be equidistance from the  
13 bottom part of that line, it should be flat.

14 MR. RUBIN: Yes. Yes.

15 MR. SCHULTZ: Then, again, that would be under the  
16 assumption that you have met your obligation to achieve  
17 that.

18 MR. RUBIN: That would just assume that energy  
19 efficiency programs are going to be funded through 2017 and  
20 the IOUs only get back to zero.

21 MR. SCHULTZ: Wait a minute, you said something just  
22 contrary. Well, as it stands now --

23 MR. RUBIN: Michael Wheeler is in the room, correct?

24 MR. SCHULTZ: Yeah.

25 MR. RUBIN: I do not mean to put you on the spot,

1 Michael, but am I getting this right or not? Or maybe I am  
2 not clear.

3 MR. SCHULTZ: He is coming up to the mike to clarify  
4 everything.

5 MR. RUBIN: Thank you.

6 COMMISSIONER BYRON: And, Mr. Rubin, it would be  
7 helpful if you could identify what organization you are  
8 with.

9 MR. RUBIN: [Inaudible] Gas & Electric.

10 COMMISSIONER BYRON: Thank you.

11 MR. WHEELER: So this is Michael Wheeler. I think  
12 the confusion comes from -- so, Rob, you are correct that it  
13 is Commission policy that we have these cumulative savings  
14 goals, and where we have, I would say, a disagreement is  
15 that we expect that utilities will meet their cumulative  
16 savings goals throughout the period that goals are provided.  
17 So in this case, we have adopted goals for utilities through  
18 2011, and we have been talking a whole lot at the Commission  
19 lately about what the ability is to actually meet cumulative  
20 savings goals. At the CEC, as I understand it -- and, Don,  
21 correct me if I am wrong -- is that we are only looking at  
22 the committed, excluding any utility programs going forward,  
23 the effect of any utility programs going forward, ignoring  
24 that goals exist and that it is highly unlikely that utility  
25 programs would not be funded. That is part of the

1 uncommitted. And it sounds like that is the disagreement  
2 that we are having right here.

3 MR. SCHULTZ: So the reason it does not drop off is  
4 because we do have some residual decayed effects going  
5 beyond the first year impacts. The reason it does not stay  
6 flat is for precisely the reason we have decided as a matter  
7 of policy to retain the convention we have had in the past,  
8 and that is that only committed resources defined as that  
9 which is authorized, and we are in a little bit of a gray  
10 area this time, I agree, compared to that hard core  
11 definition.

12 MR. RUBIN: Okay, I understand that. So that is  
13 clear for me. Thank you. Let me ask you now the last  
14 question and then I will move it over. So the next cycle,  
15 when we have to go -- let's say we bring 100 megawatts, but  
16 30 of it had decayed previously, so we would only be  
17 claiming 70 because 30 just got us back to zero. How is  
18 that -- are you now going to go ahead and add 100 to this  
19 graph on the following year because that 30 is not in it?  
20 And the utility is only reporting 70? That is where I am  
21 getting confused going forward how you are going to account  
22 for that deficit the utility --

23 MR. SCHULTZ: -- through the intermediate phase of  
24 sorting out the incremental uncommitted forecast, which is  
25 where we would start to pick up that difference. Once we go

1 where we are going to have to reconcile, as has been  
2 mentioned before, reported goals, and what does that goal  
3 mean that was established a year or two ago, relative to  
4 what we are now accounting for more accurately from an  
5 updated base. These are the ongoing analytical challenges.  
6 We are not going to get rid of what we believe is some  
7 residual through some estimate of the useful life on the  
8 demand forecast. We recognize that is a realistic effect  
9 and it will spill over into the uncommitted forecast, if you  
10 will. But those will not be reported and attributable to  
11 the uncommitted, they will be subtracted from this little  
12 area here, from 2011 on, would come out of -- it would not  
13 be added to -- the uncommitted portion of the forecast; at  
14 least, analytically, that is the way I seem to see it  
15 folding out. Now, those of you who are paying attention to  
16 all these nuances, if you think that is wrong, let us know  
17 and please let us know why.

18 MR. RUBIN: Okay, thank you.

19 MR. TOTH: Hello, my name is Phil Toth, I am with  
20 Southern California Edison. I am up here with Jacqueline  
21 Jones, or I was up here with Jacqueline Jones. I have a  
22 question regarding page 10. First off, thank you for  
23 putting this out here so we could look at it and get our  
24 arms around what is happening within the model. Basically,  
25 I have two questions. They are confirmation questions. And

1 I am not sure they are going to be answered here. Now, on  
2 the row that says the gross ratios --

3 MR. SCHULTZ: I am sorry, where are you? I am  
4 sorry? Oh, page 10? They should be the same, but like I  
5 say, I cannot see what slide number this is up here.

6 MR. TOTH: So data sources and assumptions.

7 MR. SCHULTZ: That one.

8 MR. TOTH: Under the row that says "note the gross  
9 ratios" and it has the assumed 80 percent net to gross, and  
10 then it goes into net to gross provided by ITRON, I assume  
11 that is going to come out of EM&V studies, and some other  
12 modeling, or what not, my question about net to gross ratios  
13 is, what made up these numbers? I see you cited a source,  
14 but not the numbers, and a few things like that, so I have a  
15 few more pointed questions, or data needs to assess if this  
16 is reasonable. And underneath that, realization rates, now  
17 from 1998 through 2008, it is assumed 70 percent; I would  
18 like to know how that was calculated. And conversely, from  
19 2009 to 2011, it is assumed 85 percent. In a world that  
20 realization rates and that the gross ratios are going down,  
21 I would just like more information on how those were  
22 derived.

23 MR. SCHULTZ: Would you like that now or -- is this  
24 a data request?

25 MR. TOTH: Yeah, I am not sure if you are going to

1 be able to address these now, but I wanted to get them out  
2 here.

3 MR. SCHULTZ: General statements that went into this  
4 as a somewhat collective judgment, based on various folks  
5 who were involved with this, the 80 percent net to gross  
6 ratio is what I recall from my fading memory back in the day  
7 when that is what the Commission told PUC utilities when  
8 there was endless studies and analyst time being wasted on  
9 trying to measure the immeasurable perimeter of free  
10 ridership, and I believe the Commission told, for certain  
11 program years, if not all of them, through the 1990s to use  
12 .8 as the net to gross ratio until there was a study that  
13 convinced otherwise. Subsequent to that, there were some  
14 studies that were done that showed a net to gross ratio that  
15 was different for different sectors, it went all over the  
16 place, and I do not know whether it ever got re-fixed, or  
17 reapplied, or whatever else. So that takes care of that  
18 one. Again, I do not know -- I am not quite sure what --  
19 maybe Michael Messenger will talk about the net to gross  
20 ratio what were used from ITRON, Nick did it from the  
21 workbooks, and, again, I am not sure exactly what the values  
22 were. And again, for lack of a -- because of the ever-  
23 changing nature of this perimeter, and again for lack of  
24 understanding on what could or should be done for '09  
25 through '11, we just resorted to another best judgment, or

1 our judgment at this time. Quite frankly, I mean, I do not  
2 know, I have been doing this as long as probably anybody or  
3 almost as long as anybody, and this is just one of those  
4 things that you want to have one, but everybody knows it is  
5 greater than infinity and less than or more than 1 and less  
6 than infinity, or some such thing. And studies get done,  
7 tons of them are done, and I had a chance to review them  
8 all, some of the studies that were done to collect  
9 information are basically convincing for one program year,  
10 but not necessarily true elsewhere. And so the  
11 transferability of things, I do not know, it is just one of  
12 the factors that is out there. It is a measurement  
13 evaluation issue that has been around forever, and it will  
14 be around forever. And, you know, a case could be made that  
15 it should be 1.0 and just stop it. But that determination  
16 has not been made, so...

17 MR. TOTH: And the realization rates?

18 MR. SCHULTZ: The realization rates, again, the  
19 source of the -- I will call it the need for a realization  
20 rate, although I am not sure others would agree with that  
21 choice of terms, arose out of the -- well, I do not know how  
22 many dozens of verification reports that were done for these  
23 programs, right? Different -- they were done -- and I am  
24 not going to say ad hoc in a ad hominem sense, in the sense  
25 that it was not, you know, it is just that you cannot do --

1 it is extraordinarily expensive to do a full-on verification  
2 report for every program year, for every utility, every you  
3 know, it just gets extraordinarily expensive. So the  
4 Commission has done what it has done in the past, they say,  
5 okay, we are going to do a selective year, a selective  
6 sample by different utilities, whatever else, and hire a  
7 consultant to do a full-on investigation of what really  
8 happened with that amount of money that was spent. And the  
9 different consultants that came through, oh, Tech-mark, was  
10 that the consulting group, Chris, is that right, that was  
11 hired by the Energy Division, or Mike, to oversee these  
12 consultants who did these verification reports, came up with  
13 the realization rates -- am I being correct here, Mike? Is  
14 that about right? And they came up with different  
15 realization rates for different programs than others. Okay?  
16 And we did not have the time to go back and realign all  
17 those to the end uses that we ultimately want to get to, so  
18 again just said, "Well, time is up. We've got to do a  
19 forecast, we can't talk about this anymore, we've got to  
20 choose a number." We thought about it deliberately for, I  
21 do not know, quite some time and chose a number. Again,  
22 these are the kinds of parameters, if you will, that we want  
23 to review and reconsider. And two observations again,  
24 please give us a reasoned explanation of why you think for a  
25 program year, or whatever else, should be different than

1 that, whether it is a net to gross ratio, or all these other  
2 assumptions. You know, if you want to contribute to this  
3 debate, give us what you think it is and why. The other  
4 thing I want to conclude with here is, and this goes back to  
5 something that Chris said earlier, we have a fairly moderate  
6 thing here, right? In other words, we did not take  
7 everything that was reported. If we took everything that  
8 was reported, the first year impacts, everything that was  
9 reported, that is unadjusted, the demand forecast would be  
10 appreciably lower than what it is now for the next short  
11 term, and into the long term. Okay? If we ignored it, I  
12 mean, we could have just said, "This is impossible, we  
13 cannot do it, let's put it off to the next cycle," right?  
14 And so let's assume no effect. Right? Well, that would  
15 have had a noticeable effect the wrong way. This is a  
16 fairly middle course, meaning that we can change all these  
17 things, we can refine all these things, and as much as we  
18 will, and we can get to the point where we will go to court  
19 on each and every one of these adjustment factors and defend  
20 it, and it will not, I am convinced, be a significant  
21 difference, that change by itself, if we focused all our  
22 time, the Demand Office, between now and the Final, in  
23 refining these, to the best -- even better than ever, world-  
24 class adjustment factors, uncontestable, the results on the  
25 Demand forecast would not be much different than if we left

1 it the way it is. So what we have to do is decide what, in  
2 terms of timing and resources, is it more important for us  
3 to deal with some more structural changes to the model, or  
4 are we going to have time to do that plus refine these  
5 adjustment factors? And this a question that --

6 MR. TOTH: Well, I am with you. Just to be clear, I  
7 was not attacking them, I was just trying to assist the  
8 source and so it helps me determine if they are reasonable.

9 MR. SCHULTZ: Okay. Anything beyond that, I think,  
10 would be a waste of both our times in terms of documenting,  
11 and I think that is as close as we need to get for now,  
12 particularly since, again, as I said, these are preliminary  
13 and when we do establish and -- if we change any of these  
14 things significantly and document it for the final, we will  
15 give you a more definitive citation. How's that? And if  
16 you can help us find a better citation, thank you.

17 COMMISSIONER BYRON: And if I may, just to add here,  
18 isn't the reason that these are in dispute and possibly  
19 holding up approval of the new programs at the PUC is  
20 because aren't the incentive payments that are linked to  
21 these a key aspect of what we are talking about? I mean,  
22 Mr. Wheeler, maybe you do not want to get into this, but I  
23 would appreciate it if you could just let me know, isn't  
24 that really what the critical issue here is, is we have got  
25 incentive payments that are linked to the success of these

1 various programs, and these factors are going to certainly  
2 influence the results. Isn't that correct?

3 MR. WHEELER: Commissioner, you are correct that the  
4 incentive payments are connected to these results, but just  
5 for the record, I do not believe that that interaction is  
6 causing the majority of the delay with the current adoption  
7 of the current filing.

8 COMMISSIONER BYRON: Fair enough, but it is  
9 nevertheless why these factors are in serious dispute,  
10 because there is real money associated with them?

11 MR. WHEELER: Yes, I agree, that is one of the  
12 reasons, and I think that we would like to develop as  
13 another one of the reasons that we are able to report,  
14 whether for load forecasting, or for procurement purposes,  
15 true impacts of energy efficiency so that we get those  
16 forecasts and procurement authorizations correct.

17 COMMISSIONER BYRON: Good.

18 MR. SCHULTZ: Yeah, I think I might add, I do not  
19 think there -- I have never been involved in any discussion  
20 in our group, and it certainly would not be my intent to  
21 suggest to the PUC that you go back and throw these  
22 adjustments into your earnings claims disputes now or ever.  
23 We made these adjustments in order to make them fit for the  
24 purposes of which we are trying to use them and for us to --  
25 it would be hubris for us to think that these are better for

1 earnings approval purposes than for getting a demand  
2 forecast that makes sense.

3 COMMISSIONER BYRON: Fair enough.

4 MR. SCHULTZ: We are not going to intervene in the  
5 PUC proceedings and say... At least, I do not think so. I  
6 would not volunteer for that one.

7 MR. MILLER: My name is Bill Miller. I work for  
8 Pacific Gas & Electric Company. I have not worked in energy  
9 efficiency as long as Don Schultz. But Michael said that  
10 there were goals adopted through 2011, I believe, and I  
11 believe there are goals adopted out to 2020, and the  
12 Commission is also looking at those goals. Maybe that is a  
13 fairer way --

14 COMMISSIONER BYRON: Step up to the microphone,  
15 please, so everybody can hear you on WebEx.

16 MR. MILLER: Yes, there are goals out to 2020 and  
17 CPUC is looking at whether it wants to change those goals  
18 and on what basis, so it is not decided to reconsider the  
19 goals through 2011 -- did I get it right, Michael?

20 MR. WHEELER: Yeah, you got it right, Bill. I think  
21 that the only distinction I will make is that we have goals  
22 for utilities through 2011, and we have goals for the total  
23 market from 2012 through 2020, inclusive of utilities, codes  
24 and standards, legislation, federal codes, and in our goals  
25 update process in 2010, we will parse out, we will update

1 who we expect to accomplish which of those of that total  
2 market goal.

3 MR. MILLER: Thank you. And then I wanted to offer  
4 Don some help and ask for some help. And we will provide  
5 some additional information, but I think I still have -- and  
6 you may have Rick Ridge's consolidation of studies to that  
7 date of about 2001 or 2002, where he basically went through  
8 the left-hand side of your chart and came up with some  
9 assessments which I will send you, which may or may not be  
10 useful.

11 MR. SCHULTZ: On the topic of net to gross ratios --

12 MR. MILLER: Basically many of those things --

13 MR. SCHULTZ: Okay, great.

14 MR. MILLER: -- he was tasked by the CBE to sort of  
15 assemble the current state of knowledge at that point in  
16 time, the California Board [inaudible] Efficiencies. And  
17 then the help I want to ask for is, I remember a situation  
18 two or three years ago where my company was asked to go see  
19 Commissioner Grueneich, and asked why her adopted goals were  
20 not in our load forecast, so the help I am going to ask for  
21 is that, when this is finalized, and there is basically some  
22 kind of map back from what the programs say they  
23 accomplished, so in fact there is a work paper or something,  
24 so that in fact, should that question come up again, it  
25 could be answered by saying, "It's here and here is how

1 these numbers link to those numbers." So a map like that,  
2 at the end of the day, could be very useful to all of us.

3 MR. SCHULTZ: Thank you for your help, Bill.

4 MS. JONES: This is Jacqueline Jones with Edison  
5 again. Hey, on slide 3, the statement standards and price  
6 market effect estimates are from the 2007 IEPR?

7 MR. SCHULTZ: Yes.

8 MS. JONES: Where would that be from?

9 MR. SCHULTZ: The previous IEPR cycle; in other  
10 words, okay, to reproduce this chart based upon all the  
11 changes and everything, socioeconomic, planning period, and  
12 everything else, for everything other than the IOU programs,  
13 requires a much more systematic and final type of iterations  
14 to eke out the difference between appliance standards,  
15 building standards, and price effects. Okay? So all we  
16 did, since we do not think that there is much change in  
17 terms of the structural effects in the last two years, in  
18 terms of the price as captured by the models, or the  
19 standards as captured by the models, all we did is take  
20 those same numbers, take out the POU impacts, or the whole  
21 system of the POUs, so that the scale is the same, and then  
22 spliced in the revised dark blue things. Does that make any  
23 sense?

24 MS. JONES: Well, yes and no. I believe I remember  
25 from the 2007 IEPR that one of the issues was not being able

1 to attribute between all the standards and price market  
2 effects and the IOU and EE Programs.

3 MR. SCHULTZ: Right.

4 MS. JONES: So I do not understand how you were able  
5 to split it up.

6 MR. SCHULTZ: It is not as sophisticated as you  
7 would think, yet. But let me put it another way, I am  
8 pretty sure it is our intent to repeat, or replicate this  
9 chart for the final, that not only will change this dark  
10 blue a little bit, but will be a more accurate indication of  
11 what the magnitude and timing of those other effects are,  
12 and hopefully a more complete documentation in terms of how  
13 there is not any, or very little, or minimal interaction  
14 between them, because that is the objective, is to make sure  
15 that there is no excessive interaction. So these are all  
16 goals, if you will, or objectives that we are hoping to  
17 have. We just wanted to -- I wanted, or we did -- wanted to  
18 put this up there just to, again, key off of and start to  
19 drill down more specifically on this blue line, relative to  
20 the larger stuff that was reported earlier on the forecasts,  
21 and to basically reiterate the message that you have been  
22 hearing again, is that, in the larger scheme of things, on  
23 the demand side, if you think that price and market effects  
24 are a demand-side phenomena, naturally occurring, or  
25 whatever, and certainly building and appliance standards are

1 a demand-side type option, that the relative impact compared  
2 to those other effects, of those four of the IOU Program,  
3 are relatively small.

4 MS. JONES: Well, the cumulative effect that is in  
5 the Demand Forecast is not relatively small, so that is why  
6 I actually -- my understanding is that we started all of  
7 this, because of the question of the overlap. And so right  
8 here, are you saying you are going to have that for the July  
9 workshop?

10 MR. KAVALEC: The answer is yes, we are redoing this  
11 analysis for the Preliminary Forecast, we are in the middle  
12 of doing that right now.

13 MS. JONES: Thank you.

14 MS. GEORGE: Well, Don Schultz is the person that  
15 inspired me to get involved in this eight years ago. He  
16 said, why don't you come down and become an Intervener and I  
17 will tell you how to do it. Anyway, we were reviewing like  
18 the '96 through 2000 programs and it was just me and him, I  
19 was brand new, so that is the level of the data was, it was  
20 pretty scary. Anyway, I wanted to find out, first of all,  
21 is this is all demand, not peak, right?

22 MR. SCHULTZ: Correct. This is all energy.

23 MS. GEORGE: Yeah, so is there going to be --

24 MR. SCHULTZ: These are all gigawatt hours. Lynn's  
25 this morning was megawatts -- peak.

1 MS. GEORGE: So you are not dealing with the peak --  
2 is that --

3 MR. SCHULTZ: Well, the Demand Forecast models do a  
4 peak forecast which is not being -- and each of these  
5 program impacts, or standards, and whatever else, could be  
6 converted to a peak -- their peak demand dimension if we  
7 wanted to.

8 MS. GEORGE: Okay, well, one of the questions that I  
9 had was whether there is going -- and maybe you are not the  
10 right person to ask, but in some of the forecasts there is a  
11 factor applied, in other words, I just multiply by, you  
12 know, 20 percent, or something like that, and that is the  
13 peak.

14 MR. SCHULTZ: Right.

15 MS. GEORGE: But that does not really represent what  
16 is happening on the grid, necessarily, in particular, for  
17 example, the CFLs in the residential setting are used mostly  
18 off-peak. And so they practically -- the effects of that  
19 practically disappear when you take it on-peak, and the  
20 factor, the previous factor, did not really reflect that.  
21 And since they, you know, they were like a huge part of the  
22 program, so one of the questions that I had, I was looking  
23 at your, you know, what is adjusted downward and what is  
24 adjusted upward, the residential is an increased measured  
25 penetration, and then on the commercial, you are reducing

1 the output. You are assuming that there is an adjustment  
2 downward. Is that right?

3 MR. SCHULTZ: Okay, but in general, the closer we  
4 get to an end use accounting for it, whether it is  
5 subtracted off a sector component going into the sector  
6 model, or out of it, or through the sector model like the  
7 CFLs, and then all that information does get passed to the  
8 official peak demand forecasting model, which is a separate  
9 modeling after everything else is in, and that is where you  
10 get the definitive load shape, or peak impact, through the  
11 whole process. We just have not gotten to that process.

12 MS. GEORGE: Okay.

13 MR. SCHULTZ: Later on -- the peak demand models are  
14 being run, or will be run, and the peak demand forecasts,  
15 with and without these effects, could be computed and shown,  
16 will be perhaps if they started to get some indication of  
17 what this will be. It is a very tedious process and the  
18 reporting is also tedious. But in the final documentation  
19 and final forecasts, again, I am not sure what the kind of  
20 commitment anybody could make to it now, but the tradition  
21 would be that there would be a complete accounting for both  
22 the energy and peak demand, as well as possibly even natural  
23 gas savings associated with these programs.

24 MS. GEORGE: Is the model going to be able to take  
25 the values from the DEER database and plug those in?

1 MR. SCHULTZ: No.

2 MS. GEORGE: So it is going to be a factor, still,  
3 it is just going to be a multiple factor?

4 MR. SCHULTZ: Well, yeah.

5 MS. GEORGE: Well, the issue that concerns me is  
6 that CFLs had been grossly exaggerated for many many years  
7 in the commercial sector. The Commission finally  
8 acknowledged that there were 400 percent exaggerations and  
9 that has to do with, you know, the effective usable life was  
10 assumed to be nine years, based on residential studies back  
11 in the early 1990s and, in fact, since they are used 12  
12 hours a day in a commercial setting, they tend to burn out  
13 in a year and a half, so your cumulative savings over those  
14 commercial CFLs is pretty non-existent. And that would make  
15 a really big difference in those cumulative figures,  
16 especially on the peak side, and one of the things that I am  
17 extremely concerned about is that the demand forecasts, you  
18 know, the energy efficiency figures start to really match up  
19 with what is on the grid because I think that we have spent  
20 too much time worrying about how much shareholder  
21 incentives, profits they are going to get, and little time  
22 looking at the capability of energy efficiency to actually  
23 reduce the peak. So that is the issues that I really want  
24 to get at. CFLs are one thing, I think that that is going  
25 to be reduced going forward, but they just like lost a huge

1 chunk of their savings over the last couple of years, and  
2 that is really what the arguments are about, because they  
3 had overstated CFLs, and the goals were based on these very  
4 exaggerated savings, and they were not there when they  
5 really looked at the numbers. But the other issue that I  
6 want to see very clearly laid out in the demand forecasts  
7 going forward is to be able to look at the potential for  
8 reducing the peak with air conditioning. And PG&E actually  
9 -- procurement planners said they did not know how to do  
10 that, they had no -- energy efficiency is a base load  
11 resource, well, that is ridiculous, you know, it is both  
12 base load and peak, and that is one of the reasons we have  
13 not done enough shell measures in the air conditioning is  
14 because we were so -- we were looking at the cost-  
15 effectiveness in a way that really did not make sense. When  
16 you look at the cost of peak power, we should be doing much  
17 more of the shell measures in the air conditioning because  
18 that is where the demand for new resources comes from. So  
19 that is where I really want to see that whole area clarified  
20 in the future, so that they can look at this demand forecast  
21 and say, "Oh, if we increase the air-conditioning by this  
22 much, then we would be able to reduce the peak by that much,  
23 and we would still have reliability with many fewer  
24 resources."

25 COMMISSIONER BYRON: Thank you, Barbara.

1 MR. SCHULTZ: Thank you, Ms. George.

2 COMMISSIONER BYRON: Can I just comment on just a  
3 couple things here? I think we have time, do we?

4 MR. SCHULTZ: Uh huh.

5 COMMISSIONER BYRON: Barbara, if we go back here to  
6 this summary table here, you mentioned a bunch of things,  
7 but I just wanted to let you know where we are in  
8 considering some of the things you talked about. You  
9 referred to the DEER database, it is our understanding that  
10 the Energy Division right now is in the process of  
11 confirming that all of the numbers in the '09 through '11  
12 applications are built upon the revised, most recently DEER  
13 database, which will capture such things as radically  
14 reduced useful lives of CFLs. So we are counting on, unless  
15 we hear otherwise from our colleagues that they found some  
16 smoking guns, or whatever else, and the utilities need to go  
17 to prison for violating the addictive -- you know, using the  
18 DEER database -- we are going to assume that the numbers  
19 that are adopted at some point will reflect the best  
20 available information in terms of the DEER database,  
21 including such perimeters as useful life. And there is, as  
22 I understand it also, there is substantial indication now  
23 that, particularly in commercial buildings, as you  
24 mentioned, the useful life of CFLs is a lot different than  
25 it is for residential. One of the issues that we have not

1 dealt with, and, again, it is on the table, and you have  
2 some -- because you are correct, there is a disconnect here,  
3 we want to ensure the best available information is being  
4 used, and there is spotty information. If you take  
5 residential CFL where there is a lot of question about -- we  
6 know that we can document and assume that the utilities have  
7 used the 10 year useful life that has been in the DEER  
8 database, if that is what it was, for a long time because  
9 that is all it was; subsequent studies in recent years have  
10 suggested that, in the residential sector, as well, the  
11 useful life of CFLs is not that. Okay? One question that  
12 we might have to deal with, and I am sure it would have  
13 little effect on the peak demand forecast, and it will have  
14 little effect on the historic, but we could go back, because  
15 all of these numbers in the historic period here are based  
16 upon, and we would probably use -- well, no, we did a decay  
17 factor on them, so it did not carry along with it -- but  
18 what I am saying is that we could go back and take the most  
19 recent available information on some of these really small  
20 parameters and revise history, if you will, based upon best  
21 information, even though the money that was collected for  
22 earnings from this stuff is already gone.

23 MS. GEORGE: It is gone -- \$350 million and --

24 COMMISSIONER BYRON: Well, I understand. But there  
25 is another analytical question, it could be that the earlier

1 generation of CFLs in the residential sector, maybe they did  
2 last longer.

3 MS. GEORGE: Yes, I understand that.

4 COMMISSIONER BYRON: Maybe they were a higher  
5 quality CFL. These are all questions of which there is very  
6 little, other than anecdotal evidence.

7 MS. GEORGE: Right.

8 COMMISSIONER BYRON: Okay.

9 MS. GEORGE: Yeah. Anyway, this is a long long  
10 argument.

11 COMMISSIONER BYRON: Well, it is. And I thank you,  
12 and we welcome your participation. I am going to go ahead  
13 and suggest that we move. Mr. Schultz, we have not had a  
14 chance to meet, I understand you have been Energy  
15 Commission, at the PUC, and now you are back with us. And,  
16 you know, that is a high value ad because it really gives us  
17 the benefit of your perspective, it improves communication,  
18 and we are really all interested here in getting the most  
19 credible forecasts that we can. So welcome back to the  
20 Energy Commission in your new capacity.

21 MR. SCHULTZ: Thank you.

22 MR. KAVALEC: ITRON has been providing invaluable  
23 assistance for our work, not only for the energy efficiency  
24 numbers that we developed, but also for the taxonomy work,  
25 and for work involving a comparison of our model inputs with

1 the asset model inputs. So here to give a summary of that  
2 work, the CEC ITRON joint work, is Mike Messenger.

3 MR. MESSENGER: Thanks, Chris. I am glad to be here  
4 and I hope that I will also provide some value ad because I  
5 have worked at the Energy Commission, the PUC, and ITRON.  
6 The other thing I want to say is, I have sat through this,  
7 and I have tried to imagine myself as a member of the  
8 public, as opposed to someone who has been in this business  
9 for 20 or 30 years, and so I want to ask you that, if I  
10 start to do what some of the other speakers have done and  
11 start using acronyms, that you stop me. And say, "No, I  
12 don't understand that acronym," because it is very easy to  
13 lapse into acronyms in this particular business. And the  
14 final think I want to say as an overview before I get into  
15 my presentation is, you know, it seems to me that this  
16 repeats over and over in every state that I work in, and I  
17 have now worked in many different states, that deal with  
18 these same issues of program attribution, and it gets really  
19 messy because no one can agree how to separate price  
20 impacts, standards impacts, and utility program impacts. So  
21 one of the things I am going to suggest today is, it may be  
22 more important to get the total right than to get these  
23 percentages of attribution correct. And I think that is  
24 something that we really need to focus on because I think we  
25 could have endless debates about which program caused --

1 which was the first mover, was it the standard, or the  
2 program, or the price effect?

3           So here is what we are going to talk about. First,  
4 I am going to try to breeze through really quickly the work  
5 to date. I was asked to sort of summarize it, and if I am  
6 spending too much time on that, let me know and I will just  
7 go quickly. Then I want to talk about what we found from  
8 our analysis of model comparisons, and we have two specific  
9 recommendations for you to look at, then I am just going to  
10 go through some highlights of what sort of will be the  
11 trends in the utility program savings over time, at both  
12 total level and an end use level, talk a little about the  
13 assumptions that have been used in the quantification step  
14 this time around for the committed forecasts, and then what  
15 we plan to do in the future in terms of working with the  
16 Energy Commission and the PUC, in terms of developing an  
17 uncommitted forecast that bridges this gap between committed  
18 and uncommitted.

19           So why did we start? We were hired to try to  
20 understand the better, you know, with a greater level of  
21 certainty, what is really embedded in the CEC current model  
22 in terms of savings. And I have to tell you that I think we  
23 have made some progress there, but we still do not know if  
24 our key end uses, how much savings is embedded in this sort  
25 of baseline forecast. And so we are working to try to get

1 to that place because, obviously, if you are going to try to  
2 compare a savings forecast from a utility vs. the baseline  
3 forecast, you need to know what level of savings is embedded  
4 in your forecast, and I think we are doing well in some  
5 places but not others.

6 We were also hired to provide sort of additional  
7 documentation of the level of utility program savings over  
8 time, what is in our model, which was the basis for the CPUC  
9 goals decision, and what is in the CEC model. In particular  
10 we wanted to focus on what is the baseline, you know, before  
11 we do any comparisons of forecasts, do we both agree that  
12 the baseline UEC for lighting in residential, for example,  
13 is 1,800 kilowatt-hours per year in an average building, or  
14 not. So we try to make sure we are starting from the same  
15 base.

16 And then we wanted to see if we could add any  
17 information or light on this question of, well, what is the  
18 level of overlap. I think, unfortunately, we are still --  
19 most of the analysts I have heard have opinions on this, but  
20 there is no real definitive analysis on whether it is 20  
21 percent, or 50 percent, or 100 percent, but we will try to  
22 get to that if we can.

23 So all of this work is available in the series of  
24 deliverables that we found, but I am just going to give you  
25 the highlights. We compared the baseline EUIs for what we

1 thought were the key end uses -- residential lighting,  
2 commercial lighting, and commercial HVAC in both SDG&E and  
3 PG&E service territories, and we looked at, well, where are  
4 the big differences and do they make a big difference in the  
5 overall aggregate forecasts. We did a comparison on what  
6 are the methods that are being used to estimate and forecast  
7 savings over time. And we got into a little bit of this  
8 sticky wicket of was this savings program induced, caused by  
9 a program, or can we determine a certain naturally occurring  
10 level of energy efficiency that would happen, regardless of  
11 whether there were standards of programs. And that, to me,  
12 still has not been shown, you know, that there is a  
13 naturally occurring efficiency level, and whether that  
14 tracks, you know, price trends, or whether that is just an  
15 autonomous variable that happens at 3 percent per year. But  
16 we are trying to get to an answer on that. And then,  
17 finally, we did some more comparisons of actually forecasts  
18 of structural electricity use, and particularly, we looked  
19 at commercial lighting in terms of what we forecasted for  
20 the growth in different types of commercial buildings and  
21 what the saturations of equipment, how those change over  
22 time, and how those sort of interacted with energy intensity  
23 changes to produce a final forecast. And as has been  
24 referred to earlier, we also gave our best sort of  
25 literature summary of what estimates exist for average

1 lighting use in various parameters, bulbs for household,  
2 daily hours of use, and average watts per bulb, over  
3 history, from 1980 to 2000. And we also updated that to  
4 like 2008 in a subsequent step. And we are hoping that is  
5 the basis for the residential lighting usage forecast that  
6 Tom Gorin talked about earlier today, and trying to move  
7 forward on that. And then we also developed some revised  
8 estimates of changes in structural growth, and we will talk  
9 about this a little bit later in a slide that, you know,  
10 there really has been some significant structural growth in  
11 the demand for refrigeration services and houses. People  
12 are using bigger refrigerators, with more features, and  
13 that, to a certain extent, is counteracting the effects of  
14 energy efficiency over time. It is important to understand  
15 that.

16           So what do we conclude is real to this initial  
17 analysis? Well, the first one is one that is a hard sell,  
18 but we are going to keep trying to make it, even though we  
19 are a minority point of view here. The first three hours of  
20 debate here focus on, you know, which program saved what,  
21 and can we definitively determine whether it was utility  
22 programs, or program standards, or price effects. And what  
23 we have been saying is, regardless of that argument, what  
24 you should do when you put out a forecast is talk about what  
25 is your forecast re structural growth at each energy use;

1 for example, do you forecast a 15 percent growth or a 20  
2 percent growth in the number of households? What is your  
3 forecast for the growth of the average size of a house? Is  
4 it going to keep going up? Or is it going to stay flat?  
5 And, then, what is your forecast for the energy intensity  
6 increase or decrease? Are HARMS (phonetic) going to be 10  
7 percent more efficient 20 years from now, or 20 percent more  
8 efficient? And that that is what is useful for policy-  
9 makers. They need to see that top-level information first,  
10 before you dive into all the details we have been talking  
11 about today about, you know, the relative effectiveness of  
12 CFLs and their useful life, and all those other things. We  
13 content that you need some high-level structural framework  
14 before you get to the details of net to gross, and  
15 realization factors, etc. So we are hoping that we can  
16 help, working with the CEC staff, to get some of that  
17 information out there in the public domain because that is  
18 the top-level thing that we think you need to worry about if  
19 you are really concerned about things like climate change  
20 and what the electricity use comparisons are going to be.  
21 It is not all about savings, it is just as important to  
22 understand what is the structural growth, or lack of  
23 structural growth in each of these sectors, and how that is  
24 going to change as a result of the recession, for example.

25 The last thing is that we did find one thing, which

1 I think we have reached agreement with the CEC on, and they  
2 are working on it -- I think Don referred to it as a  
3 "deferred treatment issue", is we think that it is a  
4 structural problem that the load impacts of utility lighting  
5 energy efficiency programs, not the rest of the programs,  
6 but the lighting ones shows where the significant share of  
7 savings from '92 to 2003, it appears to us that not  
8 including those effects has led to an overestimate of EUI in  
9 the commercial sector for lighting. And that was across the  
10 board in all of the different building types that we  
11 examined. So we made a recommendation, which I think Tom  
12 referred to as an adjustment that he had made already to try  
13 to figure out the effects of increased enforcement of  
14 standards, as well as looking at to what extent a building's  
15 EUIs are changing over time. So we think that the results  
16 of this recommendation will hopefully be manifest three or  
17 four weeks from now when we look at what the commercial EUIs  
18 are in the Final forecast. But that is a place where we  
19 think that it is probably important to explicitly look at  
20 these utility reported savings, make whatever adjustments  
21 you need to make, and then to factor those into the  
22 commercial baseline forecast.

23           These next things, I think, are just sort of  
24 interesting policy things, they are time series analyses  
25 that we have looked at for both the IOUs in terms of their

1 savings, both reported and verified. And I want to make one  
2 little parenthetical remark about "verified." I see another  
3 place where we are potentially going to have some confusion;  
4 I noticed on Don's chart that there is a separate adjustment  
5 for net to gross in realization rate, well, in the Energy  
6 Division's Report, when they did realization rate, they had  
7 an NTG adjustment as part of their realization rate, so  
8 there is now a potential of double-counting because there is  
9 an NTG adjustment and then a realization rate adjustment,  
10 and if you are using somebody's realization rate adjustment  
11 that also includes NTG, you are double-counting. So we are  
12 going to have to, I think, work that out. And it is the  
13 first time that the PUC has actually ever tried to adjust  
14 reported savings to get to verified savings, using both net  
15 to gross and changes in the installation rates. So I can  
16 understand why there is confusion there.

17 COMMISSIONER BYRON: Mr. Messenger?

18 MR. MESSENGER: We had clear definitions there about  
19 realization rate and net to gross.

20 COMMISSIONER BYRON: Wouldn't that be double  
21 discounting?

22 MR. MESSENGER: Double discounting, yes.

23 COMMISSIONER BYRON: Okay.

24 MR. MESSENGER: And whether that leads to double  
25 counting is another question, but the way I understand it,

1 if you are double discounting, you may be underestimating  
2 the net realized savings from the programs.

3 COMMISSIONER BYRON: Right.

4 MR. MESSENGER: And, you know, the problem is that  
5 we only have data, as Don was saying, for the last four or  
6 five years that is reliable, so how you can take that data  
7 and either use it in the back casts or the forecasts, is  
8 another judgment question.

9 The second bullet here is we did agree with the  
10 staff that you do need to make an adjustment from reported  
11 program savings to get to verified savings and we  
12 recommended something like 60 to 70 percent for that  
13 particular cohort, 2004 to 2007. And I would also say  
14 parenthetically, that the Energy Commission did a similar  
15 analysis in the early 1990s that came out with a 65 percent  
16 realization rate, you know, back in IEPR-2 or something like  
17 that. So I think it is reasonable to assume that, over  
18 time, there is going to need to be a systematic reduction  
19 between reported savings and verified savings, and it seems  
20 to be in the range of 70 to 80 percent for the times that we  
21 have looked at it.

22 This is just some information about the relative  
23 share of savings for the three IOUs here. And you will note  
24 that there is this big surge in 2001 and then a drop in 2002  
25 and 2003, you know, post-energy crisis, or whatever we want

1 to term that -- the market meltdown, or whatever we want to  
2 call it in 2001. And then you can see that we have gone  
3 back to this cyclical effect that I have documented in  
4 previous papers before of, there is this big surge in  
5 spending, everybody gets really excited for two or three  
6 years, and then it drops off. You can see in 2005 and 2006  
7 it drops off a little bit, and now we are in the midst of  
8 another big surge being reported in 2007 to 2008. And I  
9 predict, am willing to put money on it, that 2009 is going  
10 to be another drop because of the fact that programs still  
11 have not been authorized, they are just bridge funding for  
12 2009 and we are half-way through 2009. But the important  
13 trend is it seems to be going up, even though there are  
14 these regulatory waves that are happening in terms of both  
15 funding and verified savings.

16 COMMISSIONER BYRON: And, Mr. Messenger, that is  
17 what you attribute it to, it is the cyclic nature of  
18 funding? Or is it that we over-attribute, and then have to  
19 readjust, and so we are seeing the readjustment in these  
20 cycles? I have not read your papers.

21 MR. MESSENGER: Okay. I think it is two things, one  
22 is there are regulatory lags built into this system, and I  
23 think the history is, is that when you look at a new cycle  
24 it usually -- authorization does not happen until six to  
25 nine months after the program year has started, so that is

1 one of the effects you are seeing; and the second effect is,  
2 usually after a wave of results of evaluations come in,  
3 people say, "Ah, we should be moving away from this measure  
4 into a new measure," or into a new set of program designs,  
5 and it takes a while to get the new program design up and  
6 running and to recruit, so that is the other lag effect you  
7 see here is -- I would say, for example, starting in 2005,  
8 people started questioning whether you should have lots of  
9 residential CFLs and that drop that you see, part of that is  
10 not as much reliance on savings from residential CFLs, then  
11 there is another wave of that, which is coming later on. So  
12 that is just one technology, there are many different  
13 examples. You know, in the 1980s it was ceiling insulation,  
14 for example, that was judged to be -- we should no longer be  
15 giving rebates for that. And there is probably another  
16 technology I could show you in the '90s, but that is the  
17 other thing, is that when the EM&V feedback comes in, there  
18 is a shift in program designs, and that leads to a temporary  
19 drop, at least, in the savings. And it seems like the cycle  
20 is anywhere from three to five years if you go back over 30  
21 years of recorded evidence in California, at least. And it  
22 is similar in other states, but not exactly as pronounced  
23 because there is not as much of a historical record. What I  
24 think tends to happen, if you look at the two graphs, the  
25 trends are very similar whether you look at residential or

1 non-residential, so this is a systemic thing, it does not  
2 vary by sector, and so you can see these sort of ups and  
3 downs. This is getting to the question of what is the right  
4 adjustment factor, and this is just the data that we are  
5 reporting from another source from the Energy Division's  
6 Verification Report, and you can see that it varies by  
7 utility, but, you know, for 2004-2005, it was between 61  
8 percent and 68 percent, as the amount you should multiply  
9 the reported savings times that fraction to get to verified,  
10 and the results are similar for 2006-2007. And, as I said,  
11 the problem with 2006-2007 is there is not only an  
12 adjustment for installation rates and realization rates, but  
13 there is also an adjustment for ex post measurement of net  
14 to gross. So that is the first time that ex ante has been  
15 converted to ex post, and a big one, for example, is the  
16 residential CFLs used to be .80 was the NTG rate, or 80  
17 percent, and the DEER update said it was only 62 percent, so  
18 taking that 80 percent and taking it down to 62 percent  
19 resulted in a much lower realization rate.

20 COMMISSIONER BYRON: So these are realization rates  
21 in this table?

22 MR. MESSENGER: Yes.

23 COMMISSIONER BYRON: Okay.

24 MR. MESSENGER: But the problem is, what I am trying  
25 to point out is the realization rates in 2004-2005 did not

1 include NTG, the ones for 2006, 2007 did include NTG, so  
2 they are a little bit apples and oranges. Another reason  
3 why I think it is important to get the total right is  
4 because you can make all kinds of errors when you get in the  
5 lead of trying to figure out that program.

6 This is just to show -- and I just show the effect  
7 of going from reported to verified, and the blue is the  
8 reported, and the red is verified. And you can see, it does  
9 not change a lot over time, but it is, nevertheless, a 20-30  
10 percent reduction every time, and that is important to take  
11 into account if your model relies on utility reported  
12 savings as an input.

13 COMMISSIONER BYRON: And is there a reason  
14 specifically that you can point to why there is a consistent  
15 continuous over-reporting?

16 MR. MESSENGER: If I knew the exact answer to that  
17 question, I would be a millionaire, so I am just going to  
18 give you a hypothesis.

19 COMMISSIONER BYRON: Or maybe somebody trying to  
20 become a millionaire.

21 MR. MESSENGER: What I think tends to happen is  
22 Public Utility Commissions tend to encourage utilities to  
23 set ambitious goals, and so Program Managers say, "Yeah, I  
24 can get 1,000 customers to do this, or 10,000 customers to  
25 do that routinely," and then it turns out to be

1 systematically more difficult after-the-fact to get all  
2 those 10,000 customers to do it, and the savings per unit  
3 that you thought would happen usually gets reduced. And if  
4 you look at the distribution, I did this once -- actually,  
5 recently -- it tends to be something like 70 percent of the  
6 customers get slightly less savings than they thought, and  
7 30 percent of the customers get slight more savings than  
8 they thought, but when you take the net effect into account,  
9 there is a reduction of anywhere from 20 to 40 percent  
10 downward in terms of the installations achieved vs. the  
11 installations that were forecast. So that is the basic  
12 reason. Another way of looking at it is hope springs  
13 eternal, and what that means is, every time the forecasters  
14 -- the Program Managers, in this case -- forecast, "Yeah,  
15 I'm going to get 1,000 units," or, "I'm going to get 10,00  
16 units." And then it comes back and they get less. They  
17 have a whole set of reasons as to why that was, and then the  
18 next time it is going to be better. And so they try again  
19 and, so, as far as I can tell, there is no negative  
20 incentive for Program Managers who consistently over-  
21 forecast because, if you look at what happens, and this is  
22 something that the PUC, I think, is changing, but right now  
23 when utilities report their savings, they report verified  
24 installations times their ex ante estimates of savings per  
25 customer, and there is no requirement that, in a future

1 report they come back and say, "And here is what the  
2 verified savings was." So there is no feedback that policy-  
3 makers see that says, you know, "Even though we thought we  
4 were going to get 100 megawatts, we only got 70." So  
5 without that systematic feedback, I think there is  
6 encouragement, and I think -- I know, because I have been  
7 guilty of it in the past -- to encourage people to continue  
8 to do optimistic forecasts. So I think that -- and I  
9 imagine that if we went to a private firm, there would be  
10 this similar relationship, you know, "How many computers are  
11 you going to sell next year?" "Oh, easily 20,000." And  
12 then reality comes in and it is 14. And they say, "Well,  
13 okay, we'll do a new model and next year we'll try again."  
14 So I think this is just optimism.

15 COMMISSIONER BYRON: And we could expect the same  
16 kind of optimism, I would assume, then, from the publicly-  
17 owned utilities, as well?

18 MS. MESSENGER: In spades. Yeah, I think that is  
19 true. Now, the other thing I wanted to do is -- this chart  
20 is supposed to highlight what, to me, is a fairly  
21 significant factor, which is the utilities have finally  
22 achieved the policy goal that most people thought was very  
23 difficult, if not impossible, to get to, and that is can you  
24 ever get to a place where your program savings are more than  
25 one percent of your actual sales. And if you look around

1 the United States, right now, people are starting to set  
2 goals at 1.5 or two percent of sales for conservation  
3 savings goals, but the common denominator is about one  
4 percent, and as you can see in this graph where it says "one  
5 percent crossover," that is the first time in the last ten  
6 years or so where you are getting to a place where even  
7 "verified" is starting to come close to one percent of sales  
8 on an aggregate basis. So that is a pretty significant  
9 finding, and if you can continue that, and if we can go up  
10 this red line, in 2008 they are saying that the verified  
11 savings are going to be, you know, maybe 1.3, 1.4 percent of  
12 sales, so that is a pretty significant thing. So they are  
13 making progress and it is becoming bigger over time. The  
14 real question in my mind is, how deep is the next trough  
15 going to be when this cycles down again? And we do not  
16 know.

17           This is just more work on energy and peak savings by  
18 end use and this is to give you an example of the kinds of  
19 information that is available on the database that Don and  
20 Nick are working on. And this is to show how the influence  
21 of CFLs over time in this forecast -- this is for  
22 residential. And note this is reported savings, not  
23 verified, but you can see how the share of savings from CFLs  
24 has gone from maybe 40 percent in the year 2000 up to 75 or  
25 80 percent in the year 2007, and you can see how the other

1 savings by end uses have also followed that over time. And  
2 I should note that that -- I expect that that fraction --  
3 and, Michael, tell me if I am wrong -- I think that fraction  
4 is now down to about 30 or 40 percent now, the CFLs as a  
5 fraction of residential? Yeah, so that is going to cycle  
6 down for 2009 and beyond. So I have mentioned these  
7 already, so I am not going to spend a lot of time.

8           The other thing that I think is happening, which I  
9 think gets to this question of, well, what is happening in  
10 terms of residential usage as a result of the recession, in  
11 addition to seeing CFL going up over time, the proportion of  
12 total portfolio savings is going up for residential as  
13 compared to the total. So it used to be that people said,  
14 "Well, 60 or 70 percent of the savings are coming from non-  
15 res." It now looks like, in 2005, it went up to the  
16 majority -- 52 percent of the total savings -- were coming  
17 from residential products. That means to me that the  
18 utilities are spending more time focusing on savings from  
19 the residential sector, and it may be easier to sell some  
20 measures to the residential sector, like CFLs than it is to  
21 sell measures in the commercial sector. The other thing is  
22 pretty obvious, there has been about a 6X increase in first  
23 year annual savings from 2000 to 2008. And I have already  
24 mentioned this last point about verified savings for the  
25 first time, at least in my mind, have exceeded one percent

1 of sales in 2007 -- verified annual for 2007.

2           So now, to get to the question, sort of, that has  
3 been discussed a couple of different times in this meeting,  
4 how can we figure out what is the degree of overlap, or if  
5 there is overlap, between the utility program savings  
6 estimates that are happening in this one model, and the  
7 embedded savings that are in the CEC forecasts? We have  
8 come up with two methods and we are getting closer to the  
9 answer, but we are not there completely yet. The first one  
10 is, well, first, let's try to figure out what the total  
11 level of savings is that is embedded in the CEC forecasts by  
12 decomposing it into sales growth and energy intensity, then  
13 compare that to these program savings forecasts and whatever  
14 level of sales growth their service sales growth they are  
15 determining, and figure out if, you know, if in fact it  
16 looks like the change in energy intensity in the CEC  
17 forecast is so significant that the utilities savings  
18 already are captured in that, or not. That is the sort of  
19 high-level approach. The low-level approach is, you need to  
20 go back and look at all of the details of how did they do  
21 the savings impact calculations for standards, how did you  
22 do it for price impacts, how did you do it for utility  
23 programs, and did you assume the same baseline; and based on  
24 all of those comparisons, come up again with an estimate of,  
25 okay, if we hold all things constant, it looks like X

1 percent, you know, 20 percent of the utility savings, or 50  
2 percent, need to go into the CEC forecast. So we use both  
3 of those methods. CEC has not had the time to use either  
4 method in the short term because they have been focused on  
5 trying to produce a forecast, and I have been told that they  
6 may present some results consistent with Method 1,  
7 quantifying the level of total savings, and then looking at  
8 what that means in terms of what the utility forecast is,  
9 and comparing that both on an energy intensity basis, as  
10 well as total sales, in the June 26<sup>th</sup> forecast and in the  
11 revised forecast. But, like I said, it is not yet clear if  
12 that is going to happen in time, and so we think that the  
13 best thing to do is to try to first of all get everybody to  
14 agree on a transparent way of looking at what is the total  
15 level of savings in the forecast, then look at what the  
16 addition of the utility amount would be, and talk about  
17 whether it is feasible for the utilities to actually -- if  
18 there is already, for example, a 30 percent decrease in  
19 energy intensity, I would not want to layer on additional  
20 savings beyond that if the utility program is only shooting  
21 for a 10 percent drop in usage. So you can compare the  
22 relative drops that the utility is shooting for in the  
23 baseline vs. what is already in the forecasts, and compare  
24 them on an apples-and-oranges basis.

25 So this is just more details about those different

1 methods. I have already talked about providing your  
2 forecast of structural growth and energy intensity per  
3 common forecasting unit, and by that I mean square footage,  
4 or per housing unit, per single-family house that is 2,200-  
5 square-feet in total area, or per refrigerator, or per  
6 dishwasher, all of those are common forecasting units. And  
7 I have talked a little bit already about why that is  
8 critical, it provides a better perspective on what is  
9 driving the forecast and helps you identify, if you are  
10 short of resources, which end uses have the most savings  
11 impact, and therefore which ones you should focus on as  
12 being critical to the actual forecast, and which ones you  
13 can afford to ignore. For example, we have ignored, of the  
14 15 to 16 end uses in the residential sector, we are only  
15 focused on three; the other 13, we think, are fairly stable,  
16 and we have not tried to do any improvements of those  
17 particular ones.

18           And here is an example of how we would suggest that  
19 you try to display information for each end use in the CEC  
20 forecast because we think it provides information -- useful  
21 information. And this example is from the paper that we  
22 did, that was both a taxonomy paper and looking at how you  
23 can explain forecasts over time. Now, everything has been  
24 normalized in this example to 1990 equals one, but you could  
25 choose any base here you want to. And what this shows is

1 that the structural service growth, e.g., the amount of  
2 energy services residential customers are demanding from  
3 their refrigerators, has grown at a greater rate than the  
4 decreases in energy use caused by building in appliance  
5 standards and utility programs over this time period. So  
6 let's just take year. In 2005, if you look at that, there  
7 has been a 54 percent increase in the demand for  
8 refrigeration services, but there has only been a 12 percent  
9 decrease, or one minus .88 in the average usage per  
10 refrigerator. So when you net all that out, there is a 15  
11 percent overall increase in electricity usage for that end  
12 use. So, you know, it depends on whether you are looking at  
13 the glass as half-full or half-empty. One can say, "Well,  
14 gee, without efficiency programs and standards, we would  
15 have had a huge increase in sales from that particular end  
16 use;" on the other hand, you could say, "Yeah, but if there  
17 is some interaction effect, if people are using the savings  
18 that they get from the more efficient refrigerators to buy  
19 more efficient refrigerators, then it looks like there is a  
20 significant income effect that is increasing electricity  
21 use, regardless of whether you set standards that are really  
22 stringent, or not so stringent. And as you probably know,  
23 California set the most stringent standards in the world in  
24 1984, and the federal government adopted those later on in  
25 1988. That has led to a big decrease in marginal intensity,

1 or the UEC for a new refrigerator. But because of the slow  
2 turnaround, it is just barely starting to get into the stock  
3 in 2005 at a .88 effect, and the overall energy use, bottom  
4 line, it continues to increase in the refrigerator sector,  
5 even though that is one of the success stories of energy  
6 efficiency that is trumpeted by many people around the  
7 world.

8           And I just went through this -- I said I was not  
9 going to spend any more time -- I think the other reason  
10 that this is important is that, when you are trying to  
11 assess whether certain GHG policies are even possible, it is  
12 important to know if you are seeking energy use reductions,  
13 efficiency is not enough. If you just focus on efficiency,  
14 and do not look at the growth in, for example, the size of  
15 the house, or the size of the refrigerator, or the size of  
16 the car, or the horsepower, you can do incredible things on  
17 the energy efficiency side, but you are still going to have  
18 increases in energy use. If you really believe that you  
19 want to decrease energy use, you have to have some policy  
20 for at least monitoring, if not effecting service demand  
21 growth over time; otherwise, that service demand growth is  
22 going to completely overwhelm whatever energy efficiency  
23 policies that you passed, and bottom line, you will still  
24 have increases in electricity use over that time period.  
25 Here is just another way of trying to display those things

1 and, really, I am just searching here for ways that might be  
2 intuitive for policy-makers who do not want to get into the  
3 details. This is a way of showing for some selected end  
4 uses the impact of structural change on the forecast between  
5 2000 and 2018, that is in the blue; the red is the decrease  
6 in energy use per unit, think of it as, you know, maybe the  
7 average refrigerator was 18-cubic-feet in 1980, so what that  
8 says is, you know, we are going to reduce that, the baseline  
9 usage of that 1980 refrigerator by -- what is that -- 25  
10 percent. And that is great, but if on the other hand, now  
11 the average size is 23-cubic feet for a refrigerator, the  
12 net of both of those effects is what is shown in the vanilla  
13 there, which looks like, you know a four percent effect. So  
14 these are all examples of how you might want to just display  
15 this information, and then you can have discussions of,  
16 well, does that seem realistic or not? And how do you  
17 figure out, you know, for each of the programs we have been  
18 talking about, what share of the red bar do they deserve --  
19 if this utility program is 20 percent, or 50 percent of that  
20 red bar, that type of thing.

21           The last thing I want to mention here about Method 2  
22 is, from an economist perspective, the reason that we have  
23 programs, in addition to capturing savings, is to try to  
24 increase price elasticity over time. And by that, what I  
25 mean is, for a given increase in prices, we would like more

1 response from the marketplace in terms of buying more  
2 efficient goods. The problem that I have right now with  
3 trying to separate out price effects from utility effects  
4 is, the last time we measured price elasticity was in the  
5 '80s, so we do not know, I would argue, when you look at  
6 that chart that Don was showing, that has big price effects,  
7 whether the price of elasticity has changed and, if so, how  
8 much, when we would look at these data in the year 2000.  
9 And economists argue about this all the time, are price  
10 elasticity's -- do they change over time, or not? And it is  
11 a function of a lot of different things, but I think it is  
12 going to be important if we are going to continue to report  
13 that very large amounts of savings come from price effects,  
14 that we confirm that by going out and re-estimating price  
15 elasticity in the residential sector, or the non-residential  
16 sector, whichever seems to be the most important. Now, on  
17 the other hand, it may be impossible to separate them, but I  
18 would think that you should be able to separate price  
19 effects from utility program effects if you do it correctly,  
20 do not know.

21 Now, what is the solution in the long-term? This is  
22 just, again, speculation. We have talked about in this  
23 working group alternative model specifications that focus on  
24 trying to forecast total energy savings and usage by end  
25 use, first, and then separate them into these different

1 components of service, demand growth, and energy intensity,  
2 and that by definition requires you to think less about  
3 trying to prove attribution and more about how can we gather  
4 information in the marketplace about what the net effect of  
5 all the programs that are happening, whether it is a program  
6 run by ARB, or SMUD, or the Energy Commission, whether it is  
7 flex-your-power ads, or whatever, try to get an accurate  
8 idea of what is happening net of all the programs as opposed  
9 to trying to focus on can we determine, you know, the  
10 incremental effect of the utility program vs. the standard  
11 that covers the same end use vs. the ad that was run on  
12 flex-your-power last month that encouraged people to reduce  
13 their dishwasher usage, for example. It is almost  
14 impossible to sort all those out, but it may be possible to  
15 run it to work on a different model that works on accurately  
16 forecasting total savings first, and then gets to the  
17 question of attribution.

18           Okay, this is just a summary of the recommended  
19 adjustments that we made to the forecasting model to  
20 incorporate savings estimates from utility programs and  
21 other market changes, and I have already gone through most  
22 of these things in terms of our recommendations for  
23 residential lighting and non-residential -- 100 percent. We  
24 recommended not adjusting their current model to include  
25 savings from refrigeration and cooling end uses and HVAC

1 because it does not look to us like they are going to be  
2 very significant, and the baseline comparisons were either  
3 incomplete or pretty close. So in terms of just  
4 prioritizing your effort, we think that the CEC staff is  
5 headed in the right direction by focusing in on lighting  
6 first, and then getting to those other end uses.

7           The other thing that we have done, that we are not  
8 sure if the CEC staff is going to have enough time on, is we  
9 recommended a change in the expected useful life of  
10 refrigerators, and that is based on the most recent evidence  
11 from the most recent RASS, and the effect of utility  
12 recycling programs, and that effect is basically to shorten  
13 the expected useful life of the refrigerators because people  
14 are, say, instead of holding on to a refrigerator for 25, 30  
15 years, I am going to turn it in through the recycling  
16 program and get a new one. So we think there is evidence  
17 that, on average, people are holding on to their  
18 refrigerators for a shorter period of time, and buying a  
19 newer model. And as far as we know, that is not yet  
20 incorporated into the CEC's model, which I think -- correct  
21 me -- is this 18 years or 20 years? Do you know, Tom?  
22 Yeah, the CEC model currently is about 20.

23           So what are the next steps? Well, ITRON is  
24 committed to working with the CEC staff and our PUC Project  
25 Manager to develop an uncommitted managed forecast using

1 energy savings estimates from both the Goals Study and from  
2 what we call the SESAT model, and try to make sure that  
3 everything is consistent between what is on the CEC side of  
4 the model and what is on the side of the PUC model. But the  
5 other thing that I want to just say that I was thinking  
6 about this when I heard various arguments today about, you  
7 know, is it a good idea or a bad idea to have committed  
8 savings, and then a cut-off, and then uncommitted savings?  
9 And in my opinion, that is sort of the wrong question; the  
10 right question is, as funding goes out over time, there is a  
11 lower probability that you can actually estimate that it is  
12 certainly going to happen, so, if it was me, and I did not  
13 have any other policy considerations, I just wanted to get  
14 an accurate forecast, I would use a probabilistic model, I  
15 would use some kind of crystal ball simulation, and I would  
16 say, you know, the expected value of funding of X is 90  
17 percent in the first three years, and then it goes to 70  
18 percent in the years four through six, and then it is like  
19 50 percent in the last years, because that seems to me -- it  
20 is more of a continuous function, it is not a yes/no, either  
21 there will be funding after 2012, or there will not, it  
22 seems to me that it is more likely that, if there is a  
23 distribution function that you can construct there -- and  
24 maybe we could do that as part of the scenarios analysis  
25 because I think, you know, particularly given the most

1 recent recession, no one knows with any accuracy what the  
2 funding levels are going to be beyond the existing cycle;  
3 but I think it is reasonable to expect that there will be  
4 some funding, and so you can deal with that through a  
5 probabilistic analysis, rather than assuming zero in one  
6 forecast and lots of funding in the other.

7           And that is it. I am here to take questions. I  
8 have just some more additional back-up information about  
9 savings by end use for different sectors, if you are  
10 interested in seeing that. But for right now, I will stop  
11 and say -- ask for questions.

12           COMMISSIONER BYRON: Very good. I hope there will  
13 be some questions. I would like staff to respond to that  
14 last recommendation you just made about changing our  
15 assumptions about uncommitted funds, that there is some  
16 probability of committed funds going forward in the out  
17 years, and whether or not that makes sense to them. Dr.  
18 Jaske, coffee break is over.

19           DR. JASKE: Mike Jaske, Energy Commission staff.  
20 There are a variety of ways to deal with the issue of how to  
21 treat long-run savings objectives goals. Mr. Messenger is  
22 correct that some sort of probabilistic approach is one  
23 option to deal with the level of funding question, but there  
24 is an additional level of uncertainty and that is what is  
25 the program design. So how do you convert those dollars

1 into savings? How do you decide what is the mix of end uses  
2 and measures? And as one of the earlier questioners of  
3 staff tried to penetrate, you know, there is a big  
4 difference whether your energy savings mix is tilted toward  
5 off-peak CFL lighting savings vs. on-peak air-conditioner  
6 savings. So, for the very same aggregate energy savings, a  
7 quite different peak consequence. So I suppose one could,  
8 you know, create some alternative assumptions about funding  
9 levels, program designs, etc., but you are talking about  
10 multiple forecasts, then, maybe not -- at least that would  
11 be my first step about how to do it, is to have multiple  
12 forecasts because I am not sure I can convert policy calls  
13 into probabilities very easily. But then that would leave  
14 the Commission, or any of the other users of the forecasts  
15 with the quandary of which one, or which set of them to use,  
16 and how to weight them. So we could move in that direction  
17 if you so desire, but it has both staffing levels, and then  
18 questions of interpretation, and sort of just tractability  
19 to all the downstream applications.

20 COMMISSIONER BYRON: Right. The problem is the all  
21 or nothing, so even if it was an assumed 50 percent, that  
22 that would at least leave some continuity in the program.

23 MR. MESSENGER: And if I can, just a brief  
24 additional fact. I worried about the same problem that you  
25 did in terms of how do we figure out not just funding

1 levels, but how do you convert that to savings, and I think  
2 if you go back through the historical record, you can see  
3 there are trends in the amount of kilowatt-hours purchased,  
4 so to speak, per dollar of funding, and you can look at  
5 those trends and use those trends to develop an easy way to  
6 convert a thousand dollars of funding into both an energy  
7 and a peak component. So I think it is possible to do  
8 probabilistic and make it simpler than having to do 15 or 20  
9 different forecasts, but you have to be willing to  
10 extrapolate the data from history and agree that history has  
11 some way of informing what the future might be like. If the  
12 future is really different, then you are right, Mike, there  
13 is no way of figuring out per million dollars spent in 2016  
14 what you are going to get. But I would argue that if you  
15 look at the patterns of what the utilities at least have  
16 reported getting per dollar of expenditure, you can see a  
17 pattern from history and use that to bound the  
18 probabilities.

19 COMMISSIONER BYRON: Turning to the Energy  
20 Commission staff, since this presentation was really  
21 directed towards the staff in terms of recommendations,  
22 instead of getting more folks like me popping up, say,  
23 "Yeah, why don't you do that," do you have any questions for  
24 Mr. Messenger?

25 MR. KAVALEC: Chris Kavalec, Energy Commission

1 staff. Going back to your slide that you had with  
2 refrigerators, and you had a demand for energy services, I  
3 was not clear, although we have talked about this before,  
4 how you were defining energy services. I mean, so when  
5 energy services are going up, what does that mean?

6 MR. MESSENGER: Okay, so first let me say that it is  
7 all in the paper and I would be happy to send that to you,  
8 but I am going to give you a really quick answer. It  
9 includes the following dimensions: 1) increases in the  
10 number of refrigerators per household; so if people are  
11 going from one refrigerator per household to 1.5  
12 refrigerators per household, that would be picked up in this  
13 indicia of structural service growth; it includes increases  
14 in the size of the refrigerator, again, going from maybe 18-  
15 cubic-feet to, I think the latest figures I have seen are 23  
16 or 24-cubic-feet on average that people are purchasing, so  
17 that would be included; and then the last thing that is  
18 included is increases in features service demand, and the  
19 biggest feature service that has an effect on energy use is  
20 when people say, "I want through-the-door ice." Through-  
21 the-door ice features usually adds about 10 percent over the  
22 base usage, so as a greater fraction of people in California  
23 say, "I want through the door ice" when they buy a  
24 refrigerator, that again is reflected in increased service  
25 demand, demand for essentially more convenience, in this

1 case, and that leads to a higher energy use per  
2 refrigerator, even if the standard is there, because the  
3 standards let you use more energy if you have through-the-  
4 door ice. So did that answer your question? Okay. I am  
5 just showing this in case someone wants to talk to me about  
6 this later. This, I think, is a very interesting look at  
7 what has happened in terms of the savings by end use for the  
8 non-residential sector, commercial and industrial, and that  
9 big red area in there is lighting fixtures and ballasts and  
10 that is what Don was referring to earlier as, you know, a  
11 change-out from T-12 to T-8 to T-8 premium ballasts. So  
12 that has been pretty much a constant, but the other thing  
13 that you can see in there is, CFLs -- and this is primarily  
14 -- I would expect CFLs to small commercial, although there  
15 may be CFLs to some large commercial customers, have been  
16 increasing, as well, in the non-residential sector. Anyway,  
17 that concludes my presentation. Any more questions?

18 COMMISSIONER BYRON: Seeing none, Mr. Messenger,  
19 thank you. I found it very informative.

20 MR. MESSENGER: You are welcome.

21 MR. KAVALEC: We have gone into excruciating detail  
22 on the Energy Commission's approach to incorporating energy  
23 efficiency program impacts, both in the models and through  
24 post-processing. And, of course, we are not the only people  
25 that measure energy efficiency impacts, so one of our

1 working group meetings focused on the utilities presenting  
2 their approach to measuring energy efficiency impacts within  
3 their forecasts. So here to give a summary of the utilities  
4 approaches is, again, Chris Ann Dickerson.

5 MS. DICKERSON: Thank you, Chris. And good  
6 afternoon. My name is Chris Ann Dickerson. All right, so  
7 as Chris mentioned, what I am about to present is an  
8 overview of how the utilities, and actually a little bit  
9 about, at a high-level, how the Energy Commission constructs  
10 their demand forecasts, and in particular, incorporating  
11 energy efficiency.

12 Now, what I wanted to say about this presentation  
13 is, what I am not about to present here is a detailed course  
14 or teaching on the methodologies; in fact, we have far more  
15 qualified forecasters here in this room than I am. But what  
16 is interesting about this presentation is the ability to  
17 compare at a high level the variety of methods that the  
18 different utilities and the Energy Commission and others are  
19 using, so that you can see really that there is a wide  
20 variety of options in terms of how you put these forecasts  
21 together. And when you go to compare the different  
22 approaches, it is not surprising, in my opinion, that we are  
23 tending to see different kinds of results coming out of  
24 different models. So that is what we are going to talk  
25 about here.

1           So, once again, as we have talked about abundantly  
2 today, when you are talking about energy efficiency, you are  
3 inherently talking about forecasts. The accomplishments  
4 themselves are forecasts because they are estimates of what  
5 might be saved based on what might have occurred, and now we  
6 are talking about incorporating forecasts into forecasts, so  
7 it is sort of, you know, it is a little bit of an endless  
8 regress when you are talking about efficiency, and that is  
9 always something that is just important to remember.

10           So as we have mentioned earlier, the participants in  
11 our working group put together some information about their  
12 forecasts, and we compared these in a couple of working  
13 group meetings, so we have the demand forecasts focusing on  
14 the energy efficiency component from Energy Commission  
15 staff, from the IOUs, and from the publicly owned utilities,  
16 the POUs, the two largest, L.A. and SMUD. We also had some  
17 presentations from ITRON's SAE, they call it, the  
18 Statistically Adjusted End Use modeling group, and there is  
19 a little bit of information about the way the forecast is  
20 constructed for the PUC Energy Policy Goals. So the goals  
21 approach is not really a forecast, per se, because it does  
22 not forecast demand of energy, but it does forecast adoption  
23 of energy efficient goods and services, and in so doing you  
24 can determine from that an amount of savings. So that is  
25 sort of a different approach. But these things all become

1 talked about together, so it is interesting to know the  
2 different kinds of approaches that are used.

3 All right, so just again, at a very high level, it  
4 is important to bear in mind that we are talking about very  
5 different basic types of forecasts here. The Energy  
6 Commission uses an end-use-based forecast, and so we are  
7 looking at building stock and saturation of equipment and  
8 appliances throughout this state, and based on -- we have  
9 been using the term UEC's, and Use Consumption of Energy,  
10 and a number of other types of characteristics. You build  
11 from the ground up, looking at the buildings, and the  
12 equipment, and the appliances, and the usage, and the  
13 population; from the ground up, you develop some estimates  
14 of the amount of energy that is going to be demanded. Now,  
15 the utilities basically use econometric forecasts, and the  
16 difference there is that we are basically forecasting future  
17 energy used based on past energy use. So you can see at the  
18 outset that these are inherently different methods. The  
19 utilities also, in some cases, supplement their econometric  
20 forecasts with some end use forecasts, and basically that is  
21 true back and forth among all these different methods, is  
22 that there really is never one -- is it not the case that  
23 these methods are entirely separate; rather, they are put  
24 together in different sort of mosaics, and for each  
25 different forecast. So you could say that something is

1 mostly econometric, but there will be little end-use-based  
2 components. As we mentioned for the energy efficiency  
3 potential studies that are done for the Public Utilities  
4 Commission, as we mentioned a minute ago, we are not  
5 actually forecasting energy use at all, but rather we are  
6 forecasting the amount of energy efficiency that will be  
7 adopted by participants in the state, and it could occur  
8 naturally and, then, through that, you forecast an amount of  
9 energy that would be saved.

10 All right, so again, this is just to give you a  
11 flavor of the different types of approaches that can be used  
12 to incorporate energy efficiency into a demand forecast. So  
13 one of the first methods is that you need to reconstitute  
14 your loads, so what this means is that, inherent in your  
15 forecast is the notion that efficiency has already been  
16 occurring and is evident in the data that you are using to  
17 forecast forward. So in order to back out the energy  
18 efficiency, you first -- you subtract off the energy  
19 efficiency that has already occurred, and reconstruct your  
20 forecast -- oh, I am sorry, let me rephrase that -- you add  
21 energy efficiency to the demand that has already occurred.  
22 Here, we can look at this slide. So the red line is your  
23 measured load, the red dotted line, you add back the amount  
24 of efficiency that has taken place, so that you construct,  
25 in essence -- they tend to call it a consumption variable --

1 this is the amount of consumption that would have occurred  
2 if the efficiency had not been conducted. From that, you  
3 develop some new parameter estimates and you forecast  
4 demand, going forward, as if that efficiency had not  
5 occurred. And then you subtract out the energy efficiency  
6 that has already occurred, plus the efficiency that you  
7 expect to occur in the future. And, again, I think the  
8 point here is not to learn to do the method, but rather to  
9 contrast this with a couple of approaches that we will see.

10           Second approach is that you include energy  
11 efficiency as a variable in your model to predict the  
12 historic demand, the demand for which you have observable  
13 data. And then you develop your forecast going forward,  
14 using as an explanatory variable to predict future  
15 consumption, you use your energy efficiency coefficient as a  
16 term in the model. And this model works better when your  
17 energy efficiency is expected to be the same, going forward,  
18 as it has been in your historic period for which you have  
19 sales data.

20           Third method that you can use is basically to  
21 prepare your forecasts going forward, using existing  
22 consumption data, without regard, at first, to how much  
23 energy efficiency may or may not be included in the  
24 forecast. And rather, you become interested in the  
25 efficiency only to the degree to which future efficiency is

1 expected to be different from that which has historically  
2 been occurring in your forecast. So if approximately the  
3 same amount of efficiency is expected to occur over time,  
4 you can just leave your forecast the way it is and not worry  
5 about the amount of efficiency that might be embedded in  
6 your sales data. And then, if you anticipate that there  
7 might be more efficiency, for example, that there are  
8 changes in program funding -- more or less efficiency, but  
9 usually what we are seeing is more -- then you can do, as we  
10 have been mentioning, a post model adjustment where you then  
11 add or you subtract from your forecast the additional amount  
12 of energy efficiency that is expected to occur in your  
13 forecast time period, but you only subtract additional  
14 efficiency that is above and beyond that which you have been  
15 seeing historically over time because you assume that that  
16 is embedded in your forecast.

17           So something that is important to remember is that  
18 any of these methods can be used in varying combinations.  
19 They can be done at the sector level, so you might use one  
20 or more of these methods all the way through, let's say,  
21 your residential customer class, your industrial customer  
22 class, your commercial customer class, and then add them up  
23 all at the end. On the other hand, you may take energy  
24 efficiency all in one grand total, together, and subtract if  
25 off that way, either using any of the three methods we

1 discussed, or some permutations of the methods. In  
2 California, we show that the utilities are using a  
3 combination of methods 1 and 3, so those are the methods  
4 where we either reconstitute loads, or where we just worry  
5 about the trends, overall, and we have the Energy Commission  
6 using Method 2, where they are using energy efficiency as an  
7 explanatory variable in their model. And if you will  
8 recall, we have different kinds of basic models here, as  
9 well. So we have the basic econometric forecasts going on  
10 with the utilities and use forecasts going on from the  
11 Energy Commission.

12           Something that is also worth mentioning is that  
13 treatment of distributed generation is also an issue, so I  
14 am not sure that I know this information for all of the  
15 utilities, but I can say, for example, for San Diego, they  
16 use a Method 3 where they only forecast a trend line for  
17 energy efficiency, however, they manage their distributed  
18 generation, their solar and their other DG, they subtract  
19 that from their forecast, and then they use sort of a  
20 method, the Method 3, and then they forecast the trend line  
21 without subtracting the energy efficiency off. And if that  
22 is hard to follow, that is okay because, really, the only  
23 important point is that there are different ways to do it.  
24 So it is interesting when we go to compare the forecasts,  
25 that they do not match, and maybe one would not really

1 expect them to all match.

2           We have spent a lot of time already talking about  
3 the evaluation data coming from the energy efficiency  
4 programs, so I will not belabor that point, except to say  
5 that, in addition to having these different methods of  
6 constructing the forecasts, we also have the different  
7 entities using different types, and eras, and vintages of  
8 program data from CPUC programs. And as you have heard many  
9 people saying, as presented in this chart, even a basic  
10 reporting of program accomplishments goes through five or  
11 six iterations before it is considered final. And this line  
12 here for the ex ante results, the first results that are  
13 reported after the program accomplishments have been tallied  
14 up, but before they have been evaluated, the ex ante data  
15 tend to be the most consistently available, and that is what  
16 most of the models are tending to use; and it is interesting  
17 to note, of course, that from the PUC's perspective, it is  
18 the ex post, or what we call the realized results, the  
19 proportion of the ex ante results that were realized in the  
20 end, that constitute the actual final record of what  
21 occurred. So we have at a minimum something of a disconnect  
22 in terms of using these ex ante results in the models, and  
23 the ex post reported results being those results that are  
24 considered final by PUC and, as you have seen, Energy  
25 Commission, in particular, has taken great care to make a

1 number of adjustments to those ex ante results to get them  
2 to match as consistently as possible with what we might  
3 consider to be the final results. And when we did our  
4 comparison in our working group meeting, we see that the  
5 utilities are using varying versions of these ex ante data,  
6 in some cases with some ex post adjustments.

7           Okay, so we have covered this. In the program data  
8 we have, again, you have heard from a number of speakers  
9 today that these ex post program data are difficult to work  
10 with because they are aggregated in different formats over  
11 time. And the results are hard to match back to the  
12 original claims. And, again, we do not want to make -- it  
13 is the case that this information exists somewhere, it just  
14 exists in such diverse forms that it is very difficult to  
15 aggregate together.

16           So we have just spoken about incorporating  
17 programmatic energy efficiency into the forecasts. There  
18 are also some issues with the over-arching methods for  
19 incorporating standards into the forecasts. So the Energy  
20 Commission, of course, very carefully incorporates savings  
21 from energy efficiency standards into its forecasts, using  
22 its end-use-based model. That is in many ways sort of a  
23 primary output of the CEC model. Now, the utilities, since  
24 they are using econometric forecasts, and forecasting  
25 demand, future demand based on previous demand, do not tend

1 to be as concerned about specifically incorporating the  
2 effects of standards into their data. The reason for that  
3 is that, as the standards kick in over time, so standards  
4 will be enacted, but the effects of those standards only  
5 become evident in the data over time, as new vintages of  
6 building and appliance stock become subject to the  
7 standards. So, over time, the sales data begin to  
8 incorporate the effects of those standards, in fact, they  
9 are embedded, a term we have talked about a lot today. So  
10 it is not critically important, necessarily, to explicitly  
11 model the effects of standards and, rather, you can let them  
12 show up over time because the data that you are using to  
13 construct the forecasts are beginning to incorporate the  
14 effects of those standards. And in some cases, the  
15 utilities use a blend of both of those approaches, so they  
16 will a lot of times let the impacts of the standards become  
17 evident in the data from an econometric perspective, which  
18 does not require a lot of adjustment, but if a big standard  
19 expected to have a lot of effect is coming in, they might  
20 model that explicitly in their forecast.

21 We have spoken a little bit earlier about the issue  
22 of including policy goals in forecasts and I just wanted to  
23 highlight that there are different kinds of perspectives  
24 about this issue. I think we have heard from PG&E that, in  
25 service of having sort of some matching forecasts, they are

1 interested in making sure that those goals are incorporated.  
2 We have heard from the Energy Commission that they are  
3 interested in continuing the distinction between committed  
4 and uncommitted energy efficiency, and another issue that  
5 arose in some of our working group meetings is just the  
6 concern from a resource adequacy perspective about the  
7 implications of including policy goals in a forecast if that  
8 forecast is intended to be used for procurement and/or  
9 resource adequacy purposes. So there are just a variety of  
10 issues to consider when you think about including policy  
11 goals in a forecast.

12 I think you have also heard some people mention that  
13 there certainly could be additional clarity in how different  
14 goals and policies and program effects fit together over  
15 time, and so that is when we start talking about our AB 32  
16 goals and our AB 2021 goals, and then the effects of  
17 different standards and legislation that is rolling in over  
18 time. We will have, now, the effect of the stimulus funds  
19 to consider, and there is a lot of interest by the  
20 stakeholders in our working group in having some over-  
21 arching place where we can sort of consider all those goals  
22 and standards together, so that the participants can know  
23 where they are on the map, and so that they know that  
24 someone or some group is sort of watching over the over-  
25 arching set of requirements, so that we can make sure that

1 they either add, or do not, over time. And that is, in  
2 part, what we are doing here, certainly with the Energy  
3 Commission forecasts and, in particular, the incremental and  
4 uncommitted forecasts. But there is sort of an even over-  
5 arching layer from a policy perspective about just having  
6 someone make sure that we know how all of these pieces fit  
7 together and who is responsible for accomplishing which  
8 portion of all of those goals.

9 All right, so just to sum up, we have talked about  
10 some of the methods you can use to estimate the impacts of  
11 energy efficiency, programs, and standards on consumption.  
12 There are several basic approaches, and ultimately the  
13 building blocks can be put together in many different ways,  
14 and they can be put together in many different ways in  
15 California, and they are. We have seen interest in our  
16 working group for developing a common forecasting  
17 methodology, and that is certainly something that we are  
18 interested in considering doing. And at a minimum, what we  
19 have been able to accomplish in our working group so far is  
20 increased transparency, so I think people found it very  
21 interesting to compare notes with one another about how they  
22 put their forecasts together.

23 Our working group members are struggling more and  
24 more with these kinds of issues, as efficiency becomes more  
25 important from a policy perspective and as a critical

1 feature in their forecasts, and certainly we have a group of  
2 people who are motivated to try to find some solutions to  
3 these problems, and we are making progress in the group.  
4 Thank you very much. Are there any questions?

5 COMMISSIONER BYRON: You may have said this because  
6 I was jotting down a note while you were talking, but back  
7 on slide 12, I am not sure that you emphasized your last  
8 line there, that it can require two to five years to  
9 complete evaluation. And of course, I think a message that  
10 I have learned today is what we are asking this Commission  
11 to do is very complicated, and the determination of the  
12 accurate incorporation of energy efficiency programs going  
13 forward, the attribution of that, the second step, very  
14 complicated. And then, of course, we may not know this for  
15 two or three or four years later, and we want to know it  
16 now. We want to know it 10 years ahead of time so we can  
17 set good policy. But I have to ask the question, why does  
18 it take up to five years to get that result?

19 MS. DICKERSON: Well, so in order to do what we call  
20 full ex post evaluation, a lot of times -- well, a lot of  
21 times you want to let the program cycle run for a little  
22 while so that you can do an over-arching evaluation of a  
23 cycle. So let's say you have the 2004-2005 program cycle,  
24 in that case you will wait until the close of 2005 before  
25 you even start evaluation; then there is a period of time

1 while the utilities go through their books and add  
2 everything up, and then say, you know, these are the number  
3 of -- we got this many participants in these different  
4 programs, and we have processed this many rebates, and it  
5 takes a while just to get the books settled, so that may  
6 happen, it happens in varying degrees. There are some  
7 initial filings and some subsequent filings, but that can  
8 take a number of months, maybe three to six months. So, at  
9 that time, we have some studies, a verification study now.  
10 So then ED will have their teams of consultants go out into  
11 the field and inspect to see -- well, they do a couple of  
12 things -- they inspect the books, then, and then they do  
13 some field inspections which can include on-site visits and  
14 surveys, telephone surveys, so they are actually looking at  
15 participant sites to see how many of these claimed  
16 installations can we actually count. And for the most part,  
17 there tends to be a high correspondence; in some cases, for  
18 example, in lighting, there tends to be more of an issue  
19 where some of the measures are, for example, dropped off and  
20 left in a closet, and so they are never installed. In most  
21 cases, you see close to 100 percent installation rates --  
22 and, Michael Wheeler, you can say something if I am off-base  
23 here, but for the most part, the items are installed. But  
24 in some cases there are just some errors, and you find that  
25 something is not installed and operational. So that is the

1 verification step. There are also some -- and this is  
2 something that is controversial at PUC -- but what can also  
3 happen at the verification step is that we revisit some of  
4 the initial estimates that were made to develop the program  
5 assumptions. So you see here in my -- on that first line,  
6 the green box, we have gross and net assumptions that go  
7 into determining how much energy is saved by each measure,  
8 and so the gross savings is a difference from -- the  
9 difference between the energy efficient piece of equipment  
10 and the standard, or base case piece of equipment. But that  
11 is not just one number, that is a number with a lot of  
12 parameters, so that includes how many hours the equipment is  
13 operated, the weather for weather affected measures, the  
14 affected area per measure, so an example there might be a  
15 set-back thermostat, so you have to make some assumptions  
16 about how much heating and cooling is controlled by that  
17 thermostat, and then the measure life, of course, something  
18 that we have talked about. So any and all of these  
19 parameters can change, and they do change, and the same with  
20 the net savings and that is the attribution about why was  
21 something installed. So we now have several stages at which  
22 any of those parameters can change. So you begin with your  
23 ex ante, that is your initial estimate. At the verification  
24 step, we can go into the field and, with your surveys, you  
25 can determine how many of these measures were actually

1 installed. And now at the verification step, we are also  
2 doing some revisiting of the net and gross parameters. So  
3 to your question of how long does that take, you can imagine  
4 how that takes a while for all of that to happen and the  
5 results to be added. Then, when we go to do that third  
6 step, the ex post evaluation step, a lot of times that  
7 involves metering in the field; actually, we have to contact  
8 the customers, go out to their sites, and install meters, a  
9 meter for a specified period of time, which can often be  
10 several months, and then come back and analyze the data.  
11 And sometimes we do billing analysis where you want to get a  
12 year of billing data, a year or more of billing data before  
13 the measures were installed, and then you usually wait a  
14 year and then you get a year of data after the measures were  
15 installed. So you can see right there that that would add  
16 well over a year onto ex post evaluation by the time you go  
17 out into the field, collect those data, and/or wait for a  
18 year to pass before you can have a full year of billing  
19 data, and then conduct a number of analyses, write a report,  
20 and add it up. That is what takes so long.

21 COMMISSIONER BYRON: Thank you. I am somewhat sorry  
22 I asked. But it is, obviously, very complicated, takes a  
23 long time, and I suspect it is obviously a very expensive  
24 process, as well. So any future questions? Please, come  
25 forward, yes. Absolutely. You can comment, you can

1 question, we are glad to have you.

2 MR. WHEELER: Michael Wheeler, Public Utilities  
3 Commission staff. I just wanted to take this opportunity to  
4 make a comment, which is that this is the measure-based  
5 savings regime that we currently operate within, and there  
6 is discussion, and I encourage the CEC to join in this  
7 discussion at the Commission around the fact that we have  
8 these meters on every building measuring how much energy  
9 they use, and wouldn't it be neat to come up with a way to  
10 use them to do this work for us, even though we know that  
11 there is a lot of other intricacies to the amount of energy  
12 demanded by of certain residents, the weather, the economy,  
13 all of these different fluctuations that add to the choice  
14 to turn something on or off; however, we still do have these  
15 meters on every house and, given that this system works well  
16 enough if we do not need the information that results from  
17 the EM&V analysis for three years, but because we want it  
18 sooner than that, maybe we are interested in looking at  
19 alternative pathways to coming up with that type of -- call  
20 it preliminary information in the short term -- that we can  
21 use for policy-making, and still do this type of detailed  
22 EM&V to double check and verify those assumptions.

23 COMMISSIONER BYRON: Very good. In fact, that is  
24 the real reason I asked and my interest is to inform the  
25 policy-making in terms of designing good programs, rather

1 than being five years behind. Are there any other  
2 questions, comments?

3 MR. MESSENGER: Mike Messenger, ITRON. To me, it is  
4 completely unacceptable to have a five-year lag between the  
5 program and the final evaluation. And I could spend an hour  
6 explaining to you why it takes so long, it has to do with  
7 overlapping jurisdictions and the desire to measure things  
8 to the level of precision that rarely gets done in the real  
9 world, but the bigger problem is, if it takes two to five  
10 years for the policy-makers to find out how, about the  
11 customer? You know, my view is the customer needs to have  
12 an evaluation within three months of installing this good,  
13 it is about whether or not it is working. And that is  
14 actually the place where meters can have the biggest effect.  
15 A lot of -- some of these questions cannot be answered by --  
16 let's call it smarter meters -- because, for example,  
17 figuring out what the baseline and what would have occurred  
18 anyways, there is no meter in the world that can figure that  
19 out for you, unless you want to trend the last 10 years of  
20 the customer's site and say that is the baseline that you  
21 want to use. But there are a lot of things that a well-  
22 designed smart metering system can provide feedback, both to  
23 the customer and to the policy-makers, within six to 12  
24 months, and I think it is just because of the way that this  
25 whole industry has grown up that there is endless delays in

1 every step of the way in terms of trying to figure this out.  
2 So in my view, the biggest positive impact, or one positive  
3 impact the Energy Commission could have, is they could talk  
4 with their sister agencies and say, "Look, it is not  
5 acceptable to have a five-year delay. That doesn't work for  
6 us." We need to work together to figure out, to even reduce  
7 it to two years would be wonderful. And I think the  
8 starting point should be a year and a half, or something  
9 like that, but any business could not run on a system that  
10 it takes five years to evaluate the efficacy of a purchase  
11 or a program. So, to me, that is not a good thing, it is a  
12 bad thing when it takes five years to evaluate. Other  
13 people may disagree, but...

14 COMMISSIONER BYRON: No, I appreciate that comment  
15 and, of course, that was one of the first times, I think, we  
16 have heard today the mention from the customer's perspective  
17 when they need this kind of information. Any other  
18 questions, comments? Thank you.

19 MS. DICKERSON: Thank you.

20 COMMISSIONER BYRON: I think we are in a public  
21 comment period, correct?

22 MR. KAVALEC: Yeah, that is the way the agenda was  
23 set up. But while this is up, this will only take two  
24 minutes, I might as well do this first. This is not really  
25 a presentation, I just wanted to put all the next steps that

1 we talked about in one place for the Committee to see, and  
2 for folks to comment on. We talked about refinement of the  
3 energy efficiency numbers, scenarios for economic  
4 projections, next steps related to modeling, next steps  
5 related to energy efficiency estimation that Don talked  
6 about, what the working group is going to be up to, and what  
7 ITRON/CEC is going to be working on. So this is -- we  
8 consider this cooperative mentor and we would appreciate  
9 comments from anyone on what we are doing, what we should be  
10 doing, what we are doing wrong, and so on. So you have that  
11 set of slides. So now we can take public comments.

12 **[Public Comment Period]**

13 MS. KOROSSEC: I think since we have been having  
14 question and answer after each session, I do not know how  
15 much more public comment there is going to be. Is there  
16 anything -- anybody on the Web who had anything they wanted  
17 to say? So if you are amenable, Commissioner, I think that  
18 would probably be it for our presentations and public  
19 comment.

20 COMMISSIONER BYRON: Okay. I have a few comments I  
21 would like to make in close, although I recognize it is a  
22 staff workshop, and I do appreciate all the effort that has  
23 gone into it. I have learned a great deal today. And, as I  
24 mentioned, it is unfortunate that there are just so many  
25 days on the calendar, and we could not schedule it so that

1 Commissioners Bohn and Grueneich could be here, because I  
2 know they wanted to be.

3           You know, I tried to put this in a broader  
4 perspective, if I may. The energy efficiency is at the top  
5 of the state's loading order. This is extremely important,  
6 even though it is only right now, if I understand it  
7 correctly, a net effect of about one percent. We anticipate  
8 and our policies are moving towards this being a much higher  
9 percentage. And given all the money that California is  
10 spending on the energy efficiency programs -- I should say  
11 of Californians' money -- it is vital we understand and  
12 properly account for the savings from the utility programs  
13 and the building standards, however cyclic. However, I like  
14 the way Mr. Messenger put it, we need to get the total right  
15 first, and then the allocation, second. And also, I note  
16 that policy-makers' view of energy efficiency might be  
17 different from customers' and, having worked on the  
18 customers' side of the meter for a number of years, it is  
19 all about saving money. You know, a dollar's worth of  
20 saving equates to essentially ten dollars worth of revenue  
21 for a commercial company, and certainly residential  
22 customers, I think, are very open to saving money, as well.  
23 But we are missing it in terms of the scheduling effects,  
24 here. The PUC is well behind in terms of allocating these  
25 programs on the year, and without going into the reasons of

1 it, I know that that creates problems for customers. They  
2 have budget cycles they need to make, they have to count on  
3 these programs, they need some certainty, and this kind of  
4 delay without taking that into consideration may be  
5 contributing to the kind of cyclic nature that we are seeing  
6 here. Of course, this last issue that we just brought up  
7 with regard to the measurement and verification is also  
8 important to customers, they need that measurement, they  
9 need the certainty of funding, they need consistency, they  
10 need accuracy, and so these are things that we need to also  
11 be working on, instead of just getting our forecasts right.

12           And we count on our staff here at the Commission to  
13 provide the best forecasts possible. I heard some  
14 encouraging things today, and I heard some things that  
15 concern me a little bit. They do a very good objective  
16 application of all the factors that are necessary in making  
17 the forecasts, and we count on our staff to do that. But we  
18 have got a lot more work to do, it looks like, we need to  
19 add in the publicly-owned utility programs, we need to  
20 consider other programs that I believe have not been  
21 incorporated yet, that might have an effect, the low-income,  
22 the CSI, the SGIP, the California Solar Initiative and the  
23 Self-Generated Incentive Program, and a number of the  
24 potential discrepancies that came up today, I hope the staff  
25 will address in a more substantial way. So I think I will

1 end my comments there. It has been very informative. The  
2 issues around forecasting and attribution energy efficiency  
3 will no doubt continue, and I also very much appreciate the  
4 efforts of the Demand Forecast Energy Efficiency  
5 Quantification Project Working Group, that sounds like that  
6 has added a great deal of benefit to our efforts here. But  
7 we are not done. And we will be back on another workshop on  
8 this subject for the IEPR, please remind me, Ms. Korosec.

9 MS. KOROSEC: The 26<sup>th</sup>.

10 COMMISSIONER BYRON: Of this month, of June, on June  
11 26<sup>th</sup>. I would like to thank you all for coming and for your  
12 participation. Some of you come from long away, and some of  
13 you are joining us more and more by WebEx. We appreciate  
14 all your participation. Are we done?

15 MS. KOROSEC: We are done.

16 COMMISSIONER BYRON: Thank you. We will be  
17 adjourned.

18 [Adjourn.]

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CERTIFICATE OF REPORTER

I, Kent Andrews, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission IEPR Staff Workshop on Energy Efficiency Program Measurement and Attribution And Proposed 2010 Peak Forecast, and that it was thereafter transcribed into typewriting.

I further certify that I am not of counsel or attorney for any of the parties to said workshop, nor in any way interested in outcome of said workshop.

IN WITNESS WHEREOF, I have hereunto set my hand this \_\_\_ day of June, 2009.

\_\_\_\_\_  
Kent Andrews