

COMMITTEE WORKSHOP  
BEFORE THE  
CALIFORNIA ENERGY RESOURCES CONSERVATION  
AND DEVELOPMENT COMMISSION

In the Matter of: )

Preparation of the 2008 Integrated )  
Energy Policy Report Update and the ) Docket No.  
2009 Integrated Energy Policy Report ) 08-IEP-1

Improved Efficiency Measurements and )  
Attribution in Energy Demand )  
Forecasts )  
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TUESDAY, AUGUST 12, 2008

10:04 A.M.

**ORIGINAL**

Reported by:  
Peter Petty  
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COMMISSIONERS PRESENT

Jeffrey D. Byron, Presiding Member

Jackalyne Pfannenstiel, Associate Member

Karen Douglas

ADVISORS PRESENT

Laurie tenHope

Tim Tutt

STAFF PRESENT

Suzanne Korosec

Michael Jaske

Chris Kavalec

Tom Gorin

Sylvia Bender

ALSO PRESENT

Michael Wheeler  
California Public Utilities Commission

Mike Rufo  
Itron

Richard Aslin  
Pacific Gas and Electric Company

Mary Anderson  
San Diego Gas and Electric Company

Jasmin Ansar  
Pacific Gas and Electric Company

Athena Besa  
San Diego Gas and Electric Company

ALSO PRESENT

Michael Cockayne  
Los Angeles Department of Water and Power

Art Canning  
Southern California Edison Company

Andrea Horwatt  
Southern California Edison Company

Nate Toyama  
Sacramento Municipal Utility District

Tim Vonder  
San Diego Gas and Electric Company

Nick Zettel  
Redding Electric Utility

Alan Sanstad  
Lawrence Berkeley National Laboratory

Lara Ettenson  
Natural Resources Defense Council

Matthew Tisdale  
Division of Ratepayer Advocates  
California Public Utilities Commission

## I N D E X

	Page
Proceedings	1
Introductions	1
Opening Remarks	1
Presiding Member Byron	1
Associate Member Pfannenstiel	3
Suzanne Korosec, CEC	6
Overview/Background/Objectives	6
Michael Jaske, CEC	6
Michael Wheeler, CPUC	13
Concepts and Vocabulary	20
Mike Rufo, Itron	20
Energy Efficiency Attribution and Measurement in CEC's Energy Demand Forecast	59
Chris Kavalec, CEC	59
Tom Gorin, CEC	65
Afternoon Session	83
Panel Discussion: Efficiency Attribution and Quantification	84
Michael Jaske, Moderator, CEC	84
Mike Rufo, Moderator, Itron	84
Framework for Future Conservation Quantification Progress	161
CEC Conceptual Plan, Michael Jaske, CEC	161
Conservation Quantification Approach for 2008/2009 IEPR, Mike Rufo, Itron	164

## I N D E X

	Page
Framework for Future Conservation Quantification	
Progress - continued	
Discussion about Working Group	171
Public Comment	172
Closing Remarks	187
Presiding Member Byron	187
Associate Member Pfannenstiel	188
Adjournment	189
Certificate of Reporter	190

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

10:04 a.m.

PRESIDING MEMBER BYRON: Welcome to the Committee workshop on improved efficiency measurements and attribution in energy demand forecasts. I'm the Presiding Member of the Integrated Energy Policy Report Committee. With me is our Chairman, Jackie Pfannenstiel, who's also the Associate Member of that Committee. And also joining us is Commissioner Douglas; welcome.

With us at the dais is Chairman Pfannenstiel's Advisor, Tim Tutt; and my Advisor, Laurie tenHope. And I don't know if anyone else will be joining us, but we'll introduce them if they do.

I'd just like to take a few moments and just kind of recap where we are on this particular issue, and remind everyone why we're here. I'd also like to thank you all for being here this morning.

The purpose of this workshop is to present information about clarifying and improving the measurement and attribution of energy efficiency in the Commission's energy demand

1 forecast.

2 Now, the meeting notice does a very good  
3 job of going through, in more detail, information  
4 about that objective. But you may all recall, and  
5 some of you were probably here, that we identified  
6 in the 2007 IEPR the need to conduct a public  
7 process to determine an effective method to better  
8 delineate energy efficiency savings assumptions in  
9 the Commission Staff's demand forecast.

10 As a result we had a workshop on March  
11 11th; and the conclusions of that workshop are  
12 also contained in the meeting notice. And I call  
13 them to your attention.

14 And we also released in May of 2008 a  
15 scoping order for the 2008 IEPR update that  
16 identified topics for energy efficiency that we  
17 needed to make sure we addressed. Those are also  
18 delineated in detail in the notice, and I won't go  
19 through them. But I encourage you, if you  
20 haven't, to please take a look at them.

21 I'd like to thank the staff. I know a  
22 lot of time has passed since the March 11th  
23 workshop, but they've been very busy. We've had  
24 numerous meetings to make sure that we try and get  
25 the communications around these issues correct.

1 And that we also try and get it correct in our  
2 demand forecast.

3 So we're here today to try and resolve  
4 some of these issues. We're going to be  
5 discussing a lot about nomenclature and  
6 definitions of some of the terms. Concepts and  
7 vocabulary is one of the presentations. We're  
8 going to be looking more carefully at the energy  
9 efficiency attribution and measurement in our  
10 current demand forecast. We're also going to look  
11 at and plan to improve the conservation  
12 quantification for the 209 IEPR.

13 So the plan is that we will get -- we  
14 have a very detailed agenda. The plan is that  
15 we'll take a lunch break and we'll probably go on  
16 till 3:30 timerange. And I hope you'll all be  
17 able to stay for that. If time allows, we'll do  
18 some public comment in the first, just before we  
19 break for lunch in the event we have some folks  
20 that are not able to stay for the full day.

21 So, I'll turn to my fellow  
22 Commissioners. Do we have any other comments?  
23 Chairman Pfannenstiel.

24 ASSOCIATE MEMBER PFANNENSTIEL: Thank  
25 you, Commissioner Byron. Just briefly, I also



1 want to thank people for being here today and  
2 helping us with this thorny issue. This is  
3 fundamental to what we do at the Energy  
4 Commission.

5 We've got to get this right. We've got  
6 to make sure that our demand forecasts are  
7 accurate in that they incorporate all of the  
8 latest information, and that they're  
9 understandable. That the people who are using  
10 these forecasts are using them appropriately.

11 And I think, as the Presiding  
12 Commissioner on the 07 IEPR, we realized sort of  
13 at the end of the day that there remained a fair  
14 level of either confusion or controversy, or both,  
15 over what went into this forecast.

16 And we realize that we couldn't go  
17 forward with this sort of uncertainty of where the  
18 Energy Commission believed that demand,  
19 electricity demand in California, was going; that  
20 we had to straighten that out.

21 It's been surprisingly difficult. I, at  
22 the time, thought that once we all sort of got  
23 around the same table and agreed to agree, we'd  
24 figure it out. But it hasn't been that easy. We  
25 still are slogging our way to making sure that we

1 all understand things the same way and that the  
2 forecasts are ones that we all stand behind.

3 So, hopefully we will get there today.  
4 I'm hoping that it won't be a lot more theoretical  
5 conceptual discussion, but much more kind of  
6 hands-on, what do these numbers really mean, and  
7 how much reliance can we put in them, such that  
8 the 08 IEPR update has a really strong foundation  
9 of a demand forecast.

10 So, thank you.

11 PRESIDING MEMBER BYRON: Good. I'm glad  
12 you're here. You've been at this issue a lot  
13 longer than I have, so I'm hopeful, as well.

14 Commissioner Douglas.

15 COMMISSIONER DOUGLAS: I actually do not  
16 have opening comments. I'd like to welcome  
17 everybody here, and look forward to both the  
18 presentations and the public comment.

19 PRESIDING MEMBER BYRON: Our staffs have  
20 also been very involved in this. Tim Tutt, Ms.  
21 tenHope, you want to say anything? Okay. Thank  
22 you, Commissioner Douglas.

23 Well, I'm going to turn it over to  
24 Suzanne Korosec and take it away.

25 MS. KOROSEC: All right. I just have a

1        few quick housekeeping items. For those of you  
2        who have not been here before, the restrooms are  
3        out the double doors and to your left. There's a  
4        snack room on the second floor of the atrium under  
5        the white awning.

6                And if there's an emergency and we need  
7        to evacuate the building, please follow the staff  
8        out to the park across the street, and we'll wait  
9        for the all-clear signal.

10               Today's workshop is being webcast, so  
11        for parties who wish to make comments who are  
12        listening on the webcast, the call-in number is  
13        888-566-5914; the passcode is IEPR; and the call  
14        leader is myself, Suzanne Korosec.

15               Commissioner Byron did an excellent job  
16        of setting the context for today's workshop so I  
17        think we'll move right on to Mr. Jaske and his  
18        presentation.

19               DR. JASKE: Thank you, Suzanne. For the  
20        record my name is Michael Jaske, Energy Commission  
21        Staff.

22               I'd like to start off by repeating one  
23        of the slides I used at the March 11th workshop,  
24        poses the two basic questions that we used to help  
25        frame that workshop.

1           First, for the adopted 2007 IEPR load  
2       forecast what are the near-term, incremental  
3       impacts from the next set of energy efficiency  
4       programs. That is the 2009/2011 set.

5           And, of course, this is the issue that  
6       the PUC resolved on sort of a basis of expediency  
7       by saying only 20 percent of those program impacts  
8       would be incremental to the forecast. That was a  
9       very unsatisfactory resolution of the issue, and  
10      we are striving to come up with a better way of  
11      linking the forecast with incremental program  
12      impacts.

13          And then secondly, given the Energy  
14      Commission's load forecast, what are the long-term  
15      incremental impacts and costs from the further  
16      portions of potential that policymakers wish to  
17      set forth as goals. Clearly this has come up in  
18      the staff scenario project during the course of  
19      the 2007 IEPR; it's come up in the PUC work  
20      through the GHG calculator; and now embodied in  
21      the sort of preliminary scoping plan the ARB has  
22      set forth for AB-32 implementation plan.

23          At that workshop there was a series of  
24      next steps that were proposed. This slide is the  
25      same slide with just a slightly different title,

1 characterized that it was what was proposed.

2 Much of the process identified in the  
3 steps of the first bullet are what we're going to  
4 talk about today. But unfortunately, Chairman  
5 Pfannenstiel, we're going to talk more about  
6 process than numbers, and perhaps be less able to  
7 resolve things than you might have wished.

8 These are the things that have actually  
9 been able to be accomplished since the March 11th  
10 workshop. As Commissioner Byron has said, we have  
11 had several meetings with the IEPR Committee. We  
12 have, in effect, gone through multiple iterations  
13 of a conceptual project plan, which has been  
14 distributed now to all parties. And it will be  
15 discussed as one of the last agenda items this  
16 afternoon.

17 We have obtained PUC energy division  
18 comments on a draft of that conceptual project  
19 plan; have modified it in some respects to  
20 incorporate their comments. Most importantly, we  
21 have secured a commitment from the PUC to fund  
22 Itron to undertake some of the work. And we here  
23 publicly thank the PUC for taking this step.

24 And we are in the stages of working  
25 through, in detail, what Itron will accomplish and

1 over what timeframe, gearing both to particular  
2 things that can be done as we develop the load  
3 forecast for the 2009 IEPR cycle, and at least  
4 setting the stage for some work beyond that, if  
5 not committing to doing that work, itself.

6 PRESIDING MEMBER BYRON: Dr. Jaske,  
7 thank you for reminding me. We had discussed this  
8 earlier. Wanted to make it clear, we are very  
9 appreciative of the PUC, the California Public  
10 Utilities Commission, funding of Itron -- forward  
11 on this. So, thank you for bringing that up.

12 DR. JASKE: And I think that's the  
13 reconciliation of the work that Itron has done  
14 principally on potential, but also in the sort of  
15 application of potential to goals, and how that  
16 relates to the Energy Commission's forecast, is  
17 sort of mutually important to both agencies.

18 And there are numerous things under way  
19 at the PUC that sort of, from their perspective,  
20 are aspiring for resolution of this issue; and  
21 from our perspective, the Energy Commission's  
22 perspective, moving toward some degree of  
23 resolution of this issue.

24 And one of the things we'll talk about  
25 this afternoon is the way in which we can get

1 additional support from utilities and others to  
2 sort of carry out all of this planned activity.

3 So, in terms of staff's objectives for  
4 this workshop, we're trying to get some  
5 recognition that these issues are fundamental to  
6 all forecasts. Certainly the genesis of this is  
7 with the staff's forecast, but all of the entities  
8 involved in doing demand forecasting for various  
9 purposes have these same issues.

10 Anyone who's trying to make a long-run  
11 forecast, or even an intermediate run forecast is  
12 needing to come to grips with the focus that the  
13 policymakers are raising on high energy efficiency  
14 goals, high aspirations for efficiency measures  
15 and their penetration into the population.

16 Staff has, you know, particular ways in  
17 which it deals with these issues. They may not be  
18 the best ways, and we're going to try to adopt the  
19 best techniques that we can that are applicable in  
20 the timeline of the 2009 IEPR. And to the extent  
21 there's yet better things we can do over the  
22 longer run, we'll set forth to do that, as well.

23 We want to lay out, you know, this  
24 multiyear plan, which I have to confess may  
25 disappoint you by being multiyear, but given the

1 nature of the issues and the resources available,  
2 I think there was just no getting around the fact  
3 that this is going to take more than what can be  
4 completed in the 09 IEPR cycle.

5 But you have gotten staff's attention  
6 and we are focused on improving what we do in this  
7 area, and we're hopeful that we can get the  
8 support we need from utilities and others to make  
9 steady progress.

10 And finally, of course, as you have  
11 heard and what I've said before, clearly there  
12 have been some indepth discussions with a limited  
13 set of parties, and we want this workshop to  
14 provide an opportunity for other interested  
15 parties to learn what's going on and provide any  
16 comments that they have.

17 Broadly speaking, this is the schedule  
18 that we anticipate in the 09 IEPR, itself. The  
19 workshop that was already conducted on March 11th,  
20 sort of setting the stage. This workshop, in  
21 effect reporting on progress that we have in  
22 developing these plans and securing commitments  
23 from various entities.

24 Contributing to the 08 IEPR update in  
25 what perhaps will be a chapter, or section of a



1 chapter, that can describe where we're going over  
2 time. And the 09 IEPR, itself, developing a  
3 preliminary demand forecast to have some degree of  
4 improvement, both in the substance of how energy  
5 efficiency is included, as well as its  
6 documentation.

7 Some further improvements, perhaps, in  
8 the May timeframe in the revision of that  
9 preliminary forecast. And then bringing forward  
10 in June a set of impacts from uncommitted energy  
11 efficiency programs that are consistent with that  
12 revised demand forecast.

13 And then beyond the 2009 IEPR cycle,  
14 either later in 09 or in 2010, some method for  
15 developing impacts from high efficiency scenarios,  
16 whether that be extracting from Itron's asset  
17 model results, or some translation from that  
18 model, or some other mechanism all together.

19 So that's the conclusion of my sort of  
20 opening overview and objective presentation. Are  
21 there any questions?

22 PRESIDING MEMBER BYRON: Not really a  
23 question, but we did review the schedule and the  
24 Committee determined that it does work. And it  
25 fits with our needs in moving forward with the 09

1 IEPR.

2 I'm also going to be interested to hear  
3 today how this schedule works for the utilities  
4 and the Public Utilities Commission going forward,  
5 as well, in meeting their needs.

6 So, thank you, Dr. Jaske.

7 MS. KOROSEC: All right, next we will  
8 have Michael Wheeler from the Public Utilities  
9 Commission.

10 MR. WHEELER: Good morning,  
11 Commissioners. My name is Michael Wheeler from  
12 the California Public Utilities Commission. I'm  
13 the Lead Analyst on our energy efficiency goals  
14 update work which thankfully was recently  
15 completed, with a final decision giving us energy  
16 efficiency goals for the IOUs for the years 2012  
17 through 2020.

18 I'm also the Lead Analyst on our  
19 residential strategic planning efforts going  
20 forward.

21 I'd like to take the opportunity just to  
22 thank you all for putting forth such a concerted  
23 effort on these issues. I'm here today to  
24 reiterate the CPUC's position regarding the IEPR  
25 load forecast as the state's load forecast.

1 I apologize I don't have a presentation.  
2 Things are very busy right now over at the CPUC.  
3 We've recently received the utilities' energy  
4 efficiency application filings for the years 2009  
5 through 2011.

6 There's not a lot for me to report here.  
7 Yesterday we have a prehearing conference  
8 regarding that proceeding and really all I can say  
9 is that staff is still reviewing those filings.  
10 We are reviewing them to insure that there's  
11 consistent use of the proper figures, figures that  
12 will be going forward with the demand forecasting  
13 staff in making sure that those all line up with  
14 the figures that you all use in the demand  
15 forecasts.

16 We'll also be reviewing those for  
17 compliance with our decision 07-10032 last  
18 October, setting up some key orders for utilities.

19 But I'm pleased to say that given the  
20 three-year goals for utilities, 2009 through 2011,  
21 their portfolios that they've proposed exceed  
22 those goals somewhere on the order of 117, 115  
23 percent for our gigawatt hour and megawatt demand  
24 goals.

25 But back to what we're here to talk

1 about. The CPUC has held a long-standing --

2 ASSOCIATE MEMBER PFANNENSTIEL: Excuse  
3 me, Mr. Wheeler, I just want to make sure I  
4 understood your last sentence.

5 MR. WHEELER: Sure.

6 ASSOCIATE MEMBER PFANNENSTIEL: You said  
7 that the utility filings exceed the goals by 115  
8 percent?

9 MR. WHEELER: I'm sorry, they exceeded  
10 the goals -- they met the goals at 115 percent.

11 ASSOCIATE MEMBER PFANNENSTIEL: Okay, so  
12 they --

13 MR. WHEELER: They are coming in at --

14 ASSOCIATE MEMBER PFANNENSTIEL: --  
15 exceeded by 15 percent?

16 MR. WHEELER: Sure. Sure. That's  
17 probably a better way of saying it.

18 So, the CPUC has held a long-standing  
19 position in regards to the IEPR load forecast that  
20 the forecast is the state's load forecast. And  
21 that we use that forecast in our LTPP proceedings.  
22 And that the LTPP, long-term procurement plan,  
23 proceedings shall not be an alternative forum for  
24 relitigation of such issues.

25 And we have held this position and

1 reiterated this position in multiple documents.

2 In our own OIR, order instituting rulemaking, for  
3 the 2008 long-term procurement plan. We describe  
4 there that the LTTP proceeding will be based on  
5 this IEPR load forecast. And we do not intend to  
6 re-examine load forecast issues there except for  
7 with very narrow exceptions, such as material new  
8 information or materially changed circumstances.

9 In addition, in decision 07-12052, which  
10 is the 2006 LTTP, this document also reaffirmed  
11 that long-standing position.

12 And we actually presented at the March  
13 11th IEPR update workshop similar to statements  
14 made today; we also filed comments in response  
15 to -- in regards to that workshop.

16 Those comments expressed our agency's  
17 intention to collaborate in the 2008 IEPR update  
18 proceeding. And noted that quantification of  
19 energy efficiency in the CEC load forecast was  
20 placed in the scope of our LTTP proceeding, but  
21 was deferred to the CEC IEPR process for the issue  
22 to be resolved. So that, again, is just another  
23 message, I suppose, to the utilities which will be  
24 working in our LTTP proceeding, that this IEPR  
25 proceeding is the proceeding to deal with load

1 forecast issues.

2 Also in those comments we expressed the  
3 CPUC's preference for the CEC to produce a  
4 mitigated and unmitigated forecast in order to  
5 distinguish the effects of the utilities' energy  
6 efficiency programs. And to demonstrate the  
7 tangible benefits of energy efficiency to offset  
8 new fossil generation.

9 And finally, in those comments, we  
10 included questions that were mainly prepared for  
11 the CEC's forecasting staff in order to refine  
12 understanding of our interest, or the scope of our  
13 interest.

14 Some of those questions covered issues  
15 such as the calibration of data start dates  
16 between our agencies, as well as comparing the  
17 modeled attribution of energy savings from such  
18 things as building and appliance standards, market  
19 effects, price effects and utility programs.

20 And comparing those to the CPUC's  
21 evaluation, measurement and verification  
22 conventions such as the participant and  
23 nonparticipant spillover program market effects,  
24 free-riders.

25 Today it'll be great to listen to Mike

1 Rufo and get into some of these issues about some  
2 of these definitional issues, so we can all begin  
3 to speak a similar language on some of these  
4 topics. I think that's really the first step  
5 towards coming to consensus about how to deal with  
6 these large issues.

7 And finally, I take a lot of pleasure in  
8 saying that the CPUC Staff is extremely pleased  
9 with the way that these questions and others were  
10 handled in the scoping of this conceptual workplan  
11 that Dr. Jaske and the demand forecasting staff  
12 put together.

13 We were very pleased to see the  
14 comprehensiveness of that scoping plan. And are  
15 excited to have everybody take a look at that  
16 today and excited for the discussion that ensues.

17 So, finally, I'll close by saying that  
18 the CPUC is again committed to bring its experts  
19 to the table to satisfactorily address these  
20 issues. And both through our own staff resources,  
21 and through our existing contract resources with  
22 Itron. We're really excited to see this schedule  
23 carried through.

24 And it wasn't in my presentation, but I  
25 heard your interest, Commissioner Byron. This

1 schedule does work with our LTPP proceeding. And  
2 so we're excited to see it move forward on  
3 schedule.

4 Can I take any questions from you?

5 PRESIDING MEMBER BYRON: That was going  
6 to be my only question. So, Mr. Wheeler, thank  
7 you for being here. Thank you for reiterating the  
8 PUC's commitment to our load forecast and the  
9 determination of energy efficiency in our IEPR  
10 process.

11 I'm glad to hear these things. And I  
12 also am very pleased to see the way that the  
13 staffs are working together and trying to resolve  
14 all these issues. That's why we're here today.  
15 Thank you for being here.

16 MR. WHEELER: Sure thing.

17 PRESIDING MEMBER BYRON: Any other  
18 questions?

19 ASSOCIATE MEMBER PFANNENSTIEL: No.

20 PRESIDING MEMBER BYRON: No. Good.  
21 Thank you.

22 MS. KOROSK: All right. Now we will  
23 hear from Mike Rufo from Itron.

24 PRESIDING MEMBER BYRON: Mr. Rufo,  
25 you're going to define concepts, vocabulary,



1 terms, acronyms. I've always wanted to know, does  
2 Itron, is that an acronym that stands for  
3 something?

4 (Laughter.)

5 MR. RUFO: You know, when I joined Itron  
6 a few years ago, I Googled it trying to figure  
7 that out. I think it actually is. It goes back  
8 to something with the State of Idaho, when  
9 originally the company was, I believe, founded in  
10 a garage, like many companies, and it was  
11 something like the Idaho Electronic Metering  
12 Company or something. But I can get you a clearer  
13 firmer answer to that.

14 PRESIDING MEMBER BYRON: Okay, good.

15 MR. RUFO: A Trivial Pursuit question.

16 PRESIDING MEMBER BYRON: Thank you.

17 MR. RUFO: Well, thank you,  
18 Commissioners and everyone for being here today.  
19 I'm here to talk about a couple things in this  
20 first presentation about some of the savings  
21 concepts and vocabulary that we're using in  
22 various different proceedings. Mostly focused on  
23 those related to energy efficiency and  
24 forecasting.

25 And I'm hoping that I can get through

1       this in a timely way.  Mike Jaske, if you'll help  
2       me out here with the schedule, I think we're  
3       trying to make up a little time, and I think 15  
4       minutes ahead of schedule right now.  We want to  
5       leave some time for comments.

6                So, we could use a lot of time talking  
7       in detail about a lot of these terms, but I think  
8       for today my goal is really to introduce some of  
9       the terms, refer folks to the accompanying report.  
10      And then to encourage comment really on the  
11      current set of terms that we have.

12               I think one of the project team's goals  
13      is to improve some of these definitions moving  
14      forward and to consider, you know, whether  
15      additional terms are needed or really significant  
16      changes in terminology or concepts, moving  
17      forward.

18               So, what we've started with is just kind  
19      of a where-are-we-starting-from, let's see if we  
20      can get, you know, some common understanding of  
21      the terms, as currently used, as a way of starting  
22      to move forward to what are the strengths and  
23      weaknesses or inadequacies of some of these  
24      concepts and terms, and what are possible  
25      improvements that folks think need to be made.

1 I think we have some in mind, ourselves. But we  
2 didn't want to jump too quickly to those.

3 So I think I talked a little bit about  
4 our objective; and Mike Jaske did, as well. We  
5 want to try to get folks where we have some  
6 consistency in the use of terms in the current  
7 nomenclature before we move on to potential  
8 improvements in some of that nomenclature.

9 It's not just an academic issue because  
10 the way we define these terms should directly  
11 translate into how we're doing various different  
12 analyses and quantifications. So it is material,  
13 and it can be material to all kinds of things,  
14 including things like shareholder incentives that  
15 folks may care strongly about.

16 So it's really not just -- it can  
17 sometimes seem a bit esoteric and academic, but  
18 given the importance of energy efficiency in so  
19 many different proceedings and for overall energy  
20 policy it really is important that we get this  
21 right and make some improvements moving forward.

22 So, as I noted, we're going to go  
23 through the efficiency and conservation terms and  
24 how they're used in the forecasts. Talk some  
25 about attribution of savings to programs and

1 market factors.

2 Talk some about the level of savings  
3 reasonably expected to occur, which is a long-  
4 standing Commission definition and concept, as  
5 used in the forecasting process. And then really  
6 emphasize our desire to get comment and input from  
7 various stakeholders on these issues.

8 So as I go through a few of these I'm  
9 going to, I think, you know, try to go fairly  
10 quickly at a high level. Hopefully there is a  
11 fair amount of common understanding about most of  
12 these terms and how they're used. And to the  
13 extent that there isn't, I think we will address  
14 that through the day through some of the  
15 presentations and comments, and in the written  
16 comments that are filed and subsequent further  
17 work that the team produces.

18 So, here, just wanted to differentiate a  
19 few different things. Energy intensity, energy  
20 efficiency and conservation. Energy intensity we  
21 have described here as a normalized unit of energy  
22 over some level of energy service and structural  
23 demand.

24 So this is typically expressed as  
25 kilowatt hour per square foot, or kilowatt hour

1 per household for some type of services in an end-  
2 use-driven perspective. So energy per home for  
3 water heating or for lighting.

4 Energy intensity has both an efficiency  
5 dimension and an energy service dimension. So the  
6 amount of energy for a task is a function of how  
7 efficiently the task can be performed, and what  
8 the specific level of service demanded for the  
9 task is.

10 Energy efficiency we're defining as the  
11 amount of energy it takes to deliver the task.

12 Conservation, defined here as more of a  
13 behavioral, sometimes short term, not necessarily,  
14 but it's more reduction in the level of energy  
15 service demanded. And that may be because the  
16 level of energy service demanded originally was  
17 unnecessarily high. Say, doesn't necessarily  
18 apply that there's a level of service that's  
19 inadequate after the conservation action has  
20 occurred.

21 ASSOCIATE MEMBER PFANNENSTIEL: So,  
22 Mike, does that make conservation a subset of  
23 energy efficiency? I mean the terms are used  
24 interchangeably. And I've never really thought  
25 they should be interchangeable.

1 MR. RUFO: Yeah, no, I --

2 ASSOCIATE MEMBER PFANNENSTIEL: But  
3 you're making the distinction here, I'm just  
4 trying to understand --

5 MR. RUFO: We're trying to draw some  
6 lines in the sand to separate the use of the  
7 terms. You know, lots of people in the field over  
8 the last 25 years have used these terms in the  
9 vernacular, kind of loosely.

10 But I think, you know, when you dig  
11 deeper into some of the formal definitions you'll  
12 see this type of a separation.

13 And, so, no, I would say, you know,  
14 there are some grey areas. People like to say,  
15 you know, turning off lights is conservation. But  
16 you could also argue that it's efficiency if the  
17 lights aren't really providing any needed service.

18 One distinction might be that if we  
19 provide a piece of equipment, like a lighting  
20 control system, to turn off those lights, we'll  
21 call that energy efficiency. If we're relying on  
22 people to manually turn the lights off, we're  
23 typically going to call that conservation.

24 And that distinction, I think, is useful  
25 because it points out, you know, differences in

1       how the job is being done. And, you know, we've  
2       seen, over time, that those conservation effects  
3       can surge and ebb over time in response to prices  
4       and general concerns or not about the  
5       environment --

6               ASSOCIATE MEMBER PFANNENSTIEL: Well, I  
7       think it is useful and I think conservation seems  
8       to have a connotation of deprivation with it. And  
9       I think that, so it has sort of a negative sense,  
10      I believe, in the public, so we try to use energy  
11      efficiency in lieu of. But I just wanted to make  
12      sure that was how you were thinking of it.

13             MR. RUFO: Yeah, it is.

14             MR. TUTT: Mike, I'm missing why you  
15      have energy efficiency and energy efficiency  
16      improvement. Is there a distinction between those  
17      two?

18             MR. RUFO: I'm not sure that there is.  
19      There are a few cases in the tables in the report  
20      where we introduced a concept, and then we've kind  
21      of talked about the level of savings associated  
22      with it. So, I think that's -- I'm not sure that  
23      that row is really adding a whole lot conceptually  
24      here.

25             That reminds me, I did want to thank

1 Mike Messenger for putting together the slides  
2 that I'm presenting here today. Mike and I have  
3 been working on this together. Mike wasn't able  
4 to join us today. So there may be a few questions  
5 like that where -- we didn't complete our vulcan  
6 mind meld and I may have to speculate on what Mr.  
7 Messenger had in mind there.

8 But you will see a couple of cases where  
9 we talk about the concept and we try to convert it  
10 into, you know, what does that mean in terms of  
11 the level of savings in a forecast. But I think  
12 our focus now should really be on these big  
13 picture concepts. Any other questions?

14 I think I already mentioned why, some of  
15 the reasons why we think getting these terms right  
16 is important. We were just talking about  
17 conservation, and conservation does have, I think,  
18 more of a temporal variance than perhaps energy  
19 efficiency does. So that's one of the reasons to  
20 keep a good eye on that.

21 Energy intensity changes can occur for a  
22 variety of reasons, not just efficiency. So we do  
23 think it's important to separate the intensity  
24 from the efficiency. Sometimes those are  
25 confounded a little bit, as well.



1           And, as we'll talk about in a little  
2 bit, the amount of all of this is really a policy  
3 issue. But there are many many factors that lead  
4 to both efficiency and conservation adoptions.

5           So, as we move down to, you know, some  
6 of the terms that are used in the different kinds  
7 of forecasts that are out there, just kind of  
8 laying out some annual savings for energy  
9 efficiency would be a reduction in energy  
10 intensity or UEC, as a function of an efficiency  
11 improvement. That's carried out through the  
12 number of structural-consuming units that have  
13 made that change.

14           The cumulative savings are the annual  
15 savings from a given point in time relative to our  
16 reference here over the life of the measure. And  
17 there are nuances there that aren't shown here in  
18 the table. Different analysts will sometimes have  
19 different methodologies for how these savings are  
20 forecasted to occur over time.

21           But that there's a survival function  
22 associated with that. Decisions about what  
23 happens at the end of the useful life of the  
24 measure. Is it automatically readopted; is it  
25 readopted because of code. Is it only readopted

1 with program intervention. So, there can be  
2 differences in accounting mechanisms for  
3 cumulative savings over time.

4 The baseline year for savings just  
5 defining that different analysts and different  
6 venues and different studies may have a different  
7 starting point for estimation of their savings  
8 over time.

9 And similarly, the concept of frozen  
10 efficiency forecast is one that, you know, we  
11 think can be helpful around these challenging  
12 forecasting issues. There are so many things that  
13 naturally have to be invented in the forecast for  
14 the forecast to be accurate.

15 Sometimes one of the only tools  
16 available to try to figure out how much efficiency  
17 is embedded in those forecasts is to reforecast by  
18 trying to back that efficiency out and hold  
19 efficiency constant at some point in time.

20 Any questions on that?

21 MR. TUTT: I guess I have one, Mike.  
22 When you say frozen efficiency forecast, I think  
23 another term that you might use is frozen  
24 intensity forecast. Because some of the changes  
25 moving forward are going to be ascribed to

1 nonprogram effects.

2 And I think some of the confusion is  
3 that people call that efficiency, and other people  
4 don't. Does that make sense?

5 MR. RUFO: Yeah, it does. And I think  
6 one would -- there are benefits to doing both, as  
7 well, because then there are energy service demand  
8 changes, I think, that are going on in forecasts.  
9 And I think it's useful to see the efficiency and  
10 the service demand separated a little bit because  
11 there's a lot of policy information there, as  
12 well. You know, how much of the change in demand  
13 is associated with increases or decreases in  
14 energy service demand.

15 So, yeah, I agree that those can be done  
16 together, and there are benefits to separating  
17 them, as well.

18 Any other questions on that slide?

19 We were just talking about baseline  
20 years for different modeling efforts. You know,  
21 this is something that we have seen with looking  
22 at the potential studies that have been done over  
23 the last five, six, seven years. And the CEC's  
24 forecasts, I think, have done a nice job over  
25 history of trying to estimate cumulative savings

1 from sort of the dawn of the energy policy era in  
2 California back in the mid 70s.

3 But for most of the work that a lot of  
4 us are doing with respect to forecasting future  
5 potential with respect to programs, we tend to  
6 calibrate those models to data that's, you know,  
7 in the one- to five-year looking-backwards  
8 timeframe.

9 So, even when we're estimating savings  
10 or comparing a frozen efficiency forecast, we may  
11 have completely different time references for the  
12 baseline. And there are advantages to both; they  
13 tell you different things. And we'll get back to  
14 this issue, I think, in a little bit or later  
15 today.

16 I think one of the tough issues that  
17 we'll be talking about again more today is how the  
18 different models and analyses handle naturally  
19 occurring conservation or energy efficiency. And  
20 how we deal with that aspect of savings with  
21 respect to what's in the baselines. So, let's go  
22 into some of those issues here.

23 So, now we're going to talk about how  
24 does energy efficiency manifest conceptually with  
25 respect to different types of forecasts and

1 analyses of program or market effects.

2 So, some of the things we have here on  
3 this table, we've got program direct savings. So  
4 those are typically utility kinds of programs;  
5 that is what we mean to refer to in that bucket.

6 And in that world you typically have  
7 savings being estimated in relation to a group of  
8 participants in a specific set of programs. And  
9 often in the utility program world those savings  
10 will be claimed and reported by the utilities in  
11 their filings with the PUC for a variety of  
12 purposes.

13 And currently there's a set of CPUC  
14 evaluation measurement and verification protocols  
15 that are used to estimate what those savings are.

16 I'm actually going to jump down from  
17 there quickly to the last row, since we're  
18 referring to program direct savings. There's sort  
19 of a semi-bright to grey line between what in the  
20 CPUC protocol nomenclature being referred to as  
21 program direct savings versus program indirect  
22 savings.

23 The program direct savings are typically  
24 being associated with incentive programs where  
25 there's, you know, very direct link between

1 program participation and a piece of equipment  
2 that received an incentive, and the savings are  
3 counted and claimed for.

4 Then, of course, there's a whole other  
5 set of potential program effects that are  
6 associated with less direct, nonincentive kinds of  
7 program interventions. So energy information,  
8 energy audits, and even market effects,  
9 potentially program induced market effects.

10 So in the CPUC's current protocols  
11 that's a separate bucket of savings, these  
12 indirect savings. And they have a different set  
13 of methodologies for evaluation. And generally  
14 not as much savings being claimed, although this  
15 kind of issue has shifted over time, the amount of  
16 energy that's being claimed for these kinds of  
17 indirect program activities.

18 So, another concept lurking here is  
19 okay, well, those are different flavors of savings  
20 associated with programs. Then we have this  
21 uncomfortable animal that has been called a free-  
22 rider for many many years. And a lot of  
23 discussion, not a lot of satisfaction, I think,  
24 with the use of this particular term. Although I  
25 think conceptually what it's trying to represent

1 remains very important, the term, itself, I think  
2 is problematic.

3 But here we're referring to savings that  
4 would have otherwise occurred. A program  
5 participant who receives an incentive, say, and is  
6 determined, through various analyses, to the  
7 conclusion is well, that's they participate in  
8 this program, they received an incentive, but they  
9 were going to adopt that energy efficiency measure  
10 anyway.

11 If there's time we can talk about some  
12 of the things that are wrong with that term, I  
13 think, in terms of its association, how it's used  
14 in traditional economic literature. I think the  
15 way it's used in energy efficiency is a little bit  
16 too strong.

17 But I think the bigger issue that we  
18 have with the term in the current policy  
19 environment is, you know, that term was pretty  
20 tractable and useful at the dawn of energy  
21 efficiency market interventions because we had a  
22 lot of baselines which had a very low saturation  
23 of energy efficiency; and it was easier for  
24 analysts 15 years ago to kind of establish what  
25 they thought that estimate of free-ridership was.

1 And there hadn't been a lot of years of program  
2 interventions.

3 Now, we've been doing this for 20 years  
4 or more. And we had this issue of, well, as an  
5 end-user or the consumer who takes an action today  
6 and is determined that they would have otherwise  
7 done it, is that a free-rider if they were  
8 potentially influenced by the last ten years of  
9 programs. The reason they're taking action today  
10 is because of the cumulative effect of program  
11 interventions over the last X or Y years. Is that  
12 an appropriate term to use.

13 And I think that's one of the things  
14 that we want to get comment on. Even though I  
15 think that the concept of, I would sometimes refer  
16 to this as marginal program efficacy, even if we  
17 don't like the term free-rider and we re-label it  
18 or redefine some of these things, we still have to  
19 ask the question, is there importance or validity  
20 to the concept of a marginal program effect.

21 So you take your next dollar in the  
22 program cycle and how do you determine what the  
23 incremental effect of that program dollar is.  
24 Even if you give credit to the long-standing  
25 program effects, you may still want to know what



1 is the marginal effect today of the next dollar  
2 spent.

3 Okay, the last item there is just an  
4 estimate of what the net savings are, which, you  
5 know, theoretically are these total gross program  
6 savings less the free-ridership or estimate of  
7 what would have occurred in the absence of the  
8 program.

9 Any questions on that?

10 MR. TUTT: So the net savings do not  
11 include the indirect savings?

12 MR. RUFO: They may or may not. I think  
13 it depends on you can have a net savings  
14 associated with an indirect program activity, for  
15 example, an audit program. We've estimated and  
16 others have estimated a net impact for audit  
17 programs. It kind of depends on what's being  
18 claimed.

19 So, what's in and what's out between  
20 direct and indirect, I think, is an issue that  
21 changes over time. But conceptually there's  
22 nothing, you know, that should -- you could argue  
23 that it's all in and it's just a matter of trying  
24 to get the analysis right.

25 There's no reason, I think, there should

1 -- I think there are non -- hopefully there are  
2 nonzero indirect impacts. They're just a little  
3 bit more challenging to estimate at times.

4 Any other questions on that?

5 Okay, I have a few more concepts here.  
6 Program and market attribution. I think I used  
7 the word market effects a couple times. Sometimes  
8 you'll hear people refer to market transformation.  
9 And here what we're talking about are changes in  
10 the structure of the market as a result of program  
11 interventions.

12 And generally we tend to associate these  
13 with, hoping that these are positive changes that  
14 produce more energy efficiency. So a program-  
15 induced market effect or market transformation  
16 would produce structural changes in the supply or  
17 demand side of the market that lead to more energy  
18 efficiency that is sustainable and would continue  
19 to occur absent direct intervention.

20 I'm going to skip down to the naturally  
21 occurring. And naturally occurring savings is a  
22 term that's closely associated with the free-  
23 ridership concept. But it's used more in the  
24 forecasting venue, so evaluators, when they're  
25 looking at snapshots of programs will talk about

1 net savings and free-riders, and they're in and  
2 out of a program cycle.

3 Forecasters, when looking over five, 10,  
4 15, 20 years, will often use this term naturally  
5 occurring savings, and it represents pretty much  
6 pretty similar concept, which is what level of  
7 energy efficiency is forecasted to occur in the  
8 absence of programs.

9 But that term suffers from some of the  
10 same problems, maybe not all, that the free-  
11 ridership term does, what's natural 10 or 20 years  
12 after a series of market interventions. So I  
13 think some folks are starting to think about  
14 shifting this term over to something like, you  
15 know, market-driven savings.

16 Which the idea would be that, well,  
17 today there's a certain amount of energy  
18 efficiency, there's demand in the market. And a  
19 chunk of that might be because of program  
20 interventions for the last 20 years. A chunk of  
21 that might be because of codes and standards. A  
22 chunk of that might be because of price. A chunk  
23 of that might be because of changing norms,  
24 behavior, perception of the environment, climate  
25 change.

1           But from a forecaster's point of view,  
2   it's all market demand for energy efficiency  
3   before you even try to cut it up. As opposed to  
4   maybe this naturally occurring, which has some  
5   kind of reference to some theoretical time zero  
6   year that may not be very useful anymore.

7           Price-induced savings. The idea here is  
8   recognizing that there is the price elasticity out  
9   there, getting economists to converge and agree on  
10   what the level of the price elasticity is for  
11   electricity and natural gas, is not always easy.  
12   And the data that's available to estimate price  
13   elasticity, especially down at an end-use level,  
14   is fairly inadequate.

15           But conceptually, again, changes in  
16   prices should lead to some changes in demand. And  
17   that's something that can be estimated directly or  
18   indirectly, albeit not as accurately as all of us  
19   would like.

20           I think I'm going to wait on committed  
21   savings because that term's going to come up again  
22   in a slide or two.

23           ASSOCIATE MEMBER PFANNENSTIEL: Mike,  
24   can we just make sure then that I'm clear. Could  
25   you give me some examples on the market effects

1 compared to the naturally occurring compared to  
2 price-induced?

3 For example, would market effects be  
4 more education, advertising, information induced  
5 kinds of savings? Naturally occurring might be  
6 that of perhaps over a longer period of time? And  
7 price effects through outside of those two, but  
8 just plain, you know, price elasticity demand?

9 I mean, is that really what you're  
10 saying here? I'm finding the terms a little  
11 difficult to follow without the context.

12 MR. RUFO: Yeah, and I think one of the  
13 challenges here is what we've -- what we're trying  
14 to do at this stage is to lay out some of the  
15 definitions that are out there without -- we  
16 haven't taken the step of -- let me try to clear  
17 the deck and say, well, let's redefine these  
18 things in a way that we think deals with all of  
19 the mutual exclusions --

20 ASSOCIATE MEMBER PFANNENSTIEL: Then I'm  
21 just going to bear with you and let this go until  
22 we reach the point where we try and decide which  
23 are useful definitions.

24 MR. RUFO: Yeah, but I think there's  
25 something I can address in your question. For me,

1       you know, this is my opinion, others may have  
2       different opinions. I see the term naturally  
3       occurring or market-driven as potentially the  
4       bigger animal from which some of these other  
5       things are subsets.

6               So, as I was saying before, forecasting  
7       point of view, if you believe that there's a  
8       certain structural change in the market or the  
9       equilibrium for energy efficiency is what it is,  
10      and it embodies everything that's out there,  
11      that's the bigger unit.

12             And then price and program-induced  
13      market effects would be subsets of that.

14             ASSOCIATE MEMBER PFANNENSTIEL: Really  
15      just the question of how finely policy people need  
16      to disaggregate this.

17             MR. RUFO: Yeah, and it can, you know,  
18      there can be a lot at stake --

19             ASSOCIATE MEMBER PFANNENSTIEL: And to  
20      what purpose.

21             MR. RUFO: Right, from the utilities'  
22      point of view, it's important, I think, to have  
23      some attribution and disaggregation of this. For  
24      example, you know, program-induced market effects.  
25      So if in one set of nomenclature, that's just

1       rolled into this market-driven or naturally  
2       occurring because it suits the forecasting need,  
3       from a policy point of view it doesn't necessarily  
4       reflect for the entity could be the Commission's  
5       for codes and standards getting the recognition of  
6       the long-term effect of some of the program  
7       interventions.

8               So, I think we'll get back to that issue  
9       today, I'm sure.

10              MR. TUTT: One specific question here.  
11       What do you mean in price-induced, where you say  
12       that the current staff forecast includes all  
13       behavior-induced changes in intensity in that  
14       category?

15              MR. RUFO: I asked Mike about that.

16              (Laughter.)

17              MR. RUFO: And I think he said that was  
18       a quote from one of the CEC forecasting  
19       methodology documents. Mike Jaske, or anyone  
20       else, help me out here?

21              But I think he put that in there because  
22       he found it in one of the documents and wanted to  
23       just confirm or not, or --

24              MR. TUTT: So, you mean, is it simply  
25       that there may be many reasons why a change in

1 energy intensity happens and there's just one way  
2 to reflect those in the price, in the staff  
3 forecast, and that's through a price change? Or  
4 to describe it as a price-induced change?

5 MR. RUFO: That may be, but I'm probably  
6 not the best person to answer that question.  
7 Maybe we can take that up in the next  
8 presentation. What do you think, Mike?

9 PRESIDING MEMBER BYRON: Dr. Jaske to  
10 the rescue.

11 DR. JASKE: I think from the perspective  
12 of how staff differentiates or conducts  
13 attributions, let's put it that way, that when  
14 there are things introduced for reasons other than  
15 direct impacts programs, we're not really  
16 separating between all of the various purely  
17 behaviorally induced changes.

18 So what Messenger is trying to record  
19 here is that there's several motivating factors  
20 that really we're not, traditionally at least,  
21 separating between price and other things that  
22 might have caused, you know, that measure to be  
23 introduced.

24 MR. TUTT: Okay, one last question. The  
25 market effects transformation at the top. You



1 haven't used this term. I'm wondering if it's  
2 fallen out of favor. But is that similar to a  
3 free driver effect?

4 MR. RUFO: Yes. Spill over. I guess  
5 one other thing about -- I think I said the market  
6 driven was the biggest animal, but again, where  
7 the program-induced market effects go, those are  
8 decisions that could be made by different animals.

9 And I think what we're saying is, you  
10 know, we think it's important to try to separate  
11 the price, the market effects and the program  
12 effects if we can. At least acknowledge when  
13 multiple of those entities are bundled up  
14 together, be careful with the nomenclature.

15 I think we've already talked about most  
16 of what's on this slide. I do want to pick up  
17 some time. So, let's go on to the committed and  
18 uncommitted. And I don't know if we need to say  
19 too much about this, this is what's already been  
20 documented in the IEPR in terms of committed  
21 savings being those estimated to result from  
22 programs that are funded and authorized. And the  
23 uncommitted are those that are reasonably expected  
24 to occur based on goals or program plans. But are  
25 typically not included in the forecast.

1           Now, the next slide, now talking about  
2     some of the terms, in general; how they're used in  
3     evaluation; how they're used in forecasting. And  
4     there are different sets of analysts that may use  
5     those terms that are presented slightly  
6     differently.

7           In the report we've provided some  
8     citations on the PUC's definitions and some of the  
9     CEC's definitions.

10          But you won't find a, you know, like  
11     holy grail that defines these things precisely for  
12     the industry, per se.

13          Now, we're going to talk about some  
14     terms that are used in the, for lack of a better  
15     term, stand-alone energy efficiency potential or  
16     forecasting models.

17          So I think, as most of you know, there's  
18     been a set of analyses done here in California and  
19     around the country, around the world, I'm sure, in  
20     which energy efficiency potential is estimated,  
21     but through a set of models that are typically  
22     stand-alone. They're not trying to forecast the  
23     entire load. They're looking at the incremental  
24     effect of energy efficiency over a particular  
25     period. And some of these terms have also been

1       around for a couple of decades.

2               So technical potential is typically used  
3       to represent the theoretical potential of energy  
4       efficiency if you could apply the energy  
5       efficiency measure throughout the population for  
6       all applications where it's feasible from an  
7       engineering point of view. Not taking into  
8       account consumer preferences or economics.

9               There are different -- other little  
10       sticky issue of technical potential is the time  
11       dimension. So a lot of typically most studies  
12       will estimate technical potential as a theoretical  
13       snapshot concept. So you wave the magic wand and  
14       swapped out all the equipment, there's your  
15       savings.

16               That's an interesting concept, but when  
17       you try to put it onto a forecast graph what you  
18       see is instantaneous drop in load, that's  
19       inconsistent with the natural turnover of capital  
20       equipment. So it doesn't often tell you much in  
21       the short term about what the potential is.

22               Sometimes you'll see that technical  
23       potential phased in for certain measures as a  
24       function of the capital equipment natural  
25       replacement rate.

1           Economic potential is the same thing as  
2   technical potential, but with the economic screen  
3   applied. So a cost effectiveness test is applied  
4   to each measure typically. In California that's  
5   usually based on the total resource cost test.  
6   And other jurisdictions it might be based on a  
7   different economic test. Might be based on the  
8   consumer's perspective.

9           The same issue with respect to the  
10   instantaneous and capital replacement issues.  
11   Oftentimes economic potential will be a big number  
12   initially because that doesn't take into account  
13   the time it takes to replace the equipment.

14          Achievable potential is where analysts  
15   try to calibrate these estimates of potential  
16   looking at the costs and the benefits from the  
17   consumer's point of view. And looking at what  
18   adoption in the real world is.

19          And so there are a number of different  
20   models and analyses out there from various  
21   analysts who try to estimate potential by  
22   calibrating to actual adoptions. And what happens  
23   when you do that is it usually reveals what has  
24   been called the payback cap for 25 years, or high  
25   implicit discount rates. All kinds of different

1       ways people talk about this. Market barriers, you  
2       know, why don't 50 percent of the consumers adopt  
3       the measure with the two-year payback. Depends on  
4       the measure.

5               But there are a number of reasons for  
6       each measure and market segment why consumers  
7       might not adopt a measure that looks theoretically  
8       very attractive from an economic point of view.

9               For the achievable potential analysts  
10      it's like a forecaster, they'd like to know why,  
11      but what they really care about is the bottomline.  
12      What percent of the market has adopted the  
13      measure. And if it's not explain by economics,  
14      then it's typically calibrated with some factor in  
15      order to get the model to mimic what's going on in  
16      the market.

17              And there are good things and bad things  
18      when you do that. One of the good things is that  
19      you have a calibrated analysis. One of the bad  
20      things is that you may have an analysis that's  
21      tied to the past in terms of the performance of  
22      that measure is now maybe locked down based on  
23      what the performance has been historically. When  
24      what you really are trying to look at are programs  
25      and policies that would change that dynamic

1       fundamentally.

2               Within achievable potential there's a  
3       whole range of sub-terms that get used in  
4       different studies by different analysts. Base  
5       potential, current potential, business-as-usual  
6       potential, a variety of terms to characterize, you  
7       know, what's the level of program activity that's  
8       expected in the current paradigm or the business-  
9       as-usual paradigm.

10              Then there will often be a set of  
11       analyses that ramp up from there. Aggressive  
12       potential, higher incentive levels, more  
13       information, marketing outreach. And then you get  
14       up to the top you'll see terms like maximum  
15       achievable potential or full potential. And those  
16       are typically models in which full incremental  
17       costs are assumed to be paid through rebate  
18       programs. Or the amount of resources devoted to  
19       information and knowledge building are adequate to  
20       create knowledge and awareness throughout the  
21       entire population. And that will kind of underlie  
22       this estimate of what's the maximum you can get  
23       from these voluntary programs.

24              But there's a lot of variation and  
25       differences in assumptions in all of those

1 studies. Some general consistencies, too.

2 Questions on that? Oh, I should also  
3 say that many of these studies also have their own  
4 estimate of naturally occurring or market-driven  
5 potential. And, of course, the obvious question  
6 that comes up right away when you have these  
7 stand-alone studies, that we have them all over  
8 the country in conjunction with econometric  
9 forecasts, is well, how much of that naturally  
10 occurring estimated in the stand-alone model is  
11 embedded in the econometric forecast.

12 Because hopefully, if it was the same  
13 amount you would then just take the net savings  
14 from the stand-alone energy efficiency forecast  
15 and apply that to the load forecast. But if it's  
16 not the same amount, then it wouldn't necessarily  
17 just be the net estimate.

18 Questions on some of these concepts? I  
19 know we talked a little bit about this with some  
20 folks who were here in other workshops in the  
21 past.

22 Okay. So, maybe we should wrap this up,  
23 stay on schedule. Our real goal at this point was  
24 just to put out some of these terms of reference,  
25 the sources. And it's mostly from PUC --

1 protocols and some of the CEC's own documents.  
2 And to, you know, open the door for comment,  
3 input. Because I think the project team would  
4 like to refine some of these things, make them  
5 more precise and potentially propose maybe some  
6 changes in nomenclature, or even additional terms.  
7 But we wanted to gain a lot of input from the  
8 stakeholders on that.

9 That's it. Anything else?

10 PRESIDING MEMBER BYRON: You had some  
11 good questions from the dais here, Chairman  
12 Pfannenstiel and her Advisor. But I want to make  
13 sure that the staff or public has any -- those in  
14 attendance here might have an opportunity to ask  
15 any questions or clarifications on this  
16 presentation.

17 Okay. Oh, please. Just come forward  
18 and identify yourself and ask your question.  
19 Yeah, if you're going to use one of those  
20 microphones, just turn on the green light.

21 MR. ASLIN: My name is Richard Aslin and  
22 I work for Pacific Gas and Electric Company. And  
23 I just had a couple of questions.

24 First of all, I thought the presentation  
25 was very very interesting and worthwhile. And I



1       feel like you've saved me hours and hours of  
2       having to dig through reference material to come  
3       up with this same level of understanding. So I  
4       really appreciate your presentation.

5               Just had a couple of questions that  
6       might go to your request for comments here at the  
7       end. One was on this slide number two. Let's  
8       see, it's the one that says efficiency and  
9       conservation concepts. It's number two in line.

10              So I'm still struggling with the  
11       difference between energy intensity and energy  
12       efficiency. And actually when I'm looking at this  
13       definition the first sentence says, estimated  
14       kilowatt hours required to meet a specific level  
15       of energy service.

16              And then later on it says, intensity  
17       changes include both efficiency effects and  
18       changes in the level of energy service.

19              So, I'm wondering how those two  
20       things --

21              MR. RUFO: Yeah, I think we need to  
22       clean that up a little bit. And we did have some  
23       internal back-and-forth on that.

24              What we'd like, I guess my preference is  
25       that the intensity capture the efficiency and the

1 service demand. And that the efficiency capture  
2 just the efficiency.

3 And that as kilowatt hour per square  
4 foot or per home changes or say, residential water  
5 heating, that change -- that we understand how  
6 much of that change is efficiency and how much is  
7 the service demand.

8 But at the end of the day you still have  
9 an intensity there. I think maybe we should --

10 MR. ASLIN: Okay, so it would be --

11 MR. RUFO: -- remove the service. I  
12 think we have to -- putting the service demand up  
13 there maybe confounds it a little bit, I agree.

14 MR. ASLIN: Okay.

15 MR. TUTT: One example might be when I  
16 get rid of my 30-year-old CRT television set and  
17 put a plasma screen on my wall that's going to  
18 change the energy intensity. It's not an  
19 efficiency measure necessarily.

20 MR. ASLIN: Okay, yeah, thank you. That  
21 did clarify it for me. Thanks very much.

22 MR. RUFO: Oh, you wanted -- I'm sorry,  
23 I thought we were still -- the problem was in the  
24 language, but it was in the concept.

25 MR. ASLIN: Well, it's kind of both.

1 One thing was I really do like the distinction  
2 between energy efficiency and conservation being  
3 around the level of service, since the energy is  
4 really a derived demand. And what you're really  
5 consuming is the service. I think it's really  
6 important to make a real clear distinction between  
7 those two things because it's so easy to confuse  
8 those issues. And that leads to confusion going  
9 forward.

10 So, I like the nomenclature here; I was  
11 just struggling with that --

12 MR. RUFO: Yeah, and we'll work on that.  
13 The intensity can get a little muddy, too, because  
14 if it's say kilowatt hours per home for cooling,  
15 and the home size increases, then the intensity is  
16 increased because cooling is the denominator. But  
17 if it was square footage then it would be -- the  
18 more you normalize, the more you start to approach  
19 efficiency. I think you could normalized some of  
20 the service demand out, but it's just a matter, I  
21 think, of trying to be clear.

22 That's a good comment. I know we need  
23 to, this is one where we need to sharpen the  
24 pencil a little bit more.

25 MR. ASLIN: Okay. The other question I

1 had was on slide 4, which is titled, why  
2 efficiency terms are important.

3 The last bullet says conservation or  
4 efficiency reasonably expected to occur is a  
5 policy issue. And I have to say, that immediately  
6 struck me as being -- I usually would think of  
7 that as being a technical issue.

8 So I was curious, what did you mean by  
9 that.

10 MR. ASLIN: Well, that's -- I think the  
11 credo term is mostly associated with programmatic  
12 intervention. So I think it was just highlighting  
13 that, the use of that term, at the Commission  
14 historically. I think legislatively, the Warren  
15 Alquist is, you know, it's associated with a set  
16 of programmatic policies.

17 But, you know, it's both. There are all  
18 kinds of technical issues associated with  
19 estimating that. But the animal, itself, how much  
20 is in there is more of a policy issue. Although I  
21 don't know that that's really that germane to the  
22 presentation, honestly.

23 MR. ASLIN: Okay, so if I understood  
24 that, so what you were talking about there was,  
25 for example, one of the policy choices would be to

1 just take the Public Utilities Commission's target  
2 goals and say that that's the level of energy  
3 efficiency that's reasonably expected to occur?  
4 Or it could be some percentage of that? Is that  
5 what you were getting at?

6 MR. RUFO: I think so. Pardon my  
7 equivocation, because I'm just not positive, since  
8 Mike Messenger put these slides together. He  
9 might have also been trying to get at -- one of  
10 the things I didn't maybe emphasize is that this  
11 term conservation is really the one that's the  
12 official term, conservation reasonably expected to  
13 occur. So he may have been referring to it maybe  
14 policy issue with respect to whether we want to  
15 change that to efficiency reasonably expected to  
16 occur, or come up with some other term to capture  
17 both efficiency and conservation.

18 MR. ASLIN: Okay, thanks. If you could  
19 bear with me for just one last question here. I  
20 have slide number 7 called attribution of observed  
21 or estimated savings.

22 MR. RUFO: Yeah.

23 MR. ASLIN: What I'm interested in  
24 knowing, and maybe the fellow from the Public  
25 Utilities Commission could answer this, as well,

1 but for the current targets that are out there  
2 through 2013, in this slide of those targets,  
3 which one of these boxes is closest to those  
4 targets?

5 Is it program-direct savings? Is that  
6 the measurement of the target? Or is it the net  
7 savings? Are you familiar with that?

8 MR. RUFO: I am familiar with it. My  
9 understanding is in the 06/08 cycle it's primarily  
10 the direct. There's not an allowance or a  
11 measurement, per se, of the market effects part of  
12 indirect.

13 It is, I think, allowed in the 06/08  
14 cycle to claim some indirect savings on  
15 information and audit programs. Not all utilities  
16 are doing that.

17 I don't know if anybody from the  
18 audience wants to comment or clarify. I think  
19 Edison, you guys are claiming some indirect audit  
20 effects in your 06/08 portfolio.

21 But what's not on the table in the  
22 current measurement regime or in the current --  
23 maybe I should say risk reward regime, is  
24 inclusion of, you know, market effects or  
25 nonparticipant spillover as it's sometimes

1 referred to.

2 So the current goals are net goals. And  
3 the way you get to the net goals is, you know,  
4 determined by each utility. But the claims are  
5 primarily on the direct and a little bit on the  
6 indirect side.

7 Does that -- I guess Michael Wheeler's  
8 not here, but, utilities, anybody? Does that  
9 sound right enough? I guess when we take that  
10 up --

11 MR. ASLIN: Okay, an area for further  
12 discussion.

13 MR. RUFO: Why don't we take that up in  
14 your guys' panel. Get some other input on it.

15 MR. ASLIN: All right. Well, thanks  
16 very much. I really appreciate that.

17 MR. RUFO: Yeah.

18 DR. JASKE: I don't think I or,  
19 Commissioners, in your opening comments, we  
20 reminded the audience that I believe August 19th  
21 is the date for comments.

22 And to the extent that there are  
23 clarifications the parties want to make as a  
24 result of this presentation and others, as we are  
25 going to be influencing things moving forward,

1       those kind of comments are especially appreciated.

2               We'd like to sort of receive them on  
3       that date so we can build them into our materials  
4       and start making progress.

5               PRESIDING MEMBER BYRON:   Thank you, Dr.  
6       Jaske.   That date is also in the notice of the  
7       Committee workshop August 19th.

8               Ms. Korosec.

9               MS. KOROSEC:   All right, I think we'll  
10       be moving on now to the staff presentation on  
11       energy efficiency attribution.   Mr. Kavalec.

12              MR. KAVALEC:   My name is Chris Kavalec  
13       from the demand analysis office.   I'm going to  
14       take just a couple of minutes here to give a brief  
15       review/summary of our model structure and how we  
16       incorporate efficiency.

17              And this is just meant to give sort of a  
18       minimum level of familiarity to the way we do  
19       things to better inform our discussions later.

20              And then Tom Gorin is going to go into a  
21       little bit more detail on some of these things.  
22       So if you have questions about the dirty details,  
23       I would suggest waiting for his presentation.

24              And he's also going to talk about some  
25       of the challenges that we face in modeling



1 efficiency.

2           So, here's the forecast structure. On  
3 the left-hand side we have the residential and  
4 commercial models which are our end-use models.  
5 The agricultural model which is an econometric  
6 model. And then on the right the industrial  
7 model, which is a hybrid econometric and end use.

8           We also project energy consumption for  
9 transportation, communications and utilities and  
10 street lighting in simpler models.

11           And the results from these are gathered  
12 together into the summary model where we calibrate  
13 to historical use; we adjust for weather; and we  
14 make certain external program adjustments, for  
15 example, for unclassified use.

16           Then annual totals from the summary  
17 model are shuffled off to the peak model where  
18 incorporated load shapes in the peak model allow  
19 projections of peak for each year for each service  
20 territory.

21           Okay, incorporating efficiency programs.  
22 The two sectors where we explicitly account for  
23 efficiency programs for the residential and the  
24 commercial models. And the bulk of programs that  
25 affect residential and commercial are incorporated

1 in the models.

2 Past impacts are incorporated implicitly  
3 in other sectors through calibration to actual  
4 energy use. Historic and projected impacts from  
5 committed efficiency programs not modeled in the  
6 residential and commercial models are accounted  
7 for in the summary model which I'll talk about a  
8 little bit more in a minute.

9 And we plan to modify in the future the  
10 industrial model to allow explicit incorporation  
11 of efficiency programs.

12 Okay, the residential model, our end-use  
13 model. Forecast residential consumption based on  
14 projections of the number of households, appliance  
15 saturations and appliance unit energy consumption,  
16 or UEC, which just basically means average energy  
17 use in a given period of time for an appliance.

18 As I mentioned, it incorporates most of  
19 the residential efficiency program impacts through  
20 the introduction of building and appliance  
21 standards and various retrofit programs. A  
22 complete listing of the programs that are included  
23 is given in one of the discussion papers for the  
24 workshop today, the one on modeling efficiency.

25 Efficiency program impacts are handled

1 through adjustments to the UECs, given the  
2 assumptions we make on penetration and compliance.  
3 And, as we've talked about earlier this morning,  
4 sorting out impacts from individual programs  
5 requires adjusting for price and other market  
6 effects.

7 The commercial model. Our other end-use  
8 model that forecasts energy use for electricity  
9 and natural gas by projecting commercial floor  
10 space. The portion of floor space devoted to each  
11 end use, and end-use energy intensity. In other  
12 words, energy use per square foot in a period of  
13 time.

14 Like in the residential model, it  
15 incorporates the bulk of commercial efficiency  
16 program impacts through the introduction of  
17 standards and federal, school and hospital  
18 programs. And, again, a complete listing of the  
19 programs is given in the discussion paper.

20 Efficiency program impacts are handled  
21 through adjustments to the EUIs, given our  
22 assumptions on penetration and compliance. And,  
23 again, sorting out impacts from individual  
24 programs requires muddling through price and other  
25 market effects.

1           Okay, the summary model, as I said,  
2       combines the energy forecast from all the  
3       individual sectors. The combined forecast is  
4       adjusted for weather, unclassified consumption and  
5       efficiency programs. And it's calibrated to  
6       historical data.

7           The additional efficiency adjustment  
8       accounts for committed programs that are not  
9       incorporated in the residential or commercial  
10      models. And examples of these programs include  
11      master metering, industrial energy management  
12      incentives, and a complete list is given in the  
13      discussion paper.

14          To quantify these programs, the way we  
15      do it is first year impacts are assigned a useful  
16      measure life. Then a degradation factor is  
17      applied to each year of that useful life to  
18      account for poor maintenance or equipment failure.

19          And if you can't get enough of this  
20      stuff, we have a couple papers available on our  
21      website included with the materials for this  
22      workshop. They give you tons of details on our  
23      modeling and how we handle efficiency.

24          So, with that I will turn it over to Tom  
25      Gorin unless there are questions about our general

1 approach.

2 ASSOCIATE MEMBER PFANNENSTIEL: Yes,  
3 Chris, --

4 MR. KAVALEC: Yes.

5 ASSOCIATE MEMBER PFANNENSTIEL: On your  
6 slide on the residential model, the last bullet,  
7 sorting out impacts of individual programs  
8 requires adjusting for price and other market  
9 effects.

10 Describe a little bit how you adjust for  
11 price and other -- I understand what you do with  
12 UECs. But how do you adjust for price and other  
13 market effects?

14 MR. KAVALEC: A simplified example,  
15 let's say you have a standard for some appliance,  
16 and at the same time you have a large price  
17 increase. And use of that appliance because of  
18 the price increase is reduced below that that  
19 would have happened with the standard.

20 In that particular case the standard  
21 would have no impact, because folks are reacting  
22 to the price. So those savings would have  
23 occurred anyway. So the standard is having no  
24 effect.

25 ASSOCIATE MEMBER PFANNENSTIEL: How do

1       you figure that out for each of these appliances  
2       that you model the UECs for? Just in your model  
3       go through each and every one and decide whether  
4       that is standards or a utility rebate program had  
5       any effect, or whether it was just the price that  
6       happened at that time? Or the price at some  
7       future time? Or some change in marketing or  
8       information value or some promotion? Or how do  
9       you decide that?

10               MR. KAVALEC: That is a perfect  
11       transitional question for the man who did it for  
12       us in the last forecast.

13               ASSOCIATE MEMBER PFANNENSTIEL: All  
14       right, thanks.

15               MR. TUTT: Chris or Tom, I just had one  
16       question on that slide, too. How does the  
17       residential model take into account changes in  
18       square footage of houses?

19               MR. GORIN: I'm Tom Gorin from the  
20       forecasting office.

21               We essentially used the RAS results to  
22       develop square footage estimates by housing  
23       vintage, for the vintages of houses we have in the  
24       forecast which are consistent with the building  
25       standards. And the new houses, each housing

1       vintages grown for purposes of additions and  
2       renovations at a slight increase each year, the  
3       average square footage.

4               MR. TUTT:   And then that's factored into  
5       the UEC somehow?

6               MR. GORIN:   That's factored -- the UECs  
7       for heating and cooling are based on kilowatt  
8       hours per square foot, and therms per square foot.  
9       So if the houses are getting larger the UEC will  
10      go up over time.   Does that answer your question?

11              MR. TUTT:   It's --

12              MR. GORIN:   Back to Chairman  
13      Pfannenstiel's question.   I think your question  
14      brings up part of the purpose for this workshop  
15      and the purpose for the contract and the working  
16      group, is we're trying to put all of these  
17      attribution -- we're trying to fill all the  
18      attribution boxes more accurately than we have in  
19      the past.

20              In the past, from forecasting  
21      perspective, we were more interested in what the  
22      most reasonable forecast of future energy use  
23      would be.   And we weren't that interested in  
24      whether it was a price impact or a program impact.

25              From my perspective there was a bound

1 of, you know, unmitigated forecast and a most-  
2 likely forecast, and the difference between those  
3 two was the difference allocated to savings  
4 programs.

5 And, you know, we tried our best to  
6 allocate those things in various boxes. And there  
7 wasn't the demand that there be a more accurate  
8 accounting in those boxes that there is now.

9 Does that help any?

10 ASSOCIATE MEMBER PFANNENSTIEL: But if  
11 you're doing end-use forecasting, I'm sort of with  
12 you, I just want to know what the forecast is.  
13 And, you know, how much electricity or natural gas  
14 we're going to use in California.

15 But in order to get to that I think we  
16 have to determine how much, how effective our  
17 energy efficiency programs are. And to get to  
18 that we have to back into why we're here today. I  
19 mean all of this trying to allocate this.

20 I don't think we're doing it -- from the  
21 PUC standpoint I believe the PUC needs to  
22 determine how much is in each of the boxes,  
23 because that's how they incent the utilities.  
24 That's the risk and reward in the utilities.

25 From our perspective it's less how much



1 is in each of the boxes, but when you do an end-  
2 use forecast you kind of have to do, you have to  
3 get it down to the granular level and be confident  
4 that for each item in your model you know what's  
5 happening, and whether that's happening because  
6 there's a new appliance standard, or because  
7 prices have gone up, or, you know, something else  
8 has changed in the marketplace.

9 You need to know what the right number  
10 is. So I don't see how you cannot describe the  
11 adjustments that are done for what's called there  
12 for price and other market effects.

13 I'm just trying to figure out how those  
14 adjustments --

15 MR. GORIN: Well, in the residential  
16 model there's slight price elasticity for heating  
17 and cooling use based on the relationship between  
18 the current price and the price last year.

19 And residential prices have been  
20 relatively constant over the past 20 years, so  
21 there's not a lot of movement in that. There's  
22 some discussion that that's going to change in the  
23 next forecast because there's some belief that  
24 prices are not going to be constant in the future,  
25 or declining in the future. So, we're going to

1 have to specifically visit that subject.

2 In the residential sector we've  
3 primarily driven the reductions in use by  
4 standards. And, you know, taken the price impact  
5 comes in mostly in play in the miscellaneous end  
6 use where it goes up and down in relationship to  
7 changes in historic pricing.

8 And residential use has been fairly  
9 inelastic, I think, over --

10 ASSOCIATE MEMBER PFANNENSTIEL: So there  
11 really haven't been any adjustments for price  
12 because there's been very little change in price,  
13 and it's all done on the basis of elasticity,  
14 which hasn't been very great anyway?

15 MR. GORIN: Right. Now, in the  
16 commercial model, the EUI -- there's EUI developed  
17 on the basis of a price elasticity for each end  
18 use. But that is also compared with the 1977  
19 price, which bring up a question of what our base  
20 year needs to be now.

21 And that, the reduction in the EUI,  
22 there's an EUI that's calculated based on what the  
23 difference in price is, and there's an EUI  
24 calculated on the basis of what standard or  
25 conservation program would be. And what is taken

1       for the forecast is the lower one of those. So  
2       the most credits given, if there's a huge price  
3       increase it's determined that the energy use is  
4       based on the lower one of those two.

5               Now, for the forecast purpose, now  
6       that's slightly different, and it's probably open  
7       to discussion in whether you credit the price or  
8       the program impact for the savings estimate, which  
9       is different than where you're going with the  
10      forecast.

11             ASSOCIATE MEMBER PFANNENSTIEL: Are  
12      there any other market effects adjusting -- do you  
13      adjust it for any other market effects other than  
14      price?

15             MR. GORIN: We try to -- these are old  
16      illustrations, but in gas appliances we removed  
17      the gas use by pilot lights, because they're no  
18      longer used. And we would look at changes in  
19      television sets that are market induced. You  
20      know, they've gone down, and now they're going  
21      back up.

22             Part of the problem -- not the problem,  
23      but with going back to 75 as the base year, you  
24      know, you're looking at tvs that had tubes in  
25      them. And there was a huge savings when you went

1 to transistors. And now we're going back sort of  
2 the other way, and probably the new plasma tvs  
3 will get more efficient over time.

4 And, you know, maybe because of  
5 standards, maybe not.

6 ASSOCIATE MEMBER PFANNENSTIEL: So this  
7 is the UECs --

8 MR. GORIN: This is the UECs, right.

9 ASSOCIATE MEMBER PFANNENSTIEL: -- not  
10 outside of those.

11 MR. GORIN: Right.

12 ASSOCIATE MEMBER PFANNENSTIEL: Thank  
13 you.

14 MR. GORIN: And I dug through and put  
15 these old documents out for people that wanted  
16 more detailed information. Granted they are old,  
17 but they give a good description of the savings  
18 calculations and the inputs to those savings up  
19 through the probably about 1998, even though they  
20 were done in 1995.

21 You've all seen the residential model.  
22 We track appliances by year of purchase and decay  
23 those. We track households by year of  
24 construction and decay those. And essentially  
25 have a UEC for each appliance year of purchase.

1           The benchmarks we're currently using are  
2   pre-1978 for appliances; pre-1975 for building  
3   shell. The savings for heating and cooling are a  
4   combination of both shell improvements and  
5   appliance improvements.

6           So, if you put a new SEER 13 air  
7   conditioner in a pre-75 house, it will use more  
8   than if you put a SEER 13 air conditioner in a new  
9   house.

10          And the savings are quantified  
11   iteratively by running the models, by taking  
12   specific years out. And this tries to explain it  
13   a little better. The baseline forecast is our  
14   assumption of our most reasonable forecast.

15          In order to get savings for each of the  
16   standards and retrofit programs we run the model  
17   with the standards. The efficiency's essentially  
18   frozen at 2001 levels to get the value of the 2002  
19   standards and subtract the baseline from that  
20   result to get the savings.

21          And this is not an exhaustive list, but  
22   it's pretty close to the number of iterations that  
23   we go through to try and get savings for each of  
24   those programs.

25          And the run number 8 with prices held

1 constant at the 75 level, and other measures held  
2 constant would be our unmitigated forecast which  
3 may be too unmitigated for the purposes that we're  
4 looking at it today. We may need to find a way to  
5 upgrade, to make our base year more recent.

6 What we're doing with the end uses that  
7 are affected by the standards, refrigerators,  
8 freezers, room air conditioners, dishwasher  
9 motors, dishwasher and clothes washer water use,  
10 and water heaters.

11 This is a table that I presented in  
12 March. It shows the relative efficiency to the  
13 base year of 1978 that we assumed new appliances  
14 have that are entering the stock due to standards  
15 impacts.

16 Now, if you're looking at a rebate  
17 program, some of these would -- some of the  
18 efficiencies like if you take the 1987 frost-free  
19 refrigerator standard, you would maybe interpolate  
20 between those two to increase the efficiency over  
21 that time period to look at an acceleration of  
22 more efficient appliances in that period.

23 This is an attempt to graphically look  
24 at the way the savings are calculated. The base  
25 UEC is the dark line. Now the iteration of taking

1 the standards out, the 2002 standards savings is  
2 this shaded part; the 92 savings would be the next  
3 shaded part. And this is essentially holding the  
4 efficiency and actually the size constant at those  
5 pre-standards levels for each of the iterations of  
6 the standards. So the entire shaded part is the  
7 total savings that you get from the standards.

8 I was talking with some people at LBL  
9 about this, and they said, well, but the size of  
10 the refrigerator increased. So you should  
11 actually increase the unmitigated forecast. And  
12 the point of this would be that you would give  
13 more savings to -- there's more savings available  
14 for the standards, but it doesn't actually change  
15 the forecast of where you're going. But it  
16 changes the value that the -- it changes the  
17 savings estimates for the standards, which I think  
18 is the major question of -- major purpose of our  
19 workshop is to determine what the most accurate  
20 level of savings are.

21 I think there's more agreement on where  
22 our forecasts, our most reasonable forecast is,  
23 where the larger level of disagreement is how much  
24 savings is in there.

25 Space heating, central air conditioning

1 and water heating are affected by both building  
2 and appliance standards. This is a chart that --  
3 a table that I presented in March of the  
4 relationship of heating and cooling requirements  
5 per square foot based on each of the standards.

6 And while these are based on a reduction  
7 on a square foot basis, if we're increasing the  
8 housing size, then the savings will increase  
9 because of the housing size.

10 When you put all those things together  
11 and use this multicolored chart, attempts to put  
12 attribution into all our little boxes that we  
13 have.

14 Now, with some combination -- there's  
15 some overlap between these boxes and the boxes  
16 that Mike Rufo put together, and that's, you know,  
17 sort of the crux of the matter that we're talking  
18 about today, is where all these savings go; how  
19 much they are; and trying to come to some  
20 agreement with all the parties on this.

21 Now, for the programs that we're talking  
22 about, I tried to put together what I thought was  
23 sort of the history of the new types of programs.  
24 We start out with goals that are developed from  
25 the potential studies and scenario projects.



1           The goals turn into programs. These  
2 programs start out with saving estimates or what  
3 the parties expect the programs to save. And  
4 after the program is done, there's post-program  
5 measurement using measurement evaluation and  
6 verification tools that provides an actual savings  
7 or net savings after the program has been  
8 delivered.

9           And then there's a whole question about  
10 the attribution of how the savings affects each of  
11 the boxes or how much of the savings would be put  
12 into each box.

13           The objective of the EM&B projects,  
14 which I think are important, are to document and  
15 measure the impacts of a program to see if it  
16 actually met the goals, and to provide better  
17 understanding of why the impacts occurred.

18           And from our forecasting perspective,  
19 one of the jobs that we are going to have is to go  
20 through the EM&B reports and determine what the  
21 basis for the savings is; how that savings  
22 compares to what would be in our forecast; and try  
23 and eliminate any double-counting. And I don't  
24 think that is a well-defined task right at the  
25 moment. But it's something that needs to be done,

1 and there are a lot of reports we have to go  
2 through.

3 One example is the 2004/2005 single  
4 family efficiency rebate program that, based on  
5 the measured savings results, which I'm assuming  
6 is at the meter, the program met 50 percent of its  
7 goals that it started out with.

8 Now, if you think about that from a  
9 resource planning and forecasting standpoint, the  
10 goals in the program were probably developed in  
11 2002/2003. The program was executed 2004 and  
12 2005. The evaluation, I think, was completed in  
13 2007.

14 So there's a lead time there from a goal  
15 of savings to an actual verification of savings of  
16 about five years. Which, if you contrast that  
17 with siting a power plant, putting steel in the  
18 ground, it's more tractable, I think.

19 And that's our challenge right now, is  
20 how to treat the efficiency programs as a resource  
21 and have them accounted for with the  
22 accountability that a generation facility would  
23 have.

24 And to do that we need a lot more data.  
25 And we have to have a better sense of the

1 measuring end use in housing and building type  
2 when we're in the process of conducting a new  
3 statewide RAS survey. And hopefully we'll get  
4 more cooperation or a better response rate than we  
5 did in 2002.

6 So we can get more detail on the  
7 distribution of consumption, the distribution of  
8 use within the residential sector and commercial  
9 sector, and more detail on existing level of use  
10 by appliances.

11 Any other questions?

12 PRESIDING MEMBER BYRON: Do we have any  
13 questions from those in attendance here for Mr.  
14 Gorin? Please, come up and identify yourself.

15 MR. SANSTAD: Thank you, Commissioner.  
16 I'm Alan Sanstad from Lawrence Berkeley  
17 Laboratory.

18 PRESIDING MEMBER BYRON: Is your  
19 microphone on? Can you tell?

20 MR. SANSTAD: I think my mike -- the  
21 light's on.

22 PRESIDING MEMBER BYRON: Good.

23 MR. SANSTAD: Tom, I want to say, having  
24 waded through some of this documentation fast,  
25 your presentation was great. It was a very

1 helpful sort of high-level summary of how this is  
2 all working.

3 I have a specific question on the  
4 building standards, and I'm looking at the  
5 paragraph on page 3 of one of the summary of  
6 modeling efficiency that was circulated. Not the  
7 slide, but the prose report.

8 Can you say, just in summary terms,  
9 about the use, I think you were referring to the  
10 use of DOEII, the building simulation model. Or  
11 is there some -- it says a DOE model.

12 I'm interested in how the -- the general  
13 question is how you estimate the effect of the  
14 building standards that you then do the step-by-  
15 step calibration and sort of pulling out the  
16 vintages.

17 And if -- my other question, in  
18 specific, is the use of the building simulation  
19 model and the inputs to that calibrated  
20 consistently with all of your other inputs about  
21 housing size and thermal shell bear on the  
22 characteristics of the buildings that you're  
23 simulating.

24 Does that make sense?

25 MR. GORIN: It does, and we're in the

1 process now --

2 (Alarm ringing.)

3 MR. GORIN: Somebody tried to get out.

4 (Laughter.)

5 MR. GORIN: The original analysis was  
6 done with DOEII and it's relatively ancient. I  
7 mean it goes up to R-30 ceiling insulation and R-  
8 19 wall insulation.

9 We're in the process, and what we did  
10 was developed a set of 20 or 25 iterations of  
11 kBtus per square foot for heating and cooling, and  
12 backed those out with the standard.

13 So, our assumption was if we have kBtus  
14 per square foot and multiplied by square footage  
15 we would get, you know, the difference.

16 Now there's some concern that the volume  
17 of the houses have changed, which is true. The  
18 houses now have a smaller footprint, and so the  
19 first floor is 10 feet instead of 8 feet. So we  
20 have to take that in consideration.

21 We're going back and trying -- and we  
22 have a staff member that's trying to put all the  
23 old assumptions into MICROPAS. And develop -- and  
24 redo history, if you will, of the savings based on  
25 the most recent computer simulation model.

1                   And, you know, one of the things the  
2           original DOEIII I don't think took into consider  
3           duct losses. So automatically you have no duct  
4           losses. Now we've discovered we have duct losses,  
5           so we're going to go back and try and calibrate,  
6           you know, the earlier sets of standards with those  
7           assumptions, assuming that we have 28, 30 percent  
8           duct losses.

9                   MR. SANSTAD: A quick followup question.  
10          Does this process use or otherwise in any exploit  
11          the analysis and the data that the Title 24 people  
12          go through to set the standards?

13                  MR. GORIN: We are actually using -- we  
14          were using their prototypical houses. We'd have  
15          maybe some differences with their assumptions on  
16          the operating characteristics of those houses.  
17          Because when -- we're trying to calibrate to  
18          actual use. And, you know, at some point they're  
19          basing the standards on a prototypical use, where  
20          they're assuming that everybody that moves into a  
21          house that has an air conditioner uses it.

22                  And we're finding that, you know, 15 --  
23          depending on where you're living, 15 to 20 percent  
24          of the people don't use an air conditioner, even  
25          though they have it.

1               So, we have to, you know, try and cross  
2               that bridge and make some assumptions there.

3               MR. SANSTAD: Thank you.

4               PRESIDING MEMBER BYRON: Okay. Thank  
5               you, Mr. Gorin. There's no other questions. I do  
6               have, it looks like just one person that's still  
7               with us in terms of public comment, Ms. Ettenson.  
8               We certainly want to hear from you by the end of  
9               the day. But I want to offer to you, and anyone  
10              else who is not able to stay with us until about  
11              the 2:30 timeframe, if they want to make comments  
12              at this time.

13              MS. ETTENSON: I can wait; I'll be here  
14              till the afternoon.

15              PRESIDING MEMBER BYRON: Wonderful. So  
16              if there's no one that wishes to make comments  
17              now, then I think we'll take a lunch break. Is  
18              that all right?

19              Okay, good, I'm going to take the  
20              Chairman's prerogative and suggest that we be back  
21              here at 1:15 promptly.

22              Thank you, thank you, all.

23              (Whereupon, at 12:03 p.m., the workshop  
24              was adjourned, to reconvene at 1:15  
25              p.m., this same day.)

## 1 AFTERNOON SESSION

2 1:18 p.m.

3 PRESIDING MEMBER BYRON: Thank you all  
4 for being so prompt. I apologize. I am  
5 personally going to set that clock back a few  
6 minutes. I'm always late compared to my clock, so  
7 I apologize.

8 Thank you all very much. I hope you  
9 partake of the farmers' market outside, as well,  
10 during the lunch hour.

11 Ms. Korosec, are you going to introduce  
12 this panel? Okay.

13 Mike, I would like to ask, before you go  
14 ahead, as we discussed last week, I'm going to  
15 turn this over to you and we're really going to  
16 try and extract comment information from all these  
17 folks that have agreed to be here today.

18 If you need the full time allotment, use  
19 it. But if both you and Mr. Rufo feel comfortable  
20 that we've achieved our goals here during the  
21 panel, it's your discretion to foreshorten it.

22 And, of course, we'll also defer to  
23 Chairman Pfannenstiel to make sure she's satisfied  
24 that we've gotten there, as well. So, go right  
25 ahead.



1                   DR. JASKE: Thank you. One thing that  
2                   Mr. Rufo and I are going to do is try to make sure  
3                   that we cover each of the four broad categories of  
4                   questions. I think at the end of each one of  
5                   those we're going to maybe try to give a very  
6                   brief summary of, you know, anything particularly  
7                   noteworthy that we heard or controversial that,  
8                   you know, probably the sort of thing that we might  
9                   want to be thinking of as take-aways from this  
10                  panel discussion.

11                  And first of all, thank you to all of  
12                  you who are here today for agreeing to participate  
13                  and share some insights about these issues. As I  
14                  said at the outset of my opening comments this  
15                  morning, while a lot of this effort is focused on  
16                  the staff forecast, we sort of all have these  
17                  problems to one degree or another. And the  
18                  solutions is something that we need to pursue  
19                  collectively, jointly, in some way.

20                  To some extent what we're trying to do  
21                  by asking this particular set of people to  
22                  participate is to get both a forecasting and a  
23                  program quantification perspective, because that's  
24                  the real nut of what we're trying to deal with  
25                  here.

1                   And so, I don't even actually know all  
2                   the people at this table. I think maybe we'll  
3                   just go around the table and people can say who  
4                   they're with and what sort of perspective they're  
5                   bringing to this discussion. We do that first.

6                   PRESIDING MEMBER BYRON: That means  
7                   everyone at the table.

8                   (Laughter.)

9                   PRESIDING MEMBER BYRON: Mr. Rufo, you  
10                  may begin.

11                  MR. RUFO: Yes, I'm Mike Rufo with  
12                  Itron, and I'm here to assist Mr. Jaske -- Dr.  
13                  Jaske, excuse me, with this panel.

14                  MR. GORIN: Tom Gorin from the demand  
15                  analysis office; I work on the demand forecasts  
16                  for the Energy Commission.

17                  MR. KAVALEC: Chris Kavalec, demand  
18                  analysis office. I also work on our forecasts.

19                  MR. ASLIN: Richard Aslin, Pacific Gas  
20                  and Electric Company. And I manage the team that  
21                  does the long-term energy forecasting for PG&E.

22                  DR. ANSAR: I'm Jasmin Ansar from PG&E.  
23                  I'm in customer energy efficiency strategic  
24                  planning.

25                  MS. HORWATT: I'm Andrea Horwatt from

1 Southern California Edison. I work in Edison's  
2 DSM planning and integration group. And my  
3 primary focus is long-term energy efficiency and  
4 demand response potential on forecasting.

5 MR. CANNING: That was a mouthful,  
6 Andrea. Art Canning, Southern California Edison.  
7 I manage a group that does long-term and day-ahead  
8 forecasting.

9 MS. BESA: I'm Athena Besa with San  
10 Diego Gas and Electric. And I work on energy  
11 efficiency and demand response policy,  
12 administration and measurement and evaluation.

13 MS. ANDERSON: Hi, I'm Mary Anderson. I  
14 work with --

15 PRESIDING MEMBER BYRON: You have to use  
16 the large microphones. The smaller ones really  
17 don't amplify sound.

18 MS. ANDERSON: Okay, thank you. My name  
19 is Mary Anderson. I work with San Diego Gas and  
20 Electric. I work in the long-term demand  
21 forecasting department.

22 MR. VONDER: I'm Tim Vonder; I'm also  
23 with San Diego Gas and Electric. And I also work  
24 in forecasting, long-term forecasting area.

25 MR. TOYAMA: Nate Toyama from SMUD. I

1 do load forecasting primarily. Our energy  
2 efficiency analyst is on vacation today, so I'll  
3 try to answer both the forecasting, as well as the  
4 energy efficiency questions that you might have.

5 MR. COCKAYNE: My name is Mike Cockayne.  
6 I'm with LADWP. I do the load forecasts for  
7 LADWP.

8 MR. ZETTEL: My name's Nick Zettel with  
9 the City of Redding; I'm a resource planner. I  
10 deal with both the load forecast side and energy  
11 efficiency side. And I presume I'm here to give a  
12 viewpoint of a small utility.

13 DR. JASKE: Okay, thank you. You can  
14 tell from the logistics of handing these  
15 microphones back and forth that we're not going to  
16 be able to be completely spontaneous, and also for  
17 purposes of the recording.

18 So, I think probably the best way to  
19 proceed through these questions is perhaps at  
20 least to start by just working on the first  
21 category, and maybe work ourselves around the  
22 table. People give some perspective on how their  
23 organization, and where there's two of you if you  
24 have multiple perspectives about how all this  
25 happens, that you are willing to share with us,

1       you know, that might be one way to start.

2               So, the essence of the first question  
3       really is the dichotomy between the end-use  
4       models, econometric models, the need for something  
5       either like an end-use model, or it's close  
6       neighbor, you know, a model like ASSET or some  
7       other detailed quantification of the impact of  
8       programs.

9               And then, using two different  
10       techniques, bringing them together so that you  
11       actually have a forecast. So part of -- the  
12       essence of this question really is how is that  
13       done, you know, in the way you develop long-run  
14       forecasts.

15              I think probably the staff's position is  
16       pretty well known. So, PG&E, could you start us  
17       off?

18              MR. ASLIN: Sure, I can do that. So, at  
19       PG&E we don't use an end-use model at all for the  
20       purposes of forecasting. And I don't believe we  
21       use an end-use model structure to develop energy  
22       efficiency program design, either. So we don't  
23       use end-use modeling at all.

24              The way that we develop the long-term  
25       energy demand forecast is by using the econometric

1 model which uses statistical technique to develop  
2 a relationship between the historical sales and  
3 load data, and certain economic and demographic  
4 variables, like households, energy prices, income,  
5 underlying commercial activity.

6 And once that model is fit, then we have  
7 forecasts of the underlying drivers. And we  
8 simulate the model structure to produce a base  
9 forecast.

10 Once we get the base forecast then we  
11 ask ourselves what in the future is likely to be  
12 different than in the historic period for which we  
13 use to develop the estimated relationships.

14 In the case of energy efficiency over  
15 the last few years that has been one of the key  
16 areas that we've focused on in terms of what's  
17 different going forward than in the past.

18 And what we do is we have a fairly  
19 straightforward approach to that. We do have a  
20 big team that's devoted to energy efficiency,  
21 program design and also measurement evaluation,  
22 and in reporting out what the effectiveness of our  
23 programs are. And Jasmine is part of that team.  
24 So I'll let her talk more about that.

25 But we work with that team to

1 understand, you know, what the amount of energy  
2 efficiency savings were in the past. And then we  
3 take the targets from the Public Utilities  
4 Commission that are out there, that are public.  
5 And for which it's our point of view that we've  
6 been requested to include in all of our long-term  
7 forecasts for the purposes of long-term planning  
8 for transmission or for procurement planning  
9 purposes.

10 We look at those two things, what's in  
11 the history and therefore captured in the  
12 regression, and what's in the future. And we  
13 calculate the difference between those two and  
14 then we make an adjustment to our forecast from  
15 the econometric model.

16 So just to put that in terms of, you  
17 know, some round numbers. In the current forecast  
18 if we look at our history we see that in terms of  
19 megawatts over the period of the history that we  
20 did the regression over, the average savings due  
21 to CEE programs was about 150 megawatts per year.  
22 So about 1500 megawatts over a ten-year period.

23 And when we look at the targets we see  
24 that 2009 going forward the average is about 250  
25 megawatts per year. And therefore there's an

1 average adjustment to our forecast, pushing it  
2 down 100 megawatts per year relative to what it  
3 would have been had we just used the regression  
4 model going forward.

5 So that's how we do it.

6 PRESIDING MEMBER BYRON: Good.

7 ASSOCIATE MEMBER PFANNENSTIEL: I have a  
8 question, Rich. I know some years ago PG&E did  
9 end-use forecasts, long-term forecasts, and did  
10 econometric for short-term. What moved PG&E away  
11 from using the end-use forecasts for long-term  
12 forecasts?

13 MR. ASLIN: I'll let Jasmin answer that  
14 since she was the manager of our group when we  
15 decided to make that change.

16 ASSOCIATE MEMBER PFANNENSTIEL: Good  
17 idea. Dr. Ansar.

18 DR. ANSAR: I think it was really, in  
19 some sense, an evaluation of what did we get, what  
20 did the end-use models with a much greater level  
21 of disaggregation and complication, what did we  
22 buy in terms of forecast accuracy; and in terms  
23 of, you know, just projecting what our resource  
24 needs were.

25 And on balance we came to the conclusion



1       that the additional complexity and resource cost  
2       really did not, you know, outweigh the potential  
3       benefits.

4               I mean one of the beauties, if you like,  
5       of an econometric model is that it does, it  
6       embodies historical data. And that, of course,  
7       embeds all past accomplishments. And in some  
8       sense what that does is it enables you, if you  
9       like to continuously adapt, and to learn what the  
10      effects are on these programs on resource need and  
11      on, you know, future resource need.

12             As Rick outlined, we basically moved  
13      much more towards, you know, the econometric  
14      models at least, you know, for load forecasting  
15      and resource forecasting needs.

16             That isn't to say that there isn't a  
17      role to be played by end-use-type models. And I  
18      think there is. And we use those types of models  
19      really as Rick said, in the energy efficiency  
20      arena. And what we're looking at, individual  
21      program design, program planning. We use, you  
22      know, Itron potential studies and those much more  
23      disaggregated models for those purposes rather  
24      than for the load forecasting.

25             ASSOCIATE MEMBER PFANNENSTIEL: So the

1 relationship then between your efforts at  
2 determining on a disaggregated basis the  
3 efficiency impacts of these various programs. The  
4 energy savings in the programs becomes pretty  
5 irrelevant then to Rick's forecast in the future.

6 He doesn't really need to need that  
7 information to plug in. He just looks at past  
8 experience at PUC, determine goals.

9 DR. ANSAR: Yes. He's more interested  
10 in the gross sum impact rather than, you know, the  
11 attribution issues or, you know, on a program-by-  
12 program basis. That's correct. .

13 ASSOCIATE MEMBER PFANNENSTIEL: All  
14 right, then I need to ask a question. Do you,  
15 between the two, do a true-up to compare the  
16 results that you would get on a disaggregated  
17 basis from what he is -- he's plugging in, I  
18 assume, what the PUC has said are your goals. And  
19 so you need to do a bottoms-up disaggregated  
20 calculation to get to that same place. Is that  
21 how you do it?

22 DR. ANSAR: There's isn't actually a  
23 true-up, partly because even the sum of all of the  
24 disaggregated, there are, if you like, holes or  
25 gaps. And so we don't actually do it in that

1 context. We would only do it in the context of  
2 looking at the overall forecast accuracy and error  
3 correction. And to the extent that we noticed any  
4 type of bias or anything in terms of the forecast  
5 accuracy creep in, then clearly, you know, the  
6 energy efficiency impacts would be one of the  
7 areas we would want to explore.

8 ASSOCIATE MEMBER PFANNENSTIEL: Thank  
9 you.

10 MR. ASLIN: I would just add, if I  
11 could, that PG&E is designing its programs to meet  
12 the targets or exceed them. So, there's really no  
13 conflict there.

14 And also to the extent that PG&E filed  
15 program designs, which did exceed the targets, or  
16 this won't happen, but if they design programs  
17 which didn't meet the target and they were filed,  
18 I would pick those up.

19 So, --

20 ASSOCIATE MEMBER PFANNENSTIEL: I was  
21 actually sort of thinking about an after-the-fact,  
22 a historical basis true-up of looking at what you  
23 thought was going to happen from the -- and then  
24 comparing against the actual program, the actual  
25 experience with demand.

1 MR. ASLIN: Go ahead.

2 DR. ANSAR: Sorry. I was going to say  
3 that actually does happen through the measurement  
4 and evaluation process. Because in that process  
5 that's exactly what you're doing, you're truing up  
6 what you hoped for with what's ex-post is  
7 realized. And then you use that information and  
8 those learnings to actually adapt and to change  
9 whatever the future targets are.

10 MR. ASLIN: And so that's what I would  
11 say, also. I was just going to say that same  
12 thing, that we really have a process for doing  
13 that exact thing. And that is the updating of the  
14 goals.

15 So when the goals are being updated  
16 through that whole process, all the stakeholders  
17 get to weigh in as to whether they think those  
18 goals are appropriate. And one of the key  
19 criterias that they're using to judge whether  
20 they're appropriate is what was their past  
21 experience.

22 So, if we think, oh, you know, those  
23 goals were set so high in the last round that we  
24 just really couldn't achieve them, we had 70  
25 percent of 60 percent of that. Even though we

1       designed the programs in such a way that they  
2       should have achieved them, then that would go back  
3       to inform all of the parties that were setting the  
4       goals in the next round.

5               And I think that has happened. So I  
6       think that process is working.

7               MR. TUTT: Do you explicitly account for  
8       the effects of building and appliance standards in  
9       your forecast methodologies?

10              DR. ANSAR: Yes, they are included.

11              MR. TUTT: As part of a historical  
12       correction or factor in the econometric equation?

13              MR. ASLIN: We don't explicitly adjust  
14       for that. The point of view there is that in the  
15       historic period there were upgrading to the  
16       building and appliance standard codes, and that  
17       that will continue in the future.

18              So, yes, the forecasting model, it is  
19       going to forecast forward all trends in the  
20       historical data unless they are explicitly  
21       recognized and adjusted in some way going forward.

22              So if we had reason to believe that that  
23       was not the case, then we could make an adjustment  
24       for that.

25              MR. TUTT: For example, like with the

1 efficiency programs, if you had reason to believe  
2 there would be greater savings from future  
3 standards than historically seen, you might adjust  
4 for that?

5 MR. ASLIN: Yes. If we have reason to  
6 believe that. Although that's one of the things  
7 we might want to talk about later, is the targets,  
8 themselves, the goals per the decisions from the  
9 Public Utilities Commission, it's somewhat unclear  
10 as to how they treated increases in standards and  
11 so on and so forth.

12 So that's one of the things that I think  
13 we're hoping will be an outcome here of the work  
14 between the CEC and the PUC, is to really  
15 establish, you know, what were those different  
16 buckets, so that we could, you know, better  
17 incorporate it or at least know, you know, where  
18 we're going wrong.

19 DR. JASKE: Okay. Edison?

20 MS. HORWATT: This is Andrea Horwatt.  
21 Art and I are going to kind of tag-team the  
22 description on the way Edison works things between  
23 the energy efficiency forecasting side, and then  
24 how that falls into our long-term sales  
25 forecasting efforts.

1           We really attempt to leverage the  
2       results of the work that's been done by Itron, and  
3       prior to Itron by KEMA Energy, in terms of looking  
4       at EE potential. Several different statewide  
5       studies have been done, and those are broken out  
6       by utility service territory.

7           The world that we're currently living  
8       in, the EE goals that had been set are an  
9       aggregate number that really isn't broken out by  
10      sector and by end use. So we use the information  
11      about potential from the statewide studies to help  
12      guide where we focus our energy by sector and by  
13      end use in terms of program design.

14          We use that to help guide, like in the  
15      case of our application that we filed a week or so  
16      ago, couple weeks ago, to help guide program  
17      design and where to focus our dollars and our  
18      expected kilowatt hour savings, with the objective  
19      of meeting or exceeding the PUC goals for our  
20      service territory.

21          And at that point basically those are  
22      handed off to Art.

23          MR. CANNING: On the long-term forecast  
24      we do it econometrically. We go back in history  
25      and look at how much energy efficiency we claimed

1       that we saved, and add it back to recorded sales.

2               So, we calculate a consumption number we  
3       might call it, Jack, -- I mean Mike, that is  
4       similar to energy plus energy that would have been  
5       consumed except for energy efficiency. And we run  
6       our models on that.

7               And then in the forecast period we go  
8       ahead and subtract off the total forecast of  
9       energy efficiency that came from Andrea.

10              At the same time we can include a price  
11       variable, and it's coming up as it usually has  
12       with about a negative .15 price elasticity. And  
13       that's been about the same number for the last 20  
14       years, so that seems fairly reasonable.

15              And we get the energy efficiency  
16       variable in there, which I think is an important  
17       variable, also.

18              We haven't done end-use energy  
19       forecasting since deregulation. That was about  
20       the time we dropped it back in 96 or so. Partly  
21       because of cost, the tremendous cost of running  
22       it. We had, I think, four people work six months  
23       every two years to try and get that out.

24              And at one point my group got so -- I  
25       was in a group that had generation and



1 transmission planning. Says, Art, you can't be  
2 here any more. You're going over to another  
3 group.

4 So I got sold off to another group and  
5 we just said we're going to stop doing -- we don't  
6 have the staff anymore to do end-use. And it  
7 doesn't look like that's our duty anymore.

8 Econometric was looking out short range,  
9 and that was our primarily purpose for a few years  
10 there in the mid 90s. And since then we've gone  
11 back to using econometric long range, along with  
12 Andrea's end use.

13 There were a few things we would take  
14 into account in end use, and that would be like  
15 the mid-90s, fluorescent lighting upgrades, where  
16 all commercial buildings got upgraded within two  
17 years. We put that in as a step function because  
18 that was something that happened to all buildings  
19 at once.

20 Whereas the other building standards we  
21 basically do the same as PG&E and assume that  
22 they're coming in affecting just the new  
23 buildings, slowly over time.

24 I can remember a time back, it's  
25 probably been 15 years, where one of the

1 Commissioners said our goal is to increase the  
2 standards by 5 percent every three years, or 3  
3 percent every five years, I've forgotten which.

4 But in any case, it certainly gave the  
5 goal that this is something that's going to  
6 increment slowly. And in doing some research we  
7 found an EIA publication that looked at the U.S.  
8 ad said, you have building standards impacts come  
9 in more or less linearly over time. They're not a  
10 big step function.

11 So, in that case I assume that they're  
12 in the historical trend of sales, and they'll  
13 continue into the future.

14 I think that was about all the questions  
15 I remember you asking PG&E and also our approach.

16 DR. JASKE: Art, can you clarify in  
17 adding back estimated energy efficiency savings  
18 before you do your econometric estimation, what is  
19 the source of those historic EE estimates?

20 MR. CANNING: The source would be what  
21 we call our March 31st reports to the PUC which  
22 says what net energy savings was there by customer  
23 class. Which should be coincident with what  
24 Andrea's forecasting.

25 Now, the tricky part, and it's mentioned

1 in your report, is how doe that decay over time.  
2 What happens. So I got a rebate in 1985 for  
3 buying a high efficiency refrigerator. What  
4 happens to that savings when I buy a new one.

5 And we decay in the forecast about half  
6 of the accumulative energy efficiency programs at  
7 their predicted lifetime.

8 I don't think it's the best way, I don't  
9 think it's the worst way, I just don't have a  
10 better method yet. And I think it's something  
11 that end use will give us a better explanation of.

12 DR. JASKE: Are there kinds of programs  
13 that you could use as part of the adding back, in  
14 addition to the utility ones that are in the March  
15 31st report if you actually had that kind of  
16 annual first-year savings data for them?

17 MR. CANNING: When we've looked back at  
18 like the building standards, the number of savings  
19 from the building standards gets so large. My  
20 concern is it will now overcome almost -- it'll be  
21 almost equal of half of sales, and the econometric  
22 model is liable to be driven more by building  
23 standards than by actual sales.

24 So, that's the reason we haven't  
25 actually added that, like your estimates of what

1 building standards have done. Edison programs we  
2 know a little bit more about, and we've handled  
3 that because we want to be able to tell the PUC,  
4 here's what we've done in the forecast.

5 ASSOCIATE MEMBER PFANNENSTIEL: Well,  
6 then I really don't think I'm -- how do you handle  
7 building standards? You just have a factor in  
8 there that is some gradual --

9 MR. CANNING: There isn't even a  
10 specific factor. When we forecast residential  
11 uses per customer we'll make it function of  
12 personal income per household of temperature and  
13 price. And it'll be picked up in the econometric  
14 model because the trend is already built into the  
15 trend of usage per household.

16 ASSOCIATE MEMBER PFANNENSTIEL: So it's  
17 a historical trend, whatever that is, you assume  
18 that goes forward?

19 MR. CANNING: It just picks it up into  
20 the future, too.

21 ASSOCIATE MEMBER PFANNENSTIEL: And so  
22 if we were to make some enormous changes in the  
23 way we do building standards, you would have to  
24 make some adjustment for that?

25 MR. CANNING: I'd have to make some

1 adjustments, that's -- and Rick just mentioned  
2 about his own energy efficiency standards are  
3 going up by so much that he really wants to  
4 account for them. That's one thing I feel, too.

5 If you were to pass, especially a one-  
6 time shot, where you're going to re-lamp all the  
7 buildings again, we definitely would take that  
8 into account.

9 Otherwise you're going to have to do  
10 something really to increase the building  
11 standards for us to say, okay, this is a change in  
12 trend. And we've tried to do something about it,  
13 like what Rick did; the incremental effect of  
14 that.

15 ASSOCIATE MEMBER PFANNENSTIEL: But  
16 generally, and I think it's true for the  
17 econometric models by definition, you really don't  
18 assume there will be any change in either  
19 regulation or the market in the future from what  
20 you've seen in the past?

21 MR. CANNING: Exactly. No change in the  
22 rate of change than what's happened in the past.  
23 Correct.

24 MR. ASLIN: Well, can I comment on that,  
25 though, because we don't really use the -- the

1 econometric model does not produce the forecast.  
2 The forecast is produced by a team of people, and  
3 the econometric model is a tool that, you know,  
4 forms the basis of the forecast. But it's really  
5 the adjustments to that forecast and the  
6 discussion around that, and the interaction with  
7 other people that is what really produces the  
8 forecast that we use.

9 It's not really produced by the  
10 econometric model, per se. It's a big help, but  
11 it doesn't do the whole thing.

12 MR. TUTT: I was going to ask were there  
13 any -- it sounded like PG&E did something slightly  
14 differently. Does PG&E add back in the historical  
15 estimates of energy efficiency, and then do the  
16 econometric equation on that series?

17 MR. ASLIN: No. We don't do that. And  
18 that's why at the end of the process we only  
19 subtract off the increment between the historic  
20 and the forecast. But essentially they are the  
21 same process.

22 DR. JASKE: Okay. San Diego.

23 MS. BESA: I'm Athena Besa, SDG&E. I'm  
24 on the energy efficiency side and our role is to  
25 actually take the PUC's given goals and design and

1       determine programs and budgets.

2               So what we do is we have tools like the  
3       potential study, the saturation studies. And what  
4       we do is we look at the goal. We look at where  
5       the potential, what sectors, what end uses. And  
6       we make allocations based on that.

7               We calibrate it against saturation and  
8       past program performance, and possibly known  
9       customer behavior, wherever it might impact.

10              For example, at one point in time we  
11       determined that we had so many pools in San Diego,  
12       and that if we actually installed some time device  
13       and made everybody shift to some period in time  
14       and actually save energy, that we would actually  
15       achieve a lot of demand savings and energy  
16       savings.

17              Unfortunately, people don't really want  
18       to turn off their pool pumps when we want them to.  
19       And therefore, we had to back out those types of  
20       behavior in terms of determining what types of  
21       programs we were going to be doing in the future.

22              So then we also take those savings, once  
23       we've determined the annual savings that meets the  
24       goal, we also have measure lives built in that are  
25       provided in here, and we streamline that savings.

1       So that when we provide it to the long-term  
2       forecasting folks, they actually have a stream of  
3       savings that lasts through, say, on the average,  
4       15 to 20 years.

5               We also gross up our savings because the  
6       current goals, at least right now, for 06 to 08,  
7       and in the past were met, so we provide a gross up  
8       of these savings using the net-to-gross ratio as a  
9       substitute for naturally occurring.

10              After we've done that we provide this to  
11       the long-term forecasters to use in calibrating  
12       their econometric models.

13              Now, Commissioner, you asked about  
14       truing up. And as we go through the different  
15       IEPR cycles and long-term procurement cycles with  
16       the PUC, we actually update historically based on  
17       what we actually achieved.

18              So, for example, once we're done with  
19       the 06-08 cycle sometime in 2010 we will provide  
20       to the long-term forecasters exactly what we  
21       installed.

22              We talked about EM&V results. And  
23       historically there's not been a procedure with the  
24       PUC on how to incorporate all these adjustments  
25       back since 1994 to -- since actually 2005. And so



1       although these adjustments exist based on EM&V  
2       results, they've not been explicitly incorporated.

3               But moving forward we'll probably have  
4       to develop some process with the PUC on how we  
5       actually update the results of the forecast so  
6       that the historical trend is sort of trued up at  
7       that point in time.

8               We don't do end-use forecasting on the  
9       energy efficiency side. We used to do air  
10      conditioning for both commercial buildings and  
11      residential back when we had to do Title 20 before  
12      deregulation. And so we collected end-use data  
13      for that. We calibrated models so we could have a  
14      forecast. But since deregulation we haven't  
15      really focused on that type of activity for that  
16      particular end use since typically that is the  
17      more variable load as compared to the lighting  
18      load.

19              And so once we're done with that, we  
20      hand it off to the forecasting group.

21              MR. VONDER: At SDG&E in our forecasting  
22      area we do our long-term forecasting just about a  
23      carbon copy of what PG&E does. Our models are  
24      econometric and everything with regard to  
25      standards and energy efficiency is contained

1 within the history. So, it's in there.

2 And then we do the same thing that they  
3 do. After we produce our forecast we take a look  
4 at the historical data that we get from our  
5 measurement people on our actual impacts as  
6 they're measured and refined. And then we take a  
7 look at that trend and the difference that we see  
8 in the future from the forecast in the EE trend.

9 We take a look at the goals that we're  
10 supposed to shoot for and that incremental. Our  
11 forecast then would be adjusted by that  
12 incremental.

13 In regard to end-use forecasting when  
14 deregulation happened we stopped doing end-use  
15 forecasting for the same reasons as others have  
16 said. End-use forecasting is extremely labor  
17 intensive. It required that we would have to  
18 actually add to our staff rather than, you know,  
19 maintain. So we didn't have the manpower to  
20 continue doing end-use forecasting.

21 The need to do it wasn't there. We were  
22 interested in bottomline forecast and that was  
23 taking care of our business needs. We do have a  
24 simple abbreviated end-use model that we run  
25 occasionally when we need to do analysis. Maybe

1 Mary can speak to that.

2 MS. ANDERSON: So our end-use models are  
3 just as Tim said, extraordinarily simple. And  
4 they're used to create some variables to use in  
5 our econometric models. They're also used as kind  
6 of a true-up to make sure that the results that  
7 we're getting from our econometric models makes  
8 sense, and that they are, you know, fairly  
9 correct, or fairly accurate.

10 The last few times the end-use models  
11 have corroborated what the econometric models have  
12 shown. And it's just been a very abbreviated  
13 thing. Our end-use models are not very flexible  
14 because just they haven't needed to be. We've  
15 just used what we could and gotten them through.

16 MR. VONDER: They're very simple.

17 MS. ANDERSON: Extraordinarily simple.

18 DR. JASKE: Tim, could you clarify what  
19 I thought I heard Athena say, is that she gives to  
20 you both an annual stream of net and gross  
21 savings. And then you said you added to that by  
22 saying that you used a method like PG&E where you  
23 were using the increment of net savings as the  
24 delta to your forecast. Did I get that right?

25 MR. VONDER: That's right. We use the

1 increment of net savings and the information that  
2 she passes on to us we use to true up our history.

3 DR. JASKE: So, can you explain how you  
4 would make use of that.

5 MR. VONDER: Well, there's decay in  
6 there, and so we keep track on a cumulative basis  
7 what our energy efficiency impacts, which she  
8 measures, with the decay included. So that we  
9 know, over time, how much should be contained  
10 within our -- well, an estimate of what's  
11 contained within our history. From our --

12 DR. JASKE: So, if there was a shift  
13 over time from long-lived measures to short-lived  
14 measures, you would actually -- and there was no  
15 accommodation of that in the going forward energy  
16 efficiency programs, you'd actually get a kick-up  
17 in the growth rate of the load forecast?

18 MR. VONDER: I guess if there was a  
19 change, but I haven't seen much of a change over  
20 the years in terms of lives.

21 DR. JASKE: Well, there have, in recent  
22 years, been major shifts to CFLs, which obviously  
23 have much shorter lives than air conditioner  
24 measures --

25 MR. VONDER: That's true, too.

1 DR. JASKE: -- or refrigerators. So  
2 we're about at the point where short-lived CFLs  
3 are going to start all burning out. So, unless  
4 there's a program or some kind of assumption about  
5 them being replaced, seems like your method would  
6 cause there to be an acceleration of the  
7 bottomline forecast growth.

8 MS. BESA: If I may, I think the  
9 adjustment to the measure life in CFLs has only  
10 been in the last couple of years. I mean it was a  
11 big issue of debate with us. And so in the next  
12 cycle, when we update the forecast and we update  
13 the results of 04/05, 06 and 08, we will adjust  
14 based on whatever the PUC direction is to adjust  
15 the measure life of CFLs, which is a big portion  
16 of the savings.

17 And so it will show in the stream of  
18 savings that we provide to the forecasting group  
19 so that they can recalibrate whatever's going on.

20 And since the utilities have not only an  
21 annual goal, but a cumulative goal, we are  
22 expected to replace any short-term losses.

23 So, as Mike was defining cumulative  
24 savings, currently it's a span of ten years. If  
25 the CFLs are three years worth only, then the

1 utilities, at every point in time, will be  
2 expected to always meet the cumulative goal at  
3 that point.

4 So we would have to replace either  
5 however way CFLs are embedded into the programs,  
6 or find new measures to replace those.

7 So, from a savings perspective relative  
8 to the annual goal and the cumulative goal of the  
9 Commission the utilities are expected to continue  
10 to maintain the level of savings. From that  
11 perspective, the forecasting could be indifferent  
12 to the specific measures that are going into the  
13 forecast from the program perspective.

14 MR. TOYAMA: If I could just clarify one  
15 thing on that, Athena. So, in a way, decay  
16 doesn't matter very much. And when you say you  
17 can replace, that could also be going on the  
18 market to do that replacement as well, right?

19 MS. BESA: Well, the way the goals are  
20 currently set, unless the Commission changes over  
21 time, we are expected to replace them with our  
22 programs. So, up until they actually adopt a new  
23 perspective on goals for the utility specific,  
24 currently we're on the hook to actually replace  
25 all the savings that we have lost because we used

1 short-term measures.

2 And to the extent that we can't take  
3 advantage of participant spillover or  
4 nonparticipant spillover at this point in time,  
5 then we can't take advantage of other things that  
6 happen indirectly as a result of our programs.

7 MR. TUTT: Even if it's a standard that  
8 causes the savings to continue?

9 MS. BESA: Well, the interesting thing  
10 about codes and standards is the Commission has  
11 allowed the utilities to take some portion or  
12 credit of it, which I think complicates to some  
13 extent if you're at the end-use level, the  
14 attribution of savings. Because if the  
15 econometric models automatically pick up the  
16 linear change in codes and standards, but now the  
17 goals that the utilities have and are allowed to  
18 take as part of their credit, some portion of it,  
19 and I think moving into 2009 to '10 we might be  
20 able to take credit for the entire codes and  
21 standards. There would be double-counting  
22 resulting from that that we would have to adjust  
23 for.

24 DR. JASKE: And did I understand you  
25 earlier to say that that kind of adjustment hasn't

1 yet been thought through in the PUC process?

2 MS. BESA: You mean the codes and  
3 standards portion?

4 DR. JASKE: No, how to do that -- the  
5 elimination of that double-counting that you just  
6 mentioned. That's a process to be invented going  
7 forward?

8 MS. BESA: From the perspective of  
9 probably inputting into the forecast we would have  
10 to explicitly have that discussion with our  
11 forecasting group to make sure that if there's a  
12 built-in way to forecast the impacts of codes and  
13 standards, that we've somehow made sure that we  
14 didn't double count. Because now the goals are  
15 explicitly including codes and standards.

16 Before it was like an automatic given  
17 part of naturally occurring. But if it's now part  
18 of the goal, then potentially you could be double-  
19 counting if you don't adjust for it.

20 DR. JASKE: Nate?

21 MR. TOYAMA: Well, at SMUD we use very  
22 similar model as all the other utilities have  
23 discussed. We use an econometric to derive a base  
24 forecast. But we make several modifications to  
25 the base forecast to make changes that we think



1 are important for future forecast.

2 One, we try to incorporate new standards  
3 into the forecast in two ways. One is by looking  
4 at the existing customers and developing an  
5 indices of how appliances and fixtures change  
6 over, and how that affects this index. It's  
7 similar to an SAE model which is developed by  
8 Itron, the statistical adjusted end-use model.

9 But this index basically tracks the  
10 changes in appliance standards and building  
11 standards. And so that gives us some idea of what  
12 the existing customers will look like in the  
13 future.

14 For new homes we have a new home  
15 construction model that we have. And we did this  
16 primarily because in the last four or five years  
17 we saw that the new construction in Sacramento was  
18 very very different from the previous years. The  
19 new developments in the suburbs and in some of the  
20 unincorporated cities and cities that are now  
21 incorporated, we saw were much larger than our  
22 typical home. Usually about 2400 or 2500 square  
23 feet versus an average of about 1800 square feet.

24 The sales are about the same because  
25 they're very efficient homes, but we noticed that

1 the loads on these homes were very different from  
2 older homes. So we had to make some changes.

3 And so we have a new construction model  
4 which is developed using data from the post-2005  
5 standards that went into effect primarily in 2006  
6 and 2007.

7 And a third modification we made to the  
8 base model is that we then degrade historic energy  
9 efficiency over time. And that becomes what we  
10 feel is our unmanaged forecast. Now, it's  
11 unmanaged with respect to the way that SMUD  
12 implements its programs. It still has energy  
13 efficiency because we know that homes do retrofit  
14 and put in things that are beyond our control, or  
15 beyond what we account for in our energy  
16 efficiency.

17 And so we realize that there is still  
18 energy efficiency going on, especially with  
19 retrofits. But we hope that the SAE index  
20 provides us with some idea of what way that index  
21 would be going.

22 And then the third step we have to come  
23 up with our forecast is to then put in new energy  
24 efficiency savings from our programs. We don't  
25 have an end-use model inhouse. We do have a -- we

1 use the ASSET model from Itron to come up with the  
2 bulk of our savings. And that's primarily for our  
3 existing customers.

4 And so we actually separate savings into  
5 two measures. One resulting from Title 24, and  
6 the other, which are above Title 24, which we can  
7 attribute to SMUD's energy efficiency programs.

8 And this is primarily in the residential  
9 sector. We don't do much in the nonresidential  
10 sector, pretty much just extrapolate what it looks  
11 like based on the most recent trends in commercial  
12 and industrial customer usage patterns.

13 We may, in the future, do that, but like  
14 others, we have a very small staff. And so we  
15 tend to do things incrementally. And the  
16 increment that we're trying to focus on now is  
17 residential energy efficiency, because that is a  
18 very important part of SMUD's overall strategy.  
19 And it's one that's very well defined in terms of  
20 program participation and in our future portfolio  
21 for energy efficiency savings over time.

22 We're primarily focusing on 2010 because  
23 that's when the bulk of SMUD's programs become --  
24 is when we start to ratchet up our programs to  
25 meet our goals, which are fairly ambitious.

1       They're 1.5 percent per year over time. So, it's  
2       quite a bit. And we're ramping that energy  
3       efficiency up now, 2008, but it won't become  
4       really full until 2009, 2010, where we look at our  
5       1.5 as being a very -- as being our goal on which  
6       we try for energy sales and load forecast.

7               And so, anyway, we -- well, let me just  
8       try to answer your question.

9               So that's basically how we modeled it.  
10       All the models are not integrated. They're, at  
11       best, ad hoc. We tend to use our base forecast,  
12       add, subtract and out comes our forecast.

13              We're considering an end-use forecast  
14       next year. We just finished our RAS survey, and  
15       so it may give us enough information to implement  
16       the end-use model.

17              We had an end-use model several years  
18       ago prior to the deregulation of the market. But  
19       unlike the other utilities, we decided to change  
20       because we lost our forecasters to the ISO. And  
21       rather than reinventing the forecast with new  
22       assumptions and parameters, we decided to go the  
23       econometric route which, for us and for our  
24       business purposes, satisfied much of our needs  
25       primarily for looking at load-serving capability,

1 load management, as well as risk management, as  
2 well.

3 That's sort of how we got to where we  
4 are.

5 DR. JASKE: In your analysis of new  
6 construction, residential new construction, and  
7 you're finding that the houses are using about the  
8 same, even though they're larger, therefore  
9 they're more energy efficient per square foot, are  
10 you seeing a difference between that phenomenon as  
11 annual electricity versus impact on peak load?

12 MR. TOYAMA: It's something we suspect.  
13 Well, let's go for energy sales first. For energy  
14 sales, even though the homes are larger, because  
15 of energy efficiency we found that energy use per  
16 square foot is about half of what the homes built  
17 in the 1980s, '70s and '80s, or the Title 24 was  
18 in '78, I believe, so those homes were about 1800  
19 square feet. The newer homes are about 2400. But  
20 the energy use is approximately the same.

21 But we also realized that on the load  
22 side people were installing very large air  
23 conditioners to handle the heat in the summer.  
24 And so we found that over the last couple of years  
25 that our load has been increasing relatively fast,

1 faster than what we would expect to occur just  
2 from customer growth.

3 And so what we think it is is that the  
4 newer homes, which over the last four or five  
5 years, there's about 50,000, 60,000 new homes in  
6 Sacramento, that those homes are contributing to a  
7 faster than expected load growth.

8 And that's why we're having the new --  
9 the new construction sample does two things. It  
10 allows us to examine the new standards on homes,  
11 at least the most recent standards. So going  
12 forward, the marginal loads will at least can take  
13 that into consideration.

14 The other aspect of the new home  
15 construction was we expect that the distribution  
16 of new homes will be different in the future.  
17 Primarily move towards a smaller single-family  
18 homes, and maybe attached single-family homes.

19 It follows SACOG's blueprint plan where  
20 the new home development will be along major  
21 corridors. And the housing will be single family,  
22 but it will reduce from about 70 percent single  
23 family down to about 40 percent, with the  
24 remainder being single family, but smaller single  
25 family.

1           For example, I believe they assume that  
2     the new single-family homes are about 2800 square  
3     feet; and the newer infill development, mixed  
4     residential/commercial development, single-family  
5     homes will probably be about 1500 to 1600 square  
6     feet.

7           And so that type of distribution would  
8     require us to really look at the energy use of new  
9     homes. And specifically because they're so energy  
10    efficient that if we do see this trend in smaller  
11    single-family homes and more attached homes,  
12    multifamily homes, we might even see a marginal, a  
13    lowering of our load growth in the future. We're  
14    looking maybe 2020 to 2030 when we expect that to  
15    occur.

16           So, anyway, that would give us quite a  
17    bit of time to see if these developments actually  
18    occur. The blueprint for those who are  
19    interested, in Sacramento, is a multi-county plan,  
20    which to, one, minimize transportation travel as  
21    well as manage our water better in the Sacramento  
22    area.

23           And so much of the development will tend  
24    to be along major corridors to reduce traffic  
25    commute times. And a lot of the emphasis will be

1 on infill commercial/residential development.

2 Much like you see in downtown, midtown Sacramento.

3 And so that will really alter the future  
4 load growth of Sacramento if we see that mixed  
5 commercial/residential development develop more  
6 fully.

7 And so the emphasis on new construction  
8 was both to look at how the standards affect new  
9 homes, the distribution of new homes and what that  
10 will look like. And also, finally, it would allow  
11 us to look at the solar homes.

12 In Sacramento we expect solar homes to  
13 be about maybe 50,000 new homes in the future,  
14 which would be a substantial amount of our load or  
15 our new growth. We're figuring about a third of  
16 our new growth over a 10- to 15-year period. And  
17 that will have a dramatic effect on our energy  
18 use, or the energy use for new homes. And put an  
19 interesting peak load on our system, as well.

20 And so that's the emphasis on new  
21 construction.

22 DR. JASKE: Thank you. Mike?

23 MR. COCKAYNE: Yes, I'm, like the  
24 others, that we've gone to econometric models. At  
25 LADWP, I'm basically the forecaster, so I work on



1       it about six months a year.

2               I think what is different from what  
3       you've heard so far compared to what we're doing  
4       is that we lack the data on the efficiency side to  
5       really do much.

6               Our measurement and evaluation systems  
7       are just being developed. They're getting better  
8       fairly rapidly. We've devoting a lot more staff  
9       in those areas, but I just don't have much data to  
10      do the types of things that you're hearing here,  
11      to really integrate it into my forecast. So, I  
12      think we're going to improve it in the future.

13              I think what the CEC does in terms of  
14      their end-use models and analysis they do on the  
15      savings is actually what I use to check my -- even  
16      though I don't specifically integrate energy  
17      efficiency into my model, it's basically assuming  
18      what has gone in the past is going to go forward,  
19      I do look at the data analysis in the CEC forecast  
20      in this area to check what I'm doing.

21              I've also tried statistically adjusted  
22      engineering models from Itron. So I have those  
23      inhouse. The problem, again, for me is a data  
24      issue that a lot of the forecasts and the indexes  
25      come from Energy Information, EIA. And there are

1 three-state models so I have to use, what is it,  
2 California, Oregon and Washington forecasts for  
3 L.A. It doesn't make sense to me.

4 One thing that I think can come out of  
5 this process, I think it's a question further  
6 down, is better data.

7 DR. JASKE: Okay, thank you.

8 MR. ZETTEL: Nick Zettel with the City  
9 of Redding. Surprisingly, we use the same methods  
10 as most other utilities. We use an econometric  
11 long-term forecast model that I believe we  
12 contracted with a consultant firm, Economic  
13 Sciences Corporation, back in 1987 or so. 1986.  
14 So we've got 20-plus years of econometric modeling  
15 which anytime you have that much data for that  
16 long a timeframe on a regression type model, it's  
17 actually pretty accurate on an energy basis.

18 And with the recent energy efficiency  
19 focus in California we've staffed up to look on an  
20 end-use basis at what energy efficiency programs  
21 work in Redding and what doesn't work in Redding.

22 You know, Redding's a real hot place in  
23 the summer and it's a real cold place in the  
24 winter. And so certain things work and certain  
25 things don't work.

1           And what we've tried to do is, in  
2   resource planning we try to coordinate the end-use  
3   type structural energy efficiency modeling with  
4   the econometric long-term forecasting modeling and  
5   insure that one, we're not double-counting, and  
6   that we're only focusing on the incremental  
7   improvement or decrease in energy use.

8           In resource planning what we tend to do  
9   is look back at the historical numbers through  
10   load duration analysis and some other things, and  
11   see what is happening, what are these programs  
12   doing in the load profile.

13           And for example, a few years back we  
14   initiated a pretty heavy AC or aging AC rebate  
15   program that was focused on SEER, seasonal energy  
16   efficiency ratio. And what, in resource planning,  
17   we started to notice was the energy consumption  
18   was falling, but peak demand was increasing.

19           And in Redding it's so hot that on the  
20   hottest peak day it doesn't matter what the SEER  
21   is of the air conditioner, it's just as bad as any  
22   other air conditioner. And so the peak demand was  
23   still there, but the shoulder, so to speak, on the  
24   load duration curve following it.

25           So what we did is we went back to the

1 energy efficiency folks and said, what is  
2 happening, what are you doing. And since then  
3 they've revised the rebate program to focus on the  
4 EER, the energy efficiency ratio, while  
5 encouraging a high SEER along with that.

6 And so by doing this kind of backcasting  
7 and coordinating between the econometric model and  
8 the energy efficiency model we're trying to home  
9 in, although it's still pretty -- at this point.  
10 We're trying to home in on what works best.

11 And through the AB-2021 process we hired  
12 a consulting firm, Nexant, to kind of do a  
13 structural review of our programs. And one of the  
14 outcomes of their work was we needed to focus more  
15 on light retrofits. And we're just now trying to  
16 understand the impacts of our new lighting program  
17 that we initiated, CFLs and so, working with our  
18 commercial customers. How is that going to impact  
19 the econometric model and exactly how much can we  
20 net off, net the model down to.

21 So, this is some new stuff for Redding,  
22 and probably for everybody else. But basically  
23 that's our process.

24 DR. JASKE: Thank you.

25 MR. RUFO: Nick, I had a question for

1 SMUD. The 1.5 percent reduction per year goal,  
2 are you planning around that? Is that basically a  
3 given?

4 MR. TOYAMA: I'm sorry, what was that  
5 question?

6 MR. RUFO: The 1.5 percent efficiency  
7 improvement goal. Are you planning around that?  
8 Is that pretty much taken off the procurement --

9 MR. TOYAMA: We're still gearing up  
10 towards that. In the past our energy efficiency  
11 has been about .6 percent. I think last year I  
12 believe it was about 1 percent. This year it'll  
13 be about 1.2 percent.

14 I believe 2009 is when we get to the --  
15 it'll actually be 1.6 percent.

16 MR. RUFO: Yeah, I guess from a  
17 forecasting point of view, you pretty much take  
18 that as we're going --

19 MR. TOYAMA: We take -- we --

20 MR. RUFO: -- to do that and plan  
21 resources around that?

22 MR. TOYAMA: Well, what we do is we do  
23 two things, of course. We look at our base  
24 forecast; make our adjustments; degrade historical  
25 energy efficiency; and then add in the new energy

1 efficiency. And that becomes our forecast.

2 MR. RUFO: But you don't derate it or  
3 anything?

4 MR. TOYAMA: I'm sorry?

5 MR. RUFO: You don't derate it for  
6 probability of achievement or anything like that.  
7 You pretty much take it --

8 MR. TOYAMA: No. No.

9 MR. RUFO: -- as good.

10 MR. TOYAMA: Because, well, you know,  
11 basically the question is more like what is the  
12 use of our forecast. And when we develop that  
13 particular forecast we use that for future growth  
14 for our sales and revenue forecast.

15 But it's one of maybe two or three  
16 different types of forecasts that we use for  
17 planning purposes.

18 And so we have our base forecast which  
19 would basically say if we -- if none of our  
20 programs are effective then it resorts to our base  
21 forecast. And then we have our unmanaged  
22 forecast, that is if we were to stop all together.  
23 We have that forecast.

24 But in terms of the one with energy  
25 efficiency, it's the one that we use for our

1 planning purposes, at least for programs, for  
2 energy sales, revenues. And that's how that  
3 forecast is used.

4 We use it all until we know that that  
5 number's going to change.

6 DR. JASKE: Let me take an attempt to  
7 summarize what we've heard on this question. And  
8 I would say it's that there's no utility using an  
9 end-use model directly. There's some smattering  
10 of use of end-use models or end-use-like tools  
11 like ASSET to do some kinds of quantification  
12 external to the main forecast as a basis for a  
13 couple of things.

14 Sometimes direct adjustments to the  
15 econometric forecasts, sometimes as guides to  
16 development of programs by taking end-use and  
17 other elements of the end-use model into account.

18 Quite a variety of how those adjustments  
19 are made, and quite a variety in how building  
20 standards are adjusted, also from things fairly  
21 directly, dealing with the effect of standards  
22 like SMUD has been telling us, to I guess the  
23 whole discussion we had with Art, you know. Not  
24 really a direct reflection of the standards at  
25 all, at this point anyway.

1                   And somewhat a complicated set of  
2           different mission, lesser resources, not enough  
3           data to really be carrying the end-use models  
4           along, that people did use or some of the  
5           utilities did use, you know, back in the mid '90s.

6                   That's maybe what I heard as high  
7           points.

8                   PRESIDING MEMBER BYRON: Agreed. And I  
9           very much appreciate all of the utilities being  
10          here. And, by the way, Mr. Zettel, we're not in  
11          any kind of order here, certainly not --

12                   MR. ZETTEL: That's okay.

13                   PRESIDING MEMBER BYRON: -- in order of  
14          importance.

15                   MR. ZETTEL: That's okay.

16                   PRESIDING MEMBER BYRON: But we have a  
17          number of other questions, Mike. And I'd like to  
18          ask the two of you to go ahead and see if we can  
19          pick up the pace a little bit, drill down on some  
20          of the questions that you think are key that we  
21          need to address here in our workshop. So, go  
22          right ahead.

23                   DR. JASKE: I think in category two, the  
24          one part of its sub-questions that's different  
25          than what we've talked about so far is the part in



1       2.b. that has to do with what would happen if we  
2       had significant customer price increases, rate  
3       increases. We haven't had that in the past,  
4       although somewhat complicated in how you measure  
5       that and, you know, the AB-1X limitation.

6               But there are estimates like, if I  
7       understand it correctly, when E3 did their GHG  
8       analysis, they had about a 30 percent increase in  
9       rates as a result of various phenomenon. And one  
10      of the criticisms of their analysis is they didn't  
11      have an elasticity that would fold that back into  
12      some adjustment of the load forecast.

13             So, if it did have an increase in rates  
14      of that kind of magnitude, how would that be taken  
15      into account in people's forecasting models.  
16      Maybe this time we'll put staff on the spot, ask  
17      them to say something.

18             MR. KVALEC: Well, that is a very good  
19      question because the models that we have are not  
20      as price responsive possibly as they should be.  
21      Specifically the residential model and the  
22      industrial model.

23             So I guess my answer to that would be to  
24      incorporate large changes in the market, we would  
25      need to do some additional work on our models to

1 incorporate that.

2 MR. GORIN: I think one thing with AB-1X  
3 we'd have to figure out is how many people are  
4 actually impacted by the pricing increase. If you  
5 have a 30 percent rate increase for residential  
6 and you freeze essentially 60 to 70 percent of the  
7 customers, that would at least double the rate for  
8 the remaining customers. And that's going to have  
9 a differential impact.

10 So, first thing I'd like to do is  
11 collect the information on how many customers are  
12 actually impacted in both the first two rate  
13 (inaudible). And, you're right, we'd have to go  
14 back and look at other -- I'm not sure there's  
15 actually any other studies with that kind of rate  
16 increase further than 2001. And that was kind of  
17 confounded by no energy.

18 So, we'd have to think that through a  
19 little bit more.

20 MR. ASLIN: Well, speaking for PG&E, in  
21 the econometric model prices is one of the  
22 variables in the model, so it's modeled  
23 explicitly. And the price that we currently use  
24 is the marginal price, so it's the -- historically  
25 it was our tier two price. And now I'm not sure

1       whether it's tier two or tier three, but it's  
2       basically the marginal price on the theory that  
3       that's the price that people are trying to avoid  
4       in the main. And so that's what we use in the  
5       model.

6               And we get a price elasticity estimate  
7       that is very close to negative 0.8, which is  
8       pretty consistent with the literature on price  
9       elasticity for energy demand. So we feel pretty  
10      comfortable with that as a elasticity. That's the  
11      short-term elasticity, so if prices are maintained  
12      at a high level for a long period of time that  
13      elasticity gets larger and larger. But that's the  
14      kind of elasticity that we get in our model, and  
15      that's the price term that we're using currently  
16      in the model.

17             But I do think it's a legitimate  
18      question as to, you know, what is the best  
19      representation of price. We could use bills or  
20      something like that, which might be really a  
21      better indicator because of all the tiering in the  
22      prices. Or you could use multiple prices. But I  
23      think there you might not get very good results.  
24      That's what we do currently.

25             MS. HORWATT: I would just like to say

1 one thing about the potential impacts of rate  
2 increases on energy efficiency and then turn it  
3 over to Art for him to speak more broadly.

4 Not really prepared to talk about AB-1X  
5 kind of effects associated with rate increases.  
6 But one thing I'd really like to reinforce from an  
7 energy efficiency perspective in terms of  
8 increasing the level of achievable energy  
9 efficiency, this is, you know, really the key  
10 thing that would increase that level of achievable  
11 potential.

12 Everybody always looks to things like  
13 natural gas price increases or GHG adders. Those  
14 might increase the level of economic potential.  
15 But until those filter back through the system as  
16 a rate increase, they really don't do much to  
17 drive the level of achievable potential, which  
18 requires customers to take action.

19 And I'll rely on Mike Rufo to keep me  
20 honest here, but one would expect to see greater  
21 levels of achievable energy efficiency if we do  
22 have higher rates going forward.

23 MR. CANNING: In the econometric  
24 forecast model we use average rates which tend not  
25 to pick up what Rick was talking about. And we've

1       been experimenting on looking at just those  
2       customers who are above the 133 percent of  
3       baseline, as well as looking at different  
4       subgroups of customers to see how they'll be  
5       affected because the rate increase is coming. How  
6       big it will be, I'm not sure. But we've asked for  
7       as much as 30 percent. And as you said, that's  
8       going to hit the top tiers.

9               Now, I think we've also asked to put in  
10       a slightly bigger customer charge to spread it  
11       among all customers, not knowing if that'll pass  
12       through AB-1X or not.

13              But it certainly is a big issue of  
14       concern on load management. How do you spread  
15       that big dollar increase among a fairly small  
16       group of users. But they're the high-end users.

17              So, we're looking at ways to try and get  
18       a price elasticity for that group, breaking those  
19       customers out. I don't have it yet, but we've  
20       been working on it for several months now.

21              ASSOCIATE MEMBER PFANNENSTIEL: Art, I  
22       thought you said earlier that the price elasticity  
23       you used is a negative .15, --

24              MR. CANNING: Yes.

25              ASSOCIATE MEMBER PFANNENSTIEL: -- is

1       that long term?

2               MR. CANNING:  Yes.  That's on the  
3       average price over all customers.

4               ASSOCIATE MEMBER PFANNENSTIEL:  Okay.

5               MS. BESA:  I just wanted to make one  
6       comment.  If price, if the rates actually go up,  
7       and we're trying to disaggregate the effects of  
8       energy efficiency versus conservation, then part  
9       of the price increase could also result in  
10      significant conservation that's not energy  
11      efficiency based on the definition we stated.

12              So, that you could see decline in sales  
13      in the short term or long term, depending on the  
14      effect.  But that trying to disaggregate the  
15      attribution could be a little more difficult at  
16      that point in time.

17              ASSOCIATE MEMBER PFANNENSTIEL:  And from  
18      your standpoint, and from the energy efficiency  
19      measuring people here, that would matter.  But I  
20      would think from the demand forecast people that  
21      distinction, it doesn't matter, is that correct?

22              MS. BESA:  From an energy efficiency  
23      perspective, since we don't take credit for  
24      conservation measures, --

25              ASSOCIATE MEMBER PFANNENSTIEL:  Right,

1 doesn't really matter, --

2 MS. BESA: -- it doesn't make a  
3 difference.

4 ASSOCIATE MEMBER PFANNENSTIEL: -- but,  
5 I mean, in terms of doing the overall --

6 MS. BESA: Yeah, it doesn't matter,  
7 right.

8 ASSOCIATE MEMBER PFANNENSTIEL: --  
9 demand forecast, it doesn't matter.

10 MS. BESA: Right. Only if you cared  
11 about attribution.

12 MR. VONDER: We haven't studied price  
13 elasticity in a while. But I can say that back  
14 prior to AB-1X when we were allowed to raise our  
15 rates at one time, and they went up quite high,  
16 there was quite a dramatic response to that.

17 But it needs to be looked at.

18 MR. TOYAMA: Well, in regards to our  
19 modeling efforts, we had a short-term impact --  
20 well, first of all, we don't have a price  
21 elasticity in our main model because we've never  
22 been able to come up with a number that seemed  
23 reasonable.

24 And if you believe real prices, and real  
25 prices have been falling over time, so you might

1 expect load to increase or sales to increase,  
2 which we haven't seen, either. So, there's just  
3 too much stuff going on for us to pick up a price  
4 impact.

5 So, in the short term we probably  
6 wouldn't pick it up. In the long term, like  
7 everyone else is saying, we would expect the  
8 portfolio of appliances to change dramatically  
9 with 30 percent or even a 10 percent price  
10 increase. Just because now conservation and  
11 energy efficiency looks like a very reasonable  
12 alternative.

13 We would probably pick that up in one,  
14 our ASSET model results; and if we do happen to  
15 use an end-use model, we might see it there, as  
16 well.

17 But if we do see a trend in energy use  
18 declining when we do have a price impact like  
19 that, that would be incorporated into our most  
20 recent trend model. And so that's how we would  
21 capture it.

22 But, you know, a short-term trend,  
23 short-term impact is hard to quantify because we  
24 don't think they'll last. And if they do last,  
25 they'll be incorporated into a portfolio change in



1 the household and we'll pick it up there.

2 So, on the short term or the short run  
3 we won't see it. Long term we'll definitely pick  
4 it up if that trend continues over time.

5 DR. JASKE: Okay, thank you.

6 MR. COCKAYNE: Our price elasticity in  
7 the econometric models run near what Edison's  
8 (inaudible) and I also have a problem where our  
9 real rates have gone down over the last ten years.  
10 So we do a -- in the future, but I'm not so  
11 certain that what we measured in the past is going  
12 to be relevant to these real price increases in  
13 the future, even though we had to claim price --  
14 for the last ten years.

15 MR. ZETTEL: In the model there's many  
16 metrics and so you'd have to also look at income,  
17 per capita income, the ability to pay which would  
18 reflect the ability, the elasticity of the  
19 product. I suppose if it was a continuing trend  
20 for a multiyear trend you would falter the  
21 expected elasticity in the econometric model.

22 But if we could have this meeting a year  
23 from now, and if gasoline prices continue on their  
24 way that they're at, then I think we'll have a  
25 better idea of conservation versus the long-term

1 shift in demand.

2 PRESIDING MEMBER BYRON: Mike, if I may,  
3 I haven't had a chance to ask staff this question,  
4 and maybe it's more of an observation, but as I  
5 recall there's still about 2000 utilities across  
6 this country, and we've got a lot of expertise  
7 here at the table with regard to these forecasting  
8 and modeling approaches, and I'm not a modeling  
9 expert or an economist, but I'm struck by the fact  
10 that basically for the most part these models  
11 seems to be home-grown, is that correct? I've  
12 heard Itron mentioned a few times, but it sounds  
13 like your own individual models, is that correct?

14 MR. ASLIN: Yes.

15 PRESIDING MEMBER BYRON: Getting a sense  
16 of yes. And, so obviously the benchmarking is an  
17 issue that you do primarily based on historical  
18 basis, it sounds like.

19 Are there any kinds of forums or  
20 discussion groups for these kinds of forecasts  
21 amongst the utilities? Or is it something that  
22 you all do on your own?

23 I mean there's always forecasting and  
24 modeling forums in the oil and gas industry and  
25 elsewhere. So my sense is that pretty much

1       everybody operates on their own here. Is that  
2       correct? Tell me if I'm wrong.

3               MR. ASLIN: There actually are a few  
4       industry groups out there.

5               PRESIDING MEMBER BYRON: And you're a  
6       large utility. Do you participate in those?

7               MR. ASLIN: We participate rarely in  
8       those. But the main forum we have for vetting the  
9       forecasts are the various CPUC proceedings in  
10      which the forecasts are presented, and then all of  
11      the intervening parties get a chance to tell us  
12      exactly what they think of our forecasts.

13              And also I think that's been a big, big  
14      benefit of the first the ER process, and even more  
15      so with the IEPR process, is that's allowed  
16      various parties to get together to talk about  
17      things in a much more collegial way. So that's  
18      been very important.

19              And I think the whole workshop process  
20      has been really important, also. And not just in  
21      terms of the IEPR, but in terms of the other  
22      initiatives both at the PUC and the CEC where the  
23      forum has been workshops and people have been able  
24      to get together.

25              I mean I've worked much more closely

1 with Art and Tim and other people in the last  
2 couple of years than I ever did in the previous  
3 ten years. So that's been a really big benefit.  
4 I'm hoping that that will continue.

5 PRESIDING MEMBER BYRON: So at least at  
6 the statewide level these provide some sort of  
7 forum, these workshops provide some forum for  
8 sharing the approaches that you all take.

9 MR. ASLIN: Um-hum.

10 PRESIDING MEMBER BYRON: Okay, thank  
11 you.

12 Gentlemen, go right ahead.

13 DR. JASKE: I am going to let Mike ask a  
14 particular question. Go ahead.

15 MR. RUFO: Okay, and then if we have  
16 time, I wonder if they can comment on the  
17 Commissioner's question.

18 But, let's go on to -- I just wanted to  
19 ask on the issue of uncertainty and attribution,  
20 how important or not it is to the utilities to  
21 have some general agreement about the both  
22 historic savings that go into some of these sub-  
23 buckets that Tom and I were talking about this  
24 morning between codes and programs and price, both  
25 backwards for the last 10 or 15 years, and

1 forwards in the forecast.

2 Does it matter to folks whether or not  
3 the CEC produces an analysis with 5000 gigawatt  
4 hours of utility program savings versus your  
5 tracking systems showing 15,000, for example. I  
6 don't know what the numbers are that made that up.

7 So I guess what I'm trying to get at is  
8 where you see the importance or not of truing up  
9 some of this, first backward and then the forward  
10 side of this attribution. Or do you see it as  
11 really not that important?

12 DR. ANSAR: Let me start with some -- I  
13 mean I think from the utility's perspective one of  
14 the most important thing is that the, I'll call  
15 them the measurement and evaluation protocols, at  
16 the planning stage be consistent with those  
17 adopted ex ante and ex post at the evaluation  
18 stage.

19 Because, although, you know, from the  
20 utility's perspective you're basically operating  
21 under a set of measurement rules which change on  
22 you mid-course, so you can never really keep track  
23 of where you're going.

24 I think with regard to your second  
25 question, I think there is a need at a statewide

1 level for consistency in terms of measurement and  
2 evaluation protocols, both ex ante and ex post,  
3 especially in the context of AB-32 and in terms of  
4 state planning goals for things like greenhouse  
5 gases and our targets.

6 MR. CANNING: It came up most recently  
7 in the LTPP where we ended up with this overlap  
8 factor which was, I would say, a temporary  
9 solution. I knew it wouldn't last. But it got us  
10 through the process right then.

11 And the issue was the uncommitted. You  
12 know, it was too big or too small or something  
13 like that. And I think that has to be  
14 straightened out to get these two Commissions  
15 together. I think that's really a big issue, I  
16 think that's what really started this.

17 So, that uncommitted part, I think, is a  
18 very important bucket to have, get us an agreement  
19 on that we can get a procurement plan that has an  
20 agreeable amount of uncommitted in there. And the  
21 committed is really, you know, it's almost in the  
22 past at that point. So it's the uncommitted, to  
23 me, that's very important. Especially in the  
24 LTPP. And that's been one of my focuses of the  
25 last year.

1           MR. TUTT: Art, just to follow up a  
2 little bit on that. It's not so much the amount  
3 of uncommitted and various estimates of the amount  
4 of it, that's important, I think, but how it's  
5 attributed in the demand forecasts.

6           MR. CANNING: Well, uncommitted, a long  
7 time ago used to be considered on the supply side.  
8 And then we said, you know, it really ought to be  
9 on the demand side. It's going to be a slower  
10 meter read where it's going to show up.

11           And I can't remember the exact, how we  
12 went through this in the LTPP how many times, but  
13 we brought it up, I think, to the demand side.

14           But then we saw this doesn't work very  
15 well because using it with the CEC forecast, all  
16 of a sudden the forecast was down at a half  
17 percent growth rate. We said we don't believe  
18 that.

19           And that's where the overlap factor came  
20 in. At that point in time, let's leave it back  
21 down in the supply side. I mean this is a pretty  
22 messy way of handling it.

23           So, I think we need to get out of this  
24 mess. And so in answer to Mike's question, yeah,  
25 we need to get that bucket cleaned up. And that

1 spreads all over everything you've got in these  
2 other questions.

3 So, it is how much, also. It's very  
4 much how much. And really whether it's on the  
5 demand or supply side, probably doesn't matter.  
6 That can be handled. But it's how much in  
7 addition to what's already in the CEC forecast.

8 MS. BESA: I think the reason why you'd  
9 like to know attribution depends on the purpose  
10 for it. So, for example, for as long as there's a  
11 shareholder incentive mechanism that defines what  
12 achievement means, then attribution's important.

13 From a forecasting perspective, if you  
14 want to know what the load growth is going to be,  
15 and based on everyone's discussion there is  
16 embedded enough variables in there to accommodate  
17 a lot of the things that happen, then it's not so  
18 important to know attribution at that point.

19 But if you want to know what the free-  
20 riders are, for whatever purpose like designing  
21 programs and so forth, then it's important from  
22 that perspective.

23 So, I think the policy behind wanting to  
24 know what attribution is for needs to be set first  
25 before you decide whether models need to be



1 changed to start delineating what attributions are  
2 and what buckets are supposed to be out there.

3 Like you said, Mike, even when we're  
4 going through the definitions there's a lot of  
5 questions about whether the definition is adequate  
6 or not. And until you get there, trying to figure  
7 out what the buckets are is not going to be --  
8 we'll still always have some type of discussion  
9 that goes on, and some accommodating way to let us  
10 get through some LTPP process or IEPR process  
11 until the next time when we get around to refining  
12 it.

13 MS. ANDERSON: I think the most  
14 important thing is, I guess, says that we  
15 understand what's already in there so we're not  
16 subtracting additional uncommitted amounts or  
17 additional goals out of it, so we, you know,  
18 artificially lowered the forecast to the point  
19 where it's unusable.

20 MR. VONDER: Right. From an attribution  
21 perspective, if uncommitted is included in the  
22 forecast then there's less of a need to understand  
23 the attribution of all of the parts.

24 But if it is excluded from the forecast  
25 then we need to know exactly what is in and what

1 is not in. So it makes it more important at that  
2 point. Just like you said.

3 MR. TOYAMA: We don't really make that  
4 distinction in our forecast between committed and  
5 uncommitted. Ours are more goals. And if we meet  
6 our goals this is what our load will look like.  
7 And so, it's -- and when we are doing our  
8 forecast, whether it be short term or long term,  
9 the ultimate impact is to see what type of impact  
10 it will have on our load growth.

11 And currently if our plans and our goals  
12 are met, then it will be a pretty flat load growth  
13 over the next 20 years. And so as far as  
14 committed and uncommitted, I think that's a  
15 budgetary term, isn't it? As far as I know it's a  
16 budgetary term. And so it doesn't have much  
17 relevance to our forecast.

18 MR. COCKAYNE: I have no comment on  
19 attribution.

20 MR. ZETTEL: As a small utility, it's  
21 very important that we attribute savings to a  
22 particular program because we have limited funds.  
23 It's our customers' money. We want the best bang  
24 for the buck. And we need to understand if this  
25 program isn't working then we need to adjust it or

1       get a new program.

2               And so we don't have, obviously don't  
3       have the staff, and really don't have the money to  
4       kind of blindly move forward with the program and  
5       look at results and wonder what happened without  
6       attributing, or at least hoping to attribute.

7               MR. TUTT:  Is understanding the  
8       attribution of savings more important the longer  
9       your forecast goes?  Or does that matter?

10              I heard SMUD talk about 2030, and you  
11       know, what long-term forecasting means for  
12       everybody.

13              MR. ASLIN:  Well, for me I think it  
14       really just boils down to whatever targets are out  
15       there for the future that we understand what they  
16       are.  And they're comparable to the historical  
17       data that we have in the past.

18              So, if the targets are set up into small  
19       buckets, and that's the way the programs are  
20       supposed to be run, then I guess we would need to  
21       spend some time and try to figure out in the  
22       historic period what buckets all those savings  
23       were in so that we could line them up going  
24       forward.

25              So from a forecasting perspective it's

1 really just a matter of understanding what  
2 occurred in the past, and then what's likely to  
3 occur in the future, and how they're different.

4 But I completely agree that from a  
5 program design point of view, and trying to  
6 understand how effective your programs were,  
7 attribution is key, it's critical.

8 So, again, it's just a matter of what  
9 your purpose is. But for forecasting I don't  
10 think it's really that critical. But for program  
11 design and evaluation, it's very critical. That's  
12 my point of view.

13 But I -- could I just -- I think what I  
14 heard as we went around the table is this is kind  
15 of a change in what attribution kind of was  
16 defined as.

17 So, I think what Art and Tim were  
18 talking about, in particular, was more this next  
19 question about what is this business-as-usual  
20 case. So were you intending on asking that  
21 question?

22 MR. RUFO: Great segue.

23 DR. JASKE: I'm actually trying to  
24 figure out how to pick out just a subset of these  
25 remaining topics so that we can focus on that.

1           I guess one thing that intrigued me is  
2       the comment that Tim made about whether -- about  
3       the distinction between committed and uncommitted.  
4       And if, you know, you didn't have that distinction  
5       then none of these things would even be visible.  
6       They'd all, in effect, be buried in the load  
7       forecast and no one would be -- we wouldn't even  
8       be having this discussion, I guess, is one  
9       potential consequence of that.

10           Seems as though that, in fact, is a  
11       confirmation that this paradigm of committed  
12       versus uncommitted does put some degree of  
13       sunshine on the uncommitted. In some respects  
14       that's the whole purpose of that construct, going  
15       way back, oh, I don't know, 15, 20 years ago, is  
16       that there was a concern that goals would be  
17       established that weren't, in fact, reasonable.  
18       And just buried in the load forecast. No one  
19       would ever know about it or have a forum in which  
20       to talk about it.

21           Whereas creating this committed/  
22       uncommitted, and having a sort of a tight  
23       threshold or definition of what was committed, you  
24       know, allowed those sorts of things to be in the  
25       forecast. And it then set up, in effect, a

1 process whereby the uncommitted, or at least you  
2 can, with that line people could debate what that  
3 line was conceptually, numerically. You know,  
4 what kind of proof was needed in order to  
5 delineate that in any particular cycle.

6 Maybe that's less useful when we now are  
7 in an era where there's this massive orientation  
8 to high goals. But it does seem, if we were to go  
9 that route it does seem to say those goals better  
10 be set right in whatever forum they're set. Or  
11 otherwise we're never going to have a chance to  
12 really, you know, talk about it and discern  
13 whether we're going to be successful in achieving  
14 that or not.

15 Any reaction to that?

16 MS. HORWATT: I'd jus like to say I  
17 think we are living in a different world now than  
18 when, you know, back in an ER-96 era when there  
19 was greater policy uncertainty from, you know, one  
20 two-year period to the next in terms of what role  
21 energy efficiency would serve.

22 Now we're in a world where energy  
23 efficiency is either going to be at current levels  
24 or get larger in the future. Maintaining this  
25 artificial distinction, treating them differently,

1       it's not clear that it's as productive as it was  
2       in the past. And there may be greater value in,  
3       you know, particularly since we're living in a  
4       world of long-term EE goals, to really focus  
5       attention on that goal-setting process and not  
6       maintain this distinction of committed and  
7       uncommitted going forward.

8               MR. ASLIN: Yeah, I think PG&E would  
9       concur with that completely, that it's our point  
10      of view that we're committed to the goals. That's  
11      what's going to be in the forecast and that's the  
12      business-as-usual case as far as we're concerned.

13             There might be some, you know, modeling  
14      issues around that, but in terms of what should be  
15      in the business-as-usual case, the basecase, our  
16      point of view is that it should incorporate 100  
17      percent of the current targets that are out there,  
18      throughout the forecast horizon.

19             ASSOCIATE MEMBER PFANNENSTIEL: When you  
20      say the target is what is determined at the PUC to  
21      be the goal --

22             MR. ASLIN: Yes.

23             ASSOCIATE MEMBER PFANNENSTIEL: -- in a  
24      given forecast period?

25             MR. ASLIN: Yes.

1           ASSOCIATE MEMBER PFANNENSTIEL: And  
2 those goals are derived through some interactive  
3 and public process at the PUC?

4           MR. ASLIN: Yes, that's correct.

5           MS. BESA: And I would agree with PG&E  
6 and Edison, particularly when the Commission  
7 directs the utilities to include the goals that  
8 have been set for ten years and so forth into any  
9 type of long-term planning process. Whether we're  
10 building a transmission line or anything like  
11 that, we have to account for those numbers.

12           So, from that perspective, you could  
13 almost say the same thing which Andrea was saying  
14 is that there is some commitment towards that  
15 number. But the definition that's sort of  
16 revolving around what uncommitted savings are is  
17 whether there's a budget assigned to it.

18           But other than that, it seems like the  
19 Commission, once they set their long-term savings  
20 goals, they are committed until --

21           ASSOCIATE MEMBER PFANNENSTIEL: The  
22 Commission being the Public Utilities Commission?

23           MS. BESA: Oh, yes, I'm sorry, the  
24 Public Utilities Commission, until such time as  
25 they update those goals.



1 DR. JASKE: Well, so I thought maybe I'm  
2 hearing things incorrectly, but, Athena, the way  
3 you just described it, it sounded like you weren't  
4 opposed to continuation of the committed/  
5 uncommitted paradigm. It's just that you were  
6 wanting the goals to be considered committed?

7 And there can well be energy efficiency  
8 potential beyond the goals that you would  
9 recognize as uncommitted. Maybe at some point the  
10 goal will be changed to get up to that yet higher  
11 level.

12 You don't want the goal, itself, to be  
13 considered uncommitted; that leads to too much  
14 policy confusion, in your mind? Am I putting too  
15 many words in your mouth?

16 MS. BESA: I think that's probably what  
17 I said.

18 (Laughter.)

19 MS. BESA: To the extent that -- I mean  
20 the PUC is committed to that goal. We are, in a  
21 sense, committed from the perspective of any time  
22 we do some type of planning we have to build those  
23 numbers in.

24 So there is a level of commitment  
25 already at that point. That's not to say that

1       there is no other type of uncommitted savings out  
2       there that could be due to naturally occurring or  
3       market transformation or whatever that's out  
4       there.

5               But I think that becomes a lot more  
6       nebulous than just whether or not the Commission's  
7       goals, absent the budget authorization, is  
8       committed or uncommitted.

9               MR. GORIN:  So, I'm a little bit  
10       confused, but that's nothing new.  Then the  
11       remaining question is whether or not those goals  
12       are or not included in the Energy Commission  
13       forecast, right?

14              MR. CANNING:  That's right.  That's why  
15       we're here.

16              MR. GORIN:  That's why you're here.

17              (Laughter.)

18              MR. GORIN:  And that is left to the  
19       Commission Staff and Itron and other stakeholders  
20       to work out in the future, is that a correct  
21       assumption?

22              DR. JASKE:  I think it's safe to say  
23       goals are not reflected in the Commission's  
24       forecast intentionally at this time.  Perhaps  
25       that'll change.

1                   MR. GORIN: I was wondering what would  
2                   happen if the PUC decided to double their goals.  
3                   Just automatically assume they're -- achievable?

4                   MR. CANNING: In the last two or three  
5                   years I think that's what they've done. Pretty  
6                   much that. So, we've gone from 90 million three  
7                   or four years ago per year to \$250 million a year  
8                   now.

9                   So, they have doubled it in the course  
10                  of, I guess four years or something like that.

11                  MR. GORIN: So you use a constant  
12                  savings per dollar spent?

13                  MR. CANNING: No, but I just use the  
14                  dollars because I can remember the dollars. It's  
15                  a big number.

16                  MR. GORIN: I would assume that as you  
17                  go down the line savings would be harder and more  
18                  expensive to achieve. And, you know, it's up to  
19                  us to figure out whether they're achievable or  
20                  not.

21                  MS. HORWATT: Intuitively that's what  
22                  one would believe. But there are counter-  
23                  arguments that have been made by various parties  
24                  at the PUC that hypothesize that it would get less  
25                  expensive to do it.

1                   One of the things to bear in mind, you  
2                   know, you raise an interesting hypothetical in  
3                   terms of doubling the goals, should they  
4                   automatically be incorporated.

5                   The thing that I will give energy  
6                   division great credit on, and I don't know if  
7                   Michael Wheeler is still here, but they did take a  
8                   very principled approach to the most recent round  
9                   of goal-setting in working with Itron to use  
10                  potential studies to guide where the goal should  
11                  be set.

12                  And I think if we go through that kind  
13                  of very rigorous and principled approach, that is  
14                  a reasonable basis for, you know, setting goals  
15                  and then incorporating those goals into demand  
16                  forecasts going forward, or sales forecasts going  
17                  forward.

18                  It's not being done in a vacuum, it's  
19                  being done in a very rigorous way.

20                  MR. VONDER: I'd like to add one other  
21                  thing in regard to Tom's comment. If the goals  
22                  were doubled and it was considered they're the  
23                  goals and they're also considered uncommitted,  
24                  right now that issue would have to be dealt with  
25                  in the resource planning arena if it wasn't

1 addressed in the forecasting arena.

2 And I think it would probably be much  
3 more efficient to deal with everything, all  
4 aspects of it, in the forecasting arena rather  
5 than split it between forecasting and resource  
6 planning. So just bring it back under one tent,  
7 so to speak.

8 DR. JASKE: Do the POUs want to add  
9 anything on this committed/uncommitted issue?

10 Okay.

11 I think that we have actually already  
12 talked about item 4 to some extent, particularly  
13 where Athena identified, you know, that there are  
14 some valid alternative perspectives, and that we  
15 do need to keep things kept track of, particularly  
16 where there's incentive mechanisms that cause  
17 things to count or not count and so forth.

18 So, in the interest of moving along,  
19 perhaps we've sort of really reached the end of  
20 these questions.

21 PRESIDING MEMBER BYRON: Gentlemen,  
22 thank you, and thank the panel. Is the panel  
23 going to stay for the next item, as well. It says  
24 it's open to all interested parties, I think.

25 Anyhow, let's go ahead and take a break

1 for about ten minutes. Thank you very much. And  
2 we'll reconvene here in just about ten minutes for  
3 item 7, framework for future conservation  
4 quantification progress, and then public comment.

5 (Brief recess.)

6 PRESIDING MEMBER BYRON: We'll go ahead  
7 and get started again. Mike, go ahead.

8 DR. JASKE: So, we're in agenda item 7,  
9 first bullet. I'm going to very briefly describe  
10 this conceptual project plan that was posted on  
11 the website the later part of last week. Copies  
12 out on the table.

13 As I indicated this morning, this was  
14 the result of several iterations of discussion  
15 among staff with Committee, with the PUC Energy  
16 Division Staff, actually even with Itron once we  
17 got the sort of informal go-ahead from the PUC  
18 that they would be funding Itron.

19 And so this document, whatever it is,  
20 10, 11 pages, something like that, is our roadmap  
21 for the moment going into this workshop about how  
22 to both describe the work that we see in front of  
23 us, and somewhat descriptive of several phases of  
24 it, the timelines of those phases, the products as  
25 they interface with the 2009 IEPR process.

1           And perhaps most importantly for this  
2           item on our agenda is the beginnings of trying to  
3           identify what entities actually contribute to  
4           working on various elements.

5           So, certainly this workshop will help us  
6           to refine this document. Our discussion with  
7           Itron has helped that a bit already. In a minute  
8           Mr. Rufo will sort of lay out some dimensions of  
9           the work that the PUC is going to be funding them  
10          to do.

11          And then it sort of turns to this  
12          question of how can other interested parties  
13          collaborate.

14          So, really the meat of item 7 is  
15          starting from this conceptual project plan  
16          document; evolving it through some further  
17          discussions with a larger group of folks than has  
18          participated so far.

19          And then sort of buckling down and sort  
20          of getting to work on about the schedule that I  
21          identified this morning, aiming for a preliminary  
22          forecast just after the first of the year. Some  
23          sort of review of that preliminary forecast in  
24          front of this Committee, some direction on review,  
25          perhaps some bringing in a few additional elements

1       that a few more months can allow us.

2               And producing a revised forecast in the  
3       May timeframe. And then potentially actually  
4       bringing that forward to the Commission for the  
5       Commission to act on so that it can then become  
6       the basis of the 2010 LTPP proceedings that the  
7       PUC is intending to issue next spring.

8               So, that's the basic message I wanted to  
9       communicate about this. I don't have any  
10      PowerPoints; I'm not going to run through all its  
11      pieces. Perhaps just the one thing worth looking  
12      at is the table that's on page 2 of the document.

13              Sort of broke things into four broad  
14      categories, sort of the planning elements of which  
15      this workshop is a part. The work of doing a  
16      demand forecast. The work of preparing these  
17      incremental EE program impacts. And how, you  
18      know, the result of this workshop, talking about  
19      including goals in there; clearly need to be some  
20      refining of that.

21              And then finally, the very last category  
22      is long-term energy efficiency potential impacts.  
23      And in this document that's the least well-  
24      specified of any of the pieces, and has sort of a  
25      wide range of possible approaches, all the way



1 from just using Itron's asset model directly,  
2 perhaps with some slightly different assumptions  
3 than they have been using heretofore, all the way  
4 through the Energy Commission deciding it wants  
5 some kind of potential analysis capability of its  
6 own.

7 And that all remains, I think, sort of  
8 lower priority in the sense of doing things for  
9 the 2009 IEPR simply because no one, apparently  
10 staff doesn't imagine we can do, you know, all of  
11 these things in parallel. And that's the least  
12 important one from the 09 IEPR. And delivering  
13 some useful product to the PUC on time.

14 So, drawing people's attention to this  
15 as the framework that we're using for this entire  
16 project, getting point of departure for Mike Rufo  
17 to make a few comments about their specific  
18 activities as we've outlined them to date. And  
19 then soliciting the involvement of these folks  
20 here today and others who haven't yet spoken is  
21 really what I wanted to say right now.

22 Are there any questions, general or  
23 particular? All right, thank you. Mike.

24 MR. RUFO: All right. Thanks, Mike. So  
25 I'm going to just talk a couple minutes about the

1 initial plan for Itron's portion of the overall  
2 plan that the CEC has laid out.

3 So our main objectives are to work with  
4 the CEC and the PUC and the other stakeholders to  
5 improve the accuracy of the savings estimates  
6 including both the base and the uncommitted  
7 estimates, improve the transparency level of these  
8 estimates, and develop better understanding of  
9 what the underlying drivers are.

10 And we're going to go through four  
11 phases of this work. The first is working on the  
12 definitions and the concepts and the overall  
13 approach. And we started a little bit of that  
14 today, and we're looking forward to getting  
15 comments on the initial set of terms that have  
16 been used to date.

17 But even more importantly, as I said  
18 earlier, we would like input on improvements to  
19 some of these terms or proposals for new terms and  
20 concepts to be included in this work. And then we  
21 will be developing some of those ourselves.

22 We'll be going to more detail reviewing  
23 the methods and the data inputs in the CEC's  
24 forecast models, as well as explaining those same  
25 things with respect to the models that we've

1 developed on stand-alone energy efficiency  
2 potential forecasting.

3 So our staff will be sitting down with  
4 the CEC Staff and exchanging data and information  
5 to make sure that we understand where what we've  
6 been working with and each other's processes.

7 Then we will start to look at comparing  
8 the results from those different sets of data and  
9 analyses. And then comparing the outputs as well  
10 as the inputs. And from that, come together, we  
11 hope, on some agreed-upon improvements in data,  
12 methods and explanation or the transparency in the  
13 CEC forecast with respect to the stand-alone  
14 estimates of efficiency that have been developed.

15 So I think we already talked about these  
16 terms and definitions. So I don't want to spend  
17 much time on that. I want to just get right to  
18 this, because I know we're nearing the end of the  
19 day and I want to leave time for any final public  
20 comment today.

21 As far as the second phase, approving  
22 the methods and data inputs, we're going to be  
23 really rolling up our sleeves and sharing data  
24 information. I think that the Commission Staff  
25 have a lot of information that we have used over

1 the years in some of our analyses, and probably  
2 some additional information that we could learn  
3 from that may be a layer deeper in their analysis.

4 And we hope that, from some of the work  
5 that we've been doing, looking a lot at recent  
6 saturation data and program evaluation, results  
7 that we can provide information back to the  
8 Commission Staff on some of our estimates. And  
9 work together to start developing some consistent  
10 data sets and data sources for calibrating the  
11 models at a more detailed end-use level.

12 So from that we'll produce some interim  
13 memorandums on what we've learned about each  
14 other's methods and where improvements can be  
15 made. As well as data sources, what improvements  
16 we're seeing from exchanging information on the  
17 data that's out there.

18 Out of all of this I think we'll be  
19 producing recommendations for where we feel  
20 there's a need for improved information for all  
21 these kinds of modeling and forecasting efforts.

22 Phase three is the moving to working  
23 towards comparison of results and focusing on a  
24 few end uses. So, rather than trying to tackle  
25 all the end uses and all of the sectors in this

1 process, we're going to pick out a few of the most  
2 important ones to really focus on, so that we can  
3 do a good job. A couple areas which we think will  
4 produce better results from a methodological point  
5 of view than trying to capture everything.

6 So I'm going to go on. So I think our  
7 plan is that as we share information on the  
8 different approaches and the various modeling  
9 efforts and the different sources of data, that  
10 we'll also be doing some additional work, so that  
11 there will be a feedback of information. And  
12 there may be analyses that we do, that Itron does,  
13 with the ASSET model that we have where we may run  
14 different sets of -- make changes in our input  
15 data on measure saturations or prices or  
16 incremental costs or other key inputs to our  
17 analysis based on what we've learned from working  
18 with the CEC Staff on some of their assumptions  
19 and vice versa, that they may do new analytical  
20 work that's informed by the information that we  
21 provide, or that we've converged on through this  
22 effort.

23 Then we'll kind of compare and contrast  
24 the results coming out of the different models and  
25 methodologies, and make recommendations for where

1 we think improvements can be made on both fronts  
2 with, you know, emphasis on providing transparency  
3 and better methodologies, better communication and  
4 better sets of results ultimately.

5 In the end I think our charge is to work  
6 with staff to come up with the best possible  
7 approach that we can to estimating energy  
8 efficiency going forward in California. And we  
9 haven't, as far as I understand it, predetermined  
10 what those approaches are going to be. The extent  
11 to which that may result from changes to some of  
12 the Commission's forecasting approaches, or  
13 perhaps use of other models, stand-alone models,  
14 to make certain kinds of estimates or some  
15 combination thereof.

16 But at the end of that process we'll  
17 have hopefully made a lot of progress with respect  
18 to those questions. And be in a position to move  
19 forward with an approved set of results for the  
20 next IEPR.

21 And schedule-wise, consistent with what  
22 the schedule that Mike had put up before, our goal  
23 is to focus initially on these terms and  
24 approaches from a concept point of view. And we  
25 have done a little bit of work so far, just

1 preparing for this workshop, but we actually don't  
2 have a contract change-order in place yet. So  
3 we're still waiting for that before we can really  
4 get going in earnest on even step one.

5 But we're expecting that to happen in  
6 the next couple of weeks. And I think we should  
7 be fine with staying on that initial schedule for  
8 step one. It might bleed over into October some.  
9 And we'll accelerate step two a bit, as well.

10 I think we'll make a lot of progress on  
11 one and two just by getting our staffs together,  
12 in person, rolling up their sleeves and working  
13 together for some days and weeks there in  
14 September, October.

15 So, the goal is to produce some of these  
16 new model runs and calibration results in the  
17 December-February timeframe. With final estimates  
18 of the uncommitted efficiency methodologies in  
19 place for June-July of 09.

20 Any questions on the process or the  
21 schedule?

22 PRESIDING MEMBER BYRON: Mr. Rufo, the  
23 steps and phases are synonymous, correct? Steps  
24 one through four, phase --

25 MR. RUFO: Yes.

1                   PRESIDING MEMBER BYRON:  -- one through  
2           four?

3                   MR. RUFO:  Yeah, they are.

4                   PRESIDING MEMBER BYRON:  This looks very  
5           good to me.  And we discussed this to some extent  
6           in previous meetings.  I think now, if I  
7           understand the agenda, we're looking for some  
8           feedback on this approach, is that correct, Mike?

9                   DR. JASKE:  That's correct, and in  
10          particular this notion that Division of Ratepayer  
11          Advocates has put forward previously, the working  
12          group that allows not only the sort of folks who  
13          were around this table earlier this afternoon, but  
14          perhaps others, to sort of keep abreast of what  
15          we're doing, is sort of now the point or the topic  
16          for discussion.

17                  PRESIDING MEMBER BYRON:  Would it be  
18          okay to open this up then, as well, combine  
19          essentially this discussion about the working  
20          group and the public comment period?  Would that  
21          be all right to combine these at this point?

22                  So, let's do that.  I notice we've lost  
23          some folks in terms of probably travel plans back  
24          to places south.  This would be the time that we'd  
25          look forward to any feedback from some of our



1 Committee members -- I'm sorry, our panel members  
2 this morning.

3 I see that Ms. Ettenson's joined the  
4 table. And I'll just open it up, go right ahead.  
5 Just let me know if you'd like to speak and we'll  
6 get some feedback on this approach to see if it  
7 meets all of our needs.

8 Ms. Ettenson, did you want to speak?

9 MS. ETTENSON: My name is Lara Ettenson  
10 with the Natural Resources Defense Council. Thank  
11 you for the opportunity to speak. I have a few  
12 public comments that I'll start by addressing the  
13 most recent question.

14 We also agree with the theory that there  
15 should be a working group that's open to a larger  
16 stakeholder participation group. In particular,  
17 we encourage the Commission to reach out to CARB  
18 and to have some of their staff members here, as  
19 well. And if possible, and it's helpful, to also  
20 have some of the modelers that are also involved  
21 in the other statewide processes to really get an  
22 understanding of what is being discussed and what  
23 is needed.

24 So, to that end, I think that this is a  
25 fabulous start. And we generally support this

1 process. And actually hope to participate along  
2 the way as resources enable us to.

3 In addition, I think that while the plan  
4 outlines near-term and long-term considerations of  
5 modifying the model, we are also -- NRDC is also  
6 concerned that we need something a little more  
7 immediate to create some consistency among the  
8 assumptions that are being used right now in the  
9 CARB business-as-usual forecast, and how they're  
10 determining what the greenhouse gas emissions  
11 reductions are going to be, as well as the other  
12 processes that are going on in the long-term  
13 procurement planning, et cetera.

14 So if there's a way to take the demand  
15 forecast as is and create some assumptions that  
16 all of the agencies agree to use, then we can at  
17 least minimize inconsistencies at this time while  
18 we're trying to determine how to modify the model.

19 So, those are my comments on that in  
20 particular.

21 MR. TISDALE: Thank you. My name is  
22 Matthew Tisdale; I'm here on behalf of Division of  
23 Ratepayer Advocates. I do appreciate the  
24 opportunity to speak.

25 DRA is an independent division within

1 the CPUC. We represent consumers in utility  
2 matters, with a mission to obtain the lowest  
3 possible rate for utilities' services consistent  
4 with safe and reliable service levels.

5 Pursuant to this mission, DRA's  
6 obviously a big supporter of energy efficiency.  
7 And as you're all aware, Ratepayers have really  
8 invested in energy efficiency in the State of  
9 California.

10 Given the weight of the investment DRA  
11 believes it's imperative to insure that the  
12 savings we are earning through these energy  
13 efficiency programs offset or defer the need for  
14 new procurement.

15 And a crucial first step, as we're all  
16 recognizing here today, is to insure that we have  
17 accurate quantification of the amount of energy  
18 efficiency that is embedded in the CEC load  
19 forecast.

20 So, I'm here today to essentially be a  
21 source of encouragement, a source of support, to  
22 thank all the parties and participants for the  
23 work that went into this workshop, and to the  
24 plan, that was the conceptual plan that was  
25 released. DRA believes they are both excellent

1 examples of the type of progress we need to be  
2 making towards solving this little problem.

3 And we want to encourage parties to keep  
4 up the dialogue, keep up the process here through  
5 the working group as proposed here by Dr. Jaske.  
6 Specifically we hope that staff from the Utility  
7 Commission, from the Energy Commission, from the  
8 utilities, themselves, as well as from Itron can  
9 continue to be a part of that process.

10 And the one suggestion that I would make  
11 for making sure that the working group is as  
12 effective as possible is to increase the  
13 transparency of the whole process. There is a  
14 great deal of technical issues to the entire  
15 process, as we are all seeing today.

16 And we hope that in spite of that rather  
17 technical nature, we can still keep this open and  
18 really allow some light to shine on the process  
19 and let parties be a part of that process, and to  
20 provide review and to provide comment on the  
21 process.

22 So those are my comments for the  
23 afternoon. And I'd be happy to take questions if  
24 that would be helpful to anyone.

25 PRESIDING MEMBER BYRON: No, those are

1 good. Those are all good. And we also appreciate  
2 the support of the PUC. I don't know if this is  
3 through the DRA or not --

4 MR. TISDALE: One big happy family.

5 PRESIDING MEMBER BYRON: -- for the  
6 financial support with the contract with Itron, as  
7 well. And, of course, it will remain -- all the  
8 meetings will remain open and transparent. We're  
9 looking for the participation and the consensus  
10 among parties here.

11 So, thank you for your comments.

12 MS. ETTEENSON: So, if there are no other  
13 questions on process might I take a step back and  
14 give a few more comments?

15 PRESIDING MEMBER BYRON: Sure, go right  
16 ahead.

17 MS. ETTEENSON: Okay. So, again, I want  
18 to thank everyone for their hard work on this.  
19 This issue has been going on for quite awhile and  
20 I think that we've made some significant progress  
21 at this point.

22 Just before we move on, I would like to  
23 step back and just reiterate what the importance  
24 of this is from a policy perspective.

25 In particular, while we understand that

1 we cannot predict with certainty, we do think that  
2 there is value in creating more consistency and  
3 clarity. And to that end, this will allow CARB,  
4 as I mentioned, to have a better estimate of the  
5 business-as-usual estimation, as well -- forecast,  
6 excuse me, as well as the greenhouse gas reduction  
7 emissions that we are going to target for AB-32.

8 In addition, this will most also help  
9 the IOUs and the POUs, both, in forecasting what  
10 they need to procure in the future. And while I  
11 appreciate, I believe it was Sempra and PG&E who  
12 stated that their goals are committed, and  
13 therefore they're used in their planning, actually  
14 in their procurement planning, I'm not quite clear  
15 if that's the same methodology across all  
16 utilities in the state. And I encourage some  
17 consistency across that, as well, as set out in  
18 the laws, SB-1037 and AB-2021.

19 In addition, I also appreciate Sempra's  
20 comment that the attribution is important for  
21 various procedures and processes, and that the  
22 best way to get to an end goal that is most  
23 effective is to discuss what it is that this  
24 forecast will be used for.

25 In effect, then we could look at are we

1 using this just to understand the growth effect of  
2 what energy efficiency is reducing the demand  
3 forecast in general. Are we looking to see if the  
4 programs developed are appropriate. What is the  
5 distinction between the codes and standards, et  
6 cetera, et cetera.

7 And I think by creating this stakeholder  
8 working group that we were discussing that we can  
9 really address what the end goal is. And from  
10 that, modify the model in a way as proposed to be  
11 most effective.

12 I also would like to encourage, again,  
13 that the assumptions be consistent as soon as  
14 possible since the CARB scoping plan is coming,  
15 the next iteration is coming out in October. And  
16 it is planned to be approved in November, or voted  
17 on for approval in November. And to have an  
18 understanding of this consistency as soon as  
19 possible where it will help inform that process.

20 And, again, as we stated before, while  
21 energy efficiency in the electricity sector is  
22 extremely important, we also want to reiterate the  
23 importance of including this issue to be addressed  
24 in the natural gas sector, as well, and the  
25 efficiency that's embedded in the demand forecast.

1                   And as requested earlier, and supported  
2           it seems, by a number of stakeholders, we also  
3           encourage other parties to support CEC in these  
4           efforts as we know that there are limited  
5           resources and this is a big task. And in order to  
6           have a timely and effective model, we also  
7           encourage that. And NRDC will participate and  
8           help along wherever we can.

9                   Thank you.

10                  MS. HORWATT: This is Andrea Horwatt,  
11           Edison. Just a few quick comments. Edison  
12           absolutely supports the process that's been  
13           proposed here. I personally find this  
14           tremendously exciting what we're talking about  
15           here today.

16                  I've been involved in this activity in  
17           some way, shape or form since the CFM days in the  
18           early 90s. And the fact that we're taking a step  
19           back now and trying to really get this right, I  
20           think is really great.

21                  From a policy perspective, I think we  
22           need to have an understanding of the attribution  
23           of all the savings, both from the utility side as  
24           well as the PUC and CEC sides, just to understand  
25           really where our savings are coming from the



1 dollars that we're spending. It's in everybody's  
2 best interest to really understand what's going  
3 on.

4 The schedule that's been proposed, very  
5 aggressive, to say the least. One thing I'd like  
6 to encourage us to do to keep in the forefront as  
7 we're executing this, is prioritizing to make sure  
8 that we're focused on where we're going to get our  
9 biggest bang for our buck. And let's try to do it  
10 right, if at all possible.

11 We are certainly willing to roll up our  
12 sleeves and be part of any working group or other  
13 effort that's required to make this a reality.

14 In terms of a couple specific areas that  
15 we would like to encourage to be looked at in the  
16 execution of this project, in particular are some  
17 of the savings attributable to building and  
18 appliance standards. To really get an  
19 understanding of the magnitude of those.

20 Possibly doing some EM&B type evaluation  
21 to really understand if we're getting the level of  
22 savings that we expect. Sylvia and I actually had  
23 a discussion about that kind of thing during the  
24 break. And certainly seems like it would really  
25 help us understand codes and standards, and

1       similarly to the savings that we're getting from  
2       IOU programs.

3               And then lastly, one thing I would  
4       really encourage us to do is not get stuck in a  
5       world of false precision in any of the work that  
6       we're doing. Just because you can calculate  
7       something to eight decimal places doesn't mean  
8       it's real.

9               If it means that we sacrifice precision  
10       in some areas to really get a better outcome, I  
11       would encourage us to be open to that and really  
12       get something that's meaningful rather than super-  
13       precise.

14              And if there are no questions, that's  
15       it.

16              PRESIDING MEMBER BYRON: Good comments,  
17       thank you. Please come forward. Grab a seat.

18              MR. SANSTAD: Alan Sanstad, Lawrence  
19       Berkeley Lab. I actually had a series of  
20       questions I wanted to pose to the utility  
21       panelists, but I think what I really intend to do  
22       is pose them to SCE.

23              (Laughter.)

24              MR. SANSTAD: So, very quickly. For  
25       you, what is long term? The question was raised

1 before, for the purposes of this discussion.

2 MS. HORWATT: Well, I guess I was -- for  
3 purposes of this discussion, I point back to the  
4 schedule that's in here. You know, for us, near-  
5 term is probably our current three-year program  
6 cycle; and long-term is beyond that. The kind of  
7 timeframe, ten-year timeframe that you'd use in a  
8 procurement plan.

9 MR. SANSTAD: Ten years. Roughly ten  
10 years?

11 MS. HORWATT: Typically. But, I'm  
12 curious, do you have a specific reason for wanting  
13 to clarify --

14 MR. SANSTAD: Yeah, it matters a lot if  
15 it's 10 or 20 or more, from a modeling  
16 perspective. The problems, as you well know, the  
17 problems change, and the technical issues change  
18 and everything becomes, you know, more challenging  
19 and somewhat different the further out you go.

20 MS. HORWATT: Absolutely, and our  
21 primary focus is the long-term procurement  
22 planning cycle.

23 MR. SANSTAD: My second question was,  
24 I'll ask you and maybe you know for the others, is  
25 any technical documentation of your econometric

1 model publicly available?

2 MS. HORWATT: You know, I don't do the  
3 end-use forecast -- or the, excuse me, Freudian  
4 slip -- the econometric forecast --

5 (Laughter.)

6 MS. HORWATT: -- focused on the EE side.  
7 I know that some information available about it as  
8 part of the sales forecast that we submit both for  
9 our general ratecase, as well as our long-term  
10 procurement plan. But I don't know the extent of  
11 the specifics.

12 MR. SANSTAD: Thank you. I wanted to  
13 make several comments about things that were  
14 raised during the day.

15 The first is partially terminology, and  
16 it's also suggestion. I think that the  
17 terminology of econometric versus end-use might  
18 usefully be put in the sort of in the category of  
19 things that should be clarified as this proceeding  
20 goes forward.

21 The reason is the following.  
22 Technically, econometric versus end-use is not all  
23 that well grounded a distinction, for the simple  
24 reason that there are examples and modeling  
25 history of end-use econometric models. And it

1 depends upon exactly what's being meant.

2 The two dimensions that are usually  
3 distinguished in this regard are whether the model  
4 is estimated, like statistics. Run a regression  
5 to come up with the parameters. That's one way of  
6 thinking about an econometric model.

7 The other dimension is disaggregation.  
8 And the estimation and disaggregation issues are  
9 quite different. And I think they are quite  
10 relevant for this proceeding.

11 If what is -- if the key difference is  
12 the lack of technology-specific detail, that  
13 should be emphasized because it has certain  
14 implications that are different from, for example,  
15 not having econometric or having econometric  
16 estimation of the parameters.

17 A question for Mike, actually, Mike  
18 Rufo. What do you mean by accuracy? Improving  
19 the accuracy of forecasts.

20 MR. RUFO: Did I say that? I think what  
21 I'm more concerned with probably is really  
22 improving the accuracy of the information going  
23 into the forecast, and the transparency of the  
24 information going in, and methodologies, than  
25 accuracy of the forecast, per se.

1           Because I think there's a lot of  
2       uncertainty inherent in these kinds of forecasts.  
3       So if I said that, let me retract it and reframe.

4           MR. SANSTAD:   Good.   A couple other  
5       comments.   One is on a point that I think was made  
6       and seconded and third, about the attribution  
7       problem not really affecting the forecasting  
8       problem.

9           I think that bears further scrutiny.  
10       The reason is as follows.   In an environment in  
11       which we are sort of anticipating, in which there  
12       are price changes, suppose one's doing a forecast  
13       and has some kind of elasticity in one's model so  
14       there's a price effect.   And one correctly  
15       forecasts a price change.

16           The value of elasticity will gauge the  
17       forecasted effect of the price change.   And that  
18       obviously will gauge what's in -- that contributes  
19       to what will be projected in the forecast as far  
20       as the price effect versus anything else that  
21       might be included.

22           So, at least by way of clarification  
23       going forward, why the attribution question, the  
24       issue is not thought of to be important for demand  
25       should be clarified.

1           One final point for the representative  
2   of NRDC. I agree completely that, you know, full  
3   consistency across CARB's analyses of inputs would  
4   be very desirable before the scoping plan is  
5   completed.

6           I think realistically we have to be --  
7   everybody has to be pragmatic. One thing that  
8   would be very useful, however, and I think NRDC  
9   might have standing to do this, is complete  
10   transparency of what is going into the scoping  
11   plan.

12           In this case with respect to energy  
13   efficiency, I haven't looked at all the  
14   documentation thus far. But my recollection of  
15   the scoping plan draft appendices is that they  
16   gave the answer, the number that they anticipate,  
17   one number for their efficiency savings. I'm not  
18   sure that they have fully documented and explained  
19   the process by which they got it. And the process  
20   is at least as important to understand how it  
21   interacts or not, or is not consistent or not with  
22   other inputs.

23           They obviously can only do so much. So  
24   it's by no means a criticism, if, in fact, they  
25   haven't produced that documentation. But it's

1 something to think about.

2 Thank you.

3 MS. HORWATT: And I actually got one  
4 clarification to the miracle of modern  
5 electronics. Our econometric model is available  
6 as part of our general ratecase. You can get the  
7 details on it.

8 MR. SANSTAD: Great. Do I have to pay?  
9 Do I have to come to the ratecase?

10 (Laughter.)

11 PRESIDING MEMBER BYRON: Thank you. Are  
12 there any further comments?

13 Dr. Jaske, shall we end this part on the  
14 agenda?

15 DR. JASKE: I think we're getting  
16 actually very close to ending the whole workshop.

17 PRESIDING MEMBER BYRON: Okay, good.  
18 Listen, I found this all very informative. I'd  
19 like to thank all of you that were here today and  
20 hung in there with us this afternoon.

21 I'm reminded how difficult forecasting  
22 is, every year on New Years Eve for the last 28  
23 years or so, I've been getting together with  
24 friends and we drink wine and we eat a lot of good  
25 food, and we grade last year's predictions that



1 we've made.

2 And we actually have a trophy that I  
3 think might be appropriate here, as well. The  
4 trophy reads: You can eat and you can drink, you  
5 can have a good time. You really can't predict  
6 the future.

7 So I know this is extremely difficult.  
8 And I like the plan that's been laid out. The  
9 feedback has been good on it, as well.

10 Before ending, however, I'm going to  
11 turn to my Associate Member who's been involved in  
12 this particular issue for I believe she said four  
13 and a half years, and ask her if she has any other  
14 comments.

15 ASSOCIATE MEMBER PFANNENSTIEL: I agree  
16 with Commissioner Byron, I think that the plan, as  
17 laid out, is a good one, and one that we need. In  
18 my four and a half years here we have been  
19 struggling with the issue of the forecast, and  
20 specifically how to incorporate energy efficiency  
21 into forecasts.

22 I think I also said that for something  
23 like 20 years I have been struggling with that  
24 same problem. So, it's clearly not an easy one to  
25 address. And I think it's only getting more

1       difficult as we're putting greater reliance on  
2       energy efficiency going forward.

3               So, this is certainly a key time, a  
4       critical time to take a look at this. I hope that  
5       we are able to use the good -- both the good  
6       offices of the PUC working with us to help us  
7       retain Itron for this effort.

8               And I think all the good will of the  
9       utilities, investor-owned and publicly owned, and  
10      the other interest groups like NRDC, coming  
11      forward to use this as a moment to figure out how  
12      to do this correct. I don't think there's a  
13      single right answer, but I do think that if we use  
14      our good judgment we can come up with something  
15      that's going to be really useful to us in the long  
16      term.

17              So, thank you all for your participation  
18      today.

19              PRESIDING MEMBER BYRON: Thank you. Ms.  
20      Bender, thank you and your staff for putting  
21      together a very good workshop, well constructed, a  
22      lot of good information.

23              And with that we'll be adjourned.

24              (Whereupon, at 3:59 p.m., the workshop  
25      was adjourned.)

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