BEFORE THE

CALIFORNIA ENERGY COMMISSION

In the Matter of:	)	Docket No. 09-IEP-1C
	)	
Integrated Energy Policy Report	)	
Electricity Demand Forecast	)	

JOINT IEPR AND ELECTRICITY AND NATURAL GAS COMMITTEE

WORKSHOP

INCREMENTAL IMPACTS OF ENERGY POLICY INITIATIVES RELATIVE TO

THE ADOPTED DEMAND FORECAST

ORIGINAL

California Energy Commission

1516 Ninth Street

First Floor, Hearing Room A

Sacramento, CA 95814-5512

WEDNESDAY, FEBRUARY 17, 2010

1:00 P.M.

Reported by:
Peter Petty

COMMISSIONERS PRESENT

Karen Douglas, Chairman, and Presiding Member, Integrated Energy Policy Report (IEPR) Committee

Jeffrey D. Byron, Associate Member, IEPR Committee, Electricity and Natural Gas Committee

Laurie ten Hope, His Advisor

Robert Weisenmiller, Presiding Member, Electricity and Natural Gas Committee

Staff Present:

Suzanne Korosec, IEPR Lead
Mike Jaske
Chris Kavalec

Also Present (Via WebEx)

Presenters

Carmen Best, California Public Utilities Commission (CPUC)
Mike Ting, Itron
Simon Baker, CPUC

Stakeholders

Manuel Alvarez, Southern California Edison (SCE)
Amber Riesenhuber, Independent Energy Producers (IEP)
Tim Vonder San Diego Gas & Electric (SDG&E)
Richard Aslin, Pacific Gas & Electric (PG&E)
Faramarz Nabavi, Member, RETI Stakeholders Steering Committee
Cynthia Mitchell, for TURN

I N D E X

P R O C E E D I N G S

FEBRUARY 17, 2010 1:04 p.m.

COMMISSIONER DOUGLAS: Good afternoon, everybody. Welcome to the Energy Commission Joint IEPR and Electricity and Natural Gas Committee Workshop on the Incremental Impacts of Energy Efficiency Policy Initiatives. I am Karen Douglas, the Chair of the Commission; to my left is Commissioner Weisenmiller, the Chair of the Electricity and Natural Gas Committee; to my immediate right, Commissioner Jeff Byron, who was the Chair of the IEPR Committee and the Electricity and Natural Gas Committee when the vast majority of the work that really went into this forecast was conducted; to his right is Laurie ten Hope, his Advisor.

Again, welcome, and I would like to turn this over to Commissioner Byron for some opening comments.

COMMISSIONER BYRON: Well, thank you, Commissioner. In fact, maybe Commissioner Weisenmiller has something to add, as well, but I appreciate the opportunity to speak first and pass the gavel to some extent, as it were. You know, we have been working on this, I dare say, long before we took this up in the 2008 and 2009 IEPR. The 2007 IEPR Committee also worked on this embedded energy efficiency issue, struggled with it, adopted a forecast, and actually had to punt some issues -- I should use a different word -- actually had to defer some issues in the future

IEPRs. It is an ongoing process and, dare I say, we are very pleased with the progress that has been made. We take this very seriously. I am quite satisfied that Management has applied some of our best staff to this issue and I think they have done an excellent job, certainly they have worked very hard. But we are going to evaluate results here and that is what I encourage you to continue to do as you take this up this next year.

Also, I think it is appropriate, wholly appropriate, to give recognition and kudos to the coordination effort that has gone on with the Public Utilities Commission. If you do not know already, they funded and provided assistance with a contractor, Itron, who we will hear from later today, as well. And I am very satisfied that the efforts to coordinate and really share and exchange information, listen to each other's comments, has been very helpful. You may all know the PUC relies upon our work, our forecasts for their Long-Term Procurement Plan; that is a good thing. I suspect you are both very knowledgeable that there is a lot of financial interest that is at stake in this process. The goal setting that goes on at the PUC, the incentive programs that they have in place to make sure that these goals are met, all create, let's say, pulls and tugs on, indeed, what the final numbers are. And we are all very happy and satisfied that the PUC sets

such ambitious goals, and those will be discussed to some length here today. But the measurement and verification, how those rewards are handed out, thank God it is the Public Utilities Commission job to get that all figured out. But we are going to continue bite at their heels because we are all interested in the same thing, making sure we get these numbers right, making sure that there is no increased cost -- I should say no higher costs to ratepayers -- and that our state policy goals with regard to energy efficiency are met. So we certainly support their efforts, but that is a difficult job and not part of this process here today, but it does have bearing on it because, as you will see, there is a lot of interests at stake.

So I think the other issue that will come up, and has in the past, is that this Commission endeavors to do its work in a very open and transparent and public process, and we attempt to be very objective in what we do; again, this is what I applaud the staff for, I think they have done an excellent job. But the models that they need to use because of the lack of the end-use data that is available are not as transparent as we would like them to be. You really have to dive down into this information and, as you may know, they created the DFEEQP, the Demand Forecast Energy Efficiency Quantification Project Working Group, a bad acronym, but a very good working group that has involved all the parties

that have the interest and the ability to participate. And we will hear more about that today. I think that has helped tremendously, but transparency -- it means two things to me, that is the decision-making that we do is transparent and open, but getting into the details and the assumptions in the model is not always as transparent, and that has been a challenge that we have had to deal with for the last couple of years.

If you have not already, you are going to learn a lot of new phrases and acronyms associated with this process. Commissioner Weisenmiller, some of your older terms are still applicable, they have just changed. And we still need to maintain a very high standard for the work that we do in the IEPR around demand forecast, and that is part of why we are here today, is to determine how we have done. But as I said, it is not the end of the process, this will need to continue. I will, of course, stay involved as your IEPR Committee Associate Member, but this is a challenging one. And I look forward to hearing from the staff, from the PUC, and from the commenters today, so that we can help assess how well we have, indeed, done here over the, oh, I hate to say the last two years, but certainly our most recent efforts. Sorry for the long comments, but I appreciate your allowing me to put my little stamp in terms of what we are doing here today. And perhaps Commissioner

Weisenmiller would care to add something.

COMMISSIONER WEISENMILLER: Yeah, again, I think often what I try to do is to provide some context for people -- by "context," I mean history. And so I remember a meeting that occurred in the mid-'70s with Tom Graff of Environmental Defense, Art Rosenfeld with LBNL, basically pulled Dave Goldstein and I together, and the quandary they thought was decision-makers needs to understand the implications of the policy choices, and so, to the extent the Energy Commission was to adopt building standards or appliance standards, you needed to be able to reflect those in the demand forecast. And certainly at that time in the classic econometric models, you could not do that, and so David and I were thrown in to try and come up with basically the first end-use forecasting model for California in terms of cobbling together any data we could. David did the appliances and I did the building stuff. And obviously it was very -- well, that was very challenging at that point -- people have really labored in that area for decades now, I mean, certainly the models and the data are still weak, but I mean, still fundamentally the decision-makers have to be able to connect what the impacts are of their policy choices, like with the conservation programs of the PUC, or all building standards, back to what does it mean for sales and peak flow, you know, what are we deferring? Or, what

are the impacts? And that means, particularly now that we have so many different programs, or types of programs, the untangling the impacts of all of them is very complicated. But, again, there is a lot of particularly fun issues to dig into here, but the bottom line is we have to really be able to connect our actions to the impacts that they have.

COMMISSIONER BYRON: So, Madam Chair, I think I have certainly talked long enough, and let's try to restore some schedule here. We all, of course, know Suzanne Korosec, Program Director for Integrated Energy Policy Report?

MS. KOROSEC: Correct.

COMMISSIONER BYRON: Ms. Suzanne Korosec, and I would like to turn it over to her now for this Joint Committee Workshop.

MS. KOROSEC: All right, well, I will just do some brief housekeeping items. We do have a full agenda and I want to get going on that. Restrooms are out in the atrium, out the double doors and to your left, there is a snack room on the second floor at the top of the stairs under the white awning, and if there is an emergency and we need to evacuate the building, please follow the staff out the door and to the park that is kitty corner to the building and wait there until we are told that it is safe to return.

Today's workshop is being broadcast through our

WebEx teleconferencing system and parties need to be aware that we are recording the workshop. The recording will be made available on our website as soon as it is ready and we will also provide a written transcript of the workshop about two weeks after the workshop date. Those listening in on the WebEx, if you would like to ask questions, you can send those to the WebEx coordinator and we will make sure that those are passed on to the presenters. During the public comment period at the end of the day, we will hear first from the people in the room, and then from those on the WebEx. We would like you to come up to the center podium and use the microphone so we can make sure that we capture all of your comments on the record, and it is also very helpful if, when you come up to speak, you give the Court Reporter your business card so we can make sure that your name and affiliation are spelled correctly in our transcript.

We are also asking for written comments from parties and those are due by 5:00 p.m. on Friday, February 25th. So at this point, I will turn it over to Dr. Jaske to begin our presentations.

DR. JASKE: Good afternoon, Commissioners, members of the audience. I am going to give some background for what we are calling the Incremental Uncommitted Energy Efficiency Quantification Subproject, a mouthful as a title

and probably hard to unpack to subproject because it is closely related to, but different than, and sort of associated with, the Base Demand Forecast adopted in the 2009 IEPR. I will get into some of these other terms that are in the title in a moment. But, as both Commissioner Byron and Commissioner Weisenmiller have said, we are really trying to get down into some weeds here and this is reflected in the fact that we have a staff report of over 100 pages, and a consultant attachment, or Appendix, whatever we ended up calling it, of 150 or so pages.

So just to add to what Commissioner Byron said, decision-makers have long endorsed high levels of energy efficiency. That have done so sometimes quantitatively, sometimes qualitatively, sometimes with logical statements like "all cost-effective energy efficiency" without actually knowing what that means in terms of a number. This project is directly tied to trying to understand for a particular set of defined program initiatives how much of the savings from those program initiatives is incremental to the 2009 Adopted IEPR Demand Forecast.

A number of things are going on here that are the procedural vehicles by which forward progress has been made in this area, sometimes haltingly, but nonetheless, sometimes these various proceedings have identified questions that need to be asked and they are taken up and

progress made in subsequent proceedings. And that will surely continue to be the case going forward beyond what is at the bottom of this slide.

So picking up on particular proceedings or in the middle of that string is the 2006 PUC LTTP Proceeding. This is the first time that the PUC had actually attempted to take what it had said in earlier goal setting decision and tried to actually subtract estimates of additional energy efficiency savings from the forecast, in this case, the 2007 IEPR Demand Forecast. As these sub-points indicate, there was a bunch of controversy associated with that, the means by which those estimates were quantified were different than the means by which the forecast was prepared, there was a clash of methodologies, assumptions, there was not enough time to really get into the details of it. In the end, in the decision closing out that proceeding, the PUC decided that 80 percent of these estimates were going to be considered as duplicative of what was already in the 2007 IEPR Demand Forecast, and even worse for San Diego, that there was no incremental savings whatsoever. And everyone, of course, was willing to agree that that was not a very satisfactory resolution to the process.

At essentially the same time and parallel, the PUC had already begun what turned out to be the 2008 goal setting process. Itron had been hired by IOUs to do a

potential study, hired by the PUC itself to help develop some background that eventually led to new numeric goals. They developed the model that goes by the acronym of SESAT, also used in this effort, and produced a very detailed report that builds up three scenarios from a particular body of hypothetical policy initiatives that are sort of different in not so much their scope, but in the level of intensity, the degree to which those policy initiatives are pursued, resulting in different amounts of savings.

In the decision culminating that process, the PUC expanded what it considered to be the basis for its goals, it introduced this concept of total market gross, which means several things; it means it is expanding beyond the scope of IOU programs that had heretofore been the case of previous goals; it means that it was not just focusing on the net savings from the programs, it wanted to understand the total effects of the programs, and here we are intrinsically getting into net vs. gross issues. And of the three cases that had been prepared by Itron, they adopted the mid case. Those scenarios encompassed dimensions of each of these four buckets, continued IOU programs, Codes and Standards, which is actually a combination of Energy Commission Title 24 and the Federal Appliance Standards, what we are usually calling AB 111, sometimes "Huffman Lighting Standards," initially set out as goals in the

legislation itself and directing the Energy Commission to adopt regulations and now, at least in part, adopted into Title 20 of the Energy Commission's Appliance Regulations. And then things that came out of the PUC's energy efficiency strategic planning process, these big bold initiatives that probably eventually will be reflected in yet tighter appliance standards, Building Standards, but necessarily involve other dimensions because this is where the zero net energy home, zero net energy building concept comes into play. And so we have energy efficiency being somewhat traded off against on-site generation, so that the building does not have any net load on the system, at least on an annual average basis.

So picking up that LTTP thread again, early in 2008 at the beginning of the 2008 IEPR update process, the PUC requested, and the Energy Commission agreed to undertake, analysis of scenarios that were a part of the goal setting process, tried to identify the incremental savings associated with those, and in the end hand back to the PUC a product that was going to be useful in the PUC's Resource Planning Procurement Proceeding. The Energy Commission agreed to do that, we undertook some workshops in the '08 IEPR update proceeding to sort of develop a work plan, that was where the working group that Commissioner Byron mentioned came about, the working group met many times

subsequent to that time. The 2008 IEPR update, when confronted with the question of should the Energy Commission shift its process from what heretofore had been its practice of separating between committed and uncommitted policy initiatives, decided to retain the committed dimension of what goes into the forecast with these definitions here giving you an idea of what the difference between those are, but, at the same time, take on the task of preparing an uncommitted forecast and do so in a particular manner.

So just to give a graphical depiction of what we are talking about here, the heavy blue line, third from the bottom, is a demand forecast following the Energy Commission's typical practice of only incorporating committed energy efficiency program initiatives. The distance between the heavy blue line and the sort of brownish line at the very bottom is for this graphical schematic purpose the result if all of the savings of the hypothetical programs here were actually incremental. So the forecast would, in effect, rotate down from the blue line to the brown line. Now, if you had something less than 100 percent of those savings viewed as being incremental, you would not, of course, get as far down. And if you used the proportions the PUC had included in the final LTTP decision, you would in effect be rotating that wedge up so that you would have the green line and the black line that

both surround the blue line being the same size as that wedge, but it is being shown as duplicative of savings within the demand forecast, and only about 20 percent of its magnitude would be a reduction to that demand forecast. So this is a graphical way of showing what the consequences of deciding whether policy initiatives that are uncommitted have effects that are incremental. If a lot of it is incremental, you have a lower and lower demand forecast, so that it is perhaps even as flat as this one. This chart has been used a number of times, it actually appeared in Chapter 2 of the 2008 IEPR update in an attempt to explain in visual terms what the controversy is all about.

So we launched our project, as Commissioner Byron said, and let me say again, graciously funded by the PUC through an arrangement they already had in place with Itron. The Energy Commission has funded Itron now since the beginning of this calendar year, as the PUC's contract with them expired. We undertook three particular subset projects, upgrading energy efficiency in the base forecast, itself, developing these incremental savings estimates that are the focus of today, and trying to determine whether SESAT or some other capability is one that we should bring in-house and use in future cycles.

For the forecast, I will just go through this very quickly, we ended up deciding that an emphasis on IOU

program savings was the most cost-effective way to use Itron's assistance. We ran into some significant difficulties acquiring the kind of evaluation measurement and verification data that we desired, and one of the things that this project has surfaced more visibly, and that I will probably have some more to say about in our recommendations later this afternoon, is that some aspects of how EM&V has been conducted over time really only reveal themselves when we are doing a forecast of this sort. The PUC typically makes major focus on these EM&V results in terms of the short term, in terms of what does it mean for incentive payments and those program cycles wherein utilities were authorized instead of payments, or in perhaps redesigning programs for the next cycle, but issues of long term savings through decay, through replacement, through just basic fundamental engineering analyses of lifetimes and what the distribution of that is, those issues rarely find themselves coming to a policy consequence in the PUC's proceedings because they are mostly short run. It is when we are trying to make use of these data for the long run playing out, the life of these energy efficiency measures over 10, 15, 20 years, depending on the item in question, that is where these long term consequences are really showing up to be critical. And more will be needed to improve upon EM&V efforts going forward.

We of course concluded the 2009 IEPR just a few months ago, it included both the technical upgrades and the incorporation of what finally became the 2010-2012 program cycle in that forecast, it reduced that forecast noticeably, and Chris will show some consequences of that in terms of the differences between the 2007 and 2009 IEPR Demand Forecasts, and then the further reductions if these incremental savings are used as the PUC staff intends them to be used.

A little bit about our effort with Itron. Itron was helpful in pointing out a number of things that were areas where our end-use models could be updated. In some respects, they were using data in a faster turnaround cycle than we were, some of that still remains in front of us. Of course, we had to deal with the fact, as I just mentioned, that the definition of policy initiatives established by the PUC in the 2008 goal process included as goals the 2009 through 2020 period. Some portion of that has now gotten the status of being committed and is therefore included in the forecast, so there are adjustments necessary to, in effect, track how the passage of time from the PUC's goal setting proceeding has resulted in some of those efforts being incorporated in the forecast itself. We had to modify the SESAT model to make it be more consistent with the actual 2009 IEPR Forecast that was adopted, in part because

the fundamental Econ Demo drivers are different and, in part, because we used increasing electricity prices over time when the goals update process had not, and a number of other technical adjustments. And then, finally, where there still remained modeling ambiguities, we had to determine some mechanism whereby we would resolve those so that we could actually produce incremental savings that we were comfortable with.

These five bullets identify the major elements of the Staff Report and the Appendix. A staff report authored principally by Chris Kavalec and myself, an appendix with a glossary of terms, an attachment written by Itron, and bundled or collated separately because it is so large, a detailed focus on the methods and the results, and then two attachments written by the PUC Energy Division staff, one focusing on the PUC's goal setting process, and one speculating, I guess, would be one way to say it, or highlighting, foreshadowing, how it is these results may get used in the PUC's forthcoming procurement planning process. And on the goal setting, one of these, Carmen Best of the PUC's Energy Division will give you a little bit more history in just a moment.

So these are the steps that remain. To the extent that the technical documentation prepared by Itron, or the policy documentation prepared by staff needs to be tweaked

as a result of the comments and discussion at the two workshops that we have had, we will need to do that. We are, of course, conducting this workshop today. There are a set of questions, I believe, attached to the Agenda, and parties have been given an opportunity to submit written comments. We will want to receive those and see what people have to say, incorporate that most likely in the Staff Report. The Energy Commission will need to transmit to the PUC the final version of all of this documentation with some sort of cover letter endorsing it for use in the LTTP proceeding, and that will, in effect, close out the PUC staff's request and the Energy Commission's agreement to conduct this proceeding and deliver it into the 2010 LTTP Proceeding. We will, of course, as staff have many areas where we want to consider improvements for the next cycle, both in our Base Forecast and in the parallel Incremental Uncommitted work that we will undoubtedly do again for that cycle, and we will of course get some guidance from the IEPR Committee about what areas to focus on in so doing that.

So that completes my presentation. Before Carmen comes up and gives hers, are there any questions?

COMMISSIONER BYRON: Dr. Jaske, we are going to see you again, so we will have another shot at him. Do you have any questions for him? You know, I would just like to go back briefly to your slide 10, the graphical depiction of

the overlap, and I guess I just have a quick comment for everyone here, and that is that this is really a transformational effort here. We get really kind of wrapped up in the details, but we are now not just reducing energy demand or, I should say, lowering the -- reducing the slope of the curve, we are now turning the slope into a negative number by our efforts, and is really a transformational time, one that I think all of us in this industry have been working towards for a long time, and so really the bottom line of what we are trying to accomplish here is to turn that curve and to make it a negative slope despite the increasing demand as a result of population increase and electrification of the transportation industry, or whatever. But I guess I just wanted to highlight that and thank you, Dr. Jaske, for your presentation. It does a good job of characterizing what we are about here today. I think we can press on to the next one. Thank you.

DR. JASKE: Thank you.

MS. BEST: Hello, my name is Carmen Best. I am here representing the CPUC, the Energy Division today. I have three things that I wanted to share today. I was going to go through the key decisions on goals since 2004 from the CPUC, how the CPUC is tracking the achievement of cumulative goals, and share some additional graphics that illustrate how goals have changed as a result of the aforementioned

decisions, and also how we have been tracking utility achievement of cumulative goals. And this is all to highlight some of the content that is in the Attachment B that Mike had cited, there is more detail in there.

The key goals decisions started essentially in 2004, which is when the Commission had made a commitment to long term savings goals. They basically account for 70 percent of economic potential and 90 percent of maximum achievable potential for energy savings over 10 years. They were cumulative, which meant that, in each year, there was the first year energy savings were added to the next to have a cumulative goal, and were also called out for use in the long term planning process, the LTTP Proceeding. Subsequently, there have been other decisions since then that have further expanded the application of the goals. For example, in the risk reward incentive mechanism that was noted earlier, which linked the achievement of goals to earnings claims that the IOUs were able to make, and it has also clarified the expectations and means for the utilities to meet these cumulative targets. For example, in the Decision 07-10-032, there was a further clarification that the cumulative savings could be achieved in a variety of ways and the Utilities had different means of illustrating how they had achieved those goals.

In the '08 decision, which is really pinnacle to

the analysis that we will hear about later, it adopted a new paradigm, which is the Total Market Gross Strategy, which was a more expansive definition of our goals, and it also, as opposed to just net IOU goals for the 2012 to 2020 period, it expanded the time frame that we were looking at and it also adopted these goals on an interim basis pending further study and updates on a regular basis, and that was partly to meet the needs of the CARB proceedings, so they could use that in their Scoping Plans. It also required that 100 percent of this Total Market Gross goal, TMG goal, should be used in long term procurement planning, again, likewise in the '04 decision. So it was a consistent theme that the goals should be used in long term procurement planning. It also characterized the existing '09 to 2012 program goals as gross, which was seen as kind of an incremental step to moving to this broader total market gross paradigm. There have been two other decisions in 2009, which had an impact on what those goals were, but it did not involve a full reanalysis of the goals or an in-depth study of the goals, but they were -- adjustments were made to better align the numeric goals with the existing potential based on new information that was available on ex ante assumptions, and also rectify a standing issue with SDG&E regarding the portion of economic potential that they were required to achieve.

Some of the specific changes in there, and you can see them up on this slide, the first was to remove '04-'05 from the definition of "cumulative", in effect lowering the total cumulative goals that would be set for 2012; in essence, there is no make-up of the shortfall or the measure decay from the 2004-2005 period. And that was partly due to methodological reasons and the availability of that long term data. There is also an adjustment made to the therm goals because of interactive effects. Since we are talking about electricity today, I will not get into those in a lot of detail.

And then, in the September decision, which adopted the energy efficiency portfolio that we will be working towards for 2010 to 2012, we also did some additional decrements to better align with the ex ante assumptions that the utilities were using, and also based on new information that we had about that, and corrected this error for SDG&E, for example, and clarified what the 2012 goal was because there was some overlap from the '04 decision. And it also clarified that the utilities would be required to make up 50 percent of savings from measure decay, and that the PUC would continue to study this issue to see if that number was correct or not. Prior to this, the utilities were required to make up 100 percent of the measure savings decay, and they could illustrate that in several different ways. So

that is the essence of the changes that have happened over time. And I will show you a graphic later that shows the incremental differences.

The PUC has been tracking the achievement of cumulative goals, which is our way of looking at the long term, and there are two examples of that. In the CPUC approval of the 2010 to 2012 portfolios, in that review process, we looked at both the shortfall from the prior cycle, or the anticipated shortfall in savings where they did not quite meet their goal, and what they need to make up in this cycle. We also considered both 100 percent and 50 percent scenarios of making up measure savings decay from the prior cycle. And in the end, we approved program plans that either met or exceeded the cumulative goals for 2012. So, in theory, doing this each cycle you are ensuring that you meet that cumulative goal in the long term.

The other area that we have been tracking the cumulative effects is through our EM&V studies and our reporting. The Energy Division's Verification Report, which came out in October of 2009, also took into account the utility shortfall from the prior cycle. That study was dedicated to the 2006-2008 cycle, but it quantified what the shortfall was from the prior cycle to see how far they were from the cumulative goals. In that study, however, we did not incorporate the shortfall of measured decay because we

had some data issues on that.

COMMISSIONER BYRON: Ms. Best, if I may interrupt for just a moment?

MS. BEST: Sure.

COMMISSIONER BYRON: Terminology -- shortfall -- is that the difference between actual and reported, or actual and expected? What is that?

MS. BEST: The shortfall would be the difference between the goal and the reported.

COMMISSIONER BYRON: Okay, so it is not the difference between the actual and the reported, then?

MS. BEST: No.

COMMISSIONER BYRON: Okay.

MS. BEST: The actual and the reported, I would consider equal, unless -- what do you mean by actual? Evaluated?

COMMISSIONER BYRON: Okay, helping me with terms and hopefully this is helpful for my fellow Commissioners, so "reported" is what the investor-owned utilities report to us as their efficiency savings?

MS. BEST: Right.

COMMISSIONER BYRON: So you are telling me that we take those as actual?

MS. BEST: We take those and then we evaluate them, and that is what I think you mean by "actual." Right?

COMMISSIONER BYRON: Yes.

MS. BEST: So "reported", we have the "goal," and then we have the "reported" which is in many cases larger than the goal, but once it is evaluated, then we look at the difference between the evaluated and the goal, and that would be the shortfall. So, in any given year, or any given cycle, the utilities must meet that cumulative goal. Therefore, if at the end of the -- if their actual savings, actual evaluated savings, do not meet that goal, then they need to make that up in the next program cycle. They need to have more programs, or programs that exceed -- that save more energy to make up that gap. I have graphics that might help.

COMMISSIONER BYRON: Well, and we are just trying to define terms. I think it is a very difficult assignment, and I am glad the PUC has it. And it is really crucial, too, because we are trying to hold the utilities' feet to the fire in terms of reaching these goals.

MS. BEST: Right.

COMMISSIONER BYRON: Maybe they have the toughest job of all, but yours is to evaluate the relative success of that.

MS. BEST: Right.

COMMISSIONER BYRON: Sorry to interrupt, please continue.

MS. BEST: No problem. And "decay" maybe deserves two seconds of definition, as well. By "decay" of measure savings, I mean, once the unit, a widget of sorts, is installed, it has a certain lifetime, and once that lifetime has expired, the savings also have expired. So therefore, that equivalent savings is no longer available. Or it is no longer on the grid, if you will. And I believe there is going to be a lot more discussion about that going forward.

Okay, so the graphic, then, that I wanted to share here is to illustrate how those decisions have had incremental changes on the existing goals that we are tracking for the utilities. The red -- the solid lines show the current goals and where those land. The dotted lines are the prior goals, and the tags on each one illustrates the decision that started that goal and how it was adjusted. So, for example -- oh, and also, all the maroon lines are values that are based on the '04 goals decision, and the blue line are values that are based on the '08 decision. And you will also see at the bottom, we go from a net goal definition in 2004 to 2005, net in 2006 through 2008, and a gross definition from 2009 through 2012, and a total market gross from 2013 to 2020. Would it be valuable to go through what "net" and "gross" means at this point? Would that be helpful?

COMMISSIONER WEISENMILLER: Yes, why don't you do

that, particularly in terms of, obviously, when you look at the slopes and all, to the extent you can explain the features of the graph in terms of the definitions, that would help.

MS. BEST: Okay. So the values themselves have not changed in the '04 or '08 decisions, however, the definitions of "gross" have changed. So, for example, with the "net" in the 2004 through 2008 means that the utilities file, they report a certain level of savings, the PUC goes out to evaluate those savings, they evaluate both the "gross" savings, which means how many widgets were installed and what was the savings associated with those widgets, and then the next step is to apply a "net" factor which is a means to determine whether or not the program that the IOU had invested in had caused that change, so it is an attribution factor. And it is also a means of understanding the cost-effectiveness of that activity. Now, moving into the 2009 through 2012 period, this is not a total market gross paradigm, but it is a gross paradigm, which means we just do those first two steps where we are looking at what the utility reported, what was evaluated in terms of all the widgets that were installed, and what savings there are available on the grid, in essence. But the attribution is not incorporated into this. And there are various reasons for that, I do not know if I want to get into all of those

right now, but essentially it was these incremental steps to taking a bigger picture at the market, and the influence that the IOU's could have on energy savings in the state. So, in each of these paradigms, their influence in essence is growing, their potential influence is growing.

COMMISSIONER BYRON: Mr. Weisenmiller, I think it is fair to say this is going to get more complicated, not less, but you did say this was going to be fun in your opening comments.

COMMISSIONER WEISENMILLER: Challenge is always fun, right?

MS. BEST: Okay. So this graphic is another picture of the prior graphic, but it is in bar stacked form. So if you look at the maroon stacks over time, the stacks get increasingly larger because we have -- each year is additive over time, and these striped stacks on top just show where we were with the original decisions. So the maroon on the bottom is where we are now. You will notice that the annual obligations for the IOUs to achieve in any given year, if they keep up with their cumulative savings and do not have a shortfall, and are able to make up the decay, their annual savings expectations stay relatively flat, and likewise for the KW Goals projections. These graphics are not showing any accomplishments yet, the next one will.

So the last item that I wanted to share was just one of the ways that another illustration, but I needed to lay it out before I showed the picture, the next slide is going to show the recorded savings of PG&E, just as an example, we have it for all of the utilities in Attachment B. The projected goals will be on the maroon line, and then we will see the reported savings are underneath that. This accounts for measure savings decay and it also accounts for the persistence of the savings over time for the 2006 to 2008 programs, but it does not have that for the 2010 to 2012 programs. That whole definition kind of falls in line with our view of "committed," as the CEC interprets "committed." But we will see it in a second. The other impacts that the utilities are allowed to count towards their goals are low-income energy efficiency and half of the pre-2006 Codes and Standards accomplishments, which was in agreement with the IOUs from prior cycles.

So here we go. This is what it looks like. And the graphic is on the bottom -- or the legend is on the bottom. So like I said, the line going across is, again, the goal that we are shooting for, the purple bar is what the PUC has validated and verified, it is one step in between full evaluation and their reported savings because we have not completed the final ED staff report that shows the evaluated savings. So this is from the 2009

Verification Report. So the maroon bars are for 2006 and you see that they decrease over time, which is a reflection of the decay of the measure savings over that time period. The striped line is an approximation of the savings that were accomplished in 2009, but you will note, in 2008, based upon their verified savings, PG&E came right on top of its goal; therefore it would not have any make-up for the shortfall in 2009. In 2009, they came right up to the goal value, so there is not any shortfall that they need to make up in that time period. Likewise, in 2010, 2011, 2012, they are over by a small portion of their goal, but these are not evaluated yet, so presumably these values would go down once the programs are implemented and we assess how well they did. It is also conceivable that they could go up. But there will be a few more adjustments when the EM&V results come in and we find out what the actual savings were. But in 2012, this was a foundation of our adoption of the PG&E Portfolio Plans because they were on target to meet their goal for that time period. And likewise for the megawatt savings, same scenarios, the maroon bar is the 2006 savings, the purple bar is the low-income and pre-2006 Codes and Standards, and the striped is 2009, the blue is the 2010 through 2012 projected savings from the IOUs. So those were the numbers that they filed with the PUC saying, "We shall achieve these in this portfolio." You will note that they

do not have as much cushion in this scenario as they did in the prior with the KWH goals. So we will be keeping an eye on that, but it does not preclude them from finding other means and ways to meet that goal. Any other questions?

COMMISSIONER WEISENMILLER: Yeah, actually I would like to get a sense of what your priorities are in this area for the next, say, two years in terms of enhancements of the methodology, or what.

MS. BEST: Well, I think the first priority is to ensure that the utilities do go out and get the savings that they are planning to get for this 2010 through 2012 cycle. From an EM&V perspective, which is the team that I represent, we definitely want to fully account for what happened in 2006 through 2008, and get a better number on 2009 that is more reflective of actual savings that happened in 2009. But in terms of priorities, I mean, it is really kind of a mechanical process for tracking it based on what the Commission has decided what the goals are and what they are supposed to achieve, so it is kind of -- better accounting is what we are looking at right now from a staff perspective.

COMMISSIONER WEISENMILLER: Thanks.

MS. BEST: I do not portend to reflect what the Commission's view of this -- what this means. I think my colleague, Simon Baker, will have more to say about that.

COMMISSIONER WEISENMILLER: Okay, thank you.

COMMISSIONER BYRON: Ms. Best, thank you for being here. In fact, you know, we always joke about how the PUC sends us their best, and they have done that again.

MS. BEST: Literally.

COMMISSIONER BYRON: Yes.

MS. BEST: Thank you.

COMMISSIONER BYRON: Any particular reason that you are showing PG&E? Are you picking on them, or are they your best example? Or --

MS. BEST: No, they always come up to the top for whatever reason, they were just the first one that I had done, so they are on the top of the -- they were at the top of the attachment. But all of the IOUs are in that attachment, so you can look at all four of them.

COMMISSIONER BYRON: A couple of questions if I may.

MS. BEST: Please.

COMMISSIONER BYRON: And since you have PG&E up there, I suppose that is fair because I was in PG&E service territory this weekend, you know, I live in different service territories during the week, it seems, but I went into my local hardware store and I bought one of those widgets you were talking about, they had a tremendous sale on, $.25 for a CFL. And I think, just to show you how

difficult EM&V is, I go, "My word, I have got to buy some of these. This is just too good to pass up." So I buy dozens of them, right? Oh, what is a few dollars? No limit. So I take them home. I am an Energy Commissioner, I give them to my friends, say, "Here, have a CFL." How do you track this? I mean, all of mine, none of them got installed, they got put in a box and they are up on the shelf, so when my old bulbs go out, you know, these will get plugged in. And then, of course, I have got that problem that my wife might not like the color of those things and she will take them out, unbeknownst to me, and -- I am just trying to describe a process that I think all of us go through, mixed -- there is no way to really quantify all this, and so this decay and this notion of what gets plugged in and what does not, very complicated, very difficult. So the measurement verification is crucial here, and I use the CFL example because I think it is -- if I recall, it is the best of the so-called widgets that we have got for this embedded energy efficiency, correct?

MS. BEST: It is the one that has been used the most, so far. It makes up a very large portion of the '06-'08 portfolios, over half of the claimed savings. So I will direct you all to the recently published series of EM&V Reports to get more detail on how each one of those issues you raised were handled. There is -- we have done analyses

of tracking where those bulbs have gone, we have done phone calls, called hundreds of thousands of customers to find out if their bulbs are still installed or not, we have called the retailers to find out where they put them and how they advertise them, we had field staff out in stores looking to see which bulbs were on which shelves. It has been an extremely intensive process and I would also note that this is the first year that the CPUC has directed those evaluations with the help of an army of contractors that go into the field to do all this work, and just in the past week all of our EM&V studies have been posted to the public site after getting review from the IOUs and other stakeholders. So a more comprehensive report that shows it all in one place will be coming out in the middle of April, April 15th is when that draft report should be coming out. But all the data that is going to support that is in our contractor reports. It is very complicated.

COMMISSIONER BYRON: Yes, it is, and very important, too. And, you know, part of why we are here today is to discuss this embedded energy efficiency in our demand forecast, and I think it points to how difficult that is to determine, the accuracy of that.

MS. BEST: Right.

COMMISSIONER BYRON: And a lot of comments I suspect we may hear later on today center around the

accuracy of the forecast, but you can see the assumptions and the information that we rely upon are extremely important, as well. So I do not mean to anticipate those comments, but it is not just the forecast that is at question here.

MS. BEST: I would agree.

COMMISSIONER BYRON: Okay, thank you, Ms. Best.

MS. BEST: You are welcome.

MS. KOROSEC: All right, next we will hear from Dr. Kavalec.

DR. KAVALEC: Good afternoon. I am Chris Kavalec, in case you cannot read it on the slide there, from the Demand Analysis Office. I am here to give an overview of the methods we used in this incremental uncommitted analysis and present some of the key results, but first I am going to give a very brief review of our 2009 IEPR Demand Forecast and talk a little bit about the concept of a managed forecast. As you probably know, the 2009 IEPR Forecast is the reference forecast, or the starting point, for this incremental uncommitted analysis, and as Mike mentioned earlier, the general rule for our forecast is we include committed efficiency savings only, that is, initiatives that have been finalized or firmly funded, have a specific program plan, so that we have something to work with in terms of forecasting. And you will see as we start talking

about the uncertainties regarding uncommitted impacts why we have this general rule.

Typically when we do our forecast, we focus on what we call transmission planning areas, but that would not do for this analysis because we are interested in IOU service territories, which differs slightly from our defined IOU planning areas. But fortunately we also do a sales and a peak forecast for the IOUs by service territory. And heading down the road toward a managed forecast, we are at a point, starting at a point already below that in the 2007 IEPR, and that is because of the economy, more efficiency impacts, higher rate projections, we assume a 15 percent rate increase in the '09 IEPR vs. flat rates in the '07 IEPR, and more self-generation which does not affect the consumption, but it does affect sales and peak.

So first off, here is a comparison of sales for the three IOU service territories combined for the '07 and '09 IEPRS. And you will notice on the left-hand side there the graph, the impact of the current recession and, after the recovery, the '09 forecast never catches back up to the '07 forecast for the other three reasons that the forecast is lower -- more efficiency impacts, higher rates, and more self-generation, so that by 2018, which is the last year forecast in the '07 IEPR, we are 7 percent below the '07 forecast.

Same comparison for peak, although the difference is not as large, and that comes mainly from our observations that, so far, in the current recession, peak demand has not fallen by as much as energy demand, so we are only 5 percent below in 2018 vs. 7 percent.

A word about the managed forecast. We are starting with the '09 IEPR forecast and we are subtracting off demand-side resources like energy efficiency, combined heat and power, PV systems, and so on. And Simon Baker from the CPUC will talk a little bit more about the managed forecast later this afternoon, and we also have a discussion in Attachment C of our incremental uncommitted report. But a reminder, this analysis we are talking about today is looking at the further energy efficiency component only. The other demand side resource adjustments, we will leave up to the CPUC.

Okay, on to the analysis. Our mission that we chose to accept was to estimate the incremental, or additional impacts of three CPUC-defined efficiency scenarios for 2013 to 2020, and some terminology here. In our analysis, we refer to 2012 and before as the uncommitted period because 2012 is when the IOU committed programs end and the period 2013 to 2020 is the uncommitted period. So we are looking at the incremental impacts of these scenarios, accounting for overlap between these uncommitted

initiatives and the committed savings in the 2009 IEPR Forecast during the uncommitted period.

These three scenarios which we call the high, the mid, and the low, are based on different assumptions regarding the four efficiency categories that Mike Jaske discussed earlier, and the next presentation by Mike Ting will go into some details about the assumptions regarding these initiatives. But, for example, the scenarios vary by the levels of incentives assumed for the IOU programs, they varied by the number of revisions assumed for the Title 24 standards between now and 2020. And these scenarios are basically identical to what was done in the 2008 Goals Study, although updated to account for the passage of time. So, for example, in the 2008 Goals Study -- and the Goals Study, again, is what forms the basis for the current CPUC efficiency goals -- in the 2008 Goals Study, there were Title 24 impacts, revision impacts, estimated for 2008 and 2009, but we all know that Title 24 was not revised until -- or the revisions do not go into effect until this year, so therefore the impacts in 2008 and 2009 had to be eliminated from the analysis.

Another reminder, what we are doing here is a little bit different from our typical forecast in that we are not projected a reasonably expected to occur, most likely to occur, efficiency future. We were given three

specific reasonable scenarios and asked to look at the incremental impacts relative to our forecasts of these scenarios. Okay, so we are not saying anything about the likelihood of these scenarios, whether there is a more likely scenario, okay? We are saying nothing about that.

COMMISSIONER BYRON: Well and therein is the rub, perhaps, Dr. Kavalec. If I were to press you and ask you as my expert, which one of these three scenarios do you find the most reasonably expected to occur, could you say anything about that? Or does that require additional analysis? Or are you going to defer to Itron?

DR. KAVALEC: No, I would have to defer to the CPUC and I would not want to attempt to influence their decision. If they want me to offer my opinion, I could.

COMMISSIONER BYRON: So you see that as a policy-setting issue, then, that it is -- is that what I am understanding you are saying?

DR. KAVALEC: Yeah. What we did was make our best effort to identify the impacts of these three scenarios -- which one is going to be chosen, the low, mid, or high, is a policy call that we are leaving up to the CPUC.

COMMISSIONER BYRON: Well, I think you should defer, then, giving your opinion until they ask for it.

DR. KAVALEC: Yes.

COMMISSIONER BYRON: But that is interesting,

okay, thank you very much.

DR. KAVALEC: Okay, for this analysis, we relied on Itron's model referred to as SESAT, which is a relatively simple spreadsheet model designed specifically to look at efficiency scenarios and, in turn, SESAT uses output for estimated uncommitted IOU program impacts from Itron's asset model, which is a real fancy behaviorally-based model designed to estimate utility program participation based on the costs and benefits of individual efficiency measures.

And then preparation for this analysis, we and Itron matched inputs for our respective models, that means SESAT and our Energy Commission Forecasting Model, as closely as possible, and when I say "inputs," I am talking about things like projected number of homes, projected commercial floor space, appliance saturations, and so on. Once we were done with our IEPR forecast, we provided Itron detailed data on committed savings at the end-use level, as well as peak to energy ratios so that they could estimate peak savings along with energy savings.

Now, despite our diligent efforts to reconcile the two models, we found that output, meaning electricity sales between the two models differed in a non-trivial way in 2012, the last year of the committed period, and we did not have the time or the resources to fully account for this difference. So what we did was basically to scale the two

models so that they were identical in 2012, in other words, we zeroed out the difference in 2012, and then did our incremental analysis from 2013 on.

COMMISSIONER WEISENMILLER: How different were they?

DR. KAVALEC: It depended on the scenario and I would have to ask Itron because I do not have the numbers in front of me, the differences, but it is in the report, it is shown in the report.

COMMISSIONER WEISENMILLER: Okay.

DR. KAVALEC: As I say, they were not trivial, they were more than 1 or 2 percent, and they were coming mainly from differences in estimates of IOU programs in the two models.

COMMISSIONER BYRON: And it really did not kick in until 2012, the significant incremental difference -- significant difference?

DR. KAVALEC: Yeah, okay, I should say differences in the pre-2013 period, and the differences were highest in 2012.

COMMISSIONER BYRON: Yes, and we zeroed them out so we are carrying forward that era, perhaps --

DR. KAVALEC: Yes, we assumed they away. And we would have preferred not to do this because, when you scale like this, you introduce additional uncertainties. But from

a policy point of view, this is not totally inconsistent because the total market gross goals, meaning goals that are in terms or that incorporate not just IOU programs, but other efficiency initiatives like standards, they do not kick in until 2013, so non-IOU program efficiency initiative impacts would not have counted toward the goals anyway until 2013. So that sort of minimizes a little bit the problems caused by this scaling of the two models.

Okay, the value added in this analysis relative to past work is that we are explicitly accounting, or estimating, overlap between committed savings and uncommitted savings in the uncommitted period. And to understand how we did the accounting for this overlap, the first thing to note is that we did this analysis at the end-use level, so we are dealing with metrics like UEC's, Unit Energy Consumption; for example, the average amount of energy used by a refrigerator in a single-family home in a given year, that is a UEC. And the commercial equivalent, EUI, Energy Use Intensity, which measures average end-use energy use per square foot of commercial floor space. And our overlap culprits between committed and uncommitted included IOU Programs since, although our committed IOU Programs end in 2012, their effects persist into the uncommitted period, so there is some overlap between committed and uncommitted IOU Programs in 2013 to 2020.

Naturally occurring savings -- by "naturally occurring," I am talking about savings that occur even without IOU program incentives or standards. Both SESAT and the Energy Commission model incorporate naturally occurring savings, so there is some overlap there, and the Huffman Bill. In the '09 IEPR Forecast, we included some additional residential savings in the anticipation of the Huffman Bill, so naturally there is going to be overlap between those additional residential lighting savings and the Huffman Bill savings coming from SESAT.

For the specific overlap calculations, we transformed savings at an end-use level for both committed and uncommitted impacts to percentage terms, and the reason we did that is we are dealing with two different modeling platforms that differ slightly at the end-use level. So we wanted to avoid a case where, if we used the absolute magnitude of savings, we could end up with a negative UEC once we subtracted committed from uncommitted. So therefore we stuck with percentages.

These percentage reductions in committed savings, from committed savings, at the end-use level, were netted out, subtracted off the percentage impacts from the uncommitted initiatives coming from the SESAT Model, to give us the incremental uncommitted. So, in plain English, let's say that SESAT predicts that average residential lighting

savings is going to drop by 40 percent in 2020 relative to 2006, which is our base year, and committed savings from the '09 IEPR forecast lead to a reduction in average lighting of 18 percent. Well, the difference, 40 minus 18, or 22 percent, becomes the incremental uncommitted effect. So there is nothing really complicated going on here in terms of the methodology, it is just a lot of details to keep track of and a lot of data to work with.

COMMISSIONER BYRON: But, Dr. Kavalec, isn't the key whether or not that data is accurate, in other words, the example I used with my buying of CFL's this weekend, really trying to translate that up on a state-wide basis is really problematic, isn't it?

DR. KAVALEC: It is. That is one of the -- I mean, we will talk more about uncertainties in later discussions, but certainly that is at the forefront. We need better data on real world efficiency impacts.

Okay, so once we had these percentage net impacts, they were reconverted to energy terms and multiplied by the appropriate units, number of homes, or amount of commercial floor space, to give us total incremental uncommitted savings for specific end use, and then all the different end uses were added together. And then we converted these energy savings into peak savings using peak to energy ratios.

Finally, some results. These numbers are incremental uncommitted savings and therefore they can be subtracted directly off the '09 IEPR forecast. For the three IOUs as a whole, for the three scenarios, on the energy side we are looking at a range between 10,700 and 14,400 gigawatt hours. And on the peak side, 4,000 to 6,500 megawatts.

In terms of load growth, this next slide gives the percentage of energy growth avoided because of these incremental uncommitted savings. So, for the IOUs as a whole, in the low scenario, 57 percent of the growth between 2008 and 2020 predicted in the '09 IEPR forecast is avoided by these incremental uncommitted impacts; up to 77 percent in the high case; and the peak numbers range from 56 percent to 91 percent. You will notice that PG&E's peak numbers are higher than the other two IOUs, and some of that is due to the differential impact of these initiatives. But most of it is due to a lower short-term growth rate for PG&E for peak relative to the other two IOUs. So if we look at the same thing, except using the time period 2012 to 2020, that difference for PG&E relative to the other two IOUs disappears. But still we have basically a notable result here, and that is that peak percentages are higher than those for energy, and the reason for that comes from the big bold initiatives, as Mike Ting will talk about a little bit.

The big bold initiatives, since they target HVAC, have more of an impact on peak in relative terms than they do on energy.

Okay, this slide looks at these incremental uncommitted savings relative to the '09 IEPR forecast. That is, the bottom three lines there below the green line that is what our forecast would have looked like had we incorporated these incremental uncommitted savings for each of the scenarios. Same thing for the peak side, but more of a reduction by 2020, as I mentioned, between 8 percent and 12 percent in 2020. And you will notice in the mid and high cases, the red and black line, that we actually have declining load growth between 2012 and 2020. And this is maybe the most critical result from this analysis, and it is something that we all need to think about: are we comfortable in our energy planning under the assumption that load growth is going to be negative for an extended period of time, for maybe the first time in history, or the first time in a long time? Do we want to be more conservative and choose the low case? Do we want to come up with an even more conservative case? Do we want to plan for contingencies in case these efficiency efforts do not come to fruition? So I am just throwing these questions out there, and I will just say that I am glad I do not have to make these decisions.

Okay, what is the distribution of the uncommitted savings impacts, you ask. On the energy side, the main contributor, by far, is IOU programs responsible for almost 60 percent of the impacts in 2020, followed by the Big Bold Initiatives. On the peak side, as I implied earlier, Big Bold Initiatives have a much larger effect, and thus we have a larger peak effect vs. energy. The Big Bold accounts for just about as much as IOU Programs -- on the peak side, around 38 percent.

This next graph is just meant to give some perspective on these incremental uncommitted savings vs. all of the committed savings that are included in the '09 IEPR. That includes standards, IOU programs, naturally occurring savings going back to 1975, the dark blue slice on the right, being the incremental uncommitted. This is a little bit apples and oranges because we are talking about two different base years here -- 1975 for the committed, and 2006 for the uncommitted, so it is not the greatest comparison, I just wanted to give you some rough idea of the magnitude of the two.

COMMISSIONER BYRON: So, like you say, it is apples and orange comparison, but I think if I am understanding your point, that we are capturing the majority of the efficiency programs in our forecast. Is that what you are saying?

DR. KAVALEC: Yeah. In historical terms, this is a pretty small slice, and this is the energy slice, so it is smaller than the peak side.

COMMISSIOENR BYRON: Maybe this is an inappropriate question, but is anything in the past in question here? No one seems to be questioning how we did in the past, I take it, in terms of modeling the embedded energy efficiency.

DR. KAVALEC: Plenty of people questioned that in the past during the forecasting process --

COMMISSIONER BYRON: Yeah, they questioned it then. The entire interest is going forward, no doubt about it.

DR. KAVALEC: Okay, finally, many may wonder about these incremental uncommitted impacts relative to the Air Resources Board Scoping Plan AB 32 goals, i.e., how much do these incremental uncommitted savings contribute toward meeting the AB 32 goals? The first thing is to note these two are not directly comparable because the AB 32 goals are statewide and we are focused on the IOU service territories, and the AB 32 goals use the 2007 IEPR Forecast as a reference, whereas we are benchmarking everything to the 2009 Forecast. But making a couple of manipulations, we can give a sort of rough comparison of the contribution of these incremental uncommitted impacts to the AB 32 goals. In

2020, the Scoping Plan goal is 32,000 Gigawatt hour savings vs. the '07 IEPR Forecast. The '09 IEPR Forecast has around 10,000 Gigawatt hours more committed savings than did the '07 Forecast in 2020, so we are down to 32,000 minus 10,000, or 22,000 away from the AB 32 goal. As I mentioned, the incremental uncommitted savings on the energy side range from between 10,700 to 14,400 Gigawatt hours, and we can project that to a statewide total, making the assumption that efficiency efforts are just as aggressive in the non-IOU areas as in the IOU areas, and noting that IOU service territories are responsible for around three-quarters of statewide sales. Doing that, we end up with an estimate of 65 to 90 percent of the Scoping Plan goals being met in 2020 from these incremental uncommitted impacts. Again, that is making the assumption that efficiency impacts are similar relative to sales outside of IOU service territories compared to inside.

Okay, with that, I will ask the committees if they have any comments or questions.

COMMISSIONER BYRON: Commissioner?

COMMISSIONER WEISENMILLER: No.

COMMISSIONER BYRON: Thank you, Dr. Kavalec. I think we will press on. But as usual, a lot of good information here and we will look forward to hearing comments from others and perhaps there will be some

additional questions later.

MR. TING: Good afternoon. My name is Mike Ting from the Consulting Analysis Group at Itron. I led the Itron side of the study team to conduct this work. Dr. Jaske and Chris asked me to hopefully give you a little bit more flavor about the specifics of the policy initiatives that were included in the original Goals Study and reflected in the current set of results for the incremental uncommitted analysis, and then talk about the key uncertainty issues from an analytic modeling perspective. And there is quite a bit of detail here, and if I go too fast, please do not hesitate to stop me and ask questions.

So this slide kind of gives you an overview of the specific policy initiatives that were included in the Goals Study, and therefore kind of carried over into this work. They have four kind of general categories that are summarized on the left-hand column of this table. We looked at the impacts of IOU Programs, obviously, the Big Bold strategies which were mentioned previously, we also looked at future revisions to Codes and Standards, both at the state level and at the federal level. We did this from two different perspectives, from the perspectives of the IOUs vs. the perspectives of society as a whole, and I will explain the relative merit of doing that in more detail later on.

In the right-hand column of this table, it shows you that within each of these kinds of broader categories, we had different components, and I am going to walk through each of those in a little bit more detail. And if I get too into the weeds, or if I go too fast, just let me know. But I do want to try to get to the end, especially to talk about uncertainty. But this is really just to give you a little bit more -- you see these large incremental uncommitted savings numbers and I want to give you a little bit more perspective on specifically which policy initiatives they are coming from, and how.

So for the IOU programs, modeling the IOU programs, as Dr. Jaske mentioned before, we were basically replicating the results from the previous potential study conducted by Itron for the IOUs, using Itron's bottom-up asset model, which is an adoption forecasting model, and really the output of that model is the market potential, which is the term to describe the amount of measured adoption and savings that occurs over time in response to specific measure incentives, and those relationships of the forecast is based on the cost-benefit ratios and assessments of market barriers for particular measures, looking at the size of eligible markets, etc. etc. In that respect, we take into account things like cost-effectiveness or simple payback for a particular measure, awareness and willingness

levels. Now, we used two particular scenarios of market potential, they are called "full" and "base," and they also have this restricted term tacked onto it, "restricted" means that all of the measures that are considered in the adoption forecast have a total resource cost ratio of greater than .85. So, according to the TRC test of greater than 1.0, that would mean that the costs were lower than the awarded cost benefits. So that gives you the framework for only assessing cost-effective measures, measures that are cost-effective to society. Now, that threshold was dropped to .85 in the '08 Potential Study to try to cast a slightly wider net. I think according to the portfolio rules of the PUC, the portfolio TRC has to pass 1.0, but you can support measures with TRC's lower than 1.0 to support kind of market acceleration for emerging measures. So this is just definitional. "Restricted" means it was restricted to things that were generally cost-effective, according to the TRC test. Now, "full" and "base", the only difference is the level of the measure incentives that were assumed. The base market potential, the incentives were designed to represent the weighted average incentives that were actually used in the '04-'05 program cycle vs. "full," full is kind of the high end, and it is assuming measure incentives equivalent to full incremental costs. That is where the term "full" comes from. So we drew from two versions of

market potential, one that is continuing kind of weighted average incentives from the '04-'05 programs, and one that is on the higher end of assuming full incremental cost incentive levels. In addition to market potential, we also forecast the naturally occurring, and that is the amount of customer adoption that would occur in the absence of any utility programs or incentives over the forecast period. So this is the approximation of free ridership, if you will, a more conventional term. But it also includes things like non-participant spillover and long term market effects from strictly a modeling point of view. These are the IOU program, that is the kind of more specifics about the assumptions behind the IOU program forecast.

As both Chris and Mike touched on earlier, the Big Bold Energy Efficiency Strategies turn out to be a large part of the total incremental uncommitted forecast. Now, what these are, in case you do not know, this is a term that was coined by Commissioner Grueneich in an April '07 Scoping Ruling, and they were defined to be strategies that promote [quote unquote] "maximum energy savings through coordinated actions of utility programs, market transformation, and Codes and Standards." So this is a departure from -- just that framing is a departure from both voluntary programs run through IOUs and, for that matter, traditional kind of the way that we have framed Codes and Standards in a silo. So

this is really a whole market transformation type of target, that is a coordinated action. And within this framework, they define -- she defined -- three specific initiatives, two which were new construction, one of which was targeted as a -- it is called the Small HVAC Initiative, but it is really a retrofit initiative for existing HVAC installations. For today, I am just going to focus on the new construction initiatives in terms of giving you more detail, they make up the vast -- 90ish percent of the total Big Bold impacts, so I am just going to focus on those two, in particular. They are both kind of cast in terms of trying to zero net energy new construction targets. So these are penetration targets -- the way it was laid out is that they were market penetration targets for zero net energy new homes and buildings. And I think Chris mentioned earlier that the '08 Goals Study and this study, we framed the savings impacts from these zero net energy buildings strictly in terms of the efficiency side of zero net energy, so this is not including anything about PV or other types of on-site generation to actually have net zero energy on an annual or a coincident demand basis.

The way that we actually implemented this in modeling is that the scoping decision, the scoping rule in April '07 established some penetration targets for zero net energy new homes and buildings, so we followed -- we

implemented those penetration targets to try to come up with a penetration weighted savings estimate over time. In terms of the unit savings, I am going to show you a table of the specific unit savings numbers that we incorporated. Now, we had to do a little bit of adjustment to not double-count between -- so this is strictly new construction initiatives, and we did a little bit of adjustments to make sure we did not double-count impacts from new construction programs that were already in the IOU forecast. Generally they offer incentives for builders to hit performance levels better than Title 24, and so we had to adjust the impacts from these Big Bold standards to not double-count impacts from those existing efforts. And I guess one of the important things to note is that, for the residential analysis, the savings from these Big Bold Initiatives were applied to -- this is at the bottom of the page here -- water heating and HVAC, Heating, Ventilation and Air-Conditioning. And we scoped it specifically like that in terms of impacts, number one, to stay consistent with the scoping Title 24, and number two, to avoid double-counting with the lighting and appliance measure savings from other scenarios, specifically the Huffman Bill and updates to the Federal Appliance Standards.

On the commercial side, the scope of the savings was water heating HVAC and lighting, and again, that is

mostly to stay consistent with the scope of Title 24. And we did not have to adjust for the Huffman Bill in new construction because we restricted the Huffman Bill savings to the existing commercial buildings -- I will not bore you with those details.

So this table, this is the summary of kind of the specific numbers that are embedded in the savings forecast. Tier 2 and Tier 3 represent the whole building savings thresholds that you have to achieve for the New Solar Homes Partnership Program, so according to that program, you have to hit these whole building savings targets before becoming eligible for PV rebates. Those benchmarks were adopted by the PUC for purposes of defining the Big Bold targets for zero net energy homes, and so there are two separate sets of market penetration trajectories for Tier 2 and Tier 3 homes, and they are summarized as, you know, all homes in 2020 in the high scenario are Tier 2 compliant, and then 90 percent are Tier 3 compliant. Does that make sense? Okay. And so you can see the variation between the high and low cases vary in terms of the market penetration of these zero net energy homes by 2020.

This is a similar kind of summary table for commercial zero net energy buildings. In this case, there was only one kind of unit savings assumption. This is a 30 percent reduction target and these are all relative to 2005

Title 24. Again, it is a 30 percent reduction in HVAC water heating and lighting levels from current Code, and then the penetration targets through 2020, low to high, vary from 40 percent to 70 percent of all commercial new construction.

COMMISSIONER BYRON: And they would be at 100 percent in the high case for 2030.

MR. TING: Exactly, yes.

COMMISSIONER BYRON: Okay.

MR. TING: So I am going to skip over the small HVAC slides in the interest of time. So that is the Big Bold, those literally -- that is the set of input assumptions that then are reflected in the results that Chris showed you earlier. And for what it is worth, they are aggressive, they are very aggressive, and the PUC characterized them as such from the beginning.

COMMISSIONER BYRON: In fact, Mr. Ting, this Commission supported Commissioner Grueneich and the Public Utilities Commission when they indeed adopted these Big Bold Energy Efficiency Goals. I prefer to call them the Big, Bold and Beautiful, but that begins to sound a little more like a soap opera, I guess.

MR. TING: Okay, so the second kind of big category of policy initiatives is obviously new Codes and Standards. Now, I said earlier that we evaluated them from two distinct perspectives, the IOU perspective of impacts in

Codes and Standards, and the societal perspective. And the reason this was important for goal setting is that new codes and standards typically have the impact of obviating existing programmatic efforts in IOU portfolios. So, for example, AB 1109, the Huffman Bill, will essentially kind of remove some of the lighting measures that are available to IOU programs because they kind of become the baseline going forward. So there is an interaction that we wanted to quantify between an aggressive outlook for new Codes and Standards, and what technologies and measures will be available to IOU programs, and what savings might be expected as a result of such interactions. And then, obviously, the flip side is the societal perspective where you want to not just -- you kind of want to look at the total picture, total savings to society, both in terms of savings from new Codes and Standards, and then additional savings from IOU programs that go beyond Codes and Standards.

So we kind of looked at -- for each Code and Standard, we kind of looked at it from both sides of the aisle, as it were. The most important ones to do that were the Huffman Bill and revisions to Title 24. We also looked at the societal impacts from Federal Appliance Standards, the only reason that we did not do a flip size from the IOU perspective is that they did not overlap with any of the

current program offerings, so there was no interaction there. You know, for full disclosure, we did not -- the scope of the Codes and Standards revisions -- we limited it somewhat, we could not cast the kind of wide universe net mostly from data constraints. I think probably the biggest one at the time was the Title 20 standards that are under development for battery chargers and now televisions, but those were not included in the original study. I will show you the exact scope of the federal standards that we did include a little bit later.

So from the IOU perspective, obviously there were two, the Huffman Bill and Title 24. The way that we modeled kind of the IOU perspective on the Huffman Bill was we used CFLs as a proxy for the incoming standards, which turned out to be a pretty good guess relative to what was actually adopted in Title 20. The changes in Title 20 were adopted at the end of last year. There is an interim efficiency level that goes into effect next year, roughly 20 lumens per Watt, it varies slightly according to output buckets. The final standard level is 45 lumens per Watt by 2018, which is roughly the equivalent performance of CFLs. So we modeled -- we estimated kind of the IOU impacts of this Huffman Bill as a phase-out of general service CFL programs over the 2011-2018 time period, so this is kind of pushing down the market potential of the IOU lighting programs. That is the

type of feedback that we estimated.

Likewise for Title 24, every time Title 24 is revised, the IOUs have to revise their new construction programs, and to offer incentives that are then benched to the current standard. To avoid double-counting with the IOU program forecast, we modeled kind of the impacts of revisions to Title 24 as a phase-out of the current new construction programs that were reflected in the Asset Forecast, to make sure we were not double-counting those savings. When we get through the societal perspective slides, I will show you the details of exactly how the Title 24 revisions were estimated. So this is the societal version of Huffman and Title 24. Again, for this time around, we got to leverage the way that Title 24 is actually specified relative to General Service Lighting, so again, this is at 20 lumens per Watt starting in 2011 and going up to 45 lumens per Watt in 2018. I will talk about later, one of the uncertainties in modeling the impacts of this has less to do with the cumulative impacts from this type of standard, but more in terms of the year-to-year impacts, since the interim levels are specified by the output of certain product categories. And so we did not quite have enough data to simulate the year/year impacts from these interim milestones that are defined in Title 24. I will get back to that in the end.

So from the societal perspective for Title 24, you know, this is ratcheting up Title 24 at regular intervals, typically three-year intervals, although we varied it from low to high, so I think it goes from one revision through three or four revisions through 2020. And, again, these are kind of ratchets, so they are continually kind of creating savings incremental to the previous code baseline. The way that we actually modeled this is that we used new construction rates as a forecast in the IEPR Demand Forecast and used that to create a penetration weighted savings estimate that was consistent with the new construction rates embedded in the IEPR forecast. And, again, the scope of the savings was the same as before, specifically residential savings, it was water, heating and HVAC vs. water, heating, HVAC and lighting in the commercial new construction.

So this slide is just trying to summarize the actual values that are reflected in the Title 24 scenarios. The unit savings for each ratchet are the same across low, mid, and high, 10 percent for each ratchet in residential, 5 percent for each ratchet in commercial. These were benched to some of the prospective impact estimates from the 2008 Title 24 proceedings, that ended up not being adopted, but some building simulation analysis done by architectural and energy helped us provide these 10 percent and 5 percent benchmarks. Now, the periodicity and number of revisions is

what does change between the low and high scenarios, going from one revision in the low scenario in an out year, all the way through a regular three-year revision starting in 2011 in the high scenario.

Now, for federal standards, we drew exclusively from the DOE's published Schedule of Rulemaking, so the last time it was published, well, the one that was most recent schedule that was published during the time the OE Goals Study was issued in January of 2006. Now, the ones, the rulemakings that were in that schedule that were kind of deemed to be the most significant in terms of future impacts were high efficiency clothes dryers, dishwashers, central air-conditioners, room air-conditioners, and then PTAC and PTHP, is Packaged Terminal Air-Conditioning and Packaged Terminal Heat Pumps, so those are both commercial cooling technologies. So, again, this is residential -- clothes dryers, dishwashers, central air-conditioners, room AC, and then these packaged AC and heat pumps in commercial.

The way that we modeled the savings, they were modeled as -- ROB stands for Replaced on Burnout, so this is only in the existing buildings, so the reason that we limited the impacts to existing buildings is that we wanted to avoid double-counting with the Title 24 impacts. So Replaced on Burnout is we used an estimate of the useful life of the specific types of equipment to estimate the

stock turnover rate in the existing stock. And, as I said before -- oh, this is the reason that they were not included in the Asset Scenarios is that they do not currently pass TRC in California, so they were not included in the full or base restricted market potential portfolios, if you will. So that just means that these are strictly incremental to what is in the IOU Program portfolios that we modeled.

COMMISSIONER BYRON: Does this have much of an impact? Does this assumption have much impact on your calculations? I am sorry, I will be more clear. You are looking at the published list of rulemakings from four years ago --

MR. TING: It was the schedule.

COMMISSIONER BYRON: Right, the schedule, and of course what a difference an Administration makes, there are a lot of changes that have gone on at DOE just in the last year that we are certainly aware of, and that we are involved with in some litigation with the Department of Energy and driving standards. We are very hopeful that they are going to be responsive to California's leadership. I am just trying to get a sense -- so you have to call the play at some point and make your assumptions, I am just trying to get an assessment of how significant these assumptions might be in the calculations that you are modeling -- that you model.

MR. TING: In terms of what their current schedule for rulemaking is --

COMMISSIONER BYRON: Let's assume the new Administration is going to drive energy efficiency Appliance Standards much harder than the previous one did.

MR. TING: You are asking me to venture a guess? Okay. Well, I can say from the '08 Goals Study, the prospective standards on the gas side had a higher relative impact relative to IOU programs and building codes for gas, but that was mostly because residential cooking, for example, has not really been regulated for efficiency, and so the gains -- there is lots of low hanging fruit. We looked at the -- we did not revisit or do any strict comparisons between the current schedule and at what was published in 2006, we did look at the way that the lighting standards were specified because of the Energy Security Act. And the Title 20 specifications for General Service Lighting are the same standards, the same exact standards one year earlier. So the interim standards that you saw before, 20 lumens per Watt starting in 2011, is just a one-year acceleration of the federal standard. That does not really -- for clarity, that does not really come close to eliminating incandescent, but then the 45 lumens per Watt is obviously way beyond at the federal standard. Beyond that, I would not venture an order of magnitude guess.

COMMISSIONER BYRON: All right, please continue.

MR. TING: So these are the specific numbers that are reflected in the final forecast in terms of the input assumptions. You can see the unit savings vary from 10, 13, 18 percent, all the way up to 48 percent for dishwashers. And then you have the UL is the effective useful life estimate, and the third column, that feeds back in terms of the stock turnover rate. But these are fairly long-lived measures, so over the forecast period, these were not huge stock turnover rates, put it that way, certainly not near complete stock turnover. And then the specific periodicity assumptions, so these are following the rulemaking schedule and then we assumed a lag in the actual effective implementation date. So it is generally about a five year lag, I think, across the board -- it is a five-year lag across the board, which is typical for Federal Standards.

So I have two more slides just in terms of to give you a little bit more perspective on the modeling that we did before we talk about uncertainties, and they both have to do with interactions. We talked about the interaction from the Codes and Standards and IOU Programs, and this is an illustration -- a specific illustration of the relative magnitude of that just in the case of the Huffman Bill, right, this is the biggest animal in the room when it comes to impacting future IOU portfolio offerings. Without

Huffman, you can see in 2020, you can get to -- let's see if I am reading this right -- so there is the general interaction between taking a new standard that takes a measure off the table after a certain period of time; now, we also have to be careful in tracking, depending on if you are assuming the full market case for IOU programs, vs. the base market case, the amount of CFL adoptions by the time that the Huffman kicks in differs, right, because you are offering less incentives -- more incentives in the full case -- vs. kind of business-as-usual incentives in the base case. And so that affects the true incremental impacts from the new standards because you have already got society to a certain kind of installed level of efficiency for lighting. Does that make sense? Okay. But depending on how aggressive you are, assuming with IOU programs, we want to make sure that we are not double-counting, even in between these different kind of full vs. base cases. And this is the size of the impact, you know, if we assume kind of current weighted average incentives, the net impacts from the Huffman Bill are 12,000 by 2020. If we assume that utilities are pedal to the metal, whole portfolio of full incremental cost incentives, the net impacts from Huffman are dramatically less -- 8,000. So that is just to give you -- we were looking at and trying to identify as many areas of potential double-counting as possible, which is one of

the main objectives analytically in these types of studies.

There is a similar type of interaction between Big Bold and Title 24, so now we are not talking about the difference between interaction between IOU programs and Codes and Standards, but between different policy initiatives, so the Big Bold Initiatives vs. zero net energy homes, and different trajectories for Title 24. So the more aggressive you are with Title 24, the lower the net impacts from a zero net energy home initiative. And this illustrates the relative magnitude of that impact. In the high case, it is roughly 3,000 Gigawatt hours in 2020, varying down to about 1,500 in the low case. So those interactions are significant. There is a trade-off between how aggressive you are in Title 24 and how much true incremental net savings you can get from achieving the Big Bold targets for net zero energy homes.

COMMISSIONER BYRON: Okay, so I think you said it, but that is what I am missing in that figure, it is in the year 2020, correct?

MR. TING: Oh, sorry, yeah, it is on the Y Axis. Correct.

COMMISSIONER BYRON: Okay, thank you.

MR. TING: So now I am going to switch to just a couple of slides on uncertainty. Any forecast -- this is probably obvious, but it needs to be said -- any forecasting

exercise is trying to predict future outcomes and is inherently uncertain, period. This effort had the additional challenge of trying to interact inputs and outputs from two different modeling platforms, forecasting modeling platforms, in a way that avoided systematic bias, and somehow achieved the reasonable level of internal consistency. And that was really the focus of our efforts was just that, trying to avoid as much systematic bias as possible. Now, reconciling all the differences between the '09 IEPR forecast and the '08 Goals Study was realistically impossible in the scope of this effort. So it is just, again, full disclosure. We focused our efforts on trying to identify and reconcile as many of the most important differences as we could. And this is specifically to the key inputs, the modeling methodologies, and the scenario assumptions. And the specifics are in these four sub-bullets here. We looked specifically on how the end-use baselines were characterized and tried to reconcile any major differences, and adopting common forecasts of energy service demand drivers, so these are the econ demo variables that Mike Jaske talked about earlier, housing counts, commercial floor stock, new stock additions over time. We framed cumulative savings relative to a common base year, and this sounds obvious, but as you saw before the CEC forecasting model has a 1975 base year, that is always kind

of their historical reference point, and so we used 2006, as Chris mentioned earlier, which is a very non-trivial step. We expressed savings in common metrics, so percent reductions in base year, i.e., 2006 UECs and UIs. And through a lot of kind of close collaboration between the study team and the CEC forecasting team, we tried to identify areas of duplication across the two forecasts in terms of the savings delivery mechanisms that were being modeled, and tried to develop methods that we both agreed on to address any areas of duplication. That is where we are able to focus our efforts for this exercise. Now, obviously, some differences do remain with an unknown level of uncertainty from a quantitative point of view. We did try to isolate and discuss, based on the professional judgment of the study team, what we thought were the most significant analytic caveats and uncertainties, each of these are discussed in more detail in the Itron Report. So these five are -- they are differences in the electricity prices that were assumed over the period. I think both Chris and Mike mentioned that the IEPR forecast has an increase of 15 percent in real terms from 2013 forward -- 2010 forward. The electricity price assumptions in the asset forecast were constant in real terms, only growing in inflation. So that in and of itself could not be reconciled in the scope of this project. We mentioned before and

actually Commissioner Byron, you touched on it earlier, that there are differences in the committed savings estimates through 2012. We think we know that the biggest causes of those differences are mostly related to the fact that the incentive levels that were assumed in the asset forecast were different than were used in the CEC forecast. The CEC forecast used actual incentive levels from program accomplishments and then the proposed levels for the next cycle, the 2010-2012 cycle, vs. the asset forecast used this weighted average from the '04-'05 cycle for the base case, and then 100 percent incremental cost levels in the full case. So the asset measure level assumptions, one was below and one was above what the values of the CEC used, which were a closer reflection of actual measure incentives through the committed period.

I mentioned earlier that there is some uncertainty in the annual savings trends and this is most important relative to the Huffman Bill and the impacts from the Huffman Bill and the Big Bold Initiatives. For the Huffman Bill, I touched on it earlier, the interim simulating the impacts, the year-to-year impacts from the interim standards, those are the ones that start taking effect in 2011, they are specified by output bin, meaning, you know, you have a high output group of lamps, all the way down to a low output group of lamps, and they each have slightly

different luminous efficacy levels, and they get phased in between 2011, 2012, and 2013, depending on the output bin. There is not enough market data available to actually simulate the year-to-year trends from those that phase-in directly. So what is reflected in the forecast is really just kind of a best guess of how those interim standards produce cumulative savings, aggregate savings over time. Relative to the Big Bold Initiatives, these year-to-year trends that are reflected in the current set of results literally reflect the penetration milestones in the PUC Scoping Ruling from April '07 and nothing more. So that, again, begs for the question of, you know, it is strictly a market penetration assumption that is reflected in those year-to-year savings.

The last two, the savings decay from IU programs, I think we are going to talk about this a little bit more in the next presentation, so I am going to skip that. And the last one is uncertainty associated with the Big Bold targets, so I started to talk about this, but the Big Bold -- the zero net energy initiatives for Big Bold, as Chris showed earlier, account for roughly 40 percent in peak demand terms of our total estimate of incremental uncommitted savings. Now, to take you back to the way these things are defined, these are literally market penetration milestones, they are targets, and they are very aggressive,

100 percent Tier 2 homes by 2020, 100 percent Tier 2 buildings by 2030, I mean, these are very aggressive targets. And the numbers just reflect the savings associated with hitting those penetration milestones does not reflect any assessment of probability or likelihood to occur, or, for that matter, any specific delivery mechanisms associated with hitting those milestones. And obviously the total peak demand inputs are highly sensitive to that particular outcome.

Now, I think this is my last slide. Through the course of the working group and the technical workshop that was held a couple weeks ago, there were a lot of questions about the peaked energy ratios that were used in the analysis. There are additional uncertainties specific now -- these five areas of uncertainty affect both the energy and the peak demand side; obviously, the Big Bold is most important on the peak side because it is a significant, but not a huge contributor to the energy side. But, nonetheless, these five areas of uncertainties also reflect the energy side. Now, the peaked energy ratios only affect the peak demand results and probably should be considered in specifically in that context. The current set of peak savings results reflects the use of [quote unquote] "normal weather year", peaked energy relationships at the end-use level. There is obviously uncertainty in those peaked

energy ratios themselves, but there is also the reality that year-to-year weather conditions can vary quite dramatically over time, so we also have provided some high level -- this is just for PG&E residential as a whole, it is not the end-use -- but even there, you can see how much they vary. '04 was a historically mild year, you have an overall peaked energy ratio of .228; '06, two years later, was a historically hot year, that value jumps all the way up to .312, that is about a 30 percent increase right off the bat, just in the peaked energy relationship from increased AC demand during system peak. '09, which is the first year of the IEPR forecast and is based on normal weather year conditions, that value is .275, so mild to hot varies plus or minus 15 percent just in terms of the actual peaked energy relationship for the residential sector as a whole, that plus or minus 15 percent is actually -- that band -- is actually wider when we consider the impacts from, for example, the Big Bold Initiatives because they are almost entirely concentrated in HVAC. So, again, this is just perspective on this particular source of uncertainty and the dynamics around it. So that is specific to weather sensitive end-uses and savings, but it should also be recognized that, you know, as we go forward with a very aggressive portfolio of policy initiatives for efficiency, there is also the potential impact of shifting the system

peak hour and the time of year, which then filters back into the peak demand, the coincident peak demand savings from all end uses, not just weather sensitive end uses. And the perfect example is residential lighting, which is where most of the RU portfolios are now, it is a shoulder load and its end-use profile is very steep now at the system peak hour, roughly 4:00 in the afternoonish, something. Right, a shift in the system peak from 4:00 to 5:00, or from 4:00 to 3:00 can have a pretty significant impact on the peak to energy relationship on the peak savings impacts from residential lighting, which is not weather sensitive, but because it is a shoulder load, its contributions to peak savings, coincident peak savings, can vary depending on when the coincident peak occurs. So I just wanted to offer that up because there are the obvious sensitivities for weather sensitive end uses and savings, notably the Big Bold, zero net energy new construction savings, but it also applies to non-weather sensitive end uses in a future where the system peak hour is actually going to shift because of the result of some of these policy initiatives. So I will leave it there and answer any questions.

COMMISSIONER WEISENMILLER: Yeah, hi. Could you describe what you have done so far in terms of model validation for your model?

MR. TING: For the IOU programs?

COMMISSIONER WEISENMILLER: Yes.

MR. TING: Because those, we are basically replicating the results of the potential study that was conducted for the utilities in 2008, based on the asset modeling framework, that model calibrates its forecast values to actual accomplishments and, so, for that study they were calibrated to actual accomplishments in the '04-'05 program cycle. So, in that respect, they -- I would not call them as much validated, but they are calibrated to actual accomplishments, actual historical accomplishments. And then that calibration factor is carried forward in the forecast years.

COMMISSIONER WEISENMILLER: Okay.

MR. TING: For the kind of non-IOU programs, they reflect the assumptions that we showed earlier in terms of -- it is difficult to validate future policy initiatives in terms of Title 24. I mean, there is a historical record for Title 24, for example. But that is why we constructed high, mid, and low cases, to try to bound them to the future.

COMMISSIONER WEISENMILLER: Yeah, just the follow-up is, to the extent now you have done some degree of verification for your model, we have done some sort of cross-comparison between the two models, so obviously part of the issue is, by implication, what does that say back about the Energy Commission model?

MR. TING: Uh --

COMMISSIONER WEISENMILLER: Or you can leave that for Mike.

MR. TING: Honestly, I am not sure if I could pass judgment on the end-use forecasting model in a very robust way.

COMMISSIONER BYRON: That is hedging it, isn't it?

MR. TING: Yeah.

COMMISSIONER BYRON: Okay, Mr. Ting, two takeaways for me, one is this is really complicated, and the second is, with only four pages or four slides around uncertainties and key caveats, obviously there is a lot of uncertainty associated with this. I would like to assure you that, if you had any concern about sufficient detail in your presentation, you have surpassed my level of detail and understanding in all of this. It is very complicated. Unless Commissioner Weisenmiller wants to dive down deeper, we are going to forego your Appendix slides because we are behind schedule.

MR. TING: Those are just in case you wanted to go there, but if you do not, we do not have to.

COMMISSIONER BYRON: But I would like to thank you very much, it really does highlight how complicated this is and the uncertainty associated with it. But let's press on. Dr. Jaske, you did not put Mr. Ting up to this presentation

to befuddle and confuse this Commissioner, did you?

DR. JASKE: No, sir. I would never do that. Okay, there is a section of the staff's report talking about caveats and recommendations. Caveats have a lot to do with uncertainty and that -- a piece of that uncertainty was recognized from the beginning of this project, that is, that there will be multiple scenarios, those scenarios are intrinsically assumptions about the level of effort that various agencies put into developing and periodically updating energy efficiency programs with all of the host of pressures that come to bear in deciding to adopt a particular level of Title 24 standard and, just as an example here at the Energy Commission or the PUC deciding what level of incentives to offer for IOU programs and ratepayer groups, on the one hand, you know, saying those programs are not really cost-effective, and advocates of higher levels of efficiency wanting, you know, yet more expansive programs, etc. So, all of those dynamics are at play not only for a particular cycle, but for, as Mr. Ting's presentation showed, a whole series of updates of these things going out through time. So that dimension of policy uncertainty was always understood and the design of the project was to construct the different scenarios and to lay the consequences of those different scenarios out there. And, of course, we were largely building off of the

scenarios defined in the 2008 Goals Study conducted by Itron and for which the PUC reviewed the results of all three scenarios and chose the mid case. Whether the PUC chooses to do the mid case, you know, in the LTTP proceeding is, of course, the basic question that we always understood going into this project.

COMMISSIONER BYRON: Dr. Jaske, let me interrupt for a moment. Do we need to say anything for the folks on WebEx about going on mute?

MS. KOROSEC: We are completely muted, so it is just that we are having a feedback issue here. Thanks.

COMMISSIONER BYRON: All right, thank you. We will hold off on those for now. Dr. Jaske, please go ahead.

DR. JASKE: So as I have been saying, we always had this policy question, policy uncertainty question, and what I think is not perhaps as well highlighted in the staff report as it could be, and therefore this is an area where it should probably be strengthened in the final version, is that by holding true to these scenarios defined now back in probably the spring or summer of 2007, when Mr. Ting's firm got launched in their effort, there have of course been other policy initiatives brought forth as ideas and, in some cases, even carried all the way through to a regulatory decision. A good example of those is the TV standards. You know, the Energy Commission adopted late in 2009. We do not

address the TV standards in this analysis, so it is neither in the adopted demand forecast, nor in this incremental uncertainty analysis. And so, when the PUC has to grapple with which one of these particular scenarios, or picking pieces from more than one of them, and mixing and matching, it needs to be taking into account that there are things going on that, in the real world, which will induce long-run savings for which these are not being accounted for here, you know, so that adds a little bit of weight toward, yes, a lot of these savings will actually happen, they may not actually happen exactly because of the policy initiatives that have been modeled here.

Now, what has emerged over the course of the last several months is the second question on this page, and that is the whole issue of savings decay, replacement of savings decay, and how to address the manner in which that is represented in the staff's forecast, and how the PUC should consider an adjustment related to the difference between how it is addressed in the staff forecast vis a vis the policy direction that the PUC has issued heretofore. And several of my slides will get into that in more detail. So, I do not think I will run through these technical uncertainties because this is essentially the same list of things as Mr. Ting identified before.

And I will go through this slide quickly because

Carmen Best went through this in more detail in her presentation, but there is a particular aspect of it that I am going to highlight. So a number of things happened in really the most recent of the PUC decisions dealing with establishing goals. They adjusted them downward a little bit, as she indicated; they decided to clarify which of the two sources of the 2012 goal ought to be actually applicable in 2012, and they went with the narrower IOU only goal, as opposed to the total market gross goal for year 2012. They deemed, which is an interested word that comes out of Regulatory Land, that 50 percent of savings decay should be considered replaced and until further study can establish a different value. So the PUC is in this circumstance where savings decay has got several critical near term dimensions that, in the continuing cascade of decisions that the PUC has to make in the short run, I think, lead to this solution to the issue. It has created an incentive mechanism and there has to be a determination of how many savings are decided to exist, or be identified such that they lead to financial incentives for the utilities. Further, are the utilities dealing with decay in a manner that does or does not match up to their cumulative savings goals; if not, then they should be proposing mitigation measures, different program designs, or higher levels of activity so as to make up for that. What they have not had to deal with is the

dimension of the projection of savings decay through time, particularly out in the time horizons that we are talking about. So the issue of deeming 50 percent, you know, as replacement is just that, it is a decision that we are going to pick that number and I think it is clear that the words in the PUC decision recognize that that is not a satisfactory solution, so the Energy Division staff has been directed to go off and do more work. And that introduces, in effect, an uncertainty that the PUC's LTTP side of the world is going to have to deal with when it gets to the point where it is going to decide how much adjustment to the adopted demand forecast they are going to make. So the original issue of which one or some parsing of the three scenarios, and now this issue of savings decay.

Now, at the time the staff report was written, we understood that this was an issue, it has been written up, I think, from the sort of policy perspective not quite right because there were editorial clarifications that the PUC suggested to us that fell through the cracks, and that we will include in the final version. But more importantly, the relative size of this decay shown in this figure, Figure 5 of the Staff Report, is a little misleading. So this figure was intended to give sort of an idea as to the relative proportion of the committed savings decay issue vs. the original topic of incremental uncommitted savings. And

we decided not to contaminate the analysis of incremental uncommitted savings by including this as an element of that, but rather to call it out as a separate issue, as I am trying to do here. But the problem is we did not fully understand the regulatory decisions that the PUC has made about savings decay replacement. And so this sort of reddish or rust-colored segment of the chart is probably about four times too large relative to what we now understand, and so there is going to be -- this is another area where we need to update the staff report and it is crucial for you to understand that, while this is an important dimension of our analysis that we have uncovered, it is not as big a deal as this figure would lead you to believe. And so here is the reason why that is the case. The PUC has decided that it is only going to require savings decay replacement from 2006 going forward. I believe when we tabulated that chart, or the numbers that went into the previous chart, we were thinking that it applied to savings decay for IOU programs all the way back to, you know, as much activity as has been undertaken, over decades. That is clearly our inability to fully absorb all of what the PUC has said and done about this issue.

COMMISSIONER BYRON: And Mr. Baker is going to speak to this or verify that we have got it right now, or that we will get it right?

DR. JASKE: Hmm, get it right, someone from the PUC will, I am sure, be willing to jump up and say something if I do not get this quite right, because we do want you to get the right information, even if I do not have it.

COMMISSIONER BYRON: Ms. ten Hope, did you have a question?

MS. ten HOPE: No. I was going to ask exactly what you put up here was the reason for the decay.

COMMISSIONER BYRON: Okay.

DR. JASKE: So middle bullet showing the three figures will give you a sense of the real proportion of this. So in the staff report, we had identified, you know, for 2020 something over 7,000 Gigawatt hours as the amount that the PUC would need to take into account for this issue of savings decay replacement. Simply understanding that it is only decay associated with program activities that start in 2006 brings that down to 3,700 and change Gigawatt hours, so that is about half right there. And then, if it is only that 50 percent of that needs to be replaced, we divide that in half, so now we are down to a little over 1,800 Gigawatt hours. So instead of 7,000 Gigawatt hours compared to the range of 10,000 to 14,000, which is a very big component, now we are down to around 1,900 compared to 10,000, to 14,000, and it is an issue, but it is not an overwhelming issue, and it is one in which I think we can pull together

in the revised staff report enough explanation that the PUC has a decent record upon which to make a decision.

So let me now turn to recommendations and next steps. So a clearer recommendation stated quite directly in the staff report is that we are very uncomfortable with stating goals in absolute value terms, "Go achieve 10,000 Gigawatt hours." It is essentially impossible to understand how such a goal relates to our forecast or any other credible sort of process. So, 1) goals should be stated in terms that are relative to something so they can be judged as this project has attempted to do, as to being incremental in whole, or in part, compared to all the other things that are typically used with or in conjunction with these kinds of goals, namely a base forecast. We think that what has been developed by the Itron staff team is a credible savings analysis for the three scenarios. We have made the adjustments that we think are appropriate to them. We have quantified them in a manner that we believe has reduced the issue of overlap and duplication and, particularly, systematic bias that Mr. Ting identified, to a level that the PUC can make use of this analysis in its LTTP Proceeding, just as had been the original plan. And as I perhaps labored on in these earlier slides, the PUC should make this further adjustment around 1,900 Gigawatt hours so as to reflect the current understanding of savings decay

replacement the PUC has already adopted in its policy decisions.

So what remains before us? So as I indicated this morning, or the first thing this afternoon, we clearly have to update our technical documentation in certain areas. The staff report needs to also be worked on, particularly in this last area of savings decay replacement, and then we need to take that whole package and transmit it to the PUC as input into the LTTP Proceeding. Over the next time horizon, there are probably other forums in which these same results can be used. There are a number of energy agency activities that are being done jointly, such as OTC analysis, or the joint study on air quality limitations in the South Coast, AB 1318, led by ARB, that could make use of these analyses in a very similar way as they would in OTC. So these should probably be used in a variety of forums, not just the LTTP proceeding.

Staff needs to complete its current contract with Itron, which focuses on training of the existing SESAT model, and we are thinking that a good exercise as part of that is to actually try to take the SESAT tool and develop POU estimate, with as little hand-holding from Itron as possible. We are going to -- and there is already a meeting scheduled for, I believe, March 2nd -- talk with the working group to see if we can, now that we have completed this

effort, identify a mutually satisfactory course of action, targeting the 2011 IEPR cycle. There is a whole host of things that were talked about during the course of our working group meetings, a number of them sort of that could not be pursued directly at the time they were identified or they were pursued to a certain point and then had to be stopped. We are resurrecting all of that and finding a mutually agreeable course of action is high on our next step list. And similar things exist in terms of talking with PUC staff about what we have learned from this effort.

Over the longer term, of course, we have this whole issue of the staff's ongoing forecasting model review project. There are things that came out of the earlier phases of Itron's support to us that ended up focusing on our improvement of IOU program savings that we can try to fold into our effort, and we clearly have some much improved understandings of the differences between the asset platform and its way of handling measure adoption, naturally occurring savings, than what is included in our staff models and trying to think through how to find the best features of both would be a very useful exercise. And to the extent we end up in this same marriage of models in the next cycle, you know, trying to make progress on reducing those inconsistencies would be desirable.

There are, of course, a number of other demand

side measures that lead to a managed forecast. Chris mentioned that -- I hope that Simon Baker, when he makes his presentation, will augment what we have said -- managed forecast is a concept that is broader than just incremental energy efficiency and should not be thought of just as being associated with incremental energy efficiency. And then, of course, we need to both target what we can accomplish for the 2011 IEPR cycle and make some more general plans for where we are going with this whole effort over the longer run. So I believe I am finished. Are there questions?

COMMISSIONER BYRON: I think I am going to forego questions at this time just because we are so far behind schedule, Dr. Jaske. But I think -- do we want to do WebEx questions now, Ms. Korosec? Or shall we press on? Can we reserve them for public comment? Let's do that because that would be fair to everyone else. Dr. Jaske, thank you. Mr. Baker, you have been very patient. Thank you for being here.

MR. BAKER: Good afternoon. I am Simon Baker with the PUC's Energy Division. I work in our Procurement and Resource Adequacy Section and I work on long term procurement. I have been accompanying this process since its outset, most recently when these issues first arise in the 2006 LTTP Decision, and then the Energy Commission took these issues up actively in the 2008 IEPR Update. And I

just have to say at the outset that I am very pleased with where we are now in terms of what we have produced and the demonstrated benefits of close collaboration amongst our two agencies. The devotion of staff that have worked on this, and really put their best efforts forward, I think we have really produced a good work product here. I think we have gone a long ways towards making the underlying assumptions in the various models much more transparent and given stakeholders an opportunity to really see what the implications are of making certain assumptions about a policy future, and how that impacts various activities, including procurement.

So as you can tell from today's presentations, all eyes are on the PUC's process at this point, and so what I will offer today is what the PUC has said so far about these issues and how this information would be used in a procurement process, and then also I will be sharing some of our staff recommendations because the Commission itself has not yet acted in terms of speaking to these issues.

COMMISSIONER BYRON: And thank you for those comments. Of course, I am glad to hear you say you have been as involved in this process as you have, that is extremely important as you can tell, at least as I can tell, the complexity of this, and I do not think the original demand forecast of this Commission was intended to be the

basis for how, going back years or decades, Commissioner Weisenmiller would probably know better than I, that it was not intended as the basis for your Long Term Procurement Plan, but we certainly directed the staff, and I agree with you, I think they have done a really good job of trying to adjust to the needs of the PUC in meeting what you require to set policy and to set that bogey, if you will, for the target for the utilities. I look forward to your comments. We are not done. We will continue this process and perfect it as time goes on. But please continue.

MR. BAKER: I will just make one other acknowledgement here. I want to acknowledge the work of Itron, as well. I think it has been very good to have continuity in terms of the consulting assistance on this project, having them work on this project of quantifying the incremental impacts of an original scenario that they worked on has been very helpful. And the participation of the DFEEQP Working Group members has also been very helpful, and many have been actively engaged.

So with that, the PUC's Long Term Procurement Plan Proceeding occurs biannually pursuant to Public Utility Code 454.5, which was established pursuant to AB 57. This is where the Commission reviews the Utilities' 10-year plans for procurement and, in addition to reviewing their plans for procurement, the PUC also reviews whether there is any

need for new resources to meet system reliability needs in the long term, whether we have sufficient resources to meet long term resource adequacy requirements. Pursuant to the Code, the utilities' plans have to first meet any unmet resource needs through all energy efficiency that is cost-effective and reliable, and I have underlined cost-effective and reliable because that is really the rub when you look at how the PUC will be considering these numbers in its procurement process. Although it preceded the EAP Loading Order of 2003, this is consistent with the EAP's Loading Order of putting energy efficiency first.

The PUC has deferred to the CEC's IEPR process to produce the Base Case Demand Forecast and the energy efficiency goals that the Commission has set appear in one of two places, as has been discussed earlier, either as committed effects embedded in the load forecast, or as these uncommitted effects which this report has attempted to quantify. We authorize procurement based on what is called the Managed Demand Forecast, including any reasonably expected to occur savings from uncommitted energy efficiency and other demand side measures such as demand response, combined heat and power, and renewable distributed generation, as examples. And I use the term here "reasonably expected to occur," which is a term that we, as PUC staff find to be a useful term when looking at what

assumptions are reasonable to make about forecasted impacts of energy efficiency when considering those assumptions in the context of a system reliability decision. The LTTP Proceeding, as I said, it is a 10-year look, but really the decisions about whether or not to build new resources are being made in about that five to seven year time frame, that is the time that you need to authorize procurement and have new infrastructure be built. If you start crunching that time frame towards more of a, you know, two to three year time frame, you may not get cost-effective choices when you go out to procure. Indeed, in the 2006 heat storm, we did face a situation like that and, so, what we face at the PUC, and what the Commission has to evaluate in these sorts of decisions, is a tension that exists between potentially over-procuring, and buying more resources than may be needed if energy efficiency, for example, comes online and has higher impacts than expected. And there is a cost associated with over-procurement. And the opposite of that is this under-procurement situation where you may be making just in time procurement decisions to meet reliability needs. And so I think it is important for us to keep this in mind, that the LTTP proceeding is somewhat unique in terms of how it evaluates the forecasted impacts of energy efficiency in the context of system reliability.

So in the most recent LTTP decision, the

Commission acknowledged that there was uncertainty about the quantitative incremental impacts of the Commission's energy efficiency goals relative to the Demand Forecast. At that time, the Commission assumed that 20 percent of our goals was incremental to what was in the 2007 IEPR, and one exception was San Diego, where for various reasons the Commission assumed that 100 percent of San Diego's goals were embedded in the forecast. But the Commission acknowledged that we need to do a better job of quantifying these savings, of our goals relative to the Demand Forecast. And this is really the seed that was planted two years ago to really get a better number of what is the incremental impact. And so, when you look at how energy efficiency goals have been set, for example, in the PUC's process, we have not had this type of information yet in the past when we have looked at energy efficiency goals, the most recent energy efficiency goals were set in 2008, and then most recently adjusted in 2009 prior to having any of these quantitative -- these assessments of the quantitative impact of energy efficiency relative to the Demand Forecast. So I think it is important to put that in context, as well.

So as I mentioned, we have been actively participating in the Demand Forecasting and Energy Efficiency Quantification Project, and I use this term throughout the rest of my presentation to mean the combined

analysis of two things: one is how much committed energy efficiency is embedded in the forecast, the 2009 IEPR Forecast, plus how much incremental have we evaluated, as well? So the Commission authorized procurement in late 2007, and then, in mid-2008, the energy efficiency goals were further updated, looking at various goals scenarios which have been propagated through this analysis, and ultimately the mid-range goals level was adopted for 2012 to 2020. And notably, that decision ordered the utilities to use 100 percent of the numerical total market gross goals in the procurement proceeding. And as Dr. Jaske already mentioned earlier, this presents some potential challenges when looking at how underlying data used to generate these scenarios change over time. Consistent with previous energy efficiency goals decisions, the numerical values were ordered to be used in the procurement process.

So in the 2008 Long Term Procurement Plan Proceeding, rather than reviewing new plans from the Utilities, the Commission decided to take a pause and look at various proposals to standardize the resource planning process in the Procurement Proceeding, and that led to a staff proposal in the 2008 Long Term Procurement Proceeding, which had the benefit of accompanying this project up until the point the staff proposal was released in July of 2009. And at that time, the staff proposal anticipated that this

project, the DFEEQP project, may produce results which are numerically different from the original goals decision, which were ordered to be used at 100 percent of their numerical value in the Procurement Proceeding. As has been described before, the underlying economic and demographic data are one of the reasons why there may be changes in the forecasted effective goals over time. How the staff proposal dealt with this was to essentially recommend, if there is a discrepancy between the original goals decision on a numerical basis, and this analysis of the total energy efficiency savings embedded plus uncommitted, that the Commission should use the lower of the two estimates as its base case estimate for a managed demand forecast of energy efficiency. And it did so based on the reliability criterion that I spoke to earlier.

So this graphic attempts to show what staff proposal means, essentially what you have is the final 2009 IEPR forecast, which is the red bar having some amount of committed energy efficiency embedded within it, and then some amount of uncommitted. The dash lines represent hypothetical values of what the PUC's mid-range energy efficiency goals would be when reassessed in terms of their incremental impacts out of this project. And essentially what it shows is that the lower of the two values should be used in the LTTP process according to the staff proposal.

So when you track the original goals decision to what this analysis has produced, you get this chart, which I will take some time to walk through. What I have done here is I have only taken the peak megawatt savings estimates because, in the LTTP Proceeding, we are focused on the peak, not energy. So for peak, the original goals decision, the '08 goals decision is shown in the light purple with subsequent adjustments shown in the dark purple or maroon. This project has produced results which are shown in the dark blue and, as you can see, the combined committed plus uncommitted energy efficiency is less under current estimates than it was originally forecasted to be in the goals decision. So the Commission has a situation where the original goals decision required the utilities to use essentially this light purple value for the procurement process, when new information is showing that the forecasted impact of that same set of energy efficiency policy initiatives is forecasted to be lower than analyzed at the time the goals were adopted. The gold bar shows what the forecasted impacts of energy efficiency were in the 2006 Long Term Procurement Plan Proceeding.

COMMISSIONER BYRON: And the light blue, the D08-07-047, that is the goals of --

MR. BAKER: That is the 2008 Goals Decision which was subsequently adjusted in the 09-047, the maroon bar. So

the effective goals right now are the maroon bar.

COMMISSIONER BYRON: Okay.

MR. BAKER: And I will make one other note, which is that this issue of decay and replacement of 50 percent of the savings decay, if you were to include that 50 percent decay replacement, that would be an increment to this dark blue bar.

COMMISSIONER BYRON: So that would be assuming a zero decay?

MR. BAKER: No, that would be assuming 50 percent decay replacement. So that is saying that, of the forecasted decay in energy savings, the PUC's energy efficiency policy has required the utilities to make up 50 percent of that savings decay.

COMMISSIONER BYRON: Okay, thank you.

COMMISSIONER WEISENMILLER: And I assume, if you looked at the energy numbers and made a similar correction that it might have an impact on the renewable procurement?

MR. BAKER: That is right. So I kind of glossed over that, but it is a very important issue and it is one that is coming up, particularly, in the transmission planning context for 32 percent, and in RETI, that the impact of the energy numbers is germane in terms of renewables planning.

Again, the staff proposal in the current LTTP

Proceeding acknowledged that the Commission may wish to consider the impacts of uncertainty related to forecasts of energy efficiency in the context of these system reliability decisions that are being made and the adoption of need for new resources in the LTTP. And so, therefore, the recommendation of staff was to, in addition to having a base case assumption, to also show high and low bounds on the need for new resources that would be informed by, perhaps, these high and low scenarios which have also been developed in this process. In addition, we ask the utilities to provide some estimates of the likelihood of occurrence for each of the uncommitted energy efficiency scenarios with the expectation that parties would all comment on that issue, as well, and the Commission would have a record on which to base a decision about what number to pick for reliability purposes.

So, in summary, I would say that this project, as I mentioned at the outset, has actually clarified a lot of uncertainties. We went into this project, remember, not really knowing -- not having a very fundamental understanding of what was in the forecast relative to what was in our energy efficiency goals. And staff of the two Commissions, and Itron, and parties, have worked very hard in the past two years to answer some of those fundamental modeling questions. And I think we have gone a very long

way to addressing many of the uncertainties. We have done a better job of identifying savings of utility programs in the 2009 IEPR Forecast, and in particular we acknowledge and appreciate the Energy Commission's accommodation of last minute changes to the adopted 2009 IEPR forecast to shift the energy efficiency program cycle from the originally forecasted '09 to 2011 period, to then a 2010 to 2012 period. We recognize that that was a last-minute adjustment and we appreciate your flexibility in doing so. Better calibration of the models has also been a central theme of this project, and we think we have done a good job there. That said, Itron's presentation clearly indicates that there remains many uncertainties and most, if not all those uncertainties, have yet to be quantified. The only uncertainty that you could really do a back of the envelope calculation on today is this peak to energy ratio issue, where essentially the original goals decision adopted goals based on one set of peaked energy ratios, which is different from the peaked energy ratios that were used in this analysis consistent with the 2009 IEPR Forecast.

So the central questions for the PUC right now are, you know, should the Long Term Procurement Plan Proceeding use more updated savings estimates, notwithstanding these adopted numeric energy efficiency goals and the requirements in previous decisions to use 100

percent of those numeric goals? Certainly, the Commission has the authority to change its previous decision in the LTTP context, but whether it chooses to take that question up in the LTTP Proceeding and scope that into the LTTP Proceeding, as opposed to some other proceeding such as the Energy Efficiency Proceeding, which is the original place in which that decision was made, that is up to the Commission to decide in the scoping of the pending LTTP OIR. And then, this issue of uncertainty is not going to go away in the LTTP context, so it is going to have to be dealt with there, as well.

So what we are recommending at this point, as staff advising the Commission, is that, for the forthcoming 2010 Long Term Procurement Plan Proceedings, that the OAR essentially scope in a potential reevaluation of the 100 percent of TMG Goals requirement and that that potential reevaluation be coordinated with the Energy Efficiency Proceeding, essentially noticing all parties to both proceedings. And there is going to have to be some thinking about, you know, which of these uncertainties is best to resolve in the LTTP Proceeding vs. the Energy Efficiency Proceeding, and it goes without saying that we are recommending that this analysis that is being discussed here today be the foundation from which any further discussions at the PUC build from. So those are our recommendations at

a staff level. Again, these recommendations have yet to be adopted by the full Commission. We expect that the OIRs for the LTTP Proceeding to be issued in the March time frame and so we will have more answers at that time. And with that, I would be happy to take questions.

COMMISSIONER BYRON: Commissioner?

COMMISSIONER WEISENMILLER: Thank you.

COMMISSIONER BYRON: Mr. Baker, the staff has listed a bunch of questions and I see that the one that comes to mind for me is their number two question, are the three scenario analyses undertaken sufficiently consistent to provide you with that you need, or what the PUC needs, going forward?

MR. BAKER: I think the answer to that is yes.

COMMISSIONER BYRON: Good, I was hoping -- I drew the same conclusion from your presentation, but I wanted to ask that. I have a feeling there may be a few more other questions to come up, but in all fairness, let's go ahead and -- well, let me thank you very much for being here. You were most patient to sit through everything. Thank you for your analysis. We look forward to seeing what the PUC comes out with in their LTTP. I am glad to hear we are providing you the tools you need. But let's go ahead and open it up to public comment and other questions. Isn't that the way we want to proceed at this point, according to the agenda it

says "Questions for stakeholders" and we actually have an hour allocated for this, but I am hopeful that we will be able to finish this up in the 4:30 to 4:45 time frame. So, how should we proceed? Ms. Korosec, do you want to take this?

MS. KOROSEC: Actually, I was hoping Dr. Jaske would give me a sense of how he would like to do this. Should we just open it up to people to comment on the questions? All right, let's go ahead and do that.

COMMISSIONER BYRON: If you will come forward to the podium?

MS. KOROSEC: Come forward to the podium and we will do those in the room first and those on WebEx afterwards.

COMMISSIONER BYRON: Very good, I agree.

MR. ALVAREZ: Good afternoon, Manuel Alvarez, California Edison. I guess I was asked to go first. Actually, I would like to start kind of where Mr. Baker left off in his answer to your question number 2, Commissioner. I guess I answer that question in the negative. I am not clear that we actually have enough scenarios to move forward. And I guess what I would ask you to consider when you do the analysis is to go back to the peak energy ratios and go back to the original ones and generate those scenarios so that you have that comparison when you are

evaluating the implications of the forecast. I think that is a bit of an exercise that you could do. I am not sure how much of an effort it is, and that is something that the staff would have to examine, and I am sure that will weigh into your consideration. But I would ask you to consider that for further analysis. So with that being said, I definitely want to thank the Commission staff and the working group, there is definitely a lot of reasonable progress that is being made. This is the first time that I can recall parties kind of digging into the implications of a lot of this forecast with the time necessary that the Commission sent us on, but I think you will understand that there is definitely a lot more work to be done. This is actually not the end, I consider this to be a beginning in terms of how the forecasting is going to be done in the future. There have been a number of evolutionary activities that have taken place. The evolution of AB 57 that set up the long term planning process is, in fact, the new paradigm that was created as a result of the energy crisis in which power plant decisions and acquisitions was reestablished for the State of California to enter that. The historical note that the Energy Commission's forecast was used to determine the need for new facilities and the type of new facilities, and so that was actually a resource planning function, we are getting back into that world today, having the State of

California undertake those activities, albeit somewhat different than it was in the '70s and '80s, but still an active role for the State of California. We do not have specific answers to your questions today, but we are working on them. We thought we were not really clear on how we would answer those questions. We will be filing those comments for you to consider. But, clearly, one of the implications of the work that we are seeing today is a reduction in the amount of procurement that the utilities would undertake. And I ask you to kind of consider the implications of that, especially in the market environment that we are in today; it is still an evolving market. This Commission is going to be looking at evaluating what the hybrid market as it is being characterized is today, and that is something you are going to be undertaking in this coming year, and as I understand it, in the IERP Update Proceeding for 2010, and it will have implications for 2011. With that, I will leave it at that and let you know that we, in fact, will be filing comments for your consideration here in the next week. Thank you.

COMMISSIONER BYRON: Well, thank you, Mr. Alvarez. And, in fact, we do have your comments from the February -- we have Southern California Edison's comments from the February 3 --

MR. ALVAREZ: Technical Workshop.

COMMISSIONER BYRON: -- Technical Workshop, right. And from that, I derive the concern that you just expressed about the scenarios. And I look forward to the full comments, but I guess I would characterize it more that what we are doing here, we are not at the beginning of this process, this is like a freeway that we are modifying as we go along here, and we are keeping the freeway open. I guess I would like to turn to PUC and ask if they had any response to the concerns that SCE has expressed, and I think we will hear others along this line, too. Mr. Baker, would you care to respond to whether or not that you think the PUC will be able to use this analysis and these scenarios? Or do we need to start over again?

MR. BAKER: Thank you. No, I mean, I would not say that we need to start over and I stand by my original comment that we have come a long way here and we have a lot of very useful information to proceed. That said, I am not precluding that additional analysis take place either at the CEC or in the PUC's process in the LTTP if the Commission decides to place this into the scope of the LTTP. It is certainly conceivable that, in the LTTP Proceeding, if this is placed into scope, that parties could call for additional analysis to look at how the peak results would change under different peak to energy ratios, the utilities could work with Itron to have that type of analysis developed, or

potentially, you know, CEC staff may work with Itron if they think that is a worthwhile endeavor. I am not saying that would be a bad idea. I think that, when you look at -- I mean, you are going to get two different numbers that the Commission is going to want to consider, and one is going to be using a peak to energy ratio that is for a mild year, and one is going to be using a peak to energy ratio that is for an average year. And so, the Commission would be able to deliberate which of those two seem like a reasonably expected to occur assumption.

COMMISSIONER BYRON: Thank you. And I am turning to my staff now, I assume Southern California Edison has been participating in the DFEE -- I cannot remember the name of the working group -- I am seeing heads nod yes. Thank you. Again, we look forward to the comments. Anyone else? Please, you were first. We seem to give deference to the investor-owned utilities because they seem to have so much at stake in this process, but we welcome comments from everyone.

MS. RIESENHUBER: Hi. Amber Riesenhuber with the Independent Energy Producers Association. I appreciate the work that you guys have done on this report, it is large endeavor as we all see, and we understand the difficulty of looking at something on such an extensive time horizon, and so we appreciate the work that you guys have done there.

While IEP has been a long time supporter of energy efficiency and demand side management goals, we are concerned with what will happen if these uncommitted energy efficiency and demand side goals are not met in the time expectancies relayed here. Mainly, IEP is concerned and suspicious of the uncommitted DSM and energy efficiency that does not subsequently show up, and that that may be used to manipulate the procurement of generation resources at the PUC. We are also concerned that the generation resources that are truly needed maybe foregone as a result of over-estimating energy efficiency, or demand side resources, and so those are some things that we would just urge you guys to look at. Earlier in the presentations, questions were kind of thrown out about looking at more conservative lower cases, I know the CPUC has done a mid, upper, and low ranges here, and also the idea of throwing out a contingency plan. I think that is something that we would look to exploring more with you guys, as a contingency plan, in the instance that something does occur, that all these things -- the uncommitted energy efficiency and DSM -- do not occur as expected. So we are going to be filing more written comments related to this issue, but I just wanted to bring those to your attention for now.

COMMISSIONER BYRON: We share your concern and, certainly, I have been on this Commission to experience the

short -- when we are short on capacity, and I have seen it on the consumer side. And it does lead to, let's just say, awkward and unfair procurement practices, so we share your concern and the ultimate issue is the cost to consumers.

MS. RIESENHUBER: Exactly.

COMMISSIONER BYRON: So we are very aware of it. We welcome your comments and the perspective of IEP is very helpful.

MS. RIESENHUBER: All right, thank you very much.

COMMISSIONER BYRON: Please.

MR. VONDER: My name is Tim --

COMMISSIONER BYRON: Is your green light on, on your microphone?

MR. VONDER: Now it is, okay.

COMMISSIONER BYRON: Please identify yourself again.

MR. VONDER: Yeah, Tim Vonder with San Diego Gas and Electric Company. San Diego Gas & Electric appreciates the opportunity to comment and we also appreciate the work that staff and Itron has done, and I personally applaud their effort. I have worked with some of these individuals for more than 25 years and I know that they are very professional and they work very hard, and they try very hard to do a really good analysis, so anyway. But that does not mean that we do not have some constructive criticism to

offer, that is always the case. Mr. Baker's last presentation, Simon's last presentation, was kind of a surprise to us, or to me, anyway, when he compared the incremental uncommitted savings that is in this analysis to the goals of the PUC in their decisions because, when we took a look at the incremental savings that are in this analysis and compared them for years 2013 through 2020, not the whole 2008 through 2020 time frame, but just that period of time which is considered uncommitted for the purpose of this forecast and analysis, we actually found the opposite. We found that the incremental uncommitted that is in the analysis is actually higher than what is in the Goals Decision, or the instructions from the PUC that was given to the Utilities to use. And, to us, that is a little troubling and we actually would like to see an additional scenario done on the analysis that would kind of bring that back down to the goals that were in 08-07-047 for the time period 2013 through 2020. Now, granted, I want to go back and take a look at Mr. Baker's presentation here and try to understand it, but as if today it was kind of a surprise to me because we did not come up with that. Another comment that I would like to make is in regard to overall uncertainty associated with the analysis. It is a very complicated analysis and it has been said, you know, time and time and time again in our workshops prior to today's

meeting, and here at today's meeting, that there is an awful lot of uncertainty associated with the analysis. For example, when Chris said today that each of these three scenarios, he could not make an assessment on which one was most likely to occur, that we have three scenarios, a low, medium, and a high, and there is some degree of uncertainty embedded in each of those, but we do not know what it is. And how, you know, which one, the low, the medium, or the high, would be most reasonably expected to occur. So I think that another thing that should be done is to extend this analysis before the final report, some kind of assessment of the elements that contribute to the uncertainty in the analysis, and try to quantify those, so either each of the scenarios could be looked at in terms of which is least likely or most likely to occur, or maybe the elements that are contained within each of the scenarios are assessed with some kind of degree of uncertainty so that one could pick and choose. So that was my second comment. And my third comment and last comment really pertains to the next time that we go through this effort. This time, the Energy Commission staff prepared their forecast and, when they prepared their forecast, they decided to include only committed EE and not include uncommitted EE in their initial effort to produce their forecast, and then the analysis, which is just completed, was done subsequent to their

effort, well, it overlapped, but it was a separate effort, and then some of the problems that were encountered in trying to carry out the uncommitted program analysis apart from the forecasting effort was that things had to be lined up, they had to take the 2008 Goals Study and make some different assumptions, and line it up with the forecasting effort, and that caused a lot of problems. So I think in the future, the next time around, that it would be best if the Energy Commission staff, as part of their forecasting effort, they also take into consideration the task of incorporating uncommitted EE as part of their initial forecasting efforts so that it is not done at a later point in time and then bolted onto their forecast as a forecast adjustment. I think it would be much smoother and it would probably eliminate a lot of the problems of trying to line up two separate analyses. So those are my verbal comments and hopefully we will have time to respond in writing to those questions.

COMMISSIONER BYRON: I hope you do and we welcome your input. Mr. Vonder, you raise fundamental issues that have obviously come up before, and I understand the potential disagreement around this, and there is a lot of uncertainty. Clearly, the presentations today indicate there is uncertainty all over the place. One that I would of course point back towards the investor-owned utilities is

that we really need timely and rigorous and consistent EM&V data with regard to the penetration energy -- so much data is missing, it would seem, that we are having to make so many assumptions, but that is one that, let's say, I will bounce back into your court that we need in order to do better forecasting, as well. And I think that is the primary reason why uncommitted is not going forward -- well, I may be incorrect on that, but your last point about needing to incorporate uncommitted energy efficiency in the forecast is a fundamental problem that we cannot -- I do not think we are going to agree upon. But we will let the Public Utilities Commission bolt on those uncommitted programs as they commit the investor-owned utilities to them.

MR. VONDER: Okay.

COMMISSIONER BYRON: Did I -- would my staff care to correct my statements or add anything? I welcome the correction. Dr. Jaske is always the first to jump up to correct me.

DR. JASKE: Rather than use that word, let me say that I think staff's opinion is that the 2008 IEPR Update made exactly the right call, that is, the Managed Demand Forecast is not the right approach to use, which is what Mr. Vonder is recommending, although he did not use that term, that separation between committed and uncommitted remains

just as valid and vital going forward as it was when it was created, you know, decades ago. Think of what the predominant issue that has been raised today is not some technical issues, although they are there and methodological improvements would mitigate them to some degree, they are policy issues. Who knows what level and frequency of ratcheting of Title 24 is going to happen? Who knows what the Federal Government is going to do? So by converting, perhaps, is an interpretation of what Mr. Vonder is suggesting, all of that uncertainty into several future forecast scenarios, number 1, I do not know that anyone has the ability to tell you what is the probability associated with any of those scenarios, and further, the causative forces of that uncertainty, namely the going forward policy decisions that this and other agencies need to make, would get diluted when it gets lumped in with a bunch of other uncertainties. The whole idea of separating committed and uncommitted is to put the spotlight on the uncommitted proposals so that they shift from vague goals to at least hypothetical program designs, which is where we are now, so that you can judge on the basis of the 15 or 20 different levels of disaggregation that are reported in the Itron Appendix, different customer classes, and the different program impacts, you can make a judgment about which of those things are likely to happen, and high, medium, and low

variance, and the mixing and matching idea that has been mentioned several times today may well be the best way for the PUC to deal with that in this cycle, given this body of information. Maybe there is some improvement that can be done going forward, but to take away from the need to focus on the likelihood of those 10, or 15, or 20 sector/program combinations is absolutely the wrong thing to do. We need to have the spotlight on those things so as we can make some kind of a judgment, whether it is purely subjective or otherwise, about whether they are going to be likely to happen or not. And that is the dilemma -- not the dilemma -- that is, I think, the challenge that the PUC understands that they have at this point, and why Mr. Baker has already suggested in writing that Utilities put forward their own characterization of the likelihood of those things happening, and all the other parties can throw their two cents worth into it, and the PUC will make a judgment. At this point, it is not anything more than a judgment. Maybe we can do better in future cycles to put bounds on that, but it is fundamentally a policy call, and it should not be hidden inside the forecast.

COMMISSIONER BYRON: Agreed. Very good answer. We have plenty of uncertainty as it is with the committed energy programs.

COMMISSIONER WEISENMILLER: Yeah, I was going to

say, obviously what we need to do is present to the policy makers the choice between some of these programs and some of the other resource choices, and there will be uncertainty, and we will have to deal with the uncertainty, God knows there is uncertainty in what the policy makers would do, at least we need to give them the tools to do that comparison.

COMMISSIONER BYRON: Thank you, Mr. Vonder.

DR. KAVALEC: If I could add just a little to that?

COMMISSIONER BYRON: Dr. Kavalec.

DR. KAVALEC: I agree with Mike Jaske about keeping the distinction between committed and uncommitted in the forecast. But there is opportunity here for better integration between the committed and the uncommitted forecasts, and Mike mentioned one example of that, and that was using the SESAT model in-house, and not having to rely on Itron to do this uncommitted work -- as much as we love Itron -- we would rather be able to have the in-house capability. So I just wanted to add that integration of our modeling process would be one step in addressing Mr. Vonder's concerns.

COMMISSIONER BYRON: Thank you. Any -- Mr. Alvarez, I just want to make sure that we are going to get to everyone else, as well. Could I just have a show of hands just to get a sense of others that wish to comment?

Okay, good. Mr. Alvarez, go ahead.

MR. ALVAREZ: Since the question of how we move forward came up in this context in this last discussion, I kind of want to make a point here and now that the working group concept, as we look forward to what we are going to do, is actually helping us to understand what is going on, so those uncertainties can get discussed and understood better in everybody's methodological techniques. Various analysts are not going to give up their methods; that is what they do, but understanding the implications is what we are trying to get to here. So I would urge you to keep this working group concept moving forward as we look at the next cycle.

COMMISSIONER BYRON: Good, thank you. I think there is general agreement on that and I think you are absolutely right. That is what I take away from Mr. Baker's presentation, that there is a great deal of increased understanding around the assumptions and the modeling.

MR. ASLIN: Hello, my name is Richard Aslin and I work for the Pacific Gas & Electric Company. We also, I think, intend to file written answers to the set of questions, and I hope that is acceptable, but I was not quite sure on when the date for that will be.

COMMISSIONER BYRON: Oh, we have a deadline. Dr. Jaske said it earlier? What is it?

MS. KOROSEC: February 25th.

MR. ASLIN: February 25th, okay. Thank you.

COMMISSIONER BYRON: And I do have your comments from the earlier workshop and we look forward to your answers to these questions. Did you want to say anything and provide us with any input at this point?

MR. ASLIN: Yes. I just wanted to kind of take up this issue of this committed vs. uncommitted. And I know we have talked about it a lot and, in fact, now that I am standing here, I think I might have even taken a vow never to mention it again, but since it came up, I could not resist. Here is my take on it. And this is actually the view of PG&E, as well. And that is that the California Public Utility Commission has committed us to pursue the goals. The goals are what we are committed to. And Simon even put up there, there was the decisions and they said that we must include the numerical goals in all of our long term planning. We do not need to be reinventing all the time this what the uncommitted goals are, there is no question at all as to what the goals are, the goals have been codified. There is a whole proceeding, the CEC is part of that proceeding, Itron is part of that proceeding, the IOUs are part of that proceeding, we are all part of that proceeding. The goals have already been decided. There is no uncertainty about the goals.

COMMISSIONER WEISENMILLER: Well, let me remind you, I think you may have been around, I am not sure, but when Lenny Ross was at the PUC, which was in the mid-'70s, at that point the Commission said the Utilities shall procure all cost-effective conservation. That was a long time ago and we are still struggling to get there, so it is a good goal, but the details still have to be worked out.

MR. ASLIN: I do not disagree with that. It is the goals that are currently set are stretch goals. But my point here is that a lot of this confusion, and a lot of this analysis could have been avoided, in my opinion, if the CEC staff would simply adopt the same working definition of what the committed goals are, or what is committed energy efficiency, as all of the IOUs, the POUs, and my understanding is also the CPUC has, which is that committed energy efficiency is energy efficiency that is consistent with the goals decision. And uncommitted energy efficiency is any energy efficiency that is above and beyond that level, and I think that, if we go forward into the next cycle, you know, I would like to see that as the working definition because, once we do that, then all of the goals can be embedded within the base case demand forecast and the discussion that we can have is around this issue of reliability and what is the cost-effectiveness trade-off between resources, just in time procurement, and energy

efficiency goals, and also what is the cost-effectiveness of going above and beyond the goals. That is what I would like to see. And I think that would really reduce -- it would have, in my opinion, actually obviated the need for this whole two years of analysis. I also certainly agree that the real focus should be on figuring out what is the historical amount of energy efficiency because, if we could agree on what is the historical amount of energy efficiency, we know what observed demand is, it actually happened; if we could figure out what the historical energy efficiency was and agree to that, and have some consistency between the history of energy efficiency savings and the goals, it would be a fairly simple task, in my opinion, to determine, you know, how much is in the forecast and how much is not, you can just look at the history, then you could look at the goals, and you can see what the difference is. So if your history says that you have been reducing peak demand by 250 megawatts per year for the last 10 years, and your goals say in the future you will be decreasing demand by 350 megawatts, then you simply run your aggression equation, forecast your sales, and then reduce it by 100 megawatts per year. It is really -- I have never seen the need for all this technical analysis. But I will put that in my comments.

COMMISSIONER BYRON: All right, good. I like the

way you think. I wish it were simpler, as well. Would the staff like to respond to Mr. Aslin's comments about either of them, that we do not need to do all this sophisticated analysis, or agreeing upon past energy efficiency as being critical? I would like you to respond. You did not jump up as quickly there, Dr. Jaske.

DR. JASKE: There are a number of ideas like developing a consensus history that have been surfaced in the Working Group meetings, and I sort of alluded to vaguely in one of my earlier presentations. And that particular one is, I think, a extremely positive suggestion that Mr. Aslin has made in the past, and I think that we really do want to go down that path. We are trying to focus on the positive here, but there are a number of ways in which the historic EM&V process has been focused on the next program design cycle, as opposed to the kind of needs that forecasters have, that sort of twist the focus somewhat in order to get forecasting needs, you know, a little bit higher up the priority queue. And maybe it is merely a function of stepping up to the plate and saying we have these needs, and let's recognize them in conjunction with all the others that exist. Because the absence of agreed upon history, of course, contaminates everything going forward. I think, just to be as explicit as possible, the Energy Commission should be telling the PUC that it should not have the kind

of goal setting process that it has today. The PUC wants to establish long run goals, it should not be stating them in absolute value terms, it should be stating them in terms of these scenarios: "We are going to pursue, you know, these 20 policy initiatives, and those policy initiatives are what we are committing to, not the numeric number." And then the identification of the uncertainty associated with those policy initiatives folds itself into this sort of technical analysis that Mr. Aslin just said. But having an absolute value goal makes it impossible to have the comparison of, you know, a list of 20 candidate energy efficiency initiatives vs. renewables, vs. distributed generation, vs. everything else. You simply cannot do that mix and match process, which is what we essentially need to get to that kind of a structure. Whether the committee wants to be as bold as staff in saying that straight out to the PUC when this material gets transmitted to them is for you to judge, but that is what staff's report says, that the PUC should not continue to be having absolute value numbers, it should convert to something which is tangible, trackable, and can be compared to other things.

COMMISSIONER BYRON: Good. Mr. Baker.

MR. BAKER: We certainly appreciate Mr. Jaske's remarks and we look forward to hearing what the Committee has to say in the final report. On another related note,

however, I just wanted to mention that, as Ms. Best mentioned earlier today, we do have some new EM&V data that is surfacing for this '06 to '08 program cycle, and that that will be consolidated in a report in mid-April, and so if the PUC concurs and chooses to look at what is reasonably expected to occur for energy efficiency in the Procurement Proceeding in the pending LTTP, then that would be an additional source of information that the Commission could consider and parties could utilize in their pleadings to the Commission about what is reasonably expected to occur in the LTTP.

COMMISSIONER BYRON: Very good. Any other public comment?

MS. KOROSEC: We do have two callers on the phone here. Can you unmute Cynthia Mitchell? So Cynthia Mitchell from TURN would like to make a comment.

COMMISSIONER BYRON: Go ahead, Ms. Mitchell.

MS. KOROSEC: I think we are getting her unmuted now.

COMMISSIONER BYRON: Ms. Mitchell, go ahead and start talking and we will tell you when we can hear you.

MS. KOROSEC: Oh, okay, Cynthia, your line is unmuted, if you want to speak? We may have -- oh, she is not on the phone, I am sorry, she is connected just to the WebEx.

COMMISSIONER BYRON: Okay, it is hard to ask questions if --

MS. KOROSEC: It is hard to ask questions just through the WebEx.

COMMISSIONER BYRON: Do you have another?

MS. KOROSEC: We have another caller, Faramarz Nabavi said he was not going to be available until 4:45, so I am not sure if we will have him on or not.

COMMISSIONER BYRON: We may be done by 4:45.

MS. KOROSEC: Faramarz, are you on the line? Apparently not, so I --

MR. NABAVI: Hello. Yes, this is Faramarz.

MS. KOROSEC: Okay, can you speak a little more loudly?

MR. NABAVI: Yes, this is Faramarz Nabavi. Is it my turn to ask questions?

MS. KOROSEC: Yes, please.

MR. NABAVI: Great, thank you. I have several questions during the course of the various presentations, so I will ask them together here.

COMMISSIONER BYRON: Mr. Nabavi, is there an organization that you represent?

MR. NABAVI: I am not representing an organization here, I am a member of the RETI Stakeholders Steering Committee and I am just asking questions and I am not

providing public comment, just one clarification on a couple of items.

COMMISSIONER BYRON: Please, go ahead.

MR. NABAVI: Thank you. So the first question is for Carmen Best. I wanted to understand the difference between gross and total market gross on Slide 6. She did explain the difference between net and gross, but I was not clear on what the difference between gross and total market gross are. I also have two questions for Michael Ting. One was if he could --

COMMISSIONER BYRON: Hang on a second, we will take your first one. Let's take your first question, either a short answer or refer him to where he can get his answer.

MS. BEST: Yes. You can find your answer in Appendix B, Attachment B, but the very short answer is gross is just for IOU programs, and total market gross encompasses more than just IOU programs. But look in Attachment B.

MR. NABAVI: Okay, thank you.

COMMISSIONER BYRON: Thank you, Ms. Best. Go ahead with your next question.

MR. NABAVI: Thank you. And then I have two questions for Michael Ting, one was what is the difference between the goals -- IOU Programs and CEC-IOU Programs in Slide 33?

MR. TING: The difference is the CEC estimates of

IOU program savings vs. the estimates of IOU program savings according to the '08 Goals Study.

MR. NABAVI: So that is -- so they are distinct and not overlapping?

MR. TING: They -- okay, let me try to boil it down, so those results that you are looking at, the inputs and the baselines have been reconciled to the best of our abilities, such that the results are comparable. So the line that you are looking at is the savings from IOU programs as modeled by the CEC and reconciled with the SESAT modeling framework, so that you can then compare them to the IOU program savings in the goals scenarios that were modeled in the same modeling framework.

MR. NABAVI: So the goals are on top of what the CEC has done and you have reconciled the model so that they are incremental, there is no overlap?

MR. TING: Correct.

MR. NABAVI: Okay, and then the other question I had for you was, with regard to the decayed savings replacement, over the course of the various presentations, I think I understood that what Itron did was it assumed 100 percent based on earlier guidance from CPUC, but now CPUC is looking at only 50 percent decayed savings replacement. What I am trying to understand is what is qualitatively in the goals and in the CEC-IOU Programs, and to what extent,

for example, in your previous presentation two weeks ago, there was a very similar slide to the one I just discussed where you showed what occurred if the CEC-IOU programs are assumed to have 100 percent decay. And the difference went into the Goals-IOU program bucket, if you will. So what I want to understand is, if we are assuming that there is no decay, or there is only 50 percent decay, and those programs are going to continue to generate -- no, sorry -- the existing energy efficiency work will continue to generate savings beyond the committed program period, what exactly is going into these goals? Is there an assumption that there would be new unidentified IOU Programs that would be implemented? What is it?

MR. TING: So I am sorry, you lost me a little bit. So you are asking about the measured decay assumptions that are embedded in the Goals scenarios for IOU programs?

COMMISSIONER BYRON: No. I apologize, gentlemen, this is Commissioner Byron and I apologize, but Mr. Ting and our questioner, in the interest of time, I am going to ask if the two of you might connect up and you might be able to help him with this, but just in trying to save everyone else's time here, and because the hour is late, and because these are just questions and clarification, I think that might be a more efficient way to get to the answer.

MR. TING: No problem.

MR. NABAVI: Could you provide Mr. Ting's contact information on the WebEx, if possible?

MS. KOROSEC: Yeah, we will do that.

COMMISSIONER BYRON: Yes, we can do that. And I apologize, you have been very patient with your questions, but we have a room full of folks here and we are approaching 5:00 and I think we need to try and close.

MR. NABAVI: That is fine, if you could just put up contact information, that would be great. Thanks.

COMMISSIONER BYRON: That information, I am told, will be provided to you. Any other public comments on WebEx?

MS. KOROSEC: Yeah, we are going to open up all the lines and see if we can get Cynthia if she is on one of the other things. Cynthia, are you there?

MS. MITCHELL: Hi, this is Cynthia.

MS. KOROSEC: Yeah, we can hear you now.

MS. MITCHELL: Oh, that is great. Thank you so much. This is Cynthia Mitchell. I am the Principal with Energy Economics and TURN's consultant on energy efficiency. We have been participating in the DFEEQP Workshops and, as such, we wanted to say hats off to all of those involved in sorting out the committed and uncommitted EE savings in what appears to be a very satisfactory manner. TURN is very involved in the CPUC Proceedings, on the IOUs EE Portfolios,

including but not limited to a review and analysis of the IOUs Forecasted EE savings in 2006 through 2009, and the projected energy efficiency savings in this current cycle portfolio, the 2010 through 2012. TURN has brought that expertise to bear in a fairly detailed review and analysis of the forecast of committed and uncommitted EE savings. We will be providing written comments on this next week, February 25th, and we are looking forward to continued participation in the DFEEQP Workshops, and we are available for discussions with CEC staff and other interested parties. Given the limited time and the late hour, let me offer TURN's bottom line recommendation. That is that we adopt the lower case scenario, that would be the higher forecast with lower EE savings, for purposes of the upcoming Long Term Procurement Planning process. The analytic basis for our recommendation, and I will just give you the high points of it, is as follows: the IOUs 2010-2012 EE program savings that are included in the CEC Forecast are as projected by the Utilities, that is, there are no adjustments to that forecast. The IOUs 2010-2012 EE programs are very similar to the '06-'09 programs. Now, as explained by Carmen Best, the IOUs '06-'09 reporting savings were adjusted downward by Energy Division based on ED's October 2009 Verification Report. This worked out to be about a 10 percent downward adjustment in the utilities reported savings. As Mr. Baker

just referenced, the ED October 2009 Evaluation is just the first step of a three-step evaluation process that ED is currently involved in. The second step was the public vetting in December and January of about a dozen Energy Division measurement verification reports on the '06-'08 EE Programs. This did not include an analysis of the M&V results bottom line basis to the IOU reported savings, ED just has not had time to do that yet. TURN did conduct an analysis of the bottom line impact and we provided a very high level finding result to Commissioner Grueneich via a letter dated February 8th, 2010, and we can make sure that you have a copy of that. The bottom line finding on that is that those savings for '06-'09 should most likely be just adjusted downward by 40 percent, this could be an additional 30 percent reduction from ED's October 2009 work, okay? There is one more M&V step or analysis that is underway that TURN estimates will further adjust the IOUs reported savings for '06-'08 downward by another 10 percent for a total downward adjustment of 50 percent. Okay? What this all boils down to is that, when you go to your CEC Report, beginning at the Attachment B section, I believe it is around page 9, which shows the IOUs 2010-2012 EE savings as forecasted relative to the Goals, Carmen Best a few minutes ago, or a couple hours ago, I believe, had a slide showing PG&E and she said there is very little cushion in these

projected savings for 2010-2012 relative to the EE Goals. As I stated earlier, the 2010-2012 programs are very similar to the '06-'09 Programs, with the forecast of IOU peak demand megawatt savings highly dependent upon space cooling savings, okay? This is a very big component of the IOUs core program and a huge component of the CPUC Big Bold Initiative, that is, across the zero net energy construction for residential and non-res, and then there is the stand alone heating ventilation air-conditioning initiative. Without going into details here, California is not where it wants or needs to be in achieving space cooling savings via the Utilities EE programs, or the Big Bold Initiatives, which are just in the earliest stages of rolling out; thus, for these reasons and other reasons that TURN will cover in our written comments, we recommend that it is more prudent to go forward in the Long Term Procurement Proceedings with the lower case scenarios, that is, the higher forecast and the lower energy efficiency savings. Thank you.

COMMISSIONER BYRON: Thank you, Ms. Mitchell. We do not get TURN participation very often in our proceedings, we are glad to have you. But I suspect we all understand why you are participating. Ms. Korosec, any more comments?

MS. KOROSEC: We have no other commenters, no.

COMMISSIONER BYRON: Commissioner, any closing comments?

COMMISSIONER WEISENMILLER: Well, I certainly want to thank everyone for their participation today and certainly thank the staff of the Commissions for undergoing this effort in trying to parse out some of these issues. We certainly look forward to people's comments. And, again, hopefully we are not at the very beginning, but we have made some significant progress, but there is still more to go.

COMMISSIONER BYRON: Commissioner, it is good to have you on this committee. I think it is clear from your comments that you are going to bring a lot of strength to this issue and others on the Commission. I note that the Chairman had to leave early, but her advisor is present, so we have the benefit of having direct input to her office, as well, and we have some recommendations to consider. I think, as you all know, Dr. Jaske and Dr. Kavalec give us well considered recommendations, and we have those hear today. I would like to thank everyone for your involvement and participation in this process not just today, but obviously there are a lot of other times when the working group has met, and previous workshops, and staff. We have a lot to consider. I wish -- I was trying to think of an analogy, and I will be short, but having just watched last month the new Boeing 787 take flight, I was reminded that Boeing came out years ago and committed an energy efficiency savings on their fuel savings on this aircraft long before

they could develop it, and General Electric, I believe, as the engine developer, had to come up with it, to pick a number, say it was 10 percent fuel savings, and they went out and sold a bunch of aircraft on that basis with penalties if they did not deliver, obviously. And it is a black box to everyone, no one knows what goes on in that engine that saves it 10 percent on fuel, and as policy makers, I suppose, that is all we are interested in, is the result. But it is a little more complicated in this case, we need to know what is going on in that engine, we need to know because the sources of the savings get dissected and have bearing on considerations at the Public Utilities Commission, but we also do not really have the data that Boeing has. They can measure the fuel going in and the miles traveled, and it is a lot more complicated in this case. So the analogy breaks down quickly. But we have to look inside that engine, we have to know what is going on, we will certainly consider the recommendations of staff carefully. And I would like to again thank you all for being here. If this were but a lot simpler, but it is very important and we are going to continue to push the goals forward in this state. We applaud the Public Utilities Commission's efforts to set these absolute goals and I am not sure I am in complete agreement with Dr. Jaske, but we will look at whether or not we need to make recommendations

to the PUC on how you might go forward. Nevertheless, we will continue to support you in your long-term procurement process. I am glad to hear that these results will be useful to you. It is a process that will continue.

Ms. Korosec, one more time, the date that comments are due?

MS. KOROSEC: February 25th.

COMMISSIONER BYRON: Thank you all for your participation. We are adjourned.

(Whereupon, at 4:57 p.m., the workshop was adjourned.)

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CERTIFICATE OF REPORTER

I, PETER PETTY, a Certified Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission Workshop; that it was thereafter transcribed into typewriting.

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

IN WITNESS WHEREOF, I have hereunto set my hand this 22nd day of February, 2010.

PETER PETTY