

COMMITTEE WORKSHOP  
BEFORE THE  
CALIFORNIA ENERGY RESOURCES CONSERVATION  
AND DEVELOPMENT COMMISSION

In the Matter of: )  
Preparation of the 2007 Integrated ) Docket No.  
Energy Policy Report ) 06-IEP-1I  
2008-2018 Peak Demand and Energy )  
Forecasts )  
\_\_\_\_\_ )

CALIFORNIA ENERGY COMMISSION

HEARING ROOM A

1516 NINTH STREET

SACRAMENTO, CALIFORNIA

TUESDAY, JULY 10, 2007

1:12 P.M.

Reported by:  
Peter Petty  
Contract No. 150-07-002

PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

COMMISSIONERS PRESENT

Jackalyne Pfannenstiel, Presiding Member

John L. Geesman, Associate Member

Jeffrey Byron, Commissioner

ADVISORS PRESENT

Timothy Tutt

Suzanne Korosec

Kevin Kennedy

STAFF and CONSULTANTS PRESENT

Lorraine White

Tom Gorin

Lynn Marshall

ALSO PRESENT

Richard Aslin  
Pacific Gas and Electric Company

Richard Hendricks  
Pacific Gas and Electric Company

John Gillies  
Southern California Edison Company

Arthur Canning  
Southern California Edison Company

Tim Vonder  
San Diego Gas and Electric Company

Rick Codina  
Sacramento Municipal Utility District

Steven Kelly  
Independent Energy Producers Association

ALSO PRESENT

Eric Wanless  
Natural Resources Defense Council

PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345

## I N D E X

	Page
Proceedings	1
Introductions	1
Overview/Background	1
Forecasts Review, Results and Methodology	3
Pacific Gas and Electric Company	12
Southern California Edison Company	19
San Diego Gas and Electric Company	24
Sacramento Municipal Utility District	29
Los Angeles Department of Water and Power	32
Natural Gas Forecast	36
Pacific Gas and Electric Company	36
Southern California Gas Company	37
Questions/Comments	38
Presentations	41
Pacific Gas and Electric Company	41
Natural Gas Forecast	49
Questions/Comments	54
Southern California Edison Company	62
Questions/Comments	85
San Diego Gas and Electric Company	90
Questions/Comments	92
Sacramento Municipal Utility District	92
Questions/Comments	102
Public Comment/Questions	105
Adjournment	110
Certificate of Reporter	111

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

1  
2  
3  
4  
5  
6  
7  
8  
9  
10  
11  
12  
13  
14  
15  
16  
17  
18  
19  
20  
21  
22  
23  
24  
25

1:12 p.m.

PRESIDING MEMBER PFANNENSTIEL: Good afternoon. This is the Integrated Energy Policy Committee workshop on energy demand forecast.

I'm Jackie Pfannenstiel; I'm the Presiding Commissioner on the IEPR Committee. To my right is Commissioner John Geesman, who is the Associate Member on that Committee.

To my immediate left is my Advisor, Tim Tutt. And to his left is Commissioner Jeff Byron, who is the Presiding Commissioner on the Electricity Committee. On Commissioner Byron's left is his Advisor, Kevin Kennedy. And to Commissioner Geesman's right is his Advisor, Suzanne Korosec.

With that, I think I will turn it to Lorraine for some introductory comments; then we can get started on the demand forecast workshop.

MS. WHITE: Thank you. Welcome, everyone to the staff draft energy demand forecast workshop of the IEPR Committee. Today's topic is pretty self explanatory. Our staff have developed forecasts for projected demand between 2008 and 2018.

1           Over the course of the day we will be  
2           looking at a review of the results and methodology  
3           looking at the forecast according to utility area;  
4           and then also discussing the natural gas forecast.

5           We're joined by some utilities that will  
6           be providing us comment on our particular  
7           forecasts, and making some presentations of their  
8           own.

9           And then we invite individuals to  
10          provide comment, as a whole, on both what the  
11          utilities present and what staff has done.

12          After which, of course, we'll be asking  
13          for some closing comments.

14          Today's workshop is the second related  
15          to the demand forecast. We had one back at the  
16          end of May. And at this point in time we're  
17          looking at the long-term forecast. The earlier  
18          forecast was focused on the near term.

19          The notice identifies that we will be  
20          asking not only for comments today, but also  
21          written comments to be filed with us by July 20th.

22          Information related to staff contacts is  
23          also contained in that notice. You can find all  
24          of the Energy Commission Integrated Energy Policy  
25          Report proceeding on our website.

1                   And before we get into the actual  
2 presentations, themselves, I'd like to just cover  
3 a couple of housekeeping things. For those of you  
4 that are joining us for the first time, out the  
5 double doors to the left you'll find the  
6 restrooms. Up on the second floor at the top of  
7 the stairs under the awning you'll find our snack  
8 bar for refreshments.

9                   And then in the event of an emergency,  
10 we ask that you follow staff across the street  
11 into the park until such time as we're allowed  
12 back in the building.

13                   So, with that, I would like to introduce  
14 Lynn Marshall, who, along with Tom Gorin, will be  
15 providing the staff presentations today.

16                   MS. MARSHALL: The draft demand  
17 forecasts we're presenting today are used in a  
18 variety of contexts. They're used both in system  
19 analyses for work here at the Energy Commission.  
20 But the final adopted forecast will also be used  
21 in a lot of other applications at the PUC and at  
22 the ISO and by the utilities, themselves. In  
23 particular, the next PUC long-term procurement  
24 process. They also get used in the local  
25 reliability studies that the ISO does.

1           So, we're going to present our forecast  
2           and some comparison to the forecasts submitted to  
3           us by the utilities.

4           After the workshop we'll publish a  
5           revised forecast and I'll make some other changes  
6           I'll talk more about in a minute.

7           Generally we're using the same  
8           methodology and models that we've used in the  
9           past. We use our Energy Commission-developed  
10          models for the most part. We use end-use models  
11          in the residential and commercial sectors. We use  
12          econometric models in the ag and water pumping  
13          sectors.

14          From those annual forecasts of energy  
15          consumption we use hourly load shapes and weather  
16          adjustments to develop an annual peak forecast.

17          As part of -- most of that work is done  
18          at the planning area level, but we also, from  
19          that, then derive more detailed LSE-level  
20          forecasts. And those are published as part of the  
21          tables in the statewide chapter. Those are based  
22          on the weather normalization analysis we did for  
23          our peak demand staff report that was published  
24          about a month ago.

25          Some of our key drivers are, for the

1 residential sector, population and household  
2 projections. We also account for building  
3 standards and some efficiency programs. In the  
4 commercial sector the key economic driver is  
5 commercial floor space. And those models also  
6 account for building and appliance standards.

7 All of those econ demo data are county  
8 level. Similarly in the industrial sector we use  
9 county-level projections from economy.com of  
10 employment or value added for three- to four-digit  
11 nakes (phonetic) groups.

12 The key differences from our last long-  
13 run forecast, in the residential sector we've  
14 updated the saturations of end uses in our  
15 residential model. In particular we've got higher  
16 air conditioning saturations. There's also higher  
17 saturations of the miscellaneous, the plug-load  
18 category.

19 We've revised our methodology for floor  
20 space projections. In our last forecast we did a  
21 very simple trend off recent average floor space  
22 additions. For this forecast we've gone back to  
23 an econometric methodology that uses economic  
24 drivers. Economic and demographic drivers are  
25 specific for each building type. And we also

1 reevaluated the method used to estimate historic  
2 floor stocks. So you'll see those differences in  
3 the forecast.

4 There's also some differences our  
5 historic data. And we're using economic data from  
6 economy.com's spring economic forecasts.

7 Electric rates for this forecast, and in  
8 the past, we've used an electricity rate forecast  
9 prepared by our electricity analysis office. They  
10 did not have one available; they just had a  
11 workshop on theirs last week.

12 So for this forecast what we did was  
13 look at historical, real historic rates. For  
14 example, this is the commercial sector. With some  
15 there's been, you know, certain periods of  
16 volatility obviously. But by and large they've  
17 been relatively constant in real terms.

18 So for this forecast we decided to hold  
19 real rates constant. The implication of that for  
20 our models, and these are elasticities in each of  
21 our sector models, in the residential it's not  
22 very significant at all. There's only one end  
23 use, and we've got a very very small elasticity;  
24 that should be negative.

25 But it is significant in the industrial

1 and groundwater pumping that it is a factor  
2 somewhat in our commercial sector.

3 To give you a flavor of the economic  
4 projections we're using, this shows household  
5 income by planning area. In particular if you  
6 look at say PG&E and SMUD, in the near term  
7 there's a lot of growth in real personal income,  
8 fairly high rate of growth. So that's a factor in  
9 our forecast.

10 Programmatic assumptions. Now, we're  
11 using, as far as energy efficiency programs, these  
12 are the same assumptions we used two years ago.  
13 The PUC has not adopted post-2008 targets. They  
14 currently have a process where they're considering  
15 whether to revise those targets, and how to  
16 redefine them specifically for the utilities post-  
17 2008.

18 We say -- one of the things we did in  
19 our forms and instructions was try to clarify the  
20 definition of committed as to what's in our model.  
21 So we say we don't explicitly adjust for any  
22 programs after 2008. However, it is true that  
23 because of the way we model end use replacement in  
24 our commercial and residential models, and we  
25 model building standards, the areas overlap with

1 those post-2008 programs.

2 Now, in the past we've done  
3 quantification of that conservation and efficiency  
4 effects in our model. And it is a substantial  
5 amount. I think a year ago I estimated it was  
6 something on the order of 60 percent for PG&E.

7 However, at this point we have, from the  
8 utilities, uncommitted projections for 2008 based  
9 on targets that are about to change possibly. And  
10 they're not program specific. They are kind of  
11 just very aggregate numbers.

12 And traditionally, the way we have done  
13 the adjustment process for our forecasts is to  
14 look at the specific program mix that is being  
15 proposed and to evaluate individually whether  
16 those programs are already accounted for in our  
17 model.

18 So we intend to do some more  
19 quantification work on the amount of DSM in our  
20 forecast as part of our revised forecast. But I  
21 don't think that's going to fully solve the  
22 problem that we do need to address before the next  
23 procurement proceeding of precisely quantifying  
24 the extent to which there's overlap between the  
25 PUC targets, which may be based on PUC accounting

1 procedures, that don't necessarily map very well  
2 to the way we do our forecast.

3 For two other programs on the  
4 distributed gen side we account, as we did last  
5 time, for the self-gen incentive program, by  
6 looking at recent historic installations. That  
7 forecast is not very much different from last  
8 time.

9 For this forecast we've included the  
10 effects of solar programs. And what we did was  
11 look at the recent trends in installations. In  
12 particular the last two years, because obviously  
13 these are very new programs. And we based our  
14 projections based on the recent rate of new  
15 installations.

16 So, a lot of people would argue this is  
17 overly conservative. The solar program has this  
18 goal of 3000 megawatts of installed capacity by  
19 2017 or '18. That assumption and the idea of the  
20 time -- the subsidies currently offered for  
21 renewables is based for the solar -- is based on  
22 the idea that at some point you build the market  
23 enough that capital costs will drop dramatically  
24 and there will be much greater rates of  
25 penetration.

1           That is certainly not happening under  
2           the current data. I think it's very speculative  
3           as to the timing and magnitude of that change.  
4           You know, there may be capacity coming online;  
5           there could also be new states or countries  
6           offering their own incentives.

7           So, for this forecast we have simply  
8           assumed trended off the current level of activity.  
9           So as you can see, this gets you -- this graph is  
10          of installed capacity, so it's 750 megawatts. On  
11          peak that's really about 343 megawatts.

12          There's our revised forecast draft.  
13          Energy forecast for the state it's about 1.5  
14          percent higher. Similarly for the consumption per  
15          capita; as in the past, use per capita is  
16          relatively constant.

17          At the sector level generally our  
18          commercial and residential forecasts are higher.  
19          The commercial because of our revised floor space  
20          projections predominately, and because of the  
21          economic drivers we're using. Similarly, the  
22          residential is higher because of the personal  
23          income projections and some other factors.

24          On the other nonres sector,  
25          industrial/ag, those forecasts are lower, which is

1 a combination of the higher rates and lower  
2 economic projections.

3 The statewide peak forecast is similar  
4 changes to the energy. And this is consistent  
5 with the updates to our peak forecast that we've  
6 already published. And as an energy peak demand  
7 per capita is relatively constant.

8 This shows our translation into the  
9 control areas. So the SMUD western control area  
10 is the fastest -- continues to be the fastest  
11 growing part of the state under this draft  
12 forecast.

13 And in our natural gas demand forecast,  
14 both of those, both in SoCalGas and in northern  
15 California the forecasts are higher, again because  
16 of the, in this case, the commercial sector and  
17 also in mining demand in southern California.  
18 That is therms per capita in gas demand declining  
19 about as on par with historic trends.

20 So, I had mentioned that as part of the  
21 revised forecast we do plan to work on more  
22 quantification of the conservation embedded in our  
23 model. Some of the other things we're going to  
24 continue working on is preparing a climate zone  
25 level forecast which we've been working on as part

1 of this forecast. But those results weren't ready  
2 to be published yet. And we're still working on  
3 the peak portion of that forecast.

4 And also as part of the more  
5 disaggregate forecast, address the issue of  
6 projections of newly migrating or municipalized  
7 load. Load that's moving between the public  
8 utilities and PG&E or Edison.

9 And this slide says a possible new  
10 population forecast. Well, that's the new  
11 population forecast that was released yesterday by  
12 Department of Finance. So we'll be incorporating  
13 that in our revised forecast.

14 Although at the statewide level there's  
15 not much change, there are some significant  
16 changes at the county levels. So that will  
17 definitely have some effects.

18 So we'll go through each of the playing  
19 levels. We'll go to PG&E. So both our energy and  
20 peak forecasts for PG&E are slightly higher. The  
21 growth rates are pretty similar. There's the  
22 table showing the differences.

23 That's big increases on the peak, but as  
24 I said, these are consistent with peak updates  
25 that we've already published based on our last two

1 years of weather load analysis.

2           So this is the electricity forecast.  
3 Slightly higher but similar growth rate. The peak  
4 is higher than our last forecast; still below that  
5 '06. You can see the weather normalization down  
6 from the unusual 2006 event.

7           Per capita consumption, as in the last  
8 one, declined slightly. There's effective  
9 increasing persons per household and energy  
10 efficiency and building standards effects.

11           And the per capita peak displays a  
12 similar trend. There's the load factor is  
13 slightly declining over the forecast period, lower  
14 than our previous forecast.

15           So the residential sector, we have a  
16 higher starting point. Part of that is the higher  
17 personal income growth that we're using. And one  
18 of the things we're going to look at is also  
19 incorporating 2006 actual consumption data into  
20 this forecast. So where we have a shift up in the  
21 starting point that looks kind of big, actually,  
22 we're going to evaluate whether that -- we can  
23 adjust for that.

24           And then look at whether the income  
25 response in our residential models is really

1 appropriate. There's an income elasticity in the  
2 miscellaneous end use, and we have higher  
3 miscellaneous saturations in our model. So when  
4 we have strong income growth projections, we get a  
5 noticeable effect.

6 Similarly the residential peak is  
7 increasing; and use per household is increasing.  
8 Slightly higher.

9 And then the peak use per household,  
10 similar trend. We're shifting that based on our  
11 calibration to the higher actual peak, weather  
12 adjusted peaks in the last couple of years.

13 The demographics were not much changed.  
14 We're using the same Department of Finance  
15 population forecast. It was 1998, although we've  
16 used their county updates of current year  
17 estimates.

18 And there you see the household income  
19 that's quite a bit higher than what we had before,  
20 in the near term.

21 So commercial sector. The difference  
22 between those two forecasts is really the  
23 difference -- is the difference in our floor space  
24 projections. Similarly with the peak. And here's  
25 the difference in floor space.

1           We re-estimated both the historic floor  
2           space. We used a different decay function that  
3           prolonged the life of a lot of buildings, so we  
4           have a higher historic floor stock and we have  
5           higher projections in the future.

6           So, on a kilowatt per square foot basis  
7           the net effect is actually lower. They decline  
8           slightly over time as in the previous forecast.  
9           That's reflecting replacement of old buildings  
10          with new buildings and the effects of building  
11          standards. Similar effect on the use per square  
12          foot on the peak side.

13          Industrial sector. In PG&E the economic  
14          driver we're using has about half the growth rate  
15          of the forecast two years ago. So lower growth  
16          rate there. And, of course, we have constant  
17          rates as opposed to declining rates last time. So  
18          slower growth rate, although we do have a higher  
19          starting point.

20          Similar story on the peak. And this is  
21          the use per value added. Similar trend to what  
22          we've seen in recent years, although nowhere near  
23          what we saw in the late '90s. But that was during  
24          a period of rapid expansion. So that's not  
25          entirely comparable.

1                   In the TCU sectors we have a big  
2                   difference in starting point due to our continued  
3                   efforts to figure out the best way to allocate  
4                   unclassified. The TCU, transmission communication  
5                   and utilities, is continually plagued by the  
6                   unclassified data. So, this reflects our latest  
7                   attempt to deal with that problem.

8                   And this is our ag and water pumping  
9                   sectors. On the top and on the bottom, mining and  
10                  oil extraction. The ag and water pumping is much  
11                  flatter. There's an electricity rate effect  
12                  there. So we have slower growth there.

13                  On the mining industry we have higher  
14                  demand in the near term. That's a higher  
15                  employment projections in the short term, but it's  
16                  declining parallel to the declining employment  
17                  forecast.

18                  Net effect on the peak, not much change.  
19                  And those are simply the prices that we used for  
20                  the different sectors, historic and forecast.

21                  These are the self gen incentive  
22                  program. So the bottom pink line is the annual  
23                  installation, so that's based on, you know, the  
24                  recent rate of additions installations we've seen.  
25                  And on the top is the cumulative peak impact.

1                   And this is the solar installations.

2                   And these are installed megawatts. So we have the  
3                   history between, you know, -- for the total PG&E  
4                   planning area between 25 and 30 megawatts. So  
5                   we're adding about 25 megawatts a year in our  
6                   forecast.

7                   And the result of this is the PG&E  
8                   planning area ends up with something like 125  
9                   megawatts by the end of the forecast period. Now  
10                  I put on this graph PG&E in their procurement plan  
11                  did a variety of scenarios. So I think they  
12                  provide a good context for that.

13                  What we did is very similar to their  
14                  current rates of -- it's the same thing as their  
15                  current rates of installation. They also did an  
16                  escalating installation rate.

17                  And then the curving upward blue line is  
18                  meeting the target plus the Energy Commission's  
19                  own program. And you can see that's far above the  
20                  level of activity that we're experiencing now.

21                  And I also put in here a couple of the  
22                  scenarios from our scenario project which used a  
23                  market penetration model with assumptions about  
24                  when costs are going to go down to try and predict  
25                  penetration under various scenarios.

1           The upward line, that's their new  
2           business model, which, you know, it's essentially  
3           a market transformation scenario with greatly  
4           declining costs. But we're not that much  
5           different from their current incentives results.  
6           So, this is certainly something that's feasible  
7           and in line with the status quo.

8           So, comparing our forecast to PG&E's we  
9           have one of the big differences, whether we  
10          compare to their with DSM or without. And they  
11          have a much higher unmanaged forecast.

12          If you take out their post-2008  
13          uncommitted energy efficiency, they're actually  
14          very similar. So this is an issue for us going  
15          forward. We'll have to attempt to quantify this  
16          better.

17          Let's see, this is with the committed --  
18          this is with their uncommitted forecast. This is  
19          comparing the staff forecast to the aggregated  
20          forecast. PG&E provides a forecast for their  
21          service area, so we have in here also Silicon  
22          Valley and MID and TID and other entities that  
23          provided a forecast.

24          So, fairly similar growth rates. Let's  
25          see. Here you can see we're much closer when we

1 take out PG&E's uncommitted. So not much  
2 differences at this level. And here's a graphical  
3 display of that.

4 So the PG&E service area forecast, I  
5 think probably Rick will talk about this, but you  
6 can see on the bottom half that's the gap between  
7 their uncommitted and committed forecast. So  
8 that's a significant amount on both lines. And  
9 similar difference on the peak side. So that's  
10 PG&E.

11 Some of the same stories on the Edison  
12 forecast. The energy's only 2 percent higher; the  
13 peak's higher, again. These are analyses that we  
14 did last month, so we've incorporated that  
15 analysis for Edison in this forecast.

16 So slightly higher on the energy, but  
17 similar growth rates. A little more growth in  
18 peak, so higher starting point reflecting the  
19 higher actual peaks that we've had in the last  
20 couple of years.

21 We have increasing per capita  
22 consumption as opposed to flat last time. This is  
23 higher usage in the residential and commercial  
24 sector. Again, this is our revised commercial  
25 forecast.

1                   Similar differences on the peak. The  
2 load factor is declining, as it has been. Higher  
3 as you would expect in '06, but it's lower than  
4 some of the '2, '3, '4 or '5 load factors that we  
5 saw during the energy crisis and during years with  
6 cooler temperatures.

7                   So again we have a higher starting point  
8 for the residential sector related to the higher  
9 income growth. However, long run, growth rates  
10 are very similar; same story on the peak.

11                   Increasing use per household, as it has  
12 been historically. Similar with the peak. Again,  
13 our econ demographic drivers haven't changed a  
14 whole lot. Slightly lower persons per household.

15                   A little hard to see, but there's some  
16 differences in the econ. Not as much as in the  
17 PG&E area, though.

18                   So, here's the commercial sector.  
19 Higher rates of growth in the commercial sector.  
20 It's increasing -- you notice increasing at the  
21 end, that's the effect of decaying diminishing DSM  
22 from earlier programs in our model.

23                   The floor space is significantly higher  
24 starting point, and somewhat higher rate of  
25 growth. But again we have, as we did last time, a

1 decreasing use per square foot. And similarly on  
2 the peak side.

3 The industrial sector a little lower  
4 starting point. Somewhat higher rate of growth,  
5 and actually this is a little bit misleading. All  
6 of the growth in the Edison industrial economic  
7 projections are almost all in the San Bernardino/  
8 Riverside area. When we divide this up there's  
9 actually more of a decline in the L.A./Orange  
10 County portion. But the net effect shown here is  
11 still positive.

12 Got a higher starting point for the peak  
13 forecast, but similar growth rate. And that's the  
14 energy intensity. Declining at about the rate,  
15 same rate as we've seen in the last few years.  
16 And, again, our TCU sector, different starting  
17 point reflecting changes to the historic data used  
18 for the forecast.

19 And ag and water pumping, again you see  
20 that's groundwater pumping. There's a price  
21 effect there, so we have a lower rate of growth.  
22 And in mining, again, in southern California that  
23 TEOR-related activities. Higher projection in the  
24 short term, but declining over the long run.

25 And as we look at the 2006 data, I think

1 maybe that increase didn't actually happen.  
2 There's an increase on the gas side that seems  
3 higher than what the recorded data is that's  
4 coming in. So we need to reevaluate how we're  
5 using that driver for that sector. And net peak  
6 is not much changed.

7 And, again, these are the prices we've  
8 used, the comparison of the real rates versus the  
9 historical rates.

10 And self gen, we're using real rates,  
11 recent rates of installations. And then it  
12 declines to the sector growth rate in the latter  
13 part of the forecast, after the program expires.

14 And CSI, here's the net, PV installation  
15 is the peak line growing to about 70 megawatts.  
16 Historically Edison has been having much lower  
17 rates of installation than PG&E. And so that's  
18 reflected in this forecast. Logically you'd think  
19 they'd get similar results. Interesting question  
20 why PG&E is having -- why there's more activity in  
21 PG&E there.

22 Okay, our forecast comparison with the  
23 Edison forecast. We tried to incorporate, they  
24 submitted to us a new peak forecast, but we didn't  
25 have it for all years, or we didn't have an energy

1 forecast. So we tried to work around that, but  
2 Art can straighten us out if we've  
3 mischaracterized anything.

4 So, again, we have, you know,  
5 differences whether we're using a precommitted or  
6 with or without the uncommitted. This is with  
7 their committed. So on the energy side, the SCE  
8 planning area is the Edison forecast. Slightly  
9 higher rates of growth on energy. But they have a  
10 -- and on peak. But they have a higher starting  
11 point on peak, and that's related to our  
12 assumptions about, you know, the relationship of  
13 peak to energy and how that's going to progress in  
14 the future.

15 So the top line shows the aggregated  
16 planning area forecast with before the uncommitted  
17 and then the lower yellow line is subtracting the  
18 uncommitted. Once you do that there are similar  
19 trends.

20 And on the peak side this is Edison's  
21 own peak forecast. And you can see on their peak  
22 forecast it's a much higher rate of growth than  
23 ours. And a higher starting point there.

24 And on this we put our load factor  
25 comparison. So the dark blue line is our analysis

1 of historic load factors. And the top blue line  
2 is our load factors decreasing over time. Higher  
3 than '06 because '06 was unusually hot.

4 The bottom pink line is what we believe  
5 Edison's load factor is. Much lower than anything  
6 that's been observed historically. So, I'm sure  
7 we'll talk more about that when they make their  
8 presentation.

9 And let's see. Tom, you want to do,  
10 who's next, San Diego? Take a break.

11 MR. GORIN: Similar story for the other  
12 utilities. The San Diego forecast is about 1  
13 percent higher by the end of the forecast period.  
14 The peak is higher through the adjustments.  
15 Growth rates are the same as last forecast. Peak  
16 is a higher starting point.

17 Per capita consumptions projected to  
18 increase slightly, but still in the pre-crisis  
19 range. And capita peak is projected to be  
20 relatively constant.

21 The load factor is actually starting out  
22 from the 2006 value, projected to decline  
23 slightly. It's interesting that 1998 had a lower  
24 load factor than 2006 for the San Diego planning  
25 area.

1           Residential growth is higher due to the  
2           increase in growth in household income. Use per  
3           household is going up because of that. Peak is  
4           higher because there's an increase in saturation  
5           of air conditioners than was previously used in  
6           the last forecast, which drives peak use per  
7           household up.

8           I think for the revised forecast all of  
9           the demographic inputs are going to change. The  
10          Department of Finance forecast that came out  
11          yesterday shifted population from north to south.  
12          And basically I think their projections for 2010  
13          are a continuation of the trend that we see  
14          between 2000 and 2006.

15          San Diego household income, well, 2006  
16          may be leveled out -- not leveled out, but slowed  
17          down more than was thought in the previous  
18          forecast, they decided economy.com has a rosier  
19          picture for income in San Diego than they did the  
20          last cycle.

21          The commercial building energy and peak  
22          as a result of the revised floor space estimates,  
23          which are higher. Same score with kilowatt hours  
24          per square foot have declined slightly, but starts  
25          from a lower point. Peak has the same impact.

1           Industrial consumption slightly higher.  
2           The peak's higher from a higher starting point due  
3           to calibration from more recent utility data. The  
4           use per production unit declines at a lower rate,  
5           comes from a lower starting point.

6           This TCU adjustment is due to the  
7           unclassified information there was a reporting  
8           difference that was halfway resolved in 2006. So  
9           that's why that big dip is there. Still trying to  
10          resolve where the energy comes from in the  
11          national defense industry in San Diego County.

12          Ag and water pumping and mining are  
13          basically the same as the other utilities, the  
14          drivers. There's a assumed reduction in water  
15          pumping in San Diego after prior to what was  
16          thought of previously.

17          And the peak starts from a different  
18          point because of the unclassified change in  
19          energy. And the prices are relatively flat.  
20          What's interesting is the prices were really high  
21          in the early '80s. If I remember right, back that  
22          far. They had a little oil-fired generation back  
23          then that they converted to get prices down.

24          Our forecasts are essentially 2 percent  
25          higher in the near term in the managed forecast,

1 but by the end they're the same. And we have the  
2 same question that we're going to have to try and  
3 resolve about uncommitted DSM savings. And our  
4 peak forecast is below.

5 So, the electricity consumption forecast  
6 starts from a slightly higher point and grows at a  
7 slightly lower rate. This may be due to  
8 differences in population which may change when we  
9 incorporate Department of Finance population  
10 forecast. The peak forecast differences are a  
11 little higher.

12 Our per capita consumption forecasts are  
13 lower than San Diego's assumptions. And the  
14 unmanaged per capita consumption with San Diego's  
15 forecast grows at a pretty rapid rate. Peak  
16 consumption doesn't grow quite as much.

17 Our residential forecasts are related to  
18 the difference, I think, in our household forecast  
19 assumptions. You can see here San Diego's  
20 household forecast is growing. I think the new  
21 Department of Finance numbers would actually  
22 increase the San Diego County population.

23 We have a difference of opinion on the  
24 persons per household. San Diego's is decreasing  
25 and we project an increase in persons per

1 household, which is a continuation of what we see  
2 as the recent, or the history over the last ten  
3 years. That leads to obviously a difference in  
4 household counts.

5 We have a faster growth in personal  
6 income in the short term. And San Diego's is more  
7 constant. And San Diego is projecting -- the  
8 growth rates, after adjusting for 2007, were  
9 relatively constant. So we have to probably try  
10 and resolve that difference.

11 Nonresidential forecast is about the  
12 same difference. San Diego's forecast grows at a  
13 higher rate than the staff. And by the end  
14 they're graphically the same.

15 COMMISSIONER BYRON: Mr. Gorin.

16 MR. GORIN: Yes.

17 COMMISSIONER BYRON: Just a quick  
18 question, if I may. I'm not familiar with the  
19 terminology in a couple of the legends. Unmanaged  
20 and managed. Is that the same as committed and  
21 uncommitted?

22 MR. GORIN: Yes.

23 COMMISSIONER BYRON: Okay, thank you.

24 MS. MARSHALL: Those were San Diego's  
25 terms; but I think they make it easier to

1 understand which one you're talking about  
2 actually, so.

3 MR. GORIN: The SMUD planning area. We  
4 have a higher consumption forecast and a higher  
5 peak forecast due to the starting point in  
6 calibration. We used the same methodology that we  
7 use for the IOUs. We hadn't done that previously.

8 The growth rates are similar to last  
9 forecast; basically it's a decision on where you  
10 start the forecast from. We're still looking at  
11 the 2006 consumption data, so there's a gap there.

12 The peak is built off of a weather-  
13 normalized peak that we discussed in the previous  
14 workshop. Per capita consumption continues to be  
15 flat. And per capita peak continues to be flat.  
16 The load factor is a little higher than it was las  
17 time, but it's projected to be relatively constant  
18 to slightly declining. The load factor in SMUD  
19 for the last ten years, while it's bounced around,  
20 is highly dependent on the weather for each given  
21 year, because the historic load factors aren't  
22 weather normalized.

23 And the residential forecast is  
24 essentially similar to what we had in the past.  
25 And the peak is similar. Use per household

1       declined slightly. I think in use per household  
2       slightly increases, historically last since 2000  
3       you could -- the trend looks like it is down.

4               We're calculating in the income effect.  
5       These are going to change, the demographic inputs.  
6       The Department of Finance has decided that in  
7       their forecast that they've decreased their  
8       population estimates for SMUD for 2010 and 2020 by  
9       what I would consider a substantial amount.

10              The income is projected to be higher  
11       than it was in the past. We have commercial  
12       consumption is higher because of floor space  
13       assumptions. Floor space, using our new method,  
14       increases at a slightly higher rate than it did in  
15       the past forecast, and starts from a higher point.  
16       Commercial square footage goes down. Peak goes  
17       down.

18              Industrial consumption is about the  
19       same. Industrial peak starts from a higher point,  
20       but is relatively constant. There's a leveling  
21       out of industrial use for production unit for  
22       value added, where it declined in the past.

23              TCU is starting from a higher point  
24       because the consumption was higher. It's driven  
25       mainly by population. If the population decreases

1 that's probably going to decrease also.

2 Water pumping and mining, which is a lot  
3 of aggregate consumption is driven by the similar  
4 drivers that we're -- have short-term increase and  
5 longer term decrease. Peak is slightly lower.

6 We have a higher forecast than SMUD by a  
7 bunch. Our forecast is 6 percent higher by the  
8 end of the forecast period; and the peak is 7  
9 percent higher. Using the population numbers will  
10 probably, will reduce that difference.

11 And most of the difference is in the  
12 residential sector forecast. So, by reducing  
13 population it will reduce residential sector. We  
14 also have a increase in use per household because  
15 of the income effect. SMUD's projecting a flat to  
16 slightly declining use per household. And, you  
17 know, in the last, since the energy crisis use per  
18 household has been increasing slightly. But over  
19 the last 15 years it's been relatively flat.

20 Nonresidential forecasts are -- grow at  
21 essentially the same rate; there may be a  
22 difference in the presumed starting point for  
23 2007. But it's only slight.

24 The nonresidential peak forecast grows  
25 at a higher rate than SMUD probably because of the

1 floor space and air conditioning assumptions.

2 Peak forecasts are relatively the same.

3 There's some difference in what the assumed  
4 history of nonresidential peaks were. They're  
5 both essentially estimated, using load data from a  
6 sample of customers.

7 Where'd LA go? Is LA here?

8 (Pause.)

9 MR. GORIN: There's not a whole lot  
10 of -- we have higher economic and demographic  
11 growth projections for LA. For this forecast  
12 cycle we used the LA City Planning Department for  
13 a resource for population.

14 In the past we've had difficulty  
15 splitting Los Angeles County up in its constituent  
16 groups. So we took the Cities L.A., Burbank,  
17 Glendale and Pasadena and looked at their  
18 projections and tried to divide the county level  
19 up, and using that instead of -- because the  
20 Department of Finance projects at a county level,  
21 which doesn't do much good if you're looking at  
22 city level projections.

23 So our forecast is higher. Peak  
24 forecast is relatively the same, it's slightly  
25 higher. Per capita consumption, while it's lower

1 than it was in previous forecasts, it's still at a  
2 higher level, but remains relatively constant.  
3 And peak is about the same as it was last time.

4 The load factor is relatively flat. So  
5 we're assuming higher starting points for  
6 residential based on calibration at a higher  
7 growth rate. This will also change with the new  
8 population forecast.

9 Residential peak rose and is higher than  
10 it was in the past. Use per household increases  
11 based on income. Residential peak use is  
12 relatively constant. This shows differences that  
13 we had. We have higher persons per household and  
14 higher population for the City of Los Angeles than  
15 we had before. Results in slightly higher  
16 household counts.

17 I think this may be more consistent with  
18 what the Department of Finance has come out with.  
19 But we're going to need to do some analysis to  
20 figure that out. The income growth rate factored  
21 in some of the city level economic information  
22 that was available.

23 The commercial building -- commercial  
24 energy forecast is higher due to square footage  
25 estimates. Lower economic drivers in the

1 industrial sector and oil extraction sector. And  
2 other TCU and other, same problem with  
3 unclassified.

4 This time we tried to distribute  
5 unclassified to each model before we ran the  
6 model. And that has changed the results somewhat.  
7 In the past we ran the model with using what was  
8 available, and then added in unclassified to it,  
9 which gave us slightly different results.

10 Commercial square footage. There's a  
11 higher history from 1990 resulting in a higher  
12 forecast. Use per square foot goes down because  
13 of building standards. Industrial consumption  
14 goes down due to lower drivers. The peak adjusts  
15 from a lower starting point due to calibration of  
16 the model.

17 There's similar decline to previous in  
18 use per value added. There's just a different  
19 definition of value added is the reason the lines  
20 are so far apart.

21 This is probably where the unclassified  
22 differences are seen from the last two forecasts.  
23 They were -- both of these are starting from a way  
24 lower point, although it's not many gigawatt  
25 hours. The peak is slightly lower, but an

1 increase.

2           We have still some differences in  
3 historic consumption for L.A. And I think some of  
4 it centers around estimates of self generation in  
5 the LADWP service area. But our forecast starts  
6 from a higher point. It's 3 percent higher on  
7 energy and 4.5 percent higher on peak. LA  
8 forecast grows at a faster rate, so by the end of  
9 the forecast period LA forecasts slightly higher  
10 on both energy and peak than the staff forecast.

11           I think that the new population values,  
12 there's an increase in L.A. County population by  
13 2010, so that's going to increase the short-term  
14 growth rate of our forecast. There's also a  
15 longer term implication of growth.

16           So, the forecast growth rates may  
17 actually be closer together after inclusion of the  
18 new population forecast than they are currently.

19           We have higher residential forecasts  
20 than LA, although theirs grows at a slightly  
21 higher rate. I think where the major difference  
22 is in nonresidential growth, which may be the low  
23 due to difference in assumption of use per square  
24 foot of future commercial buildings.

25           Okay, you want to do gas?

1           MS. MARSHALL: Talk about our gas demand  
2 forecast. Actually in the introduction we showed  
3 the total forecast for PG&E and for the southern  
4 California gas utilities. Both of those are  
5 slightly higher. We'll talk about the PG&E and  
6 SoCalGas areas specifically.

7           For the PG&E area we have a lower  
8 starting point, but we have a higher growth rate,  
9 so we end up being almost 3 percent higher than  
10 our previous forecast by the end of the forecast  
11 period. It's mostly the commercial sectors, you  
12 can see here. Our residential forecast actually  
13 is lower; has a lower starting point, although  
14 similar growth rate. And use per household is  
15 slightly declining as it has been historically.  
16 That's unchanged.

17           In the commercial sector, again our  
18 floor space forecast is increasing our forecast of  
19 gas demand quite a bit. Although on a use per  
20 square foot it's essentially the same.

21           In the PG&E area on the industrial  
22 sector is a very similar gas demand forecast. The  
23 oil and extraction industry we have a higher  
24 starting point, but very similar growth rate. So  
25 it's really the higher commercial and the high

1 nonres starting point that's increasing our  
2 forecast at the beginning.

3 This shows our energy intensity for the  
4 industrial sector declining over time as  
5 consistent with the last few years.

6 In SoCalGas I think we have a similar  
7 story; we're having a lower starting point than  
8 last time, but again, a higher growth rate. As in  
9 PG&E the residential forecast is starting a little  
10 lower, but a similar growth rate. And the energy  
11 intensity trend is essentially the same.

12 And, again, the commercial sector growth  
13 is much higher. Different starting points there,  
14 but essentially the same. Slightly declining use  
15 per square foot forecast as before.

16 In SoCalGas the mining sector is much  
17 larger than industrial. It's the reverse of PG&E.  
18 And that's TEOR activity. And we have, because of  
19 the economic driver we're using, a higher starting  
20 point, a big increase in '06. And that's  
21 something we're going to look at, but we're  
22 probably over-predicting in that first year. The  
23 industrial sector is essentially unchanged.

24 And that's the -- for the mining sector  
25 that's the energy intensity trend. And we've got

1           it essentially constant through the forecast  
2           period. We have to see if we have the right  
3           starting point, though, the issue there.

4                        So those are the staff presentations.  
5           So we'll open it up to the utilities to make their  
6           presentations. Rick, would you like to start?

7                        MR. ASLIN: Sure.

8                        MS. MARSHALL: Okay. We'll have Rick  
9           Aslin for PG&E. And this would be yours here.

10                       MR. ASLIN: Thank you.

11                       MS. MARSHALL: Okay.

12                       COMMISSIONER BYRON: Madam Chairman.

13                       PRESIDING MEMBER PFANNENSTIEL:

14           Commissioner Byron.

15                       COMMISSIONER BYRON: By my count about  
16           200 slides and just about an hour. That's about  
17           three slides a minute. Are we going to pick it up  
18           a little bit here?

19                       PRESIDING MEMBER PFANNENSTIEL: Did you  
20           have questions on those 200 slides?

21                       COMMISSIONER BYRON: I did --

22                       MS. MARSHALL: Rick, see what you can  
23           do. Do you want to have questions about the staff  
24           presentation first? I should ask.

25                       COMMISSIONER BYRON: There was one thing

1 that I didn't -- if I may, there's one item just  
2 in the last presentation that, as I've been trying  
3 to keep up here, and I'm struggling to find it.  
4 It was about slight 8, the industrial use per  
5 output, had some unspecified units on value added.  
6 I've not seen that before. Is that dollars?

7 MS. MARSHALL: yeah, that would be  
8 dollars per. Was that on the gas demand, so --

9 COMMISSIONER BYRON: Yes.

10 MS. MARSHALL: Yeah, so the value added  
11 are the industrial sector's GDB contribution is  
12 our economic driver. So we're simply dividing  
13 millions of therms by millions of dollars. So  
14 that's essentially the energy intensity relative  
15 to the economic driver we're using.

16 COMMISSIONER BYRON: Thank you.

17 MR. TUTT: I did have a couple questions  
18 regarding the inclusion of CSI forecasts. I'm  
19 very pleased that you're doing that. I just had  
20 some questions about that.

21 In your initial presentation you  
22 suggested that the amount of megawatts on peak  
23 from solar was probably less than half of the  
24 nameplate. Can you tell me what that's based on?

25 MS. MARSHALL: We used technical

1       assumptions.  Actually it was the same technical  
2       assumptions that were used in the scenario study,  
3       and they actually came from a PIER analysis that I  
4       think is about to be published.

5                But, yeah, they find that, yeah, that  
6       derate is about 46 to 48 percent.  It varies by  
7       planning area.  But it's largely a coincidence  
8       adjustment.  The solar output may peak at noon;  
9       the system peak is, you know, 4:00 to 6:00 p.m.

10              MR. TUTT:  And a big difference between  
11       4:00 p.m. and 6:00 p.m. for the solar output.

12              MS. MARSHALL:  Right, exactly.

13              MR. TUTT:  I didn't see similar charts  
14       to what you had for PG&E and Edison for the San  
15       Diego service area or any of the munis.  Has any  
16       work done on that?

17              MS. MARSHALL:  We did the same  
18       methodology; we just didn't include it.  We left  
19       out a few graphs, I guess, we could have made it  
20       longer.  But we did the exact same methodology.  
21       So we've included -- because the dataset we're  
22       using, the grid-connected PV data that our staff  
23       compiles collects data from all utilities from the  
24       state.  So we have a pretty good dataset, I think,  
25       on current installations.

1           MR. TUTT: So one last question. If you  
2 look at the PG&E graph for solar it looked like  
3 the installations per year were increasing  
4 historically. But it looked like your  
5 extrapolation in the future held those at a  
6 constant level.

7           MS. MARSHALL: Right. We took the  
8 average of the last two years and used that. So  
9 we didn't project an increasing trend, which  
10 obviously would get a much -- could be getting a  
11 much higher result.

12          MR. TUTT: Okay.

13          MS. MARSHALL: Any other questions?

14          PRESIDING MEMBER PFANNENSTIEL: Let's go  
15 on to PG&E then, and back to the whole discussion.

16          MS. MARSHALL: Okay. There you go.

17          MR. ASLIN: Well, my name is Richard  
18 Aslin and I work for Pacific Gas and Electric  
19 Company. And I just want to say that it's a  
20 pleasure to be here today. And that Pacific Gas  
21 and Electric Company does definitely support the  
22 IEPR process. I'd also like to thank Tom and Lynn  
23 for all the work they've put into the report thus  
24 far, and over the last several rounds of the IEPR,  
25 being very helpful to a very, I think, a really

1 good process and it works really well.

2 I don't know if I'll be able to go  
3 through each slide any quicker, but I have fewer  
4 slides. That I can promise you.

5 So, with that said, just go a little  
6 overview here. So what I'm going to do is I'm  
7 going to just briefly give my first impressions of  
8 the electric peak load forecast; and then segue to  
9 the energy forecast for electricity. And then  
10 talk about what I think would be some useful next  
11 steps.

12 And then I am going to turn it over to  
13 Richard Hendricks who also works for Pacific Gas  
14 and Electric Company, and he can talk about the  
15 gas demand forecast, his first impressions from  
16 that.

17 Can everybody hear me okay? Okay. We  
18 just want to kind of jump right in here because it  
19 was really kind of hard to make any sort of really  
20 firm statement about the forecasts because of this  
21 kind of outstanding issue about what is the level  
22 of energy efficiency savings in the uncommitted  
23 period.

24 So, what you're looking at here on this  
25 particular slide is the bottom blue line is the

1 staff's draft forecast for PG&E's service area.  
2 This is the peak forecast. The top red line is  
3 actually PG&E's forecast, but that's the forecast  
4 without any kind of adjustment for energy  
5 efficiency savings in the uncommitted period.

6           Regardless of where those savings might  
7 have come from. So regardless of whether they  
8 would have come from standards or whether they  
9 would have come from programs. It's just that's  
10 what our forecast looks like if there's no  
11 adjustment for any energy efficiency in the  
12 uncommitted period.

13           And then the green line is what our  
14 forecast looks like if you fully adjust it. And  
15 when I say fully adjust it, I mean you build in  
16 the target levels of energy efficiency savings.

17           And as you can see, Lynn pointed this  
18 out earlier, that if you compare the staff's,  
19 their forecast, the draft forecast, with our  
20 forecast after it's been fully adjusted, the two  
21 forecasts are very similar. Both in terms of the  
22 rate of growth and in terms of the level.

23           But we need to work with staff to  
24 understand what is the level of energy efficiency  
25 savings in the uncommitted period before we can

1 really come to some consensus about this forecast.

2 Just to put some words with this, so  
3 what we have built into our forecast in the  
4 uncommitted period is 2000 megawatts of  
5 incremental conservation. So that's consistent  
6 with the targets. The current targets go through  
7 2013, but we just extrapolated them out to 2016.

8 And just to give you some idea, so if we  
9 don't include the uncommitted energy efficiency  
10 targets then the growth rate of our peak load is  
11 2.5 percent. But once we include the energy  
12 efficiency targets, and we net those out, then the  
13 peak load growth reduces to 1.5 percent. But  
14 that's still a little bit higher than the staff's  
15 draft forecast, which has a peak load growth of  
16 about 1.3 percent.

17 And, again, what I'm hoping will come  
18 out of this is we'll be working with the staff  
19 over the next several weeks to try to understand  
20 what level of energy efficiency savings is  
21 included in that uncommitted period.

22 Is there any questions on this part?

23 This is the energy demand forecast. And  
24 as you can see, it's really just the same story.  
25 The blue line is the staff's draft forecast; the

1 green line is PG&E's forecast, you know, with the  
2 adjustment for the energy efficiency savings in  
3 the uncommitted period.

4 The red line is what PG&E's forecast  
5 would be if we don't include any adjustments for  
6 energy efficiency in the uncommitted period. And  
7 so you can see that it's really hard to make a  
8 comparison at this point, or make any kind of firm  
9 statements about how we feel about the staff's  
10 forecast until we can determine what is the level  
11 of the energy efficiency savings that are included  
12 in the uncommitted period.

13 But just to give you some idea on the  
14 energy side. So, on the energy side during this  
15 uncommitted period, which is 2009 through 2016, we  
16 have 9000 gigawatt hours of energy efficiency  
17 savings.

18 And whether that comes from programs  
19 that are designed, or from standards that are put  
20 in place, it's irregardless of that. That's just  
21 how much we reduce the forecast. And that's,  
22 again, consistent with the current targets.

23 So what we would have if we don't adjust  
24 for energy efficiency, we're going to have growth  
25 of about 2.2 percent in energy demand. But once

1 we adjust for energy efficiency that cuts the rate  
2 of growth about half, down to 1.1 percent.

3 And the last thing -- well, almost the  
4 last thing, I wanted to bring out is that if we  
5 look at our projections of systems load factors,  
6 again use the same color scheme here.

7 So, the blue is the staff's draft  
8 projection. That's the load factor. And it's  
9 decreasing, and we think that's appropriate. We'd  
10 like to say actually that one thing that we do  
11 like is the direction in this forecast relative to  
12 the last IEPR.

13 In the last IEPR the energy and peak  
14 grew at exactly the same rate. Now there is this  
15 differential growth rate. Actually we feel the  
16 differential growth rate probably should be a  
17 little bigger. And that's what we have in our  
18 forecast. So we have peak growing at 1.5 percent;  
19 we have energy growing at 1.1 percent. And so we  
20 actually end up getting this steeper decline in  
21 the load factor over time.

22 But one thing I would also point out is  
23 kind of interesting. If you look at the green  
24 line what you'll see is at the end it actually  
25 starts to level off. And all that's showing is

1 that you can use the energy efficiency programs,  
2 the design of those programs, to, you know,  
3 reshape your load factor.

4 So what's happening there is that at the  
5 end of the period the energy efficiency targets  
6 are much heavily more targeted on the peak than  
7 they are on energy. And so you start to get this  
8 leveling out in the load factor. It's just kind  
9 of an interesting thing to think about. This load  
10 factor is not completely out of our control,  
11 especially with the amount of energy efficiency  
12 programs and also standards that things -- levers  
13 that are available could help us with that.

14 I think I just went over all that. And  
15 so I'd just like to, as far as the gas part of it  
16 is concerned, -- or electric, I'm sorry, I'd just  
17 like to say that the next steps that I would like  
18 to see is I'd like to just see us working more  
19 with staff to understand not only the level of  
20 energy efficiency programs that are embedded in  
21 the staff's forecast, but the nature of them.

22 So whether they're programs, or whether  
23 they're standards, or whether there's any  
24 distinction between those two and if that's  
25 important.

1           The second is to reach some consensus on  
2           any sort of starting point issues, because I think  
3           Lynn did mention that on the energy consumption  
4           side we do have a slight discrepancy in the  
5           starting point. But the growth rates are about  
6           the same.

7           And then also it would be very nice to  
8           understand how the differentials in the growth  
9           rate between peak and energy are being modeled in  
10          the end use modeling process, because I don't  
11          fully understand that.

12          And the last thing is right now we're  
13          just looking at the expected value forecast. And  
14          one of the really beneficial things in the last  
15          IEPR was the various scenarios. So there was  
16          different load growth scenarios.

17          And it looks like, you know, maybe  
18          there's CSI scenario that could be put in there.  
19          What I personally would like to see in this round,  
20          though, I think I mentioned this a few weeks ago  
21          when I was up here, is I would really like to see  
22          us take a shot at a global warming type scenario.  
23          Just to see what we could come up with there.

24          I think waiting for the next round in  
25          the IEPR would be a long wait for that. So, I'd

1 like to see if we could just develop something.  
2 It wouldn't be perfect, but it could be something  
3 that we could look at. And just kind of judge  
4 what the ramifications of that would be.

5 And that's all I have on the electric  
6 side. And if we have time for the gas, can we do  
7 that?

8 MS. MARSHALL: Yes.

9 MR. ASLIN: Okay, come on up, Richard.  
10 And, Lynn, could you help us with the --

11 (Pause.)

12 MR. HENDRICKS: I'm Richard Hendricks;  
13 I'm PG&E's gas demand forecaster. And I'd like to  
14 thank staff for assisting in making these  
15 comparisons between their draft forecast and our  
16 forecast. It's challenging -- I find it  
17 challenging making these comparisons, because we  
18 forecast by customer class, whereas staff  
19 forecasts by industrial groupings. And so it's  
20 kind of a juggling act to try to move volumes,  
21 therms from one class to another to make a  
22 reasonable comparison. So, thank you.

23 The first slide here is total PG&E gas  
24 demand. This is excluding, however, the  
25 cogeneration and EG gas demand. But it's pretty

1 much everything else.

2 Now, you'll see the overall PG&E's both  
3 recorded data and forecasts are higher than those  
4 of the CEC. That masks -- a couple differences,  
5 though, when you look at res versus nonres, which  
6 we'll look at in a moment.

7 The recorded data in here for the CEC  
8 goes from '03 through '05; for the PG&E line it  
9 goes from '03 through '06. The dip that you see  
10 there in the first part of the CEC line is  
11 presumably related to what we call core  
12 residential and commercial, the more temperature-  
13 sensitive parts of the market. And we had some  
14 relatively warm years from '03 through '05, which  
15 is causing presumably that dip.

16 Having said all that, it's perplexing  
17 that the recorded data is different for PG&E than  
18 for the CEC. So I think we need to work with  
19 staff to try to figure out what we're counting  
20 that they are not, or vice versa.

21 So these are some of the comments. The  
22 first comment was just the need to develop this  
23 consensus. On average, if you look at total  
24 customer gas demand, PG&E's forecast is roughly 4  
25 percent higher than that of the CEC. And we'll

1 talk about that in a little more detail in just a  
2 moment.

3 Because the relationship between the two  
4 forecasts for res are different from what it is  
5 for nonres.

6 The growth rates for both over the  
7 forecast period going from '06 to 2016 or '07 to  
8 2016, are not terribly different. The staff's  
9 forecast is a little bit, has a more robust growth  
10 rate than we do.

11 Okay, so here's the res forecasts. And  
12 again, it's interesting to look at the recorded  
13 period here, and notice that there are obviously  
14 differences in perceptions of what historical data  
15 has been.

16 '05, as I mentioned before, is, I think,  
17 the last year for recorded data for the CEC Staff.  
18 And again, since '05 was a relatively warm year,  
19 gas demand was down. But then it shoots up in '06  
20 interestingly enough as the forecast goes back to  
21 quote-unquote normal temperatures.

22 The thing I want to sort of take note of  
23 here, though, is that in actual terms '06 was a  
24 relatively normal year. And just if you look at  
25 the recorded data for PG&E, which in '06 is

1 recorded in the red line, it's substantially lower  
2 than that for the staff forecast, indicating one  
3 of two things, perhaps both.

4 Perhaps the temperature normalization  
5 process that staff is using is a little bit too  
6 robust. And it could be also that the price  
7 forecast they were using for '06 was lower than  
8 what PG&E -- prices turned out to be.

9 Trends are not terribly different, the  
10 growth rates. But there is some difference.

11 Comments. Again, we just need to figure  
12 out what is a good starting point. You know, what  
13 we're including that staff is not. The spike that  
14 goes into '06 is somewhat interesting. We  
15 probably need to discuss that.

16 The trend growth rate, however, for the  
17 staff forecast seems a little bit too aggressive.  
18 It goes up at about 1.2 percent per year, and  
19 that's roughly the rate of increase for our  
20 household growth or our residential customer  
21 growth.

22 And as staff mentioned, residential  
23 consumption -- gas consumption per customer has  
24 been dropping. It's been dropping for years and  
25 years, implying that probably overall gas demand,

1 residential gas demand should be going up by  
2 something a little bit less than 1.2 percent.

3 Lastly, there doesn't seem to be any  
4 energy efficiency savings that were mandated by a  
5 PUC decision from about three years ago. That's  
6 in the early part of the forecast, that is not  
7 substantial, but it grows fairly significantly by  
8 the time you reach 2016.

9 Here are the nonres forecasts compared.  
10 Again, for the recorded period for PG&E, '03  
11 through '06, we're somehow including things that  
12 the staff was not, so we probably need to discuss  
13 that.

14 The growth rates, however, are very very  
15 close between the two forecasts. Basically  
16 everything that's in here is industrial and  
17 commercial demand, as we see it. In staff  
18 parlance I guess it's mining, agriculture,  
19 industrial and commercial.

20 Again, this is just repeating a couple  
21 points that I just mentioned. I think we have no  
22 problem with the growth rate over the forecast  
23 horizon. There just seems to be a much lower  
24 starting point.

25 In 2005, the last year of recorded data

1 for staff there's a difference of 9 percent  
2 between the two sets of recorded data, which is  
3 troubling.

4 Things to do in the future. Try to  
5 figure out, you know, what we're counting that  
6 staff is not. And talk about residential growth  
7 rates which seem a little bit high to us on the  
8 staff forecast.

9 Any questions?

10 PRESIDING MEMBER PFANNENSTIEL:

11 Questions?

12 COMMISSIONER BYRON: Actually my  
13 questions might be for both of you, so I hope you  
14 don't mind. And you'll have to indulge me just a  
15 little bit. My fellow Commissioners, I'm sure,  
16 are much more familiar with how these analyses are  
17 done than I am. So I'm just going to ask basic  
18 questions.

19 First, though, thank you very much for  
20 being here and for your efforts to coordinate with  
21 staff. I think it's really a worthwhile exercise  
22 that we go through here; and to try and figure out  
23 why they're different is a likewise worthwhile  
24 exercise.

25 But in terms of how PG&E does these

1 kinds of forecasts, can you tell me how often you  
2 do them?

3 MR. HENDRICKS: On the gas side it's  
4 generally once a year unless the last forecast is  
5 not tracking very well for whatever reason, in  
6 which case we would do it more frequently than  
7 once a year.

8 COMMISSIONER BYRON: Likewise for  
9 electricity?

10 MR. ASLIN: Yes.

11 COMMISSIONER BYRON: Yes, okay. And so  
12 when was your last forecast done, if I may ask?

13 MR. HENDRICKS: The gas demand forecast  
14 was developed in January of this year in  
15 preparation for a regulatory proceeding that never  
16 happened. So, it's basically six months old.

17 COMMISSIONER BYRON: And are these the  
18 same forecasts both for electricity and gas that  
19 are used internally within the company?

20 MR. HENDRICKS: Yeah.

21 MR. ASLIN: Yes. We only have this one  
22 set of forecasts that we use. We do track them  
23 every month. And, you know, we do have the  
24 ability to update the forecast if it start to, you  
25 know, vary from actual. We use this for

1 budgeting; we use it for regulatory proceedings;  
2 we use it for rate setting. We use this for  
3 everything, so.

4 COMMISSIONER BYRON: And if I may, it's  
5 all done bottoms-up, correct? In other words, you  
6 do these forecasts and they're reviewed by  
7 management. Are they adjusted by management at  
8 anytime?

9 MR. ASLIN: They're not adjusted  
10 explicitly by management. But we do take into  
11 consideration different people's points of view  
12 since we have a lot of people at PG&E who are very  
13 knowledgeable about the market and have different  
14 points of view as to where things could be going.

15 So it is a consensus forecast within  
16 PG&E.

17 COMMISSIONER BYRON: So, based upon the  
18 most recent forecast did you make any substantial  
19 changes based upon internal reviews?

20 MR. ASLIN: I think on the electric side  
21 probably the biggest things that we changed, based  
22 on internal review, was we included a forecast for  
23 electric vehicles. We had electric vehicles  
24 forecasting in the forecast previously for the  
25 last few years, but we had found that just the way

1       it was done it didn't really make a lot of sense.  
2       It wasn't turning out that we were seeing those  
3       kind of volumes. So the electric vehicles  
4       department did rethink their forecasting process;  
5       we put that in.

6                 Another adjustment that we made was for  
7       the agricultural internal combustion engine  
8       program where we were offering incentives to  
9       change out internal combustion engines for  
10      agricultural pumping in the Central Valley. That  
11      led to increases in load for the electric side.  
12      And -- well, actually they were diesel engines.  
13      But we're also offering that incentive going  
14      forward, I think, for natural gas, or we proposed  
15      that. So that was in there.

16                Other than that, we had a lot of  
17      discussion around CSI, and what impact CSI, you  
18      know, would have; what was the likely thing. And  
19      that's why we actually when we submitted the  
20      forecast we did submit four different scenarios  
21      for CSI because we just couldn't pick one.

22                COMMISSIONER BYRON: And thank you. And  
23      one last question. Since the heat storm of last  
24      July did you make any substantial changes in the  
25      way you did your forecast this year over previous

1 years?

2 MR. ASLIN: Yes, yes, we did. We really  
3 made a lot of changes based on the workshops that  
4 we had for the heat storm and all the discussion  
5 we had around the heat storm.

6 We completely revamped our temperature  
7 statistic. So we went to using an 11 station  
8 sales weighted temperature statistic. We built in  
9 the minimum temperature as well as the maximum  
10 temperature. Because, if you recall, that was a  
11 major kind of feature of the heat storm.

12 And we recalculated the expected value  
13 for each of the months in the forecast for the  
14 temperature, I don't know what you'd call it --  
15 the benchmark, or the one-in-two temperature, as  
16 well as the one-in-five and the one-in-ten. So we  
17 did do a lot of work based on the heat storm.

18 COMMISSIONER BYRON: Thank you.

19 PRESIDING MEMBER PFANNENSTIEL: Just a  
20 quick question on methodology. Did you base those  
21 forecasts, both electric and gas, on the same  
22 RASS, residential appliance saturation survey data  
23 that the staff used?

24 MR. ASLIN: Well, we don't really have  
25 an end use model. These are all econometrically

1 based models.

2 PRESIDING MEMBER PFANNENSTIEL: I see.  
3 So it's just really a completely different  
4 starting point?

5 MR. ASLIN: Yes, that's right. Although  
6 I would say that we do look at the residential  
7 appliance surveys because we -- not everything is  
8 contained in the historical data. So that gets  
9 you, you know, 60, 70 percent of the way there if  
10 things are, you know, stable and -- we really have  
11 to put a lot of thought into how things are  
12 changing in the future, so.

13 We did look at the residential appliance  
14 surveys, especially the idea that air conditioning  
15 saturations in kind of the South Bay area seemed  
16 to be a lot higher than they were in the previous.  
17 We didn't --

18 PRESIDING MEMBER PFANNENSTIEL: Yeah, I  
19 was actually trying to get sort of to that, about  
20 the question of air conditioning saturation being  
21 greater, and being greater in certain areas that  
22 you used to see. And how do you get to that? And  
23 do you think you have fully captured that in your  
24 current set of numbers?

25 MR. ASLIN: I'm not sure if we've fully

1 captured it, but I can tell you that this forecast  
2 that we have and that we submitted in the 2007  
3 IEPR is both higher in its level, so that the  
4 starting point is higher, and the growth rate is  
5 higher than it was previously.

6 So, you know, we're making attempts to  
7 capture that. And we really have to just kind of  
8 wait and see how that plays out. Probably some of  
9 it has to do with income effect; some it has to do  
10 with the housing boom.

11 So, there's a lot of variables out  
12 there. That's, again, why I think the scenarios  
13 are so important. I just don't think we can  
14 capture it all in just one, you know, here's the  
15 forecast.

16 PRESIDING MEMBER PFANNENSTIEL: I know I  
17 saw it a minute ago, and I kind of can't find it  
18 again, your load factor. How is your load factor  
19 doing? Is it decreasing a bit? And it's  
20 decreasing based on air conditioning load, is that  
21 the hypothesis?

22 MR. ASLIN: Yes. Yeah, the load factor  
23 has been decreasing. It's been steadily  
24 decreasing over the last several years. And it's  
25 a little hard to look at load factor and make a

1 lot of inference just from looking back a few  
2 years because the peak is so sensitive to  
3 temperature; and the annual energy is not nearly  
4 as sensitive.

5 So you get a lot of bouncing around in  
6 the load factor. But we have seen load factor  
7 decreasing. We are expecting load factor to  
8 decrease going forward, just because of where the  
9 population is growing in our service territory.  
10 It's places where you are going to have an air  
11 conditioner and you're going to use it.

12 PRESIDING MEMBER PFANNENSTIEL: You  
13 didn't show, did you, a per capita electricity  
14 use, either recent historical or a forecast? Did  
15 you show that? I know Lynn did it, but I didn't  
16 see one in yours.

17 MR. ASLIN: No, we didn't have that.  
18 But I can tell you that per capita household  
19 consumption is pretty stable.

20 PRESIDING MEMBER PFANNENSTIEL: Thank  
21 you.

22 ASSOCIATE MEMBER GEESMAN: Can I ask  
23 your reaction to the staff's use of constant  
24 prices in their electricity forecast?

25 MR. ASLIN: Well, that is what we use,

1 also.

2 ASSOCIATE MEMBER GEESMAN: So you think  
3 it's a pretty good approach?

4 MR. ASLIN: I think, given that the  
5 market is not really all that price sensitive,  
6 especially in the short term, it makes a lot of  
7 sense to go that way. I think if the market was  
8 more price sensitive it probably would behoove  
9 everyone to put more effort into that. But that's  
10 what we use, also, real prices, constant.

11 ASSOCIATE MEMBER GEESMAN: Thank you.

12 PRESIDING MEMBER PFANNENSTIEL: Thank  
13 you.

14 MS. MARSHALL: Art Canning from Edison.

15 MR. GILLIES: Good afternoon. I'm John  
16 Gillies; with me is Art Canning. We are from  
17 Southern California Edison. We have a brief  
18 presentation on our latest electricity sales and  
19 demand forecast; and some comments on the  
20 comparison with the CEC's latest forecast, as  
21 well.

22 A brief comment on methodology. We,  
23 like many utilities, use an econometric approach  
24 in estimating and forecasting electricity sales.  
25 We do use allocate our energy by customer class.

1 And we have six separate customer classes that we  
2 do separate forecasts for and add them up to get  
3 our total retail energy.

4 And like most utilities and the CEC, we  
5 seem to have a generally common set of drivers, or  
6 factors that influence energy consumption, such as  
7 weather, electricity prices, income, employment.  
8 All those things factor into our modeling in one  
9 way or another.

10 We have a relatively large sample  
11 period. We can go back and estimate  
12 relationships, say even from the early '90s right  
13 up to the, well, the current quarter of 2007 in  
14 any case.

15 We combine our forecasts of electricity  
16 consumption per customer with another set of  
17 models that do forecasts of the number of  
18 customers or building square footage, and combine  
19 those two to get our final sales forecast.

20 We use another set of econometric models  
21 to do the peak demand. Every summer we estimate a  
22 relationship between the daily peak and the  
23 maximum temperature for the summer months. And  
24 thereby we tend to accumulate our own historical  
25 database of parameters that associate demand with

1 the weather component, and the other baseload  
2 component.

3 And so with this historical dataset then  
4 we do regressions on how these particular  
5 parameters we've estimated vary according to other  
6 economic factors, say such as customer growth.

7 So we have a set of equations for peak  
8 demand that's not entirely associated with growth  
9 in retail sales, but has its own separate trend.

10 As a brief summary of how our growth  
11 rates compare with the staff's forecast, I've used  
12 the period '06 to 2018 to estimate average annual  
13 growth rates. And you see that our energy  
14 forecasts are relatively similar. We estimate --  
15 the CEC has 1.2 percent average annual growth in  
16 the SCE planning area over that period of time.  
17 And we have about 1.5 percent.

18 But that 1.5 percent is a forecast that  
19 has been reduced again by the uncommitted energy  
20 efficiency.

21 On the demand side, however, we do have  
22 somewhat more of a difference. We see peak demand  
23 continuing to grow faster than energy over the  
24 forecast period, consistent with what we've seen  
25 in the recent history.

1           Just some of the drivers which influence  
2           our different forecasts of energy and peak demand.  
3           We haven't had a lot of time to investigate this  
4           in detail, but we did notice that staff has  
5           households growing at a -- well, less than 1  
6           percent between 2006 and 2018. We have a little  
7           bit more at about 1.2 percent.

8           Our commercial floor stock growth rates  
9           now look to be approximately the same.

10           We use a different set of drivers in the  
11           manufacturing sector, not so much value added.  
12           We're a little bit more on the pessimistic side  
13           among our manufacturing customer class. We see  
14           manufacturing employment and floor stock  
15           continuing to decrease over time.

16           We did graph the residential household  
17           additions data that we had from staff and compared  
18           it to what we have in the historical period, and  
19           over the period '07 to '18.

20           And they're relatively close in  
21           historical measurement. But we do have some  
22           differences over the forecast period. We're both  
23           projecting a decline in residential additions in  
24           the '07, say, '09 period, as a result of the  
25           slowdown in residential housing construction. But

1 we do see somewhat a recovery in the residential  
2 construction industry by 2010. Whereas staff  
3 seems to have their additions continuing on  
4 throughout the period at a relatively low rate.

5 So, say given our brief analysis of what  
6 we've seen so far, that may be one of the reasons  
7 why we have a higher growth rate overall over the  
8 period in the total retail sales.

9 I'll now turn it over to Art Canning.

10 MR. CANNING: Thank you. It's great to  
11 be here. Nice to see you, Tim, again, and  
12 Commissioners and Staff.

13 We've been working daily with Lynn,  
14 trading emails, trying to get data. A lot of this  
15 analysis was just done either last Thursday,  
16 Friday or this Monday. So it was done quickly.

17 I really want to point out that that  
18 level you see between 1990 and 1999 or so, that  
19 was when the L.A. Basin was going through the  
20 aerospace recession. We lost about a half a  
21 million jobs. It drove down the housing market.  
22 Banks were going out. There was a lot of economic  
23 pessimism going on during that period.

24 And if you'll look -- and we're about  
25 the 30,000, 35,000 range of household additions.

1 And staff now has the forecast down around that  
2 same long-range number.

3 Now, they mentioned that they're going  
4 to update it with a new demographic forecast. We  
5 think that 60,000 customers is probably where  
6 we're going to be in the long run, L.A. Basin  
7 still being a very big immigration center. So  
8 immigrants from either South America or from the  
9 Asian countries come, have families there, and  
10 then they migrate out over a period of time.

11 But we're still quite a hub. So it  
12 doesn't mean that we're getting people from Iowa  
13 moving into Long Beach, as might have been  
14 happening 30, 40 years ago. But we're still  
15 getting a lot of immigration from outside.

16 ASSOCIATE MEMBER GEESMAN: Where do you  
17 come up with your demographic inputs?

18 MR. CANNING: We use Global Insight,  
19 which used to be DRI as a forecast. And then  
20 break out their statewide by their county  
21 forecast. And then allocate the counties to  
22 what's Edison and what's not Edison.

23 ASSOCIATE MEMBER GEESMAN: What vintage  
24 are you using in this chart, for example?

25 MR. CANNING: First quarter 2007.

1           ASSOCIATE MEMBER GEESMAN: Okay.

2           MR. CANNING: So this forecast was done  
3 in April 2007. We'll be using it in our general  
4 ratecase submission. It was not used in the long-  
5 term procurement plan. That was the last October  
6 one. And there's some differences there, and  
7 we'll bring that up, also.

8           But here's a fairly big difference in  
9 assumptions in number of households.

10          ASSOCIATE MEMBER GEESMAN: If I may, and  
11 I'm not certain there's anybody here that knows  
12 the answer, but I think this question came up in  
13 2005, as well. Are we not under some kind of  
14 obligation, which may be statutory, to use the  
15 Department of Finance population projections?

16          MS. MARSHALL: No, that isn't true.  
17 That's kind of a myth around here.

18          ASSOCIATE MEMBER GEESMAN: Okay.

19          MS. MARSHALL: It may have been true at  
20 one point, but we're not constrained by that  
21 anymore.

22          ASSOCIATE MEMBER GEESMAN: Okay. Thank  
23 you.

24          MR. CANNING: And as was noted in The  
25 L.A. Times today when they talk about the --

1 forecast, Riverside and San Bernardino would be  
2 the highest growing counties. So, really, there  
3 is a building cycle going on now. But we've seen  
4 building permits already flatten off, so they've  
5 reached the bottom. They haven't turned up yet,  
6 but at least the decline has stopped. And we  
7 declined less than the state or northern  
8 California, as a whole.

9 Now we'll come to our best effort at  
10 comparing our energy forecast. And staff produces  
11 a definition called energy consumption. Edison  
12 internally does retail sales. There's a fair  
13 amount of difference in this. Rather than adjust  
14 staff's definition to us, we adjusted us to staff.  
15 So this is our best estimate at putting us on the  
16 same basis, but highlighting also what has been  
17 brought up by PG&E and told also by Lynn that  
18 energy efficiency programs for Edison are a  
19 differential.

20 So here we see the dark blue line is the  
21 staff forecasted consumption history and the  
22 forecast. The green line would be what we'd be  
23 forecasting if we did not subtract off the  
24 uncommitted energy efficiency programs, post 2009  
25 and beyond.

1           And to clarify, what I understand, the  
2 PUC has set targets through 2013. And this was a  
3 big issue in the long term procurement plan. So  
4 in the staff witness, it was Sylvia Bender, in  
5 rebutting Edison's forecast. We had taken the  
6 staff forecast and deducted our forecast of  
7 uncommitted conservation from it, saying because  
8 the staff had said they had deducted none, our  
9 resource planners said well then we'd better  
10 deduct the number that we're deducting from ours.

11           The staff came back, and if I'm quoting  
12 you right, it was not all of the energy efficiency  
13 should be subtracted.

14           So I think that's what needs to be  
15 looked at. How much of it is -- we've got to get  
16 on a common ground here. Pre-deregulation energy  
17 efficiency was sort of thrown in the basket on  
18 supply side to see how it traded off with  
19 generation resources.

20           Well, now with the loading order putting  
21 energy efficiency on top, I think we can go ahead  
22 and reduce the demand forecast by the uncommitted,  
23 the best outlook for uncommitted energy  
24 efficiency. And it's still reasonably expected to  
25 occur. So it's not unlikely, it's just not funded

1 yet.

2 ASSOCIATE MEMBER GEESMAN: What do you  
3 think of the CPUC's CSI initiative, the solar  
4 program? How should that be reflected?

5 MR. CANNING: In the long-term  
6 procurement plan we took Commissioner Peevey's  
7 directions and we saluted him and put in the 800  
8 megawatts reduction. And we delayed it two years,  
9 a little bit slower to -- it would build up in its  
10 impact.

11 So we were allocated, I think, a large  
12 share of the CSI, about 800 megawatts by 2016. I  
13 think we said it would be 2018 or 2019 before we  
14 actually got there. So we put in 20 megawatts  
15 incremental the first year; 30 megawatts, 40  
16 megawatts, we ramped it up.

17 In this forecast, in talking with my  
18 senior manager, they said, Art, I want you to take  
19 that out of the supply plan and put it over in the  
20 demand forecast because it's really going to be a  
21 demand reducer.

22 You asked PG&E if we'd had any  
23 discussions with management. They also said, and  
24 electric technologies are heating up again.  
25 There's so much influence of greenhouse gas

1 reduction. Industrial customers are coming to us,  
2 asking what can we use to electrify to get -- in  
3 other words, we're going to take on the burden of  
4 greenhouse gases so they don't have gas- or  
5 propane-powered forklifts; the cold ironing at the  
6 ports; the truckstops where they now can pull in  
7 the air conditioning unit from electric air  
8 conditioning from the side and plug into their  
9 window. All this starts to add up.

10 Now, the big one then is plug-in  
11 hybrids. And I think Edison had a news release  
12 yesterday how we have an incentive, a program with  
13 Ford. Toyota has come out and said indirectly  
14 their next generation of batteries is ready to go;  
15 and the Prius will be redesigned in 2009.

16 So we have included in our forecast an  
17 outlook based on the TIAX study that was, I think,  
18 funded by the CEC, about two years ago. And our  
19 electrotechnologies people, I worked with them to  
20 update.

21 So we're assuming something like 40,000  
22 or 50,000 plug-in hybrids a year after 2010, which  
23 is about 5 percent of the California market. It's  
24 not a big number, but it's something I wanted in  
25 there. I said I know it's got to be included. I

1 don't know what the right number is, but let's put  
2 in something as a placeholder.

3 ASSOCIATE MEMBER GEESMAN: And that's in  
4 this forecast?

5 MR. CANNING: That's in this forecast.

6 ASSOCIATE MEMBER GEESMAN: And --

7 MR. CANNING: And it doesn't kick in  
8 until the out five years. I mean, it ramps up  
9 after -- it starts in 2010 and then ramps up.

10 ASSOCIATE MEMBER GEESMAN: And you put  
11 the 800 megawatts of solar in this forecast?

12 MR. CANNING: Yeah, we put in 800  
13 megawatts of nameplate. And like PG&E said, we  
14 looked at the ITRON study, which again I think was  
15 funded by the CEC -- or done jointly with PG&E,  
16 I've forgotten which one. But they showed a 40  
17 percent reduction on peak because peak occurs at  
18 3:00 to 4:00.

19 But we put in the nameplate, as Governor  
20 Peevey suggested. So -- I don't know the --

21 ASSOCIATE MEMBER GEESMAN: We call him  
22 President Peevey here.

23 MR. CANNING: It's the Governor who's  
24 going to be upset when he finds out his million  
25 solar households is not going to be met. It was

1 President Peevey who instructed us how much to put  
2 in. That's right.

3 But I just smile as you're going to  
4 explain to the Governor why you likely don't think  
5 the million solar household is going to be reached  
6 when you adopt whatever forecast you adopt.

7 I might have personal opinions on it,  
8 but the company's stance is still to go with  
9 Commissioner Peevey's directions.

10 So we have electrotechnologies, which  
11 boosts us up a little bit, and CSI, which brings  
12 us down a little bit. But overall, we're still  
13 got a significantly higher forecast than the staff  
14 does. And it shows up most in peak demand.

15 So we're -- we've talked about this  
16 before in the last two months in meetings on the  
17 resource adequacy. For 2008 there's a fairly big  
18 difference and half of it starts from how we  
19 weather adjust 2006. Half of it comes from what  
20 we think our 2006 to 2008 growth rate is.

21 And that all stems from a declining load  
22 factor. Our energy growth rate in the first year  
23 is not all that much different from the staff's.

24 In the long run we're 2000 megawatts  
25 different by 2016. When we look over at what's

1       happening in the long-term procurement plan this  
2       is 2000 megawatts of additional need for SP-15.  
3       And it really impacts the need for new  
4       construction.

5               Now, the last thing we want to do is  
6       delay decisions until it's too late, and then we  
7       have to do emergency procedures. So I just bring  
8       that up, that, yes, there's some uncertainty about  
9       the forecast, but let's -- I just ask you to  
10      consider what Edison has to say, that we don't  
11      want to be stuck with last-minute decisions.

12             ASSOCIATE MEMBER GEESMAN: Well, let me  
13      remind you of how we addressed that in our 2005  
14      report. Because, you know, there is uncertainty  
15      in any of these forecasts. But our  
16      recommendations, as a Commission, to the long-term  
17      procurement proceeding was that in addition to  
18      meeting your forecast demand, that your  
19      procurement policy ought to also reflect  
20      investment in new plants in order to retire or  
21      replace a bunch of the older plants.

22             The other two investor-owned utilities  
23      seem to have taken that recommendation quite a bit  
24      more to heart than Southern California Edison has.

25             And I think that's one way of bridging

1 any difference or gap that may exist between the  
2 two demand forecasts, would be to address the  
3 other reasons why you would want to engage in  
4 long-term procurement.

5 MR. CANNING: Well, I think -- yes,  
6 exactly. The retirements of the old gas plants is  
7 an important decision. And I know we've made some  
8 assumptions about that which are nowhere near the  
9 9000 megawatts recommended by the Commission.

10 But true, if you retire -- you can't  
11 retire 9000 megawatts in SP-15 and serve the  
12 demand. You're going to have to repower those.  
13 And --

14 ASSOCIATE MEMBER GEESMAN: And that was  
15 included within --

16 MR. CANNING: Okay.

17 ASSOCIATE MEMBER GEESMAN: -- the  
18 definition we used --

19 MR. CANNING: And the trouble is nobody  
20 in this room has any control over when and if  
21 those things will be retired or repowered. Those  
22 are owned by private entities.

23 ASSOCIATE MEMBER GEESMAN: Yeah, you  
24 have to sign contracts with them.

25 MR. CANNING: The retirement --

1                   ASSOCIATE MEMBER GEESMAN: You have to  
2 go out to bid.

3                   MR. CANNING: I'm not the resource  
4 planning specialist, but it's been explained to me  
5 that some of them, like the peaking units, may get  
6 retired when the new peaking units get built.

7                   ASSOCIATE MEMBER GEESMAN: And that's  
8 good.

9                   MR. CANNING: But that's resources that  
10 just disappear and we've lost Devers-Palo Verde  
11 possibly forever, possibly for a few years delay.

12                   ASSOCIATE MEMBER GEESMAN: You lost  
13 Devers-Palo Verde, we didn't.

14                   MR. CANNING: Thank you very much. It's  
15 been lost. The Arizona Commission voted against  
16 it. It's --

17                   ASSOCIATE MEMBER GEESMAN: The federal  
18 government may come in and help you out there.

19                   MR. CANNING: Thank you. I hope so, but  
20 it's been delayed, at the very least. Our  
21 resource planners are very concerned that if you  
22 start assuming a lot of retirements, along with  
23 the delay or nonexistence of Devers-Palo Verde,  
24 the physical resources aren't there, and the  
25 transmission resources aren't there.

1                   So, --

2                   ASSOCIATE MEMBER GEESMAN: Which is why  
3                   you ought to get your long-term procurement  
4                   program in action.

5                   MR. CANNING: Well, I'll just thank you  
6                   very much. I'm not the long-term procurement  
7                   resource planner. I'm a forecaster. But, I know  
8                   we're doing --

9                   ASSOCIATE MEMBER GEESMAN: Yeah, but I  
10                  guess what I wanted to say is don't insinuate that  
11                  we are selling your service territory short in our  
12                  procurement recommendations because our forecast  
13                  is 2000 megawatts different from yours.

14                  MR. CANNING: It's part of the picture,  
15                  though. If you have a 2000 megawatt lower  
16                  forecast, it's going to --

17                  ASSOCIATE MEMBER GEESMAN: And a 9000  
18                  megawatt taller procurement order. And a  
19                  different philosophy towards transmission planning  
20                  and permitting.

21                  MR. CANNING: Okay, thank you,  
22                  Commissioner.

23                  ASSOCIATE MEMBER GEESMAN: Thanks for  
24                  being here.

25                  MR. CANNING: I'll go on. The load

1 factor. Lynn's graph I don't think was accurate.

2 COMMISSIONER BYRON: Before we leave the  
3 last slide, could I ask you a question?

4 MR. CANNING: Yes.

5 COMMISSIONER BYRON: I just want to make  
6 sure that we're comparing apples to apples here.  
7 So, Mr. Canning, the SCE forecast, does it include  
8 -- I guess I'm asking both the staff and you this  
9 question -- do we have any demand response in  
10 these forecasts? Are they comparable?

11 MR. CANNING: No, no demand response.  
12 Demand response is considered on the supply side.  
13 All the energy efficiency's on the demand side.  
14 So I think staff's probably in agreement with that  
15 philosophy.

16 COMMISSIONER BYRON: Staff's in  
17 agreement. All right, thank you. Go ahead.

18 MR. CANNING: The load factor. Staff  
19 made the comment that 2006 the load factor would  
20 have gone up. I think when we calculated it, it  
21 actually -- we had so much additional energy,  
22 also, that even though we had a higher peak we had  
23 a higher summer energy, too. I think we  
24 calculated that it still declined.

25 So these are actual historical load

1 factors which aren't weather adjusted. But I  
2 think we showed those in an earlier presentation  
3 here.

4 We've got, as you can see, a decline in  
5 2007, '8 and '9, as it flattens off then by 2010  
6 or '11. And we didn't bring it up this time, but  
7 in previous slides we've shown you that during the  
8 whole decade of the '70s there was a decade of  
9 decline in load factor. So we know it can  
10 decline.

11 We're watching this summer to see how  
12 people have learned from last summer. A lot of the  
13 disagreement between us and the staff is the  
14 weather adjustment of last summer. And the  
15 implication of if there was a bill-shock effect,  
16 what did it do and how much did people permanently  
17 affect their usage. So what'll show up this  
18 summer. So, we're going to have to wait and see  
19 how this summer goes.

20 The heat storm that I think you had over  
21 the 4th, we had a nice cooling trend move in right  
22 around the 5th, and it helped us out, so we didn't  
23 get any good recorded peak demands that were  
24 record-setting or anything like that yet.

25 But, that CEC load factor comes from

1 their form 1.4. So we think we've got a good  
2 comparison here between us and them.

3 The next one really just goes over, we  
4 brought it up before, the inclusion -- the  
5 subtracting uncommitted ee from the forecast.  
6 Since energy efficiency is a negative number, when  
7 you say the English word included in the forecast,  
8 I'm always, does that mean you deducted it or not.  
9 So I always says deducted it from the forecast; it  
10 should be clear what we mean.

11 The targets have been established  
12 through 2013. We had this issue come up in the  
13 long-term procurement plan. My resource planners  
14 tell me that they will deduct it from the 2009  
15 CEC, this forecast in the 2009 long-term  
16 procurement plan unless it's handled.

17 So, just know that what they did this  
18 year, they are bound and determined to do again  
19 unless you do something about it. So, I invite  
20 you to find a way to resolve this.

21 And its effect is very large, so it's  
22 about .3 of a percent on the growth rate. I asked  
23 them that just at the lunch I think it was  
24 yesterday. Just to confirm that, yes, they will.

25 So, overall conclusions. We do have a

1 higher forecast. The issues are deducting  
2 uncommitted ee, the declining load factor and the  
3 demographics.

4 And since I wrote this, the  
5 electrotechnologies, the TIAX study has an  
6 expected case and an aggressive case. The  
7 aggressive is way out there; I mean 100 percent of  
8 all cars are plug-in hybrids, something like that.  
9 So we didn't do that.

10 But we did take the expected case which  
11 does expect that there will be some incentives to  
12 help the customers make these conversions. And  
13 update it for whatever we thought was most recent  
14 outlook for plug-in hybrids. And, again, Toyota's  
15 saying the Prius should be ready by 2010 with  
16 that.

17 But those build up over time. The  
18 truckstops and the port, cold ironing, and the  
19 forklifts all start off, you know, are going on  
20 now.

21 The part I wasn't clear on was lawn  
22 equipment. There's something like 7.5 million  
23 pieces of gas-burning lawn equipment in the  
24 Southern California Edison's area. And apparently  
25 there's a bill out to help people -- to fund

1 people to replace those with electric-driven.  
2 Haven't seen where I get that rebate from yet.  
3 Because that's something I would be willing to do.  
4 I've had electric lawnmowers before and willing to  
5 go back. But I'm not willing to do it without a  
6 little bit of help right now.

7 CSI. I don't think your number is all  
8 that bad, but let me explain what Lynn said, that  
9 we've had a very slow start. It's been a very  
10 slow start. There was a big ramp-up, sort of a  
11 gold rush, in late 2006. Everyone get in on the  
12 CEC rebate program.

13 What happens is in the Edison area the  
14 residential time-of-use rate onpeak is fairly high  
15 compared to PG&E or San Diego summer onpeak TOU  
16 rate for residential.

17 And our rules state that if you put in  
18 photovoltaic you have to go onto TOU rate. What  
19 they found in the million solar roof program, what  
20 the customers found and the consultants found was  
21 if they didn't put in a photovoltaic that would  
22 more than -- that essentially would cover 100  
23 percent of their onpeak use, the onpeak tariff was  
24 so high that it turned the economics upside down.

25 And that's why there was a gold rush at

1 the end of 2006 to get in on your program. And I  
2 think I saw a newspaper article, 77 percent drop  
3 as of March of April. The solution is to not make  
4 that mandatory, that it be time-of-use.

5 I'm not the rate design expert. I  
6 assume there's a good reason for that onpeak rate  
7 for Edison. But that's the reason why in the  
8 Edison area it has fallen off so much.

9 I haven't read anything in the last two  
10 months to change what I read two months ago, that  
11 the contractors were saying that they just can't  
12 sell it anymore.

13 One pending issue is actually the model  
14 backcast. It's an old, old thing. Tom Gorin will  
15 remember it from the '80s and the '90s Edison used  
16 to bring up. Lynn has been gracious enough to  
17 send me the data. I just really haven't had -- I  
18 just got it yesterday and have just started  
19 graphing it.

20 The issue is hypothetically if the staff  
21 were to have an end use model that were to  
22 estimate 1980 and over-estimate the early '80s by  
23 say 5 percent, versus actual. And then trend  
24 along, and by 2000, say they under-estimate actual  
25 by 5 percent. They they've, over the course of 20

1 years or so, they've actually lost 10 percent of  
2 the growth that actually did happen.

3 I don't think it's quite that bad. I  
4 think it's worse than the residential model. It's  
5 not existent in the industrial under my quick  
6 look. But I'll have to make those in written  
7 comments because I just haven't really had time.

8 That is a -- that would be something  
9 that I think the staff needs to keep looking into  
10 to make sure that the calibration is pretty  
11 constant over the whole historical period.

12 And I know it's not easy. It means a  
13 bigger price elasticity; sometimes bigger income  
14 elasticity; sometimes you got nowhere to put them.  
15 It's tough to do on an end use model. But that, I  
16 think, is a pending one; and I'll try and address  
17 it in my written comments.

18 That concludes our presentation. We  
19 have a few backup slides. I'm not sure we'll get  
20 into them. About the distribution of residential  
21 usage by geographic zone.

22 But I could answer any questions.

23 ASSOCIATE MEMBER GEESMAN: What was your  
24 reaction to the staff's use of constant real  
25 prices for their forecast?

1                   MR. CANNING: Well, the PUC hosted, or  
2                   it was you that hosted the price conference last  
3                   Monday. I just read the reports in the news  
4                   media. My gut feel is prices will probably go up  
5                   because of all the unstated reasons.

6                   But when you go through the  
7                   calculations, I think all the utilities had  
8                   declining real prices. And some people felt that  
9                   that wasn't reasonable. So, I think, as a first  
10                  guess, a constant real price is probably a good  
11                  shot.

12                  There's just so many unknowns about the  
13                  cost of delivered liquified natural gas and all  
14                  these other things. That's probably a better  
15                  assumption than declining real price.

16                  ASSOCIATE MEMBER GEESMAN: Thank you.

17                  PRESIDING MEMBER PFANNENSTIEL: Yes,  
18                  Commissioner Byron.

19                  COMMISSIONER BYRON: Mr. Canning, thank  
20                  you; and thank you for the efforts over the last  
21                  number of weeks to work with staff again to try  
22                  and figure out these differences in assumptions  
23                  and the way that your company and the Commission  
24                  does these forecasts.

25                  It sounds as though you've done a

1 substantially different -- taken a different  
2 approach to this year's electricity forecast than  
3 you have in previous years, as I've read through  
4 some of your presentations, is that correct?

5 MR. CANNING: No. The methodology's the  
6 same. The approach, well, I'm being a little more  
7 aggressive here. Partly because in the long-term  
8 procurement plan one of the staff's comment was,  
9 well, Edison had no comments in the last IEPR.  
10 So, doggone it, I'm up here making comments.  
11 You're too low. You're not going to be able to  
12 make that same argument two years from now.

13 And I'm just not making it up. I'm not  
14 trying to just say I'm right, you're wrong. I'm  
15 bringing up -- I think we have, we certainly have  
16 a difference of opinion. But I think we need to  
17 get on the record that we think there's some real  
18 physical need out there.

19 COMMISSIONER BYRON: And I appreciate  
20 that your here, and that you are willing to work  
21 with us to try and understand these differences.

22 Let me direct my question toward the  
23 staff. Over the last number of weeks do we have a  
24 pretty good understanding then on why the  
25 differences are what they are, particularly with

1 regard to peak demand?

2 MS. MARSHALL: Yes, I think we've  
3 explored that pretty thoroughly.

4 COMMISSIONER BYRON: Mr. Canning, you  
5 agree?

6 MR. CANNING: Yeah, I agree, we  
7 understand the differences. I totally agree.

8 MS. MARSHALL: We don't agree who's  
9 right.

10 COMMISSIONER BYRON: Well, good. Again,  
11 thank you very much for the efforts to try and  
12 figure that out. Are we still at about 1200  
13 megawatt difference, I think, on the --

14 MR. CANNING: We brought our forecast  
15 down a little bit because of the lower customer  
16 growth. We're about 950 megawatts difference in  
17 the 2008.

18 COMMISSIONER BYRON: 2008 peak demand.

19 MR. CANNING: Peak demand. Which I'll  
20 just bring up, is lower than what you adopted a  
21 year ago for 2007. So you have a 2007 peak demand  
22 for Edison of 21-5, 22-5, and a 2008 forecast of  
23 22-4. And all that's due to the update over the  
24 last cycle.

25 So, I'm just waiting to see what the

1 summer brings.

2 COMMISSIONER BYRON: Okay, thank you.

3 MR. CANNING: Thank you.

4 MR. TUTT: I'm sorry, I had one  
5 question.

6 MR. CANNING: Yes, Tim.

7 MR. TUTT: Your plug-in hybrid forecast,  
8 I presume that you have some idea when you expect  
9 customers to plug those in? Perhaps not at peak  
10 period?

11 MR. CANNING: Oh, yeah. I assume zero  
12 on peak charging. I didn't see the news release  
13 yesterday, but the discussion with Ford is that,  
14 yes, we would do offpeak charging. And they would  
15 be developing technologies so that if on peak we  
16 needed it, we could drain the batteries, help  
17 serve the system.

18 I know our electric technology group has  
19 looked into residential battery packs where that  
20 might be possible. But I have to smile when I  
21 think about draining my gas tank on my plug-in.

22 But, you know, they're hybrids. They've  
23 got a gas tank on them, too, so they can get home.  
24 It's not like an all electric vehicle, which I  
25 think gives us a lot more flexibility. And

1            hopefully can be managed well with the new smart  
2            connect meters Edison's working on.

3            ASSOCIATE MEMBER GEESMAN: I think the  
4            PG&E Google demonstration project includes using  
5            the cars as a storage medium, as well. So there  
6            is active research underway trying to facilitate  
7            that.

8            MR. CANNING: I believe so. Any other  
9            questions?

10           ASSOCIATE MEMBER GEESMAN: Thanks an  
11           awful lot for being here.

12           MR. CANNING: Thank you.

13           ASSOCIATE MEMBER GEESMAN: Why don't we  
14           go to San Diego.

15           MR. VONDER: Can I speak from here?

16           MS. SPEAKER: Yes.

17           MR. VONDER: The reason I'm here instead  
18           of there is because SDG&E -- oh, by the way, I'm  
19           Tim Vonder with San Diego Gas and Electric  
20           Company.

21           And the reason I'm here rather than  
22           there is SDG&E doesn't have any charts or graphs  
23           to present. We haven't -- and we also don't have  
24           a critique at this point, of staff's forecast to  
25           present, either.

1                   We really need, just like Edison and  
2                   PG&E have indicated, we need more information  
3                   before we can really say that we can understand  
4                   staff's forecast and make our comparison.

5                   But hopefully we will be able to provide  
6                   some written comments by July the 20th.

7                   I heard the question earlier as to we  
8                   have indicated on our forecast forms the terms  
9                   managed and unmanaged. Just to clear that up,  
10                  Lynn was right in what she said. In the forms  
11                  that we submitted, the columns that are indicated  
12                  as managed load is the load with the uncommitted  
13                  DSM impacts included in the forecast, or in the  
14                  data. And the unmanaged is excluding those  
15                  impacts.

16                  So, I guess I could say in the short run  
17                  when you take a look at staff's forecast and our  
18                  forecast, they compare pretty close.

19                  But when we get out into the years where  
20                  the uncommitted DSM comes into play, it gets  
21                  foggy. And it's hard to compare the two  
22                  forecasts.

23                  So we're kind of in the same boat there  
24                  as everybody else. And we're kind of hoping to  
25                  get that resolved. We do believe that that's

1 important.

2 Other than that, really, at this point I  
3 have nothing to say. If you have a question or  
4 two.

5 ASSOCIATE MEMBER GEESMAN: Your reaction  
6 to the staff's use of constant real prices?

7 MR. VONDER: We find no problem with  
8 that. That's basically consistent with the way we  
9 do it.

10 ASSOCIATE MEMBER GEESMAN: Thanks a lot,  
11 Tim.

12 MR. VONDER: Okay, thank you.

13 MS. MARSHALL: SMUD?

14 (Pause.)

15 MR. CODINA: Thank you, Commissioners,  
16 for this opportunity to discuss our comments on  
17 the forecast the staff has prepared for 2008 to  
18 2018.

19 My name is Rick Codina and I'm with the  
20 Business Planning Group at SMUD. And I'm not the  
21 chief forecaster, who couldn't make it; I'm here  
22 in his stead. We will probably be making some  
23 written comments later. And any  
24 mischaracterizations or misstatements are mine.  
25 But he has more or less come up with some of these

1 ideas today that responds.

2           There's three things we do want to bring  
3 up. One, of course, how our forecast is varying  
4 from the CEC forecast. And we also want to talk  
5 about those things which are not included in the  
6 forecast, things that we have since considered, or  
7 have always considered, but haven't been able to  
8 put them in as of yet.

9           The forecast that we submitted was  
10 prepared in October last year. We prepare it once  
11 a year. And we are in the midst of designing the  
12 new forecast. Just so there's quite a few things  
13 that have changed since then.

14           Now, we have a fairly simple approach to  
15 forecasting. It's an econometric model. And what  
16 we do is we have about ten customer classes. And  
17 we look at a number of factors to develop the  
18 estimate of the usage per customer on a monthly  
19 basis. And then we make projections forward based  
20 strictly on population increase estimates that are  
21 affecting that particular class.

22           So, when we looked at the population and  
23 household assumptions that we use, with those that  
24 are in place here with the CEC study, they were  
25 nearly identical.

1           The household projections growth on the  
2 bottom, we actually are comparing to the  
3 residential accounts. And there's some slight  
4 differences because there's a difference between  
5 residents and household unit, although they're  
6 very close, and they have been historically.

7           The forecast, though, is quite different  
8 now. If you notice the top forecast, the  
9 commercial and industrial line up exactly. We  
10 have no problem there.

11           Where we do vary is on the residential  
12 side. And going out to 2018 we're about 15  
13 percent different. Now, this is energy. And  
14 because the population in households are so close,  
15 really the difference, as Tom and others have  
16 stated, has to do primarily with the forecast on  
17 the amount of energy that'll be used on a  
18 household or residential account basis.

19           And this chart shows the difference  
20 there over time. The top forecast is the CEC  
21 forecast. And it shows that by 2018 the average  
22 residential customer in SMUD will be using about  
23 1000 or more kilowatt hours a year than they do  
24 now.

25           And we were quite surprised by that

1 finding. And I understand now from the  
2 presentations that there's some income factors  
3 that are in play here.

4 We don't see it that way. And we, in  
5 fact, make the assumption that there'll be a  
6 declining usage per customer. And there's a back  
7 story for that; there's a reason for that. And it  
8 has to do primarily with the fact that we have two  
9 categories or major classes of customers that we  
10 follow.

11 These are cohorts that have had very  
12 different energy use. One is our heating-only  
13 customers; most of these are all electric. And  
14 the second are those that don't use electric heat.

15 The electrically heated customers use  
16 over 10,000 kilowatt hours a year whereas those  
17 that are gas heated use considerably less. There  
18 are about 8500.

19 These are really artifacts of a time  
20 when we were more rural; when gas was not  
21 available. And we have a large class of customers  
22 that came on all-electric electric heated.

23 And then also there was a big campaign;  
24 it was quite successful, depends how you look at  
25 it, but for a few years in the '80s SMUD

1 essentially captured the heat pump market for all  
2 development within Sacramento and there was no gas  
3 heating at all.

4 So, those two groups of customers  
5 generally use a lot more. But they use it during  
6 the wintertime. They're not necessarily any  
7 higher in the summertime.

8 The electric heat are on the decline,  
9 and moreover, all new construction has been gas.  
10 So the relative impact is declining. So, as a  
11 result the weighted average of the customer, of  
12 our average customer, is in decline.

13 And that's the reason why in that  
14 earlier graph you saw the slight decline for the  
15 average use.

16 The demand component is also higher.  
17 Overall it's about 7 percent higher. We have some  
18 theories about that, as well. And if this  
19 forecast is similar to the short-term forecast  
20 that was done prior, we're looking at the  
21 regression that was used. And we find that there's  
22 a few things that we feel were not really  
23 considered, and that probably are resulting in  
24 higher numbers than what we see.

25 One is that probably the temperatures

1 that are used in the model are considerably  
2 different than ours. We are reconsidering the  
3 temperature setpoints now. We suspect that the  
4 one-in-five may have been in use, whereas we would  
5 use a one-in-two, or perhaps the one-in-five is  
6 now considered the one-in-two.

7 And we also -- we use in our modeling a  
8 minimum temperature. And we found that that's a  
9 very robust variable; and it's very important in  
10 calculating demand. And we're not so sure that  
11 the CEC is using that.

12 Also, the data that was used for the  
13 projections was mostly 2006. It had a lot of very  
14 hot days. And so weather normalizing for such a  
15 short period of time, I think also skewed the  
16 results.

17 We also thought that the regression was  
18 a linear regression that at the high end really  
19 does not apply. It's more of an S shape. And we  
20 find that with saturation and diversity it tends  
21 to flatten out the electric use of the air  
22 conditioners at the very high temperatures. And  
23 so we don't believe those very high temperatures  
24 in some of those demand forecasts are believable.

25 On the other hand we're not entirely

1 happy with the way we are assuming a constant  
2 energy use going forward into the future,  
3 particularly in the summer. We've been sort of  
4 confounded by a number of factors. And we're  
5 starting to address them now.

6 And we're not sure which way they'll  
7 necessarily go. We do know that there is an  
8 increasing saturation of air conditioning to the  
9 central systems in a lot of our older homes.

10 The last time we did a very serious RAS  
11 survey on this was really last century. So we had  
12 projections of about 60 percent saturation. And  
13 we're sure it's much higher than that now.

14 On the other hand, we're seeing, you  
15 know, a lot of turnover and a lot of new systems  
16 going in with much more efficient units. So,  
17 that's driving down the electric use per customer  
18 in the summer.

19 At the same time we're seeing plug load  
20 increases; more electronics; and HDTVs, that kind  
21 of thing.

22 Global warming is another issue that  
23 we're, at this point, unclear how to address.  
24 There's a real clear possibility that we'll be  
25 seeing higher air conditioning loads in the

1 summertime.

2           On the other hand, it's been a big  
3 motivating force. And we could be seeing a lot  
4 more people that are willing to implement  
5 conservation measures because of the amount of  
6 information and concern in the community.

7           We've also been trying to track house  
8 size and the relationship because we've noticed a  
9 lot of Title 24 houses that should be providing  
10 better demand reduction are not. And a lot of it  
11 has to do with larger house size. Sometimes two  
12 central systems. So we saw a lot of that going on  
13 in the last decade.

14           On the other hand there's been, in the  
15 last several years, an opposite trend with the  
16 baby boomers retiring and so on, we're starting to  
17 see high-rise condos for seniors, high-rise lofts,  
18 a lot more compact design. So we're not sure, you  
19 know, how much all these factors are influencing  
20 each other, how much they cancel each other out.

21           The other thing that is not in the  
22 forecast now, and it's been mentioned a number of  
23 times here, although some utilities are putting it  
24 in, we have also adopted goals similar to AB-2021;  
25 1.5 percent annual energy efficiency; and then

1 we're also on board with SB-1.

2 So we're taking a share of the number of  
3 PV that we plan to install. And we're actually  
4 doing quite well at the moment. We have a number  
5 of developers who are signed on to put them on all  
6 their houses. Although there's been some  
7 temporary setbacks because of the housing  
8 recession.

9 So none of that is in the forecast now.  
10 We have decided -- our Board has decided to go  
11 beyond the 1 percent goal to the 1.5 percent. So  
12 we're talking about 200 gigawatt hours potentially  
13 of reduction per year for this. And then PV will  
14 also have some generation in reduction.

15 If we were to accept the numbers as they  
16 stand, essentially it would pretty much flatten  
17 out our growth curve. And so we would be seeing  
18 virtually no energy use addition over the next ten  
19 years. And we don't think this is a likely  
20 scenario. It's possible, it's attainable, and we  
21 do have it on the books as something we plan to  
22 try. However, we think that the truth will  
23 probably be somewhere in between.

24 But again, that top blue line is still  
25 considerably below the CEC forecast. So, if you

1 were to take into account our DSM goals and our  
2 PV, we would be even farther apart than what this  
3 forecast shows.

4 In preparation for our new forecast this  
5 October, we have a new RASS survey, so we're  
6 starting to come up with new information on what  
7 our customers appliance saturations and what their  
8 usage patterns are like.

9 We've also completely redesigned our  
10 rate sample, our load research sample. So, we're  
11 hoping to get much better results than the present  
12 stratified sample that we have; and give us a lot  
13 more information on our customers.

14 And so even though we don't have an end  
15 use model, we do hope to create at least some  
16 striations, some little more looking at cohort  
17 groups rather than just the two big ones which is,  
18 as I said, heating and nonheating. We're hoping  
19 to perhaps have other customer types that we can  
20 begin to track, and perhaps, you know, refine our  
21 forecasting.

22 We also have built quite a bit of data  
23 on PV generation and performance, so we'll be  
24 going forward with trying to incorporate that.

25 We also signed up with AMI. It looks

1       like we will be going to two-way communication.  
2       It's a long, more of a long-term thing for us, but  
3       we're gearing up to be able to utilize that new  
4       submetering data and incorporate that in future  
5       forecasts.

6                So we are hoping to modify the way we do  
7       our forecasting based on all this new information,  
8       including gearing up our monitoring evaluation for  
9       the DSM. Because it looks like it's going to be  
10      such a future component, and could really  
11      seriously affect our future forecast, we're really  
12      trying to model it as best we can. So we are  
13      trying to get some good load shave data, and work  
14      very closely with our -- in fact, our monitoring  
15      evaluation group has moved into our department.  
16      So that'll help us in integrating the two.

17               So, those are my comments. And we'll  
18      send some more written ones on later on as we get  
19      to understand it better.

20               Are there any questions?

21               ASSOCIATE MEMBER GEESMAN: Did you have  
22      a reaction to our staff's use of constant real  
23      prices in their forecasting?

24               MR. CODINA: No, not at all. That's  
25      fine. As I say, we have a kind of a modified

1 econometric approach, and going forward we're  
2 assuming that they're going to have a constant use  
3 for all the customer classes. So we don't think  
4 there'll be a price effect at all.

5 ASSOCIATE MEMBER GEESMAN: Thank you.

6 COMMISSIONER BYRON: If I may, based  
7 upon the differences between staff forecast and  
8 your, I believe you said October '06, forecast,  
9 will you be doing another one this coming October?

10 MR. CODINA: Yes. We're in the process  
11 now. Generally we wait until the summer is out.  
12 But we are in the process now of getting all the  
13 information together and it should be out this  
14 October.

15 COMMISSIONER BYRON: Do you think it'll  
16 have any differences based upon the review of the  
17 staff's forecast?

18 MR. CODINA: Well, I can't speak for our  
19 forecaster, but presently we're actually thinking  
20 it should be lower than it is because we haven't  
21 incorporated the DSM impacts.

22 COMMISSIONER BYRON: Thank you very  
23 much.

24 MR. CODINA: Okay. Thank you.

25 PRESIDING MEMBER PFANNENSTIEL: I'm just

1       trying to get an estimate of how much lower your  
2       basecase forecast is than the staff's. I heard  
3       you say it was something in between their  
4       forecast, which I think has you growing at about  
5       2.4 percent annually, and a flat forecast of, you  
6       know, all of your -- meeting all your PV and DSM  
7       goals. So yours is somewhere in the middle of  
8       that? So it would be about 1.5 percent, or 1  
9       percent a year.

10               MR. CODINA: Well, currently our  
11       forecasts differ by about 6 to 7 percent, the  
12       energy and the demand when you go out to 2018.  
13       So, --

14               PRESIDING MEMBER PFANNENSTIEL: Oh, your  
15       difference with the staff?

16               MR. CODINA: Between our forecast and  
17       the staff. And what we're saying is --

18               PRESIDING MEMBER PFANNENSTIEL: So at  
19       the end it --

20               MR. CODINA: -- that that's not  
21       incorporating in DSM or PV. So, if we were to do  
22       that, it would be even lower.

23               PRESIDING MEMBER PFANNENSTIEL: Okay.

24               MR. CODINA: Okay. Thank you.

25               MS. MARSHALL: Do we have anyone else

1 who wish to make comments?

2 MR. KELLY: This is Steven Kelly with  
3 Independent Energy Producers. And I guess I had a  
4 question of staff, and maybe the other parties. I  
5 saw in the presentation that they were using  
6 historical weather, and I think following up to  
7 something PG&E asked about whether we are -- the  
8 30-year record of weather that we've been  
9 traditionally using, or whatever it is, is still  
10 pertinent moving into -- are we moving into a new  
11 climatic era, and have we adjusted for that.

12 And I don't know the answer looking at  
13 the material, so I just kind of was going to pose  
14 that to the staff and find out if there was  
15 consistency with the way the staff approaches  
16 that, with the way the other parties do it.

17 Have we moved into a new era so that we  
18 are concerned about using the historical trends?

19 MS. MARSHALL: Well, we do base our  
20 weather analysis on historic data, but that's the  
21 only data we've got. So, you know, I don't  
22 pretend to be a weather -- climate forecaster.

23 MR. KELLY: It strikes me that that's a  
24 variable out there that is going to have huge  
25 meaning over the next five to ten years, if in

1 fact we have moved to something different.

2 I know in the long-term procurement  
3 proceeding there's a debate going on about whether  
4 they should be using a one-in-two forecast or the  
5 one-in-ten, which is one way to adjust for that.

6 Does this Commission have -- going to  
7 hold a workshop, or have you -- I think you might  
8 have had some discussion on that last year, but I  
9 can't remember how we resolved it. So I just was  
10 a little unclear where we stood on that in terms  
11 of the inputs into this study.

12 ASSOCIATE MEMBER GEESMAN: Well, I think  
13 historically we've been pretty data-driven. And  
14 it would be hard to envision us varying from that.  
15 As to whether or not conditions have changed to  
16 make justified adoption of a new criterion, that's  
17 a completely different question.

18 I'd be hesitant to base too much on  
19 anecdotal evidence. It apparently snowed  
20 yesterday in Buenos Aires for the first time since  
21 1918. What does that mean? I have no idea.

22 But I think we're probably on safer  
23 ground if we stay as anchored to the data as we  
24 can.

25 PRESIDING MEMBER PFANNENSTIEL: And we

1 are doing work this year on scenarios. And I  
2 think that that's going to help us, if not, even  
3 though weather isn't explicitly one of those  
4 scenarios, I think it does help us frame the  
5 question more broadly than following the point  
6 forecast.

7 MR. KELLY: Have the utilities, also?

8 MR. GORIN: Well, our energy consumption  
9 forecasts for residential and commercial has been  
10 adjusted for the last 20 years or so by the ratio  
11 of the last 12 years weather to the last 30 years  
12 weather.

13 MR. KELLY: To picking up --

14 MR. GORIN: But in the last 15 years,  
15 sometimes that ratio is positive and sometimes  
16 it's negative. So.

17 And I'm not sure that we know  
18 specifically the future impact of climate change  
19 in northern California or southern California or  
20 California in general.

21 MR. KELLY: And I don't know, I know  
22 this question was raised by PG&E. I think they  
23 asked whether there was going to be an opportunity  
24 to think this through more deeply, which I think I  
25 support -- or I do support. I think it's an

1 effort that's probably worthwhile.

2 Are there distinctions going on so that  
3 that helps contribute to the differences in the  
4 trajectories that we see or heard about today?

5 MS. MARSHALL: I don't think there are  
6 differences in our methodology on that point. No.

7 MR. ASLIN: Let me try to restate your  
8 question. So if your question was does the CEC  
9 Staff and the utilities have exactly the same  
10 temperature statistic; the answer to that would be  
11 no, we don't.

12 So some of the differences in the level  
13 of the forecast could be due to differences in the  
14 temperature statistic. And I think that was  
15 something that was brought up by the person from  
16 SMUD, you know, that big gap. You know, if you  
17 have the same growth rate and the level is  
18 significantly different, then that would be an  
19 indication that it's probably driven by whatever  
20 this benchmark temperature is that's being used.

21 But also say that PG&E, we are working  
22 with the National Center for Atmospheric Research  
23 to try to figure out how to downscale the global  
24 climate change models and have that downscaling  
25 for each of our weather stations in our service

1 territory.

2           And we're hoping to be far enough along  
3 with that to incorporate that in the next forecast  
4 cycle. But there is a lot of work that's been  
5 done by the California Climate Change Center. And  
6 there's a lot of work out there already that I  
7 think we could incorporate into a scenario for  
8 this cycle if we had time.

9           MR. KELLY: Thank you.

10           PRESIDING MEMBER PFANNENSTIEL: Thanks.  
11 Any other? Yes, Eric.

12           MR. WANLESS: This is Eric Wanless with  
13 NRDC. I just want to, I guess, underscore the  
14 importance again of teasing out the energy  
15 efficiency contribution in this forecast.

16           Notably the more recent data point that  
17 I have is that this forecast is going to be used  
18 by the Air Resources Board in developing their  
19 business-as-usual emissions scenario for AB-32  
20 work.

21           And because of that I think it's very  
22 critical that we understand exactly what is being  
23 attributed to energy efficiency and what's not.  
24 Because I can imagine that if this forecast  
25 doesn't reach a point where it's a little more

1 clear, I guess explicitly to people reading it,  
2 what's included in there, if CARB, say  
3 incorporates additional energy efficiency measures  
4 that may or may not already be included in this  
5 forecast. And doesn't see those results. I think  
6 that's an issue that we need to look at.

7 So I just would like to underscore that,  
8 the importance of that again. Thank you.

9 ASSOCIATE MEMBER GEESMAN: I think  
10 that's a reasonable request.

11 PRESIDING MEMBER PFANNENSTIEL: Yeah,  
12 it's a good request. For any reason it should be  
13 laid out clearly because it is an important part.

14 Other comments? Questions? Any last  
15 comments from staff? Nothing.

16 Okay, we'll be adjourned.

17 (Whereupon, at 3:48 p.m., the Committee  
18 Workshop was adjourned.)

19 --o0o--

20

21

22

23

24

25

CERTIFICATE OF REPORTER

I, PETER PETTY, an Electronic Reporter, do hereby certify that I am a disinterested person herein; that I recorded the foregoing California Energy Commission Committee 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 workshop, nor in any way interested in outcome of said workshop.

IN WITNESS WHEREOF, I have hereunto set my hand this 5th day of August, 2007.

PETERS SHORTHAND REPORTING CORPORATION (916) 362-2345□