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Manuel Alvarez
Manager, Reg. Pol. & Affairs
manuel.alvarez@sce.com

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1516 Ninth Street
Sacramento, CA 95814-5512
docket@energy.state.ca.us

DOCKET	
09-IEP-1C	
DATE	OCT 02 2009
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Re: California Energy Commission (Energy Commission)
Docket No. 09-IEP-1C: Written Workshop Comments
of Southern California Edison Company (SCE) the
2010 – 2020 Peak Demand & Energy Forecasts

To Whom It May Concern:

SCE appreciates the opportunity to provide comments on the 2010 – 2020 Peak Demand & Energy Forecasts. The Revised Demand Forecast presented by Energy Commission Staff (Staff) includes several changes from the June version including:

- An increased growth rate for the 2010 – 2020 forecast period
- Inclusion of an electric vehicle (EV) forecast
- Adjustment of data in the self-generation forecast
- Forecasts of energy from the California Solar Initiative (CSI) and Solar Photovoltaic (PV) installations

SCE greatly appreciates the Staff’s work in incorporating these changes. We recognize the magnitude of effort required in resource-constrained times over a short time frame. These efforts should not go unrecognized. This forecast will be used as the basis for procurement in the California Public Utilities Commission (CPUC) Long-Term Procurement Plan (LTPP) proceeding. Inaccuracies in the forecast could cause significant under or over procurement by the Investor Owned Utilities (IOUs) negatively impacting system reliability or over spending ratepayer funds.

SCE agrees with the increased growth rate, inclusion of the EV forecast and adjustment of the self-generation forecast.

With the September 21st workshop being the last in the 2009 IEPR cycle, SCE does have a few remaining concerns regarding the application of Energy Efficiency (EE) in the demand forecast. SCE’s concerns include:

1. The CEC's Residential Model is under-forecasting consumption and should be re-calibrated before a final forecast is adopted.
2. The lighting savings due to the change in the 2005 standard appears overestimated.
3. The level of incremental EE is not yet established.

As stated in the California Energy Demand 2010-2020 Staff Revised Forecast (CED Revised):

After 2002, the Residential Model output falls below historical consumption, although model results capture the general trend upward.¹

The situation is greater than just "after 2002", and an adjustment should be made to the residential model and forecast. Although Staff has calibrated the model output to match the recorded 2008 value as the starting point for the forecast, Staff has not adjusted for the fact that the residential model has a definite pattern of underestimating the growth in residential energy use for 1990-2008. Thus, the growth rate of the model also needs to be calibrated. SCE has calculated that this underestimate of the growth rate is about 150 GWh/year in the residential sector. Although further study may be able to attribute this 150 GWh/year to some specific end-use or to the income elasticity, the fastest way to adjust the model may be to add sufficient growth in GWh/year to the "miscellaneous" sector by 150 GWh/year, and thus closely match the recorded trend.

Whatever adjustment is made to the historical period should be made to the forecast period also. As a first estimate, this adjustment would raise the forecast for 2020 by about 1500 GWh or about 350 MW (assuming a 45% load factor), but other factors in the Staff model (e.g. price or income elasticity) may affect this result. SCE's graphical analysis of the need to calibrate the growth trend in the residential model is shown on the attached document.

The lighting savings estimates appear overstated when considering that they account for retrofits only. SCE recommends a "sanity check" be performed by comparing estimates of residential remodels to new construction or similarly for commercial buildings compare the number of square feet retrofitted annually to the amount of commercial new construction. The comparisons could also be done using historical data. With respect to commercial buildings, the assumption of a 10 year life leads to an implied amount of retrofitting (# of sq. ft.) that could lead to an inappropriately high amount of savings for retrofits. SCE specifically recommends that the CPUC not use these numbers for any program related decisions.

To develop a managed forecast the appropriate level of EE must be accounted for in the demand. In 2007, the CED incorporated a significant amount of EE. At that time, each utility was assigned a percentage which accounted for EE savings that were included in both the Staff's unmanaged forecast and the utility's managed forecast. The Staff was assigned the task

¹ CED 2010-2020 Revised, p.185

of resolving the amount of EE savings in the forecast. To this point, the Staff has not been able to properly resolve the issue. Considering there won't be any future workshops to provide an opportunity to vet the forecast with stakeholders, SCE does not want to use the forecast in the LTPP forum. As noted in SCE's August 21st comments to the Energy Division Straw Proposal:

For the assumed levels of energy efficiency in the base case, the Energy Division Straw Proposal proposes to use the IEPR forecast of embedded and uncommitted EE including Commission goals and Commission interpretation of CARB2 goals, subject to Deliverability Risk Assessment. SCE believes that CPUC Staff's recommendation for uncommitted EE is reasonable. However, until the level of EE embedded in the IEPR forecast is resolved, SCE cannot fully support the base case EE assumptions.

While Staff has done a thorough job in developing most of the CED Revised, parties would benefit from more detailed explanations about various aspects of Staff's EE forecasting methodology. In particular, it would be extremely beneficial to have additional information about the "treatment" of IOU program savings by end use/sector as shown in Table 34 of the California Energy Demand 2010-2020 Staff Revised Forecast Staff Final Report ("Staff Final Report"). The explanations provided in the Staff Final Report are cursory and appear to be based on judgment, rather than analysis:

Once cumulative realized program savings were developed for each year, staff determined whether these savings actually represented reductions in consumption or could be considered overlapping with savings impacts already incorporated in the model through building and appliance standards or some other source of savings. This step eliminated commercial (non-CFL) lighting, considered redundant with existing lighting standards, and industrial program savings, assumed to overlap with savings attributable to natural competitive market forces in this sector.³

* * * *

For those program impacts determined to correspond to load reductions, staff incorporated these effects in CED 2009 Revised either through post-processing (subtracting estimated impacts from model output) or by integrating estimated savings directly into the model through changes in inputs.⁴

A more detailed explanation by Staff is needed to demonstrate the reasonableness of this assumption. SCE recommends the Staff continue to work on resolving these issues in concert with stakeholders outside of the IEPR forum in order to properly review the forecast methods and results before they are used in the LTPP.

² California Air Resources Board

³ Staff Final Report, p. 170.

⁴ Staff Final Report, p. 171

SCE has greatly appreciated the ability to work very collaboratively with the Staff and hopes this can continue in the future. We appreciate being able to be an integral part of the IEPR process. If you have any questions or need additional information about these written comments, please contact me at 916-441-2369.

Very truly yours,

/s/Manuel Alvarez
Manuel Alvarez

**CHART 1 - CEC REVISED RESIDENTIAL FORECAST SCE PLANNING AREA
1990 - 2008 MODELED AND RECORDED RESIDENTIAL CONSUMPTION**

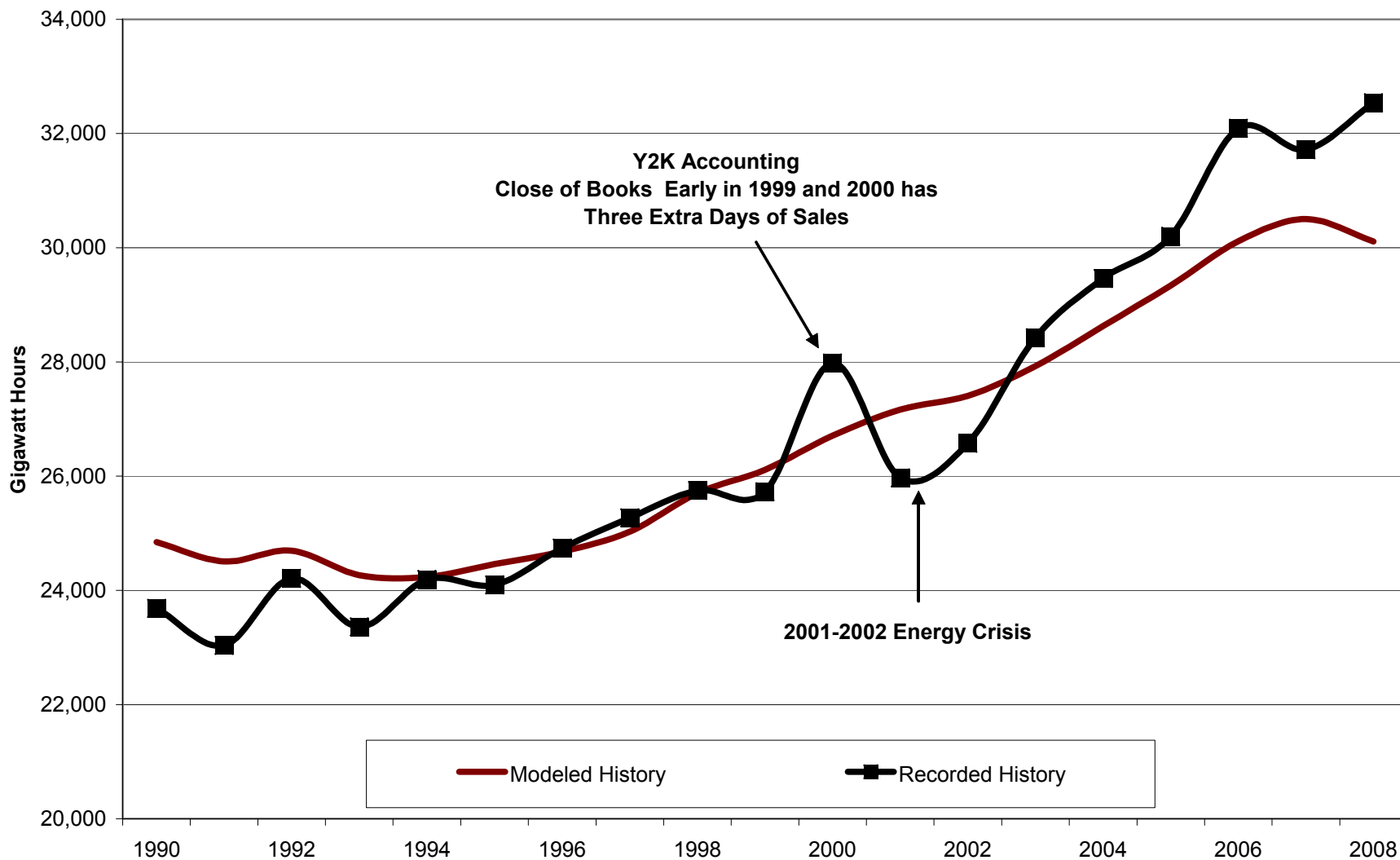


Chart 1 – In the SCE Planning Area, a comparison of Residential consumption between modeled history (magenta line) and recorded history (black line) shows a consistent model pattern of overestimating consumption in the early years and underestimating consumption in the later years.

**CHART 2 - CEC REVISED RESIDENTIAL FORECAST FOR SCE PLANNING AREA
1990-2008 DIFFERENCE BETWEEN MODELED AND RECORDED RESIDENTIAL
CONSUMPTION**

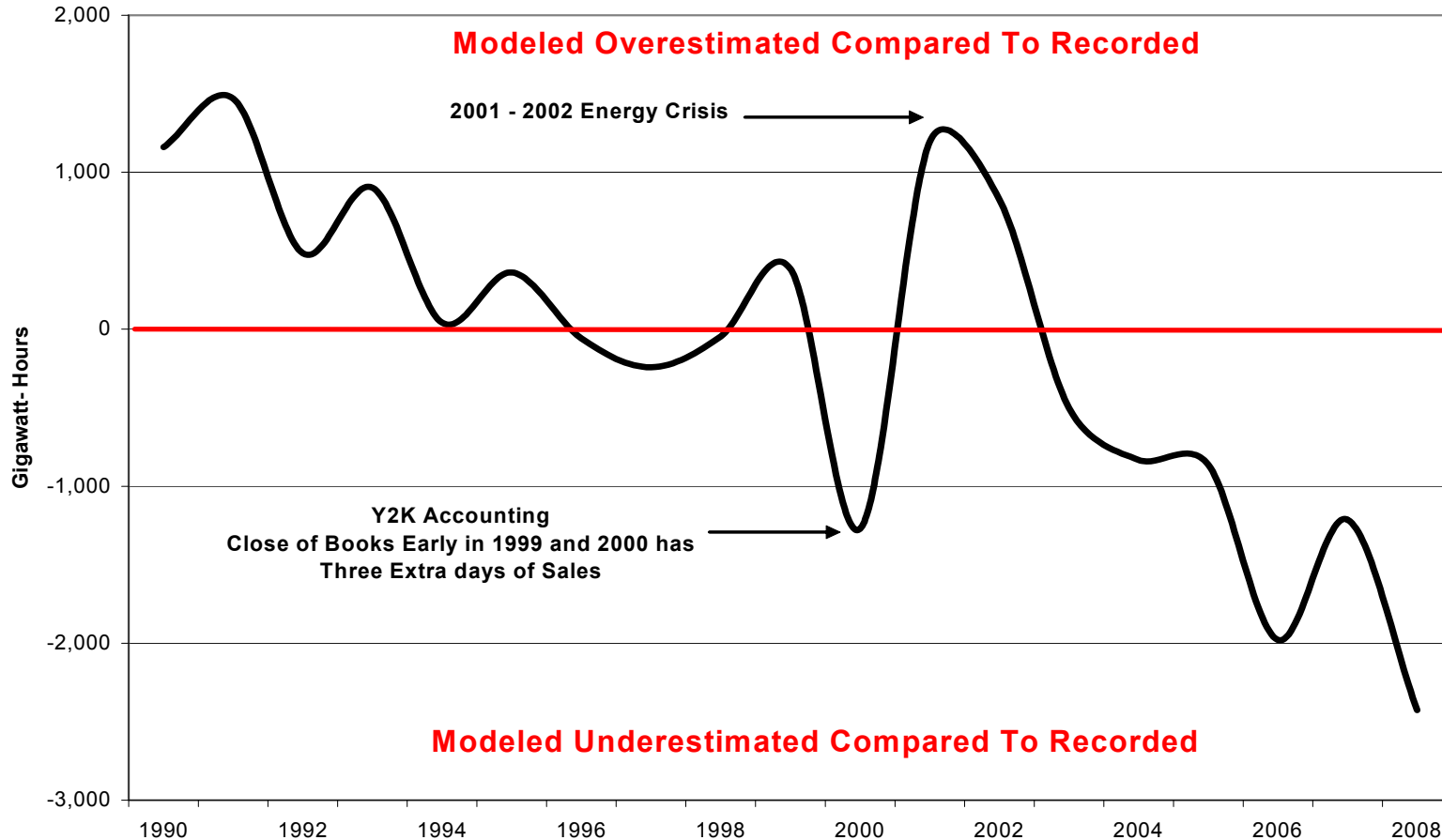


Chart 2 – Heavy black line represents the difference between the modeled residential consumption and recorded consumption over the historical period. There is a consistent trend ranging from overestimation in the early years to underestimation in the later years in the modeled consumption. The only exceptions are 2000 (partly due to the Y2K Accounting) and 2002 (Energy Crisis)

**CHART 3 - CEC REVISED RESIDENTIAL FORECAST FOR SCE PLANNING AREA
1990 - 2008 HISTORICAL TREND OF MODELED AND RECORDED DIFFERENCES**

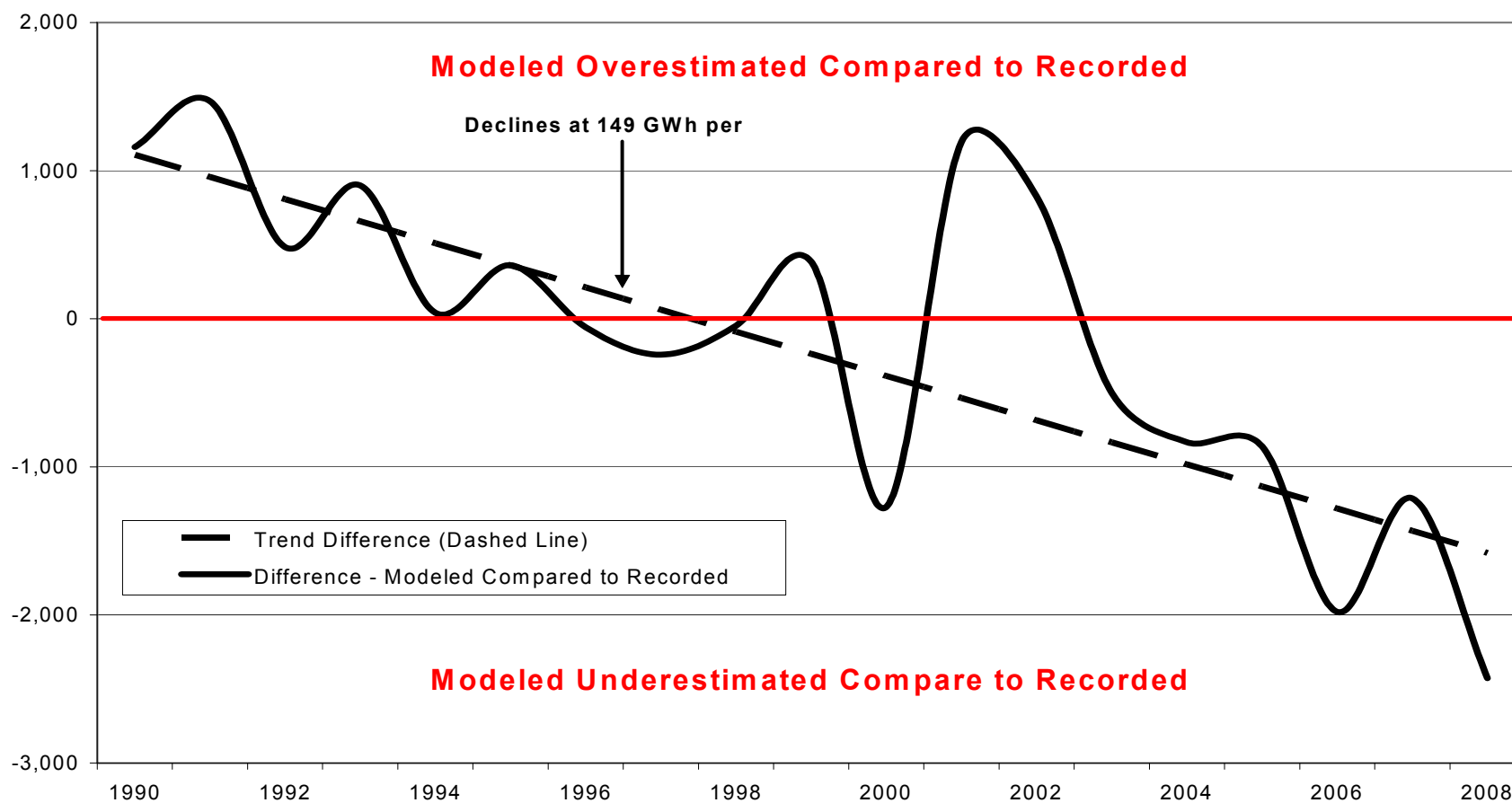


Chart 3 – A trend line (black dashed line) fitted to the difference between modeled and recorded consumption provides a measure of the increasing discrepancy between the forecast and recorded. The difference increases at an average rate of 149 Gigawatt-Hours (GWh) per year. Recorded consumption for the 1990 through 2008 grew 149 GWh faster than the model estimated. The effect on the forecast is shown in Chart 5.

**CHART 4 - CEC REVISED RESIDENTIAL FORECAST FOR SCE PLANNING AREA
HISTORICAL TREND OF DIFFERENCES EXTENDED THROUGH FORECAST PERIOD**

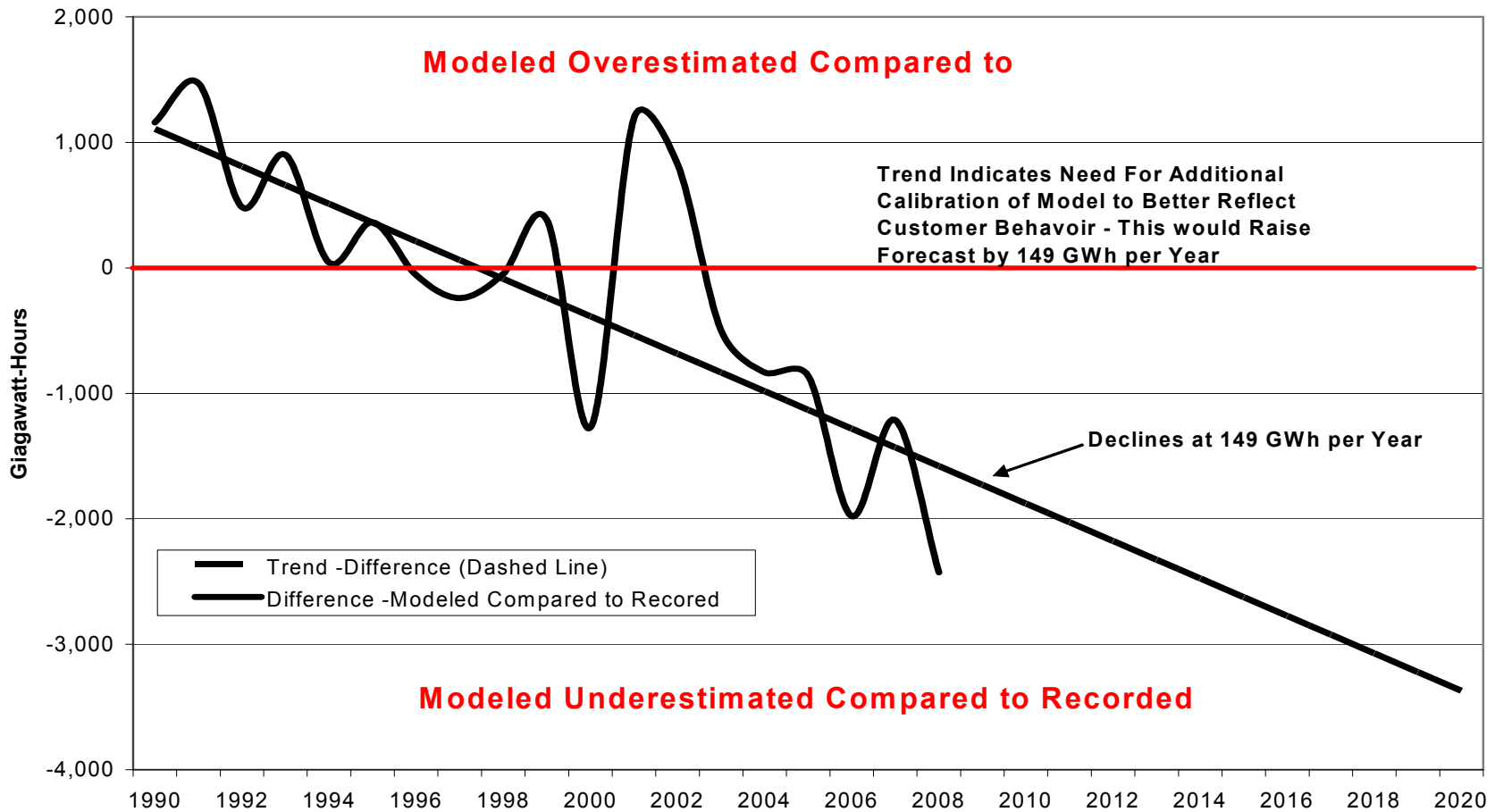


Chart 4 - The trend line is carried through 2020, the forecast period

**CHART 5 - CEC REVISED RESIDENTIAL CONSUMPTION FORECAST
FOR SCE PLANNING AREA
CEC UNCALIBRATED AND CALIBRATED FORECASTS**

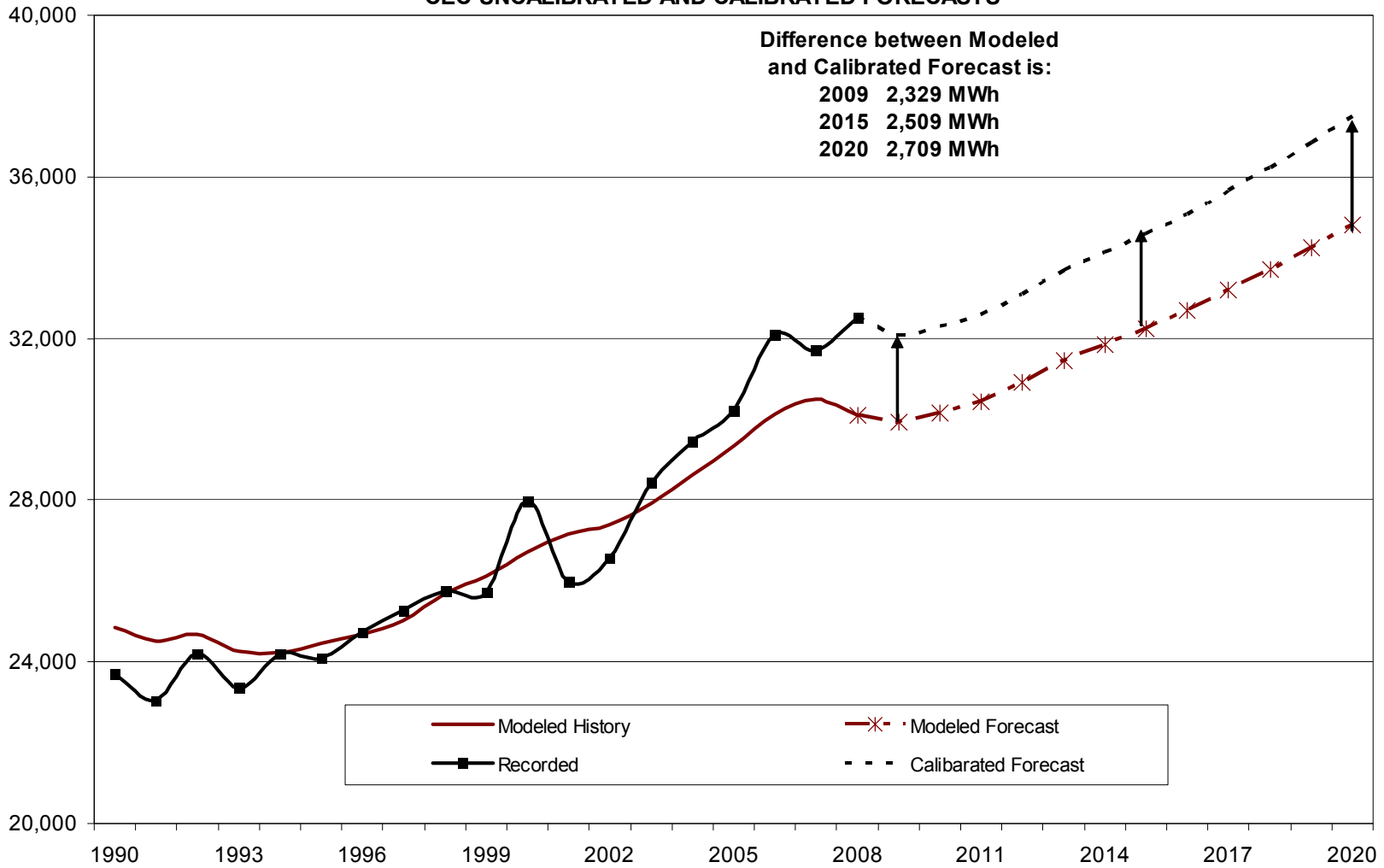


Chart 5 – Presents the Modeled and the Calibrated forecasts as published by CEC Staff and the calibration for selected years applied by CEC Staff.

**CHART 6 - CEC REVISED RESIDENTIAL CONSUMPTION FORECAST
FOR SCE PLANNING AREA
WITH RECOMMENDED TREND ADJUSTED CALIBRATION**

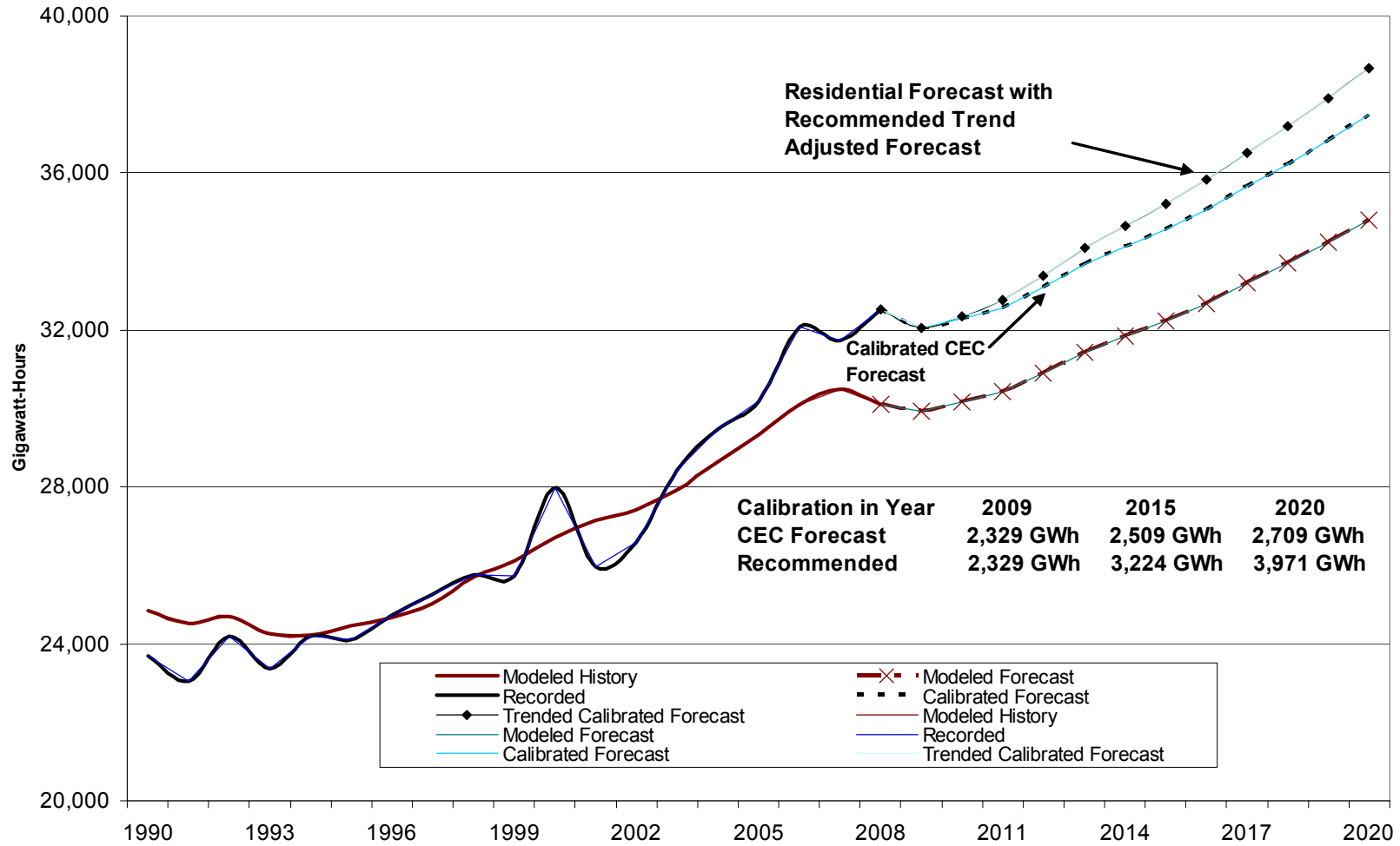


Chart 6 – It is recommended the calibration used in the CEC Staff’s forecast include an additional 149 GWh per each year in the forecast period. The recommended calibration remedies the CEC Staff’s residential model’s tendency to underestimate growth. This can be accomplished by adding 149 GWh per year to the Miscellaneous End Use.