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California Energy Commission and California Public Utilities Commission
Joint Workshop on Preliminary Reliability Plan for LA Basin and San Diego
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The closing of SONGs and planned retirements of OTCs, and the state's aggressive GHG reduction targets, are opportunities for a more robust utility business approach where EE is a utility resource. This is no small matter given the 35 year regulatory approach to EE where is a consumer resource and a utility expensed cost. Utilities invest capital in efficiency improvements in generation, transmission, and distribution infrastructure all the time. Utility capital investment in efficiency stops at the customer meter, leaving it to consumers to invest in efficiency, with the assistance of utility EE programs. This means that utilities generally have little if any financial skin in the game, other than some sort of EE shareholder incentives. While utilities are certainly receptive to this additional income, it has not created a structural change in the way utilities' make money. Rightfully cautious of being too successful with EE as to cause significant earnings erosion, CA utility EE is more of a regulatory compliance function, with the utilities an implementing partner with the CPUC on state policies.

While CA has accomplished a great deal with government mandated EE policies, the time is ripe for a more robust utility business approach to EE in California. The recent pattern in CA energy use since the CA 2000-2001 energy crisis and massive ratepayer-funded utility EE programs 2002-current shows that CA per capita and absolute energy consumption has been increasing, and at a time with state policies were to lower consumption. From 2002-2008, per capita energy consumption increased 9%. For the same period, absolute consumption increased 14%. (See Figures 1 & 2.) While recessions provide brief declines in energy use, they do not appear to be an effective way to reduce energy use long term. (See Figures 3 & 4.) And it certainly appears that CA's growing energy consumption is here to stay. CA's state forecast of electricity requirements continues on an upward trajectory. As reflected in Figure 5 these EE savings are insufficient to offset anticipated growth in electricity use to 2024.

New to the CPUC, in July 2011 Commissioner Florio suggested that "we shift our EE paradigm to more closely parallel that used for general procurement."[1] While the Commission's decision early this year directing SCE to conduct an All Source competitive solicitation including Preferred Resources, is a step in the right direction, we can and should do more.

[1] CPUC D 11-07-030 July 14, 2011, Concurrence of Commissioner Michel Florio.

Borrowing from generation procurement, the concept of "energy efficiency purchased power agreements or EE PPAs" is mentioned as possible regulatory tool to increase EE savings. Similar to capacity and energy PPAs, the utility would contract with a non-utility EE provider such as an ESCO (Energy Service Company) to provide site / building specific EE savings over a period of time. The ESCO provides the direct investment in EE, while also accessing ratepayer-funded EE rebates and financing, and makes money by sharing the bill reduction savings with the building owner. While certainly a possible avenue to more comprehensive EE savings, raising sufficient and affordable investment capital for EE projects can be difficult and can involve significant transaction costs. Also, even multi-year EE PPA projects of say up to 5 years can still leave deeper EE savings from more expensive but cost-effective EE untouched. Sufficient bill savings to turn an ESCO profit can also be tough with possible changes in building occupancy and use. All said, EE PPAs modeled after capacity and energy PPAs, still leave utilities with only an expensed product with no earnings contribution and the possible earnings erosion.

A variation on the EE PPA theme worth considering would be one where utilities provide the investment capital, and enter into a long term (say 20 year) contract with a building owner to harvest efficiency on their side of the meter. With generally easier and cheaper access to capital and a business model favoring long term capitalization, EE could then be a business asset that cycles EE savings into utility cash flow.

With a more robust utility business approach to EE that allows utilities to make capital investments in efficiency and contribute to meaningful utility earnings, we can begin to harvest all the cost-effective EE and DR in buildings. Dozens and then hundreds of (initially) large commercial building field projects could provide scalable distribution substation and circuit-specific load reductions, voltage support, contingency reserves, and energy.

At a recent state hearing on electricity infrastructure issues resulting from SONGS closure, CPUC Commissioner Michel Florio captured the moment with his opening statement: "The closure of SONGS, plus OTC retirements, provide us with a challenge and opportunity. The challenge is to replace thousands of megawatts in the LA Basin. The opportunity is to reshape to electric generation in California and the world."

Figure 1.

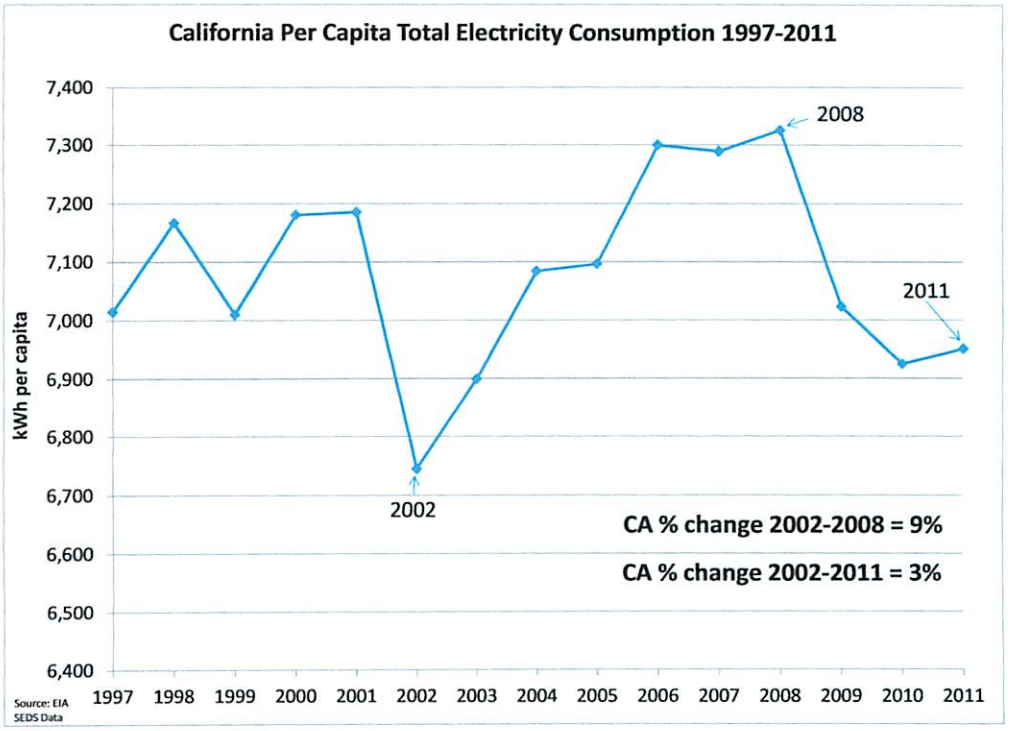


Figure 2.

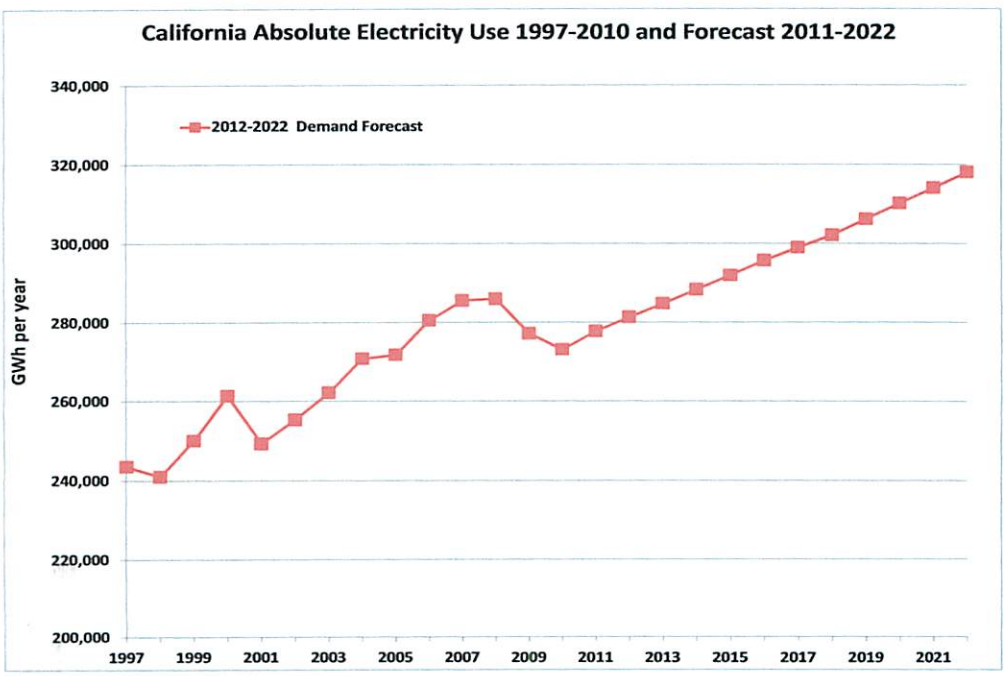


Figure 3

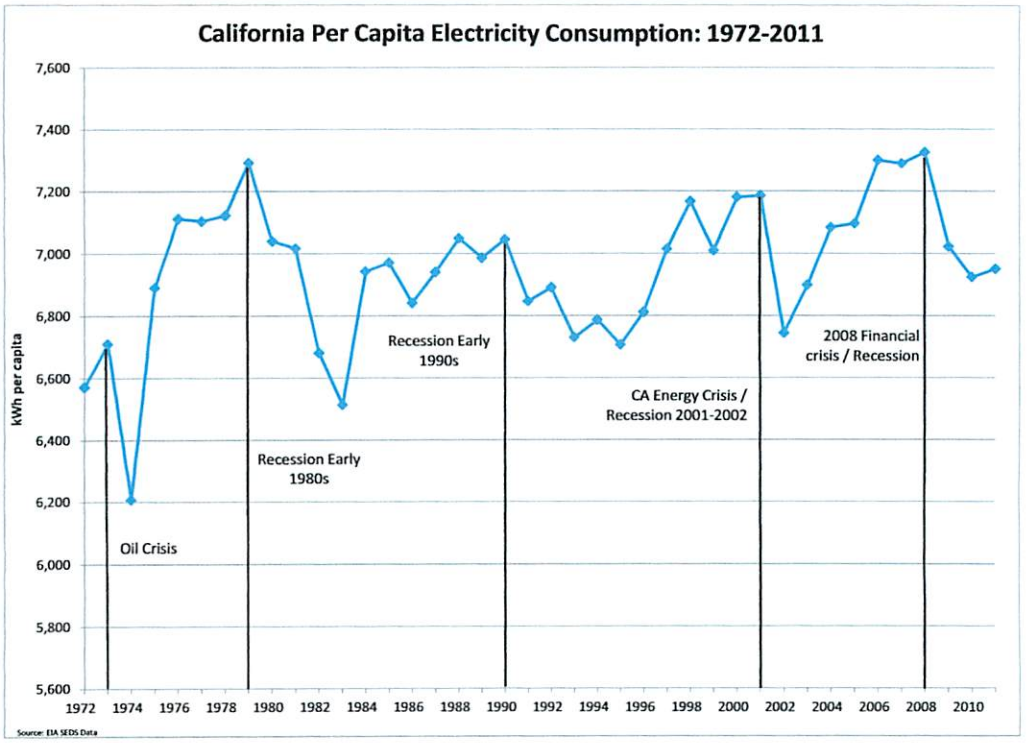


Figure 4

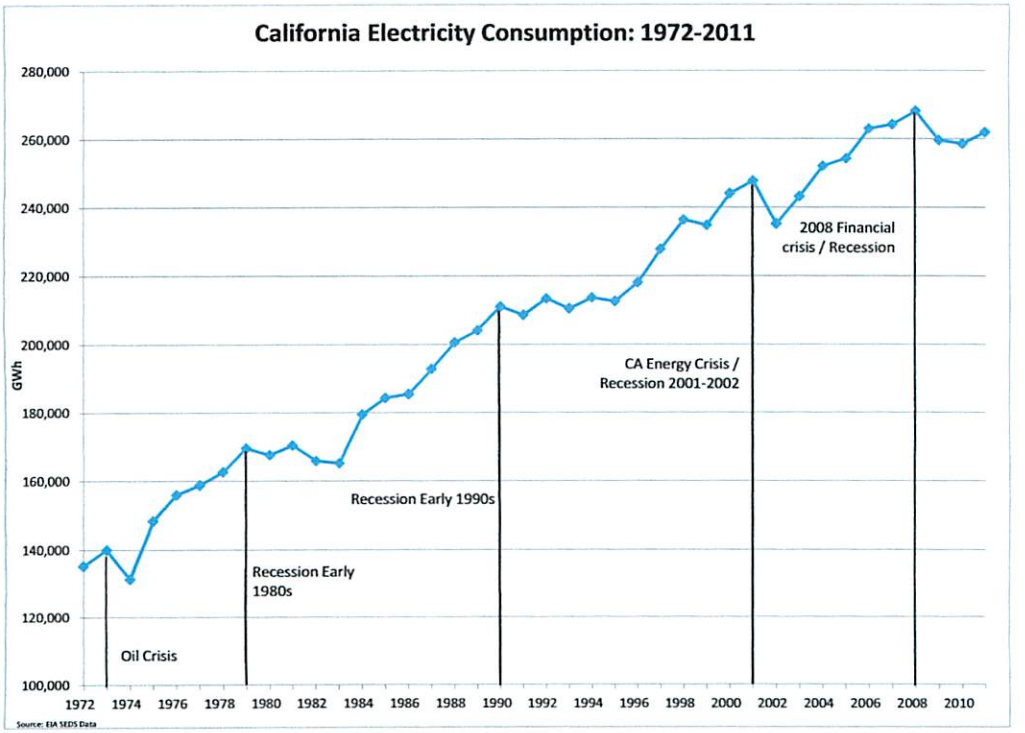
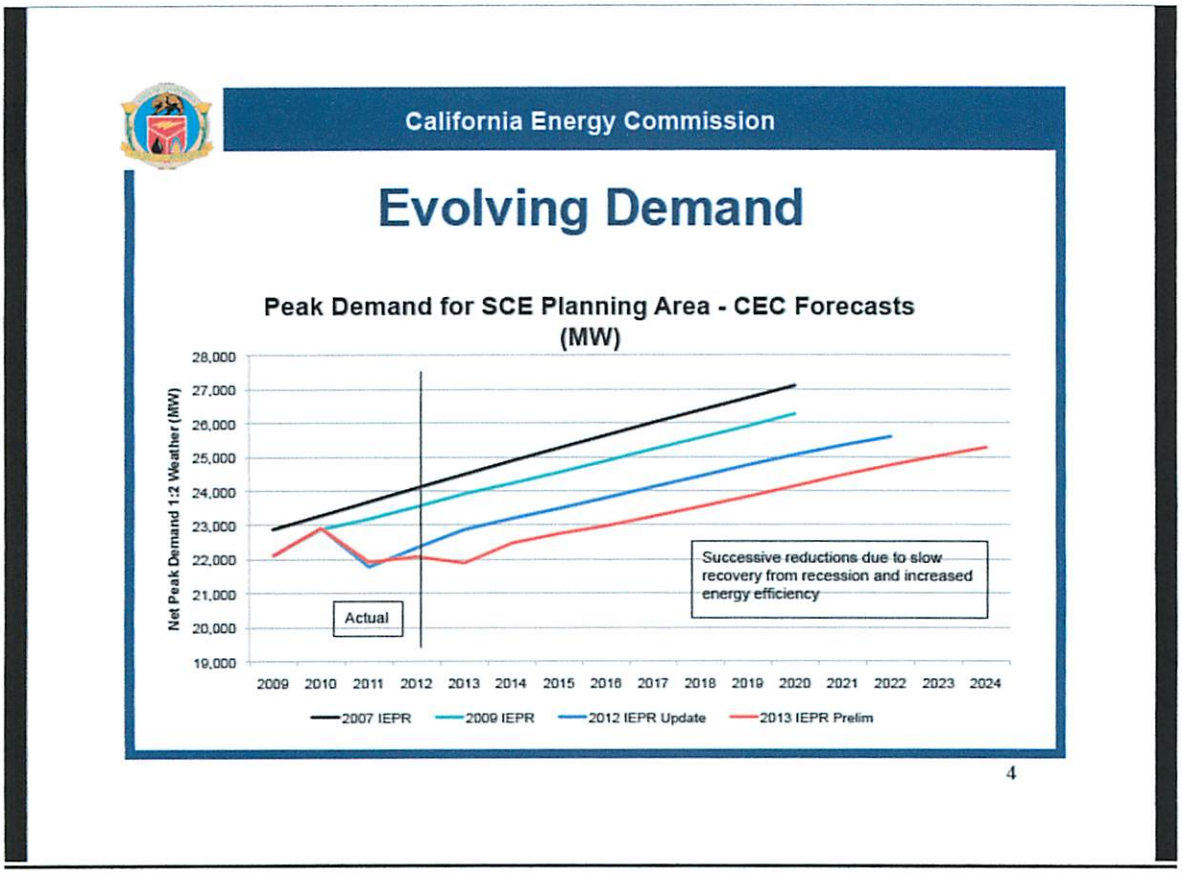


Figure 5.[2]



[2] Michael Jaske, Ph.D, CEC Electricity Supply Analysis Division, "Overview of Southern California Electricity Infrastructure Issues", Joint CEC/CPUC Workshop Electricity Infrastructure Issues Resulting from SONGS Closure, July 15, 2013,