

July 11, 2012 *Via email*

Commissioner Karen Douglas, CEC  
DRECP Director David Harlow

Dear Commissioner Douglas and Director Harlow:

Pursuant to the meeting at Commissioner Douglas's office and subsequent discussion at the DRECP Stakeholders meeting, it was Sierra Club's understanding that CEC staff would correct acknowledged flaws in the assumptions underlying CEC's 2040 acreage scenarios for the DRECP renewable energy acreage calculator.

There were several flawed assumptions, each of which tended to overstate the amount of land needed for renewable energy; and they included:

- Not accounting for California's decreasing rate of population and electricity demand growth,
- Excessively high 90% utility factor (percentage of miles driven all-electric) for PHEVs,
- Double counting of electric vehicles that had already been "embedded" in the CEC demand forecast to 2020, and
- The acreage requirement per megawatt of solar was too high.

In these forums it was agreed that CEC staff would correct the population growth assumption to be consistent with the new Department of Finance (DOF) projection, and revise the PHEV utility factor assumption to 72%, a value that is very aggressive, but is much closer to the 15%-66% projected range shown in the EPRI/NRDC report for PHEVs that travel 12,000 miles per year. In addition, CEC agreed to evaluate and correct if necessary the double counting of EVs in its demand growth assumption, and to present a revised calculator with explanatory text in an updated report. The acreage number needed per megawatt would also be reduced based on new information.

The revised scenario, which we have now reviewed, did significantly reduce the utility factor to a more credible level, and removed the embedded EVs in the demand forecast. Staff also produced a demand model that started with the base case 1.2% per year growth rate in the IEPR forecast to 2020, and made adjustments for lower population growth in future decades. Removing the EV demand that was embedded in the forecast resulted in reducing the growth rate to 0.998% per year, and the population adjustment further reduced average growth to about 0.9% per year for 2012 to 2040. Sierra Club appreciates the effort that CEC staff made in producing a new scenario with corrections to these features.

However, *staff did not replace the outdated Department of Finance population forecast with the current May 2012 DOF forecast.* The new DOF forecast—based upon the most recent U.S. census in 2010—revises the projected population of California in 2040 downward by 6.25 million compared to the value used by the CEC in the DRECP

model. This means that by using the old forecast, the revised staff model overstates electricity demand in 2040 by the equivalent of twice the population of the City of Los Angeles.

Moreover, the revised calculator scenario adopted anew, *far lower rate of efficiency savings than the November scenarios*. The November scenarios used a value of -0.834% per year for energy efficiency savings between 2010 and 2040, which the previous staff report noted was “slightly above the 1990 – 2010 average (-0.81% per year) but below that which assumes the efficacy associated with BBEES (-0.934% per year through 2020 in the mid-case).”

In the revised calculator, CEC staff asserts that after uncommitted efficiency savings the demand growth rate decreases to “an annual growth rate of 0.486%.” (p.5) Staff reduced the efficiency savings even further, asserting that “uncertainty regarding the long-run funding for/efficacy of energy efficiency programs led staff to increase the post-2020 annual growth rate by 0.1 percentage points to 0.586 percent.” This implies (by our estimate) *a rate of efficiency savings of only 0.453% per year, about half of what was previously assumed* in the low and high acreage scenarios, and much lower even than the November “Low Value” for efficiency that saved 0.734% per year. That would drop California’s ACEEE rating for electric energy savings from 2<sup>nd</sup> in the nation to 22<sup>nd</sup>!

This drastic reduction of energy efficiency offsets most of the reasonable changes that staff made to correct the demand growth rate and population. Sierra Club has argued that the previous efficiency projections of DRECP were already too low relative to what is required to meet the state’s climate policy goals, and that the performance of California’s efficiency programs have improved over the past 20 years. Thus, reducing this number even further, to a level markedly inconsistent with existing and projected state trends and policies, is deeply concerning.

Another significant change that CEC staff made in the new scenarios was to *reduce the amount of resources with lower land requirements by 2500 megawatts*, which disproportionately increases resources that have high land requirements. While Sierra Club understands that there are risks regarding development of these resources, the decrease of over 900 megawatts of baseload biomass and geothermal power will reduce system reliability. This is not a good strategic planning choice, and it seems to be based upon the questionable assumption that there will be no technological progress between today and 2040.

### **Change in Low Acreage Intensity Resources**

Resource	Original	Revised	Change
	MW	MW	MW
Geothermal	3,500	2,998	(502)
Biomass	3,000	2,569	(431)
Utility DG PV	11,000	9,421	(1,579)
Customer DG PV	10,000	10,000	-
CHP	4,500	4,500	-
Total Common Resources	32,000	29,488	(2,512)

In sum, with the latest changes the calculator inputs now include: an excessively high population forecast, aggressive electric-use values for PHEVs, assumed retirement of all nuclear power, reduced use of resources with low land requirements, addition of more storage, assuming no effects at all from the state's zero net energy building policy, no future use of vast offshore energy resources, and cutting the rate of efficiency savings nearly in half. Despite these factors, all of which increase the need for contributions from desert resources to meeting the state's climate goals, *the revised calculator is now being presented as a "plausible lower bound" scenario.*

We simply cannot see a fact-based justification for such a label. Yet, at this point, there is no other usable scenario presented by CEC staff. The CEC November scenarios included fundamental errors in various input values—as they were not consistent with California's historic performance, Department of Finance projections of population, and other empirically validated sources. Correcting these errors was the reason the current scenario was produced. Furthermore, it was understood pursuant to the above discussions that CEC staff would simply correct the CEC scenarios. While some corrections were made, the significant changes to other assumptions fundamentally changed the entire product once again. These changes inflated projected energy demand and acreage projected to be needed for renewables. The notion of now labeling this scenario a "plausible lower bound case" is not credible.

Sierra Club certainly appreciates the continuing dialogue, and the improvements that were made to the CEC reference case, but we must request that, to be credible, the following changes be made:

- The population should be made consistent with the current DOF projection of 47.93 million in 2040, rather than the outdated CEC staff value of 54.22 million,
- The former base case assumption of – 0.83% a year for energy efficiency savings between 2010 and 2040 should be reinstated, and
- The revised calculator, with the adjustments above, must be properly labeled as simply a corrected version of CEC's own reference case scenario.

Thank you for this opportunity to provide further feedback on the acreage calculator. Please post these comments on the DRECP website, and consider them as official input in the NEPA/CEQA process for the DRECP.

Sincerely,

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