BERMAN ECONOMICS
The Berman Group

March 6, 2010

California Energy Commission
Dockets Office, MS4
1516 Ninth Street
Sacramento, CA 95814-5512

RE: Docket # 11-IEP-I
IPER Draft Revised Scoping Order Comments

Dear Chairman Weisenmiller and Commissioner Douglas:

Berman Economics is an economic consulting firm specializing in energy, environmental, and natural resource issues; and has substantial experience with electric utilities. Berman Economics is pleased to provide comments on the CEC's 2011 IPER Draft Revised Scoping Order. We are pleased that the CEC has decided to substantially broaden the scope of the 2011 IEPR, and believe that the broader scope is more consistent with the CEC's mandate and will better serve the citizens of California. Our comments are based on analyses of the potential for substantial energy savings resulting from efficiency improvements on distribution systems generally, and on distribution systems of California utilities in particular. Specifically, our comments address the:

- Electricity Infrastructure Report;
- Strategic Plan for Increasing Renewable Generation and Transmission Infrastructure in California;
- Assessment of Resource Adequacy and Resource Plans of Publicly Owned Utilities in California; and
- Achieving Cost-Effective Energy Efficiency for California.

Electricity Infrastructure Report

The Electricity Infrastructure should be expanded to include distribution systems. The CEC explained that the 2009 IPER did not address distribution system efficiency because, "The 2007 IEPR dedicated a chapter to California's electric distribution system. The information covered and recommendations provided are still relevant and are not repeated in the 2009 IEPR." (2009 IEPR, page 204). However, although 2007 IEPR acknowledged that, "The distribution system accounts for a higher share of delivery losses than transmission, and may offer a significant opportunity for improvements in efficiency." (2007 IEPR, page 157), there was no further discussion of distribution system delivery losses or policies or programs to address those losses. Rather, the distribution system chapter in the 2007 IEPR dealt largely with new technology meters.

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In response to our comments, the CEC answered that, "While the IEPR Committee has not explicitly included your suggestion to include the efficiency on the distribution systems within the Scoping Order itself, the Committee does intend to look at the distribution system as part of the IEPR's overall assessment of the infrastructure needs of the electricity system." However, the current version gives no consideration to distribution system efficiency.

Although the Federal standards effective in 2010 limit state regulatory authority over distribution transformers due to the primacy of Federal regulations, the regulatory authorities of both Maryland and the District of Columbia have promulgated rules that require jurisdictional utilities purchase liquid-immersed distribution transformers using the life-cycle cost methodology specified in Section 2, Efficiency Evaluation for Electric Utilities of NEMA Standards Publication TP I-2002. Vermont also requires a similar life-cycle cost methodology developed by the VT DPS and provided to jurisdictional utilities. Other states such as New York have established dockets specifically to inquire into the nature and extent of T&D losses and how to reduce them. That the Federal standards are inadequate to California's need is underscored by the California Attorney General's 2008 filing in *People Of The State Of California, ex rel, v. U.S. Department Of Energy, United States Court of Appeals for the Ninth Circuit, Case Nos., 07-74819, 07-74836, 08-70807*. Those standards and currently under review and may be revised as required by a settlement with the California Attorney General.

Low core-loss transformers may be particularly important to California at times of economic growth as well as in the current recession. Both of these periods may be exhibit high vacancy rates. Currently, vacancy rates are high because of foreclosures due to the recession. During a booming economy, when new developments are built, houses stand idle until they are sold and occupied. During the time that the homes are vacant, they are still connected to the distribution system and the transformers still continue to draw power much as a cell phone charger draws power as long as it is plugged in, even though it is not currently charging the cell phone. California's distribution system is composed of the giant "wall warts" whose smaller versions the CEC acted to eliminate with its Appliance Standards.

Strategic Plan for Increasing Renewable Generation and Transmission Infrastructure in California

The Strategic plan for Increasing Renewable Generation should include standards for both wind turbines and transformers to ensure that renewable generation in California uses the most efficient turbines and transformers that are cost-justified. Anything less permanently wastes California's valuable and scarce wind energy resource, requiring unnecessary construction of additional facilities to meet California's renewable generation needs. Transformers are a weak-link in development of many wind farms. Step-up transformers, unlike distribution transformers, are not subject to any Federal efficiency regulations and there are no constraints on state action. Moreover, because they operate intermittently, commercial wind turbines actually draw energy from the grid to power the transformers when the turbines are not generating the power. They are similar to "wall warts" in this regard, although on a much larger scale. As an example, the CPUC recently denied, with prejudice, the application of PG&E to purchase the Manzana wind

project because it was more expensive than comparable projects and would likely not provide benefits commensurate with that cost. The 246 mW Manzana wind project, as proposed by Iberdrola and PG&E, could provide between 2 and 5 gWh more energy annually, power 300 to 800 more households, and save 1,200 to 3,200 *more* tons of carbon annually if proper attention were paid to transformer efficiency standards.

Assessment of Resource Adequacy and Resource Plans of Publicly Owned Utilities in California

Assessing resource adequacy in an Integrated Resource Plan (IRP) should distinguish between unavoidable and avoidable losses on the system, and the cost of avoiding those losses. Currently, California accepts measured losses on both transmission and distribution systems as a fact of life – a just another demand that new power plants must be built to meet. Much of this "required" generation, however, is avoidable through more efficient transformers at a cost substantially below the cost of new generation; and with no negative impacts on the environment.

Achieving Cost-Effective Energy Efficiency for California

Energy efficient transformers, particularly those with low core losses, save kWh in much the same manner as Appliance Standards, although on a substantially larger scale. A kWh saved on the consumer's side of the meter is the same as a kWh saved on the utility's side of the meter; and because the losses are not load-related, they are additive with customer efficiency savings. If viewed as a demand-side management (DSM) initiative, efficient transformers save energy at a cost less than 1¢ per kWh – lower than other energy efficiency programs in California. Compared to Appliance Standards the CEC reports will ultimately save the generation of 1 small power plant, efficient transformers could ultimately save the equivalent of 16 small power plants – about 3 million mWh annually. This would translate into a reduction in GHGs of 1.8 million tons annually – about 10% of the electric generation share of the AB32 mandated reduction.

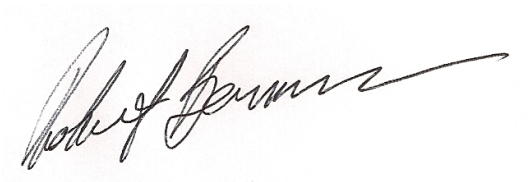
Inefficient Distribution Transformers Are Characteristic of California's Investor-Owned Utilities, Not Municipally Owned.

Although failure to acknowledge the benefit of reduced losses would not be expected to impact efficiency investments by California's municipally-owned utilities, failure to recognize loss reductions or enunciate a policy on avoiding losses where cost-effective may actually serve as a disincentive for California's investor-owned utilities (IOUs). Because ratepayers and stockholders are the same for a municipal utility, minimizing long-run costs is a common interest. To the extent that investor-owned utilities can earn a higher return for stockholders in their unregulated investments, they have an incentive to avoid investment in regulated infrastructure as the additional fuel and generation costs are simply passed through to the ratepayer.

Indeed, our analyses show a sharp contrast in the purchasing policies of municipally owned utilities versus IOUs. Both SMUD and LADWP include the capitalized values of both no-load and load related losses in their transformer specifications, and make their purchase decisions based on sum of the first cost of each transformer plus the cost of no-load losses and the cost of load losses. In addition, SMUD tests the losses and penalizes contractors whose transformer fail to meet specifications at a rate of twice the cost of no-load and load losses for each such transformer. IOUs, by contrast purchase transformers that meet minimal DOE standards based on first cost alone, without regard to the cost of losses.

In summary, Berman Economics strongly encourages the CEC to broaden its scoping order for the 2011 IEPR to include distribution system losses, and transformers on California distribution systems as well as those used as step-up transformers on California wind farms. Policies in these areas are important to providing guidance to California utilities as well as to provide standards for wind generation development where no standards currently exist.

Sincerely,



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