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State of California
Select Committee on Energy Independence and Global Warming
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Thank you for the opportunity to testify today on the role of energy efficiency policies in reducing greenhouse gas (GHG) emissions that cause climate change.

My testimony will cover three areas. First, I will provide a brief overview of energy efficiency programs and policies in California. Second, I will discuss the on-going efforts in California to maximize our energy efficiency regulatory programs in order to achieve the GHG emissions reduction goals in the California Global Warming Solutions Act of 2006, which I will refer to as California Assembly Bill 32 or AB 32.[1] Finally, I will offer my thoughts on the integration of energy efficiency into regulatory and market mechanisms to address climate change.

Energy Efficiency Is California's Highest Priority Energy Resource

California has adopted as state policy a "loading order" of preferred electricity resources. This loading order requires investment in all cost-effective energy efficiency savings as the energy resource of first choice.[2] This policy choice reflects a 30 year history of implementing highly successful energy efficiency programs through the California Public Utilities Commission's (CPUC) utility regulatory programs and state building and appliance standards.

This focus on efficiency has resulted in tangible and significant financial benefits. Since 1970, California's per capita electricity usage has remained stable and is currently approximately half of the United States average. California's electricity bill is 1.79 percent of the state's gross state product (GSP) as compared to an average of 2.54 percent for the other 49 states combined, while the average Californian residential bill is 15 percent lower than the average bill for the rest of the United States.[3] California generates nearly twice as much GSP per kilowatt hour (kWh) than the U.S. average and has tripled its GSP in the last 30 years.

The CPUC oversees the state's investor-owned utility companies, which serve approximately 80 percent of Californians. Under our direction, these utilities currently invest approximately $1 billion annually in energy efficiency resources that cover every economic sector - residential, commercial, institutional, agricultural and industrial – across dozens of different micro-climates and a culturally diverse population. They also provide specialized energy efficiency programs for low income consumers. Over the period 2004 through 2013, the CPUC's energy efficiency programs will result in $10

billion in net savings for the state,[4] eliminate the need for ten 500 megawatt power plants, and eliminate 9 million tons of carbon dioxide emissions.

This investment in energy efficiency has a 2 to 1 return: for every dollar spent on energy efficiency, California customers avoid $2 in conventional electricity generation costs. This fact is more remarkable given that the energy efficiency programs include a large number of "non-resource" programs, such as public education and outreach, job training, and emerging technologies, which do not produce a direct reduction in energy usage. Currently, utility programs and building and appliance codes and standards supply approximately 15% of California's total electricity supply. These "negawatts" are measured and verified and integrated into the regulated utilities' short and long term plans to meet projected electricity demand.

California's successes in energy efficiency are due in large part to the state's acknowledgement that there are significant market barriers to energy efficiency and its willingness to use regulatory tools to reduce or overcome these barriers. For example, California "decoupled" earnings from sales for its regulated utilities over 20 years ago, with no ill effects on utility shareholders or ratepayers. Our portfolios of efficiency measures [5] include a wide range of measures designed to remove hurdles to efficiency. Some energy efficiency measures lower the higher upfront costs of efficient products through rebates and financial incentives; others bridge an information gap by providing building and equipment audits. Others fill a technical gap by funding development of new energy efficiency products. By instituting a centrally administered and funded regulatory system, California has enabled its utilities to aggregate small efficiency resources implemented by multiple actors that result in collectively large savings.

While California has accomplished much through energy efficiency, we know that we can and must due more. To that end, we are focusing now on strategies that will support behavior and market transformation so that energy efficiency truly becomes business as usual. We are also planning to adopt later this year a long-term strategic plan for energy efficiency in California through 2020 to make energy efficiency a way of life for all Californians.

Energy Efficiency is a Key Weapon in the Fight Against Global Climate Change

There is a growing consensus that energy efficiency is not only a tool for reducing GHG emissions, but necessary one, because it is available now and generates economic benefits that mitigate the impact of higher cost reduction measures. A recent Intergovernmental Panel on Climate Change (IPCC) study on global GHG mitigation potential concluded that the largest single source of potential reductions are efficiency measures in the building sector. In a December 2007 report, McKinsey & Company concluded that, in the United States, "At 710 megatons annually in the mid-range case, energy efficiency improvements in residential and commercial buildings (including the appliances inside) make up the largest cluster of negative-cost abatement opportunities."[6]

Preliminary estimates for California show that in 2020 energy efficiency can result in a net *savings* of $20 per ton of carbon dioxide reductions.

You may have heard that energy efficiency is the "no regrets" policy on global warming. California absolutely agrees. In other words, we would maximize energy efficiency investments even if there were no global warming problem, because energy efficiency provides a tremendous benefit to the California economy. Not only does it lower our energy bills, energy efficiency is in large part a domestically produced resource. From the research and development at our universities and Silicon Valley, through sale of equipment, to on-site installation by contractors, energy efficiency creates jobs throughout all sectors of our economy.

A major question we face in California is the role of energy efficiency in a global warming regulatory structure. The CPUC and the California Energy Commission (CEC)[7] have been tasked with providing recommendations to the California Air Resources Board (CARB) – the state agency responsible for implementing AB 32 - on treatment of the electricity and natural gas sectors under AB 32. In April, the California energy agencies unanimously recommended that CARB adopt a state-wide mandate set at the level of all cost-effective energy efficiency as a cornerstone of AB 32. We stated,

> We do not adopt the policy, as suggested by some parties, that we should eliminate mandatory targets for energy efficiency and/or renewables, and allow an AB 32 cap to govern instead. . . . .We firmly believe that our existing energy efficiency, renewables, and emissions performance standard policies are the foundation upon which other AB 32 policies should be built. [8]

The approach that the CPUC and the CEC has recommended to climate change is three-fold: (1) implement existing energy efficiency, renewable energy and emissions standards, (2) expand existing programs to achieve higher standards and/or to cover other actors, and (3) implement a cap and trade system to capture other cost effective reductions.

Energy efficiency is our most cost-effective weapon to combat climate change and must be fully deployed. Regulation of carbon alone or establishment of a cap and trade system is insufficient to effectively address climate change. We must harness energy efficiency and to do so, we must have specific policies, programs, and funding mechanisms that collectively work to overcome market barriers to energy efficiency.

Recommendations for a National Climate Change Policy

- **Clear Statement of Policy on Energy Efficiency.** Any legislation should state unambiguously that energy efficiency and productivity is the highest priority generation resource for all Americans.

- **National Energy Efficiency Requirements.** Adopt national energy efficiency goals with implementation left to individual states and discretion to institute more stringent standards.
- **States Must Retain Their Role In Working With Utilities And Others In Their State To Develop Efficiency Programs.** The current structure of shared federal and state authority to implement energy efficiency programs and standards should be retained. California has been a leader in developing efficiency standards for appliances that are later adopted by the federal government.
- **National Building Standards.** The built environment constitutes 51 percent of GHG emissions in the United States. The built environment includes construction materials, construction process, and occupation of buildings. National building standards for energy efficiency will have a huge, immediate and long-term impact on emissions. The State of California is committed to achieving zero net energy building standards for homes by 2020 and for commercial buildings by 2030. The national government should make a similar commitment and provide resources to assist in this effort on a national, state, and local level.
- **Decoupling.** Section 3301 (a)(2) of the Warner-Lieberman Bill provides that states and utility regulators should be encouraged (with allocations or auction revenues) to "make cost-effective energy-efficiency expenditures by investor-owned natural gas or electric utilities at least as rewarding to shareholders as power or energy purchases, or expenditures on new energy supplies or infrastructure."
- **Long-term Funding Mechanism.** Long-term funding is critical to ensuring that maximum savings from energy efficiency can be achieved. Assuming federal climate regulation will include auctions of GHG allowances, a significant dedicated amount of the revenue from such auctions should be made available to states for energy efficiency efforts.
- **Complementary Tax Structure.** The federal tax code should reward investments in energy efficiency, particularly for improvements for new and existing buildings.
- **Investment in Research and Development and Worker Training.** Federal investment in basic research for energy efficiency has dramatically decreased over the last decade. It is imperative that we invest in new technologies that will provide the efficiency savings for the next generation. The same applies to training for green collar jobs that will provide high wages and which cannot be moved overseas.
- **A National Strategic Plan on Energy Efficiency**. The National Action Plan on Energy Efficiency has laid the groundwork for a comprehensive plan on energy efficiency that will fundamentally change the usage of energy in this country. This effort should be continued and expanded.

Conclusion

Energy Efficiency is the single most important opportunity for reducing GHG emissions and addressing our nation's energy needs. However, I urge you to act quickly, and if need be, to implement a national law on energy efficiency before climate change legislation. Buildings are being constructed, maintained and repaired, and equipment and appliances are being replaced, every day. Every year in which energy efficiency opportunities, including more aggressive building and appliance standards, are not implemented means that we are forgoing inexpensive resources today and making it more costly to take action in the future. The lack of building and appliance standards to drive new builds and purchases towards higher efficiency *now* directly translates to higher costs for retrofits down the road.

It has been an honor to testify before you and I welcome any questions you may have.

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[1] California Health and Safety Code, Div. 25.5, §§38500, et seq.
[2] Energy Action Plan II, http://docs.cpuc.ca.gov/published/REPORT/51604.htm**;** see also, CA Public Utilities Code § 454.5(b)(9)(C).
[3] Next 10, 2008, *California Green Innovation Index*, p. 21.
[4] The net savings reflects the avoided costs of constructing a new natural gas generation facility minus the cost of implementing the energy efficiency measures.
[5] IPCC 2007, *Fourth Assessment Report, Working Group III Report.*
[6] McKinsey & Company, 2007, *Reducing U.S. Greenhouse Gas Emissions: How Much and at What Cost?*, p. 34.
[7] The California Energy Commission is responsible for providing technical, scientific and policy research and information development on the energy sectors of the California economy.
[8] Decision 08-03-018, March 13, 2008, http://docs.cpuc.ca.gov/PUBLISHED/FINAL_DECISION/80150.htm , p. 36.