BACKGROUND

Energy efficiency is California's top strategy for reducing energy use and meeting the state's energy needs. Energy efficiency is at the top of the "loading order," and California's utilities are required to first meet their energy needs through cost-effective energy efficiency measures before renewable and conventional generation. The state's investor owned utilities (IOUs) and, to a lesser extent, the publicly owned utilities (POUs), administer hundreds of energy efficiency programs that provide financial incentives and rebates for installing energy efficient appliances, lighting, windows, heating, ventilation and air conditioning (HVAC) systems and other technologies or measures.

The Public Goods Charge (PGC), which sunsets on January 1, 2012, and has been the subject of a series of informational hearings by this committee, provides $228 million per year for the IOU energy efficiency programs. Although this $228 million is three times what other programs get from PGC funding ($62.5 million for energy research and $65.5 for renewable energy), the amount is dwarfed by other funding for state energy efficiency programs, including:

- $750 million per year from IOU ratepayers, which supplements the $228 million from the PGC, for a total of about $1 billion per year for IOU programs approved by the California Public Utilities Commission (CPUC).

- $300 million per year from IOU ratepayers for free weatherization services for IOU low-income customers approved by the CPUC.

- $30 million per year in federal funding for free weatherization services for low-income residents administered by the California Department of Community Services and Development (CDCS).

- $185 million for free weatherization services for low-income residents from the American Recovery and Reinvestment and Act of 2009 (ARRA) administered by CDCS.

- $280 million in ARRA funds for energy efficiency programs administered or coordinated by the State Energy Resources Conservation and Development Commission (CEC).

Some, but not all, of these programs have specific energy savings goals, although the measures for assessing performance generally are highly controversial. California's long-term goal in the

2008 Energy Efficiency Strategic Plan is "market transformation" – reducing barriers to adoption of energy efficiency measures to the point where subsidies and public intervention are no longer required and energy efficiency is a way of life in California. Given that literally billions of dollars in ratepayer and public funds currently are dedicated to energy efficiency, it is time to take stock, review these programs, and determine whether California's public investment in energy efficiency is yielding real results in energy savings and making progress toward market transformation.

$1 Billion per Year for IOU Energy Efficiency Programs – California's single biggest ongoing energy efficiency initiative requires each IOU to administer programs approved by the CPUC in three-year portfolios designed to meet pre-established energy savings goals. The $3.1 billion 2010-12 portfolios are expected to produce cost-effective energy savings of 10,000 GWh of electricity, 1,982 peak MW, and 200 million therms of natural gas, the equivalent of avoiding nearly four 500 megawatt power plants. About 29 percent of the $3.1 billion is for commercial, 23 percent for residential, 13 percent for industrial and the remainder for other programs, including agriculture, HVAC, workforce training, marketing, and evaluation, measurement and verification (EM&V) of savings achieved. (See attachment A)

Funding for IOU portfolios is all from ratepayers, with $228 million per year from the PGC, $175 million per year from a natural gas customer surcharge, and the balance from CPUC-approved rates. The 2010-12 investment is a 40 percent increase over the $2.1 billion portfolio budget for the 2006-08 cycle.

The IOUs administer these energy efficiency programs under the CPUC's Risk/Reward Incentive Mechanism and can earn shareholder bonuses or be penalized for the amount of verified energy savings achieved. For the first three-year program cycle, the CPUC awarded the IOUs more than $200 million in shareholder bonuses, which are funded through rates on top of the program costs. The CPUC, through outside contractors, currently is conducting needs assessments and studies of potential efficiency gains to set new energy savings targets with the goal of issuing a decision in July 2012 that will guide the IOUs' development of portfolios for the 2014-16 cycle to be filed in early 2013. These targets also are aligned with targets set pursuant to current law enacted in 2006 requiring the state's utilities to reduce customer energy demand by 10 percent by 2016.

$330 Million per Year for Low-Income Energy Efficiency Programs – The California Alternate Rate for Energy (CARE) program provides a minimum 20 percent energy rate discount to eligible low-income households earning at or below 200 percent of the federal poverty level. Customers who meet the CARE requirements also are eligible for the Energy Savings Assistance Program (ESAP), formerly known as Low Income Energy Efficiency (LIEE) program, which provides no-cost weatherization and other services such as attic insulation, energy efficient refrigerators, energy efficient furnaces, weatherstripping, caulking, low-flow showerheads, water heater blankets, and door and building envelope repairs that reduce air infiltration. The CPUC approved nearly $900 million for this program administered by the IOUs for 2009-2011, with 1 million eligible households targeted for energy efficiency treatment. The CPUC is required to ensure by December 31, 2020, that all eligible customers are given the

opportunity to participate in ESAP, including customers occupying apartments or similar multiunit residential structures.

A similar program of free weatherization services for low-income residents is administered by CDCS with federal funds as part of the Low-Income Home Energy Assistance Program (LIHEAP). CDCS gets about $25 million per year from the federal Department of Health and Human Services and another $5 million from the Department of Energy, which CDCS distributes to contracted community energy service providers. CDCS also received about $185 million in ARRA funds for this program.

The 2008 Energy Efficiency Strategic Plan includes a goal that by 2020 multifamily buildings will achieve a 40 percent reduction in energy purchases over 2008. Recognizing that multifamily buildings include substantial low-income populations, the CPUC recently issued guiding principles for low-income multifamily pilot programs that the IOUs could include in their next portfolio applications. This action responds to claims that households in multifamily buildings represent the greatest need for efficiency improvements and pay a greater percent of household income for energy than single-family dwelling households but only about 23 percent of them benefit from ESAP funds. Moreover, the ESAP and CDCS programs do not address heating and cooling systems where most of the potential energy savings could be achieved in multifamily buildings.

<u>$280 Million in ARRA Energy Efficiency Funds to CEC</u> – The CEC received a total of about $314 million in ARRA funds, of which $280 million were dedicated to energy efficiency as described below and on the attachment B:

- $110 million for residential, commercial, and municipal building retrofit and financing.
- $25 million for the Department of General Services (DGS) to make loans to retrofit state buildings under an existing energy efficiency revolving loan program.
- $25 million to the Energy Conservation Assistance Account, an existing program administered by CEC that makes low-interest loans to local agencies, schools and hospitals for energy efficiency measures.
- $20 million to the Employment Development Department for a clean energy workforce training program.
- $49.6 million for Energy Efficiency Conservation Block Grants, with about $35 million for small cities and counties based on population, $10.4 million in grants awarded by CEC, and $3.6 million for auditing, EM&V, and administration and project support.
- $35.2 million for the Cash for Appliances rebate program for consumers to buy Energy Star clothes washers ($100), refrigerators ($200) and room air conditioners (up to $50).
- $15.4 million for CEC staff and contractors to conduct auditing, EM&V, and administration and program support.

Residential and Commercial Buildings – California's Title 24 energy efficiency building regulations, first adopted by the CEC in 1978 and updated every three years, specify requirements relating to lighting, insulation, windows, HVAC systems, and other construction details designed to reduce energy consumption and lower energy bills for consumers. The state's Title 20 energy efficiency appliance regulations specify energy use standards for most major household and commercial appliances that must be met in order to be sold in California. There is general agreement that these building and appliance standards have been a major contributor to the state making progress toward achieving energy efficiency goals. However, about 60 percent of California's residential and nonresidential buildings were built prior to adoption of the building standards. AB 758 (Skinner, 2009) requires the CEC to develop a comprehensive energy efficiency strategy for this old building stock, both residential and nonresidential. To date, the CEC has used ARRA funds for some pilot programs to develop and advance the tools, protocols and workforce to conduct best practice building energy assessments and retrofits, which the CEC says will generate information for developing the long-term strategy. As required by AB 758, the CPUC has opened a rulemaking to investigate the ability of IOUs to provide energy efficiency financing options to customers to implement the CEC's strategy for building retrofits.

In the IOUs' 2010-12 energy efficiency portfolios, about 23 percent, or $722 million, of the total $3.1 billion budget is for residential building programs, including lighting discounts, wholehouse retrofit incentives of $1,000 or $3,500, appliance rebates and recycling, and other measures. The total expected energy savings is 3,082,995,560 GWh electric, 598,260 kW electric, and 19,281,845 therms natural gas.

About 29 percent or $936 million of the 2010-12 budget is for commercial building programs, including audits, benchmarking, and consulting and rebates and incentives for lighting, air conditioning equipment, refrigeration, and other measures. The total expected energy savings is 2,832,878,328 GWh electric, 620,787 kW electric, and 39,687,985 therms natural gas.

For new construction, a goal in the 2008 Energy Efficiency Strategic Plan is that all new residential construction in California will be zero net energy by 2020, and all new commercial construction in California will be zero net energy by 2030. Zero net energy is defined as a building where the amount of energy provided by on-site renewable energy sources is equal to the amount of energy used by the building.

Energy Upgrade California – In March 2010, the CEC launched "Energy Upgrade California," a new web portal and brand name intended to coordinate and leverage energy efficiency dollars across the state. The web portal offers a one-stop clearinghouse for information, incentives, rebates and financing for residential and commercial building retrofits. Each of the 58 counties has its own page that highlights the services and energy efficiency programs available for local residents, including those offered by the IOUs as approved by the CPUC. Property owners can enter their zip code or county name to learn about local options and participating contractors available to them. (See https://energyupgradeca.org/overview).

Engage 360 – In October 2010 the CPUC launched "Engage 360," a new brand and web portal to consolidate information and increase consumer awareness of and participation in energy

efficiency programs. Engage 360 was developed through a year-long consumer research process and pursuant to direction in the 2008 Energy Efficiency Strategic Plan, which outlined marketing, education, and outreach as essential to encourage behavior changes that will help achieve the long-term goal of market transformation. This site also allows customers to find rebates and incentives by entering their zip code. (See http://www.engage360.com/index.php?option=com_content&view=article&id=365&Itemid=318&lang=en).

Measuring Energy Efficiency Outcomes – A central concept of energy efficiency is that it can be measured as a source of energy. Every unit of energy not used, or saved, because of a more efficient appliance or window or HVAC has an equivalent in a unit of fossil fuel that need not be produced, generally a kWh of electricity or therm of natural gas. Aggregated energy efficiency savings equate to power plants that need not be built. The CPUC uses this metric to evaluate IOU energy efficiency programs and determine if they are cost-effective. Total investment is then reduced to a Total Resource Cost ratio – the dollar value of energy saved compared to each dollar invested in energy efficiency. For 2009, the IOUs' energy efficiency programs had a ratio of 1.47, meaning that for every dollar of ratepayer funds invested in energy efficiency, $1.47 in benefits were received.

The lack of a similar metric across all state energy efficiency programs (or any metric for some programs) makes it difficult to determine which programs are producing the greatest benefit and justify continued investment of ratepayer and public funds. Moreover, measuring energy efficiency savings raises many questions, including the following:

- How does the calculation of energy savings account for reduced energy use due to factors other than the efficiency measure, such as higher electric or gas prices or conservation (just using less energy)?

- Are energy efficiency programs actually reducing energy costs for customers? How do you account for customers with new, efficient appliances actually using them more?

- Does the verification of energy savings account for savings not realized because of lax enforcement of building standards and improper installations by unskilled or unlicensed contractors when a license is required? In the HVAC sector, for example, less than 10 percent of HVAC change-outs are done with building permits, so code enforcement is rarely triggered and duct work essential to energy savings often is not done.

- Should all costs of public education and outreach and building up an energy efficiency infrastructure and workforce be included in the cost-effectiveness methodology if they are deemed essential to achieving market transformation and long-term savings?

- Should the state be focused on absolute reduction of energy consumption rather than a change in the rate of energy consumption by a growing population?

- Are energy efficiency programs actually causing utilities to generate less energy from fossil fuel and build fewer power plants?