ATTACHMENT

California's Major Energy Efficiency and Clean Energy Programs

1) State Building and Appliance Standards – ongoing

2) Statewide Energy Efficiency Program - $3.1 Billion to 2014

3) Renewables Portfolio Standard Program – 33% by 2020

4) Renewable Self-Generation

5) Public Benefits Charge: Electric Program Investment Charge, local utility programs

6) Greenhouse Gas Regulations (GHG) Auction Revenue

1) State Building and Appliance Standards – ongoing

California adopts regulations for building energy efficiency that are enforced through local governments. California's Building Energy Efficiency Standards began in the 1970s and have gradually increased energy efficiency requirements. For example, 2013 Building Energy Efficiency requires 25% higher efficiency than previous standards for residential construction and 30% higher efficiency for nonresidential construction.

During the 1970s, California adopted its first energy efficiency standards for appliances sold in the state. California has continued to increase efficiency requirements and expand efficiency requirements to products. As a result of appliance standards, many of today's household appliances use much less energy than comparable models did a few years ago. Refrigerators offer an example. Today's modern designs can consume just one-quarter of the electricity that a similar-sized refrigerator would have used 20 years ago.

2) Energy Efficiency Programs available in areas served by Investor Owned Utilities, 2010-2012

The Public Utilities Commission (PUC) authorized $3.1 billion in ratepayer funding for energy efficiency programs for planning years 2010-2012. These funds are collected from ratepayers as authorized through the PUC's procurement planning process.

The 2010-2012 program cycle features 12 statewide programs that are consistent throughout the utilities' service areas, as follows:

a) Residential - Program Summary Fact Sheet, Energy Upgrade California Fact Sheet and SWResidential PIP.

b) Industrial - Program Summary Fact Sheet and SWIndustrial PIP

c) Commercial - Program Summary Fact Sheet and SWCommercial PIP

d) Agricultural - Program Summary Fact Sheet and SWAgriculture PIP

e) IDSM - SWIDSM PIP

f) New Construction - Program Summary Fact Sheet, ZNE Pilot Fact Sheet and SWNewConstruction PIP

g) Marketing, Education and Outreach (ME&O) - Program Summary Fact Sheet and SWMEandO PIP

h) Workforce Education and Training (WE&T) - Program Summary Fact Sheet and SWWEandT PIP

i) Lighting Market Transformation - Program Summary Fact Sheet and SWLighting PIP

j) Local Government Programs - Program Summary Fact Sheet

k) HVAC - Program Summary Fact Sheet and SWHVAC PIP

l) Codes and Standards - Program Summary Fact Sheet and SWCandS PIP

m) Emerging Technologies - Program Summary Fact Sheet and SWETP PIP

n) On Bill Financing - Program Summary Fact Sheet

3) Renewables Portfolio Standard Program (RPS): 33% by 2020

The RPS program requires investor-owned utilities, electric service providers, and community choice aggregators to increase procurement from eligible renewable energy resources to 33% of total procurement by 2020. The RPS provides a structure that encourages a portion of RPS-eligible facilities to be located in California.

Through the PUC's procurement planning process, a number of programs facilitate utility procurement of renewable electric generation:

a) *Renewable Energy Procurement Solicitations*. These solicitations result in contracts between investor owned utilities and renewable developers. These contracts have generally resulted in projects with generating capacities larger than 20 Megawatts.

In recognition that there is a need to include renewable generation that is built closer to where the energy will be used, several programs address small projects:

b) *Renewable Auction Mechanism (RAM).* RAM is a market-based procurement mechanism for renewable distributed generation (DG) projects greater than 3 MW and up to 20 MW. The PUC adopted RAM as the primary procurement tool for system-side renewable DG because it will promote competition, elicit the lowest costs for ratepayers, encourage the development of resources that can utilize existing transmission and distribution infrastructure, and contribute to RPS goals in the near term. Up to 1 Gigawatt of awards will be made through the investor owned utilities.

c) *Renewable Energy Market Adjusting Tariff (REMAT).* REMAT contracts will result in up to 750 MW of contracts for renewable projects no larger than 3 MW through the investor owned utilities.

d) *Feed in Tariff (FIT) for Combined Heat and Power (CHP).* The CHP FIT provides a standard contract mechanism for sale of excess generation from qualified Combined Heat and Power facilities. Eligible CHP facilities must meet efficiency and environmental requirements and be no larger than 20 Megawatts.

In order to create a vibrant market for renewable energy procurement, the RPS statute also included a trading mechanism to allow entities that need compliance credit to purchase the renewable attribute from a seller. This compliance market is limited by statute to ensure that facilities are built.

e) *Renewable Energy Certificate (RECs).* Allows trading of renewable energy attributes from existing and new facilities. As RPS requirements increase, markets for the RECs will spur development of new renewable energy facilities.

4) Renewable Self Generation

California has several programs to encourage utility customers to use renewable energy to serve on site energy needs.

a) *Statewide Solar Incentives***.** The goal of the statute creating a statewide solar incentive is to install solar energy systems with a generation capacity equivalent of 3,000 megawatts, to establish a self-sufficient solar industry in which solar energy systems are a viable

mainstream option for both homes and businesses in 10 years, and to place solar energy systems on 50 percent of new homes in 13 years. Programs are administered by both the Investor Owned Utilities and the Publicly Owned Utilities to achieve the overall program goals. The program is funded by ratepayers and capped at an overall cost of $3.1 billion over the program's 10 years period (2007 through 2016).

i) California Solar Initiative (CSI). The PUC supervises the CSI, administered by the Investor Owned Utilities. There are several components within the CSI program administered by the PUC:

1) Rebates for new solar facilities on customer premises.

2) A research and development (RD&D) program, providing grants to solar technologies that can advance the overall goals of the CSI Program; the RD&D program has a budget of $50 million.

3) The Single-family Solar Affordable Solar Housing (SASH) program, providing solar incentives to single family low income housing; the SASH program is administered through the SASH Program Manager, GRID Alternatives, and has a budget of $108 million.

4) The Multifamily Affordable Solar Housing (MASH) program, providing solar incentives to multifamily low income housing.

5) The New Solar Home Program (NSHP) providing incentives to builders for new residential construction.

6) The CSI-Thermal Program, providing incentives for solar water heating and other solar thermal technologies to residential and commercial customers of PG&E, SCE, SoCal Gas, and SDG&E.

(ii) SB 1 Solar Incentives. Separately, the state's Publicly Owned Utilities administer solar rebate programs that are similar to the program administered by the PUC and are part of the overall $3.1 billion budget. The Publicly Owned Utilities usually refer to their programs as SB 1 incentives, instead of CSI, in reference to the legislation enacted in 2006 authorizing the program.

b) *Net Energy Metering (NEM).* A program called Net Energy Metering also provides incentives for on-site renewable generation by giving credits for excess generation to utility customers. The credits are set at the retail rate of electricity and can be used to offset most of a customer's energy and non-energy utility service charges. Investor owned utilities are required to provide NEM service until the total capacity of NEM is equal to 5% of the utility's aggregate customer peak demand (The cap was established to

limit the amount of cross subsidy provided by non-participating ratepayers to NEM customers).

c) *Self Generation Incentive Program (SGIP)* – collects up to $83 million per year from ratepayers through 2014 to fund incentives to IOU customers who install qualified wind turbines, fuel cell cells, or storage systems in conjunction with wind turbines or fuel cells.

5) Public Benefits Charge

a) *Electric Program Investment Charge (EPIC)*. The PUC authorized collection of $162 million per year from electric ratepayers to fund renewables and research, development and demonstration projects through a program called EPIC. According to the PUC's decision, the California Energy Commission will administer programs for research, development, demonstration, and market facilitation, and the Investor Owned Utilities will administer the program in the area of technology demonstration and deployment.

b) *Natural Gas Surcharge*. Natural Gas ratepayers fund $200 million annually in natural gas energy efficiency and RD&D programs. The programs are administered by the Investor Owned Utilities and the RD&D programs are administered by the California Energy Commission.

c) *Publicly Owned Utility (POU) Energy Efficiency Programs*. According to the 2012 report on their energy efficiency, expenditures in 2011 by 41 of California's POUs exceeded $132 million.

d) *Clean Energy Upgrade Financing Program* (AB X1 14, Skinner, 2011) provides up to $25 million for the California State Treasurer (through the California Alternative Energy and Transportation Funding Act, CAEATFA) to administer the Clean Energy Upgrade Financing Program. Under this Program, CAEATFA provides financial assistance in the form of a loan loss reserve to financial institutions providing loans to finance the installation of energy improvements or distributed generation renewable energy sources on residential properties. The goal of the Program is to increase access to retrofit financing by reducing its cost and to grow the number of green jobs in the state. Funding for this program originated from a sunsetted program called the Renewable Energy Trust Fund.

6) GHG Cap and Trade Allocations

In 2006 the Legislature passed and Governor Schwarzenegger signed AB 32, the Global Warming Solutions Act of 2006, which set the 2020 greenhouse gas emissions reduction goal into law. This law is administered by the California Air Resources Board (ARB). Later this year the ARB will begin to auction GHG emission allowances as a market-based compliance mechanism authorized by AB 32. The current State Budget allows a portion of the auction

revenues to be expended consistent with AB 32. The auction revenues will be generated annually through 2020.

Electric utilities are given free allowances by ARB in order to lessen impacts of AB 32 implementation on electricity ratepayers. ARB requires investor-owned utilities (IOU) to offer their freely-allocated allowances for auction each year while publicly-owned utilities are permitted, but not required, to offer their allowances for auction.

Existing law (SB 1018, Senate Committee on Budget and Fiscal Review, Chapter 39, Statutes of 2012) requires the revenues from the free allocations assigned to Investor Owned Utilities to be credited directly to residential, small business, and emissions-intensive trade-exposed IOU customers, except for 15 percent that may be allocated for IOU-administered clean energy and energy efficiency projects.

Pending law (AB 1186, Skinner) would create the School Energy Efficiency and Greenhouse Gas Reduction Fund as a special fund in the State Treasury. The bill would provide grants to eligible institutions for building retrofits to reduce emissions of greenhouse gases and reduce the demand for energy.