

*Recommendations for the Commission's
Summer 2000 Energy Efficiency Initiative*

Office of Ratepayer Advocates

CPUC

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I. Introduction

The Summer 2000 Energy Efficiency Initiative established in D.00-07-017 represents a unique and welcome opportunity for the Commission to establish a consumer-based response to the electric grid reliability concerns associated with electric industry restructuring. ORA appreciates the opportunity to propose demand-side recommendations that will, if adopted, establish meaningful options and tools for electric and natural gas consumers to respond to the seller-side induced perturbations of grid supplied electricity.

ORA's position represents a California-specific application of the primary conclusions reached by a recent Bank of America analysis:¹

- "The current power grid was adequate for the industrial age but cannot provide sufficient power quality and reliability for the new Internet-based economy."
- "Deregulation is opening the door for a private-market response to the significant Energy Technology opportunities."
- "The current Distributed Generation market is \$5 billion. We expect growth of 10% or more per year over the next three years, and substantial growth thereafter as the cost per kilowatt is expected to decrease."
- "The main Distributed Generation segments are commercial and residential Backup Generation (also called Grid-Connected), commercial and residential Primary Generation (also called Off-Grid), Load Pockets, Portable and Automotive."

The CPUC has a unique and important opportunity to shape and accelerate the development of this emerging distributive generation industry. This "customer/industry market conditioning" can be accomplished by:

- (1) integrating the delivery of distributed generation products (photovoltaics, fuel cells, and micro-turbines) with conventional energy efficiency products currently being installed by Energy Efficiency Service Provider (EESP) industry in California;²
- (2) redirect current and future Energy Efficiency Public Purpose Program (EPPP) budgets to focus on the Nonresidential Standard Performance Contract program for Small/Medium Business; the Multi-family element of the Residential Contractor Program, and Residential New Construction.

¹ These citations, as well as others contained in ORA's recommendation, are from a June, 2000 report, "The Power of Growth," Banc of America Securities, hereafter referred to as the BOA report.

² As used here and throughout ORA's recommendations, "distributed generation" refers to technologies installed at or in a customer building and remove or reduce the purchase of grid-supplied electricity. Whether or how to treat "supply-side" distributed generation technologies (e.g., solar or fuel cell technologies that supply power to the public electric grid) is not addressed in ORA recommendations on the Summer 2000 Energy Efficiency Initiative.

II. Summary of ORA-Recommended Policy Changes and Commission Actions

Recent events have made it clear that the early steps in restructuring the supply-side of the electric industry are not likely to produce stable, reliable, or declining electricity prices or bills in the near or intermediate terms. Solutions to address supply-side problems will necessarily require coordinated actions by numerous agencies other than the CPUC.³

As noted in D. 00-07-017 (page 198) the recent limitations of the electric grid in California "...underscore the need to aggressively pursue demand side measures that can moderate growth and energy usage on a permanent basis." The UDC efforts in the last few years to administer energy efficiency programs have failed to stem the tide of growth in the demand for electricity. With control and public agency responsibility over the \$228 million per year Energy Efficiency Public Purpose Program (EEPPP) budgets of the electric UDCs, the CPUC is uniquely positioned to pursue near and immediate term solutions that could have long-lasting effects on reducing the current customer dependency on purchasing electricity, thereby reducing energy bills and providing price-suppression effects on the providers and provision of electricity.

The key elements of the ORA-recommended actions by the Commission for the Summer 2000 Energy Efficiency Initiative are as follows:

1. Direct the electric and gas UDCs to upgrade the quality, and reduce the costs, of information services to residential and small/medium businesses with customized, internet-based, energy management services information regarding the determinants of their bills and opportunities to control their bills in the expectation of continued price volatility and possible interruptions in services in the near to intermediate term.
2. Direct the electric and gas UDCs to create an internet-based information exchange cite that will "match" interested large electricity users (500 Kw or greater electric demand), especially those who are on interruptible rates, with vendors and manufacturers of on-site distributed generation equipment sized for large customers.

³ Prior to the divestiture of ownership of non-hydro, non-nuclear generation by the utilities, the CPUC maintained an approval role of generation assets of power plants in the form of "reasonableness review" of the rate-based assets of generation units owned and operated by the utilities. In the current context, CPUC jurisdiction over supply-side generation assets is far more limited and largely untested. In the immediate context of the ISO-approved project for a PG&E Corp unregulated, wholly owned subsidiary (PG&E Gen) to operate a generation barge in the San Francisco Bay to address electric grid reliability problems, the CPUC may have an approval role in terms of the application of Commission-adopted affiliate rules. The ISO San Francisco Bay Barge project also represents a potential supply-side project for comparing costs and benefits to demand-side alternatives that could defer or avoid this unique (to California) means of providing electricity for the electric grid.

3. Direct PG&E and SCE to post, on a joint website, and on a monthly basis, Interruptible program operational details, including amounts available for interruption, amounts and dates of actual interruption, amounts and dates of “declined to interrupt,” and (along with SDG&E) descriptions and dates of “consumer alert messages” provided to consumers who are not participating in the large customer interruptible program.
4. Direct PG&E, SCE, and SDG&E to require, as a condition for eligibility to participate in the PY2000 and PY2001 Nonresidential Standard Performance Program (NRSPC) and the multi-family element of the Residential Contractor Program, the installation of a customer-controlled, digital, programmable, internet-enabled, space conditioning thermostat control devices.
5. Direct the electric and gas UDCs to redirect designated amounts of PY2000 funding away from those customer classes and program designs that will make little or no contribution to near, intermediate or long term electric reliability concerns (i.e., all end uses for Large customers, “Misc. measures” in small and medium businesses, end uses other than non-space conditioning and water heating in residential markets, upstream market transformation activities) and into those customer end use markets that will reliably reduce electricity usage throughout the summer months (Residential cooling system efficiency upgrades through the SF and MF components of the RCP program, and lighting and HVAC system efficiency upgrades in small and medium businesses).
6. Direct the electric and gas UDCs to prepare plans for PY2001 and beyond that will explicitly provide designated financial assistance amounts (including the \$67 million identified as a “reliability set-aside” in D. 00-07-017 plus all unencumbered funds from PY2000) for:
 - designated products (i.e., photovoltaics embedded in building materials, natural gas fired fuel cells and micro-turbines with substantive on-site use of waste heat);
 - in targeted customer markets (i.e, new construction residential single-family dwelling units in non-coastal regions of San Diego, existing multi-family dwelling units in non-coastal SCE service territory, and small/medium businesses in the San Francisco peninsula area; and,
 - designated program designs (SDG&E Residential New Construction program, the multi-family element of SCE’s Residential Contractor Program, and PG&E’s Small/Medium Standard Performance Contract program).

Action items 1-5 can be accomplished with minimal or no incremental costs to the total portfolio budgets of any of the EEP PP program administrators, and with simple, program design modifications. By themselves, Action items 1-5 cannot be counted on to provide a measureable contribution to the reliability concerns that drive the Initiative for this summer. They are necessary, however, to provide clear direction to the EEP PP

administrators, the EESP industry (the providers of services and products of conventional high efficiency products and distributed generation technologies), and consumers regarding opportunities for definitive responses in and beyond the year 2001.

Item 6—the determination of designated distributed generation technologies as eligible for financial assistance in PY2001 through modifications to existing program design will require substantial re-structuring of the budgets and program design offerings of PG&E, SCE, and SDG&E. Particularly when combined with activities flowing from Action items 1-6 in 2000, the restructured budgets and focus on designated distributed generation technologies will “...provide maximum impact on demand and energy usage reductions during the next few years of potential shortage” called for in D. 00-07-017 (page 199).

Further description and justification of each of the eight action steps is provided below. The concluding section of ORA’s Recommendations identify the expected outcomes that should attend Commission adoption of the recommended actions.

III. The Commission Should Direct the UDCs to Immediately Accelerate their Efforts to Establish Web-Based Energy Management Services, via the Joint Energy Efficiency Center Website.

D 00-07-017 contains ordering paragraphs that recognizes the need to establish a joint website to be used by all four EEPPP program administrators for some energy efficiency information services.⁴ While ORA strongly supports this direction, there is an opportunity to go much further to capture to the benefits of the internet to consumers and the Commission.

The availability of high quality, customized information regarding the means for reducing bills should be seen as a consumer right of residential and small/medium businesses. With the rapidly expanding capabilities of the internet, and continued high rate and level of access to the internet in California, a master web site to serve as the premier source of total bill information on consumption and consumption reducing actions should become a reality for residential and small/medium customers no later than the first of next year.

The master website should, as anticipated by the D. 00-07-017, also become the “one-stop” shop for all participants and stakeholder groups regarding current, common, and complete information on EEPPP activities to and from the program administrators. As with the “directive” to establish online customized energy management services, however, the directive in D. 00-07-017 is insufficient to stimulate an aggressive response from the UDCs to substantially enhance the scope and content of the master website.

The Commission, therefore, should direct the electric and gas UDCs to upgrade the quality, and reduce the costs, of information services to residential and small/medium

⁴ OP 16 and 17.

businesses with customized, internet-based, energy management services information regarding the determinants of their bills and opportunities to control their bills in the expectation of continued price volatility and possible interruptions in services in the near to intermediate terms. More specifically, ORA recommends that the Commission, by way of a ruling from the Assigned Commissioner or Assigned ALJ, provide the following direction to the EEPPP program administrators:

“The UDCs should meet with Energy Division and ORA staff, no less than monthly, to discuss and review progress in complying with the directives in OP 16 and OP 17 in D 00-07-017, as well as building out the Joint EEPPP website to accommodate an expanded program administration and implementation capability for all EEPPP activities. The enhanced Joint EEPPP website capabilities to be discussed and reviewed include: network-based websites that provide customers with lists of Energy Efficiency Services Providers (EESP); webcasting (broadband-based videos containing educational and training material for customers and EESPs); web-based exchanges for matching buyers and sellers of energy efficiency products; web-based capabilities for direct financial assistance transactions between customers and providers of energy efficiency products and services; web-based capabilities for customers controlling the hours of operation of energy using household appliances; and, web-based capabilities for data storage and retrieval of information regarding customer and EESP participation in all EEPPP-funded activities.”

IV. The Commission Should Direct the UDCs to Create a Buyer-Seller Website for Large Customers Seeking Information Regarding On-Site Distributed Generation Equipment

On-site distributed generation equipment has been an increasingly cost-competitive alternative for large customers in recent years.⁵ In the current context of electric grid reliability, more and more businesses are simultaneously: (1) recognizing the costs of NOT having reliable sources of electrical power; and, (2) recognizing the need to have improved power quality.

With the technological advances of distributed generation technologies such as fuel cells and micro-turbines, current participants in the ISO/UDC interruptible programs have yet another tool available to them to avoid the costs of interruptions, price volatility and deficient power quality, from grid-supplied, power. It is in the interests of non-participants and the public for large customers to establish or enhance existing backup

⁵ These technologies, as applied to residential and small/medium businesses, are discussed in more detail in Section , below.

power equipment to the point where these large customers can transfer their load requirements from grid dependence to self-dependence through installation of gas fired fuel cells and/or gas fired micro-turbines, during periods of interruption or price volatility, throughout the entire summer season or for the entire year.

The Commission should resist any efforts, however, by large customers to seek financial assistance to help pay for fuel cells or micro-turbines, particularly from customers who have enjoyed many years of benefits of subsidized rates with no interruptions. It is not unreasonable, however, to facilitate the information flow about these technologies between large customers and the vendors and manufacturers of distributed generation technologies.⁶

The Commission, therefore, should direct the electric and gas UDCs to create an internet-based information exchange site that will facilitate customized “matches” between interested large electricity users (500 Kw or greater electric demand), especially those who are on interruptible rates, with vendors and manufacturers of on-site distributed generation equipment sized for large customers.

V. The Commission Should Direct the UDCs to Establish a Web-based Capability for Online Monitoring of Price and Availability Information Attending Reliability Induced Operation of the Interruptible Program and Other Customer Alert Messages

For over a decade, consumers with demand of less than 500 kw (i.e., residential and small/medium nonresidential ratepayers) have subsidized the lower rates available to large customers for participating in the Interruptible program. Until the last summer or two, these customers were rarely, if ever, interrupted. Since it appears that non-large customers will finally get some benefit from years of subsidized support, ORA believes it is important to make sure that the operational decisions to interrupt these customers do not come at the expense of non-large customers.

It appears that operational details regarding the decision to interrupt are determined by the UDCs and ISO. These decisions, by definition, are made in concert with making other operational decisions such as appeals to non-large customers to voluntarily curtail their loads. Clearly it is in the interests of large customers (and therefore the UDCs and

⁶ The Distributed Power Coalition of America (DPCA), established in 1997, maintains a website (dpc.org/membership/members) with subsequent links to manufacturers and providers of these technologies. A list of members of the DPCA is contained in Appendix A, along with a list of members from the leading organization of energy efficiency service providers, the National Association of Energy Service Companies (NAESCO).

The SoCalGas Energy Resource Center has “demo” units of some distributed equipment, as does the National Fuel Cell Research Center at UC Irvine. The Pacific Energy Center (PG&E) and the Customer Technology Application Center (SCE) provide “demos” and models of more conventional high efficiency technologies that are promoted in PG&E and SCE EEPPP efforts. Each of these “bricks and mortar” sites in California have been partially or wholly funded by all ratepayers of California investor-owned utilities, as has years of research activities on many of these high efficiency and distributed generation technologies.

the ISO) to appeal to non-large customers to voluntarily curtail their loads, in the hopes that large customers will not have to be asked to curtail.

Perhaps it is in the public interest (and the state economy) to preserve service to large electricity users, even if non-large customers are repeatedly asked to do sacrifice. Perhaps it is not. In any case, ORA believes that this basic public policy issue should be kept open for review. To do so, more transparency is in order regarding information on the details of the terms and conditions under which different customer classes are sharing in the service interruptions that seem inevitable.

In addition to the need for more transparency in the operational effects of dispatchable load management interventions in service, there is a need and opportunity for more immediate feedback on these details than has occurred in the past. Rather than directing the UDCs to file a report after the end of summer (as was done in the past), the Commission should order the UDCs to establish a joint web-site where key operational characteristics can be documented within days of any dispatches.

The Commission should direct PG&E and SCE to post, on a joint website, and on a monthly basis, Interruptible program operational details, including amounts available for interruption, amounts and dates of actual interruption, amounts and dates of "declined to interrupt," and (along with SDG&E) descriptions and dates of "consumer alert messages" provided to consumers who are not participating in the large customer interruptible program.

VI. The Commission Should Direct the Electric UDCs to Modify Current and Future Program Design for the Non-Residential SPC program and the Residential RPC program.

Current UDC budgets of the three electric UDCs include two programs that are of especial importance to demand-side activities during summer time reliability problems: the Residential Contractor Program (RCP) and the Nonresidential Standard Performance Contract program for small/large customers. In each case, financial assistance is available for customers to invest in high efficiency equipment that will reduce capacity and energy demand especially during the summer months: residential cooling loads, and commercial building cooling and lighting loads.

Current program designs allow for, or may also include, support for energy management control technologies that allow the building owner to more precisely determine when and whether to reduce the lighting and/or cooling loads. Such technologies have been available for many years, are relatively low cost, and have very short term "payback."

What is missing from current program designs of the UDCs is: (1) a program design requirement that requires the customer to install an advanced energy management control system as a condition for receiving financial assistance for high efficiency cooling equipment and (in the case of commercial buildings) lighting systems; and, (2)

enhancements to the control devices so that usage can be controlled (settings changed) via the internet by the owner.

The Commission should direct the UDCs to require, as a condition for eligibility to participate in the PY2000 and beyond Nonresidential Standard Performance Program (NRSPC), and the Residential Contractor Program, the installation of a customer-controlled, digital, programmable, internet-enabled, space cooling and heating thermostat control device, and a lighting energy management control system in the NR SPC program.

VII. The Commission should Provide Direction to Each UDC EEPPP Program Administrator to Redirect their PY2000 Budgets to Provide More Effective Customer Solutions to Supply-Side Inadequacies of the Public Electric Grid

Increasingly since PY98, the UDC budgets and EEPPP activities have directed funds and focus away from the customer markets that are more important to address from a system reliability standpoint. The primary examples of funds and activities that are currently being directed to activities that will have limited (minimal) contribution to the electric grid reliability problems in the past, currently, or in the future:

- (1) funds and activities for “upstream market transformation” interventions;
- (2) funds and activities to promote high efficiency residential lighting and higher-than standards refrigerators;
- (3) financial assistance for electric or gas end uses in industrial (as opposed to commercial) customer facilities;
- (4) financial assistance to large customers (i.e, greater than 500 KW, regardless of customer class).

In each of these cases, current UDC budgets, and the resources and efforts of the UDCs and the EESPs that often implement these programs, make little or no contribution to verifiably reducing demand and energy usage. Years of measurement and evaluation studies, as well as common sense, suggest that funds and activities in these customer markets cannot be counted on to contribute to electric grid reliability problems.⁷

The Commission should direct the electric and gas UDCs to redirect designated amounts of PY2000 funding away from those customer classes and program designs that will

⁷ The basic proposition that these activities are of limited, or no, value to electric grid reliability problems is founded on a variety of concerns and positions taken by ORA as an adjunct of its role in annually verifying utility-reported costs and benefits from prior year expenditures. ORA’s position is not that the dollars spent for the identified activities have had no beneficial effects, but that---relative to other product/customer segment markets---these benefits have proven to be very difficult to verify.

make little or no contribution to near, intermediate or long term electric reliability concerns (all end uses for Large customers, “Misc. measures” in small and medium businesses, end uses other than non-space conditioning and water heating in residential markets, upstream market transformation activities) and into those customer and end use markets that will reliably reduce electricity usage throughout the summer months (Residential cooling system efficiency upgrades through the SF and MF components of the RCP program, and lighting and HVAC system efficiency upgrades in small and medium businesses).

The ORA recommendation to redirect EEPPP program dollars and program administrator efforts to these customer markets is closely—and intentionally—related to the need to put highest priority on the two programs that rely on the emerging EESP industry in California. In the last few years, the Commission has succeeded in establishing UDC-administered, but EESP implemented, programs in the residential and nonresidential customer markets. This has been accomplished through the Nonresidential Standard Performance Contract (SPC) program and the Multi-family element of Residential Contractor Program. With the program design changes and fund redirections that ORA is recommending, these two programs would become expanded distribution channels for financial assistance for energy efficiency projects on customer premises for the end uses that can reliably and verifiably contribute to the electric grid problems.

As discussed further in Section VIII and IX, the activities of this emerging EESP industry needs to be integrated with the activities another emerging industry—the manufacturers, vendors and installers of distributed generation technologies.⁸

VIII. The Commission should Provide Direction to Each UDC EEPPP Program Administrator to Redirect their PY2001 Budgets to Provide a More Effective Customer Solutions to Supply-Side Inadequacies of the Electric Grid

A recent study by the Banc of American Securities (BOA) includes the following conclusions and observations that are highly relevant to the Summer2000 Energy Efficiency Initiative:⁹

- (1) “The current power grid was adequate for the industrial age but likely cannot provide sufficient power quality and reliability for the new Internet-based economy”;
- (2) “Deregulation is opening the door for a private-market response to the significant Energy Technology opportunities.”

“Energy Technologies,” according to the BOA study, include power quality technologies and distributed generation technologies. The more specific distributed generation

⁸ Appendix A identifies the members of the National Association of Energy Service Companies (NAESCO), along with the membership of the Distributed Power Coalition of America (DPCA).

⁹ “The Power of Growth,” Banc of America Securities, June 2000; quotations from Executive Overview, page 4.

technologies addressed in detail in the study are Micro-turbines, Fuel Cells, and Solar Panels.¹⁰

Micro-turbines, fuel cells, and technologies that convert sunlight directly to electrical energy (Photovoltaics) or thermal applications (solar water and space heating) are hardly “new.” What is new is that these technologies are in the midst of moving very quickly from RD&D and “pilot” stage testing to wide-spread commercial availability on a cost-competitive basis. According to the BOA analysis:

“Advances in technology, design and manufacturing processes have been reducing the cost of distributed generation technologies like microturbines, fuel cells, and photovoltaic modules at the same time that deregulation and increasing demand for higher quantities and quality of power are creating the need for an alternative to the centralized grid.”

ORA believes that these technologies—microturbines, fuel cells, and photovoltaics--offer the best hope for meeting the objectives of the Initiative of providing “maximum impact on demand and energy usage reductions during the next few years of potential shortage” called for in D. 00-07-017 (page 199). A “shot-gun” approach, however, should be avoided. Rather, the promotion of these technologies in very specific applications will be important in terms of targeting those applications which are most cost-competitive.

In the case of photovoltaics, a targetted effort means using EEPPP funds for new single-family homes in the form of integrated roofing materials built in non-coastal areas. This application is among the cost-effective applications of the PV technologies, given the ability to finance the cost over the life of the mortgage.¹¹

In the case of fuel cells and microturbines, this means using EEPPP funds for applications where maximum use of the waste heat from these gas fired technologies for thermal use onsite (i.e., multi-family dwelling units and small/medium business that have water heating and, if possible, space conditioning loads). In the correctly targetted building types and geographical locations, the on-site use of waste heat from fuel cell or micro-turbine technologies can substantially improve the economics of these technologies and produce additional energy and bill savings beyond the reduced need to purchase electricity from the grid.

The Commission should direct the electric and gas UDCs to prepare plans for PY2001 and beyond that will explicitly provide designated financial assistance amounts (including, but not limited to, the \$67 million identified as a “reliability set-aside in D. 00-07-017) for designated products (Photovoltaics, natural gas fired fuel cells and micro-turbines with substantive on-site waste heat usages) in targeted customer markets (new

¹⁰ The Section on Distributed Generation in the BOA report is from pages 41-72.

¹¹ See “Sustained Orderly Development and Commercialization of Grid-Connected Photovoltaics: SMUD as a Case Example,” Donald E. Osborn, Sacramento Municipal Utility District, May 2000.

construction residential single-family dwelling units in non-coastal regions of San Diego, existing multi-family dwelling units in non-coastal SCE service territory, and small/medium businesses in the San Francisco peninsula area and designated program designs (SDG&E Residential New Construction program, the multi-family element of SCE's Residential Contractor Program, and PG&E's Small/Medium Standard Performance Contract program).

IX. Expected Near, Intermediate, and Long Term Outcomes from Commission Adoption of ORA Recommendations for the Summer 2000 Energy Efficiency Initiative.

Near Term (the remainder of 2000): It is too late to expect any meaningful, verifiable, consumer-based solutions to the electric grid reliability problems by the end of the summer of 2000. The same is true for recently-proffered "demand-responsiveness" initiatives and the proposals to resurrect antiquated and ineffective "load management" programs left over from the days when the Commission expected a major role for the pre-1998 utility corporate structure based on vertically integrated electric utilities and a regulatory integrated process for planning and administration of both supply and demand side "resource" options.

Expectations for the Summer 2000 Energy Efficiency Initiative, rather, should be defined in terms of redirecting customer services and market-based solutions now (2000) with modest and positive effects accumulating and expanding during 2001, and in the years thereafter. Since the Commission has made it clear that the UDCs will remain program administrators through the end of 2001, the Commission's Summer 2000 Energy Efficiency Initiatives will need to be executed through PG&E, SCE, SDG&E and SoCalGas.

Near and Intermediate Term: During the remainder of 2000 and through 2001 and beyond, however, much can be done to enhance the position of the entities who have been paying of energy efficiency activities for more than two decades---the consumers of the electricity and natural gas of PG&E, SCE, SoCalGas, and SDG&E. For the near and intermediate term, consumer-based solutions can be accelerated by continued support for the emerging EESP industry.

As of the end of 1999, approximately 100 EESP's have benefited from the PY1998 and PY1999 EEPSP activities of the four UDC program administrators. These EESPs have shared, with consumers, the benefits of installing products that are expected to reduce the use of electricity, natural gas, or both, during most of months of year or throughout the entire year.

Most of the 100 EESPs that have participated in PY98 or PY99 EEPSP activities have done so with the Nonresidential Standard Performance Contract program, initiated by the Commission in 1998. These EESPs include: many of the EESP's that were winning

bidders in the Commission-directed “demand-side bidding” pilot programs in the 1993-97 timeframe; an SCE affiliated EESP (Edison Source) that evolved from a Commission-directed “utility-ESCO” program (ENVEST) during the 1994-98 timeframe; a SDG&E and SoCalGas affiliated EESP (Sempra Energy Solutions) that recently announced plans to “go national” with its ESP and EESP efforts, several EESPs that have participated in “pay-for-performance” energy efficiency programs in other states, and dozens of smaller, more local companies that have provided and installed high efficiency products in California for many years.

The emergence of a potentially competitive and robust EESP industry in California in recent years is an important development. Although robust in terms of the number of EESP’s, this “infant industry” suffers from a variety of limitations:

- One EESP (**Onsite/Sycom**) has acquired a dominant market position, with a 22% market share as of the end of 1999, including projects in many locations in the PG&E and SCE service territories, but no projects in the SDG&E area;
- The EESP with the second largest market share of PY98 and PY99 SPC commitments, (SCE affiliate **Edison Source**, 12%) has been closed by Edison International in terms of seeking new energy or energy efficiency services contracts;
- The PG&E affiliate, (**PG&E Energy Services**, with a small market share of PY99 commitments, and a “non-participant” in the PY98 EESP programs) was recently sold by PG&E Corp., with the PG&E Energy Services assets being split and sold to Enron (the largest ESP in California and the nation) and Chevron (itself a large electricity user in California);
- One of the most active and successful EESP’s in both PY98 and PY99, **Energy Masters International** (EMI, with a combined market share of 5%, including projects sponsored in all three services territories), was purchased by Northern States Power Company, a major player in the national power generation business;¹²
- Most of projects of the dominant EESPs were for equipment change-outs in large customer premises and/or for “miscellaneous” measures (measures other than for lighting and HVAC end uses);¹³

¹² The significance of EESP ownership by a power generation company is significant for several reasons, not the least of which is the vulnerability of such EESP’s by their parent companies to re-direct these business units and their operations and assets to other parts of the country and/or to more profitable enterprises such as building power plants or selling electricity, as apparently happened to Edison Source and PG&E Energy Services.

¹³ There is a long history of disputes regarding the credibility of reported benefits from energy-using equipment in large customer facilities in Commission proceedings. This history includes: a priori agreements that “free ridership” is so difficult to determine that “default” assumptions are better than spending ratepayer funds on trying measure and verify energy efficiency projects in the industrial sector and “miscellaneous” (non-standard) measures; evidence that energy usage in large customer premises after

- Few of the dozens of smaller EESPs in either PY98 or PY99 were able to sponsor projects for the two customer markets that are most valuable for electric grid reliability purposes (HVAC and lighting in small/medium businesses);
- Few of the dozens of smaller EESPs were able to sponsor projects in more than one service territory and more than one program year;
- In the SDG&E NR SPC program, EESP industry appears to have declined by PY98 to PY99, with virtually all projects limited to commercial lighting measures;
- A disproportional number of EESP projects throughout the state have been in public sector buildings (federal, state and local government buildings), and PY99 brought “participation” of a federal, out-of-state, “EESP” (the Bonneville Power Administration) at the premises of federal, in-state, government buildings;
- The vast majority of ALL UDC-reported costs and benefits from the PY98 and PY99 Non-residential Standard Performance Contract program are based on commitments made before the end of the program year, not actual payments based on verified installations and verified on-going reductions in electricity usage.

Each of these characteristics of the EESP industry raise concerns about the status and direction of the EESP industry in California, and the capacity of the UDCs to administer this program. Just as it would be premature to conclude that the existence of 100 EESP’s by the end of 1999 suggests great success in creating a competitive, robust, EESP industry, the combined effect of the various patterns of participation of the industry suggest the need for a more deliberate and focused oversight of UDC administered, EESP implemented activities.

ORA believes that the most important and critical near term need for Commission action is to establish a much more focused direction of EEPPP funds to the emerging EESP-sponsored projects in the customer market end use segments that can reliably produce verifiable reductions in electricity purchases from the electric grid, particularly during the time periods when the electric grid is most susceptible to price spikes and service interruptions by the UDC/ISO controlled electric grid. The five customer end use markets that provide the best opportunities for substantial, verifiable, incremental reductions in summer month purchases of grid provided electricity are space cooling and lighting in small and medium businesses, and space cooling in SF and MF dwelling units.

participation in a utility administered program increases, rather than decreases; prima face evidence of the inherent incompatibility of providing rate discounts to large customers for “participating” in Interruptible programs (which encourages increased, sustained or shifted, levels of usage) with allowing participation in energy efficiency programs (which is supposed to ensure reduced demand for purchased electricity).

Fortunately, the current (PY2000) program designs of the three electric UDCs include financial assistance to customers and EESPs for the five most importance customer market end uses. Unfortunately, the currently authorized programs do not include support for the installation of emerging distribution technologies that can be counted on to reliably and verifiably remove large, per unit amounts of grid-supplied electricity.

X. Conclusion

Perhaps more than in any other state, there exists the foundation of a competitive, viable private market industry capable of entering into pay for performance contracts with customers to install high efficiency appliances. As described in the recent BOA analysis, there is a small, but rapidly emerging national distribution generation industry. ORA's recommendations will enable the Commission to integrate the activities of these two elements of an EEPPP industry that will aggressively pursue demand side measures that can moderate growth and energy usage on a permanent basis, as called for in D. 00-07-017.

APPENDIX A

Membership of the National Association of Energy Service Companies

and

Membership of the Distributed Power Coalition of America

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[Enron](#)
[FuelCell Energy, Inc.](#)
[Gas Research Institute](#)
[GE MicroGen](#)
[Generac Power Systems, Inc.](#)
[GPU International](#)
[Harrington Associates Energy Consulting, Inc.](#)
[Honeywell](#)
[Hydro One](#)
[IEC Engineers](#)
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[Industrial Electric Manufacturing \(IEM\)](#)
[Intergy Power](#)
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Nextek
Niagara Mohawk Energy, Inc.
Northern Indiana Public Service Company
Northern Research and Engineering Corporation
Onsite Sycom Energy Corporation
Ontario Power Technologies
PECO Energy Group
Person & Craver LLP
PowerLight Corporation
PSEG Marketing
Resource Dynamics Corporation
RR Allison
Siemens Westinghouse Power Corporation
Solar Turbines, Inc.
Southern California Gas Company
Southwest Gas
Sustainable Systems Research
Texaco Energy Systems, Inc.
Theroux Environmental Consulting
Trigen Ewing Power
Tucson Electric Power
Unicom Mechanical Services
University of California at Irvine Advanced Power & Energy Program
Venable, Baetjer and Howard, LLP
Waukesha Engines
Williams Distributed Power Services, Inc.
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CONTROL SYSTEMS INTERNATIONAL, INC.	RELIANT ENERGY SOLUTIONS
CUSTOM ENERGY, L.L.C.	SEMPRA ENERGY SERVICES
EMCOR ENERGY SERVICES	SIEMENS BUILDING TECHNOLOGIES
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ENERGY SYSTEMS GROUP	TRIGEN ENERGY
ENERSHOP, INC.	UCONS, L.L.C.
FIRST ENERGY SERVICES CORPORATION	VESTAR
FPL ENERGY SERVICES, INC.	
HEC ENERGY AND DESIGN SERVICES	
HONEYWELL	

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COGENEX CORPORATION
EUA COGENEX – CANADA
CONTROL SYSTEMS INTERNATIONAL, INC.
CUSTOMER ENERGY, L.L.C.
ENERGY SYSTEMS GROUP
ENERSHOP, INC.
FIRST ENERGY SERVICE CORPORATION
FPL ENERGY SERVICES, INC.
HEC ENERGY AND DESIGN SERVICES
JOHNSON CONTROLS SYSTEMS & SERVICES
NORESCO (Northeast Energy Services, Inc.)
ONSITE ENERGY CORPORATION
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PHILIPS LIGHTING COMPANY
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RETRO-TECH SYSTEMS, INC.
SAIC
SAN DIEGO GAS & ELECTRIC
SCHILLER ASSOCIATES
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THE TRAN COMPANY
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THE ENERGY CONSERVATION CENTER,
JAPAN
THE FIRST ENERGY SERVICE COMPANY,
LIMITED (FESCO)

APPENDIX B

Participation of EESP's in the Energy Efficiency Public Purpose Programs

(Program Years 1998 and 1999)

APPENDIX B

Participation of EESP's in the Energy Efficiency Public Purpose Programs

(Program Years 1998 and 1999)

Table B.1 Energy Efficiency Service Provider Market Shares

(\$ millions, actual or committed payments)*

EESP	Total	PG&E	Edison	SCGas	SDG&E	Market Share		
						PY99-98	PY99	PY98
All EESP's	\$55.18	\$20.54	\$21.37	\$3.85	\$9.42	100%		
PY 1999	\$19.34	\$8.60	\$8.92	\$0.00	\$1.82	35%	100%	
PY 1998	\$35.85	\$11.95	\$12.45	\$3.85	\$7.61	65%		100%
TOP TEN EESPs	\$29.42	\$12.09	\$13.03	\$0.90	\$3.32	53%		
Onsite/Sycom	\$11.12	\$4.84	\$4.58	\$0.90	\$0.81	20%		
PY 1999	\$6.20	\$2.84	\$3.36		\$0.81	11%	32%	
PY 1998	\$4.92	\$2.00	\$1.21	\$0.90	\$0.81	9%		14%
Edison Source	\$6.76	\$1.94	\$3.27	\$0.00	\$1.56	12%		
PY 1999	\$2.43	\$0.34	\$1.69		\$0.40	4%	13%	
PY 1998	\$4.33	\$1.60	\$1.58		\$1.16	8%		12%
Energy Masters International	\$2.07	\$1.42	\$0.30	\$0.00	\$0.35	4%		
PY 1999	\$1.25	\$1.20	\$0.05		\$0.00	2%	6%	
PY 1998	\$0.00					0%		0%
Noresco	\$1.91	\$0.00	\$1.91	\$0.00	\$0.00	3%		
PY 1999	\$0.00	\$0.00	\$0.00		\$0.00	0%	0%	
PY 1998	\$1.91	\$0.00	\$1.91		\$0.00	3%		5%
Viron	\$1.71	\$1.20	\$0.27	\$0.00	\$0.24	3%		
PY 1999	\$0.09	\$0.06	\$0.03		\$0.00	0%	0%	
PY 1998	\$1.62	\$1.14	\$0.24		\$0.24	3%		5%
Sempra Energy Solutions	\$1.35	\$0.15	\$0.92	\$0.00	\$0.28	2%		
PY 1999	\$0.17	\$0.15	\$0.02		\$0.00	0%	1%	
PY 1998	\$1.18	\$0.00	\$0.90		\$0.28	2%		3%
Park Industries	\$1.21	\$0.53	\$0.63	\$0.00	\$0.05	2%		
PY 1999	\$1.00	\$0.53	\$0.42		\$0.05	2%	5%	
PY 1998	\$0.21	\$0.00	\$0.21		\$0.00	0%		1%
Trane	\$1.16	\$0.80	\$0.32	\$0.00	\$0.04	2%		
PY 1999	\$0.76	\$0.40	\$0.32		\$0.04	1%	4%	
PY 1998	\$0.40	\$0.40	\$0.00		\$0.00	1%		1%
Cal-UCONS	\$1.20	\$1.20	\$0.00	\$0.00	\$0.00	2%		
PY 1999	\$0.00					0%	0%	
PY 1998	\$1.20	\$1.20				2%		3%
Honeywell	\$0.93	\$0.02	\$0.84	\$0.00	\$0.00	2%		
PY 1999	\$0.50	\$0.02	\$0.49		\$0.00	1%	3%	
PY 1998	\$0.43	\$0.00	\$0.35		\$0.00	1%		1%
All Other EESP's	\$25.77	\$8.46	\$8.34	\$2.95	\$6.11	47%		
PY 1999	\$6.95	\$3.07	\$2.55	\$0.00	\$1.33	13%	36%	
PY 1998	\$4.84	\$0.49	\$2.49	\$0.00	\$1.94	9%		13%
# of EESPs**	154	55	65	6	28			
PY 1999	91	36	43	0	12			
PY 1998	63	19	22	6	16			

* Dollar amounts represent amount of payments (actual or committed) for the verified installation of energy efficiency products in identified customer premises. The dollar amounts are compiled from utility annual reports, and are preliminary in nature, pending responses to ORA data requests.

** # of EESPs includes some double counting; a complete list of EESP's who are participating in California "pay for performance" programs is provided in Table B.2.

Table B.2:**List of EESPs Participating in 1998 and 1999 Energy Efficiency Programs****Complete List of EESPs**

1	A&M Conservation	51	Ind Energy Consult
2	Action AC,H&P	52	Independent Energy
3	A-Design Control	53	Johnson Controls
4	A-Design Energy	54	Kelar Controls
5	AES Consulting	55	Kerr-Greulich Eng
6	Air Cond. Comp	56	KW Energy Engineering
7	Aircon	57	Lakeland Utility Conservation
8	Alt Energy Systems	58	Lighting Efficiency Masters
9	AM Conservation	59	MaxLite/SK America
10	Amdahl	60	Metro Energy Corp
11	American Lighting	61	Mid-State Surge
12	American Power Products	62	Milacron Marketing
13	Amtech Lighting	63	Monsato
14	Anacapa Heating & Air	64	National Air and Energy
15	ASW	65	Neal Electric
16	Bay Air Systems	66	Noresco
17	Bonneville Power Admin	67	North American Lighting
18	Bosek, Gibson & Assoc	68	Northern Air
19	Bruce R. Blau & Assoc	69	Onsite/Sycom
20	Cal-Air Inc	70	Pacific Lighting Ent
21	California Retrofit Inc	71	Parke Industries
22	Cal-UCONS	72	Perry's Electric Motors & Cont
23	Capital State First General	73	PG&E Energy Services
24	Carrier Corp	74	Planergy Services
25	Cartmell & Assoc	75	Portland Energy Conservation
26	CESWay International	76	Power Refrig Comp
27	CommAir Preferred Mech	77	Protor Engineering
28	Conserv Services Corp	78	Randall Lamb Assoc
29	Duro-Last Roofing	79	Reliable Energy Concepts
30	Edison Development Corp	80	Renaissance
31	Edison Source	81	Resource Efficiency Services
32	Electro--Test Inc	82	Richard Van Loon Co
33	Elk Grove Dairy Service	83	San Diego Energy Masters
34	En Tech Systems	84	Sempra Energy Solutions
35	Energie Innovation	85	SESCO, Inc
36	Energy Conversion Contractors	86	Siebe Environmental Controls
37	Energy Management	87	Siemens Building Technology
38	Energy Master International	88	Southland Industries
39	Energy Options	89	Summit Indust Equip
40	Enertech Systems, Inc	90	Syska & Hennessy
41	Envirotek Engineers	91	The Trane Company
42	EUA Citizens	92	Therma Corp
43	Free Lighting	93	Tru-Brite Energy Management
44	GAR Energy Management	94	Turlock Dairy & Refrig
45	Honeywell DMC	95	Venoco Inc.
46	Honeywell Home and Bldg	96	Verle Williams & Assoc
47	Honeywell, Inc	97	Viron Energy Services
48	Houston Polymers	98	Western Energy Consulting
49	Hussmann	99	Winegard Energy
50	Illnova		