

## PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

COMMISSION ADVISORY AND  
COMPLIANCE DIVISION  
Energy Branch

RESOLUTION E-3367  
April 6, 1994

R E S O L U T I O N

RESOLUTION E-3367. SOUTHERN CALIFORNIA EDISON COMPANY REQUESTS AUTHORIZATION TO OFFER, ON AN EXPERIMENTAL BASIS, OFF-GRID PHOTOVOLTAIC SERVICE AS AN ALTERNATIVE TO A LINE EXTENSION.

BY ADVICE LETTER 1027-E, FILED ON NOVEMBER 18, 1993.

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SUMMARY

1. In Advice Letter 1027-E, Southern California Edison Company (Edison) requests authorization to establish a three-year pilot demonstration program to test the feasibility of offering photovoltaic (PV) service as an alternative energy source to customers in locations, such as remote geographical areas, where a line extension is not economical. The pilot program would be limited to an aggregate PV off-grid capacity of 1 Megawatt (MW) for all customers.
2. Edison requests certain tariff revisions and additions to establish the pilot program. Edison also requests certain findings in support of the program.
3. Numerous letters, both in support and in protest of the proposed pilot program, were filed.
4. This Resolution authorizes Edison's request to establish its proposed PV pilot program subject to conditions that will enable the Commission to closely monitor the pilot, pending approval of a supplemental advice letter by the Commission Advisory and Compliance Division (CACD).

BACKGROUND

1. PVs are an environmentally responsible electricity generation alternative. They have no emissions, have zero noise level, are modular and portable, and can supply the basic electrical needs of certain customers.
2. By Advice Letter 1027-E, Edison proposes and requests authorization to establish a limited, three-year pilot demonstration program with the primary purpose of investigating the technical viability and cost effectiveness of PV solar

installations in comparison to line extensions. Under the proposed pilot program, Edison will offer customers who request off-grid electrical service the option of the installation of a PV system or a line extension. If the customer chooses a PV system, the customer will be required to sign an agreement that specifies the terms and conditions for service.<sup>1</sup>

3. Among other things, the agreement establishes that the PV customer will pay a Monthly Charge equal to 1.6 percent times Edison's total installed cost of the system. This Monthly Charge, collected over a 15-year period, is designed to allow Edison to fully recover the costs incurred for both capital investment and ongoing operation and maintenance costs. The installation and maintenance will be competitively bid and performed by independent contractors under the direction of Edison personnel.

4. Edison proposes to meet with PV suppliers every 12 months, commencing after the effective date of the pilot program, to review and assess the progress of the program. Edison commits that the views and findings of the review meetings will be forwarded to the Commission. In the event that Edison decides to fully implement the program following the 3-year pilot, Edison proposes that it will file an application requesting Commission approval.

5. Before granting Edison authorization for a proposed PV program, the Commission must make findings and determinations that are articulated in Public Utilities (PU) Code Section 2775.5. In particular, Section 2775.5 specifies that the Commission:

- o Shall not allow the costs and expenses of implementing the proposed program of solar energy development to be passed through to the ratepayers of an electrical or gas corporation without findings and a determination that it is in the ratepayers' interest to do so.
- o Shall deny authorization if it finds that the proposed program will restrict competition, or restrict growth in the solar energy industry, or unfairly employ any financial, marketing, distributing, or generating advantage which the corporation may exercise as a result of its authority to operate as a public utility.
- o Before granting authorization, shall find that the proposed program will accelerate the development and use of solar energy systems in the state of California for the duration of the program.

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<sup>1</sup> The proposed terms and conditions of this agreement and the accounting, ratemaking and implementation procedures for the proposed pilot program are modeled after Edison's "Added Facilities" agreement and methodology contained in existing tariffs.

NOTICE

1. Advice Letter 1027-E was served on other utilities, government agencies, and to all interested parties who requested such notification, in accordance with the requirements of General Order 96-A.

PROTESTS

1. CACD received a timely protest from Independent PV Power Producers (IPPP). This protest and additional late-filed supplemental comments provided by IPPP report, among other things, that 20 out of its 21 members voted against Edison's pilot program. Of these members, 13 (The Solar Man, Six Rivers Solar, Offline, Star TV Repair and Solar, Sierra Solar, Alternate Energy Engineering, Harris Hydroelectric, Providence Power, Electron Connection, Burkhardt Turbines, Mountain Energy, WESCO Electric, and Land & Sea Solar) also individually filed timely letters in opposition to Edison's pilot program. In addition to the IPPP protests, CACD received two individual protests from Sun Mt. Flower & Drum and Harvey Eder of the Public Solar Power Coalition. Toward Utility Rate Normalization (TURN) did not formally protest the filing but raised concerns it believes should be addressed before granting approval. Both the California Energy Commission (CEC) and the Division of Ratepayer Advocates (DRA) requested a 10-day extension of the protest period to file comments. Adhering to the 10-day extension, the CEC filed comments in support of Edison's program and the DRA filed comments of concern and conditions for support. CACD also received one late-filed protest from Jan Goldman.

2. Edison submitted 5 separate responses to protests and comments that were filed.

DISCUSSION

Procedural Issues

1. Protestants to this advice letter requested that Edison be required to file its proposed PV pilot program in a formal application before the Commission, with hearings to address their issues of concern. A formal application, instead of an advice letter, is required for utility requests resulting in rate increases, except where the increases are minor in nature. Also, some requests for a provision of new service should be made by formal application. However, if the request for a new service is of minor importance or temporary in nature, the Commission may accept the showing by advice letter. A Commission resolution is required for an advice letter request that will result in a withdrawal of service.

2. Because Edison's request is for a pilot program of limited duration, CACD believes that the request can be handled through an advice letter forum. All estimates for the costs, revenues

and associated rate impacts of Edison's off-grid PV filing for the three-year pilot duration, however, are more appropriately addressed in Edison's ongoing 1995 General Rate Case Application (A.93-12-025) proceeding.

### Policy Issues

3. Edison's proposed PV pilot program evolved out of a series of workshops with representatives from the CEC, the DRA, utilities, solar manufacturers, distributors, and contractors as part of the Photovoltaics for Utilities (PV4U) state working group. This working group was formulated to develop a plan for the acceleration of PV commercialization in California through utility sector participation.

4. The actions of this collaborative group were designed to spur PV commercialization and to provide an analytical base for identifying markets and determining PV value in different applications. As a first step towards the overall commercialization plan, the group encouraged utilities to formulate elements of utility-sponsored off-grid PV programs.<sup>2</sup> Consistent with this recommendation, Edison proposed an initial pilot off-grid purchase program to the group. This program then underwent modifications in an effort to address concerns that were raised during the collaborative process.

5. Edison has requested Commission approval of the modified pilot program by Advice Letter 1027-E. Documenting support of this proposed program, Edison submitted letters from Siemens, Utility Power Group (UPG), Solar Electric Specialties Co., Duncan Electric, Solar Depot, Real Goods Trading Corporation, Ananda Power Technologies, and Center for Energy Efficiency and Renewable Technologies (CEERT). Edison's proposed pilot program also has been endorsed by the California Solar Energy Industries Association (CAL SEIA) which represents some solar contractors, manufacturers and distributors in California.

6. Many independent PV installers and contractors, some of which were not represented in the PV4U working group, oppose Edison's pilot program. In response to some of their expressed opposition, IPPP was formulated. This organization primarily consists of PV installers-dealers. IPPP claims that although Edison represents that its plan is the result of collaboration and consensus with the PV industry, significant interests have not been adequately represented or addressed.

7. Edison and its program supporters believe that the pilot program will accelerate the development and use of solar energy systems, reduce PV system costs, and encourage growth of the solar industry in California. Parties opposing the pilot

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<sup>2</sup> All parties seem to agree that off-grid PV systems are currently the only cost-effective PV application.

program, on the other hand, believe that it will be anti-competitive, will not further the commercialization of PV power, and will not be in the best interests of the ratepayers. They assert that Edison's pilot program represents a move by a regulated monopoly utility into a market already served by existing business.

#### Should Edison Enter the Off-Grid PV Market?

8. Protestants to Edison's pilot program claim that a growing off-grid PV market already exists, with many small companies selling and servicing off-grid PV power systems throughout California. They assert that the existing industry sufficiently serves this market with off-the-shelf systems available to the customer at competitive prices. They estimate that some companies have been in business for over ten years serving thousands of off-grid homes using PV as their main source of electrical power.

9. Edison does not dispute that an off-grid PV market has already been established. Instead, they argue that their entry into the market as a buyer of PV systems from the existing industry through a competitive bidding process would enhance the market. Edison believes that its proposed pilot program would not only stimulate and improve business in the existing off-grid PV market by attracting new customers, but that this additional business would ultimately significantly strengthen the entire PV industry.

10. The PV4U state working group had recommended that utilities begin PV purchase programs or financing plans in support of this same concept. In its published "California PV for Utilities Commercialization Plan", the working group stated that the off-grid PV market, in particular, is an important initial niche market for utility involvement. However, they do note that the increase in PV demand from off-grid applications alone is likely to be relatively small and by itself, will not be adequate to drive the economics of PV component production.

11. In the case of Edison's pilot program, CACD believes it is beneficial to allow Edison to enter the market as a buyer of PVs because Edison will be providing a PV financing service that the existing market does not offer. Edison has stated that financing is a major barrier that must be overcome in order to increase utilization of PVs. CACD believes this added financing option provides an opportunity to stimulate the PV market, promote competition, and accelerate the development and use of PVs. However, CACD believes that the impact on the PV market needs to be closely monitored and evaluated. CACD recommends that Edison be required to more sufficiently explore, test and evaluate the market potential. At a minimum, Edison should provide market studies to substantiate its demand/revenue projections, state overall objectives (for both the duration of the pilot and beyond), and establish measures of success by which to evaluate its PV pilot program.

12. Before the Commission grants approval of the pilot program, CACD recommends that Edison be required to file a supplement to Advice Letter 1027-E in which Edison agrees to conduct an initial market study before commencing the pilot program. This market study should include, but not be limited to, the collection and analysis of data on the current market size (number of customers, size of PV installations, location of customers, etc.), number, size and location of distribution firms and contractors serving the PV market, and survey information on customer interest in Edison's pilot versus existing PV options. This initial market study, along with additional market studies that should be performed later in pilot, should assist in determining the relative effectiveness of Edison's alternative financing option in stimulating customer interest in PVs.

13. Edison should also provide in its supplemental advice letter, an outline of specific goals of the pilot program, its relationship to the Edison business plans, and an indication of the measures for success it intends to use to evaluate the pilot program. CACD recommends that based on the additional information, the Commission should reevaluate continuing the pilot program after one year or when PV installations reach an aggregate capacity of 100 kilowatts (kW), whichever comes first.

#### **Is Edison's Demonstration of Off-Grid PVs Needed?**

14. In Advice Letter 1027-E, Edison characterized its pilot PV program as a:

...demonstration program to test the feasibility of providing an alternative energy source to customers in locations, such as remote geographical areas, where a line extension is not economical. This program is a limited program whose primary purpose is to investigate the technical viability and cost effectiveness of PV solar installations in comparison to line extensions.

15. Parties opposing Edison's pilot program claim that off-grid PV power systems are not experimental but rather established technologies that do not need demonstration by Edison. IPPP, in particular, believes that Edison's program is not targeted at the demonstration of PVs but designed to move into and gain control of an already existing market. They assert that Edison's 1 MW pilot represents 20,000 50-watt solar modules which constitutes the entire current off-grid market.

16. TURN stated that the technical viability of PV technologies is already clear and that nothing in Edison's proposal appears to add to the existing knowledge concerning the technical viability. Furthermore, TURN asserts that the cost effectiveness of such installations as compared to line extensions is an empirical question which must be determined on a case-by-case basis. At today's costs, PVs will be cost-effective compared to some line extensions, but not all. TURN

believes that no pilot demonstration program is needed to bolster this conclusion.

17. In response to this issue, Edison restated that the experimental part of the program is to determine whether the program will, in fact, promote competition and accelerate the development and use of solar energy systems. Specifically, Edison wants to demonstrate that its program, which is primarily concerned with financing PV systems, is a viable alternative.

18. CACD agrees with TURN that the technical viability and cost effectiveness of off-grid PVs do not need further demonstration. However, it believes that the viability of offering the financing option, and the extent to which it promotes competition and accelerates the development and use of PVs should be demonstrated.

19. In its comments, DRA suggested that Edison phase out its PV financing in order to avoid competing with banks and other financial institutions, if such institutions begin to offer financing for PVs during Edison's 3-year pilot program. CACD believes that entry of the banking industry or other financial firms should be closely monitored by Edison throughout the pilot program.

#### **Will Edison's Pilot Program Advance Commercialization of PVs?**

20. PU Code Section 2775.5 states that before granting a utility authorization for a proposed solar energy development program, the Commission shall find that the program:

....will accelerate the development and use of solar energy systems in this state for the duration of the program.

21. Edison and its pilot program supporters believe that the pilot will expand the off-grid PV market and ultimately accelerate the commercialization of PVs. Through coordinated industry involvement, standards setting, competitive bidding, and financing, they think there will be a greater awareness and acceptance of PVs, and therefore, a larger market.

22. By providing a monthly financing option that is not available today, Edison hopes to reach potential customers who would not otherwise have the resources to afford the high up-front capital costs of an off-grid PV system. Edison also believes that its name recognition and financial resources may draw new customers to the PV market, thus stimulating and improving business for the existing industry. Some parties believe that the pilot program may also attract customers who have more confidence in a utility than in the PV industry. The desired outcome is that additional business from customers using off-grid solar energy systems that are purchased, installed and maintained by the existing industry, will accelerate the development and use of solar energy systems in California.

23. Parties opposing the pilot program, however, assert that the pilot would not further commercialization of PV power. They believe that the aggregate off-grid capacity of 1 MW of additional PV modules that Edison proposes to install over the next three years is relatively small compared to PV industry production levels. They claim that, by itself, this volume of purchasing is not sufficient to increase production or reduce PV module costs.

24. Although the PV4U working group tends to agree that the increase in demand from the off-grid applications alone may not be sufficient to drive the unit costs of PV component production down, they feel it is a necessary first step in the plan towards achieving full commercialization of PVs.

25. CACD recommends that the Commission be supportive of efforts designed to promote environmentally attractive generation technologies such as PVs. In evaluating the research, development and demonstration programs that are proposed by energy utilities, the Commission's policy has been to encourage utilities to pursue the development of new resources, particularly renewable resources, which further supply technologies and decrease environmental pollution. CACD believes that Edison's pilot PV program supports this goal.

26. In addition, CACD believes that Edison's provision of a financing option, not currently available in today's PV market, will attract additional customers which will accelerate the development and use of PVs in this state for the duration of this program. To ensure, and to track the extent of, the acceleration, CACD recommends that Edison measure and evaluate the impacts of its pilot program on the market. The key to measuring "acceleration" is data. Edison's market studies should reveal the number of PV systems installed both before and after its pilot program.

**Will Edison's Pilot Program Restrict Competition or Growth in the Solar Electric Industry or Unfairly Employ Any Advantage?**

27. PU Code Section 2775.5 states that the Commission shall deny authorization to pursue a program of solar energy development if:

....it finds that the proposed program will restrict competition or restrict growth in the solar energy industry or unfairly employ in a manner which would restrict competition in the market for solar energy systems any financial, marketing, distributing, or generating advantage which the corporation may exercise as a result of its authority to operate as a public utility.

28. Edison and supporters of its pilot program believe that the pilot will not restrict competition or growth but rather will promote competition within the existing industry. As a buyer of PV systems, Edison does not see itself as a competitor. The existing industry will continue to supply, install, and maintain



customer PV systems. The main difference is that the PV system supplier/installer will be selected by Edison through competitive bidding and then Edison will finance those customers who elect the Edison program. Thus, Edison's participation is primarily concerned with financing PV systems. Those customers who do not elect the Edison program can buy directly from the industry as they do in the current market.

29. Protestants claim that without building additional production facilities, Edison's purchase of 1 MW of PV modules could cause a shortage in the existing supply.<sup>3</sup> Should this happen, they project that the cost of PV modules will go up in accordance with the laws of supply and demand. They assert that this will reduce competition and the market size and thus retard the growth of the solar electric installations in California.

30. Edison argues that contrary to this assertion, prices of PVs will fall and growth will increase. Under its proposal, each job will be put out to bid to all qualified bidders, and the lowest bidder will receive the award. Edison's position is that this broadens choice of potential suppliers and places downward pressure on PV costs through competition.

31. Many of California's independent solar electric contractors, dealers, and system designers claim that they do not have the means to finance PV systems and so they can not compete with Edison. They assert that clearly Edison is utilizing a financial advantage, which they believe is forbidden by PU Code Section 2775.5.

32. In addition to the alleged financing advantage, parties opposing Edison's PV pilot program believe that Edison's entry into the off-grid PV market, is unfair to the existing small companies currently serving the market because of Edison's size, resources, name recognition and widespread advertising potential. They also contend that favoritism could result if Edison gives preference to its already-established business contacts over smaller installers. IPPP, in particular, asserts that these unfair competitive advantages can lead to monopoly control of a new market. Furthermore, they assert that there is the potential for cross-subsidization of ratepayer funds to cover costs that should be charged to the end-user customer.

33. Some parties believe that the implementation of Edison's pilot program will diminish the existing companies' level of potential business and reduce the number of qualified companies currently serving the off-grid market. They believe that the three year duration of Edison's proposed pilot will certainly be sufficient to put many small companies out of business. IPPP also argues that the group supporting Edison's pilot program,

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<sup>3</sup> The protestants do not believe that a 1 MW aggregated increase in PV modules would be sufficient to force new production facilities to be built.

largely comprised of manufacturers and distributors who do not compete with the utilities, are insensitive to anti-competitive concerns.

34. TURN believes that many of the concerns raised by IPPP about the competitive impacts of Edison's proposal are both valid and need to be more adequately addressed. TURN points out that although a pilot program of only 1 MW in capacity would not normally cause competitive concerns, if the current annual total market volume for PV installations is only 1 MW, as IPPP contends, Edison's proposal will clearly impact that market in a very significant way.

35. In response to the allegations of anti-competitiveness, Edison argues that its proposed experimental program resulted from collaborative meetings with the PV industry and was expressly designed to maintain the existing industry structure and to secure the widest possible participation. Edison originally had proposed to design, install and maintain the PV systems itself, similar to utility off-grid programs in place in Idaho and Nevada. However, through the collaborative process, DRA pushed for the competitive bidding aspect of Edison's pilot program as a means to alleviate the concerns about the potential for monopoly control of a competitive industry. Each PV installation job in Edison's proposed PV pilot program will be bid separately, with Request for Proposals (RFPs) going to all qualified bidders. Edison has stated that the contract will be awarded to the lowest bidder and that the list of qualified bidders will be reopened and revised every nine months.

36. CACD does not believe that Edison's pilot program, with the stringent conditions imposed upon it through this Resolution, will restrict competition or growth within the solar industry or unfairly employ Edison with any financial, marketing, distributing, or generating advantage. CACD recommends that the Commission closely monitor the program, and exercise its authority given in PU Code Section 2775.5 (c) to suspend or terminate any authorization whenever it finds and determines that the program no longer qualifies for authorization.

37. DRA supports the annual collaborative review and monitoring workshops proposed by Edison in Advice Letter 1027-E as a means to mitigate any negative competitive impacts on the PV industry. Edison has proposed that these workshops would provide an annual forum to meet with PV industry suppliers to review and assess the progress of the pilot program. Edison committed that the views and findings of these workshops will be reported to the Commission. DRA believes that that workshops will enable the Commission to assess and assure compliance with Edison's commitments to PV suppliers. DRA conditioned its support of Edison's pilot program on CACD sponsorship of the compliance workshops, the issuance of workshop reports under CACD auspices, and a stipulation that CACD translate the finding and views expressed at workshops or elsewhere into proposed resolutions before the Commission to alter or abolish the program, should it find the program to be in violation of PU Code Section 2775.5.

38. CACD supports the concept of the review and monitoring workshops but believes they should be conducted semi-annually instead of annually. Although Edison should coordinate and host the collaborative review and monitoring workshops, CACD believes that it should exercise its oversight authority through participation at the workshops. CACD recommends that Edison be required to submit a report containing all views and findings discussed at the review meetings within 45 days of each review meeting. CACD will attend the workshops, review the resulting reports and make any necessary follow-up recommendations to the Commission.

39. Furthermore, CACD recommends that Edison establish a separate memorandum account to track all costs and revenues associated with the PV off-grid pilot program (including, but not limited to, capital investment, installation costs, operation and maintenance expenses, marketing expenses, costs associated with the administration of the competitive bidding process, and costs incurred for the evaluation the pilot program). CACD believes that the separation of the all costs and revenues associated with the pilot program is necessary to allow strict accounting of the program elements and to prevent cross-subsidization of ratepayer funds or other anti-competitive behaviors from occurring. Edison may request approval for the PV memorandum account in its supplemental advice letter, if it chooses to proceed under the conditions enunciated in this Resolution.

40. CACD recommends that the memorandum account be subject to Commission review to ensure that all costs incurred by Edison are reasonable and are being recovered through the revenues collected by the PV customer. A Commission finding of imprudence, a violation of program conditions or guidelines, or other misuse of ratepayer funds in the PV pilot program could lead to discontinuance of the program, disallowance, and/or penalty.

41. Edison has offered to submit a final report to the Commission within six months after the conclusion of the program summarizing the results of the pilot program, including revenues and expenses. Edison has also committed that, in the event that it decides to fully implement the program, it will seek prior Commission approval through a formal application process. CACD endorses both of these conditions. Furthermore, CACD recommends that Edison consider other options such as excluding revenues and costs from the utility's net revenues, i.e. placing them below the line, or offering the PV pilot program through a separate unregulated subsidiary.

#### Is Edison's Pilot Program in the Ratepayers' Interest?

42. A subdivision of PU Code Section 2775.5 states:

The costs and expenses of implementing a program of solar energy development proposed pursuant to this section shall not be passed through to the ratepayers of an electrical or

gas corporation unless the commission finds and determines that it is in the ratepayers' interest to do so.

43. Parties opposing the pilot program believe that it would not be in the best interests of ratepayers. However, they refer to the ratepayer in this context as the customer (or end-user) who enters into the 15-year agreement with Edison for a PV installation. The parties argue that Edison's program will eliminate competition which will reduce the choices for the end-user. Besides reducing choice, they believe Edison's program will result in more costly PV systems. They claim that Edison's proposed rate structure (1.6% of system total cost per month) projected out over the 15-year contract will result in the customer paying \$57,600 for an installed system that costs \$20,000 at today's retail prices. Also, protestants assert that the customer will not own the PV system at the end of the 15-year contract.

44. In response, Edison argues that customer choices are increased by this program, not limited by it. Edison's program will add a financing choice currently not available. Edison stated that according to the PV industry, few, if any banks will finance off-grid PV systems, and customers must pay the entire cost of the system up-front. Also, Edison clarified that in accordance with the terms of the PV agreement, the customer will have the option to buy the PV system from Edison at any time based on Edison's original cost less accumulated depreciation, or may elect to take ownership of the system at the end of the 15-year period at no cost.

45. CACD believes that the customer does have an increase in options with the addition of Edison's pilot PV program; those customers who do not elect the Edison program can buy directly from the industry as they do in the current market. However, CACD is not assured that prospective off-grid PV customers would be aware of other available options. Because Edison would generally be the first point of contact for a customer requesting service requiring a line extension, the customer may assume that Edison is also the sole provider of off-grid power systems. To ensure that Edison enables customers to make informed choices at the time Edison offers its off-grid PV service, CACD recommends that the Commission require Edison to disclose to the customer the availability of other firms providing stand-alone generating options. This disclosure should include referrals to industry associations, such as CAL SEIA and IPPP, to obtain contact lists of PV installers and contractors.

46. In addition to the impact on individual end-user customers, CACD must consider the impact on the general ratepayer population. DRA in its comments stated that:

...under Edison's proposed program, no costs will be incurred by ratepayers. Customer site PV facilities will be entirely paid for by participating customers through a monthly charge of about 1.6% of total system costs.

47. CACD points out that although PV customers will reimburse the costs over a 15-year period, Edison's ratepayers bear the risk associated with the upfront financing of the PV pilot program. Edison has requested recovery from ratepayers of the revenue requirement associated with a plant investment of about \$2 million over the three-year period in its 1995 GRC application (A.93-12-025). In the event of a PV customer default for any reason, Edison stated that it has essentially two options which they believe limit any ratepayer risk. The equipment either could be transferred to another location or could be salvaged. Edison estimates that any ratepayer risk is believed to be minimal, since PV equipment has salvage value and investment over the three year pilot program will be closely monitored.

48. CACD agrees with Edison that ratepayer risks associated with the pilot program are minimal. With the customer reimbursement mechanism, ratepayers have the potential to benefit from the outcome of the pilot without assuming much risk. Accordingly, CACD believes that Edison's pilot program, as conditioned in this Resolution, is in the ratepayers' interest. CACD recommends that all ratepayer benefits be thoroughly evaluated during the PV pilot program, and that Edison relay all of the issues, results, and findings regarding the reasonableness of ratepayer expenditures to the Commission in the final report summarizing the results of the PV pilot program.

#### Is the Bid Process Proposed by Edison Fair?

49. In an attempt to provide the widest possible participation in Edison's bidding process, it was agreed upon at the PV4U collaborative meetings that in addition to contractors with a valid C-10 license, contractors with a valid C-46 license could also qualify.

50. Parties opposing Edison's pilot proposal, believe that this addition may allow unqualified contractors to participate in the PV installation bid process. IPPP asserts that contractors with a C-46 license have solar thermal qualifications but do not have the electrical skills of C-10 licensed contractors that are necessary to do PV design and installations. They contend that Edison's program may put qualified electrical contractors out of business and encourage unqualified contractors to bid on PV systems.

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4 This represents a forecasted market penetration of only about 100 kW for the three-year GRC cycle. Should the pilot program achieve the full capacity of 1 MW, Edison's ratepayers would pay the revenue requirement associated with about an \$18 million investment.

51. TURN also shares IPPP's concern. TURN believes that there are important distinctions between contractors with solar-thermal qualifications and those who are certified installers of PV equipment.

52. In response to these concerns, Edison cites the definition of a Class C-46 Solar Contractor as articulated in the Business and Professions Code, Sections 7058 and 7059. The Code states that:

A solar contractor installs, modifies, maintains, and repairs active solar energy system. An active solar energy system consists of components which are thermally isolated from the living space for collection of solar energy and transfer of thermal energy to provide electricity and/or heating and cooling of air or water. Active solar energy systems include, but are not limited to, forced air systems...photovoltaic cells, and solar assisted absorption cooling systems.

53. From this definition cite, it appears that contractors with a C-46 license are qualified to participate in the installation and maintenance of PVs. However, CACD believes that the Commission should defer to the California Contractors' State License Board to determine the appropriate experience and qualifications requirements that are necessary to ensure safety and quality of service.

54. Protestants to Edison's pilot program also raised another concern with respect to Edison's bidding process. They fear that favoritism could result if Edison is responsible for selecting the winning bidder. In response, Edison stated that its RFPs will go out to all qualified bidders and that it will award the contract to the lowest bidder. CACD believes that there may be some validity to the protestants' concerns and recommends removing the final award of the bid from Edison's control. CACD recommends that Edison identify the three lowest bids and allow the PV customer to make the final selection of the contractor.

**FINDINGS**

1. PVs are an environmentally responsible electricity generation technology alternative.
2. The PV4U collaborative working group encouraged utilities to formulate elements of utility-sponsored off-grid PV programs.
3. Edison filed Advice Letter 1027-E on November 18, 1993 to request Commission authorization to offer, on an experimental basis, off-grid PV service as an alternative to a line extension.
4. This request can be addressed through an advice letter forum with a Commission Resolution because of its pilot nature.
5. Edison has requested recovery from ratepayers of the revenue requirement associated with a plant investment of about \$2 million in its 1995 GRC application (A.93-12-025). Projected revenues, program costs and rate impacts associated with the off-grid PV pilot program are appropriately addressed in that proceeding.
6. Edison's off-grid PV pilot program offers a financing option that provides an opportunity to stimulate the PV market, promote competition, and accelerate the development and use of PVs.
7. The viability of Edison's financing option offered through its PV pilot program, and the extent to which it promotes competition and accelerates the development and use of PVs should be demonstrated.
8. Edison's pilot program, with the stringent conditions imposed upon it through this Resolution, will not restrict competition or growth within the solar electric industry or unfairly employ Edison with any financial, marketing, distributing, or generating advantage.
9. Edison's pilot program as conditioned in this Resolution, is in the ratepayers' interest.
10. The Commission intends to closely monitor the pilot program and exercise its authority given in PU Code Section 2775.5 (c) to suspend or terminate program authorization if it finds that the program no longer qualifies.
11. If Edison decides to proceed with the pilot program, it may file a supplement to Advice Letter 1027-E, acknowledging the acceptance of the following conditions and reporting requirements:
  - a. Edison should conduct an initial market study before commencing the pilot program. This initial study should identify the existing market structure to establish a baseline to test any market restructuring. Before conducting the study, Edison should submit a

detailed plan to CACD regarding the information that will be collected. For example, the study should include, but not be limited to, the gathering and analysis of data on the current market size (number of customers, size of PV installations, location of customers, etc.), number, size and location of distribution firms and contractors serving the PV market, and survey information on customer interest in Edison's pilot versus existing PV options.

- b. Before commencing the pilot program, Edison should provide to CACD an outline of specific goals of the pilot program, its relationship to the Edison business plans, and an indication of the measures for success it intends to use to evaluate the pilot program to determine the relative effectiveness of an alternative financing option in stimulating customer interest in PVs.
- c. Edison should coordinate and host, with CACD's oversight and participation, semi-annual collaborative review and monitoring workshops to review and assess the progress of the pilot program. Interested photovoltaic suppliers and the Commission's Division of Ratepayer Advocates should be invited to participate in these workshops. The first workshop should commence six months after the pilot program begins.
- d. Edison should track all PV installation and maintenance data (including, but not limited to costs, investments, number and size of installations). This data and all concerns/complaints expressed through the workshop process should be reported to the Commission within 45 days following the workshop.
- e. Edison should establish a separate memorandum account to track all costs and revenues associated with the provision of the PV off-grid service pilot program (including, but not limited to, capital investment, installation costs, operation and maintenance expenses, marketing expenses, costs associated with the administration of the competitive bidding process, and costs incurred for the evaluation the pilot program).
- f. This memorandum account will be subject Commission review to ensure that all costs incurred by Edison are reasonable and are being recovered through the revenues collected by the PV customer. A Commission finding of imprudence, a violation of program conditions or guidelines, or other misuse of ratepayer funds in the PV pilot program could lead to discontinuance of the program, disallowance, and/or penalty.
- g. Edison should operate its PV pilot program in a manner consistent with the development of a solar industry that is competitive and free from monopoly dominance, which enables customers to make informed choices.



Along these lines, at the time Edison offers its off-grid PV service, Edison should inform a potential customer of other available firms that provide stand-alone generating options and provide referrals to industry associations such as IPPP and CAL SEIA whereby the customer may obtain contact lists.

- h. After one year or when PV installations reach an aggregate capacity of 100 kilowatts (kW), whichever comes first, Edison shall evaluate the program's success and report all of its findings to CACD. Based on these results and information collected through the semi-annual workshops, CACD should advise the Commission as to whether the pilot program should be continued, altered, or terminated.
- i. Edison should submit a final report to the Commission six months after the conclusion of the program summarizing all results of the pilot program, including revenues and expenses.
- j. In the event Edison decides to fully implement this program, the Company shall be required to file an application requesting Commission approval.
- k. All PV installations and maintenance will be competitively bid and performed by independent contractors under the direction of Edison personnel. Appropriate qualifications and experience of the independent contractors for eligibility and participation into Edison's bidding process should be made in accordance with the California Contractors' State License Board requirements.
- l. Edison should identify and reveal the three lowest bidders from the competitive bidding process to the customer, and allow the customer to select the winning contractor.

**THEREFORE, IT IS ORDERED that:**

(1) Southern California Edison Company may file a supplemental advice letter within 30 days providing the additional information and agreeing with the conditions, as articulated in Finding 11 of this Resolution.

(2) The Commission Advisory and Compliance Division shall determine whether the supplemental advice letter filing satisfies the conditions set forth in this Resolution within 10 days of receiving the supplement.

(3) Southern California Edison Company is authorized to establish the pilot demonstration program, described in Advice Letter 1027-E, to test the feasibility of offering photovoltaic service as an alternative energy source to customers in locations where a line extension is not economical, pending the Commission Advisory and Compliance Division's approval of a supplemental advice letter filing.

(4) Any rate impacts due to approval of Advice Letter 1027-E shall be addressed in Southern California Edison Company's 1995 General Rate Case (Application 93-12-025) proceeding.

(5) The pilot program shall be limited to an aggregate photovoltaic off-grid capacity of 1 Megawatt for all customers for the entire duration of the program.

(6) The experimental schedule and the photovoltaic service agreement which support the photovoltaic pilot demonstration program shall be closed to new customers three years from the date of the Commission Advisory and Compliance Division's acceptance of the supplement to Advice Letter 1027-E, unless the pilot is terminated before that date.

(7) Southern California Edison Company's request for findings and determinations regarding the consistency of this pilot program with the policies expressed the California Public Utilities Code Section 2775.5 is granted.


(8) All protests to Advice Letter 1027-E are denied.

(9) The tariffs are effective when Southern California Edison Company files, and the Commission Advisory and Compliance Division approves, the necessary supplement to Advice Letter 1027-E.

(10) This Resolution is effective today.

April 6, 1994\*\*

I hereby certify that this Resolution was adopted by the Public Utilities Commission at its regular meeting on April 6, 1994. The following Commissioners approved it:

  
NEAL J. SHULMAN  
Executive Director

DANIEL Wm. FESSLER  
President  
PATRICIA M. ECKERT  
NORMAN D. SHUMWAY  
P. GREGORY CONLON  
JESSIE J. KNIGHT, Jr.  
Commissioners