

ORIGINAL

Decision No. 91272 JAN 29 1980

BEFORE THE PUBLIC UTILITIES COMMISSION OF THE STATE OF CALIFORNIA

Investigation on the Commission's )  
own motion into the feasibility of )  
Establishing various methods of )  
providing low-interest, long-term )  
financing of solar energy systems )  
for utility customers. )

OII No. 42  
(Filed April 6, 1979)

(Appearances are listed in Appendix A.)

INTERIM ORDER

On January 2, 1980, the Commission delivered a report to the Legislature entitled "Financing the Solar Transition," which represents the views of this Commission concerning long-term, low-interest financing of solar energy devices by regulated energy utilities. That report, in part, reflects an analysis of the record to date in OII 42. Based on that record, we have made the following findings which lead to the conclusions that the four major privately-owned gas and electric utilities having their primary service areas in California should promptly develop demonstration programs as recommended in our report to the Legislature. Findings 1 and 3 are based in part on official documents of this and other government agencies of which this Commission takes notice.

Findings of Fact

1. Since 1974, utility rates have increased at a compound annual rate of 24.9% for gas and 15.2% for electricity. Since 1972, fuel oil prices have increased at a compound annual rate of 27.2%. All of these increases exceed the general rate of increase in the Consumer Price Index which has been 7.7% a year since 1974.

2. Use of solar energy to heat water is one of many ways to help consumers stabilize energy costs and to displace conventional fuel use.

3. There is clear State and Federal policy to promote the maximum utilization of solar energy. Official statements of the President and the Governor, findings of the Congress and the California Legislature and previous findings of this Commission have concluded that the use of solar energy will reduce dependence on foreign oil, increase national security, improve the national balance of payments, reduce pollution, increase jobs in the domestic energy sector, increase the rate at which utilities can augment energy supplies in the short term and reduce inflationary pressures.

4. One significant barrier to the increased utilization of solar water heaters is the high initial cost of the solar system. Consumers are generally unaware of the potential for savings over the life of the system despite the high initial costs.

5. Other barriers to increased utilization of solar energy include:

- a) Lack of consumer confidence in installation and operation of solar systems, and
- b) Inadequate information about the uses, costs and current availability of solar energy.

6. Each of these barriers must be overcome before increased solar utilization can be expected.

7. There are adequate conventional financing resources available for consumers of solar water heaters. However, the monthly cost of conventional financing often exceeds the monthly savings resulting from use of solar water heaters. Additional financing assistance is required. In making this finding, the Commission notes it has not studied the impact of recent actions by the Federal Reserve Bank to tighten credit and increase interest rates.

8. A policy to encourage the use of solar water heaters is clearly justified a) if the cost of a solar system to the consumer is no more than the cost of other options, on a life-cycle basis; or b) as part of a demonstration program; or c) in response to societal objectives as stated in Finding 3.

9. Solar water heaters are clearly cost effective to the purchaser as retrofit additions to electric water heaters. Considering the rates consumers pay for gas, including both average and lifeline rates, and considering the solar tax credit, solar water heaters are cost effective retrofit additions to gas water heaters for middle and upper income people and are likely to become cost effective during 1980 for persons of lower income if historical escalation rates for the cost of gas continue.

10. Large scale financing assistance provided by the utilities or the government should provide benefits to society equal to or in excess of costs.

11. A primary objective of a solar financing program should be to make it as convenient to purchase a solar water heater as it is to receive and pay for energy from conventional sources.

12. Those cost/benefit analyses submitted to the Commission to evaluate solar financing options are insufficient in that they consider only the dollar savings produced by solar water heaters but do not consider the other primary benefits of solar energy as set forth in Finding 3.

13. Programs in which solar energy financing costs are treated as an investment and are placed in the rate base are likely to create a greater initial cost to the ratepayers than those in which cost are treated as an expense. However, ultimate savings may exceed program costs if rate base options create a greater incentive for the utilities to maximize solar energy market penetration. More rapid solar energy implementation could produce capacity savings at an earlier date and thus produce greater savings to ratepayers.

14. The cost of solar financing programs to the utility is significantly reduced if the solar tax credit is applied to reduce utility expenses or investment incurred in the program.

15. The evidence available does not permit firm conclusions as to which financing assistance programs are likely to stimulate the greatest consumer interest. Two options included in the market survey appear promising: a utility loan repaid on sale of the home and a low-interest loan. Two other options also deserve further consideration: a loan with payments indexed to rising utility bills (a concept proposed by PG&E) and a straight utility investment which the utility depreciates and which the consumer has no obligation to repay (a concept proposed by the Environmental Defense Fund).

16. Utility provided maintenance for solar water heaters appears to attract substantial interest as an additional incentive for the purchase of solar systems.

17. Financing assistance alone is not likely to overcome market barriers to solar energy systems other than the barrier of high initial costs. Solar financing programs should be accompanied by expanded programs to improve consumer information and consumer confidence in the installation and operation of solar water heaters.

18. There are substantial subsidies for conventional energy sources. The solar tax credit is essential to counterbalance, at least in part, these subsidies to conventional energy sources.

19. The solar tax credit offers substantially fewer benefits to homeowners with incomes below \$15,000 a year and to renters. Ratepayer assisted solar financing programs can help overcome this inequity.

20. Vigorous demonstration programs are necessary to evaluate the costs of various options.

21. Vigorous demonstration programs are necessary to evaluate preferences and the acceptability of various financing and non-financing options.

22. Vigorous demonstration programs would contribute substantially to increased consumer confidence in and information about solar water heaters.

23. The demonstration financing programs should be substantial in size and of sufficient duration to permit realistic evaluation of several factors including:

- a) Economies of scale that could reduce the per unit cost of promotion or administration;
- b) Impacts on both participating and non-participating ratepayers;
- c) Start up costs that would not be part of an on-going program;
- d) Impacts on different utility financial structures;
- e) Differences in consumer acceptance and ratepayer reaction;
- f) Differences in means to divide costs and benefits among ratepayers.

24. A demonstration or experimental program need not strictly comply with established cost effectiveness criteria.

#### Conclusions of Law

1. The suggested programs are reasonable and should be granted waivers from prohibitions contained in the National Energy Conservation Policy Act. Utilities can implement such programs without engaging in proscribed anti-competitive activities.

2. Applications for temporary program exemptions from any provisions of Sections 215 and 216 of the National Energy Conservation Policy Act must be submitted to the United States Department of Energy no later than 180 days after December 7, 1979. There is no deadline for applications for waivers from the provisions of these sections.

3. It is reasonable that demonstration utility solar financing programs be undertaken.

4. In order to expeditiously proceed with our analysis of alternative utility solar financing programs, the following order should become effective the date of signature.

IT IS ORDERED that:

1. Pacific Gas and Electric Company, San Diego Gas & Electric Company, Southern California Gas Company, and Southern California Edison Company shall present to this Commission, within 60 days, a plan particular to each utility company and service territory for a demonstration financing program for solar water heater retrofit installations as set forth below.

2. The demonstration financing program should be designed to retrofit 2% of the gas water heaters and 10% of the electric water heaters which are furnished energy by and are within the service territory of each utility. The programs should include all single family and multi-family residential markets and be designed to reach a wide range of geographic areas and income groups.

The program should offer, to single family dwelling owners, sufficient funds (in combination with tax credit funds) to finance the full cost of reasonably priced systems and to provide the installation at no initial cost to the homeowner. Full financing should be provided for multi-family dwelling installations at no initial cost to the building owner.

The utility may propose to include the funds advanced in the rate base or to have them treated as expenses, and should fully discuss the reasons for selecting the proposed treatment of expenditures. Each program shall provide for consumer choice of repayment in equal monthly installments over a twenty-year term, in monthly installments indexed to rising utility rates, or in lump sum upon resale of the building. Installment payment programs shall include provisions to terminate installments upon resale of the building. Each utility shall also propose a plan in which the funds advanced are treated as a utility investment for which the consumer has no repayment obligation.

3. The plans presented to the Commission shall include an analysis of:

- a. Projected energy and capacity savings
- b. Projected impact of the fully implemented demonstration plan upon ratepayers and stockholders.

These analyses should be conducted using assumptions regularly utilized by the utility in planning resource additions. Further analyses should also be conducted utilizing the following historically based assumptions for the period through 1985 and appropriate assumptions thereafter:

- a. General rate of inflation of 7.7%
- b. Discount rate of 8%
- c. Escalation rate for natural gas of 24.9%
- d. Escalation rate for electricity of 15.2%
- e. Escalation rate for fuel oil of 27%

4. Each utility shall suggest means by which consumer confidence and information about solar water heaters can be improved.

5. Each utility shall suggest at least two alternative methods by which to ensure timely recovery of all prudently incurred incremental costs associated with the program, and discuss how such mechanisms could apply to expanded programs.

6. The plan should be designed to reach the intended penetration levels within three years of commencement of the program, while allowing for a response to accelerated customer interest which would enable the program goals to be attained in a shorter period of time.

7. Each utility shall suggest appropriate measures, consistent with the positions of this Commission, to assure the quality of solar water heating systems and installations which are the subject of financing assistance pursuant to this order.

8. The plan should include a proposed application to the Secretary of Energy for a Temporary Program Exemption pursuant to Section 218 of the National Energy Conservation Policy Act.

9. After hearings to consider the plans submitted by the utilities, the Commission will, by supplemental order, establish such program or programs as it finds reasonable and appropriate to accomplish the objectives of the demonstration program.

10. The staff shall actively monitor and assess the progress of the programs to be established, reporting semi-annually to the Commission. An advisory panel, including representatives of the solar industry, regulated utilities, the financial community, consumer and environmental groups, the CEC, the Department of Consumer Affairs, and the Commission staff will be appointed by the President to report to the Commission approximately 2-1/2 years after commencement of the programs concerning the impact of the program on the rate of solar energy development in California. This report will include a comparison of consumer attitudes toward solar energy devices before and during the program, the industry's reaction to the program, an analysis of the cost effectiveness of various solar applications as affected by changing energy and material costs in the interim and a recommendation as to the best financing role for utilities following completion of the three-year demonstration program.

11. The proposals of the respondent utilities made pursuant to this order shall be submitted as compliance filings in this proceeding with an original and 12 copies tendered to the Docket Office and with copies served on all appearances of record.

12. Each proposal shall provide that persons who purchase solar water heaters during the period between the date of this order and the implementation of the demonstration program shall receive preference for selection to participate in the demonstration program to the extent such selection is consistent with program

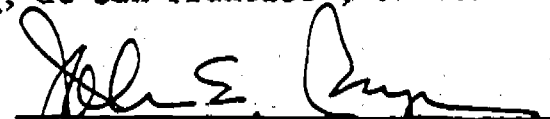



guidelines as stated in Ordering Paragraphs 2 and 7. Customers who qualify pursuant to these limitations shall be offered the opportunity to refinance their solar water heater purchases through the demonstration solar financing program within a reasonable period of time after implementation of the program.

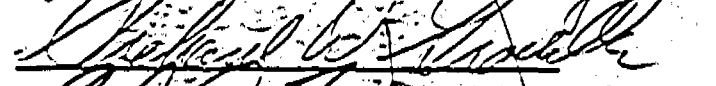
13. The Executive Director shall cause a copy of this order to be served upon all parties of record in OII 42.

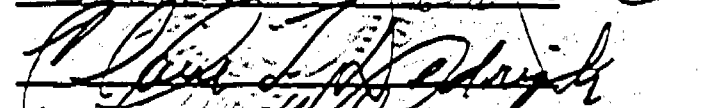
The effective date of this order is the date hereof.

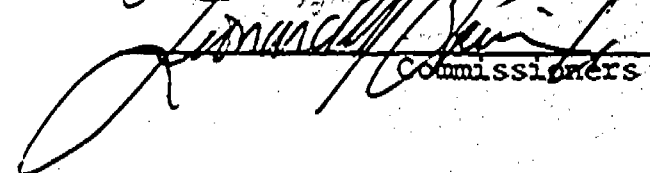
Dated JAN 29 1980, at San Francisco, California.

  
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President

  
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Commissioner

  
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Commissioners

## APPENDIX A

LIST OF APPEARANCES

Respondents: Thomas D. Clarke, David J. Gilmore, and David B. Follett, Attorneys at Law, for Southern California Gas Company; John R. Bury, William E. Marx, Richard K. Durant, and Carol B. Henningson, Attorneys at Law, for Southern California Edison Company; Gordon Pearce and Leslie R. Kalin, Attorneys at Law, for San Diego Gas & Electric Company; Malcolm H. Furbush, Robert Ohlbach, and Kermit R. Kubitz, Attorneys at Law, for Pacific Gas and Electric Company; Patrick T. Kinney, Attorney at Law (Nevada) for Sierra Pacific Power Company; and George M. Galloway, Attorney at Law (Oregon) for Pacific Power & Light Company.

Interested Parties: Robyn D. Boyer, for Assembly Subcommittee on Energy, Assemblyman Mel Levine, Chairman; David B. Roe and Thomas J. Graff, Attorneys at Law, for the Environmental Defense Fund; Greggory Wheatland and Rosemary Morgan, Attorneys at Law, for the California Energy Commission; James B. Frankel, Attorney at Law, and Laura King, for the Natural Resources Defense Council; Dunne, Phelps, Mills & Burns, by Marshall G. Berol, Attorney at Law, for California Swimming Pool Industry Energy and Codes and Legislative Council; Margaret C. Gardels, for the Campaign for Economic Democracy; Eileen M. Cohn for the Business and Transportation Agency; Downey, Brand, Seymour & Rohwer by Philip A. Stohr, Attorney at Law, for General Motors Corporation; and Sukum Sai-Ngarm for Sunrae (Solar Use Now for Resource and Employment).

Commission Staff: Steven Weissman, Attorney at Law, and Bruce DeBerry.