

# General Plan

# **Energy Element**

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**County of Sacramento**  
Office of Planning and Environmental Review

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# **SACRAMENTO COUNTY GENERAL PLAN ENERGY ELEMENT**

## **POLICY AND ACTION PROGRAM**

### **Introduction**

The Energy Element is a component—or element—of the Sacramento County General Plan. The General Plan in turn is the official statement of the Board of Supervisors setting forth policies that will guide the physical growth of Sacramento County. As a policy document, it is a commitment to a course of action that will lead over time toward the kind of physical environment desired by the people who work and live in Sacramento County. One purpose of the Energy Element is to guide the update of the General Plan, presently getting under way, such that energy conservation is considered in the policy-making which guides the physical growth of Sacramento County.

The preparation of the Energy Element was conceived by the Sacramento County Energy Planning and Conservation Council in the Spring of 1976. The Energy Council was a group of citizens appointed by the Board of Supervisors to advise the Board on matters relating to energy. The Energy Council secured a grant from the Federal Energy Administration to help finance preparation of the Energy Element, and has guided its preparation. (The Energy Council was dissolved several years ago.)

The Energy Element consists of two major works—a Research report (Background Section) and a combined Policy Plan and Action Program. The Research Report provides background data for the Policy Plan. A countywide "energy account" in the Research Report is intended to be updated annually, and will serve as a base by which to measure the effectiveness of the Energy Element.

The Policy Plan contains a goal statement, objectives, strategies, and policies. A goal is defined by the General Plan as describing the kind of environment considered to be ultimately desirable, the objective being some-what more specific by pointing to a definite, achievable target. A strategy means a plan or method for achieving a goal. Under strategies are policy statements which are specific commitments to action. The Policy Plan, then, is the heart of the Energy Element; it is the official statement of the Board of Supervisors committing them to a defined course of action.

The Action Program, the third part of the Energy Element, details how the policies in the Policy Plan are to be implemented. It indicates which individual or agency is to be responsible for implementation and gives a target date for completion. It is intended that each policy will be adopted with at least one plan of action detailing implementation of that policy.

This Action Program is to accompany the Policy Plan of the Sacramento County General Plan Energy Element. The Action Program lists the proposed policies and then describes in one or more actions for each policy how each policy is to be implemented. It indicates which individual or agency is to be responsible for implementation and gives a target date for completion. It is the intent of the Action Program that each policy will be adopted with at least one plan of action for implementation of that policy. Where possible, an estimate of the approximate energy savings resulting from implementation of the policies and actions is presented, and the estimates and policies are summarized on the last page.

Renewable energy is poised to become a significant part of Sacramento's energy supply. SMUD, PG & E and WAPA are obligated under State law to provide an increasing percentage of renewable energy and there are currently incentives for developing private renewable sources to help supply that energy. Sacramento's ample supply of cloudless days makes solar a prime candidate to help SMUD achieve its goals. Policies that relate to siting and design of renewable energy facilities are found in the Public Facilities Element in the section entitled "Solar Electric and other Renewable Energy Facilities".

### **Goals**

- GOAL:** It is the goal of Sacramento County to –
- Reverse the historical trend of increasing per capita consumption of energy, and
  - Shift toward using a greater share of renewable sources of energy, and
  - Shift seasonal and daily peak energy demands to increase the load factor of electrical generating facilities, while
  - Maintaining or enhancing the general standard of living, the level of employment, and the quality of the environment.

### **Objectives, Policies and Implementation Measures**

Predictions of future per capita energy consumption, sources of fuel - particularly those that are non-renewable - extent of fuel availability, and electrical generating system load factor are difficult to make. Projections illustrated in the objectives below are therefore general expression of past trends; targets under each objective represent general aims. Adjustments reflecting new data can be made as the Energy Element is periodically updated.

#### **Objective I: Reduce per capita consumption of energy.**

##### **Policies:**

- EN-1. Develop standards which would reduce the energy required to maintain interior spaces in the comfort zone, including such standards as tree planting and proper orientation of dwellings.

- EN-2. Inform the public of the need and of ways to conserve energy in the home.
- EN-3. Encourage the conservation and rehabilitation of existing housing and the revitalization of older, more intensively developed neighborhoods in the urban area.
- EN-4. Encourage consumers to purchase or rent energy efficient houses and apartments.

Policies for the Transportation Sector: To reduce the per capita energy consumption in the transportation sector, it is the policy of Sacramento County to:

- EN-5. Reduce travel distances and reliance on the automobile and facilitate increased use of public transit through appropriate land use plans and regulations.
- EN-6. Actively support the efforts of the Regional Transit District to expand and upgrade service and attract an increasing percentage of travel.
- EN-7. Expand existing programs and develop new programs which promote and encourage vanpooling and carpooling.
- EN-8. Promote and encourage increased percentages of more efficient cars.
- EN-9. Inform the public of the need to reduce auto travel and encourage the use of public transit and other energy efficient modes of travel.
- EN-10. Continue implementation of the Bikeways Master Plan, and develop standards for neighborhood bikeways and pedestrian-ways, incorporating them into Neighborhood Planning Standards.

Policies for Other Sectors: To reduce the per capita energy consumption in the other sectors, it is the policy of Sacramento County to:

- EN-11. Promote the location within the Sacramento area of those industries which are labor intensive, utilize solar energy systems, and are consistent with other policies in terms of environmental protection.
- EN-12. Encourage industry located or locating in the Sacramento area to participate in co-generation of power
- EN-13. Aggressively pursue programs to retrofit with insulation those existing uninsulated or underinsulated commercial, institutional, and industrial buildings where economically justified.
- EN-14. Develop or revise design standards relating to building solar orientation, landscaping, impervious surfaces, and parking space requirements to conserve energy.

EN-15. Inform the agricultural industry of ways to conserve energy through the Cooperative Agricultural Extension office.

Implementation Measures:

A. Adopt and implement energy efficient building standards for residential construction.

*Action A.1* The Board of Supervisors reaffirms its policy of promoting energy conservation by encouraging the utilization of energy conservation measures and devices in all new construction, regardless of the minimum building standards in effect at the time of construction. (Priority 1)

ENERGY EVALUATION: Cannot be quantified.

B. Aggressively pursue programs to retrofit existing residences with ceiling insulation.

*Action B.1* The County will provide funding, to the extent available through CDBG funds, to low income neighborhoods for ceiling insulation, weather stripping, and other energy conservation home improvements, training and employing low income residents to do the work. The Sacramento Housing and Redevelopment Agency or the County will administer the program and funding will come from the Community Development Block Grant program. (Priority 1)

C. Develop and implement neighborhood planning standards which would reduce the energy required to maintain interior spaces in the comfort zone, including such standards as tree planting and proper orientation of dwellings.

ENERGY EVALUATION: This policy – particularly the dwelling orientation concept – would contribute significantly to energy conservation in the residential sector.

D. Inform the public of the need and ways to conserve energy in the home.

*Action D.1* The Department of General Services should coordinate energy activities within the county (see Policy EN-29 below). They should research programs which include but not be limited to: (a) landing a grant for a teacher training pilot program to add education of energy conservation in primary and secondary schools; (b) developing a syllabus for teaching a multi-media (TV, newspaper, etc.) class on energy conservation for the homeowner; and (c) expand community college education program to train students for performing energy audits of homes. (Priority 3)



ENERGY EVALUATION: The effects of these programs cannot be quantified independently; however, they would contribute to the success of other policies.

- E. Encourage the conservation and rehabilitation of existing housing and the revitalization of older, more intensively developed neighborhoods in the urban area.

*Action E.1* The County will implement a Housing Element of the General Plan, some of whose policies and programs would achieve the intent of this policy. (Priority 1)

ENERGY EVALUATION: The significant energy savings from this action would come from (a) keeping neighborhoods viable and attractive so that residents are not encouraged or forced to "flee" from what may become a decaying urban area to the newer suburbs further from employment centers; and (b) a conservation of natural resources.

- F. Encourage consumers to purchase or rent energy efficient houses and apartments.

*Action F.1* The County will require by ordinance that prospective tenants of rental units (single and multi-family) will be informed by the landlords of the extent of ceiling insulation in the rental unit. (Priority 3)

*Action F.2* The Board of Supervisors will, by resolution, encourage SMUD to hire and train people to conduct energy audits of residences on request, and to publicize the service. Such a program may be fundable through the Comprehensive Employment Training Act (CETA). (Priority 1)

ENERGY EVALUATION: Cannot be quantified.

- G. Reduce travel distances and reliance on the automobile and facilitate increased use of public transit through appropriate land use plans and regulations.

*Action G.1* Planning and Environmental Review will investigate the energy implications of the widespread dispersal, throughout urban residential areas, of those retail and service activities which require relatively small markets. Planning and Environmental Review will recommend to the Planning Commission appropriate commercial land use policies and regulations toward meeting the objectives of the Energy Element. (Priority 2)

*Action G.2* Planning and Environmental Review will review the Zoning Code list of permitted or conditionally permitted "home occupations" with the objective of expanding the list to the maximum extent consistent with residential

neighborhood preservation. If additional uses are found to be appropriate, an amendment to the Zoning Code will be drafted. (Priority 2)

*Action G.3* Planning and Environmental Review will identify the major employment centers in the county and conduct land use studies of these centers and surrounding areas. The studies will identify suitable sites for higher density housing and will examine the potential for mixed-use developments. Planning and Environmental Review will also identify major employment centers which have the capacity for further concentration of employment and can be efficiently and flexibly served by public transit. This entire study will conclude with recommendations for amendments to the General Plan and to community plans implementing the intent of this policy. (Priority 2)

*Action G.4* Planning and Environmental Review will develop detailed design guidelines, relating to circulation, safety, appearance, etc., to accommodate higher density living. (Priority 3)

*Action G.5* The Planning Commission will recommend and the Board of Supervisors will adopt clear and concise definitions of "leap-frog" development and "contiguous growth," and these will be adopted as part of the General Plan. (Priority 1)

*Action G.6* The Board of Supervisors will expedite acquisition and development of The American River Parkway and other regional recreation areas and facilities which are located in close proximity to the metropolitan Sacramento area, and provide adequate, safe, and convenient non-vehicular access to these areas. (Priority 2)

ENERGY EVALUATION: The effects of these actions relating to the transportation sector are difficult to measure independently-

H. Actively support the efforts of the regional transit district to expand and upgrade service and attract an increasing percentage of travel.

*Action H.1* The Board of Supervisors will by resolution request that RT extend transit service to major regional parks during peak use weekends and holidays to 1) reduce the reliance on the automobile and 2) enhance the opportunities for low income residents to use and enjoy public park areas. (Priority 2)

I. Expand existing programs and develop new programs which promote and encourage vanpooling and carpooling.

*Action I.1* Planning and Environmental Review and the Department of Transportation will investigate and develop or expand vanpooling and carpooling programs for county employees and for county residents, coordinating their efforts with

the Department of General Services and the California Department of Transportation. (Priority 1)

- J. Promote and encourage increased percentages of more efficient cars.

ENERGY EVALUATION: Cannot be quantified.

- K. Inform the public of the need to reduce auto travel and encourage the use of public transit and other energy efficient modes of travel.

*Action K.1* The county office designated to coordinate energy activities in the county (see Policy EN-29, below) will cooperate in the development of education programs in conformance with this policy, and in cooperation with the California Energy Commission, Cal-Trans, the County Department of Transportation, and Regional Transit. (Priority 3)

ENERGY EVALUATION: The effects of this action cannot be quantified independently; however, it would contribute to the success of other policies.

- L. Continue implementation of the bikeways master plan, and develop standards for neighborhood bikeways and pedestrian-ways, incorporating them into neighborhood planning standards.

*Action L.1* Planning and Environmental Review, the Department of Regional Parks, and the Department of Transportation will develop and recommend standards and appropriate ordinances and amendments for neighborhood bikeways and pedestrian-ways. (Priority 3)

ENERGY EVALUATION: Cannot be quantified.

- M. Promote the location within the Sacramento area of those industries which are labor intensive, utilize solar energy systems, and are consistent with other county policies in terms of environmental protection.

*Action M.1* The County of Sacramento will conduct a study to determine a priority ranking of types of industry to attract to the Sacramento area, based on labor intensity, energy requirements, and environmental effects. Following this study, the county will identify specific site locations in the county, suitable for each industry and consistent with policies in this Energy Element relating to land use and transportation. The county will then encourage the Sacramento Area Commerce and Trade Organization to pursue those industries ranking high on the priority list to locate in the Sacramento area. (Priority 1)

ENERGY EVALUATION: While the addition of industry to the Sacramento area will increase the area's total energy consumption, industrial growth

is already planned. The type of industry that locates in the area, however, can significantly affect the total energy consumption.

- N. Encourage industry located or locating in the Sacramento area to participate in co-generation of power.

*Action N.1* The County will request a joint study with California Energy Commission and SMUD to identify sites and industries in Sacramento County that have a potential for co-generation, and seek to develop a pilot project. (Priority 3)

*Action N.2* In the industrial site identification study described in the action of Policy EN-11, above, identification of potential co-generation sites, if compatible with each given industry, should be part of that study. (Priority 3)

ENERGY EVALUATION: The effects of these actions cannot be quantified because the potential for co-generation in Sacramento County has not been identified. However, statewide, the California Energy Commission has estimated a significant potential for energy production and conservation by utilizing otherwise wasted energy.

- O. Aggressively pursue programs to retrofit with insulation those existing uninsulated or underinsulated commercial, institutional, and industrial buildings where economically justified.

*Action O.1* The Board of Supervisors will by resolution encourage SMUD PG&E, and the California Energy Commission to continue and expand their existing programs which encourage insulation retrofit of existing commercial, industrial, and institutional buildings. (Priority 1)

ENERGY EVALUATION: Cannot be quantified at this time.

- P. Develop or revise commercial and industrial design standards relating to building solar orientation, landscaping, impervious surfaces, and parking space requirements to conserve energy.

*Action P.1* Planning and Environmental Review will recommend policies and/or amendments to the Zoning Code establishing standards for commercial and industrial building and/or lot orientation and modifying landscaping and parking requirements to achieve conservation of energy. Examples may include the use of landscaping for shading windows and parking areas, use of common parking areas for adjoining uses whose peak business hours occur at different times, and changing the peak parking demand as the basis for parking space requirements. (Priority 2)

ENERGY EVALUATION: Cannot be quantified at this time.

- Q. Inform the agricultural industry of ways to conserve energy through the cooperative agricultural extension.

*Action Q.1* The Cooperative Agricultural Extension will develop an education program to inform the agricultural industry in the county of ways to conserve energy. The program will be developed in cooperation with other energy conservation educational programs to be developed under Policies EN-2 and EN-9 above, and Policy EN-22 below. (Priority 3)

ENERGY EVALUATION: Cannot be quantified at this time.

**Objective II: Reduce the reliance on non-renewable energy sources with emphasis on those in shortest supply.**

Energy sources will be shifted increasingly to renewable forms by expanding the use of solar water and space heating and space cooling, increasing the efficiency of present hydroelectric generators, and capturing the maximum amount of energy from wind, falling water, and geothermal sources, consistent with environmental protection.

Policies: To increase the contribution of solar water and space heating and space cooling, it is the policy of Sacramento County to -

- EN-16. Promote the use of passive and active solar systems in new and existing residential, commercial, and institutional buildings as well as the installation of solar swimming pool heaters and solar water and space heating systems.
- EN-17. Support the development and improvement of solar space cooling systems.
- EN-18. Develop and implement standards for the protection of the solar rights of property owners.

Policies: To increase the amount of energy from wind, falling water, and geothermal sources, it is the policy of Sacramento County to -

- EN-19. Support the development and use of renewable sources of energy, including but not limited to biomass, solar, wind, and geothermal.
- EN-20. Advocate that the state legislate a tax incentive or other means of encouraging utilities to improve the efficiency of existing hydroelectric generators.

Implementation Measures:

- R. Promote the use of passive and active solar systems in new and existing residential, commercial, and institutional buildings as well as the installation of solar swimming pool heaters and solar water and space heating systems.

*Action R.1* In the design of all new county-owned buildings, the county will consider active solar devices for water heating, space heating, and/or space cooling on the basis of the following: 1) cost effectiveness, including life-cycle costing at the marginal cost of "new" energy production; 2) available state and federal government funding; and 3) anticipation of future retrofit of solar devices if not presently cost-effective. (Priority 1)

*Action R.2* All swimming pools operated by the county and dependent park districts, which are to be heated, will be equipped with solar heating units within practical limits as determined by life-cycle costing at marginal cost of "new" energy production. (Priority 1)

- S. Support the development and improvement of solar space cooling systems.

*Action S.1* The Board of Supervisors will by resolution encourage the state and federal governments to accelerate the technical development and improvement and the wide scale application of solar space cooling systems. The Board Chairperson will transmit this resolution to the local state legislators, congressmen, and senators. (Priority 1)

ENERGY EVALUATION: Cannot be quantified at this time.

- T. Develop and implement standards for the protection of solar rights of property owners.

ENERGY EVALUATION: This action will enhance the ability to implement the effects of other policies promoting the development of solar energy.

- U. Support the development and use of renewable sources of energy, including but not limited to biomass, solar, wind and geothermal.

*Action U.1* The Board of Supervisors will by resolution inform the State Legislature and the Congress that the County of Sacramento supports the development and use of renewable sources of energy, including biomass, solar, wind, and geothermal. (Priority 1)

*Action U.2* The Board of Supervisors will by resolution encourage SMUD to consider using renewable sources of energy for future electrical-generating facilities. (Priority 1)

*Action U.3* Request SMUD, in cooperation with UC Davis and the Cooperative Agricultural Extension Service, to initiate a joint study of the feasibility of generating electricity in Sacramento County using agriculture or lumber waste products. The study would cover supply of fuel, marketing of electricity, method of organization and control, and financing. (Priority 2)

ENERGY EVALUATION: Cannot be quantified at this time.

**Objective III: Reduce seasonal and daily peak electrical energy demand, and distribute future growth in electrical energy consumption throughout the day and year, thereby increasing the annual system load factor.**

Peak loads will be reduced by providing economic incentives and seeking public cooperation through increased awareness of overall consumer savings and public benefits.

Policies: To reduce peak loads and increase the annual system load factor, it is the policy of Sacramento County to:

- EN-21. Investigate the effectiveness of reducing summer daily peak load by shifting working hours, particularly for office workers and, if effective, promote its implementation.
- EN-22. Inform the public of ways to reduce electrical consumption at times of peak load and of the resulting benefits.
- EN-23. Investigate in a joint effort with SMUD the feasibility and effectiveness of peak day pricing by rate structure and/or surcharge.
- EN-24. Support electronic load management as a method of reducing peak electrical load.

Implementation Measures:

- V. Investigate the effectiveness of reducing summer daily peak load by shifting working hours, particularly for office workers and, if effective, promote its implementation.

*Action V.1* The County will conduct this investigation relating it to county workers in particular and report back to the Board of Supervisors.-(Priority 3)

- W. Inform the public of ways to reduce electrical consumption at times of peak load and of the resulting benefits.
- X. Investigate in a joint effort with SMUD the feasibility and effectiveness of peak hour pricing by rate structure and/or surcharge.

*Action X.1* The County will cooperate with SMUD to determine the feasibility and effectiveness of peak hour pricing by SMUD on their rate structure and/or by the county levying a surcharge. (Priority 3)

ENERGY EVALUATION: Cannot be quantified at this time but, in terms of reducing peak demand, can be significant.

Y. Support electronic load management as a method of reducing peak electrical load.

*Action Y.1* The Department of General Services will consult with SMUD to determine which county buildings can participate in load management projects, and as each building is identified as suitable, the department and SMUD will take appropriate measures for those buildings to be involved. (Priority 1)

ENERGY EVALUATION: Will be determined as above study progresses.

#### **Objective IV: Exercise county leadership.**

County government will become the lead agency in energy planning and conservation by setting an example for other agencies and institutions and the general public through the energy efficient operation of county services and facilities; by coordinating energy conservation activities throughout the county; by actively encouraging federal, state, and other local governments to implement measures in support of the county's energy goal and objectives; and by raising the level of public awareness of the energy problem and the county's energy program through public education.

Policies: To exercise leadership in energy conservation, it is the policy of Sacramento County to:

EN-25. Institute total energy management (TEM) for county buildings.

EN-26. Use life cycle costing and, where applicable, consider energy efficiency ratios for county equipment purchases, including vehicles, and require that vendors on county property do likewise.

EN-27. Recycle office wastepaper

EN-28. Commit itself to the principles of source reduction and resource recovery of municipal solid waste.

EN-29. Establish within a single office of county government responsibility for the following:

A. Coordinating energy conservation efforts in county government;



- B. Publicizing the energy conservation programs of the city, county, SMUD, PG&E, and the state
  - C. Advocating, in cooperation with the county's legislative advocate, other government agencies to adopt programs which support the county's energy goal and objectives;
  - D. Preparing 'an "energy account" annually of the previous year's demand and use of energy in Sacramento County; and
  - E. Coordinating and encouraging appropriate federal, state, county, and other local governmental agencies to conserve energy in water treatment and wastewater treatment and reclamation.
- EN-30. Develop and implement standardized procedures for evaluating the initial and long-range energy impacts of proposed developments.
- EN-31. Design new county buildings to incorporate passive and active solar energy systems and total energy management.
- EN-32. Develop and implement a countywide water resources management plan which is based on conservation of energy and water resources.
- EN-33. Promote district heating for commercial, institutional, and high-density residential buildings in downtown Sacramento.

Implementation Measures:

- Z. Institute total energy management (tem) for county buildings.
- AA. Use life-cycle costing and, where applicable, consider energy efficiency ratios for county equipment purchases, including vehicles, and require that vendors on county property do likewise.

*Action AA.1* Resolution No. 76-270 of the Board of Supervisors directs County Counsel to amend existing county ordinances concerning the purchase of equipment such that all new equipment costs will be evaluated not only on the basis of initial cost but also on the basis of energy specifications and anticipated operating costs over the useful life of the equipment. (Priority 1)

*Action AA.2* The County will work to revise procurement procedures, vendor contract policies and any ordinances as necessary to require vehicle purchases and equipment purchases by vendors located on county property be evaluated on a life-cycle costing basis. (Priority 3)

ENERGY EVALUATION: Cannot be quantified.

BB. Recycle office waste paper.

CC. Commit itself to the principles of source reduction and resource recovery of municipal solid waste.

DD. Establish within a single office of county government responsibility for the following:

- a) coordinating energy conservation efforts in county government;
- b) publicizing the energy conservation programs of the city, county, SMUD, PG&E, and the state;
- c) advocating, in cooperation with the county's legislative advocate, other government agencies to adopt programs which support the county's energy goal and objectives;
- d) preparing an "energy account" annually of the previous year's demand and use of energy in Sacramento county; and
- e) coordinating and encouraging appropriate federal, state, county, and other local governmental agencies to conserve energy in water treatment and wastewater treatment and reclamation.

EE. Develop and implement standardized procedures for evaluating the initial and long-range energy impacts of proposed developments.

*Action EE.1* The State Energy Commission has been preparing such procedures for use in environmental review and supplementary CEQA requirements. As these procedures are completed, the County will review them and adopt those that are appropriate, incorporating them into the Sacramento County Guidelines for Implementing the California Environmental Quality Act. (Priority 3)

ENERGY EVALUATION: Cannot be quantified. Incorporation of these procedures in the environmental review process will aid in identifying the areas of energy costs and savings of proposed developments and various alternatives.

FF. Design new county buildings to incorporate passive and active solar energy systems and total energy management.

*Action FF.1* See the first action under Policy EN-16 above. (Priority 1)

ENERGY EVALUATION: Will be determined as each new facility is designed.

GG. Promote district heating for commercial, institutional, and high density residential buildings in downtown Sacramento.

*Action GG.1* The County Department of General Services will request that California Energy Commission initiate a joint study with the State of California, City of Sacramento, SMUD, PG&E, and the Energy Commission to investigate the feasibility and potential of installing a district heating system for-existing and future commercial, institutional and high density residential buildings in downtown Sacramento. Study conclusions and recommendations will be forwarded to the appropriate decision-making bodies within one year of adoption of this policy.

ENERGY EVALUATION: Cannot be quantified at this time.