

STATE OF CALIFORNIA



CONSUMER POWER AND
CONSERVATION
FINANCING AUTHORITY

ENERGY RESOURCES
CONSERVATION AND
DEVELOPMENT COMMISSION

PUBLIC UTILITIES
COMMISSION

ENERGY ACTION PLAN

California is a diverse and vibrant society. The fifth largest economy in the world, California's population is expected to exceed 40 million by 2010. California's economic prosperity and quality of life are increasingly reliant upon dependable, high quality, and reasonably priced energy. Following the biggest electricity and natural gas crisis in its history, the state is well aware of the need for stable energy markets, reliable electricity and natural gas supplies, and adequate transmission systems. Looking forward, it is imperative that California have reasonably priced and environmentally sensitive energy resources to support economic growth and attract the new investment that will provide jobs and prosperity throughout the state.

California's principal energy agencies have joined to create an Energy Action Plan. It identifies specific goals and actions to eliminate energy outages and excessive price spikes in electricity or natural gas. These initiatives will send a signal to the market that California is a good place to do business and that investments in the more efficient use of energy and new electricity and natural gas infrastructure will be rewarded. This approach recognizes that California currently has a hybrid energy market and that state policies can capture the best features of a vigorous, competitive wholesale energy market and renewed, positive regulation. This approach will be ever mindful of the need to keep energy rates affordable, and is sensitive to the implications of energy policy on global climate change and the environment generally.

While this Plan lays out specific actions, it is a living document. It is a blueprint that is subject to change over time. The agencies will use it to give their efforts direction, focus, and precision, but some of the specific actions cited are subject to further proceedings so may need to be fine-tuned or changed to best meet the overall goals.

Energy Action Plan Goal

The goal of the Energy Action Plan is to:

Ensure that adequate, reliable, and reasonably-priced electrical power and natural gas supplies, including prudent reserves, are achieved and provided through policies, strategies, and actions that are cost-effective and environmentally sound for California's consumers and taxpayers.

The energy agencies intend to achieve this through six specific means:

- Meet California's energy growth needs while optimizing energy conservation and resource efficiency and reducing per capita electricity demand.
- Ensure reliable, affordable, and high quality power supply for all who need it in all regions of the state by building sufficient new generation.
- Accelerate the state's goal for renewable resource generation to 2010.
- Upgrade and expand the electricity transmission and distribution infrastructure and reduce the time before needed facilities are brought on line.
- Promote customer and utility owned distributed generation.
- Ensure a reliable supply of reasonably priced natural gas.

The Agencies are Accountable for Stewardship of California's Energy Future

The state's principal energy agencies are committed to active and continued cooperation. This is unprecedented. To implement this Energy Action Plan agencies pledge:

- To discuss critical energy issues jointly through open meetings and ongoing informal communication.
- To share information and analyses to minimize duplication, maximize a common understanding and ensure a broad basis for decision-making.
- To bring joint policy recommendations about major energy issues to the Governor and Legislature.

The state needs to guide development of the energy system in the public's best long-term interest, to anticipate potential problems, and to make timely decisions to resolve problems. Specifically, the agencies commit to:

- Provide decision-makers impartial assessments of the state's immediate and long-term electricity and natural gas demands, resources, and prices.
- License and, where necessary, fund construction of new energy facilities that are consistent with the reliability, economic, public health, and environmental needs of the state.
- Ensure that the utilities are able to carry out their obligation to serve, including having adequate reserves, recognizing this is a critical component of the current hybrid energy system.
- Restore investor and private sector confidence in California's energy markets.
- Develop an "early warning" system to alert policy makers of potential future problems.

- Work with FERC to redesign market rules and prevent manipulation of the energy markets.
- Partner with governmental and other groups in western North America to pursue commonly held energy goals.
- Make continuing progress in meeting the state's environmental goals and standards, including minimizing the energy sector's impact on climate change.

Shared Principles and Strategies Will Guide this Stewardship

Achieving the overall goal and implementing the proposed actions require close cooperation between the state's energy agencies and means establishing and following common principles and strategies. In particular, the agencies intend to use market forces and regulatory approaches to operate the system in the best, long-term interest of the public: the consumers, the ratepayers, and the taxpayers. This means agency actions will attract private investment into California's energy infrastructure to stretch and leverage public funds and consumer dollars. The agencies must also provide appropriate regulatory guidance, price signals, and incentives to all Californians to use energy efficiently. The agencies will achieve rate stability and provide affordable energy, particularly for low-income consumers, through progressive rate design.

To protect the public's health and safety and ensure our quality of life, the agencies support the most cost-effective and environmentally sound strategies, including consideration of global climate change. The agencies also will work to ensure that low-income populations do not experience disproportionate adverse impacts from the development of new energy systems.

The Agencies' Approach Will be Open and Timely

Achieving the overall goal requires thoughtful planning, followed by specific, timely actions. This process begins with an ongoing assessment of the current and future energy system and the state's economic needs. It must consider a range of risks and uncertainties and must identify and inform policy makers of potential shortfalls and vulnerabilities. The agencies and state policy makers need to respond by carefully considering available options, balancing costs and benefits to meet state goals, selecting policy choices, and devising actions to implement those policy choices.

The result must be a set of interrelated actions that complement each other, provide risk protection, and eliminate the costs and conflicts that would occur if each agency pursued isolated, uncoordinated objectives. Each agency will need to implement the action plan in its individual proceedings but in concert with each other.

For the action plan to achieve the desired outcomes, it must rely on a common vision and be based on an integrated energy resource plan indicative of the state's future energy needs. The Energy Commission's integrated energy assessment process, as set forth by the Governor and Legislature last year in SB 1389, represents a critical step in identifying future statewide energy needs. The agencies will participate in this process, assessing demand growth and available supply, and balancing various state policy objectives to determine the combination of conservation and infrastructure

investments that best meet California's short- and long-term needs. The Public Utilities Commission and the Power Authority will carry out their energy-related duties and responsibilities based upon the information and analyses contained in the assessment.

The Action Plan envisions a "loading order" of energy resources that will guide decisions made by the agencies jointly and singly. First, the agencies want to optimize all strategies for increasing conservation and energy efficiency to minimize increases in electricity and natural gas demand. Second, recognizing that new generation is both necessary and desirable, the agencies would like to see these needs met first by renewable energy resources and distributed generation. Third, because the preferred resources require both sufficient investment and adequate time to "get to scale," the agencies also will support additional clean, fossil fuel, central-station generation. Simultaneously, the agencies intend to improve the bulk electricity transmission grid and distribution facility infrastructure to support growing demand centers and the interconnection of new generation.

Energy Services are Growing, are Essential, and the Delivery Systems are Complex

As a context for this plan, Californians must understand the essential and complex nature of the state's energy resources. Currently the state uses 265,000 gigawatt-hours of electricity per year. Consumption is growing 2 percent annually. Over the last decade, between 29 percent and 42 percent of California's in-state generation used natural gas. Another 10 - 20 percent was provided by hydroelectric power that is subject to significant annual variations. Almost one third of California's entire in-state generation base is over 40 years old. California's transmission system is aging also. While in-state generation resources provide the majority of California's power, California is part of a larger system that includes all of western North America. Fifteen to thirty percent of statewide electricity demand is served from sources outside state borders.

Peak electricity demands occur on hot summer days. California's highest peak demand was 52,863 megawatts and occurred July 10, 2002. Peak demand is growing at about 2.4 percent per year, roughly the equivalent of three new 500-megawatt power plants. Residential and commercial air conditioning represent at least 30 percent of summer peak electricity loads.

California's demand for natural gas also is increasing. Currently the state uses 2 trillion cubic feet of natural gas per year. Historically the primary use of this fuel was for space heating in homes and businesses. Electricity generation's dependence on relatively clean-burning natural gas now means that California's annual natural gas use by power plants is expected to increase. Overall, natural gas use is growing by 1.6 percent per year. Eighty-five percent of natural gas consumed in California is supplied by pipelines from sources outside the state.

Six Actions

The agencies propose six sets of actions of critical importance that need to be undertaken now. These are:

I. Optimize Energy Conservation and Resource Efficiency

California should decrease its per capita electricity use through increased energy conservation and efficiency measures. This would minimize the need for new generation, reduce emissions of toxic and criteria pollutants and greenhouse gases, avoid environmental concerns, improve energy reliability and contribute to price stability. Optimizing conservation and resource efficiency will include the following specific actions:

1. Implement a voluntary dynamic pricing system to reduce peak demand by as much as 1,500 to 2,000 megawatts by 2007.¹
2. Improve new and remodeled building efficiency by 5 percent.²
3. Improve air conditioner efficiency by 10 percent above federally mandated standards.³
4. Make every new state building a model of energy efficiency.
5. Create customer incentives for aggressive energy demand reduction.
6. Provide utilities with demand response and energy efficiency investment rewards comparable to the return on investment in new power and transmission projects.
7. Increase local government conservation and energy efficiency programs.
8. Incorporate, as appropriate per Public Resources Code section 25402, distributed generation or renewable technologies into energy efficiency standards for new building construction.
9. Encourage companies that invest in energy conservation and resource efficiency to register with the state's Climate Change Registry.

II. Accelerate the State's Goal for Renewable Generation

In 2002, the Governor signed the Renewable Portfolio Standard (RPS), SB 1078. This standard requires an annual increase in renewable generation equivalent to at least 1% of sales, with an aggregate goal of 20% by 2017. The state is aggressively implementing this policy, with the intention of accelerating the completion date to 2010, and will:

1. Add a net average of up to 600 MW of new renewable generation sources annually to the investor-owned utility resource portfolio.⁴

¹ . California is actively evaluating and implementing such pricing systems in a CPUC rulemaking (R.02-06-001).

² The Energy Commission's 2005 building standards, to be adopted in 2003, when combined with training and enforcement, are expected to reduce energy needs in new buildings by approximately 5 percent.

³ New federal appliance standards will increase air conditioner efficiency by approximately 20 percent, but if California were granted a waiver from federal standards, by 2007 California air conditioner efficiency would increase another 10 percent.

⁴ Electricity sales by the Investor-owned utilities totaled about 169,000 GWh in 2001. The renewables portfolio standard requires an annual increase in renewable generation equivalent to 1 percent of sales, or

2. Establish by June 30, 2003, key RPS implementation rules, including market price benchmarks, standard contract terms, flexible compliance and penalty mechanisms, and bid ranking criteria under the “least cost-best fit” rubric. Other key RPS rules will be developed and refined throughout 2003.
3. Facilitate an orderly and cost-effective expansion of the transmission system to connect potential renewable resources to load.
4. Initiate the development of RPS compliance rules for energy service providers and community choice aggregators.
5. Coordinate implementation with all relevant state agencies and with municipal utilities to facilitate their achievement of the standard.

III. Ensure Reliable, Affordable Electricity Generation

The state needs to ensure that its electrical generation system, including reserves, is sufficient to meet all current and future needs, and that this reliable and high quality electricity comes without over-reliance on a single fuel source and at reasonable prices. To these ends the state will:

1. Add new generation resources to meet anticipated demand growth, modernize old, inefficient and dirty plants and achieve and maintain reserve levels in the 15 percent-18 percent range.⁵ Current estimates show a statewide need for 1500 - 2000 MW per year.⁶
2. Finance a few critical power plants that the agencies conclude are necessary and would not otherwise be built. An estimated 300 MW of peaking capacity located in critical areas is needed to provide local reliability, help achieve adequate reserves, and reduce congestion and the need for new transmission lines.⁷
3. Work with the California Independent System Operator (CAISO) to implement generator maintenance standards and an oversight process to support coordinated availability of generation.⁸
4. Work with the CAISO to ensure the development of a workable, competitive wholesale energy market that has meaningful market power mitigation rules.
5. Monitor the electricity market to identify any exercise of market power and manipulation, and work to improve FERC-established market rules to correct any observed abuses.

about 1,700 GWh. Assuming a capacity factor of about 50 percent, this is roughly equivalent to 385 MW. Accelerating achievement of the RPS goal to 20 percent by 2010 would mean adding 4,200 MW of renewables over 7 years, or 600 MW (1.6 percent) per year. California is implementing the Renewable Portfolio Standard for the Investor-owned utilities in a PUC rulemaking (R.01-10-024).

⁵ The Western Electricity Coordinating Council (WECC) has established minimum operational requirements of loss-of-load probability of no more than one day in ten years. Current information suggests that the WECC criteria can be met with approximately 15 – 18 percent reserve margins.

⁶ Peak demand growth is expected to be approximately 1,400 MW per year for the next two years, depending on weather and other factors. California is evaluating statewide generation resource needs in the CEC development of the Integrated Energy Policy Report (02-IEP-01).

⁷ The CAISO in 2002 identified generation-deficient areas and sub-areas within its control area, such as the greater Bay Area, Humboldt, Battle Creek and Vaca Dixon. Although some of these constraints may be solved by transmission improvements, it may prove more cost-effective to add new generation in some areas perhaps utilizing the CPA's authority to finance new power plants.

⁸ California is undertaking this effort in a PUC rulemaking (R.02-11-039).

IV. Upgrade and Expand the Electricity Transmission and Distribution Infrastructure

Reliable and reasonably priced electricity and natural gas, as well as increasing electricity from renewable resources, are dependent on a well-maintained and sufficient transmission and distribution system. The state will reinvigorate its planning, permitting, and funding processes to assure that necessary improvements and expansions to the distribution system and the bulk electricity grid are made on a timely basis:

1. The agencies will collaborate, in partnership with other state, local, and non-governmental agencies with energy responsibilities, in the California Energy Commission's integrated energy planning process to determine the statewide need for particular bulk transmission projects. This collaboration will build upon the California Independent System Operator's annual transmission plan and evaluate transmission, generation and demand side alternatives. It is intended to ensure that state objectives are evaluated and balanced in determining transmission investments that best meet the needs of California electricity users.
2. The Public Utilities Commission will issue an Order Instituting Rulemaking to propose changes to its Certificate of Public Convenience and Necessity process, required under Public Utilities Code § 1001 et seq., in recognition of industry, marketplace, and legislative changes, like the creation of the CAISO and the directives of SB 1389. The Rulemaking will, among other things, propose to use the results of the Energy Commission's collaborative transmission assessment process to guide and fund IOU-sponsored transmission expansion or upgrade projects without having the PUC revisit questions of need for individual projects in certifying transmission improvements.
3. The Public Utilities Commission will ensure that IOUs build out and properly staff and maintain distribution systems to meet California's growth, provide reliable service, and stand ready to restore service after unplanned distribution system outages.
4. The Energy Commission will work with municipal utilities to help ensure completion of transmission expansion or upgrade projects in their systems for which the collaborative transmission assessment process finds a need.

V. Promote Customer and Utility Owned Distributed Generation

Distributed generation is an important local resource that can enhance reliability and provide high quality power, without compromising environmental quality. The state is promoting and encouraging clean and renewable customer and utility owned distributed generation as a key component of its energy system. Clean distributed generation should enhance the state's environmental goals. This determined and aggressive commitment to efficient, clean and renewable energy resources will provide vision and leadership to others seeking to enhance environmental quality and moderate energy sector impacts on climate change. Such resources, by their characteristics, are virtually guaranteed to serve California load. With proper inducements distributed generation will become economic.

1. Promote clean, small generation resources located at load centers.
2. Determine whether and how to hold distributed generation customers responsible for costs associated with Department of Water Resources power purchases.
3. Determine system benefits of distributed generation and related costs.
4. Develop standards so that renewable distributed generation may participate in the Renewable Portfolio Standard program.
5. Standardize definitions of eligible distributed generation technologies across agencies to better leverage programs and activities that encourage distributed generation.
6. Collaborate with the Air Resources Board, Cal-EPA and representatives of local air quality districts to achieve better integration of energy and air quality policies and regulations affecting distributed generation.
7. The agencies will work together to further develop distributed generation policies, target research and development, track the market adoption of distributed generation technologies, identify cumulative energy system impacts and examine issues associated with new technologies and their use.

VI. Ensure Reliable Supply of Reasonably Priced Natural Gas

The high and volatile price of natural gas contributed significantly to the energy crisis in 2000-2001, and concerns about manipulation of the market and scarcity persist. The Governor's Natural Gas Working Group was formed to monitor natural gas demand, supply and price issues and facilitate the construction of California infrastructure projects. Yet California remains vulnerable to the volatile spot market. The agencies will pursue the following actions:

1. Identify critical new gas transmission, distribution and storage facilities needed to meet California's future needs.
2. Monitor the gas market to identify any exercise of market power and manipulation, and work to improve FERC-established market rules to correct any observed abuses.
3. Evaluate the net benefits of increasing the state's natural gas supply options, such as liquefied natural gas.
4. Support electric utilities and gas distribution companies entering into longer-term contracts as a hedge against volatile and high spot market prices.

In implementing this plan, the agencies are mindful that energy services – both natural gas and electric – are essential to every Californian's general welfare and to the health of California's economy. As actions to improve the reliability of these services are considered, the agencies will each take into account the effect the action will have on energy expenditures, the environment and climate change, and the overall economy. Alternatives to proposed actions will be evaluated in an integrated fashion, consider the cost of action or inaction, and consider the equitable distribution of costs among customer classes and groups.

While implementation of this Action Plan represents a challenge, it is an important step for the agencies to take together to help achieve the state's overall goal of adequate, reliable, and reasonably priced electrical power and natural gas supplies.

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Adopted April 30, 2003 by unanimous vote of the CEC.

Adopted April 18, 2003 by unanimous vote of the CPA.