

Energy Policy in Arizona: a Plan for Sustainable Development

Executive Summary

**Advisory Committee on
Energy Policy and Planning
State of Arizona
December 1990**

Energy Policy in Arizona: A Plan for Sustainable Development

**Presented to the Joint Legislative Task Force
on Energy Policy and Planning
of the Arizona Legislature**

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Executive Summary

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Acknowledgements

Energy has come to shape and power in our technological society. It is the basis of huge industries with vast global financial and political power. The development of a comprehensive state energy policy is an innovative and essential element in good public policy making. The evolution of *Energy Policy in Arizona: A Plan for Sustainable Development* was possible only with the help of many individuals.

My thanks are extended to Jenny Norton of the Arizona House of Representatives for the vision, interest and continuous support that caused this committee to be created and to complete its task on schedule. At Jenny's insistence, the committee was composed of diverse interests—which has proven to be its greatest strength and at times, many thought its greatest curse. The diversity of its members has led to long and heated discussions which has promoted the development of a broad consensus upon priorities and actions.

Next, I would like to thank the committee members. These people gave almost continuously of their time, energy, and expertise. Facing a seemingly endless array of public policy considerations, to where near the end of our work it seemed as though all we did was attend meetings and review the hundreds of pages of documentation provided to the committee.

As a benefit of the committee's broad area of expertise relative to the production, distribution, and consumption of energy, the committee could function largely as their own resource. Where the committee felt additional input was necessary, presentations by experts were arranged, including:

John R. Balfour, Assistant Marketing Manager, AEG Westinghouse Transportation Systems, International Magnetic Transit of America, Inc.

David Berry, Chief, Economics & Research, Arizona Corporation Commission

Harry Braun, Research Analyst, Trans Energy Corporation

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Vito Stagliano, Acting Associate Deputy Undersecretary, U.S. Department of Energy
Fred Thompson, Facility Manager, STAR Center, Arizona Public Service Company
Ruth Valencia, Energy Data Administrator, Arizona Energy Office
David Zavaleta, Engineer, General Motors Proving Grounds

Additionally, the Junior League of Phoenix was invaluable in conducting 11 workshops which provided the committee with crucial input. Many of the final recommendations of this report were first mentioned or reinforced at these informal workshops.

My special thanks goes to the hundreds of Arizonans who in a series of public hearings held in Flagstaff, Yuma, Tucson, Tempe, and Prescott, took the time and energy to review and comment upon the committee's work. At the end, it was the views of those stalwart Arizonans who recognized the importance of our mission, that weighed most heavily upon the essence of the document.

But, it was the assistance given by the Arizona Energy Office staff that provided the greatest support to our committee. This included: secretarial support provided by Becky Edgar-Nelson and Mabel Brown who sat through countless meetings furiously scribbling notes of the committee's actions, impressions, and directions; guidance and work on planning, logistics, and media issues related to the public input process, which was provided by Maureen Bureson and Joan Laurence; overall direction of the staff and guidance on issues of governmental affairs, provided by Jerry Dion. The committee is particularly indebted to Michael Walters for his efforts at drafting and re-drafting the document—often with limited direction.

The committee's editorial committee, consisting of Mark Ginsberg, Doug Brooks, and Dennis Beals for Marty Shultz, took time in the waning holiday hours of December to put the finishing touches upon the document.

William J. Murphy, Chairman
December, 1990

Recommended State Energy Policy

Whereas, the state of Arizona's population and energy use are projected to grow for the foreseeable future; and

Whereas, conservation and the efficient use of energy are expected to continue to be the preferred overall economic and environmental strategies; and

Whereas, energy is a key determinant of the way we live, environmental quality and the vitality of the economy of the state of Arizona; and

Whereas, energy supply, energy demand and the natural environment are at a point of conflict which will continue into the foreseeable future; and

Whereas, the effect of this conflict can be mitigated through the development of a state energy policy which balances supply, demand, environment and economic issues;

Therefore, be it resolved by the House of Representatives of the state of Arizona, the Senate concurring, that the energy policy of the state of Arizona shall be to:

1. Assure sustainability of Arizona's energy supply and environmental quality through efficient use and conservation of energy resources; utilization of a diversity of energy resources; promotion of energy research, development, and demonstration projects; adoption and implementation of mechanisms to assure energy-efficient communities, buildings, equipment and transportation systems; and promotion of the optimum utilization of renewable energy resources.
2. Assure the environmental quality of the state of Arizona through environmentally sound energy utilization.
3. Establish and utilize appropriate measures of the total cost and benefit to society while maintaining an adequate, affordable and environmentally sound supply of energy for all Arizonans.
4. Assure economic development and well-being that is sustainable through implementation of a balanced energy policy; efficient use of all energy resources; and with help from renewable energy and energy-efficient products and processes.
5. Establish a long-range comprehensive planning system incorporating integrated least cost energy planning, mitigation measures to avert supply disruptions and means to incorporate anticipated energy supply, demand and technological changes.
6. Encourage individual, local, and statewide action through the implementation of energy education programs to overcome institutional, structural, and individual obstacles to beneficial changes in the energy system.

Introduction

Arizonans collectively spend in excess of \$5 billion per year on direct energy purchases from both in-state and out-of-state producers of natural gases, coal, electricity, and petroleum products. At the same time, they expend private and public dollars attempting to restore, protect, and enhance the quality of life and environment in Arizona. Energy and the environment have become part of the essential elements for all current and future Arizonans to maintain and improve their life quality. Having an adequate supply of clean energy resources to fuel the economy and quality of life in Arizona presents a significant challenge in an era of environmentalism and global interdependence. To do so at a reasonable cost, while simultaneously achieving our desires in the areas of health, safety, quality of life, and energy security will test our commitment to a hopeful future for subsequent generations of Arizonans. Yet, to rise above the short-term or special interests of those that benefit from an unbalanced energy marketplace may be the greatest challenge of all.

The energy sector impacts the social, economic, and environmental quality of the entire state and will have a significant impact upon our future growth. Many have attributed the rapid population growth in Arizona since the end of World War II to the availability of abundant electrical energy to cool homes and businesses during the hot summer months of the desert metropolitan areas; and motor fuels to propel citizens from their suburban homes to central business districts. The availability of inexpensive fossil fuel energy helped create the miracle of the vast shining cities in the Sonoran Desert of Arizona.

The low transaction cost fossil fuel energy that partially provided the impetus for the development of Arizona into a state with a population exceeding three million is also directly responsible for the substantial environmental degradation of our air, water, and habitat quality. The air once world renowned for its purity is now heavy with pollutants of automobiles and power plants; the water once flowing pure from clear mountain streams contains residue from the mining of Arizona's vast coal and copper deposits; and the deserts once renowned for their majesty are vanishing due to the urban sprawl of metropolitan areas and their associated pollution.

Energy Policy Development

The development of an energy policy for the state of Arizona and the United States is not a novel idea. In May of 1977, the Arizona Legislature passed a concurrent resolution prescribing an energy policy for the legislative body. This legislative policy (H.C.R. 2013) was developed during a period of energy supply crisis at the mid-point of the Carter Administration. The legislative policy, although containing high ideals, was largely disregarded over the next decade as the energy crisis of the seventies faded from the memory of most Arizonans, as energy prices declined substantially, and because there was no mechanism for the sustained implementation of these ideals.

In order to better understand the role of energy in the monumental conflict between economic development and environmental quality and to identify the legitimate public policy issues and role of government in resolving this conflict, the Legislature created a legislative Task Force on Energy Policy and Planning. To provide public input on this important public policy area, an Advisory Committee on Energy Policy and Planning was created and charged to explore and identify the various opportunities available to the Arizona State Legislature for assuring the future excellence of both the environment and the local economy as they relate to the production, distribution, and consumption of energy resources and services.

In Arizona, the current energy policy and strategy development process began with the passage of House Bill 2249, authorizing the creation of a Joint Legislative Task Force and an Advisory Committee, signed by Governor Rose Mofford on 31 May 1988. During the calendar years of 1989 and 1990, the Advisory Committee met bi-weekly and was addressed by over 24 speakers. The Committee held 11 input workshops and four days of public hearings throughout the State. More than 20,000 person-hours were contributed by committee members and staff towards the goal of developing a sustainable energy policy and implementation plan for Arizona. Yet, this enormous effort still scarcely scratched the surface of measuring the total social cost and economic benefit of the energy sector upon Arizona. Further, more definitive studies and considerable action will be necessary before the conflict between our economy and our environment are fully resolved.

Unlike similar efforts in other states, this committee was composed of representatives of government, business, and individual citizens with staff support from the Arizona Energy Office of the Department of Commerce. It involved all energy sectors and attempts to harness the resources of the marketplace and government by recognizing costs associated with energy production and consumption and assigning them to originators or users. The Legislature felt that starting this process by involving the public was not just sound policy, but essential. Ultimately, the public's acceptance and implementation of the recommendations will determine the committee's success.

Assuring an adequate supply of energy to fuel a robust and expanding economy presents an increasingly difficult challenge in an era of economic sluggishness. To do so at a relatively reasonable cost, while simultaneously achieving our objectives in the areas of environmental restoration and protection, tests our ability and resolve to **invent** and **invest** in solutions that balance these conflicting objectives (i.e., affordable energy and pristine environment).

Whether the source of energy is solar, natural gas, propane, oil, coal, or nuclear reaction, all Arizonans require energy for transportation from home to work, to light the dark desert nights, and to insulate themselves from the extremes of the environment we inhabit. The local development of commercial energy sources has supported the population growth of Arizona and plays an important role in our daily lives. Because energy plays such a fundamental role in the current and future economic development and environmental quality of the State, it is to our collective advantage to thoughtfully examine the total implications of energy production, distribution, and consumption in Arizona and proactively plan for an energy future that is sustainable economically and environmentally.

It is important to emphasize that in all instances the recommendations contained in this report reflect the collective philosophy of the Advisory Committee on Energy Planning and Policy and not the Editor. Nor should one infer that it represents the policies of the Governor's Office or the views of the Arizona Energy Office. The Advisory Committee process included conflict on many issues, some of which could not be resolved. Yet, the Committee was able to find enough common ground to issue this Energy Policy with its recommendations. This document is ultimately the result of a democratic effort to determine the

future course of energy production, distribution and consumption in Arizona. It is not the final word. The committee is strong in its belief that much more work must be done to implement this policy and that there must be an ongoing mechanism to review and update Arizona's energy policy.

Fundamental Suppositions

The development of this energy policy and implementation plan is based upon certain basic premises and values that have been identified by the Advisory Committee on Energy Policy and Planning, committee staff, and the public through the hearing process. These fundamental suppositions about the energy sector of the state and national economy run throughout the document and should be fully understood by the reader:

- **Energy Use is Directly Related to Environmental Quality.**

The production, distribution, and consumption of all energy in Arizona has a direct and largely measurable impact upon the environmental quality of the State. Each kilowatt of electricity, cubic foot of natural gas, and gallon of gasoline consumed by inhabitants of the State pollutes to varying degrees either our air, water, or land.

- **Energy Efficiency is Key to a Sustainable Future.**

The least-cost method of ensuring an adequate resource base for meeting the needs of all current and future generations of Arizonans is to use our finite resources in the most economically and environmentally efficient manner. The more efficient we become as individuals and as a society the fewer finite resources we will require to sustain and improve our quality of life and the less energy we require, the simpler will be the transition to the next generation of energy resources.

- **Government has a Role in the Efficient Operation of Energy Markets.**

The local, national, and world energy markets are not currently characterized as free markets. The existence of publicly-chartered monopolies and organizations of producing nations requires that appropriate levels of government have a role in the efficient operation of the energy market.

- **Energy Planning and Education are Essential.**

In order to ensure the efficient operation of energy markets, maintain consumer confidence in business and government, and protect environmental quality, the state government must maintain a proactive energy planning and education process to promote astute energy decision-making.

- **Low-Income Citizens Should have Access to Affordable Energy Services.**

Energy services (e.g., heating, cooling, lighting, transportation) are essential commodities in contemporary society. Denying low-income consumers access to affordable energy resources is equivalent to denying affordable access to shelter, food, or water.

Goals and Objectives

The rationale of this policy and implementation plan is to assure sustainable sources of affordable energy resources that will ensure the economic and physical health of the communities and citizens that constitute the state of Arizona, both contemporary and future generations. To resolve the existing conflict between economic realities and the environment will require cooperation among all levels of government, the private sector, and individual citizens. Yet, the social, environmental, and economic problems associated with the energy sector exist in a complex web of interdependence, in which the solutions to one problem may have unintended consequences upon another problem. Therefore, to reach this broad public policy goal, the Advisory Committee has identified four major objectives for state government and the private sector:

1. To use energy resources efficiently in Arizona through improvements in buildings, transportation, manufacturing, and delivery systems. Energy efficiency and conservation are seen as ways to reduce pollution, reduce imports of energy, and reduce expenditures for energy. Energy efficiency and conservation serve the economic interests of Arizona and the environmental interests of the entire planet.
2. To assist in the efficient operation of the energy markets of Arizona through improvements in planning and education about energy. Only through education of the public and effective planning will we be able to resolve the conflicts between energy production and consumption and the environment.
3. To assist in the economic development of Arizona through the use of indigenous resources and existing infrastructure. Arizona possesses unique renewable energy resources that can be promoted for the benefit of all citizens.
4. To assure the environmental quality of Arizona through safeguarding existing resources and rehabilitation of polluted resources. The economic and social value of a clean environment must be recognized in the energy decision-making process.

Priority Recommendations

The fundamental challenge of an energy policy is to find the appropriate mix of energy resources for a sustainable future. The proper strategy would produce economic vitality and a sound environment. The committee recognizes that it is the proper role of government to protect the energy future through appropriate incentives for the use of solar and renewable energy, energy efficiency and conservation; and disincentives for wasteful energy practices and use of non-renewable and fossil fuels. The following recommendations were deemed by the committee to be of the highest priority in facing this challenge.

During the two years of its existence, the Committee has focused on the role of state government, and in particular the role of the State Legislature, in effecting an energy policy. However, the Committee does see significant potential for private sector actions that would strive for the goals expressed in this document. Voluntary, cooperative efforts in the private sector can often produce the innovation and leadership that is required to establish new ideals in society. Additionally, the existing authority of state and local governments can be utilized to implement many of the recommendations expressed in this document, and to move our state toward a sustainable economy and a cleaner environment. In many cases, the power to implement these ideas already exists, and with education and public support that power could be brought to bear. The Committee believes that a cooperative effort among government, individual and corporate citizens can result in achieving the goals of this document.

For each Priority Action, the committee has considered multiple implementation strategies and provides a menu of these activities. Committee members recognize the need for further research to quantify goals as well as timelines for activities. An Energy Policy Implementation Advisory Council (Action 6) should be created to continue the effort to research and refine the necessary steps to create meaningful and effective public policy in the complicated field of energy.

Priority Action One—Solar and Renewable Energy

The State, in association with the federal government and private sector, should devote additional economic resources to further the State's solar and renewable energy research, demonstration, education, and technology transfer functions.

Possible Legislative Actions:

- establish a consumption-based fee through energy utilities to be used for solar and renewable projects.
- implement tax incentives for the installation and utilization of solar technologies.

Possible State and Local Government Actions:

- implement energy-efficient and conserving urban plans and building codes.
- Arizona Corporation Commission to begin use of long-run total avoided cost in calculating buy-back rates.
- Arizona Corporation Commission to facilitate use of mature solar technologies by energy utilities through implementing incentives for development/relocation of solar and renewable energy industries.

Possible Private Sector Initiatives:

- facilitate, endow, and invest in energy research and technology transfer.
- enhance industry standards and practices, encourage development of renewable energy trade organizations.
- encourage development of joint solar and renewable energy projects.

Priority Action Two—Transportation

The State, in concert with private and public transportation specialists, should develop a strategy to improve the utilization of our existing transportation infrastructure.

Possible Legislative Actions:

- alter current vehicle fuel, sales, and registration tax structure to acknowledge environmental impact.
- restrict source of revenue for all transportation infrastructure to vehicle fuel, sales, and registration taxes.

- require the use of “least-cost” strategy in all transportation decision-making.

Possible State and Local Actions:

- further expand regional and local mass transit opportunities.
- significantly raise parking fees at all state and local government facilities to encourage use of mass transit, ridesharing, etc.
- provide meaningful incentives for in-fill of metropolitan areas.
- require full infrastructure cost recovery from all new fringe development.

Possible Private Sector Initiatives:

- develop cooperative efforts such as transit management associations to help reduce single occupancy vehicle trips by employees.
- provide incentives to employees to utilize alternate work schedules.

Priority Action Three—Alternative Fuels

The Legislature, Governor, and other units of government should develop a long-term plan for the conversion of all government (ie., municipal, county, state, and school district) operated fleets and vehicles to cost-effective, environmentally benign alternative fuels (including but not limited to electric, CNG, reformulated gasoline, ethanol, methanol, propane, hydrogen, or solar).

Possible Legislative Actions:

- require that possibly 10% of all vehicles sold in Arizona be alternatively fueled by 2000.
- phased in conversion of all government fleets to economic alternative fuels by 2000.
- permit use of “diamond” lanes on freeways by vehicles fueled with alternatives to gasoline.

Possible State and Local Actions:

- open alternative fuel stations used by government fleets to the public.
- develop auto-free zones and streets for exclusive use of pedestrians and bike riders.
- permit utility cost recovery on the installation of alternative fuel stations.

Possible Private Sector Initiatives:

- demonstrate residential CNG fuel option by natural gas utilities.
- begin conversion of vehicle fleets to cost-effective alternative fuels.

Priority Action Four—Energy Environmental Protection

The Department of Environmental Quality should prepare for adoption stringent air quality protection measures associated with the stationary and mobile provision of energy, utilizing information gained from the South Coast Air Quality Management District, the California Air Resources Board, and local Arizona sources.

Possible Legislative Actions:

- authorize the development of stringent air quality standards by the Department of Environmental Quality for immediate implementation.
- authorize the development of chlorofluorocarbon controls by the Department of Environmental Quality for immediate implementation.

Possible State and Local Government Actions:

- convert all vehicle fleets to alternative fuels.

Possible Private Sector Initiatives:

- begin installation of best available scrubber technology.

Priority Action Five—Affordability

The State should fund a coordinated continuum of energy programs that include administrative costs to benefit low-income households through a dedicated funding source.

Possible Legislative Actions:

- identify and dedicate funding source for energy assistance programs.
- require the inclusion of energy conservation education in assistance programs

Possible State and Local Government Actions:

- implement recommendations of Energy Services Coordination study group.
- Arizona Corporation Commission to permit utility cost recovery for weatherization of low-income properties.

Possible Private Sector Initiatives:

- provide charitable contributions of funding, materials, and expertise for weatherization efforts for low-income housing.
- provide energy education for consumers.

Priority Action Six—Planning & Policy

The State should develop a comprehensive energy plan and process designed to help the State meet its needs for energy services. The plans should evaluate and address increased energy efficiency, the development of appropriate renewable energy resources including hydroelectric, greater energy independence, and preparedness for future energy emergencies.

Possible Legislative Actions:

- create an Energy Policy Implementation Advisory Council with specific goals and objectives to assist in the implementation of the state energy policy.

Possible State and Local Government Actions:

- Arizona Corporation Commission to expand breadth of Integrated Resource Plan by including municipal and wholesale energy providers.

Possible Private Sector Initiatives:

- conduct major energy audits and begin economical conservation programs.

Section 1 - Energy-Related Environmental Quality

Recommendation 1. The Legislature, Governor, and other units of government should develop a long-term plan for the conversion of all government (ie., municipal, county, state, and school district) operated fleets and vehicles to cost-effective, environmentally benign alternative fuels (including but not limited to electric, CNG, reformulated gasoline, ethanol, methanol, propane, hydrogen, or solar).

Recommendation 2. The Department of Environmental Quality should prepare for adoption stringent air quality protection measures associated with the stationary and mobile provision of energy, utilizing information gained from the South Coast Air Quality Management District, the California Air Resources Board, and local Arizona sources.

Recommendation 3. The Legislature should require the development of cost-effective, mandatory curbside separation and recycling programs for counties and incorporated communities throughout Arizona. Cities with over 25,000 people should recycle 25 percent of their trash by 1998, and 50 percent by 2005, or face substantial daily fines.

Recommendation 4. The Legislature should develop and implement an emissions tax for all stationary and mobile sources of particulates, NO_x, CO, CO₂, and SO_x pollution throughout the State based on quantity and quality of emissions with all revenue dedicated to energy conservation and energy-related pollution abatement.

Recommendation 5. The Legislature should require that all public and private organizations receiving public grants, loans, and contracts purchase recycled products when they are available at a reasonable cost as a substitute for virgin products.

Recommendation 6. The Department of Commerce should develop and make available to the public and business community a database of sources and availability of recycled products.

Recommendation 7. The Department of Commerce should explore ways to expand production facilities that manufacture products using recycled materials.

Recommendation 8. The State should immediately fund an investigation into the possibility of developing regional waste-to-energy systems for solid waste that cannot be recycled.

Recommendation 9. The Department of Environmental Quality should maintain a stringent enforcement mechanism to test regularly for degradation of the groundwater in the State associated with the provision of energy. Significant fines should be assessed and collected for violations with all revenue dedicated to energy conservation and energy-related pollution abatement.

Section 2 - Energy Efficiency and Conservation

Buildings

Recommendation 1. The State should work with private organizations to immediately develop and apply a standard residential and commercial building energy rating system to fully inform consumers about new building energy consumption. This system would provide consumers with a simple scale to identify the relative energy efficiency of new construction. Beginning January 1, 1995, no new building in Arizona should be sold or leased unless it has been rated under the Arizona Building Energy Rating System.

Recommendation 2. The State should work with private organizations to immediately develop and apply a standard residential and commercial building energy rating system to fully inform consumers about existing building energy consumption. This system would provide consumers with a simple scale to identify the relative energy-efficient new construction. Beginning January 1, 1995, no existing building in Arizona should be sold or leased unless it has been rated under the Arizona Building Energy Rating System.

Recommendation 3. The State, acting in a leadership role, should implement stringent uniform energy efficiency standards for all existing and proposed publicly-funded buildings to demonstrate the costs and benefits of energy-efficient technologies and strategies.

Recommendation 4. The State should work with utilities, private and municipal organizations to develop sliding-scale application, building permit, and energy service hook-up fees that reward developers/consumers for the utilization of energy-efficient building design, solar energy, and material technologies in new construction and penalize developers/consumers who select inefficient technologies.

Recommendation 5. The State should put into law a state-wide energy conservation building code for all new and remodeled buildings similar to Title 24 in California.

Recommendation 6. The State, in concert with the utility industry and financial institutions, should examine the development of cost-effective conservation and efficiency programs, and solar energy technology and weatherization programs, including financing incentives, for energy efficiency upgrades of existing buildings.

Recommendation 7. By 1995, the Legislature should adopt stringent energy efficiency standards based on the California Public Resources Code Section 25402 (c)(1) for appliances available to consumers in Arizona.

Recommendation 8. The State, in concert with the utility, construction, and real estate development industries, should promote access to all energy types. Through the assurance of consumer choice in energy type selection, the lowest cost energy alternative can be implemented by the consumer.

Recommendation 9. By 1995, the State, in concert with the utility industry, should develop incentives and a pricing structure that significantly rewards (cost-based) consumers for reducing peak loads and/or total energy use through the use of cogeneration, solar technologies, energy conservation, and other efficient technology or lifestyle changes.

Recommendation 10. The State should work with all financial institutions to assure that long-term energy costs are properly recognized in calculating the financial qualification of buyers for mortgages.

Transportation

Recommendation 1. The State, in concert with private and public transportation specialists, should develop a strategy to improve the utilization of our existing transportation infrastructure.

Recommendation 2. The State, in concert with its counties and municipalities, should further develop existing "least-cost" transportation systems. This could include further developments of local and regional walkways, bicycles, mass transit, toll booths, variable tolls, bus and freeway systems.

Recommendation 3. The State and metropolitan counties should immediately develop and jointly fund an efficient urban mass transit network. Additionally, the State, in concert with government and private sector transportation specialists, should develop a planning mechanism for the development of new "least-cost" transportation systems. This planning mechanism should consider and review the social, environmental, and capital costs of new transportation systems prior to approval.

Recommendation 4. The state of Arizona, in concert with its counties and municipalities, should compel the use of energy efficiency as an evaluation tool in the urban planning, zoning, and transportation design approval process. This might include incentives for high density, "in-fill," or for mixed-use developments, and disincentives for long commutes.

Recommendation 5. By 1995, the State should alter the current vehicle fuel, sales, and registration tax system to acknowledge environmental impact:

1. The value-based vehicle license tax should be altered by basing all vehicle license taxes on a revenue-neutral ratio of fuel efficiency (mpg), level of atmospheric emissions, and vehicle value.
2. The State should alter the current flat percentage sales tax on new, non-commercial vehicles to a revenue-neutral, sliding-scale sales tax from 0 to 12 percent, based on fuel efficiency and harmful atmospheric emissions.
3. The state fuel tax (gasoline tax) should be altered to a revenue-neutral, sliding-scale fuel tax based on harmful atmospheric emissions from different fuel types.

Recommendation 6. Arizona's Congressional delegation should aggressively pursue enactment of legislation increasing the Corporate Average Fuel Efficiency standards.

Delivery Systems

Recommendation 1. The State should promote the optimum use of energy transmission systems. Competition in the bulk power market can exist only where there is fair opportunity to reach and utilize new supplies. The State, in cooperation with the energy

production and distribution industries, should work to gain access to economic energy supplies from outside Arizona.

Recommendation 2. Utilities should continue to integrate dependable/economic energy sources into the utility system. Energy purchase and sales contracts should be structured to encourage alternative and or renewable sources of energy while adequately protecting the interests of utilities and their ratepayers. Contracts for regulated electric utilities to purchase power from non-utility generators should be subject to a one-time review and approval proceeding at the Arizona Corporation Commission at the time the contract is entered into by the parties.

Recommendation 3. The Arizona Corporation Commission should develop appropriate utility cost recovery mechanisms which facilitate utility investments in economic demand-side measures for efficiency and conservation.

Recommendation 4. Arizona utilities should implement the PURPA (1978 Public Utilities Regulatory Policies Act) rate-making standards as soon as possible, if not already done. PURPA sets forth six standards which include: rates should reflect cost; prohibition of declining block rates; consideration of time of use rates; seasonal rates; interruptible rates; and load management techniques, to encourage three purposes:

1. conservation of energy by end users
2. efficient use of facilities and resources by utilities
3. equitable rates to consumers.

Recommendation 5. The Arizona Corporation Commission should develop and adopt unbiased criteria for the measurement of the effectiveness of demand-side utility strategies.

Recommendation 6. The Arizona Corporation Commission should assure that utility and state incentives for efficiency are balanced. For example, rebates for evaporative coolers, solar technologies, and high-efficiency air conditioners should be included if there are rebates for electric heat pumps. Rebates should not be granted merely to enhance utility cash flow to the detriment of overall societal efficiency and equity.

Recommendation 7. The State, counties and municipalities, in cooperation with energy providers and real estate developers, should produce urban plans that include environmental impact and efficient siting for future generation, transmission, and distribution facilities.

Manufacturing Systems

Recommendation 1. The Department of Commerce should promote the development and application of dependable, economic, and efficient systems such as cogeneration and waste heat recovery in manufacturing processes.

Recommendation 2. The Arizona Corporation Commission, in association with energy production and distribution utilities, should develop a system of incentives for energy efficiency in manufacturing processes. These might include rate design, energy audits, tax benefits, financing of energy efficiency improvements, or cost-effective rebate incentives.

Recommendation 3. The State should encourage the implementation of recycling programs including the adoption of new conservation and energy-efficient processes at the

manufacturing level to eliminate financial losses from the waste of energy, and funding a study of deposit legislation for beverage containers.

Recommendation 4. The Department of Commerce, working with industry groups, should provide technical information conferences and educational programs about conservation and efficient industrial energy technologies and the costs and benefits of energy efficiency improvements.

Recommendation 5. The Department of Agriculture, Arizona Power Authority, and the university system should encourage existing programs that further research and investigate the feasibility of energy-efficient agricultural practices and techniques.

Section 3 - Planning for the Future

Planning Process

Recommendation 1. The State should develop a comprehensive energy plan and planning process coordinated with the Integrated Resource Plan of the Arizona Corporation Commission designed to help the State meet its long-term needs for energy services. The plans should evaluate and address increased energy efficiency, the development of appropriate renewable energy resources including hydroelectric, greater energy independence, and preparedness for future energy emergencies.

Recommendation 2. The State should immediately prepare an energy supply emergency plan. This plan must consider the needs of residential, industrial, commercial, and agricultural energy consumers. This plan should be closely coordinated with energy suppliers, neighboring states, and the federal government.

Recommendation 3. The Arizona Corporation Commission should actively continue its efforts to implement its Integrated Resource Plan. The Integrated Resource Plan should include an evaluation of alternative economic supply and demand strategies for meeting future demand.

Recommendation 4. The State, Arizona Corporation Commission, and energy production and distribution companies should adopt a system of least total social cost for the complete fuel life cycle in all energy decision-making. Part of this process would include the development of a public policy process to determine the appropriate balance between transaction cost for energy and its total social cost.

Recommendation 5. The State should develop a system to accurately monitor energy supply and consumption for all energy types locally and regionally, including a system of mandatory reporting of supply and consumption by large-scale commercial suppliers and users. The results should be published and made available to the public.

Recommendation 6. The State should assess and evaluate whether its current level of involvement (i.e., regulation, taxing, siting, etc.) with all private and public/municipal energy production, transmission, distribution or supply organizations in the State is optimal and results in the most efficient allocation and/or use of energy resources.

Recommendation 7. The State should continue to encourage local divisions of government to emphasize “in-fill” within their communities and urban planning/zoning with an emphasis on energy efficiency and conservation.

Recommendation 8. The State should work with the federal Department of Energy to assure that the Strategic Petroleum Reserve drawdown procedures are implemented to assure petroleum supplies to Arizona.

Recommendation 9. To the extent practical, when the State government is involved in aspects of regulation, control, review, plan approval, reporting requirements, and siting approval as these relate to the energy sector, a single bureau of state government shall be clearly designated as responsible and accountable for coordinating the activity.

Recommendation 10. The State should assess and evaluate whether the current level of public input and control over municipal energy utilities is appropriate.

Recommendation 11. The State should continue to work at the national level to encourage the federal government to develop a comprehensive national energy policy focused upon economic and environmental sustainability.

Recommendation 12. The State should identify and remove financial and regulatory impediments to the use of solar and renewable energy technologies.

Public Awareness

Recommendation 1. The State should seek ways to enhance general public, government and business community awareness of energy issues through the effective use of public workshops and forums, publications, and the use of mass media communications. The State, in association with the business community and other appropriate groups, should develop a program of energy education for all employees and develop community-wide energy education programs.

Recommendation 2. The Departments of Commerce and Education, working with energy utilities, education professionals, and other appropriate groups should encourage the development and implementation of a fully integrated energy education curriculum for primary schools, secondary schools, technical and vocational schools, community colleges, and universities. Additionally, the State should develop a teacher training program on energy and environmental topics and scholarships for students and teachers to attend energy education programs and to perform energy research.

Recommendation 3. The State should immediately expand funding for community college, university, and specialized training scholarships and programs for students who will pursue careers as energy specialists in all career fields.

Affordability

Recommendation 1. The State should fund a coordinated continuum of energy programs that include administrative costs to benefit low-income households through a dedicated funding source.

Recommendation 2. The State, in association with energy utilities, social service organizations, and other interested parties, should develop and implement programs that reasonably assure the availability of vital energy services to all residents and avoid energy utility shut-offs during periods of extreme temperatures.

Recommendation 3. The State should design energy assistance programs, including transportation assistance, with a focus on providing energy services at the most cost-effective price. Demand reduction programs should be carefully balanced with financial assistance programs, and education about energy consumption management should be a key component of all programs.

Recommendation 4. The State, in association with all interested parties, should work to expand energy efficiency and conservation programs that are successful in increasing the energy efficiency of low-income housing. These programs should include installation of solar and energy-efficient technologies, conservation of energy, and self-help programs.

Recommendation 5. The State should work with the federal government to assure that federal and state programs (e.g., weatherization and energy assistance) consider local climatic conditions (i.e., cooling and heating degree days) in their administration and evaluation.

Section 5 - Technology Development

Solar and Renewable Energy

Recommendation 1. The State, in association with the federal government and private sector, should devote additional economic resources to further the state's solar and renewable research, demonstration, education, and technology transfer functions.

Recommendation 2. The Legislature should establish a consumption-based fee through energy utilities to be used for solar and renewable energy projects.

Recommendation 3. By 1993, the State should create financial incentives such as sales tax reductions and tax credits to expand the domestic industry and market for solar and renewable energy usage.

Recommendation 4. The State, in cooperation with the State's universities and the private sector, should invest in the development and implementation of end-use applications that are powered with solar and/or renewable energy, new solar-powered communities, and central station solar power plants.

Research, Development and Demonstration

Recommendation 1. The State, utilities, and individuals should make a methodical transition from non-renewable to renewable energy systems. The State and energy providers should assist, where appropriate, in the research, development, demonstration, and funding of energy efficiency and renewable energy technologies.

Recommendation 2. The State should assist in the research effort to develop low-emissions vehicles, improved road surface technology, improved efficiency vehicles, and alternate fuels vehicles through the funding of research projects at the state's universities and private sector research organizations.

Recommendation 3. The State should assist in the research effort to develop new energy production and transmission technologies through the funding of research projects at the state's universities and private sector research organizations.

Recommendation 4. The State should assist in the research effort to develop new efficiency technologies through the utilization of existing university resources and funding of new research projects at the state's universities and private sector research organizations.

Recommendation 5. The State should work with the federal Department of Energy to study the implications of clean coal technologies as they might apply to the coal resources of Arizona.

Availability of the Report and Supporting Documents

This document summarizes the proposed state energy policy. The full report is available upon request from the Arizona Energy Office. A third document containing summaries of workshops held on the policy, transcripts of the public hearings, and written testimony has also been prepared and indexed by subject. The length of the public input document made it too costly to reproduce in large numbers. It will be provided to the Legislative Task Force on Energy Policy and Planning and to any other decision-makers who will be acting on the recommendations contained in the report. A copy will be available at the Arizona Energy Office in Phoenix for review, as well as at the main libraries in the communities where public hearings were held. Copies of this document can be purchased for the cost of the printing.

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