COMMENTS ON
THE OHIO ENERGY STRATEGY PLAN

Before

The Public Utilities Commission of Ohio

by

Kenneth W. Costello

and

Daniel J. Duann

The National Regulatory Research Institute
Electric and Gas Research Division
The Ohio State University
1080 Carmack Road
Columbus, Ohio 43210-1002

January 14, 1992

The views and opinions of the authors do not necessarily reflect the views, opinions, or policies of The National Regulatory Research Institute (NRRI), the National Association of Regulatory Utility Commissioners (NARUC), or NARUC-member Commissions.

1. Introduction

We are pleased to have the opportunity as individuals knowledgeable in the field to comment on the Ohio Energy Strategy (OES). The State can play a decisive role in setting the future course of state energy policy. The State, through judicious and selective action, can provide the foundation for a more efficient and environmentally benign energy future in Ohio. The key question facing the Public Utilities Commission centers on what role the State should play in carrying out the objectives of an Energy Strategy.

Market forces increasingly have affected production and consumption of energy. A major objective of the State should be to accommodate these forces in a way that is in the best interest of Ohioans. An Energy Strategy that does not encourage, or actually impedes, the evolution of these market forces will only serve to harm Ohio and its efforts to enhance the well-being of its citizens. An Energy Strategy built primarily on more regulations and other governmental constraints could inflict high costs on the State. By contrast, an Energy Strategy that advocates reliance on the marketplace to achieve greater efficiencies in the energy sector can advance goals relating to the economy, the environment, health, safety, and the quality of life. Most appropriately, the State can play a constructive role in mitigating the effects of barriers to efficient energy-market performance, including those that distort prices, discourage energy production, and hinder innovation. This assumes, of course, that viable energy markets are achievable or in place to begin with and can workably function with minimal governmental intervention.

2. Responses to Specific Questions

Study Area #1 -- ENERGY EFFICIENCY AND EFFECTIVENESS PROGRAMS

1. Demand-Side Management/Integrated Resource Planning

What initiatives should be adopted to provide Ohio's energy consumers with the opportunities and incentives to change their energy consuming habits and to make them more efficient?

RESPONSE: Energy consumers, like consumers of other products and services, respond to incentives. The most direct and influential incentive is provided by price. Efficient energy consumption requires that prices charged to consumers reflect the social cost of producing and delivering energy. The most clear-cut and efficient way to induce energy consumers to conserve at a socially desirable level comes from correct pricing. Most other industries rely exclusively on prices to achieve optimal levels of consumption. Consequently, the State should place primary importance on eliminating pricing distortions. These distortions, to a large degree, exist because of governmental actions that attempt to promote the economic well-being of special-interest groups. The cost of such actions includes an energy sector that is less efficient and thereby falls short of achieving the greatest possible benefits for the citizens of Ohio.

Changing energy consuming habits in an efficient direction may require the State to reexamine current energy pricing

practices so that external effects (for example, air pollution) are reflected in the actions of energy suppliers and consumers. As discussed later, the State must recognize the difficulty and hazards of explicitly including external effects such as air pollution in pricing energy resources.

The State can also provide consumers with more information than what is currently available on how to use energy more efficiently. Some Ohio energy consumers currently are not availing themselves of conservation investments that are economical both to them and Ohio. Where such market failures are evident, the State along with utilities can constructively assume an active role in disseminating accurate information so that consumers can make better decisions.

Should externalities (for example, favorable or harmful impacts on society in general or on the environment) be included in the calculation of least cost?

RESPONSE: As a theoretical matter, the efficient production, transportation, and consumption of various energy resources requires external effects to be included in energy prices. To a large degree, existing environment regulations require that energy prices reflect external effects. For example, electric utilities in the State have had to spend large sums of money to comply with various environmental regulations. These costs generally are passed through to consumers in the form of higher electricity prices.

Whether the State should do more remains an open question. A major problem lies with the fact that most externalities have no close proxies such as market prices to measure their dollar effects. Consequently, because they lack precise measurements in most instances including externalities explicitly in least-cost utility planning, in power plant dispatching, or in pricing may achieve more harm than good. For example, relying on highly speculative cost estimates for different air pollutants may result in a utility, from the perspective of Ohio, choosing the wrong power plant as a new resource. The State should recognize the great difficulty of estimating the social cost of various externalities. The old adage "garbage in, garbage out" readily applies in the case of explicitly including external cost in the calculation of least cost. Estimates of the monetary damage from different pollutants, especially by geographical area, are so highly speculative that they probably should carry little weight in utility and commission decisionmaking.

The Public Utilities Commission, in particular, should recognize the difficulty of achieving socially desirable environmental goals. While current environmental regulations and markets are imperfect, additional State intervention may make matters worse. For example, based on the knowledge available on external costs, it is quite conceivable that requiring Ohio consumers to pay electricity prices to account for remaining pollutants emitted by utilities will yield higher costs than benefits. Especially in the case where electric utilities are held accountable for pollutants that do not violate existing environmental

regulations, the net effect on the State may be negative. The fact that other firms, both inside and outside the State, would not face the same constraint means that inefficiencies are likely to result. Besides, as an equity matter, for some pollutants cost would be imposed on in-state electricity consumers, while much of the benefits would be realized by out-of-state citizens. For example, a major portion of the environmental damage done by electricity generation is regional, national, or even global in nature.

In the context of electric utility planning, the most appropriate role for the Public Utilities Commission, at this time, would be to assure ratepayers that Ohio electric utilities are complying with existing environmental regulations in a least-cost manner. The Commission, for example, can play a crucial role in minimizing the cost incurred by utilities to comply with the Clean Air Act Amendments of 1990. The Commission can encourage the participation of Ohio electric utilities in the sulfur dioxide allowance market. This could benefit both Ohio electricity consumers and the State's coal industry. Encouraging least-cost compliance planning is compatible with the long-held commission objective of having utilities provide ratepayers with highly reliable and reasonably priced electricity. When it comes to setting environmental policy, however, the Commission should leave this task to legislatures and environmental agencies. It seems illusory to believe that the Commission can assure, at no risk, that supplementing existing environmental regulations with additional requirements would be in the best interest of Ohio.

Which externalities are appropriate to include? Why?

RESPONSE: If the State decides to include externalities in calculating least cost, it should limit these externalities to those whose changes from existing levels would be expected to result in net benefits to Ohio. This means that the benefits of lowering air pollutants for Ohio would exceed the costs. For those pollutants, where existing regulations may be too stringent in the sense that at the margin compliance costs exceed benefits, additional abatement may not be cost-beneficial. (There is some evidence that the sulfur dioxide emissions cap established by the new Clean Air Act may be too stringent.) This condition would more likely occur when incremental compliance costs are used as the proxy for marginal benefits.

From Ohio's point of view, pollutants whose damaging effects are mostly in-state would be better candidates than those effects which are mostly out-of-state. The question should be asked, Why should Ohio consumers pay higher energy bills for having less pollutants produced in the State when the citizens of other states would mostly benefit? For Ohioans this makes little sense, unless of course, other states reciprocate by adopting the same policy for their energy utilities.

2. Research and Development

What kind of energy research and development should be encouraged in Ohio?

RESPONSE: Energy research and development initiatives can benefit Ohio by accelerating the deployment of new technologies by private industry and energy consumers. One general type of initiative stands out as having the most potential to benefit the State: technology that can significantly increase the market value of Ohio's native energy resources.

One notable example is clean-coal technology. By encouraging development and deployment of such technologies, Ohio's dependence on energy imported from other states and countries can be reduced. Reducing energy imports, by and in itself, however, should not be a State goal. Only when it benefits the State as a collective unit, for example by reducing energy costs to consumers, should energy imports be discouraged by the State.

According to the Public Utilities Commission, 43 percent of the coal consumed by Ohio electric utilities in 1990 was mined in the State; the remainder was transported from other states. Development of clean-coal technology can increase the attractiveness of Ohio coal to electric utilities in the State, as well as those outside the State. When greater use of Ohio coal reduces the energy costs of Ohio's industrial and commercial users, these users enjoy a better competitive position within the markets where they sell their goods and services.

How should it be encouraged?

RESPONSE: While the government's role in promoting the development of new technologies can be crucial, few civilian technologies can be successfully developed by government alone. Even if certain basic research breakthroughs require governmental funding, the deployment of these technologies undoubtedly requires participation by private industry. As a general rule, private industry would only deploy new technologies when they are profitable. Therefore, it seems nonsensical for the State to encourage energy research and development initiatives unless they offer hope for future profitability to private industry. Consequently, State funding of new technologies with little prospect for future commerciability would run counter to Ohio's interest.

The State should be cautious in funding energy research and development, particularly in view of the failure of many recent new energy technologies (though technically promising) to achieve commercial success. One costly lesson is that government does a poor job of picking winners and losers when it comes to new energy technologies.

The State should incorporate three essential elements in a program for developing new energy technologies. First, it should consider a public-private joint partnership, rather than a government-alone arrangement. The partnership would operate as a business entity free from State intervention. Second, the State would provide "seed"

money for the initial stage of technology development, feasibility studies, and technology demonstration. Third, the State could play a productive role by identifying and eliminating regulatory and other institutional barriers that inhibit the development of new technologies.

3. **Alternative Fuels**

What alternative fuels should be encouraged for use, and can these be developed in Ohio?

RESPONSE: Statistics show that the transportation sector is a major energy user in Ohio. Gasoline is the overwhelming choice of fuel used for transportation. A significant reduction in gasoline usage can achieve large environmental benefits for the State. According to the Public Utilities Commission, Ohio has the potential to save up to 10 percent of the gasoline used in the State by using gasohol. It is estimated that, in 1990, gasohol has replaced about 104 million gallons of gasoline in Ohio.

The best candidates for alternative fuels to gasoline include gasohol, ethanol, and methane. Each of these fuels currently can be adopted by gasoline users without substantial initial investments.

Should State Government provide incentives to encourage their use?

RESPONSE: The State should provide only limited incentives to encourage the use of alternative fuels. It can, however,

assist in funding development of new technologies using these fuels, and technically demonstrating the use of these fuels. Any direct taxes or rebates targeting the users of these fuels are difficult to justify. Obviously, most of the benefits from using the alternative fuels accrue to the users; thus, the users themselves are in the best position to choose from the alternatives. Additional incentives will serve only to distort the social costs and benefits of producing and using various energy resources. Finally, avoiding direct subsidies also reduces the size of government expenditure involved in encouraging the use of alternative fuels.

4. Private Industry

What can private industry in the State of Ohio do to be competitive and energy efficient at the same time?

RESPONSE: The competitiveness of Ohio industry depends largely on its ability to keep pace with out-of-state firms selling similar products and services. To be competitive, Ohio firms must improve their productivity over time through better technologies and management practices. "Better" implies those technologies and practices that reduce a firm's costs or improve its quality of products or services.

With the development of new energy-efficiency technologies, firms in Ohio as well as elsewhere have invested in conservation when it is economical (that is, where it reduces their costs). By investing in conservation, firms receive a payback in the form of lower future energy

costs. When the payback returns the firm's investment in a sufficiently short period of time, the firm would make the investment. Firms throughout the country including Ohio, have made such substantial conservation investments.

Private industry has a strong incentive to be energy efficient when it increases its competitiveness. No market barrier currently seems to be impeding the use of energy-efficiency technologies by private industry. Consequently, private industry apparently is availing itself of opportunities to invest in energy efficiency when economically attractive.

What can the State do to enhance competitiveness and energy efficiency?

RESPONSE: The State seems unlikely to make Ohio industry more competitive by promoting energy efficiency. No evidence suggests that Ohio industry has not exploited energy efficiency that would make it more competitive. The apparent lack of serious market barriers makes it difficult to justify State actions that could achieve the twin objectives of enhanced competitiveness and energy efficiency for Ohio industry.

Ohio industry may be hampered by incentives given to other energy consumers. For example, state public utility commissions throughout the country have required electric utilities to expend large sums of money on energy conservation. For many of these utilities industrial customers have funded these expenditures (through their electricity rates) while receiving little or no benefit. In

such cases where firms are paying higher electricity bills, their ability to compete has diminished.

5. Public Education

Outside of formal education, does the public need to be informed about energy efficiency?

RESPONSE: The public currently is being informed about energy efficiency through various channels. The news media, schools, private companies specializing in energy efficiency, public utilities, and various governmental agencies all are providing information in various forms on the benefits of energy efficiency. Whether more should be done is difficult to say.

If the State determines that more information should be distributed, Ohio energy utilities would seem to be in a good position to provide additional information as well as advice. They, perhaps more than anyone else (except the consumer), may know consumers' energy consumption habits the best and why some consumers are not investing in energy efficiency when it would be in their best interest.

6. Technology Transfer

What can the State do to accelerate the transfer of technological developments?

RESPONSE: First, the State should recognize that dedicating funds to accelerating the transfer of some technological

developments is not always in the best interest of Ohio. As a general matter, acceleration of new energy technologies should only be encouraged if they ultimately result in lower energy costs to consumers (after consideration of environmental and other constraints imposed by government). Accelerating technology transfers for other reasons would likely inflict harm on Ohioans. For example, new technologies that benefit special interest groups while imposing higher energy costs on Ohio consumers would be detrimental to the State as a whole.

The State should focus its efforts on new energy technologies offering real promise for commerciability. The State, for example, can participate in a joint partnership with private industry to fund demonstration facilities such as clean-coal facilities, whose success has the potential to yield significant benefits to Ohio. The information obtained from such facilities can help to assess their actual costs and operating characteristics. This information would reduce the uncertainty of subsequent deployment of the technology during commercialization.

The Public Utilities Commission can help accelerate the transfer of technological developments by reevaluating its current ratemaking treatment of expenditures made by utilities for new technologies. For example, given the inherent risks associated with new technologies, the Commission may want to assess whether Ohio utilities currently have sufficient incentives to invest in new technologies. For example, if expectations are such that utilities would bear the cost of failure but not receive the

benefit of success, utilities would tend to stay away from investments in new technologies. While it is bad policy to shift all risks to ratepayers, the Commission may want to assess whether its current policies discourage utilities from investing in new technologies. The Commission may determine that it needs to shift its policy to better compensate utilities for undertaking risky ventures. The Commission, at a minimum, should require that such ventures have real long-term promise to benefit ratepayers.

7. Public versus Private Transportation

Is there any benefit to expansion of mass transportation in Ohio with regard to energy efficiency?

RESPONSE: The expansion of mass transportation in Ohio is undoubtedly beneficial to energy efficiency since it reduces the use of private motor vehicles, which in turn can significantly decrease the energy used for transportation purposes. By the nature of mass transportation, its use will be cost-beneficial for Ohio only if it achieves a high degree of operation. Otherwise, the high capital cost incurred in building the necessary infrastructure may not be recovered through the savings in operation and energy costs.

Experience has shown that mass transportation can become an economically viable option only in densely populated urban areas. In any event, the economics of additional mass transportation would not be known with great certainty without more detailed transportation studies. A general observation is that an intracity/regional (within

metropolitan areas) mass transportation system is more likely to be an economically viable option than an intercity (city-to-city) mass transportation system.

Study Area #2 -- FUTURE ROLE OF ENERGY RESOURCES

8. Clean Coal Technologies

What is the future of clean coal technology?

RESPONSE: Clean coal technology, at this point, seems to have a promising future. Its potential advantages over conventional, coal-fired plants include lower capital costs, higher thermal efficiencies, and lower sulfur dioxide emissions. With the creation of an allowance trading market for sulfur dioxide, clean coal technology also offers electric utilities an opportunity to profit from selling allowances. Importantly for Ohio, clean coal technology can help enhance the competitiveness of in-state coal here and elsewhere.

The Bush Administration's *National Energy Strategy* is placing a high priority on the development of clean coal technology. Over the next several years the Administration hopes to embark on a program that would encourage state public utility commissions to work with the federal government to provide regulatory incentives for utilities to invest in clean coal technologies. The Administration believes that electric utilities will need additional incentives to invest in clean coal technologies, especially in view of the uncertainty over their commercial applicability.

The Bush Administration has in place a coal technology research and development program, cofunded by the federal government and private industry, that will identify the most promising clean coal technologies and, over a ten-year period, transfer them to commercial use through demonstration projects. These demonstrations will help reduce the uncertainties of the cost and operating performance of commercial-scale deployment of the different technologies. With fewer uncertainties, it is hoped that electric utilities will accelerate their deployment of clean coal technology. Even after clean coal technologies are demonstrated and available for commercial operation, it will take a number of years before the technologies are widely deployed. As reported by the U.S. General Accounting Office, time (perhaps as much as ten years) is needed for utilities to gain confidence in the technologies and to test them on individual units before installing them on others.

The electric industry also views clean coal technology as a promising technology for the future. Through its research arm, the Electric Power Research Institute (EPRI), the industry has made a large commitment to funding research and development activities related to clean coal technologies.

Ultimately, the future of clean coal technology will depend on the willingness of electric utilities to undertake the risk of investing in this new technology. The most crucial barrier to its deployment may lie with the expectation of

utilities that they will not be adequately compensated by their public utility commissions for the risks that they will have to undertake. The Public Utilities Commission will play a crucial role in giving electric utilities adequate incentives to invest in clean coal technology. How such incentives would be structured, and which types would be required, may require some administrative initiative such as rulemaking or a policy statement.

9. Natural Gas and Oil

Are there new uses for Ohio's gas and oil production (for example, natural gas powered vehicles, compressors, or small electric power generators which use natural gas directly at the well site?

RESPONSE: The natural gas industry is aggressively promoting new uses for natural gas. It is trying to convince government officials and others that natural gas is an attractive fuel in enhancing economic efficiency, environmental quality, and national security. In its *National Energy Strategy*, the Bush Administration is encouraging the use of natural gas as a transportation fuel.

Potential new uses for natural gas, with the best prospects at this time, include electricity generation, cooling, and transportation. New natural gas-using technologies are being funded heavily by the industry. A major objective of this research and development activity is to make natural gas economically attractive in a number of new applications.

Natural gas use for electricity generation is currently hampered by the uncertainty over future price. Although natural gas prices are low, electric utilities fear that future prices may rise dramatically.

Public utility commissions throughout the country have begun to question whether natural gas is being underconsumed relative to electricity and other forms of energy. Some commissions are considering a more evolved form of what is called "integrated resource planning." Under this planning scheme, an electric utility is required in its planning activities (among other things) to consider the economics of consumers switching from electricity to natural gas for various energy services (for example, cooling).

To illustrate, assume that an electric utility is looking at ways to satisfy expected growth of its summer peak. Under integrated resource planning, the utility would have to consider the option of their customers switching from electricity to natural gas for cooling. In this example, a commission may determine that natural gas cooling represents an economical peak-sharing alternative for an electric utility and an economical load-leveling alternative for the local gas distribution company.

If the Public Utilities Commission adopts integrated resource planning, along with requiring electric utilities to include environmental effects, demand for new uses of natural gas in the State may occur sooner and at greater

quantities. In view of these happenings, it seems likely that natural gas will increase its market share in the energy sector over the next several years. Increased competition between natural gas and other sources of energy will benefit Ohio. With more interfuel competition, energy prices will likely fall below what they would be otherwise. Further, natural gas, as a substitute for other fuels, would improve environmental quality. Mainly for these reasons, the State should not hinder current activities promoting the use of natural gas in new markets.

13. Conservation

How should conservation be viewed as a resource?

RESPONSE: In its most basic form, and one widely accepted until recently, conservation represents the actions of consumers in reducing their energy usage for such services as cooling and space heating. In other words, conservation reflects the behavior of energy consumers to changed economic conditions such as rising prices. The recently popular view regards conservation as a resource, in that one unit of energy conserved reduces the needs to produce one unit of energy (after making adjustments for reliability effects). As an illustration, an electric utility inducing its customers to reduce their demand for electricity by 500 megawatts translates into 500 megawatts of less generation capacity needed in future years.

Conservation as an energy resource has inherent qualities that differ from traditional supply-side resources. First,

conservation produces minimal adverse environmental effects. Although it is conceivable that a utility investing in conservation rather than, say, a large-scale new environmentally benign power plant as a new resource can have adverse overall environmental effects. This could occur when a utility would have used less of its existing, pollution-emitting plants (by dispatching these plants less) with the addition of new generation capacity. There exists some evidence of this outcome for some electric utilities currently planning to acquire new resources.

Second, the distributional effects of conservation differ from traditional supply side resources. In the previous example of a utility investing in 500 megawatts of conservation, some customers would benefit while others may be worse off. When a utility's rates are higher than otherwise, some customers would have higher electric bills while those directly benefiting from the utility's investment in conservation would have lower bills. On the other hand, when a utility builds a new power plant the effect on customers' electric bills would be more equalized. At a minimum, there would not be the effect of some customers being worse off while others are better off (assuming the utility's rates are cost-based), which often could happen when a utility invests in conservation.

Third, as an energy resource, conservation imposes higher uncertainty on a utility than new generation capacity. The actual conservation that occurs depends partially on the behavioral response of consumers. For example, utility investments in the form of subsidy payments to customers

may include dollars expended to promote conservation that would have occurred without the payments (the so-called "free rider" problem). Another behavior response is that in reducing the marginal price of energy services such as cooling and space heating, conservation subsidies may cause customers to demand more of such services. The actual energy savings therefore may fall short of what engineering or audit-based techniques would estimate. Empirical evidence has shown that these two behavioral factors should not be ignored when evaluating certain types of energy conservation programs if energy savings are to be accurately measured.

Study Area #3 -- ECONOMIC, ENVIRONMENTAL, AND COMPETITIVENESS IMPACTS

16. Manufacturing/Industry

How can the State best promote balanced competition among energy fuel resources for the major consumption sectors?

RESPONSE: The State should not bestow special favors on any one fuel resource. Subsidies offered to certain fuels would distort industry's consumption habits. For the same reason, the State should not impose special taxes or other burdens on any one fuel. Instead, by allowing the marketplace to determine what fuels industry purchases, it can best promote balanced competition among energy fuel resources. The marketplace provides consumers with a strong incentive to purchase different fuels on a least-cost basis.

The Public Utilities Commission can help to achieve "balanced competition" by approving natural gas and electricity rates that reflect marginal costs and actual market conditions. In doing so, the Commission would be encouraging in the most effective and efficient manner different energy resources to compete on a level playing field.

18. Residential

What are the impacts of increasing energy prices on Ohio's residential consumer?

RESPONSE: The burden of increasing energy prices in Ohio as well as other states falls more severely on low-income households. The reasons for this are two-fold. First, the poor spend a higher percentage of their incomes for home energy use. As an illustration (based on 1980 U.S. Census data), the average household in the Midwest may spend around 5 percent of its annual income for electricity and natural gas; the average low-income household, by contrast, may spend over 20 percent of its annual income on these two sources of energy (and, perhaps, over 30 percent during the winter months). So, for a given increase in energy prices, the real incomes of low-income households would fall by a much greater percentage.

Second, studies have shown that low-income households are less inclined to spend their income on energy conservation. The major reason is that low-income households have less money to spend on energy conservation, as well as on other

goods and services. Since low-income households have spent less than other households on energy conservation, for past energy price increases low-income households have encountered relatively larger economic losses. (As a general rule, economic losses from an increase in price for any commodity would hurt most those consumers who are less able or willing to reduce their purchases of the commodity.) During the last decade, the gap between home energy use by the poor and other households has narrowed. This can be partly explained by the lower response of the poor to rising energy prices.

Statistical studies have shown that when home energy prices increase, all households tend to spend a greater share of their incomes on energy, with the share increasing by a higher percentage for low-income households. Unlike most commodities where the poor can respond to a price increase by purchasing less quality (for example, substituting hamburger for steak), when electricity or natural gas prices increase, the poor are constrained to reducing the amount of energy they purchase to hold down their energy bills. Since many poor households already are consuming close to the "minimum subsistence" level and are unable financially to invest in energy conservation, energy price increases impose a particularly severe hardship.

What steps should be taken to assure that energy is available and affordable for those Ohioans on low or fixed incomes?

RESPONSE: The State either can raise the incomes of low-income households or give them special energy assistance. The first action recognizes that the problem of low-income households struggling to pay their energy bills is a general poverty problem. As such, the proper State response would call for increased assistance to compensate the poor for deteriorating real incomes caused by rising prices for essential commodities including energy. Applying this logic, giving the poor more money rather than in-kind (energy) assistance would be the preferable approach for redressing the problem of general poverty. Low-income households would then be able to choose the bundles of goods (energy, food, housing, and so forth) on which to spend their additional income to maximize their economic well-being.

An argument for establishing additional special energy assistance programs stems from the perception that current programs fall short of adequately cushioning the effect of rising (or prevailing) energy prices on the poor. Support for this argument comes from evidence that low-income households experience high numbers of shut-offs of utility service, and low-income households allocate a high percentage of their incomes toward paying energy bills.

If the State were to adopt additional energy assistance programs, funded either by taxpayers or utility ratepayers, they should be designed to satisfy certain criteria. First,

programs should benefit only those who are truly in need. Evidence has shown that programs such as lifeline rates benefit some middle- and upper-income households, sometimes at the expense of poor households. As a corollary, programs also should provide greater assistance to those poor households who face higher energy costs.

Second, programs should minimize efficiency distortions by discouraging recipients from overconsuming energy when the marginal price for energy is reduced below cost. Subsidies, while justified as promoting equity, may conflict with energy-efficiency goals.

Third, programs should maximize the benefits to needy recipients per dollar of assistance funded by taxpayers or ratepayers. Weatherization programs and lifeline rates, for example, are more likely to be less cost-effective than properly designed percentage-of-income (PIP) programs in terms of minimizing waste.

Fourth, programs should minimize administrative expenses. High administrative expenses reduce the benefits occurring to needy recipients per dollar funded by taxpayers or ratepayers.

Fifth, energy assistance should be adequate enough to reduce the number of utility shut-offs resulting from low-income households unable to pay their utility bills. Assistance also may be contingent on low-income households making a sincere effort to pay off past debts with their utility.

Study Area #4 -- APPROPRIATE ROLE OF STATE GOVERNMENT

21. Leadership, Legislative, Administrative

What leadership role should State government take to encourage the most efficient use of Ohio's native energy resources?

RESPONSE: As discussed in earlier comments, the role of government (state, local, or federal) is rather limited, although it can be important. The State government's leadership role should be limited to situations where the private sector, for various reasons, cannot adequately perform. Roles include removing unnecessary government regulations, subsidies, and taxes; introducing, demonstrating, and coordinating new technology development; and disseminating and publishing certain energy production and usage information.

Should the State of Ohio adopt energy efficiency standards which are more stringent than those mandated by the federal government?

RESPONSE: As a general matter, there is little support for Ohio to adopt energy efficiency standards which are more stringent than those mandated by the federal government. There may exist justification, however, for the State to adopt a specific standard which is more stringent than the federal standard.

Few energy efficiency improvements can be achieved without additional capital investments or new operational

procedures: energy efficient improvements are rarely costless. A private industry generally will achieve an energy efficiency level where the costs of further improvement will exceed the benefits. A more stringent standard would therefore likely impose a net cost (that is, profit losses) on Ohio industry while at the same time adversely affecting its competitiveness with out-of-state industry: Ohio industry may be forced to invest more than what is profitable in comparison with the private industries located in other states. Consequently, it seems that unless a compelling case can be made, a more stringent standard should not be adopted.