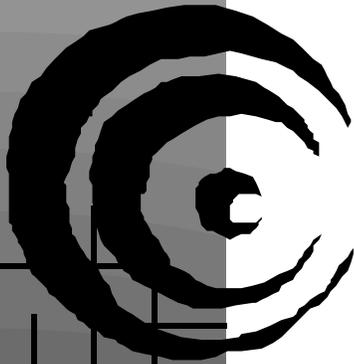


# Public Benefits



## **Emerging Competition in the Electric Industry**

Docket No. NOI-95-1

### **A Staff Analysis**

March 1999

IOWA UTILITIES BOARD  
IOWA DEPARTMENT OF COMMERCE

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## **EXECUTIVE SUMMARY**

Public Benefits issues were investigated by an Iowa Utilities Board staff team. The team was charged with “investigating ways to ensure the continuation of system benefits resulting from the current industry structure including utility-sponsored research and development, system reliability, public safety, and protection of retail customers from unfair business practices.” Furthermore, the team was charged with “developing a means of funding legislatively mandated public purpose programs (such as energy efficiency, renewable energy resources, and assistance to low income and rural consumers) that supports competition, without favoring any one competitor.”

The team organized this report by first presenting a discussion of statutes that have been employed in Iowa to achieve societal goals, and identifying key public benefit issues. The report then examines mechanisms for maintaining and funding public benefit programs. The report also addresses details of certain issues, including: research and development, demand-side management, renewable resources, and monitoring of system effects. The draft version of this report was mailed to Advisory Group members for comment on October 30, 1998. Appendix B summarizes the comments received on the draft report.

The team has identified a set of issues and potential options policymakers may wish to address in order to maintain public benefit policy goals.

Summary of Issues and Options for Policymakers.

1. Chapters 476 and 476A of the IOWA CODE include numerous public benefit policies related to electricity. Issues of public purpose appear to be an essential feature of electric utility policies.

2. Public policy goals of energy efficiency, renewable energy, and customer protection (especially for low-income customers) are distributed throughout Chapter 476 of the IOWA CODE. In some cases, a particular statute may serve several public policy goals.

3. While statutes may establish particular public policy goals, they may subordinate those goals to economic goals. Most energy efficiency policies are subject to a cost-effectiveness requirement.

4. Public policy goals in the IOWA CODE are often subject to public scrutiny, through contested case proceedings and requirements for reporting and evaluation.

5. A review of readily available national sources on electric utility public purpose issues suggests that all major issues are being addressed in the Board's Inquiry into Electric Industry Restructuring. Many of the public policy issues are being addressed by other staff teams. The Public Benefits team report focuses on the issues of maintaining and funding public benefits, and the public benefit goals of research and development, demand-side management, renewable energy, and tracking and monitoring of system effects.

6. Where the market does not deliver, public goods provided under past policies may be continued by translating the goals and statutes into specific statutory mandates or portfolio requirements. Portfolio requirements could be used to secure a minimum commitment by all generation suppliers to a variety of electricity sources.

7. Sources of funding for public purpose programs in a competitive electricity industry could include funding from the state's general fund, or surcharges on all generation suppliers.

8. Public purpose programs might be funded by a nonbypassable charge on use of electricity at the distribution level. The charge could be either a flat rate per kWh for all customers, or the public purpose funding could be allocated by ratemaking.

9. A funding mechanism for public purpose programs could be disclosed as a line item on customers' bills. Previous disclosure of public purpose funding on bills has drawn negative attention.

10. Funding for public interest R&D is currently declining with the restructuring of the electric industry and is expected to continue to decline in the future. The emphasis of R&D is also shifting from collaborative long-term R&D to short-term R&D that would give the utility a strategic advantage in a competitive market.

11. The following are potential ways to address the problem of decreasing R&D expenditures in Iowa: (a) continue state-level research and development programs by funding the Iowa Energy Center and the Iowa Center for Global and Regional Environmental Research; (b) identify local R&D needs that are not being addressed and would not be addressed in a competitive environment; (c) communicate with other states about their local R&D initiatives to determine what might work in Iowa; and (d) work with other states on addressing national and regional R&D issues through organizations such as NARUC.

12. Demand-side management programs implemented by rate-regulated utilities have saved substantial amounts of electric generating capacity and energy.

13. Demand-side management consists of load management and energy efficiency. There are significant differences between the load management and energy efficiency programs of utilities, which will be magnified by deregulation of generation suppliers.

14. Load management may be amenable to market solutions. Both incumbent and alternative generation providers may choose to offer load management options. Delivery service providers or aggregators might also choose to offer load management options.

15. Ownership of and responsibility for load management capacity may require a definitive decision by policymakers. If there is no clear-cut decision, the ownership and value of load management capacity will default to incumbent generation providers and the system as a whole.

16. Policymakers may either require delivery service providers to continue implementing load management and energy efficiency and award capacity credits to delivery service providers which create demand-side management (DSM) capacity, or accept that distribution and customer created DSM capacity is simply an uncontrollable system benefit.

17. Energy efficiency programs might be continued by requiring delivery service providers to plan, implement, and recover the costs of such programs. Or energy efficiency programs might be made part of a portfolio standard for generation suppliers.

18. Short-term funding might seek to maintain cost-effective energy efficiency programs through a transition period. Long-term funding and direction of programs could be determined through a comprehensive review and planning process.

19. Non-monetary policies to enhance DSM programs might be considered, such as: review of ratemaking incentives for regulated utilities; guidelines which address access by nonutility providers to customer information; and rules governing participation by utility affiliates in competitive delivery of unregulated energy-efficiency services.

20. Administration and governance of post-restructuring DSM may need to be consistent with the overall market structure that is adopted. Three generic options appear to be available: (a) continued utility administration by the incumbent provider; (b) administration by an existing state agency; and (c) administration by a new, nongovernmental nonprofit agency.

21. Development of renewable energy by utilities has been a public policy in Iowa for many years, which is starting to produce results.

22. Market barriers and market failures may hinder renewables and energy efficiency at many points in the electricity system.

23. Mandated “feebates” or environmental dispatch could be used to sway the market for generation toward renewables.

24. State mandates for renewables could be applied to the retail market through portfolio standards.

25. Non-monetary mechanisms for renewables could be developed including: net billing, green marketing, and environmental disclosure.

26. Market barriers to renewables are high first cost, perceptions of risk, and difficulties financing projects. Public purpose funding, such as the revolving loan fund, may be needed until such time as the market for renewables fully develops in Iowa.

27. Tracking and monitoring of system effects may be needed as the electricity system in Iowa is restructured.

28. Written comments from seven members of the Advisory Group are summarized in Appendix B. The comments were not extensive and did not substantially alter the content or findings of the report.

## **INTRODUCTION**

The Public Benefits team was charged with “investigating ways to ensure the continuation of system benefits resulting from the current industry structure including utility-sponsored research and development, system reliability, public safety, and protection of retail customers from unfair business practices.”

Furthermore, the team was charged with “developing a means of funding legislatively mandated public purpose programs (such as energy efficiency, renewable energy resources, and assistance to low income and rural consumers) that supports competition, without favoring any one competitor.”

The issues of system reliability, public safety, and protection of retail customers are being examined by the staff Reliability Team, Universal Service Team, and Customer Education Team. This would seem to leave only the issue of research and development and the funding mechanism for legislatively mandated programs as system benefits issues.

However, the “system” under examination, the electric utility industry, may have a wide range of effects on the public. System benefits may include many “public goods” resulting from the electric utility system, and the term “public purpose programs” may not accurately capture the diversity and pervasiveness of these public goods.

Defining or determining the public interest will likely be a continuing topic for debate in the discussion of restructuring. Staff looked for attributes of the electric system and impacts on the public which have been elaborated over many years. Staff does not rule out the possibility of specific new goods that might emerge in a restructured system, but cannot with any confidence identify those new benefits or their magnitude.

Full investigation of an extensive list of public-policy issues is beyond the resources of a small staff team. Staff chose to approach the task by:

- (1) Presenting a discussion of statutes which have been employed in Iowa to achieve societal goals;
- (2) Finding and applying a comprehensive framework for analysis of public benefits to identify key public benefit issues;
- (3) Examining mechanisms for maintaining and funding of public benefit programs;
- (4) Addressing details of the specific issues or areas of issues. The public benefit issues addressed in this report include: research and development, demand-side management, renewable resources, and monitoring of system effects.

### **IOWA CODE PROVISIONS FOR ELECTRIC UTILITY “PUBLIC PURPOSE PROGRAMS”**

Iowa has a long history, starting in the early 1980s, of addressing in statutes the public policy effects of electricity provided by utilities. Many of the energy-related provisions in the IOWA CODE were enacted through Senate File 2403 in the 1990 session of the Iowa General Assembly. Senate File 2403 targeted issues relating to energy efficiency, but included substantial revisions to statutes on renewable energy, known as Alternative Energy Production (AEP).

Senate File 2403 resulted from an effort by the Iowa Utilities Board to develop a comprehensive strategy for energy efficiency programs by utilities. At the time (1989) the Board was concerned about several factors: economic competitiveness, environmental improvement, and most important, construction of new power plants. One utility had recently announced plans to build a new

power plant to meet increasing peak demand, which would increase rates.  
(Partners in Energy, page 4, Iowa Utilities Board, 1990)

The Board retained a consultant, Morgan Systems Corporation to research issues relating to energy efficiency and renewable energy, and conduct working groups of stakeholders to discuss the issues and developed a set of recommendations. Morgan Systems proposed a comprehensive framework which recommended various policies including: improved energy forecasting methods, development of an integrated planning process, assessment of the cost effectiveness of all available resource options, evaluation of the results and impacts achieved from selected resources, and building the capability to pursue demand side resources, including development of supporting data on markets and related energy use in Iowa. Many of the details of Morgan Systems' recommendations were enacted into law, and other recommendations formed the basis of rules promulgated by the Board. (Morgan Systems, pages 1-5, 1989)

While some of these provisions were subsequently modified by Senate File 2370, enacted in 1996, most of the essential direction of Senate File 2403 remains in place today. The following is a summary of public purpose issues found in the IOWA CODE.

IOWA CODE section 473.2 contains findings of the general assembly, enacted in 1988. This statute states:

[T]he health, welfare, and prosperity of all Iowans require the provision of adequate, efficient, reliable, environmentally safe, and least-cost energy at prices which accurately reflect the long-term cost of using such energy resources and which are equitable to all Iowans.

Supply and demand options are to be considered using comparable terms and methods in order to best meet consumers' demand for energy at least cost. Environmental costs of proposed actions are to be identified, documented, and considered, to protect the environment from adverse external costs of an energy resource.

IOWA CODE section 473.3, enacted as part of Senate File 2403 in 1990, sets a state goal of more efficiently utilizing energy resources, especially those that are nonrenewable or have negative environmental impacts. The stated purpose is to enhance the economy of the state and decrease the state's dependence on energy resources from outside the state. The goal is to be reached through programs for energy efficiency, energy conservation, development of an energy efficiency industry, development of indigenous energy resources, and effective public information and education.

The following is a listing and discussion of various statutes found in Chapter 476, which currently address various aspects of the authority of the Iowa Utilities Board over public purpose programs, especially utility planning, energy efficiency, and renewable energy.

IOWA CODE section 476.1 extends the jurisdiction of the Iowa Utilities Board to include "efforts designed to promote the use of energy efficiency strategies by rates or service regulated utilities." This provision was originally enacted in 1983. As a result of Senate File 2403, the language was changed from "energy conservation" to "energy efficiency," consistent with a strategy of doing more with less energy, rather than reducing both energy use and the resulting goods and services.

IOWA CODE sections 476.1A, 1B, and 1C provide for the filing of energy efficiency plans and results with the Board, by non-rate regulated utilities. Although the rates of these utilities are subject to local control rather than the

Board's jurisdiction, these utilities are still required to report on their energy efficiency efforts. Nonrate-regulated utilities are also assessed fees for the support of the research and educational activities of the Iowa Energy Center and the Center for Global and Regional Environmental Research.

IOWA CODE section 476.2(6) requires a report from the Board to the general assembly on the energy efficiency planning efforts by rate-regulated utilities. This report (Iowa Utilities Board, December 1997) was delivered in 1997, and shows that rate-regulated utilities have implemented energy efficiency programs which are saving or will save hundreds of millions of dollars in net societal benefits. The report also notes the rate increases needed to pay for past energy efficiency efforts, which will continue for another three years.

IOWA CODE section 476.6(17) requires that electric and gas utilities "offer energy efficiency programs to their customers through energy efficiency plans," and requires that these plans be cost-effective. In 1996, the statute was modified to require the Board to apply four economic tests in determining the cost-effectiveness of plans: the societal test, utility cost test, ratepayer impact test, and participant test. These economic tests were recommended in the report by the Board's consultant, Morgan Systems Corporation, and have been used in Iowa and other states for evaluation of plans and programs. While the Board has previously stated a preference for the societal test in determining the overall cost-effectiveness of plans, the modified statute may require some method of considering or combining all four tests. This statute also exempts energy efficiency programs for low-income persons and for tree planting from the cost-effectiveness determination.

IOWA CODE section 476.6(19) provides a process for developing energy efficiency plans and determining energy efficiency spending levels for rate-regulated utilities. The statute specifies that plans include programs for low-

income energy efficiency by cooperation with community action agencies. In practice, utilities have worked closely with community action agencies to provide funding for activities which low-income weatherization programs do not normally address.

The statute as originally enacted in 1990 designated a spending level of two percent of gross operating revenues for electric utilities and one and one-half percent of gross operating revenues for gas utilities. Senate File 2403 also required utilities to consider certain programs, such as water heater blankets and rebates for purchase of energy-efficient goods such as lighting. These provisions were changed, by Senate File 2370 in 1996, to a process in which utilities assess the potential for energy saving technology and file energy efficiency plans with the Board, for a contested review of plans and budgets.

The statute as enacted in 1990 provided for a cost recovery process, which required utilities to defer their costs from energy efficiency programs until approved by the Board in a contested proceeding. The accumulation of costs added substantial carrying charges to the cost recovery process. Changes in 1996 authorized the recovery of costs on a concurrent basis, with a later prudence review to evaluate the results of programs. These changes mean that both an automatic recovery mechanism for new costs and recovery of previous costs occur simultaneously. However, after the previous costs are fully recovered, in the year 2001, energy efficiency costs will reflect only new costs.

IOWA CODE section 476.6(20) requires rate-regulated utilities to file with the Board forecasts of future natural gas requirements or electric generating needs, including anticipated sources of supply and how anticipated demand will be met.

IOWA CODE section 476.6(21) gives the Board optional authority to require rate-regulated utilities to provide financing for customers' energy efficiency

improvements. This authority was viewed as necessary to satisfy previous objections to the use of loans as promotional mechanisms. Thus this statute provides a clear policy decision to employ financing. In actual practice, at least one utility has contracted with commercial lenders to provide the financing aspect of its programs.

IOWA CODE section 476.8 requires all public utilities to provide “reasonably adequate service and facilities.” The statute defines reasonably adequate service and facilities to include programs for customers to encourage the use of energy efficiency and renewable energy sources.

IOWA CODE section 476.10A requires utilities to fund two statewide research centers at a rate of one tenth of one percent of gross operating revenues. Eighty-five percent of the funding goes to the Iowa Energy Center and fifteen percent is allocated to the Center for Global and Regional Environmental Research. A discussion of these research organizations is presented in the section of this paper on Research and Development, State Mandated Expenditures (p. 27).

IOWA CODE section 476.17 authorizes the Board to require all utilities to establish peak-load energy management procedures. This provision was enacted in 1981, and was one of the first statutes in Iowa to address part of what is now called demand-side management (DSM). Peak-load conservation programs include such informational efforts as “Peak Alerts,” rate-related programs such as interruptible and time-of-use rates, and direct load control programs in which utilities briefly shut off air conditioners during peak use periods. Many utilities’ peak load management programs predate the establishment of energy efficiency programs in the early 1990s. However, load management was significantly expanded during the period 1990-1996, and now

contributes several hundred megawatts of peak capacity which utilities would otherwise have had to meet by purchases or construction of new capacity.

IOWA CODE section 476.20 governs disconnection of utility service for nonpayment of bills. This section contains provisions prohibiting disconnection during winter months for customers who are certified to receive low-income energy assistance. The report by the staff Universal Service Team discusses low-income provisions in more detail.

IOWA CODE section 476.21 prohibits discrimination in rates or services by any electric or natural gas utility based on the use of renewable resources by a customer.

IOWA CODE sections 476.41 through 476.46 govern alternative energy production facilities. First enacted in 1983 and subsequently modified in 1990, 1992, and 1996, the statute explicitly sets out a policy goal as follows:

It is the policy of this state to encourage the development of alternate energy production facilities and small hydro facilities in order to conserve our finite and expensive energy resources and to provide for their most efficient use. (IOWA CODE section 476.41)

The statutes define alternative energy facilities as solar, wind turbine, waste management, resource recovery, refuse-derived fuel agricultural crop or residue, or woodburning facilities, and also define small hydro facilities. The statutes establish the process for determining purchase rates, specifically stating that rates “shall be established at levels sufficient to stimulate the development of alternate energy production and small hydro facilities in Iowa ...” (IOWA CODE section 476.43(2)).

The alternative energy statute mandates purchases by electric utilities up to a certain level of peak demand, currently a statewide total of 105 megawatts. The statutes also establish a revolving loan fund for the development of alternate energy production facilities.

IOWA CODE section 476.62 requires all public utility-owned lighting to be replaced with efficient lighting at least equivalent to high pressure sodium lighting.

IOWA CODE section 476.63 provides for consultation by the Board with the Iowa Department of Natural Resources in the development and implementation of utility energy efficiency programs.

IOWA CODE section 476.66 requires each electric and natural gas utility to establish a fund to receive customer contributions toward assisting low-income customers with winter heating bills. The report of the Universal Service Team addresses customer contribution funds in more detail.

IOWA CODE Chapter 476A governs the approval by the Board of electric generating facilities, including approval criteria that require public utilities to show they have comprehensive energy management programs and that the proposed generating plant is needed despite implementation of lower cost alternatives. Utilities have been able to satisfy the criteria for approval of new facilities by citing their implementation of demand-side management programs, such as energy efficiency and load management programs.

### **Observations and conclusions on public purpose statutes**

Several observations may be derived from this historical review of current statutes addressing “public purpose programs.”

1. There are numerous and detailed public policy issues woven into the overall statutes for utility regulation, suggesting issues of public purpose are an essential rather than peripheral feature of electric utility operations.
2. The statutes contain a variety of provisions for each of several general public policies (energy efficiency, renewables, low-income). The distribution of public purpose statutes suggests the public purpose for some issues is not confined to one part of the utility system. Also, several public purposes may be served by one statute (such as low-income energy efficiency).
3. Although the statutes may directly establish public policy goals, they may also subordinate those goals to economic goals or subject those goals to economic evaluation or testing, especially where energy efficiency is concerned. The law is clear that energy efficiency must be cost-effective, and even prescribes the economic tests to be used in that determination.
4. The development and implementation of public purpose programs is often subjected to public scrutiny. In the case of energy efficiency, there are explicit provisions for contested proceedings that must be used in reviewing plans and evaluating results. Various public purpose functions of utilities are subject to periodic reporting and evaluation, such as forecasting, energy efficiency implementation, and customer contribution funds.

### **SYSTEM BENEFITS IN IOWA**

One might conclude from the preceding discussion of public purpose programs in Iowa statutes, that there are only a few issues identified as “public purpose.” However, a detailed reading of Chapter 476 and 476A shows many issues of public purpose throughout the statutes governing electric utilities.

For example, IOWA CODE section 476.1A provides that electric cooperatives and municipal utilities exempt from rate regulation cannot grant any unreasonable preferences or subject any person to any unreasonable disadvantage. Similarly, in IOWA CODE section 476.6(5), all rate-regulated utilities must give written notice of proposed rate increases to customers. These are examples of how the public purposes or policies known as “equity” and “customers’ right to be informed,” are established in law.

Rather than attempt to discern and discuss every possible public purpose policy found in IOWA CODE Chapter 476, staff looked for a comprehensive framework from the literature on public policy and the electricity industry. Using an outside source also served as a check on whether some public purpose programs were not being addressed by any team working on the NOI. Several sources were found and are listed in the bibliography, but perhaps the most useful discussion was provided by a study published by Oak Ridge National Laboratory. This study and the table summarizing public policy issues are referred to as the Tonn study or Tonn framework, after the lead author of the study.

The Tonn framework is unique among the national studies reviewed, because it clearly shows the interaction of public policy actions with societal values and objectives. Rather than labeling certain issues or actions as “public purpose programs,” the Tonn framework shows some actions performed by the electricity system serve multiple objectives. For example, demand-side management can advance economic goals such as industrial competitiveness, social equity goals such as human welfare, and environmental goals such as clean electricity generation.

Table 1 provides an adaptation of the Tonn framework as applied to Iowa electricity public purpose issues. Staff augmented the Tonn framework with one additional action, customer education, noted in Italics.

Table 1. Framework for Public Benefits. (Adapted from Tonn, 1995)

Values and Objectives   Actions   =====>    v	R & D	System Reliability	Portfolio or Risk Management	Demand Side Management	Fair Transmission Access	Universal Service	Low-income Programs
<b>ECONOMIC PROGRESS</b>							
Economic Efficiency	X	X		X	X		
Industrial Competitiveness	X	X	X	X	X		
Economic Development	X	X	X	X	X	X	
Customer Choice	X	X		X		X	
<b>SOCIAL EQUITY</b>							
Equitable Sharing of Costs and Benefits		X	X	X	X	X	X
Public Participation			X	X			
Fair Trade Safeguards					X		
Protection of Human Welfare	X		X	X		X	X
<b>ENVIRONMENTAL STEWARDSHIP</b>							
Clean Electricity Generation and Delivery	X		X	X			
Regional Environmental Quality	X			X			

Table 1. Framework for Public Benefits. (continued)

Values And Objectives    V	Actions  ====>	Minimum Service Standards	Rate Stability	Consumer Protection	Stranded Costs; Fair Treat- ment	Renewable Energy	Pollution Reduction	<i>Customer Education</i>
<b>ECONOMIC PROGRESS</b>								
Economic Efficiency			X		X			X
Industrial Competitiveness			X			X	X	
Economic Development			X			X	X	
Customer Choice	X	X	X			X		X
<b>SOCIAL EQUITY</b>								
Equitable Sharing of Costs and Benefits	X			X	X			
Public Participation				X	X			X
Fair Trade Safeguards			X	X				X
Protection of Human Welfare	X	X	X	X			X	X
<b>ENVIRONMENTAL STEWARDSHIP</b>								
Clean Electricity Generation and Delivery					X	X	X	X
Regional Environmental Quality						X	X	

## **Conclusions about system and public benefits in Iowa**

Staff compared the Tonn framework to Iowa's statutes and the Board's inquiry into electric restructuring. Staff believes that all of the public policy issues identified in the framework are addressed by current Iowa statutes, and/or by one of the staff teams assigned to the Action Plan in the Notice of Inquiry. Many public policy issues are within the purview of other teams, but several public policy actions have either been assigned specifically to this team (the Public Benefits Team) or deserve some additional attention in this report.

Staff believes issues that may need additional consideration include: (1) research and development (R&D); (2) demand-side management (DSM); (3) development of renewable electricity resources; and (4) tracking and monitoring of system effects. These public benefits issues will be examined in detail later in this report. At this point, staff examines mechanisms for continuing public policy goals, with special attention to funding public benefits.

## **MECHANISMS FOR PUBLIC POLICY GOALS**

The Tonn study and other reports typically divide the methods that may achieve societal goals into market mechanisms or government actions. One implication is that policymakers wishing to secure public benefits must choose either a "hands off" approach or design policies to micromanage for specific outcomes.

However, there is an alternative to either laissez faire market development or intensive government intervention. The Tonn study and other reports mention the concept of "portfolio standards" as a way of achieving societal purposes. One of the first references to portfolios was by Hamrin, et. al. who define "portfolio management" as "the aggregation and management of a diverse portfolio of supply (and demand-reduction) resources which will act as a hedge against various risks that may affect

specific resources ...” (Hamrin, et. al., p. 157). Another explanation of portfolio standards is provided by Brockway and Sherman, as follows:

One specific form of requirement that firms take action to provide the desired benefits is called the “portfolio requirement.” The term typically refers to a requirement that those firms responsible for selecting the types of power resources for the system include in their “portfolio” of resource types a certain minimum level of resources from renewable fuels or energy efficient sources. Sometimes the term is more loosely applied to the more general concept of requiring a specific action by a firm that would not be expected if the firm made its decisions purely on the basis of market considerations. (Brockway and Sherman, p. 7)

In the past, some states used detailed planning processes, such as integrated resource planning for determining the best or optimum levels of public goods such as energy efficiency. Competitive generation markets may preclude integrated resource planning. However, portfolio standards might be used to secure a minimum commitment to a variety of electricity resources, with the market being left to work out the optimal level.

Staff’s review of Iowa statutes suggests that in the past the state has determined that certain public goods may not be achieved without special attention. Energy efficiency is emphasized as a method of improving the state’s economy. Environmental impacts of energy use are to be considered in evaluating energy options. Renewable resources are given special consideration through several programs. Planning for future energy needs is emphasized through requirements for forecasts, evaluations of electric fuel procurement, review of power plant siting applications, and review of energy efficiency plans.

If a restructured electricity system is developed in Iowa, some of the detailed statutory requirements may no longer be viable. Some market mechanisms may develop to provide the public benefits that have been delivered in the past by integrated electric utility systems. Where the market may not work, the public goods provided under past

policies may be continued by translating the goals and statutes into specific statutory mandates or portfolio requirements.

## **FUNDING PUBLIC BENEFITS**

### **A Summary of State Survey Findings**

Assuming policymakers wish Iowa utilities to maintain their key roles in implementing the state's energy efficiency goal by providing public purpose programs, future legislative or policy changes could be necessary. Thus, the public benefits team decided to contact other states, further along the restructuring path than Iowa, to determine how they plan to maintain and fund public purpose programs under retail choice.

The team developed a telephone survey to ascertain ways other states plan to fund and maintain public purpose programs in a restructured electric industry. Thirteen states were identified that had taken some action to initiate electric restructuring. The team contacted the utility commission in each of the thirteen states to determine its policies and actions on public purpose program funding. The table on the next page briefly summarizes various state policies and actions. Additional detail is contained in Appendix A.

**Table 2. SURVEY OF SELECTED STATES' PUBLIC BENEFITS FUNDING**

State	Public Purpose Programs	Funding Mechanisms via Utility Rate Structures	Identified on Bill?	Possible to Bypass?
California	EE, RE, LI	per kWh charge by utility	Yes	no
Conn.	Numerous	Non-univer. per kWh char.	Unknown	Unknown
Delaware	EE, RE, & LI	proposed wires charge	Unknown	no
Illinois	EE, LI, Envir.	Surcharges & base rates	yes & no	no
Maine	EE, RE, & LI	30% portfolio in generation	Unknown	Unknown
Mass.	EE & RE	universal per kWh charge	Probably	no
Montana	EE, LI, & RE	2.4% of revs. go into fund	Yes	no
New Ham.	LI	Universal, 1.5 mill / kWh	Yes	no
New York	EE, RE, & LI	Universal, 1 mill / kWh	No	Not likely
Ohio	US & Weath.	universal per kWh charge	Yes	no
Oklahoma	Details will not be known until 2001 or 2002			
Penn.	Various LI	Univer. res. per kWh charge	Unknown	no
Rhode Is.	EE & RE	universal, 2.3 mills / kWh	Yes	no

KEY: EE = Energy Efficiency; Envir. = Environmental protection;  
 RE = Renewable energy; LI = Low-Income programs;  
 US = Universal Service; Weath. = Weatherization programs

There appears to be general agreement among other states as to what constitutes public purpose program spending. Representatives from the various states the team contacted consistently grouped energy efficiency, renewable energy, environmental, low-income, and weatherization programs under a public purpose program umbrella. However, Maine and Connecticut deviate from this general grouping by including additional categories such as: funding for displaced utility workers, funds to offset tax losses, and funding the disposal of spent nuclear fuel.

The states also vary on how they view program funding after restructuring. New Hampshire, Pennsylvania, Ohio, and Rhode Island have made efforts to scale back funding and rate-recovery for energy efficiency programs. These states believe energy efficiency can eventually survive as “market transformation programs.” The states have formed working groups, which include various stakeholders, to redesign the programs

so they can eventually survive without direct utility funding. So far, few details have emerged to reveal the likelihood this “market transformation” will succeed.

Massachusetts, Montana, New Hampshire, New York, Pennsylvania, Ohio, and Rhode Island are making efforts to insure the rate impact of public purpose programs is identical among utilities and/or customer classes. For example, New Hampshire’s 1.5 mill per kWh low-income program charge will apply evenly across all utilities and all customer classes. A flat charge is also the case in Rhode Island where a 2.3 mills per kWh charge for energy efficiency and renewable energy programs appeared on all bills starting in July 1997. So far, few customers in Rhode Island have complained. Of the seven states that are planning flat rate impacts for public purpose programs, only New York reported that the charge will not appear on customer bills.

Other states, such as California, do not appear to be moving towards equality in rate treatment of public purpose programs. In California, the Public Purpose program charge is set by each utility. Existing rates were unbundled, resulting in a per kWh charge to fund energy efficiency, renewables, and low-income programs. According to a California PUC staff member, the charges are similar for all distribution companies, but not the same. As an example, the Public Purpose program charge for Pacific Gas and Electric is 4.0 mills per kWh for all kilowatts sold, regardless of customer class. The charge for San Diego Gas and Electric is 3.9 mills per kWh for the residential class.

Most states seem to agree the charges are not bypassable. The charges are attached to the distribution function of the utility, and would be collectable as long as a customer remains connected to the distribution system. Thus, even though a customer may purchase generation from an alternative supplier, charges for public purpose programs would apply. The exception would be for customers who self-generate. Presumably self-generated power which was not interconnected with a utility system would not flow

through a utility's distribution system. Therefore, it would not be subject to charges for public purpose programs.

### **Sources of funding for public policy objectives**

Funding for energy efficiency could come from several sources, including the general fund, taxes on generation suppliers or nonbypassable distribution charges, as described above. However, funding provided from the state's general fund could be viewed as severing electricity and natural gas public purpose programs from the utility system. The link would be broken between energy use and paying for the public purpose programs intended to deal with the effects of energy use.

Taxing generation suppliers might be another way to fund public purpose programs. However, taxes on generation suppliers might be somewhat difficult to recover from entities in other states, and might be a barrier to market entry.

A nonbypassable charge implemented through delivery service providers may be one of the most practical sources of funding for energy efficiency.<sup>1</sup> Eto and Goldman in their report Ratepayer-Funded Energy-Efficiency Programs in a Restructured Electricity Industry: Issues and Options for Regulators and Legislators suggest such a charge is consistent with new institutional relationships because: (1) all ratepayers contribute equitably to programs that are in the public interest because the charge is nonbypassable; and (2) utilities are not competitively disadvantaged compared to new market entrants. (Eto and Goldman, p. 20)

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<sup>1</sup> The DNR, ISEED and Izaak Walton League all stated support for such a funding mechanism in their comments on the draft report. See Appendix B.

### Scope of the charge; all utilities or only rate-regulated?

The question of whether municipal utilities and electric cooperatives in Iowa should be included may depend on the policy objective. Eto and Goldman suggest if the intent is to preserve funding for existing energy-efficiency activities, the charge should affect only customers currently funding those activities. If the intent is to create a level playing field so that all customers pay for programs with broad societal benefits, then all customers in a state should be considered. (Eto and Goldman, p. 20)

### Flat charges or allocation of charges?

The discussion of other states' public purpose charges suggests that some states have moved to a flat charge per kWh for all electricity customers in the state. There is an alternative to a flat per kWh charge for public purpose programs. Public benefit charges could be designed to use existing or revised rate allocation mechanisms. The charge could be a volumetric charge based on energy use, with additional refinements to avoid distorting prices that are based on existing tariffs. The volumetric approach could be refined by using the per-kWh charge to establish a revenue requirement and then allocating the revenue requirement based on current ratemaking practices.

### **Funding for Public Purpose Programs in Iowa**

The charges for alternative energy will increase in future years as utilities' contracted projects become fully operational, fulfilling their share of the state goal of 105 MW. However, once the projects are fully operational, the rate impacts of alternative energy projects (AEPs) among the various utilities should be similar, to the extent the utilities' contracts for AEP capacity are similar. The rate impacts for energy efficiency programs will decrease further, through about 2001, as past amortized costs are fully recovered. At that point, a mechanism will remain to recover the costs of contemporaneous or ongoing spending. Because of past policies, the current rate impacts for ongoing spending vary among both utilities and customer classes. Although new legislation

was passed in 1996, it remains unclear whether rate impacts for ongoing spending will continue to vary in the future. The table below shows current rate impacts, per kWh, for ongoing energy efficiency spending:

**Table 3. Energy Efficiency Cost Recovery Factors/kWh as of August 1998.**

Electric Utility by Region	Residential	Commercial	Industrial
Alliant (North & SE)	\$0.0022	\$0.0016	\$0.0007
Alliant (South)	\$0.0022	\$0.0016	\$0.0007
Alliant (Interstate)	\$0.00451	\$0.00578	\$0.00076
MidAmerican (all)	\$0.00121	\$0.00083	\$0.00083

In some cases, the charges for ongoing spending may vary enough between utilities, regions, or rate classes to be problematic. For example, commercial customers in Alliant’s former Interstate Power region pay nearly three and one-half times the amount for ongoing energy efficiency programs as customers in Alliant’s Northern region. If the charges are disclosed on customer bills in the future, the close proximity of the two regions could invite customer comparisons of the charges, similar to comparisons customers may make about generation costs or rates in general.

**Public Purpose Funding and Disclosure of Costs**

The consensus among most states is that public purpose programs will be funded by one or more tariff riders attached to the delivery service provider. The tariff riders produce a kWh charge that may or may not appear on customer bills after restructuring. Most states planning to unbundle customer bills appear to be moving towards disclosing the public purpose program costs on bills. California, for example, currently identifies a single “public purpose programs” charge on customer bills which includes amounts for energy efficiency, alternative energy, and low-income programs.

Disclosure of various electricity costs is suggested by various studies and advocates as important to the implementation of competitive electricity generation supply. Various

states require full disclosure of all utility costs, even for customers who do not choose generation service from alternative generation suppliers. The reason for full disclosure is that customers must know what their charges are in order to make comparisons among suppliers.

In years past, Iowa law prevented energy efficiency costs from being disclosed on customer bills. However, IOWA CODE section 476.6(19)"e" now allows line-item disclosure of energy efficiency costs on customer bills if approval is granted by the Board. Nothing in Iowa law or the administrative rules prevents alternative energy costs from being shown on customer bills. Thus, a line item funding mechanism for public purpose programs could presumably be implemented in Iowa without legislative or rule changes.

## **RESEARCH AND DEVELOPMENT**

As competition unfolds in the electric industry, the level and focus of research and development is changing. Since 1992, the trend has been decreased spending on R&D by utilities globally, nationally, and in Iowa. (See Table 4 on page 25). There is concern that research and development in areas requiring a long-term commitment which would benefit the industry as a whole will decrease as competition in the industry increases. This is especially true for R&D related to areas of power generation during the transition from a monopoly environment to a competitive environment.

Blumstein and Wiel define public interest R&D as: R&D that is not adequately provided by the competitive market since some or all of its benefits are widely distributed and cannot be captured by individual companies (1997). Examples of public interest R&D include: energy R&D, combustion science, and increasing the efficiency of heating and cooling ducts.

While this type of R&D benefits society, it may not give a utility increased profits or a competitive advantage in the market. Thus, there is little incentive to collaborate with

other utilities or alternative generation suppliers to do public interest R&D. This incentive is further decreased when the market is competitive. First, utilities need to find ways to cut costs to remain competitive and public interest R&D is one of the first areas to cut. Second, utilities will be less willing to collaborate on R&D that will benefit companies other than theirs, especially if it will benefit utilities or suppliers that did not fund any of the R&D.

### **Global and National Trends**

By observing what is happening not only in the United States but also globally, one can make a good prediction on how competitive entry into the electric market will affect R&D expenditures. One trend is an overall reduction in R&D spending. Electric utilities in the United States already spend far less on R&D than the US average for industrial firms. Only 0.3 percent of total sales goes to R&D in the electric industry while the US industrial average is 3.1 percent of sales.

Considering only energy R&D, there was a real decline of support by the private sector of 34 percent between the years of 1991 and 1994 (Dooley 1997). Other countries also have low R&D expenditures in the electric industry and countries with electric restructuring are finding that R&D expenditures are continuing to decline.

In the United Kingdom, 0.3%-0.1 percent of sales for energy R&D is typical for most of the deregulated utilities. In Spain, utilities were spending 0.85 percent of sales on R&D in 1997; however, it is expected to fall to 0.35 percent soon after deregulation (Dooley 1997). Also, utilities in Italy and the Netherlands have announced there will be no new large-scale technology demonstration program plans and they will terminate all ongoing demonstration projects for advanced power system technologies such as grid-connected PV systems that cannot be justified on purely economic grounds (Dooley 1997).

A good example from the US is the Electric Power Research Institute (EPRI). EPRI has concentrated on innovations in fossil fuel technologies. However, in a competitive environment, electric utilities are less willing to devote funds toward collective, long-term, and more risky R&D. Thus, EPRI members that are located in states with electric restructuring are providing less funding than they were in a monopoly environment (Brockway and Sherman, p. 29). This has led to a 20 percent reduction in private funding from 1992 to 1996 (Dooley 1997).

R&D expenditures have also shifted away from funding certain projects. One of Sweden's largest utilities used to spend 70 percent of its R&D expenditures on long-term R&D, such as alternative energy R&D, now only 30 percent of its expenditures are spent on long-term R&D (Dooley 1997). This is not an isolated instance. There is evidence of shifting from long-term to short-term R&D expenditures in the US. It should be noted that some of the decrease in private funding has come as a result of fewer public dollars being put towards R&D. However, lower government funding should not be seen as the driving force for decreased private R&D funding.

## R&D Expenditures in Iowa

What is happening globally and domestically also appears to be occurring in Iowa.

Data for the following tables are from FERC Form 1 for the years 1992 and 1997.

Table 4 shows R&D expenditures by Iowa electric utilities for the years 1992 and 1997.

**Table 4**

<b>Iowa R&amp;D Expenditures for 1992 and 1997</b>			
<b>Company</b>	<b>1992 Total Expenditures</b>	<b>1997 Total Expenditures</b>	<b>Change</b>
Iowa-Illinois Gas & Electric Co.	1,381,434		
Midwest Power Systems Inc.	2,455,479		
MidAmerican Energy Co.		2,604,833	
<b>Total Area</b>	<b>\$3,836,913</b>	<b>\$2,604,833</b>	<b>-32%</b>
Interstate Power Co.	\$1,012,150	\$645,313	-36%
Iowa Electric Light & Power Co.	1,159,451		
Iowa Southern Utilities Co.	500,537		
IES Utilities Inc.		1,275,174	
<b>Total Area</b>	<b>\$1,659,988</b>	<b>\$1,275,174</b>	<b>-23%</b>
<b>State Total</b>	<b>\$6,509,051</b>	<b>\$4,525,320</b>	<b>-30%</b>

From 1992 to 1997, R&D funding has decreased \$1,983,731 or 30 percent. Of the reduction in R&D expenditures, \$1,208,215 has been from a decrease in EPRI funding. Membership in EPRI is voluntary. Dues consist of a set fee, plus the utility can fund various projects that they choose. EPRI uses pricing metrics which are intended to reflect the basis by which members derive value from their participation. Table 5 shows the R&D expenditures to EPRI from 1992 and 1997.

**Table 5**

<b>Funding to EPRI</b>			
<b>Company</b>	<b>1992</b>	<b>1997</b>	<b>% Change</b>
Iowa-Illinois Gas & Electric Co.	1,029,284		
Midwest Power Systems Inc.	1,983,840		
MidAmerican Energy Co.		2,005,175	
<b>Total Area</b>	<b>\$3,013,124</b>	<b>\$2,005,175</b>	<b>-33%</b>
<b>Interstate Power Co.</b>			
	\$889,362	\$537,100	-40%
<b>Iowa Electric Light &amp; Power Co.</b>			
	982,490		
Iowa Southern Utilities Co.	0		
IES Utilities Inc.		1,134,486	
<b>Total Area</b>	<b>\$982,490</b>	<b>\$1,134,486</b>	<b>15%</b>
<b>State Total</b>			
	<b>\$4,884,976</b>	<b>\$3,676,761</b>	<b>-24.7%</b>

MidAmerican and Interstate Power have reduced funding to EPRI by 33 percent and 40 percent, respectively, while IES has increased its funding to EPRI by 15 percent.

As previously mentioned, in 1994 the national average for R&D expenditures was 0.3 percent of sales. In Iowa, R&D expenditures have fallen from 0.4 percent of total sales in 1992 to 0.23 percent of total sales in 1997. Table 6 shows the percentage of R&D expenditures to total electric sales.

Table 6

Percentage of R&D to Total Electric Sales (\$000)						
Company	1992			1997		
	R&D	Total Sales	R&D as a % of Total Sales	R&D	Total Sales	R&D as a % of Total Sales
Iowa-Illinois Gas & Electric Co.	1,381	302,004	0.46%			
Midwest Power Systems Inc.	2,455	620,196	0.40%			
MidAmerican Energy Co.				2,605	1,100,969	0.24%
Total Area	\$3,836	\$922,200	0.42%	\$2,605	\$1,100,969	0.24%
Interstate Power Co.	\$1,012	\$237,495	0.43%	\$645	\$268,653	0.24%
Iowa Electric Light & Power Co.	1,159	344,252				
Iowa Southern Utilities Co.	501	115,091				
IES Utilities Inc.				1,275	599,334	
Total Area	\$1,660	\$459,343	0.36%	\$1,275	\$599,334	0.21%
State Total	\$6,508	\$1,619,038	0.40%	\$4,525	\$1,968,956	0.23%

The above tables demonstrate that national trends in R&D spending are also occurring in Iowa. To what extent the reduction in R&D will continue remains to be seen. Monitoring of R&D expenditures in Iowa should continue so the effect of competition on R&D can be further investigated.

**State Mandated Expenditures**

While investment in R&D by Iowa Utilities is decreasing, various state mandates ensure it will not disappear altogether. IOWA CODE § 476.10A provides for the funding of the Iowa Energy Center and the Center for Global and Regional Environmental Research (CGRER). This law requires the Iowa Utilities Board to collect one tenth of one percent of the total gross operating revenues during the last calendar year derived from their intrastate public utility operations.

Of the funds collected, 85 percent goes to the Iowa Energy Center and 15 percent goes to CGRER. The types of research the Iowa Energy Center has sponsored in the past year includes: research on HVAC exhaust systems, high-efficiency electric clothes dryer, the potential for biomass production and conversion in Iowa, and a wind energy assessment for Iowa (Iowa Energy Center 1997).

Much of the research sponsored by the Iowa Energy Center has a large focus on Iowa. However, there is a great deal of R&D that requires a regional or national focus. Examples are large-scale energy R&D and regional and national environmental research. These are not issues that a state program can adequately address.

While the R&D expenditures by Iowa electric companies have decreased substantially over the past few years, much of the decrease has occurred on large-scale collaborative projects sponsored by EPRI. There is little to suggest that R&D spending on a more localized level is dramatically decreasing. However, this does not mean that localized R&D spending should not be monitored. As electric restructuring continues, R&D spending may be reduced at a more local level. If this does occur, the state may determine that further intervention is necessary.

Some states are taking the lead in developing state mandated R&D. These states include California and Wisconsin. Some states with these types of plans will be more successful than other states due to their size and funds available. For example, California covers a large area that makes up its own region. California also has a large variety of generation sources available.

### **Other States' Initiatives**

Other states have voiced concerns about the decreased level of spending on public benefit R&D and are implementing programs to address the problem. Below is a brief description of the R&D initiatives in Wisconsin and California.

## **Wisconsin**

Wisconsin Electric has been decreasing the amount it spends on R&D since 1992. In 1992, Wisconsin Electric spent \$9 million on R&D which has decreased to \$7 million in 1996. Of the total dollars spent on R&D, 75.3 percent was spent on public purpose R&D while 67.7 percent was spent on public interest in 1996 (Schilling and Scheer, p. 22). The Wisconsin PSC is concerned that utilities will spend less on public interest programs in a competitive environment. The PSC stated,

Within the Electric Power Research Institute (EPRI), utilities are making funding allocation choices that focus more heavily on R&D that provided high near-term leverage in the marketplace. Such an emphasis could eventually lead to environmental problems...This is especially a concern where the implications of the research have the potential to make energy producers' costs go up, or where public release of the results will provide an advantage to the researcher's competitors.

On December 22, 1997, the Wisconsin PSC issued an order of Enunciation of Policy and Principles in Docket 05-BU-100. The PSC identified two goals in terms of research: (1) renewable energy and (2) environmental research and the PSC identified initial funding needs.

The scope of the energy effort includes:

- Coordination of research on the environmental costs and benefits of renewable energy resources;
- Continued support for the Renewable Energy Assistance Program (REAP), which provides grant support for innovative and developing renewable technologies;
- Research for wind, biomass, and solar energy during a limited transition period; and
- Promotion of customer-based renewable technologies (dollars for this component are included in the energy efficiency funding level).

The scope of the environmental research work includes studying impacts of the electric industry which:

- Are the type now funded and performed by utilities;
- Are a direct concern to people and resources of Wisconsin;

- Are not currently funded or available elsewhere;
- Are not handled well by the marketplace; and
- Are not addressed by remaining regulation.

The PSC determined initial funding needs include \$5 million per year to promote renewable energy sources and \$2 million per year for environmental research. The funding for the research should be borne by electric and natural gas energy providers and the responsibility will come with the right to sell energy in the state and will be non-bypassable. Funding will be determined on the basis of Btu equivalency at the customer meter.

### **California**

Decreases in R&D spending were even more severe in California. In 1992, Pacific Gas and Electric spent \$66 million on R&D. By 1996 this amount had decreased to \$21 million. Of total R&D expenditures, 62 percent or \$29.5 million went towards public purpose R&D in 1992 while only 35 percent or \$6.3 million went towards public purpose R&D in 1996. The major areas of the spending decreases were related to generation. (Schilling and Scheer, pp. 19-20).

Legislation in California requires the California Energy Commission to fund certain "public interest" R&D efforts that will "advance science or technology ... not adequately provided by competitive and regulated markets." The California PUC is given responsibilities for other specified R&D activities. The two commissions are to work together to address overlap.

The Energy Commission's R&D program is the Public Interest Energy Research (PIER) program. The mission of the program is as follows:

The mission of the PIER program is to conduct public interest energy research that seeks to improve the quality of life for California's citizens by providing environmentally sound, safe, reliable, and affordable energy services and products. PIER includes the full range of research, development, and demonstration activities that will advance

science or technology not adequately provided by competitive and regulated markets.

The objectives of the PIER program are:

1. Develop and implement a robust public interest RD&D (Research, Development and Demonstration) portfolio of projects that addresses California's energy needs and initially focuses on end-use energy efficiency, environmentally preferred advanced generation, renewable energy technologies, and environmental issues.
2. Create and maintain a public interest RD&D program that balances risks, timeframes, and public benefits.
3. Create a public interest RD&D knowledge base and disseminate information to make informed decisions concerning energy technologies and services.
4. Ensure that the public interest RD&D program is connected to the market.
5. Ensure public input and accountability for the public interest RD&D program.
6. Ensure the efficient administration and stewardship of public interest RD&D funds.
7. Provide leadership and coherence for California's public interest RD&D efforts.

### **Research and Development Conclusion and Considerations**

Funding for public interest R&D is currently declining with the restructuring of the electric industry and is expected to continue to decline in the future. Evidence of this is found globally, nationally, and locally. The emphasis of R&D is also shifting from collaborative long-term R&D to short-term R&D that would give the utility a strategic advantage in a competitive market.

Some states have initiated state R&D programs that would provide for public interest R&D in the areas of energy and environmental research. Both Wisconsin and California have concerns about the reduction of public interest R&D in a competitive environment. These states are currently addressing public interest R&D as it affects their states.

This report shows an overall decline in the investment of collaborative long-term R&D which the state of Iowa may wish to address. The following are potential ways to address the problem of decreasing R&D expenditures in Iowa:

1. Continue state-level research and development programs;

2. Identify local R&D needs that are not being addressed and would not be addressed in a competitive environment;
3. Communicate with other states and federal agencies about their local R&D initiatives to determine what might work in Iowa; and
4. Work with other states and federal agencies on addressing national and regional R&D issues through organizations such as NARUC.

## **DEMAND-SIDE MANAGEMENT (DSM)**

In recent years, the Iowa legislature committed the state to a path of acquiring a portion of its electrical energy from energy efficiency and renewable resources.

In 1989, the Iowa Utilities Board began its energy efficiency initiative, which resulted in passage of landmark legislation in 1990, launching utilities on the path of providing major energy efficiency assistance to their customers. Nearly a decade later demand-side management programs conducted under the energy efficiency authority of the Iowa Utilities Board by investor-owned utilities have saved about 450 megawatts of electric generating capacity and more than 450,000 megawatt-hours annually of electric energy. However, utility energy efficiency efforts in Iowa are confronting the possibility of significant changes. (IUB Report, December 1997).

### **Load Management Capacity Issues**

One issue may be applicable across all future scenarios. The present practice of combining load management and energy efficiency programs into one DSM package, as rate-regulated utilities are permitted to do, may have to be modified or discontinued.

The capacity savings of the load management programs have previously provided much of the dollar savings used to justify the programs. Load management has been essential to utilities dealing with peak load growth, and has helped achieve high benefit-cost ratios for utilities' energy efficiency plans.

If load management is severed from energy efficiency, the statewide spending on energy efficiency programs and the capacity savings from energy efficiency will appear to decline. However, this will be a reclassification issue, because the previous energy efficiency plans have actually included substantial load management programs.

If utility restructuring results in a distinct separation of electric generation suppliers from delivery service providers, the rationale for lumping load management and energy efficiency together becomes questionable. Under restructuring, load management intended to reduce peak load costs for all customers, may become much more of a rate or service option, to be selected by customers who choose to reduce their peak electricity use in return for some form of compensation. Moreover, the load management options can be offered or packaged with electricity rate and service options by many different market participants.

There are some reasons policymakers might continue to require load management to be combined with energy efficiency and offered by delivery service providers. Policymakers might decide that the capacity created by load management should be given a value in dollars and ownership rights should be assigned to the entity which created or creates load management capacity. The ownership rights could be retained by the delivery service provider, or assigned to an incumbent generation provider.

Policymakers might conclude market driven generation suppliers may abandon existing load management programs, leading to exorbitantly high peak capacity prices or risking loss of load situations. Policymakers might also decide that if ownership of the capacity created by load management resides with delivery service providers, only delivery service providers should be allowed to control customers' electricity using equipment. A policy decision to vest load control in the delivery service provider would make most sense for direct load control programs, which require dedicated load control devices and load control systems which might resemble a natural monopoly service.

Policymakers may simply accept that system capacity benefits cannot be retained for the customers of the utility which is being restructured, and must allow capacity savings to flow to the incumbent generation supplier and to the entire interconnected utility system. Such a treatment of load management capacity savings would be consistent with a view that utility capacity in general cannot be reserved for the customers located in the distribution system of the restructured utility.

However, it is not correct to say that capacity created by either energy efficiency or load management has no value. The need for new sources of electricity generation is reduced every time a customer installs an efficient lighting system or reduces peak energy use in response to incentives. The capacity created by such demand-side management reflects back through the entire system, delays the need for new sources of electricity, and may put competitive pressure on the prices of electrical generation supply. If the capacity created by demand-side management is less costly than new sources of supply, all utility customers, even those who do not participate directly in programs, should benefit.

### **Mechanisms for maintaining energy efficiency**

A wide variety of mechanisms may be used to continue the development of energy efficiency programs in Iowa. These mechanisms may consist of:

1. Market mechanisms, such as competitive electric service providers (CESP's).
2. Market information programs, such as the Home Energy Rating System which has been developed in Iowa and other states.
3. Codes and standards which require builders and manufacturers to produce products with a certain minimum level of efficiency. Iowa has an energy code for both commercial and residential structures.

4. Public policies directed at the utility system, including portfolio requirements, mandates for implementation of programs by delivery service providers, or funding for public purpose energy efficiency collected by nonbypassable charges to utility customers or suppliers.

A brief discussion of the final set of mechanisms is appropriate. Portfolio requirements have already been discussed in the section on Mechanisms for Public Policy Goals. A few states have adopted portfolio standards for renewable energy, most notably Maine, where over 30 percent of new generation must be from renewable resources. So far, no state has adopted portfolio standards which include energy efficiency, although a proposal has been made in New Jersey to require all suppliers to deliver an amount of energy efficiency proportional to their energy sales. (Nichols, 1998).

Mandates for energy efficiency programs could be instituted by statute as part of service requirements for delivery service providers. Iowa statutes in the past have specifically determined that certain energy efficiency programs and certain levels of spending were desirable and have required utilities to “consider” such programs. A more flexible mechanism has recently been enacted, requiring utilities to assess the potential opportunities for energy efficiency and file energy efficiency plans which are reviewed by the Iowa Utilities Board.

### **Levels of implementation for energy efficiency**

Short-term funding might seek to maintain cost-effective energy efficiency programs through a transition period. Long-term funding and direction of programs could be determined through a comprehensive review and planning process, which would examine past results, estimates of achievable potential for cost-effective energy efficiency, implementation methods, and the level of funding needed to achieve policy objectives.

## **Non-monetary policies to enhance energy efficiency**

There are a number of policy decisions which can impact energy efficiency that do not involve direct funding of energy efficiency programs. If delivery service providers are made responsible for implementing energy efficiency programs, several policy issues may arise. According to Eto and Goldman, these “non-monetary policy issues might include:

- (1) Ratemaking incentives for regulated transmission and distribution utility companies (assuming the delivery service providers are responsible for DSM).

If regulated delivery service providers are regulated by price cap performance based ratemaking (PBR), an incentive is created to increase sales, which runs counter to promotion of energy efficiency by the delivery service provider. A revenue cap approach to PBR could eliminate the sales incentive but retain the cost-minimizing principles in PBR.

- (2) Access to utility information on customer energy-use patterns and market potential for energy efficiency.

Policymakers might consider guidelines which address access to customer information and ratepayer-funded market research that would be useful to nonutility providers of energy efficiency services.

- (3) Rules governing participation by utility affiliates in competitive delivery of unregulated energy-efficiency services.

Regulators might consider specifying which program activities are still appropriate for regulated utilities and establish ground rules under which unregulated affiliates of a

local utility can compete in energy-efficiency services markets. (Eto and Goldman, 1998).

Eto and Goldman point out that “

[I]f the energy-efficiency policy objective moves from resource acquisition toward creation of a vibrant, private-sector energy-efficiency services industry, market participants will have great difficulty perceiving that a regulated distribution utility can dispense funds in a competitively neutral manner if the utility has a retail energy service affiliate that operates in the local service territory.”

(Eto and Goldman, p. 51)

In Iowa, bitter disputes have arisen between distributors or contractors providing HVAC equipment and services, and utilities that operate affiliates engaged in similar businesses. These disputes resulted in extensive legislation in 1996 governing the use of the utility company’s logo, equipment, and personnel. If regulated delivery service providers are charged with implementing energy efficiency and are permitted to fund affiliated energy-service marketers, some form of regulation of affiliate/parent transactions may be needed to overcome the appearance of self-dealing.

### **Administration of Energy Efficiency**

Eto and Goldman describe three generic options for administration of utility-funded energy-efficiency programs.

(1) Continued utility administration with regulatory oversight.

In this option the delivery service provider would continue to plan and implement programs and recover costs, with utility commission approval. Collaborative processes could be used for the planning, but the utility would still be the party responsible for results. This approach has been successful with utilities which perceive some strategic

advantage to energy efficiency. A delivery service provider will have name recognition, an aggregated base of potential participants, access to customer information, and a billing system. However, if a utility sees no strategic advantage in energy efficiency, there will be many ways it can undermine implementation of programs and little regulators can do to correct the problem.

(2) Administration by an existing state agency.

In this option, an existing state agency would administer energy efficiency programs. The agency would receive funds collected by the delivery service provider and be responsible for achieving results. This responsibility could include directly planning, designing, implementing, and evaluating programs, or it could be limited to competitive solicitation of other entities to accomplish those tasks, or both. If competitive solicitation is used, other agencies, delivery service providers, competitive electric service providers, and other entities could bid for various tasks or packages of tasks. In Iowa, agencies with experience implementing or contracting for DSM or DSM research include:

- (a) The Energy Bureau of the Iowa Department of Natural Resources, which has been nationally recognized for its successful administration of energy efficiency programs for public facilities.<sup>2</sup>
- (b) The Iowa Energy Center, funded through a charge on all energy utilities in Iowa, which is responsible for public sector energy research in Iowa.
- (c) The Center for Energy and Environmental Education, located at the University of Northern Iowa.

Statewide administration might lower costs, reduce conflicts of interest, provide for more competition in the implementation of programs, and have more public

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<sup>2</sup> In its comments on the draft report, DNR welcomed the opportunity to administer and develop energy efficiency and renewable energy programs. See Appendix B.

accountability for use of the funds. However, few state agencies nationwide have the experience of administering statewide the full range of programs conducted by utilities.

Competitive acquisition of services can be a big problem, because state procurement practices are often rigid, and energy efficiency products and services are often difficult to define. State budgeting and civil service requirements may make changes in objectives or in-house technical staffing difficult to achieve quickly.

- (3) Administration by an existing or new statewide or regional nonprofit institution with a board of directors.

In this option, a new or existing state non-profit institution would carry out energy efficiency programs, with funding collected by delivery service providers. Non-profit nongovernment agencies have, in some states, built a good track record of implementing energy efficiency programs. The New York State Energy Research and Development Authority, the Wisconsin Energy Center, and the North Carolina Alternative Energy Corporation are examples of entities which have provided various energy efficiency services to their states. The organizational structure and mission of a non-profit could mesh well with energy efficiency, would not be viewed as having conflicts of interest, and would not be subject to many of the constraints imposed on state agencies.

However, creating a new entity requires a wide consensus among interested parties on the mission, objectives, dedicated long-term funding, organizational form, and oversight of public funds. The lead time and costs for startup could be significant.

## **RENEWABLE ENERGY**

IOWA CODE section 476.45 specifies that rate-regulated utilities must purchase electricity up to a predetermined amount of capacity, generated by Alternative Energy

Producers (AEPs). The legislative mandate for purchase of renewable electricity has a long history in Iowa. However, contracts for the mandated purchases (by rate-regulated utilities) of electricity produced by AEPs have only come to full fruition in the last few years. In fact, the bulk of AEP electricity purchases will not begin until the larger AEP facilities are completed in the next few years.

State-level requirements for renewable electricity purchases are similar to mechanisms which some states use for tailoring electric competition to meet societal goals, known as “portfolio standards.” Portfolio standards are only one of several strategies for advancing the development of renewable energy. Other mechanisms which could maintain development of renewable energy in a restructured electricity industry might include “feebates,” environmental dispatch, or establishment of “public purpose” charges which could directly fund development of renewable electricity. Non-monetary mechanisms are also possible to promote renewables, including: net billing, “green marketing,” and resource disclosure. The following sections will address these issues in detail.

### **Do renewables need special attention?**

Should any special effort be made to promote renewable electricity? Perhaps a restructured electricity market should be left alone (the *laissez faire* principle), with customers’ purchasing decisions determining whether renewables will thrive, or even survive.

In their report to the National Association of Regulatory Utility Commissioners, Hamrin et. al. provide a good description of the problems with *laissez faire* markets and public interest issues. The environment, diversity, long-term risks, and equity are easily left out of a *laissez faire* market and it is difficult to include them. Markets are good at allocating similar resources, can rid the system of inefficiencies through incremental improvements, and work well for short-term transactions. Markets handle externalities

and equity poorly and are not good at facilitating tradeoffs between the present and future. (Hamrin, p. viii-ix)

Market barriers and market failures may hinder renewables and energy efficiency at many points in the electricity system and may include:

- poor information to consumers
- diffuse environmental impacts which are not reflected in the cost of electricity
- economic benefits or incentives which are spread among several parties
- high up-front costs (even though operating costs are very low)
- few applications outside the electricity sector, limiting a secondary market
- substantial development risks

Hamrin, et al., explored the effects of electricity industry restructuring in the United Kingdom, Chile, and Norway, and found that none of the three countries “offer any successful models for either energy efficiency or new technology demonstration and commercialization within a market-based system.” This is not to say that energy efficiency and renewables cannot be fostered in parallel with a market structure. The United Kingdom has instituted a special subsidy program for renewables, and Chile is designing a program for non-conventional resources. (Hamrin, p. x-xi)

### **Mandated “feebates” or environmental dispatch**

Hamrin, et al., describe feebates as “a revenue neutral strategy (for the wholesale market) that places a pollution fee on electricity generated by more polluting technologies and gives rebates to electricity from cleaner technologies.” This mechanism is intended to be revenue neutral, and would encourage the use of resources which emit fewer pollutants than conventional electricity generation sources. Another strategy is called environmental dispatch, which Hamrin, et al., describe as using “a pollution index to adjust the bid prices and dispatch power at the pool level.”

The pollution index and environmental dispatch would not necessarily be revenue neutral. (Hamrin, p. 117)

Hamrin, et al., state “these strategies are compatible with a market-based system, affect all generation sources sold in the wholesale market, and internalize environmental costs in the short-term as well as the long-term market.” However, the “disadvantage of both of these strategies is the difficulty of agreeing on a set of specific pollution indices (environmental externality values).” (Hamrin, p. 118)

### **Renewable Portfolio Standard**

State mandates for renewables could be applied to the retail market through portfolio standards. A portfolio is the set of electricity resources which a generation supplier would use to meet electricity demand. A generation supplier might offer retail customers more than one portfolio, adjusting the mix of fuels and prices to satisfy customers’ particular desires. Renewable electricity technologies typically have high initial capital costs, but low fuel and operating costs, which make renewables look better over a long-term timeframe. Intervention by the government could be justified because, there is a “tendency of market driven systems to discount long-term costs/benefits.” (Hamrin, p. 118)

An advantage of portfolio standards is that several public interest factors could be incorporated in a standard. In addition to environmental considerations, long-term fuel diversity is a significant issue; price stability could be undermined by a tendency of market-driven generation suppliers to all pursue the same limited set of technologies. Another advantage of portfolio standards is they “allow states to directly express their environmental concerns and objectives.” Portfolio standards do not require quantification of pollutants which is needed to make pollution indices or feebates function. However, portfolio standards may not be as compatible with a market-based system as feebates or pollution indices. (Hamrin p. 118)

## **Non-monetary Mechanisms for Renewables: Net Billing, Green Marketing and Resource or Environmental Disclosure**

There are additional mechanisms which may help promote the development of renewable electricity generation in Iowa. Net billing is an AEP metering arrangement authorized by IOWA ADMIN. CODE 199-15.11(5), in which a single meter is used to process power flows in two directions. That is, when the AEP produces less electricity than it uses, the AEP draws electricity from the utility and the meter runs forward; when the AEP produces more electricity than it uses, the AEP transmits electricity to the utility and the meter runs backward. The meter reading at the end of the month determines whether a net purchase or sale has taken place. A positive meter reading reflects a net retail purchase from the utility, charged at the utility's tariffed retail rates. A negative meter reading reflects a net AEP sale to the utility, charged at the utility's AEP or PURPA Qualifying Facility buy-back rates. A potential issue facing policymakers is how net billing would be applied in a direct retail access environment, in which the AEP makes separate purchases of delivery service from its incumbent utility and generation service from competitive suppliers. This point was raised in a recent rulemaking on net billing (Docket No. RMU-97-12), in comments filed by IES Utilities (n/k/a Alliant). Alliant posed the question of whether competitive generation suppliers could be required to provide net billing.

Brockway and Sherman discuss "green marketing" in their report, Stranded Benefits in Electric Utility Restructuring. "Green marketing" refers to a variety of methods for promoting renewables by market-based methods. Generally, electricity customers are offered an optional guarantee that some or all of the electricity they buy comes from a renewable resource. In return, customers are asked to pay a premium rate for the renewable electricity. The exact definition of "green" electricity may vary widely; states may choose to define "green power" and regulate marketing, may leave the definition

and verification up to the market, or may require some form of third-party certification of marketing claims. (Brockway, p. 40).

Resource or environmental disclosure refers to information provided to retail electricity customers which describes the sources of the electricity which they receive and the environmental impacts of those sources, typically air emissions. Moskovitz, et al., assert that “giving consumers environmental information about their electricity is important from a societal perspective ...” “If electricity restructuring is to give retail customers an opportunity to make meaningful choices regarding the source or environmental nature of their electricity purchases, customers will need reliable ... information based on some sort of tracking and verification system.” (Moskovitz, p. 3).

The Report of the Customer Education Team discusses various aspects of environmental disclosure, including the possible need to coordinate with surrounding states. States in other regions have begun developing regional guidelines for environmental disclosure.

### **Public Purpose Funding for Renewables**

Renewable technologies may be cost-effective, especially if environmental costs are considered, but may face barriers that justify utility funding to overcome market imperfections. (Hamrin, p. 119). In the case of renewables, some of the primary market barriers are high first cost, perceptions of risk, and difficulties financing projects. Thus public purpose funding, such as the revolving loan fund, may be needed until such time as the market for renewables fully develops in Iowa.

### **TRACKING AND MONITORING OF SYSTEM EFFECTS**

Iowa statutes, administrative rules, and utility company practices currently provide for various forms of forecasting, planning, and tracking of electricity system effects.

Statutes and rules require electric and gas forecasts of system demand and energy use. Energy efficiency planning statutes and rules require proceedings to review energy efficiency plans, review spending and cost recovery, and evaluate the results of energy efficiency programs. Other statutes and rules provide for the consideration of fuel procurement and require detailed reviews of proposals for new power plants.

Reporting and monitoring by utilities presently support these various proceedings. Policymakers may have a continuing interest in tracking and understanding the new electricity system as it develops.

One reason for continued reporting is simply the overall importance of adequate and reliable electricity to peoples' lives and livelihoods. The results of the Iowa Electric Customer Survey, to be published in a forthcoming staff report, show that customers value reliability very highly, with only the cost of electricity eliciting more interest. A second consideration is the uncertainty of the ultimate outcome of the developing system. At this writing, no state has more than a year or two of experience with large scale restructuring of its electricity industry.

These considerations suggest the need for maintaining some data collection and evaluation in the event the electric industry in Iowa is restructured. Data should not be collected if it is not useful. However, some data collection will likely be needed to observe how the generation market responds to competition, how customers participate and perceive the changes, what new retail products and services emerge, and how well public benefits fare under the new structure. The market may well provide many of the public goods that regulation now secures, but this is something of an unknown.

Data collection and tracking should of course be designed to avoid burdensome requirements on fragile new market entrants or, for that matter, on existing entities which will be subject to competitive pressures. However, gathering timely information

about emerging system problems may be in the interests of both customers and competitive suppliers.

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**NOI-95-1**  
**Public Benefits Report**  
**APPENDIX A**

**State:** California  
**Respondent:** Doug Long  
**Phone Number:** (415) 703-2011  
**Date Called:** July 28, 1998

The Public Purpose program charge appearing on California customer's bills is based on rate structures in existence prior to opening the retail market. The factors are comparable, but differ from distribution company to distribution company.

**State:** Connecticut  
**Respondent:** Ginger Teubner, Consumer Service Program Developer  
**Phone Number:** (860) 827-2630  
**Date Called:** April 23, 1998

Section 18 of HB 5005 deals with Public Benefits. Some specifically identified benefits include: 1) payment program to offset tax losses, 2) hardship protection: electric service bill payment programs, funding and technical support for energy assistance, fuel bank and weatherization programs and services, 3) low income conservation programs, 4) displaced worker protection costs, 5) unfunded storage and disposal costs for spent nuclear fuel, and 6) decommissioning preparation. The bill has not yet been signed by the Governor, but approval is expected. A systems benefit charge will be determined by the PUC in a general and equitable manner to be imposed on all end use customers of each distribution company. The rate shall be applied equally to all customers of the same class based on allocation methods in effect on July 1, 1998. Customers on a special contract rate are exempt until the contract expires. Other sections of the bill address load management assessment (33) and renewable energy investment fund (44).

**State:** Delaware  
**Respondent:** Rick Latourette, Utility Analyst  
**Phone Number:** (302) 739-3227 Ext. 32  
**Date Called:** April 23, 1998

The Delaware Public Service Commission submitted proposed legislation to its legislature (HR 36 ---See LEAP Letter, Jan/Feb. 1998) but it has not been adopted or even sponsored by a legislator. While it is too early to tell about the funding source or status on the customer bill form, the PUC specified a wires charge (distribution component, thus non-bypassable unless you leave the system) to fund existing low income and conservation programs at current funding levels. The PUC has also considered a non-bypassable system benefits charge to finance energy efficiency investments and a renewable resource portfolio to promote development of renewable resources.

Del Marva Power, the largest electric utility in Delaware has their own legislative proposal, which is currently the only bill under consideration by the legislature.

**State:** Illinois  
**Respondent:** Eric Schlaf, Senior Economic Analyst  
**Phone Number:** (217) 782-2743  
**Date Called:** April 24, 1998

HB 362 calls for environmental, low-income and energy efficiency charges to be collected as a system benefit charge. These charges are actually in the customers rates as of January 1, 1998. A 5 cents per month SBC is assessed to all residential ratepayers, yielding \$5 million a year to increase use of renewable energy in Illinois. The utilities fund a \$3 million per year trust for demand side management which is administered by the Illinois Dept. of Commerce and Community Affairs. There is also a 40 cents per month surcharge on residential to provide low-income energy assistance. Some of the utilities identify the charges on customer bills, while others do "incorporate" (hide) the charge in bill. The charges are non-bypassable.

**State:** Maine

**Respondent:** Phil Lindley, Financial Analyst and Public Information Coordinator

**Phone Number:** (207) 287-1598

**Date Called:** April 27, 1998

Maine has identified low-income assistance, energy efficiency, and renewables as social programs which need to be maintained. Maine's SB 390 also calls for transitional benefits for utility employees who are laid off due to retail competition. The legislation has identified 30 to 40 rulemakings, projects, etc. for the PUC to address. Currently Maine has about 45 percent of its generation from renewables, including hydro. The legislation passed calls for the first renewable portfolio standard in the nation; the portfolio shall contain 30 percent renewables, with a possible trading of credits similar to the air emissions system established on a national level. Thus renewables will be funded inherently in the cost of generation. The cost of public benefit programs is currently buried in the customer's bills, but that could change. It's too early to tell all of the details. Check the Maine web page for restructuring updates.

**State:** Massachusetts

**Respondent:** Gene Fry, Economist

**Phone Number:** (617) 305-3654

**Date Called:** April 28, 1998

The Massachusetts market was opened March 1, 1998, with standard offer service providing a 10 percent rate reduction. Approving legislation established per kilowatt hour charges for energy efficiency activities, including but not limited to demand side management programs. The charge per kilowatt for 1998 is \$0.0033. The fee for development and promotion of renewable energy projects is \$0.00075 per kilowatt hour for 1998. A Renewable Energy Trust Fund has been established but very little funds have been dispersed because the fund has been challenged in court. Low-income customers are served on a special tariff rate, as has been done in the past. The discount ranges from 30 to 40 percent depending on the utility, with most running about 35 percent. The discount is taken off of all but fuel costs.

The charges established are not bypassable, unless the customer bypasses the distribution line. Mr. Fry was not sure if the charges appear on the customer's bill. The bills do, by law, separate distribution, transmission stranded cost recovery, and energy. There is also a conservation charge identified on the bill.

Related points of interest: Mr. Fry shared that nobody can beat the standard offer rate for residential. Any successful alternate suppliers to residential customers would be marketing green power. Electric Utility Week, March 3, 1998, mentioned that thirty-five companies had signed up to do business in the

state. Mr. Fry thought the actual number of applications was six. Peco Energy, who had successfully negotiated a contract with health related institutions, is attempting to back out of the contracts. Mr. Fry said about the only customer whom an alternate supplier could effectively compete for would be a high load factor industrial.

**State:** Montana

**Respondent:** Will Rosquist, Economist

**Phone Number:** (406) 444-6359

**Date Called:** April 27, 1998

Montana Power Company has filed a restructuring plan under the framework established by SB 390. A hearing will be held April 28 through May 1, 1998. An issue is the company's proposal for a universal system benefits programs to fund public purposes such as low-income energy assistance, conservation and renewable resources.

There is a Universal System Benefits Program Subcommittee who will make recommendations for the fund before January 1, 1999. Beginning in 1999, utilities and cooperatives must put 2.4 percent of their 1995 retail sales revenues into the fund. The 2.4 percent nets a statewide fund of \$14 million. At a minimum, 17 percent or \$2.38 million, will be designated as low income assistance for bill payment and weatherization. Disbursement of the remainder of the fund has not been determined, but a legislative committee has been established to study this. The utility can run its own low income programs or use a state agency to administer them. The Universal Systems Benefits charge (USBC) will also cover renewables, research, conservation and market transformation. The USBC will be distribution based and thus non-bypassable. The funding of this mechanism will appear on the customer's bill, which is a change from the current practice of burying in rates. The annual charge for customers with load in excess of 1000 kilowatts shall be the lesser of \$500,000 or 0.9 mills per kilowatt hour purchased.

**State:** New Hampshire

**Respondent:** Amanda Noonman, Customer Services Assistant

**Phone Number:** (603) 271-2431

**Date Called:** April 15, 1998

The only identified public benefit program will be low income energy assistance. Prior to restructuring, New Hampshire had no low income programs charged to utility rates. Energy efficiency will need to survive as a "market transformation" program within two years. A working group has been formed to make recommendations. Renewables have never been big in New Hampshire, and current spending will "sunset" in two years.

As for the new low income energy assistance program, a 1.5 mill per kWh systems benefit charge will be instituted sometime before January 31, 1999. The state-wide wires charge will apply to all customer classes and should raise about \$13.2 million annually. Since rates are to be unbundled, the systems benefit charge will likely be shown as a line-item on customer bills. New Hampshire's systems benefit charge is thought to be non-bypassable as long as customers do not bypass the distribution utilities.

**State:** New York

**Respondent:** Ronald Liberty, NARUC Subcommittee on Strategic Issues

**Phone Number:** (518) 474-1373

**Date Called:** April 14, 1998

Energy efficiency, low income, and generation research which includes renewables are treated as public benefit programs. For the next three years beginning in June 1998, these programs will be funded by a systems benefit charge collected by the distribution utilities. A system administrator, the New York State Energy Research and Development Authority (NYSERDA) will disburse the funds. The Systems benefit charge will be 1 mill per kWh, across all customer classes, for most utilities. (One utility's system benefit charge will be 6 mills per kWh.) The system benefit charge will be unbundled in the tariffs, but will not appear on customer bills. The charge is generally non-bypassable unless customers purchase power from the power authority. However, the power authority collects and funds programs under its own public benefits charge. Additional information can be found on the NY PSC web-page.

**State:** Ohio

**Respondent:** Greg Scheck, Supervisor of Forecasting

**Phone Number:** (614) 466-6548

**Date Called:** April 15, 1998

Public benefit programs mean provider of last resort and weatherization. In 1995 Ohio began phasing traditional DSM programs out of rates. In the future, DSM and programs like "green power" will have to survive as market programs. A "universal service charge" should ultimately be implemented (perhaps in late 1998 or early 1999 depending on the November elections). The charge will be same across all customer classes, across all utilities, and will appear on customer bills.

The charge must be no more than current amounts remaining in rates for social programs (about 1 mill per kWh is the best guess). It is undecided who will disburse the funds, it may be the utilities or a third party. The universal service charge will be non-bypassable as long as customers do not self-generate.

**State:** Oklahoma

**Respondent:** Jim Armstrong, Chief of Energy

**Phone Number:** (405) 521-6870

**Date Called:** April 15, 1998

Legislation has been passed, but details will not be known until 2001 or 2002.

**State:** Pennsylvania

**Respondent:** David Mick, Customer Services Supervisor

**Phone Number:** (717) 783-3232

**Date Called:** April 15, 1998

Pennsylvania defines public benefit programs as those fitting under a "low income" umbrella. For example, low income conservation, low income renewables, low income assistance, etc. Traditional rebate-driven DSM has been phased out.

A per kWh "universal service charge" will be assessed to the residential classes, but the all details not have been worked out. Each utility must file a restructuring plan outlining universal service details, but so far only one utility has completed the process. The main issues center on funding levels and customer eligibility criteria. It is not known whether the universal service charge will appear on customer bills. The charge should be non-bypassable as long as customers can not bypass the distribution utilities.

**State:** Rhode Island

**Respondent:** Mary Kilmarx, Director of Energy Policy

**Phone Number:** (401) 222-3500 Ext. 104

**Date Called:** April 21, 1998

In Rhode Island, renewables and energy efficiency are public benefit programs. Low income is funded privately. In July 1997, with the advent of retail choice, utility bills were unbundled into the following categories: customer charge, distribution, transmission, energy, system benefits (renewables and e.e.) and taxes. The system benefits charge is \$0.0023 per kWh for all utilities and all customer classes. The systems benefit charge was approved for five years. So far few customers have complained about the line-item charge.

Energy efficiency spending has not been reduced from previous amounts. Rebate programs are still offered, and utilities still implement all programs. However, Rhode Island is interested in moving to "market transformation" programs in the future. Retail choice has reduced the average residential cost by about one cent to around 10 cents per kWh.

**NOI-95-1**  
**Public Benefits Report**  
**APPENDIX B**

The following parties filed comments on the draft Public Benefit report:

Iowa Department of Natural Resources  
Iowa Sustainable Energy for Economic Development Coalition (Iowa SEED)  
Office of Consumer Advocate  
The Izaak Walton League of America  
Alliant – IES and Interstate Power Companies  
Iowa Association of Electric Cooperatives  
MidAmerican Energy

The comments are summarized briefly below.

**Department of Natural Resources (DNR)**

The state's energy policy should dictate public benefit decisions. Energy efficiency, renewable energy, environmental, and low-income programs, as well as some Research and Development (R & D) should be financed with a nonbypassable kWh charge collected from all customer classes by all distribution utilities. The charge would appear on customer bills as a single "public purpose programs" charge.

Iowa should adopt R & D goals similar to those established by Wisconsin and California. (See pages 29-31 of report.)

Further study is warranted for portfolio standards, green marketing, resource disclosure, feebates, and environmental dispatch for renewable energy and energy efficiency.

DNR has the experience to effectively administer any fund developed to further investment in energy efficiency and renewable energy.

## **Iowa SEED**

Funding for public benefits should not be left to competitive market forces. A renewable portfolio standard should be adopted, and a system benefits charge established for funding energy efficiency, R & D, and low-income programs. Full environmental disclosure is appropriate.

## **Office of Consumer Advocate (Consumer Advocate)**

While not concurring with all portions, Consumer Advocate finds the report thorough and informative.

## **Izaak Walton League**

A competitive market will not, in itself, provide adequate support for public benefit programs. The report should be supplemented by translating current energy efficiency spending into a cost per kWh. The monthly impact of such a systems benefit charge on the average customer should also be calculated and incorporated in the report.

Iowa's current generation portfolio should be included in the report, providing a baseline for future consideration. The costs of current renewable energy should also be translated to a cost per kWh and average monthly bill impact.

## **Alliant Energy**

Existing statutory policies should be reconsidered based on the outcome of a thorough restructuring analysis.

An alternative approach to starting with existing statutes would be to decide what "public benefits" exist in electric service and then determine the most appropriate funding mechanism for maintaining those benefits.

R & D might best be addressed at the Federal level, which could ensure that programs are not duplicated by numerous states and the costs are spread over all benefactors.

Many of the issues do not have single solutions. The issues are all related; a change in position on any issue impacts other issues. All stakeholders giving and taking can result in legislative consensus.

### **Iowa Association of Electric Cooperatives**

Public purpose programs should be tied to state goals and objectives rather than historical program offerings. The general assembly, Iowa Utilities Board staff, and other interested parties should review the continued need for existing programs in light of the intent that restructuring the electric industry is for the public good. If it is determined that a competitive market will not address the goals and needs, a funding mechanism should be identified.

In general, funding of social issues should be treated as a tax, not a charge on future distribution utilities. It is inappropriate to have distribution utilities collect funds for energy efficiency when the benefits fall mainly to the competitive electric service providers.

New generation companies will invest in R & D as a matter of good business practice. Distribution utilities can be encouraged to continue funding R & D through their revenue requirement and governing body investment allowances. Any distribution utility collections should be reflected on consumer bills.

Portfolio requirements to encourage alternate energy production and/or demand-side management may inhibit market participation, particularly by small entities.

Cooperatives support the use of building standards that are equally applied to all market entities.

The market will naturally undertake energy efficiency or demand-side management programs. These programs should not be offered as both a competitive and a regulated service. Programs for low income may be centrally funded and implemented by Community Action (CAP) or other knowledgeable agencies.

### **MidAmerican Energy (MidAmerican)**

Adequate funds for R & D are not a problem in other competitive industries. Prescriptive regulatory or legislative action is not recommended, since the issue may resolve itself in time. The Board could remove disincentives by clearly indicating that reasonable R & D will be recoverable in regulated rates.

With continued educational and informational programs, the market will provide adequate energy efficiency services for most consumers. The possible exception is services for low-income customers. MidAmerican supports allocating a portion of funds collected through a low-income assistance charge for energy efficiency services.

Allowing consumers to choose their supplier will result in a demand for renewables that will maintain current investments in alternate energy supplies. All suppliers in an Iowa market should be required to have a 2 percent portfolio standard for renewable energy.