DOE/IR/05106--T93

February 1983

DOE/IR/05106--T93

DE89 013858

Development of an Energy Action Plan:

A Participatory Approach

OFFICE OF PLANNING AND DEVELOPMENT

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ACKNOWLEDGEMENTS

Reflecting the community orientation of this report, project staff wish to express their appreciation to the many individuals and organizations who assisted in this effort.

Special thanks to the many readers of The Energy Exchange who contributed articles, constructive criticism and support to the newsletter; the staff of the Government Center Print Shop whose experience and assistance led to the newsletter's professional appearance; the workshop participants whose contributions are responsible for the Energy Action Plan; the Energy Division of the Minnesota Department of Energy Planning and Development, the Minnesota Project, the University of Minnesota Center for Urban and Regional Affairs, and the Minnesota Citizen/Labor/Farmer/Senior Energy Coalition for cosponsoring the workshops; the staff of the Government Center Information Library for their tireless assistance; Anne Meier (Unit Manager, PTI) and Richard Zelinski (Energy Program Director, PTI) for their direction and patience; A. J. Lee (Energy Task Force) and Phil Eckhert (Project Director) for their administrative assistance; and the hundreds of individuals, in Hennepin County and elsewhere, whose insights regarding energy issues and the potential of cooperative networking have made this a most rewarding experience.

Finally, we gratefully acknowledge the professional contributions of our colleagues at Hennepin County, particularly Theresa Fries and Robert D. Miller, for their dedication and encouragement during this effort.

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PREFACE

The Urban Consortium for Technology Initiatives was formed to pursue technological solutions to pressing urban problems. The Urban Consortium conducts its work program under the guidance of Task Forces structured according to the functions and concerns of local governments. The Energy Task Force, with a membership of municipal managers and technical professionals from sixteen Consortium jurisdictions, has sponsored forty-eight applied energy management and technology projects in 28 Consortium member cities and counties since 1978.

To develop in-house energy expertise, individual projects sponsored by the Task Force are managed and conducted by the staff of participating city and county governments. Projects with similar subjects are organized into "Units" of three to five projects each, with each Unit managed by a selected Task Force member. A description of the Units and Projects included in the third year (1981 - 1982) Energy Task Force Program follows:

UNIT -- MUNICIPAL ENERGY TECHNOLOGIES

Designed to identify emerging technologies and innovative uses of proven technologies to aid municipal energy efficiency and productivity, this Unit consisted of four projects:

- Chicago, IL - Assessment and Financing of Municipal Energy Technologies
- Phoenix, AZ - Energy Conservation in Water Treatment and Production
- Indianapolis, IN - Feasibility Study for Fluidized Bed Combustion System Application
- St. Louis, MO - Alternative Energy Sources for Sewer Utilities

UNIT -- ALTERNATIVE FUELS AND TECHNOLOGIES

Designed to identify and overcome technical and institutional barriers to the use of alternative fuels in municipal operations, this Unit consisted of four projects:

- Baltimore, MD - Institutional Barriers to Methanol Use in Vehicle Fleet Operations
- Detroit, MI - Use of Felled City-Owned Trees as a Supplemental Fuel for Coal-Fired Boilers
- Memphis, TN - Obstacles to the Use of Compressed Natural Gas (CNG) in Urban Areas
- Dallas, TX - Use of Methane as a Fuel for Municipal Vehicles

UNIT -- TRANSFER OF COMMUNITY ENERGY MANAGEMENT TECHNIQUES

Designed to develop and transfer practical technologies, management techniques and organizational structures for effective community energy management, this Unit consisted of five projects:

- Columbus, OH - Structures and Strategies for the Implementation of Energy Management Plans
- Cleveland, OH - Coordinated Energy Management Actions in Multiple Local Jurisdictions

- Hennepin County, MN - Coordinating Energy Management Actions in Multiple Local Jurisdictions
- Jefferson County, KY - Systems and Strategies to Improve Community Energy Management Practices
- San Jose, CA - Developing an Energy Management Tracking System

UNIT -- ANALYSIS OF REGULATORY AND FINANCIAL IMPEDIMENTS

Designed to identify governmental actions to reduce regulatory and financial impediments to effective marketplace actions for energy efficiency, this Unit consisted of three projects:

- Houston, TX - Reducing Regulatory and Financial Impediments to Energy Conservation in Building Codes
- King County, WA - Land Use Planning, Regulation and Incentives for Wise Energy Use
- Denver, CO - Reduction of Impediments to Alternative Energy Use

UNIT -- PRIVATE SECTOR FINANCING FOR NEIGHBORHOOD ENERGY EFFICIENCY

Designed to identify techniques to encourage private financial support for residential energy cost reduction programs, this Unit consisted of four projects:

- Kansas City, MO - Financial Options for Energy Efficiency
- New Orleans, LA - Reducing the Energy Cost Burden on Low Income Residents
- San Francisco, CA - Public Housing Energy Efficiency through Private Financing
- Montgomery County, MD - Master Meter Conversion Manual for Multi-Family Structures

UNIT -- ENERGY MANAGEMENT AND ECONOMIC DEVELOPMENT

Designed to identify relationships between energy management and economic development, defining appropriate local government roles and responsibilities in both areas, this Unit consisted of three projects:

- Dade County, FL - Energy Economic Development
- New York, NY - Integrating Energy Management with Economic Development
- San Antonio, TX - Energy and Economic Development

Project and Unit Reports summarize results from each of these projects in a format specifically designed to ease the transfer of proven experience to other local governments. Readers interested in obtaining any of these reports or further information about the Energy Task Force and the Urban Consortium should contact:

Energy Program
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CHAPTER 1 - OVERVIEW

ABSTRACT

Nearly all communities have the potential for saving energy and dollars by reducing energy consumption in buildings and transportation and encouraging changes in life styles. Most local governments, however, are now faced with fiscal and political difficulties that discourage the development of programs to realize these savings. Governments often develop policy, including energy policy, without participation by those the policy is designed to help. Hennepin County's project used community involvement to produce an Energy Action Plan that could be implemented within current fiscal and political constraints. The project acknowledged that energy responsibilities are distributed throughout the community and focused on the need to mobilize a broad range of private, community and public resources to address energy concerns.

The effort began with a newsletter designed to encourage awareness and discussion of local energy issues by businesses, community organizations and government. It emphasized a cooperative approach to resolving energy problems. Community workshops were held to provide an exchange of ideas and develop alternative solutions to local energy issues. Problems identified and recommendations made at the workshops form the base of the Hennepin County Energy Action Plan.

The Energy Action Plan is a series of recommendations, some specific and some quite general, for addressing energy-related problems of the community. The Plan is built around principles which recognize:

- The essential role of energy in the economic and social well-being of the community.

- The importance of some level of local government involvement in energy issues.

- Certain expected behaviors in energy use and management by consumers, the private sector and the public sector.

- The value of programs and cooperative efforts implemented at the neighborhood or municipal level.

The project's greatest benefit is the momentum and direction it provides for future resolution of complex local energy issues. The project has also helped establish individual and organizational relationships that may lead to cooperative community action. The conclusions of the Energy Action Plan and the lessons learned during its development are important ones for communities choosing a participatory and realistic approach to forming a local energy policy. Hennepin County's project promotes an understanding of local energy problems and the amount and scope of resources needed to address them.

PROJECT PURPOSE

Hennepin County government and its residents have much to gain by an effective response to issues of energy cost and availability, but--as many other areas of the country--are severely limited in their ability to respond. The purpose of this project was to develop an energy management strategy for the community. The Energy Action Plan provides a realistic direction for Hennepin County. The Plan's methodology may be useful to other local governments concerned about addressing energy problems within the current fiscal and political environment.

REPORT ORGANIZATION

Chapter 2 of this report provides a general background for the project, including a description of Hennepin County and the economic and political environment in which the project was conducted. Project objectives and structure are also presented.

Chapter 3 describes the processes used in the development of the Energy Action Plan. Conclusions and expected future plans are also described.

Chapter 4 summarizes the significant lessons learned during the project and presents recommendations to others contemplating similar projects.

Appendix A contains a sample copy of The Energy Exchange, the newsletter developed by this project.

Appendix B is an abbreviated version of the Hennepin County Energy Action Plan. Policy and other recommendations of more general applicability are presented. Recommendations unique to the County have been omitted.

CHAPTER 2 - GENERAL BACKGROUND AND PROJECT OBJECTIVES

GENERAL BACKGROUND--HENNEPIN COUNTY

Hennepin County, Minnesota, is an urban county with a population of just under one million. The County's 47 municipalities, which include the city of Minneapolis, provide a cross section of urban, suburban and rural characteristics. Energy consumption patterns are influenced by its extremely long and cold heating season (8,159 degree days) and dispersed population (1,660 persons per square mile), but are otherwise typical of urban areas nationally. Supplies of traditional energy sources (petroleum, natural gas, coal and uranium) are all imported from external domestic and foreign sources.

Energy use within the state has declined considerably in the last several years. Between 1979 and 1981, Minnesotans reduced the amount of energy they consumed by nearly 13 percent, while national consumption fell approximately 6 percent. Weather and economic factors may have influenced this decline, but much of it is undoubtedly attributable to local energy conservation efforts. Despite the significant changes which have taken place in energy use patterns, Minnesota and Hennepin County remain almost totally dependent upon external energy sources and are highly vulnerable to price increases and supply shortages.

During the past three decades, the responsibilities of Hennepin County government have grown enormously, reflecting the changing needs of an increasingly complex urbanized society. Since its founding, the County has been responsible for such functions as road building, registration of deeds and titles, tax collection and law enforcement. Responding to the wishes of the state legislature, the County has recently assumed many additional responsibilities, including Municipal and District Courts, suburban libraries, a highway system, and delivery of a large number of health and social services.

Hennepin County government's energy activities have been primarily directed to reducing internal consumption. The County has realized impressive reductions in both facility and fleet energy use. Numerous County departments have been involved directly or indirectly in energy related activities, including district heating (solid waste systems), ridesharing, weatherization, fuel assistance and energy emergency planning. However, while county government plays an important role in community matters and has aggressively pursued its internal energy responsibilities, its role in community energy matters has been limited.

This has occurred in part because community energy responsibilities have been delegated by the state legislature to the Energy Division of the State Department of Energy, Planning and Development or to municipal governments. Until recently, this distribution of responsibilities seemed to be a satisfactory arrangement. The Energy Division has, since its inception, played a valuable role in energy efforts throughout the state. Similarly, Minneapolis and many other of the state's larger cities have initiated innovative energy programs of their own. The future of these efforts, however, is seriously in doubt. The Energy Division has suffered severe reductions in their budget and staff. Many local programs have also been reduced or terminated.

In 1981, more than 90 percent of Hennepin County's homes used natural gas as the fuel source for space heating. While there is no evidence that a severe supply shortage will occur, recent and anticipated natural gas price increases have serious implications for an area so heavily dependent upon this fuel for heating. As winter began, considerable public attention was focused on the large number of residential customers who will be unable to pay their utility bills during this heating season. The social and economic implications of energy price increases are beginning to be appreciated while, at the same time, it is being recognized that the ability of the public sector to respond is limited.

PROJECT OBJECTIVES AND STRUCTURE

The objective of this project was to develop a methodology that could be used by counties and municipalities to coordinate the often numerous energy activities occurring throughout their jurisdictions. It was hoped that by increasing cooperation and coordination the energy issues of primary concern to the area could be identified and private and public resources could then be directed more effectively toward alleviating these major problems. The project represents a conscious effort to address current and future energy challenges facing the area by mobilizing available community resources.

The major questions confronting the project were:

1. How can conservation efforts be encouraged and the transition to alternative energy sources be facilitated in order to minimize our vulnerability to price increases and supply shortages of traditional fuels?

2. How can these ends be accomplished with minimal local government involvement?

The project was designed to respond to these challenges in a manner that would address the specific needs of Hennepin County but at the same time offer general solutions of use to other communities.

The problems being faced by Hennepin County, Minnesota, and its units of government, businesses, community service organizations and residents are similar to those in other areas of the country. Because of the severe winters, however, the issues are often more urgent than in areas with more moderate climates.

Project Structure

This report describes the County's efforts to develop a process and a plan (the Energy Action Plan) which identifies major energy concerns of Hennepin County residents and presents suggested solutions for addressing these issues. It may be especially valuable to other local governments because it represents an attempt to address energy problems within the current constraints surrounding energy activities.

In developing the process, project staff assessed local attitudes toward energy policy. It was found that obtaining formal commitment to an energy planning project would present considerable difficulty for several reasons:

- Economic conditions have deteriorated and have demanded more immediate attention from both public and private entities, leaving fewer resources available for noncritical energy planning.

- Extensive publicity and a number of highly visible energy projects have exhausted much of the community's concern and interest in energy related activities.

- Many programs addressing specific energy issues have already been initiated in Hennepin County, creating a perception that little more can or should be done.

- Commitments of time and resources would be difficult to obtain unless short-term, direct and evident results could be achieved.

- Approaches that have been most frequently used in developing energy programs in the past (i.e. task forces and advisory committees) have been less successful than desired.

Local governments, such as Hennepin County, have been reducing some of their existing programs because of budgetary constraints, while trying to clarify their role in addressing energy problems. It is especially difficult to reconcile the need to alleviate current problems and plan longer-term solutions with a federal energy policy that suggests, at most, a minimal role for local governments. Because of these constraints and past experiences with advisory committees, project staff decided that the process for developing the Energy Action Plan should rely on a broad level of community participation. The plan produced from the participation process was to be consistent with current political and economic realities and be based on the contributions from many community members rather than excessive efforts from few.

Steps in the Process

The first step in this process was to identify organizations and individuals in the community that were concerned about energy. The second step was to identify existing mechanisms that could be used to communicate with this group so that issues and potential solutions could be inventoried. One of the significant early findings of the project was that there was no established communication mechanism among these groups and individuals.

The effort to identify major problems and needed actions, therefore, began with the initiation of a newsletter. The newsletter, The Energy Exchange, was intended to serve as a forum for discussion of area energy issues among a broad spectrum of individuals and organizations with the hope of reaching a consensus on action and roles. It was also used to establish a communications network among individuals and organizations interested in energy issues and their potential resolution. The limitations of this approach became evident during the project and are discussed in Chapter 4 of this report. The newsletter was selected over the more traditional advisory group approach. Previous experience with

advisory groups had provided evidence that there are also problems, though different ones, with that form of community participation.

After initiating the communications network, the strategy for developing the Energy Action Plan called for a series of workshops to discuss important issues with representatives from the community. The newsletter was one of the methods used to promote the workshops. The Energy Action Plan was developed by the project staff based on information and suggestions offered at the workshops.

The process used to develop the plan has stimulated discussion of the complex energy issues that face the area. Its success should be measured by its ability to stimulate action and continued discussion rather than by the implementation of particular recommendations. The project, as suggested by several area residents, provided an opportunity that had previously been absent--a rational community discussion of the energy problems facing Hennepin County. This achievement alone suggests that the project has accomplished one of its major goals.

The following section describes the project, the Energy Action Plan development process, and the possible future of this concerted effort to develop a community based approach to address local energy concerns.

CHAPTER 3 - DEVELOPING THE ENERGY ACTION PLAN

INTRODUCTION

Minnesotans have been characterized as having "unbounded faith in government to solve those problems which seem too big to handle save by collective action . . ."[1] The last two years, however, have severely shaken this faith. As many other states, Minnesota has been suffering through an unprecedented fiscal crisis created by changing federal policies and a depressed regional economy. Reduced state revenues and recent federal budget actions have placed an increasing amount of the burden for meeting traditional government responsibilities at the local level--while decreasing the resources available to carry out these responsibilities.

The re-evaluation of the proper role of government in our society initiated at the federal level has created significant philosophical and operational problems at the local government level in many areas, including energy. State and local governments are severely constrained in their capacity, and authority, to respond to energy challenges, since they are not receiving policy, program or financial support from the federal government. The residents of Hennepin County and other parts of the country are entering a period of transition--from traditional energy use patterns to largely unfamiliar ones--without assistance, support or leadership from government.

This is the environment within which this project had to be conducted. It was one of the critical factors influencing its design and implementation.

The goal of the project was to develop an Energy Action Plan for Hennepin County. It was understood that a recommendation of no collective action would be considered legitimate. The question was not only "What type of action is needed?", but also "Is there

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[1]Lass, William E., Minnesota: A History, New York: W. W. Norton & Co. Inc., 1977, p. 19.

any need for action at all?" Current economic and political realities had to be considered in developing the Energy Action Plan.

Planning efforts with initially limited goals and an emphasis on practical methods for addressing problems often result in comprehensive plans that are unrealistic and academic. These efforts are sometimes wasted since the resources required for implementing their recommendations are unavailable. Comprehensive plans, such as the Comprehensive Community Energy Management Program of 1977 and 1978, can give the impression that an issue has been clearly defined and that it is being addressed as it should be--in a thorough manner. Unfortunately, these efforts seldom include provisions for the commitment of resources and support needed to implement the plan.

Hennepin County's project staff considered the "comprehensive plan" approach and rejected it as inappropriate for two reasons. First, many Minnesota and Hennepin County communities have already initiated and implemented planning efforts designed to control and change their patterns of energy consumption. Although some communities have realized benefits from such an effort, many others have encountered great difficulty integrating the recommendations which result from this exhaustive process with political and economic realities. Secondly, a comprehensive planning effort would be difficult to support in view of the fiscal constraints facing Hennepin County and, indeed, those of most local governments throughout the nation.

As a result, this project attempted to investigate local energy issues and identify potential solutions by using existing community resources and encouraging public and private cooperation. The project emphasized opportunities for cooperation between organizations and the value of government facilitation. Both of these require that communicaton about local energy issues be initiated and maintained.

ENERGY ACTION PLAN DEVELOPMENT

Policy and Fiscal Constraints

The energy policy presently being pursued by the federal government relies primarily upon the free market to motivate appropriate consumer decisions on energy use. According to this scenario, current and anticipated energy prices will influence consumer behavior and reduce unessential demand. If demand continues to increase despite higher energy prices, private investment will be attracted to enhance the supply of energy from traditional sources and to explore economical alternatives to meet consumer needs.

With emphasis on the marketplace as an allocative mechanism, there has been a corresponding de-emphasis on government's role. Government involvement, as either a regulator or financial supporter of energy resource development projects, is viewed as both inappropriate and a partial cause of the nation's recent energy problems. While there are many critics of the free market approach, it is generally conceded that the resulting energy price increases have provided a significant stimulus to energy conservation.

Federal policy was one of the two major factors considered in developing this project. While the present policy toward market pricing is a more extreme version of a philosophy initiated during the previous administration, it represents a major shift from historical United States energy policy. As a result, a significant reassessment of what, if any, role local government should play in addressing energy concerns of the community was required.

The second major factor considered in developing this project was the changing fiscal environment of the state of Minnesota. The economic recession in the Midwest has resulted in very significant and unexpected reductions in state revenues. Local governments in Minnesota receive almost 30 percent of their revenue from the state in the form of local government aid. The state legislature

has curtailed this aid and has also imposed limits on the property tax levies, the primary alternative revenue source for local governments. In 1980 the federal and state governments were the source of more than two-thirds of the revenue required by Hennepin County to provide its broad range of human and physical services. In 1983 these sources will provide slightly more than half of the revenues needed by the County for a significantly reduced range of programs.

This project used a newsletter and a workshop series to develop an energy management strategy (the Energy Action Plan) for Hennepin County. This approach was intended to accomplish the project's goal by augmenting and enhancing the present system for addressing energy concerns without emphasizing fundamental changes that were politically or financially inappropriate. The approach relies heavily on communication, networking and community participation and recognizes that the change in federal energy policy has, in general, been well accepted and has proved reasonably successful in encouraging conservation and assuring that energy supplies are available. Working from this perspective, the project inevitably faced the question of whether an Energy Action Plan was needed and whether even this level of involvement was appropriate for Hennepin County government. The newsletter and workshops were expected to provide answers to these questions.

Although the free market policy adopted by the federal government has been credited with inducing a considerable conservation effort, strict adherence to a market approach will not resolve all of society's energy related concerns and interests. Issues involving public goods and social welfare often cannot be adequately addressed by using only a free market approach. Clearly, there are some energy related goods and services that are valued by society and yet are not furnished by the market.

In many cases, these needs may be met by improvement or expansion of a current service or policy of the private sector, community organizations, or the public sector. Other community energy concerns may require new initiatives. The examination of community needs that began with the newsletter and concluded with the workshops and development of the Energy Action Plan was expected to identify the gaps and provide possible solutions that were acceptable to the community.

Paticipatory Constraints

The development of an "Energy Action Plan" for a community usually involves a citizen advisory committee. The committee functions as a working group of well-informed individuals who provide direction for the project.

There are several reasons that the project staff decided not to use the advisory committee approach in this project:

- Advisory groups are comprised of representatives from diverse organizations. Achieving a consensus in findings and recommendations is often difficult.

- Mechanisms for implementing the group's recommendations are often not included in the developed plan.

- It has become increasingly difficult to obtain the time commitments needed from desired participants as the number and complexity of issues addressed by these groups have increased.

- Advisory committees often produce ambitious and comprehensive plans. Project staff recognized that fiscal realities would not permit implementation of this sort of effort.

After assessing the advantages and disadvantages of advisory committees for the effort proposed by staff, it was decided that a different participatory structure (i.e. a newsletter and community discussion workshops) would be used in developing the County's Energy Action Plan.

The Newsletter Approach

The newsletter approach offered several advantages as a participatory tool. First, it was felt that a newsletter would provide access to a more extensive range of perspectives than a committee. Secondly, it was hoped that the newsletter might develop into a local communication vehicle for individuals and organizations interested in energy matters. Finally, there was a strong belief that this network of individuals and organizations would be able to assist in identifying gaps in the present provision of energy-related goods and services in the community. In these and other regards the newsletter was quite successful. A more thorough discussion of the successes and limitations of the newsletter approach is presented in Chapter 4. A sample of the newsletter is contained in Appendix A.

During the course of its publication, each edition of the newsletter was assigned a theme (for example, natural gas deregulation, public/private partnerships). Each theme was addressed in the lead article or editorial section. The intent was to explore each theme from several perspectives and to determine what, if any, local action was appropriate. Any actions identified were to be considered for inclusion in the Energy Action Plan.

The number of formal responses to requests for readers' perspectives on the issues presented in the newsletters was disappointingly low. While many individuals and organizations expressed opinions on local energy issues in telephone conversations with newsletter staff, few were willing to comment in writing. There are several possible explanations of this problem (see Chapter 4).

Unfortunately, it too soon became apparent that although the newsletter served an important education and information function, it was largely a vehicle for one way communication.

While there were understandable and, to a degree, anticipated difficulties with the newsletter's ability to identify community energy priorities, the newsletter provided its readers with an extensive range of perspectives. Several of these perspectives were presented in letters and articles prepared for The Energy Exchange. The newsletter also succeeded in establishing a local network of well-informed individuals and organizations interested in energy issues. The mailing list, which began at less than 300 persons, now numbers over 500.

In addition, after several months, project staff realized that production of the newsletter was yielding an unexpected benefit. They began to gain informal access to information about the activities of local organizations and their policy and program decisions. The newsletter, or more typically, communication by its staff, provided a vehicle for information exchange which may not have existed otherwise. Individuals and organizations with shared interests, though often not shared opinions, in a particular energy issue found themselves communicating--initially through the staff and later more directly with each other.

It must be realized, however, that some of this communication might have taken place eventually without the newsletter. Regardless, the newsletter's efforts were welcomed by its readership and seemed to facilitate communication among groups with divergent positions on energy issues.

Community Workshops

The community workshop and discussion series was designed to augment the energy dialogue and alleviate the newsletter's limitations. As mentioned earlier, limited formal response to newsletter articles and opinions prevented the two way communication

needed to develop an Energy Action Plan. It was difficult to determine whether the views presented in The Energy Exchange fully represented community opinions. Comments regarding possible solutions to community energy problems and priorities for local energy action were notably absent. Most of these limitations were anticipated, and their appearance confirmed plans to initiate the workshop series.

To provide a focus for these workshops, project staff conducted an informal telephone survey in which selected newsletter readers were asked to identify the most important local energy issues. Many of the readers participating were professionally involved in this area. The issues identified were grouped into three general topics:

1. Public and private roles and energy resources (a review of the implications of the market approach).

2. The impact of rising energy prices on low-income households.

3. Energy prospects and local challenges (with emphasis on the impact of energy on the state and local economy).

Several business and community organizations and a government agency were asked to serve as cosponsors to aid the development and organization of the workshop series. Groups were sought as cosponsors based on their expertise and familiarity with energy issues. Representation was sought from the significant sectors or interests of the community. Six groups were contacted and met with the project staff to discuss the goals of the project and determine topics and format for the sessions.

Four organizations agreed to serve as formal cosponsors: (1) The Minnesota Citizen Labor/Farmer/Senior Energy Coalition--a group of more than 30 organizations (including the AFL-CIO, farmer and senior federations, public interest groups and the Minneapolis

Urban Coalition); (2) The Center for Urban and Regional Affairs of the University of Minnesota; (3) The Minnesota Project--a public interest organization involved with community development and energy issues; and (4) The Energy Division of the Minnesota Department of Energy, Planning and Development.

The two business organizations initially involved in planning the workshops were unable to cosponsor the sessions because of scheduling conflicts. Both business groups, however, were involved in the planning of the sessions and provided mailing lists used in the publicity campaign. The loss of these business cosponsors prompted a special initiative to inform business and utility representatives of the workshops and encourage their participation. A review of workshop attendance indicates that this desired participation was achieved.

Three workshops were scheduled for initial discussion of the topics identified through the telephone survey. All three topics were discussed at each workshop. Staff kept detailed notes of participant comments on these issues and others of concern. The workshops were held at various meeting times and locations throughout the County to offer the greatest opportunity for participation. They were publicized through the newsletter, brochures, press releases, telephone contacts and by the cosponsors.

Following a general introduction to the goals of the project and the topics to be discussed, participants selected the area of greatest interest to them. Small groups were then formed to discuss the topics for the remainder of the session. Group leaders, or facilitators, with experience in energy issues and small group dynamics were supplied by the cosponsoring organizations. They assisted the groups in identifying the most pressing problems within each topic area. As time permitted, the groups shifted their focus from identifying specific problems to suggesting alternatives for alleviating these problems.

The fourth workshop was used as a wrap-up session after the project staff had prepared a summary of the previous sessions' results. In the first three workshops, participants had worked to identify problems and "obstacles" to appropriate energy action and services. In the fourth workshop, participants reviewed the problem listing and identified practical alternatives to address these concerns. Particular attention was given to identifying options for action using the resources of local organizations.

Workshop attendance was disappointing, but it was apparent that those who did attend were sincerely interested in the workshops' goals and in the process used to identify problems and potential solutions. The participants were extremely well-informed; most were professionally involved in the issues and held influential positions in their organizations. Because of the participants' background and experience, discussions focused quite quickly on needs for information, program improvement, financing and cooperation. Group leaders did an excellent job and, despite occasionally heated exchanges, were able to direct the discussion toward constructive ends.

Developing the Plan

The shift in focus from discussing problems to identifying solutions was essential to the development of the Energy Action Plan. This shift occurred without strong direction from group discussion leaders and suggests that the participants were anxious to take advantage of this opportunity to influence local energy policy. Similarly, participants seemed to emphasize consensus (or to minimize differences) wherever possible in an apparent attempt to provide stronger recommendations for actions and policies. This occurred despite a conscious effort to encourage minority opinions in group discussions.

The result of this process, the Energy Action Plan, was described to workshop participants as a "report to the community." It will be distributed to the organizations which received most attention in the recommendations, but is intended for the whole community. (The Hennepin County Energy Action Plan is scheduled for release in early 1983.) The greatest potential value of the Energy Action Plan undoubtedly lies in its ability to stimulate further discussion and action. How many of its recommendations will be implemented cannot be predicted, but there is some evidence that significant momentum has been established. A summary of the major recommendations of the Energy Action Plan is contained in Appendix B.

The project strategy emphasized using communication and building a constituency to pursue implementation of recommended actions. In this process, participants suggested a local government role focusing on facilitation and leadership--not implementation or funding. It is an interesting and significant view of government, especially during these times of increasing financial constraints. Even if those attending had reasonably recommended major government programs to address energy issues, it is unlikely that any new initiatives could be undertaken at this time.

It is important to note that the staff did not constrain the discussions during the workshops by imposing limits on the role that could be proposed for any sector in dealing with energy concerns. The solutions proposed and the roles suggested are the result of the community's perception of the most effective method of implementing a community energy management program.

RESULTS AND FUTURE PLANS

A project such as the one undertaken by Hennepin County does not lend itself to a concise and easily supported presentation of results. With the emphasis on coordination and community partici-

pation, the project was necessarily process oriented. Nonetheless, there are certainly some conclusions that can be made and products that can be identified as a result of the project.

The process used in developing the Energy Action Plan is one that realistically can be undertaken by communities in the present governmental environment. As such, it is transferable to the many local governments facing economic and political limitations similar to those of Hennepin County. Results of the project are discussed in four sections: Benefits of the Process, Newsletter Survey Results, Conclusions of the Energy Action Plan, and Project Impacts and the Future.

Benefits of the Process

The newsletter and workshops were used to meet several of the project goals discussed in Chapter 2. Communication among individuals and organizations involved in energy matters increased on a formal level through newsletter articles and informally through telephone contacts and the intermediary presence of the staff, as mentioned earlier in this chapter. The network of individuals and organizations reached by The Energy Exchange increased from less than 300 at the beginning of the project to more than 500 at the end. There is a sense that a constituency for energy policy and ongoing discussion has been expanded or, at least, solidified.

The newsletter and workshops succeeded also in providing an unusually wide range of perspectives on energy issues. Discussions ranged from a utility's explanation of the need for a new power plant to a public interest group's plea that a coherent state energy policy be developed and a biofuels producer's claim that only small, innovative businesses can help society out of its energy dilemma.

Finally, the project established a County presence in energy matters through the newsletter and workshop series. Comments at the workshops and throughout the project made it clear that a local government presence is desired by the community. The value of this role is reflected in the Energy Action Plan (see "Conclusions of the Energy Action Plan" in this chapter and Appendix B).

Newsletter Survey Results

A survey of newsletter readers, conducted near the end of the project, found that The Energy Exchange had provided information that was not available elsewhere and, most importantly, that it had helped them to identify individuals or organizations that share their interests. An encouraging number of those responding had contacted resources mentioned in the newsletter, writers of articles or Energy Exchange staff.

A summary of the survey results is presented in Chapter 4 ("Suggestions for Application").

Conclusions of the Energy Action Plan

The Energy Action Plan is organized by the general topics discussed in the workshop series and offers specific recommendations for the community and its organizations. An abbreviated version of the Energy Action Plan, containing more general recommendations, is presented in Appendix B. It is more appropriate for the purposes of this report, however, to focus on the underlying principles which shaped the recommendations contained in the Energy Action Plan:

- Energy is an essential need of the community. Increased costs have made it difficult for low-income persons to afford energy. Like food, shelter, and medical care, energy is a basic need requiring public support for some individuals. Local governments have traditionally served these needs.

- Local government involvement is critical to the effective coordination of energy activities and the resolution of community energy problems. Government presence lends credibility to the issues and the recognized legitimacy of government permits the access to organizations, businesses and individuals that is necessary to mobilize various resources toward finding solutions to energy problems.

- The community has certain expectations for each sector in the management of community energy concerns:

  1. **Consumers** are expected to recognize the inevitable constraints on resources and, in general, to be prepared to make energy use decisions based on the true cost of the resource.

  2. The **public sector** is expected to be a coordinator in energy matters. In addition, it should take responsibility to affect, as practicable, the energy use of those organizations with which it has close contact and to smooth the societal impacts of the transition to a market-based energy response.

  3. **Private sector** groups are expected to recognize their overall interest in a stable energy situation; to use their organizations, as possible, to regulate industry and assist others; and to provide information affecting energy decisions when appropriate.

- The government has a responsibility to use its fiscal resources for addressing the energy-related problems of low-income consumers. Attention to other consumer needs should be attempted only as remaining resources allow.

- Programs and cooperative efforts are most effective when implemented at the lowest level, through neighborhood groups, when possible, or municipal government. This procedure encourages community participation and a reliance on local strengths and efforts designed to address each situation's unique characteristics.

Project's Impact and the Future

Perhaps the greatest promise of this project is its potential for stimulating ongoing communication and discussion among individuals and organizations that may lead to the alleviation of community energy concerns. In addition to this general and rather abstract benefit, there are several tangible effects of the project's process.

- **The Energy Action Plan**--The Energy Action Plan will be prepared in early 1983. Upon completion, the Plan will be distributed to workshop cosponsors, those involved in the workshop series, and government representatives and organizations identified in Energy Action Plan recommendations. It will also be made available to the public. It is hoped that this distribution will encourage community discussions and focus the agenda of local organizations involved with energy issues on the problems that have been identified and the need for action.

- **Hennepin County Emergency Needs Task Force**--The Task Force was established by the County Board of Commissioners in September 1982 to address the energy-related problems of low-income residents, especially those receiving fuel assistance payments or threatened with utility shutoffs. Project staff have been providing technical support to the Task Force and its subcommittees. This initiative by the County Board may help identify potential actions that can be taken to address the community's growing concerns about energy hardship. This is a good example of the value of government presence.

- **Continuation of The Energy Exchange**--Several organizations have expressed an interest in supporting the newsletter at the conclusion of its project funding. While it is unclear if the necessary support will materialize, the interest shown is an encouraging recognition of the value of and need for ongoing communication among members of the energy community.

CHAPTER 4 - SUMMARY AND SUGGESTIONS FOR APPLICATION

LESSONS LEARNED

The lessons learned and problems encountered during the project are summarized and discussed in this section. The material presented is designed to be of particular interest to two groups: (1) those organizations contemplating the use of newsletters, workshops or similar approaches to energy action, and (2) those with a more general interest in community energy issues.

Newsletter Lessons

The project staff was generally pleased with the newsletter as a participatory tool and encouraged by its reception within the energy community, as documented in the survey results. The benefits of this approach have been described in the preceding section. Clearly, however, there are limitations that must be considered when using a newsletter to help develop an energy management strategy; several of these were anticipated and several were not.

A. Interactive Communication

From the outset of the project it was recognized that a newsletter could provide access to a great range of community perspectives but that stimulating the direct, two way communication necessary for policy guidance would be difficult. This suspicion was confirmed as the project proceeded. In some months it even became difficult to secure reader contributions for the initial transfer of information and ideas. A more interactive form of participation, such as the workshops, was needed to augment and make explicit the implied discussion of community energy needs contained in the newsletter.

B. Staff Time

Project staff expected that a considerable amount of time and effort would be required to produce the newsletter. However, it was also anticipated that the staff time required would decline significantly after the bulk of the conceptual work was completed and the initial issues produced. Unfortunately, this was not the case.

The Energy Exchange continued to demand a large portion of available staff time throughout the project year. Most of the time was spent on background research, contacting potential contributors and, in particular, last minute changes and editing of articles. The staff also had to write a number of articles. This last development was especially unexpected, since the newsletter concept called for reliance on reader-contributed material. Each issue of the monthly newsletter required approximately 60 hours of staff time for preparation and editing of material, layout and distribution.

C. Delays

The lead time required for printing the newsletter and, particularly, delays in distribution significantly limited its ability to perform the intended networking function. Physical production of the newsletter typically required one week from completion of the layout, although most of this time was attributed to a backlog of orders in the County print shop. In addition, the newsletter was distributed by bulk mail in order to control costs. Delivery of bulk mail even to local addresses, however, may take from one to two weeks. These delays rendered The Energy Exchange rather ineffective in providing timely information on local activities and meetings.

D. Audience

In retrospect, the newsletter may not have been directed to the proper audience. It is not clear, though, how the most appropriate audience might have been easily reached. The initial mailing list consisted of community organizations, government officials and staff, area businesses (particularly energy related), and many people involved professionally in energy issues in either the public or private sectors. The newsletter was probably less appropriate for these last two groups.

Some professional members of the energy community felt that The Energy Exchange was duplicative and not fulfilling its potential for meeting energy information needs. While the newsletter certainly aimed to transfer information about programs, meetings, and activities among people with various levels of energy involvement, it was not intended as a technical or research publication for those with specialized interests. Rather, the emphasis was on community participation and strengthening the awareness of a diverse group of organizations and individuals about a broad variety of energy programs, community resources, and perspectives. It is apparent that the newsletter's intended role within the community should have been made more clear to all its recipients.

Workshop Lessons

The workshop series developed by Hennepin County provided a valuable range and interaction of ideas on which to base the Energy Action Plan. Still, the attendance was disappointing. Fewer than 100 individuals participated in the workshops. Several points regarding attendance need to be considered by those contemplating a similar approach.

A strong response to such active forms of community participation is unlikely given present attitudes toward energy issues. The relatively stable, or at least expected, energy situation of the past year and more pressing economic concerns have diminished much of the community's interest in energy matters. Despite their small numbers, however, the participants represented a broad range of community organizations, utilities, and interest groups and were extremely well informed. Their recommendations were carefully considered and politically astute. Based on the results from these sessions, efforts to promote workshop attendance should be especially directed toward attracting those with interest and knowledge rather than the general public.

Community Energy Policy Lessons

Community energy policy makers should accept the fact that regardless of participatory methods used, the public is presently less responsive to energy concerns than was the case several years ago. (The recent attention to the emergency energy hardship of low-income households is a notable exception to this general conclusion.) The result is that government will probably not have the benefit of strong community participation in shaping energy policy. The perspectives and experience of those professionally involved, however, can be drawn upon in a less formal manner.

This underscores the need for a local government presence in energy issues. Networks of contacts must be maintained and issues must be monitored. The recommendations in the Energy Action Plan support this local government role. In this way, government may be able to react as expected when the inevitable further fluctuations in energy supply and demand occur and to assist with the continuing transition in energy use patterns.

SUGGESTIONS FOR APPLICATION

The preceding discussion of problems encountered in the project suggests some mention of measures that may be taken to avoid them. We offer several recommendations designed to alleviate some of the problems with the approaches and techniques used by Hennepin County.

Newsletter

When the newsletter was included in the process for developing a community energy management strategy, it was anticipated that it would consist almost entirely of articles and letters contributed by its readers. The project staff was to identify themes for the monthly newsletter, request and collect articles, prepare copy and layout the issue. The readers were expected to do the writing.

There were two problems with reliance on external contributors. First, it was sometimes difficult to get people to write articles, and second, the outside contributors often failed to meet the deadlines provided by staff. Both of these problems adversely affected production schedules and increased the amount of staff time required on the publication. When planning a newsletter or other communications vehicle, it is important that the production staff realize that most potential contributors have other concerns and demands on their time which have much higher priority. Preparation of an article for the newsletter will usually only be done as time allows, thus reminders from staff are often needed to ensure that promised articles are actually prepared. In retrospect, project staff placed too much dependence on reader contributions.

A more intensive level of staff involvement is needed, but it is extremely important that community input into the content of the publication be retained. This can be accomplished by encouraging reader comments and articles, soliciting information from the community for use in articles written by staff, and obtaining feedback from the community on its expectations of, and reactions

to, the publication. Reader comments and articles should be used as often and extensively as possible, but only if they can be incorporated into the publication without a major increase in staff time devoted to the newsletter or delaying production and distribution.

There is a very significant difference between relying upon the community for articles and content and encouraging contributions and incorporating information from the community into articles prepared by the staff. Most communities will find that deadlines can be more frequently met and staff more effectively used if community contacts assist with the identification of major issues and provide information to the staff. Most of the writing should be done by the staff.

After several issues have been published, the staff should conduct a survey of the readers to determine their interests and response to the newsletter. It is best to do this after the newsletter has been in operation long enough to clearly establish a format and provide readers with a good idea of the range of subjects that will be addressed. A survey of the readers will allow staff to better define the audience that is responding to the publication while determining if this is the group for which the publication was initially designed. The analysis of the survey results should allow the staff to determine what changes (if any) in format, topics, and distribution may be needed.

Hennepin County pursued this information through a survey conducted after seven issues of the monthly Energy Exchange had been distributed. The results were extremely enlightening to staff and generally encouraging. The survey provided the staff with valuable information on community concerns and interests, while reminding the audience of the newsletter's purpose and existence.

The survey produced several conclusions that may be of value to others developing or considering a newsletter.

- Readers prefer that a newsletter concentrate on local news and refer to national issues and other regions only when they directly relate to local activities and programs.

- Respondents showed greatest interest in articles on residential conservation, local and neighborhood activities, energy-related legislation, financing for energy projects, and energy information and education.

Several of the findings from the survey seem to confirm the need for increased communication within the energy community.

- More than 52 percent of the respondents indicated that they "found information in The Energy Exchange which is not available from other sources."

- More than 20 percent had contacted authors of articles, resources mentioned, or Energy Exchange staff.

- The Energy Exchange had helped almost 65 percent of the respondents to identify local organizations and individuals that shared their interest in energy activities and issues.

Perhaps the most significant findings from the readership survey involved continuation of The Energy Exchange.

- Almost 83 percent of the respondents indicated that The Energy Exchange should be continued.

- Approximately 54 percent would subscribe even if there were a small charge.

Workshops

The difficulties encountered in attracting participants and ensuring positive results from the workshops have been discussed previously. Hennepin County's experience suggests, however, that community energy workshops can be valuable if organizers follow several guidelines:

- Efforts to promote and publicize the workshops are more effective when they are integrated with other communication and networking activities. Special efforts should be made to contact organizations with an interest in energy issues.

- In developing the workshops, attention should be given to expected results and the process that will be used to obtain them. If the staff does not make clear what they hope to accomplish, it will be difficult to focus the discussion and achieve the workshop's goals.

- Participants should feel free to make any recommendations that are needed. The Hennepin County project staff were concerned that the workshops would be perceived as an effort sponsored by County government. It was felt that sponsorship would inappropriately focus discussion on government and its role in addressing energy problems. It was important that participants consider all potential resources and concentrate on developing workable solutions with wide support.

- Meeting times and locations will greatly influence the level and character of participation. Hennepin County held one workshop session during the noon hour in the central business district of Minneapolis and the remainder in the evening at neighborhood locations. This schedule was designed to encourage community participation. The day session, however, was by far the most well attended. A more focused publicity effort with the meetings at more convenient times during business hours might have increased the number of participants. This

also supports the earlier finding that efforts targeted to a selected group would be more productive than attempts to promote attendance by the general public.

- Workshops are intended to produce results. They must be organized to accomplish this goal. If the group is large, it may be appropriate to use smaller groups directed by facilitators as the working level of the meeting. A discussion of the results from the small groups can help the staff to understand the rationale of suggested actions and determine the level of support among all participants.

- It should be made clear to the participants that their role is to identify, suggest and recommend. A group that is brought together to discuss problems and develop alternative solutions within a severely limited time period cannot be expected to provide recommendations that are easily translated into a coherent and comprehensive written report. This function should be handled by project staff.

Hennepin County staff collected comments, absorbed discussion and worked to understand recommendations and rationale. Following the workshop series, the staff completed the process. A summary of problem statements and recommendations was prepared and became the basis for the more formal report to participants and the community. This staff role supported the project and workshop objectives. It eliminated many of the delays and other difficulties of a volunteer committee approach, yet has allowed retention of the range of perspectives offered by the community.

Community Energy Policy

An effective energy management strategy for the community cannot be developed without participation and support from the community. Too often, policy is created without the valuable contributions of

those for whom the policy is being made. As a result, the policy often cannot be successfully implemented and lacks the support needed for action.

In this project, Hennepin County attempted to involve the community in identifying problems and developing alternative solutions to address those problems. The Energy Exchange helped establish a network from which participants in the workshops could be sought. The Energy Action Plan was based on the discussions in the workshops.

The Energy Action Plan is an energy management strategy for the community that contains the workshop participants' suggestions for alleviating concerns they feel must be addressed. It affects many different organizations and suggests a broad variety of actions--some new and innovative, others only modifying approaches that have already been implemented. It contains clear expectations of consumers (the public), businesses and government. Some of its suggestions are specific, but others are broad and request that those organizations involved develop the specific actions required to address the problem.

A "policy" is "a principle, plan, or course of action as pursued by government, organizations or individuals." The Energy Action Plan is a policy in the broadest sense of the word--it is a plan or course of action for the community. There is no single organization that is responsible for taking the actions recommended in the Plan.

Action is needed and suggested in every sector of the community. The participants in the workshops, the readers of The Energy Exchange, and the community organizations and governments to which this plan will be distributed must work together if the policy presented in this plan is to become reality.

APPENDICES

Appendix A

The Energy Exchange

Energy Exchange
a community resource

November 1982

Waste Management Saves Money and Energy

by Dan Krivit
Source Separation Consultant

Municipal solid waste is an extremely heterogeneous mix of modern society's discards--everything from inorganic metals and glass to organic food and other plant-derived products such as paper and wood. Because of this diversity in the waste stream, we need to look at a comprehensive variety of alternatives to our present landfilling system.

The theory discussed in this article is that developing a comprehensive solid waste system that incorporates as many waste reduction and resource recovery methods as possible will not only be the most economically stable due to diversity, but also will yield the greatest energy savings.

Waste reduction can be both a personal and legislated means of reducing the amount of discards. The strongest and most easily implemented reduction strategy is to educate yourself and others within your influence about "environmental shopping." This is simply a matter of choosing items on the shelf that give you the most product and least container for the money. This practice saves energy and other natural resources and reduces the need for landfills. In addition, it will save you money at the checkout counter. (For more information, call the Minnesota Pollution Control Agency at 296-7373 and ask for their free booklet, The Environmental Shopping Guide.)

The most well known waste reduction strategy is container deposits, a legislated form of environmental shopping and recycling. This is a proven means of increasing consumer awareness and recycling because of the direct influence on behavior of a 5 or 10 cent deposit on beverage containers.

It is best to break down any resource recovery system into four components for an energy and cost analysis: collection, preparation, transportation and treatment. "Treatment," as it is used here, means reusing waste in a manufacturing process, burning waste to recover energy, composting or final landfilling. Hennepin County is pursuing several resource recovery alternatives: leaf composting, office paper recycling, residential source separation and large-scale refuse-to-energy facilities.

continued on next page

IN THIS ISSUE

the Energy Exchange

The Energy Exchange is a resource for you! Its goal is to assist local community energy efforts by providing an opportunity to exchange information and ideas among the various organizations, groups and individuals interested in energy. This newsletter is nonpartisan and consists mainly of articles, ideas, opinions and other contributions made by its readers. Your participation is encouraged!

Suggestions and written contributions can be made by sending them to *The Energy Exchange*, A-2308 Government Center, Mpls., MN 55487, or by calling 348-5106. The staff reserves the right to edit submitted articles.

The Energy Exchange is published monthly by the Hennepin County Office of Planning and Development, with the support of the U.S. Department of Energy Grant No. DE-FG02-78IR05106. Any opinions, findings, conclusions, or recommendations expressed herein are those of the contributing authors and do not necessarily reflect the view of Hennepin County or the Department of Energy.

NEXT MONTH

- More on Solid Waste and Savings
- A Unique Residential Loan Program

Krivit--continued from page one

The County's composting program has been in operation for many years, with the greatest growth in the last two years. Leaves are collected separately from the mixed refuse and then hauled by residents or municipal crews to an open composting site where the County then piles the leaves into "windrows" and innoculates the leaves with compost "starter" (a mix of micro-organisms to accelerate the natural decomposition process). The energy savings comes from reduced transportation to and from distant landfills and reduced collection and transportation of black dirt and peat moss for which leaf compost can substitute. Further expansion of this leaf composting program and examination of mixed waste composting could lead to even greater efficiencies and system stability. (On January 11, 1982, the Upper Mid-West Conference on Composting of Municipal Wastes in St. Paul will explore these ideas. For more information, call 297-2728).

The cities of Minneapolis and St. Louis Park have both recently started curbside recycling experiments to determine if this type of recycling collection service should be provided city-wide. Both pilot programs are funded in part by Hennepin County. Newspapers, cans and glass are collected once a month in Minneapolis and once every two weeks in St. Louis Park, and then hauled to recycling centers for processing, transportation and then re-manufacturing.

The U.S. Environmental Protection Agency (EPA) conducted their own demonstration of this type of residential, multimaterials source separation program in Marblehead and Somerville, Massachusetts, from 1976 to 1979.[1] The major conclusion was that the curbside recycling program in Marblehead saved nearly four times as much energy as was used by the town's entire solid waste collection and disposal operations without recycling. While collection,

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[1]U.S. Environmental Protection Agency, Multi-material Source Separation in Marblehead and Somerville, Massachusetts, Volume IV, 1979.

CURA Report Looks at Energy Required for Peatland Development

In recent months there has been renewed attention given to the potential development of Minnesota's peatland. The majority of the estimated 5.9 million acres of peatland are found in the northern part of the state. Firms from both Minnesota and outside the state have expressed continued interest in this energy source. Governor-elect Perpich has made it clear that peat development will be at the fore of his planned energy initiatives. The University of Minnesota's Center for Urban and Regional Affairs (CURA), through its Peat Policy Project, has been among the leaders of those groups assessing the potential and limitations of peatland development.

CURA has been involved with peatland studies since mid-1980. A report published in April 1981, Energy from Peatland: Options and Impacts, was designed to provide lawmakers, government energy staff, industry officials and citizens with a summary of peatland research. This report discusses possible uses for peat and the processes involved in its extraction or, alternately, its cultivation as a soil on which to grow renewable energy resources. Environmental concerns receive particular emphasis due to the fragility of wetland systems and the lack of American experience in peatland use. Because peatland development has become tied to hopes for improving the economy of Northern Minnesota, economic and social impacts are examined.

Earlier this year, CURA made available a technical supplement to the original report, Peatland Energy Options: Systems Analysis. This supplement, written by Roger Aiken and Douglas S. Wilson, is a summary of calculations comparing the amount of energy that could be extracted from the 2.5 million acres of peatlands regarded as potential commercial reserves using several approaches. This is accomplished by detailing energy consumed, expected losses and energy made available by each of three mining techniques and a renewable approach, in which cattails are grown as an energy crop. A similar energy systems analysis is performed on the possible conversion processes that change harvested peat into a usable fuel product.

Single copies of Peatland Energy Options are available free of charge from CURA at 612-373-7833. A full report of the technical study undertaken by Aiken and his associates, "Estimation of Energy Inputs and Need for Peat and Peatland Biomass Development," will soon be available from the Agricultural Experiment Station, St. Paul Campus of the University of Minnesota. Information is available from Ms. Signe Betsinger at 612-373-0964.

More Financing Information

Last month's Energy Exchange feature on financing energy improvements generated considerable reader interest. A recent bibliography by the State Energy Library will further help those with an interest in this subject. It catalogues much of the material available on Financing Energy Conservation and Alternative Energy Projects. This six page listing covers articles, reports and books under ten subjects ranging from "Investing in the Energy Transition" to discussions of community resources and the role of banks in energy ventures.

Free copies of the bibliography are available. Requests should be directed to:

Roberta Hovde
Minnesota Department of Energy,
Planning and Development
Energy Library
150 East Kellogg Boulevard, Room 980
St. Paul, MN 55101
612-296-7952

Oberstar Proposes District Heating Legislation

The following is excerpted from a speech by Eighth District Congressman James Oberstar to the Annual Conference of the International District Heating Association which met in St. Paul on October 26-28. A week before, SOHIO Corporation had announced that it would write off millions of dollars of investments and withdraw its support from a major synthetic fuels project in Wyoming. This decision followed by six months a similar move by Exxon Corporation to end its involvement in a project designed to produce fuels from oil shale.

While neither Exxon nor SOHIO had requested government assistance, their partners had expected to receive funding from the Synthetic Fuels Corporation. The consequence of these decisions are fairly obvious: the Synthetic Fuels Corporation has money to spend, but no viable project to fund.

I want to enact legislation which will give the Synthetic Fuels Corporation worthwhile, capital conservation projects to fund instead of economically questionable and potentially environmentally dangerous synthetic fuels development. I would like to see the Synthetic Fuels Corporation in the position to provide communities with the money to develop energy efficient, clean, economical district heating systems.

We have the legislative vehicle which would give the Synthetic Fuels Corporation such authority. It would allow the corporation to fund district heating and cooling and municipal waste energy projects. I have introduced this legislation, H.R. 5833, with my colleague, Congresswoman Claudine Schneider of Rhode Island, who shares my deep interest in conservation and environmentally safe energy projects. Our bill represents the products of extensive deliberations of the Northeast Midwest Congressional Coalition and of two hearings which we held last year, working closely with the U.S. Conference of Mayors and with district heating and resource recovery organizations throughout the nation.

The purpose of the legislation is to:

- Broaden the lending authority of the Synthetic Fuels Corporation to include district heating and cooling. These projects would be eligible for all forms of financial assistance available from the corporation.

- Amend Section 132 of the Energy Security Act, relating to loans made by the Synthetic Fuels Corporation, by adding a new section--Section 132a--authorizing price support loans for municipal waste to energy projects.

- Stipulate and require that 25 percent of the financial assistance available from the Synthetic Fuels Corporation be directed to district heating and cooling and municipal waste to energy projects.

- Require the Board of Directors of the Synthetic Fuels Corporation to assure that the Corporation is organized and staffed so as to effectively evaluate, process and review applications for district heating and cooling and municipal waste to energy projects.

District heating and cooling systems have been getting increased attention in these days of energy conservation and "appropriate energy technology," particularly in Minnesota . . . The Iron Range has some of the largest residential systems in the world.

District heating, like so many other conservation efforts, was derailed by the decade of cheap oil and gas enjoyed in the country during the post-war decades until 1973. The continuing increases in energy prices in the past seven years have forced a revival of interest throughout the country, in the private and public sectors in district heating.

From the standpoint of energy cost and availability, communities with district heating systems will look particularly attractive to industries, businesses, and families that need reliable sources of heat, electricity, and cooling.

District heating and cooling also offer the very attractive prospect of stabilizing heating and cooling costs for business, industry, and residential consumers, through its broad-based distribution of costs. Only 25 percent of the annualized cost of supplying thermal energy through district heating and cooling is in fuel costs; 75 percent is in capital costs. This suggests that fuel price inflation will be less of a factor in future energy pricing for district heating and cooling customers than for other systems.

The Synthetic Fuels Corporation should be broadened to include energy options applicable to all regions of the country in order to spread out this much-needed investment capital. The entire Northeast-Midwest is virtually eliminated from consideration in Corporation spending decisions. Such regional discrimination will only strengthen growing opposition to the Corporation within our region.

There are benefits for states interested in developing district heating and cooling systems. If district heating were developing in all Minnesota communities over 5,000 people, the total heat delivered by the year 2000 would be 44 trillion BTUs per year. This is about 3.5 percent of the state's projected primary energy demand in the year 2000. Since about 60 percent of this would be cogenerated, the heat would be produced by fuels also used to generate electricity. Cogeneration would save 28 trillion BTUs of energy per year. This is equivalent to 200 million gallons of oil per year.

So why isn't every city in the United States scrambling to convert to district heating? Because of the high costs of financing these projects. The assistance provided through the Synthetic Fuels Corporation would mitigate financial impediments and promote development of these innovative energy technologies. As a matter of public policy, government, federal, state and local, has a responsibility to stimulate the development of initiatives like district heating.

CLFSEC Assembly Scheduled

"Minnesota's Future Energy Agenda" will be the theme of the Third Annual Assembly of the Minnesota Citizens Labor-Farmer-Senior Energy Coalition (CLFSEC). The Assembly will be held December 11 at the St. Paul Vocational Training Institute (TVI) from 9:00 a.m. to 4:30 p.m.

Governor-elect Rudy Perpich has been invited to deliver the morning keynote address to the Assembly. Mark Dayton, 1982 DFL candidate for the U.S. Senate will speak in the afternoon on the "Benefits of Sensible State Energy Policy."

There will be workshops discussing legislative and administrative solutions to Minnesota's energy problems. Topics will be renewable fuels, energy conservation, means of guaranteeing access to energy supplies for low-income Minnesotans. Workshop leaders will include legislators, state government officials, utility experts, and representatives from labor, farm and senior citizen groups.

CLFSEC seeks to change public policy to provide adequate energy at affordable prices, increased employment through environmentally sound alternative energy technologies, and self-sufficiency through energy conservation. CLFSEC is composed of individuals and over 30 organizations with a combined membership of over 300,000. Among the organizations represented are the Minnesota AFL-CIO, the Minnesota Farmers Union, the Minnesota and Metropolitan Senior Federations, the Minnesota Public Interest Research Group (MPIRG), and the Minneapolis Urban Coalition.

The conference is open to all, regardless of whether a member of a participating organization or not. The St. Paul TVI is located at 235 Marshall Avenue in St. Paul. Fee for the conference is $10 which includes lunch. Make checks payable to Minnesota CLFSEC. For further information contact Tobey Lapakko at 227-7647 or outstate 1-800-652-9004.

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Krivit--continued from page two

transportation and preparation of the material used significant amounts of energy, the benefits of recycling still provided a net savings. All of the energy saved was in "treatment" or manufacturing of recycled products compared to using virgin materials.

The similarities between the Marblehead experience and the Twin Cities area are obvious. One of the differences is that recyclables were collected weekly rather than monthly, as is most common here. The EPA study went further to examine the net energy savings of burning the solid waste at the Saugus, Massachusetts, refuse-to-energy facility 10 miles away from Marblehead. Finally, EPA looked at the combined energy savings from both source separation and energy recovery. The results are presented below.

ENERGY USED AND SAVED IN MARBLEHEAD'S SOLID WASTE DISPOSAL ALTERNATIVES

In 1000 BTUs/Ton Saved (Used)

	Landfill Only	Source Separation Only	Energy Recovery Only	Source Separation With Energy Recovery 12.5%	25.0%
Collection	(224)	(227)	(224)	(200)	(227)
Preparation	(103)	(162)	(103)	(132)	(161)
Transportation	(52)	(221)	(52)	(108)	(144)
Treatment	(59)	2,205	6,678	7,486	8,005
Total	(438)	1,595	6,299	7,046	7,473

The table shows five solid waste disposal alternatives that were examined. The "source separation only" option was based on Marblehead's actual program results. The savings from the combined source separation and energy recovery alternative were calculated using two assumed materials recovery rates for the curbside recycling element; 12.5 percent and 25 percent.

The combined source separation with energy recovery alternative, with 25 percent recovery rate, had the highest energy return of the Marblehead options, yielding 7.4 million BTU/ton. Energy recovery of all wastes would return about 6.3 million BTU/ton. Landfill of all wastes would use about 0.4 million BTU/ton. Hennepin County residents and businesses produce about 2,700 tons of waste per day.

The other conclusion from the study was that as more materials are source separated, the energy savings attributed to energy recovery decrease since fewer materials are processed in the energy recovery facility.

These conclusions from the EPA study have implications for solid waste planning in the Twin Cities area. While the decreased BTU content of the mixed waste due to source separation may not be significant until a large portion of the waste is recycled, our best energy "buy" is through a comprehensive system made up of a variety of strategies. A multi-faceted approach using waste reduction, source separation, composting and energy recovery will yield both greater economic stability through diverse uses and markets and greater energy savings as material will be used for its highest inherent value.

Dan Krivit is the director of the Minneapolis/Hennepin County Curbside Recycling Project.

How Does Uncertainty Affect Energy-Saving Investments ?

by Bob Hagen

Investments in energy-saving materials or devices are usually one-time expenditures which yield energy savings over a period of time following the investment. This, together with the fact that different investment activities have periods of differing lengths over which benefits are expected to accumulate, requires that the investor express the profitability of each investment in a way that permits an economically meaningful comparison. This comparison can be made by expressing each investment's stream of expected future benefits (realized in the form of lower utility bills) as a single number--its "present value"--which is then divided by the cost of the investment. The result is the expected present value of the future benefits per dollar invested.

Expressing an investment's expected future benefit in present value terms telescopes future benefits into what these future benefits are worth today. This is handy because the investor must decide what to do with his money today.

For example, a homeowner believes that he can save energy, and therefore reduce his costs, by covering his windows with plastic during the winter. He expects that making this investment will lower his heating bill by five dollars a month for the next six months, at which time he will take down the plastic and throw it away. However, the future stream of savings is not currently worth $30 ($5 per month for 6 months) to the homeowner, but something less.

He could, as an alternative, invest $29.13 in a savings account earning six percent interest and have $30 in six month's time. The present value of the savings is, therefore, $29.13, not $30. If the plastic costs three dollars, the savings per dollar (expressed in present value terms) resulting from covering the windows is $29.13 ÷ $3 = $9.71.

The usefulness of present value can be seen by extending the example. Suppose the same homeowner wants to know whether to put plastic on his windows or spend $40 to caulk his window frames. If he caulks, he expects to lower his annual heating by $50 each year for 10 years, at which time the caulking will disintegrate.

The savings from caulking (also expressed in present value terms) is about $425. The savings per dollar resulting from caulking is thus $425 ÷ $40 = $10.63. The savings per dollar from covering the windows with plastic would be, as calculated earlier, $9.71. After performing these calculations, the homeowner chooses to caulk his windows since the return is almost one dollar greater per dollar invested. But is this the right choice?

Recall that the homeowner's benefits are expected reductions in his heating bill. He cannot calculate future benefits precisely because they depend upon future energy prices and the weather--two variables which can vary substantially over relatively short periods of time. His expected benefits are no more than his, or someone else's, best estimates of what future benefits will, in fact, be. They may turn out to be larger than anticipated. Then again, they may be smaller.

How does the homeowner face this uncertainty? If he is like most people he will say to himself, "I am not a gambler. If my neighbor offered me the chance of earning two dollars if the flip of a coin comes up heads, I would not be willing to give him one dollar in order to take the chance. The certainty of keeping the dollar is worth more to me than the 50-50 chance of double or nothing. In order to induce me to accept the bet, my neighbor would have to first give me, say, two cents which I'll call my 'risk premium.'"

continued on next page

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Realizing that his energy-saving investments are also gambles since the benefits are uncertain, our householder further discounts the value of future expected benefits. He adds a risk premium of two percent per year to the six percent discount rate he used in arriving at the original present values.

This time he finds that the present value of his expected benefits from covering his windows is reduced from $29.13 to $28.85, while the present value resulting from caulking declines from $425 to $335. His savings per dollar are now $28.85 ÷ $3 = $9.62 for the plastic and $335 ÷ $40 = $8.38 for caulking. Consequently, he changes his mind and chooses the plastic rather than the caulking.

The switch in the relative attractiveness of the two investments was due to the use of a risk premium in the calculations. A risk premium discounts future expected benefits more the farther in the future they accrue. Thus, the longer-lived caulking alternative suffered a relatively larger discounting of its expected benefits than the shorter-term plastic alternative. This makes sense since benefits which are realized farther in the future are subject to more uncertainty.

This simple example points out that ignoring the uncertainty surrounding future expected benefits can lead to a bias against investments with shorter lives and a corresponding bias in favor of longer-term projects. While the bias may be of little consequence to our homeowner, it has significant ramifications for society as a whole. Exclusion of a risk premium when determining the benefits of government efforts to save energy will lead to a misallocation of resources with longer-lived investments being artificially favored over those with shorter time horizons.

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Appendix B

Hennepin County Energy Action Plan Summary

TABLE OF CONTENTS

I. INTRODUCTION

The Hennepin County Energy Action Plan is the result of a process designed to produce a practical approach to the coordination of local energy activities. The Plan identifies major energy issues to be addressed and recommends a direction for their resolution to the community and its organizations.

Most communities are presently faced with fiscal and political constraints that discourage the development of large government responses to problems. This is certainly true for energy problems, despite continued or anticipated increases in fuel prices. Local governments often attempt to alleviate problems by using committees or task forces. Communities have been disappointed by many of these attempts and have come to recognize that there are limits to the value of task forces and committees. In contrast, this project used two different mechanisms to incorporate community perspectives into an Energy Action Plan built around present economic and political factors.

The Plan development process was initiated with production of The Energy Exchange newsletter, distributed to County residents interested in energy matters. The newsletter aided staff in encouraging communication among concerned individuals and organizations. This network was used to develop and publicize a community workshop series, which discussed local energy issues. These discussions, involving individuals and representatives of businesses, community groups and utilities were the basis for the structure and content of the Energy Action Plan.

The Plan is not a comprehensive or sequential program for resolving all local energy problems. Its recommendations are of varying specificity, may overlap, and represent the views of a very diverse group of citizens. This Plan is, however, a summary of many commonly-voiced policy and process suggestions that deserve

consideration and can serve to stimulate further discussion and action in Hennepin County and as a guide for similar efforts elsewhere.

Several principles emerge from the Plan and give direction for developing a practical approach to community energy policy. These principles recognize:

- The essential role of energy in the economic and social well-being of the community.

- The importance of some level of local government involvement in energy issues.

- Certain expected behaviors in energy use and management by consumers, the private sector and the public sector.

- The value of programs and cooperative efforts implemented at the neighborhood or municipal level.

The discussion of problems and possible solutions is presented in five general topics areas:

- Energy Education, Information and Technical Assistance
- Low-Income Energy Assistance
- Energy and Housing
- Financing Energy Improvements
- Energy Action Coordination

Each of these sections begins with a Problem Statement that presents the difficulties that inhibit further reduction in energy use and costs. Community Recommendations follow, including an attempt to identify organizations that should be involved in a solution.

Each Recommendation is followed by a Rationale, providing more specific background information and support for the suggested action.

II. ENERGY EDUCATION, INFORMATION AND TECHNICAL ASSISTANCE

PROBLEM STATEMENT

This project recognized that there is a variety of energy education, information and technical assistance services available from many organizations in the community. Unfortunately, however, there has been little cooperation among groups supplying this information, often resulting in duplication of some services while other needs remain unaddressed. Misinformation and frustration may result for residents whose information needs are not met. Furthermore, the costs of these information "gaps" are felt by the entire community, as opportunities for decreased energy use are lost.

The existence of this problem is not surprising. Prior to the OPEC oil embargo, virtually all consumer oriented energy information efforts that existed were conducted by energy producers and were designed to promote energy use. Energy price increases have, however, forced a radical change in consumer awareness and provider attitudes. Changes in consumer behavior have led to the redesign of old products and the introduction of new energy-related products and services. Energy awareness efforts have progressed from simple, promotional slogans designed to sell energy to comprehensive information services that stress conservation and consumer behavior changes.

Energy information and education efforts may stimulate further reductions in energy consumption. Despite the progress which has been made in the last decade, there is the potential for significant energy use reductions by continuing to change the way residents think about energy. Developing consumer energy consciousness is difficult, but it is often a less costly and more productive way to save energy than initiating structural improvements.

RECOMMENDATIONS

1. Increase Visability of Information Efforts

Recommendation: All organizations providing energy education, information and technical assistance services should cooperate in the development and implementation of a highly visable campaign to focus public attention on energy and what individuals can do to decrease energy consumption and cost.

Rationale: The mobilization of all area energy, education, information and technical assistance resources can produce significantly greater benefits than can be gained through individual action. The interest of the general public can be captured by such a campaign and residents may be motivated to act by the apparent momentum of public attention to the subject.

Benefits will also result for those organizations involved in the campaign. Their services will be publicized, the success associated with their cooperation will encourage future coordination, and the organizations' employees will be motivated by the public response.

2. Eliminate Gaps in Informational Services

Recommendation: All organizations providing energy education, information and technical assistance services should meet and attempt to coordinate their service delivery efforts. The Minnesota Energy Division and other state and local governmental agencies should provide assistance to these organizations as resources permit.

Rationale: Energy education, information and technical assistance efforts tend to concentrate on selected areas (for example, weatherization techniques in single family, owner occupied dwellings) to the exclusion of others. Although such gaps may be understandable, they cannot exist without costs.

By coordinating organizational efforts, better use could be made of available financial and other resources and costly duplication could be minimized. Particular attention should be given to addressing information gaps and maintaining coordination through communication among these organizations. Energy information and assistance services are specially needed for small businesses, multifamily housing owners and managers, tenants, and mobile home residents.

3. **Utilize Available Resources**

Recommendation: All community and business organizations should examine their resources and look for ways to provide energy education and information services to their members and the public.

Rationale: Given the complex relationship between energy and society evidenced by the effects of energy shortages and price increases, there are few institutions which do not have a stake in energy use decisions. This recommendation specifically applies to employers, schools, churches and community or social service organizations as described below. (The opportunities for governments to provide energy information services are mentioned throughout this plan and particularly in Section VI, Energy Action Coordination.)

a. **Employers**

Many local firms provide energy information to their employees. While such efforts are most often work related (fuel saving driving techniques, ridesharing promotions), they have also included information on residential

conservation and financing energy improvements. Both the employers and employees benefit from this arrangement and employeer-employee relations are strengthened.

b. **Schools**

Our school systems not only impart knowledge, but also influence the development of socially appropriate behavior. In this regard, they have great potential for influencing the energy awareness and use habits of future generations. Although energy curricula exist, more extensive development and use is needed.

c. **Churches**

Many area churches have recently encountered the need to provide counseling and other services relating to economic problems faced by their congregation. As these problems may well include difficulties in paying home heating bills, churches are encouraged to educate (and become educated) about available assistance resources. Similarly, traditional energy information organizations are encouraged to cooperate with area churches and make use of their resources.

d. **Community/Social Service Organizations**

In the last several years, community and social service organizations have often been called upon to respond to public sector cutbacks. Area community and social service organizations have responded admirably to such calls and it is unrealistic to expect a continuing assumption of new responsibilities. Nonetheless, as with churches, these organizations are encouraged to provide or refer their clients to education, information and assistance services that may be available and appropriate.

4. Local Action Encouraged

Recommendation: Consumer oriented programs should be developed to involve residents at the neighborhood level in a highly visible effort which educates, informs, and provides technical assistance on ways in which energy consumption patterns can be changed.

Rationale: State or federal resources are generally best suited to providing specialized technical assistance and designing energy education and information packages. Local resources are better used for delivering services. The Neighborhood Energy Workshop program being conducted by the city of Minneapolis and Minnegasco provides residents of a given neighborhood with energy education, information and technical assistance. It is an example of a successful neighborhood-based program conducted by a local government and a utility. While resources to duplicate this approach do not exist in every area, emulation of it as possible is recommended.

Several benefits can result from neighborhood or municipal action. First, it is often cited as the best means to combat public apathy. Action by one household tends to encourage action by neighboring households. Second, it can involve the resources of various local organizational resources, thus preventing the burden of such action from falling on any one group. Third, it develops local expertise in problem solving, which can then be called upon in the future. Finally, it can create a sense of unity through an appreciation of common problems, leading to cooperative action among neighbors.

As noted, local action can involve the use of various local organizational resources. Schools, community service organizations and churches have often shown a willingness to provide assistance, but typically, one organization must take a leadership role. Where no other organization can assume this

leadership, local government is encouraged to do so. (Note: One proposal which was received called for the establishment of a network of energy coordinators who would train volunteers from various local organizations. The proposal suggested Hennepin County sponsor this plan in conjunction with the HUD Urban Hennepin County Community Develop Block Grant Program. This proposal is being considered for inclusion in next year's program application.)

5. **Encourage Industry Responsibility**

Recommendation: Industry-wide organizations should assume a lead role in energy education and information efforts, and all energy related industries should consider developing a procedure that certifies responsible installers and products.

Rationale: Industries associated with energy goods and services have a unique potential to provide valuable energy education and information. A common criticism is that this potential is not being realized. Many of the firms involved in energy related businesses are too small to initiate or maintain efforts of their own. While consumer demand may be the most effective means to bring about the desired changes, the industries themselves have a responsibility to develop an improved energy education and information capacity. Cooperative action through a business or professional association may be an effective means of meeting this responsibility.

There has been some criticism that solar and other innovative energy industries exhibit considerable variance in firm and individual installer competency. A program that requires certain minimum standards of knowledge and competency would help alleviate this problem, benefiting both consumers and the industry.

6. Alter Energy Use Behavior

Recommendation: All organizations providing energy education and information services should encourage and support changes in consumer energy use behavior.

Rationale: Changing the ways in which energy is used is not as glamorous or exciting an answer to energy problems as the latest technological breakthrough, but it may be more valuable in reducing overall energy consumption. Altered energy habits may not only result in significantly reduced consumption, but can usually be accomplished at little or no cost to the consumer.

III. LOW-INCOME ENERGY ASSISTANCE

PROBLEM STATEMENT

Many low-income households do not have enough money to pay the full cost of the energy needed to heat their homes or apartments. Although this may seem obvious, only recently has the full impact of this situation become evident to public and private decision makers. Although improved financial management or weatherization efforts that result in decreased consumption could help some of these low-income households, a significant number of them will not be able to meet their bills even after such services are provided. Energy prices have recently been increasing at a rate that is far out of proportion to other goods. At the same time, unemployment has increased and government programs that provide financial assistance to low-income households have been reduced.

There are several reasons that the market approach being pursued by the federal government has not been effective in reducing the energy consumption of low-income households. Nearly all energy improvements require an initial capital investment which will then be returned in the future as savings on fuel bills. Obviously, few low-income residents are in a position to make the initial investment that is required. Many low-income residents live in rental housing. Even if capital were available, most tenants would not make energy investments in their housing since they do not own the property and cannot retain the increased value. In addition, renters are not motivated to make energy improvements in their residence because they rarely remain in a residence long enough to realize the payback from the improvement. Neither is there an economic motive for the landlord to conserve because, in many cases, utility bills are paid by the tenant.

Any solution to the low-income energy problem must consider the relative merits of fuel assistance payments and weatherization programs. It is evident that some need for assistance payments

would remain even if every dwelling could be fully weatherized. However, the demand for public resources to pay energy bills can be reduced by investing in increased weatherization. Few would argue for one of these approaches to the exclusion of the other; an appropriate mix must be determined.

The low-income energy dilemma becomes even more distressing when it is realized that the true proportion of households suffering from energy hardship is understated. There is little doubt that each household being threatened with a utility shut-off represents several more that are managing to pay their utility bills by sacrificing other needs. Other households, placed in a hardship situation for the first time due to unmanageable energy bills, reject assistance for reasons of pride.

The initial task is to identify which organizations are, or should be, involved in the energy assistance effort and what their responsibilities should be. Present efforts are rather fragmented and uncoordinated and result in confusion and uncertainty for area residents in need of assistance and those attempting to provide it.

RECOMMENDATIONS

1. Energy is Essential for General Welfare

Recommendation: Governments, community and service organizations, churches, businesses, neighborhoods and all groups that address or are concerned about the needs of society should make a conscious effort to add residential heating to that list of concerns for which they provide advice, referral and, if possible, financial assistance.

Rationale: Progress in addressing low-income energy assistance needs will depend on the degree to which energy is considered essential to the safety and welfare of individuals and families in Minnesota. Energy is essential for survival in the severe climate of the upper Midwest. Those who are

genuinely unable to meet their home heating needs must be aided by society. Until the low-income energy issue is recognized as a continuing economic problem, the approaches used to meet this need will continue to be fragmented and makeshift and will be unable to secure the commitment of societal resources necessary to adequately address energy hardship. It is unfortunate that the need to add energy as an element of general welfare should come at a time when the resources of community organizations are already strained. It is becoming clear, however, that energy is as important as more traditional welfare concerns.

2. **Initiate a Coordinated Programmatic Response**

Recommendation: A discussion involving representatives of local government, public assistance programs, community groups, utilities, current low-income energy assistance programs, assistance recipients, and business groups should be held to develop some standards for receiving energy assistance and to mobilize the resources of public and private organizations to meet these needs.

Rationale: The recent increase in the number of potential shut-off situations this winter and citizen concerns expressed about these situations are evidence that the low-income problem is urgent. While there has been unusual growth of the problem this heating season, those familiar with such issues had anticipated that it would intensify as the deregulation of natural gas continued. No one expects this problem to decrease in the next several years. Local attention is therefore needed.

Representatives from public interest groups, public assistance programs, community groups, utilities, current energy-related low-income assistance programs, recipients and business groups should be involved in the discussions. While the interests of low-income residents are often well represented by community

and public interest groups, their direct participation in the discussions will guarantee that their concerns are heard and permit them to "own" any solution which results. Rarely is a problem adequately resolved until the plan is accepted by those it is designed to help.

One of the first tasks to be accomplished during the discussions should be to establish a definition of need for energy assistance. Determining the number of households that may qualify for assistance will provide, for the first time, some real measure of the size of the low-income energy problem. Among the factors that should be considered in determining eligibility for energy assistance are income, assets, energy bills, outlook for future ability to pay, other public assistance received, housing situation and efforts at conservation (including acceptance of weatherization).

(NOTE: The Hennepin County Board of Commissioners recently established an Emergency Needs Task Force whose representation and general goals are very similar to those contained in this recommendation.)

3. **Coordinate Weatherization and Fuel Assistance Effort**

   a. **Recommendation:** Program changes should be initiated that will permit appropriate coordination and cooperation between the weatherization and fuel assistance programs.

      Rationale: A mix of weatherization and fuel assistance services should be available to persons eligible for assistance. The need for fuel assistance payments can be diminished by effective use of weatherization programs. An analysis of weatherization needs and projected costs for the low-income housing stock and anticipated future energy assistance payments should be used to develop an allocation plan for government investment in these two forms of aid.

b. **Recommendation:** Administering agencies should require that weatherization has been completed or applied for in order to be eligible for fuel assistance payments, if adequate weatherization resources are available to meet demand.

Rationale: Weatherization services are available to low-income households from a variety of public and private sources. They are available to multifamily structures in which at least two-thirds of the units are occupied by low-income households. These services are, however, optional. Currently, they are underutilized. Many of those eligible for services, especially older people, are mistrustful and prefer to reject the service rather than have strangers entering their home. These suspicions may be combined with a general concern for privacy and protection of property. Others may refuse weatherization because of an aversion to "taking charity." This feeling may be particularly prevalent among those who have been placed in a low-income situation for the first time as a result of energy costs or the recession. Still others may be unaware of the existence of the weatherization program and the benefits it can provide.

Tying weatherization and fuel assistance together would stimulate weatherization of low-income residences and could reduce the future expenditure of public funds for fuel assistance payments for energy inefficient homes.

Efforts by churches and neighborhood groups to inform and ease residents' concerns about weatherization would be greatly valued and involve a minimal commitment of resources. Neighborhood level initiatives can help alleviate obstacles to action and have been shown to be successful.

4. **Extend Weatherization Resources**

Recommendation: Local units of government should explore opportunities to augment the resources available for weatherization.

Rationale: Community organizations or supervised youth programs could deliver some of the less technical low-cost and no-cost improvements, freeing significant amounts of funding for the purchase of more extensive improvements from professional contractors. Simple improvements and possibly energy use training could be implemented by neighborhood or other sub-local groups.

5. **Explain the Cold Weather Rule**

Recommendation: Government employees and community organizations working with low-income residents and the media must become familiar with the "Cold Weather Rule" and provide explanations and needed guidance to residents on its provisions and meaning.

Rationale: The Minnesota Public Utilities Commission adopted the Cold Weather Rule, governing shutoffs by regulated utilities, in 1978. The rule offers protection against a shutoff affecting primary heating sources from October 15 to April 15, providing bills have been currently paid or that an arranged payment schedule has been developed as of October 15. The rule offers two levels of protection: it grants "inability to pay" status for the six month period between October and April and provides that all are entitled to a payment schedule designed to cover present and expected utility bills.

The Public Utilities Commission must continue its recent efforts to dispel misconceptions about the Cold Weather Rule. Presently, the Rule contributes to confusion concerning past due energy bills. Utility reluctance to shut-off any residence

results in widespread belief that households simply cannot be shut-off. This causes ever increasing arrearages and delayed payments by many who can afford their bills. Providing information and publicity in the community about the Cold Weather Rule can avoid this unnecessary confusion.

IV. ENERGY AND HOUSING

PROBLEM STATEMENT

The energy efficiency of the local housing stock has begun to improve. With the increase in natural gas prices created by deregulation, attention has been focused on initiating energy improvements for existing homes and developing energy-saving construction for new dwellings. Energy consumption for space heating has been reduced and public interest in technologies for further savings is increasing. Most progress in the energy efficiency of housing has been market induced; unfortunately, there are significant sectors of the housing stock which, for various reasons, are not responsive to the energy market and require a different approach.

The most significant and intransigent of these exceptions--rental housing--was mentioned in the previous section because it is an integral part of the low-income energy problem. In most rental situations there is little or no motivation to conserve on the part of either tenant or landlord. The problem is even greater when an owner purchases property for speculative reasons. In these instances, increasing property values are relied upon to provide a quick profit; there is often little concern with even basic property maintenance, let alone energy efficiency.

There is considerable opportunity to further reduce energy consumption for home heating by eliminating obstacles to the market's functioning. Some sectors of the housing market have been neglected in efforts to provide technical assistance, information and programmatic response (see section II: Energy Education, Information and Technical Assistance). Until recently, the majority of such attention has been focused on owner-occupied single family dwellings; increased support is needed for the conservation efforts of tenants, landlords and managers of multifamily structures.

More appropriate utilization of the present housing stock is discouraged by the regulatory, financial and psychological barriers which often confront those considering innovative, energy-efficient housing designs and development.

Finally, many opportunities to increase the energy efficiency of new construction and development have been overlooked. In many cases, local government building codes and zoning practices have not been re-examined since energy consumption became a matter of economic and community concern.

RECOMMENDATIONS

1. Emphasize Decentralized Approach

Recommendation: Efforts to encourage residential conservation and to provide related information should be pursued on a neighborhood or decentralized level.

Rationale: There is a good deal of local expertise and interest in the continued reduction of residential energy use. The most successful and commonly imitated efforts have had modest goals and have been delivered on a community and neighborhood basis. This decentralized approach may be a key to the area's continued leadership in reducing residential energy consumption.

2. Use Government Access to Housing Stock

Recommendation: Communities should take advantage of existing government access to the housing stock in encouraging conservation. Several specific opportunities are apparent:

a. **Institutions**

Institutions operated by, or in close contact with, local governments can be encouraged or required to pursue energy efficiency in new construction and undertake improvements in the energy characteristics of existing structures.

b. **Vendors**

Organizations that operate largely or exclusively on government contracts to provide housing for special groups such as the elderly and handicapped can similarly be influenced to maintain a high level of energy efficiency in structures.

c. **Building Codes and Zoning Ordinances**

Many codes and zoning practices are outdated and contain provisions that restrict more energy efficient development and construction. Some local regulations require excessively large setbacks and minimum unit sizes for houses and apartments. There are generally no provisions for increased density, such as allowances for common party walls and accessory apartments, which use excess space in single family homes. Such regulations are counter-productive to desires for decreased energy consumption in space heating and transportation.

3. **Provide Information for Multifamily Structures**

Recommendation: Government and business organizations providing energy information and technical assistance for housing should work to meet the needs of multifamily structure owners and residents.

Rationale: Many owners and managers have come to view energy as an opportunity for financial savings. This recognition of energy consumption as a significant business expense should be encouraged. There is some indication that the information

and technical assistance necessary for energy improvements is beginning to be supplied. It is hoped that this trend will continue.

4. **Support A Cooperative Multifamily Approach**

Recommendation: Governments, organizations and the community should support current efforts by the Energy Division of the Minnesota Department of Energy, Planning and Development to develop and implement a "shared savings" approach to multi-family residential energy conservation similar to a plan designed by the Citizens Conservation Corporation of Boston.

Rationale: The shared savings concept eliminates many of the perplexing barriers to energy conservation in multifamily rental property by offering financing for energy improvements and incentives to both tenants and landlords.

In the Boston case, a coordinating body was developed which contracts with the owner and arranges a bank loan repaid by the owner at rates no greater than would otherwise be paid for heating fuel bills. For this payment, the building owner is provided with a full energy audit, building conservation improvements and heating fuel, which are paid for by the bank as arranged by the coordinating body. In addition, workshops are provided for tenants to train them in energy conserving habits. Finally, the coordinating body provides periodic rebates to the tenants based on their reductions in energy consumption.

The "shared savings" idea seems to address the major barriers to conservation in multifamily rental units. It is based upon cooperative efforts of the landlord, tenants and lending institutions and can eliminate traditionally combative landlord-tenant relations, which often serve as an additional obstacle to increased energy efficiency.

The disincentives to energy conservation in rental housing are considerable. When utility bills are tenant paid, it can be assumed the tenant prefers to lower his energy consumption but, aside from changes in lifestyle, is powerless to do so. While energy use habits can significantly reduce consumption, the tenant cannot make even basic physical improvements since the property is not his and the tenant typically will not remain in the residence long enough to realize a payback.

The landlord has no incentive to make energy-related improvements, since the housing market (particularly a tight one) is generally not responsive to energy efficiency. Even if heating bills are landlord paid, the market may permit higher energy costs to be passed on through rent increases. Furthermore, the present structure allows such costs to be discounted as business expenses.

5. Increased Utilization of Housing Stock

Recommendation: Communities should examine the opportunities for increased utilization and, thus, energy efficiency offered by encouraging family-size residences to be turned over to younger, larger households.

Rationale: Many older, "empty nest" households find that the family home now leaves them with unmanageable energy bills. At the same time, many households with families have difficulty finding affordable housing to accommodate their needs for space.

Many older couples are prevented from leaving their underutilized housing by financial and psychological factors. There has been some experimentation with financing plans that encourage the turnover of this housing stock and free capital that is often needed by households after their retirements.

Another important factor is the understandable reluctance of people to leave the family home after a number of years. This obstacle is best addressed by aiding development of existing or new smaller, multifamily units which are accessibly located and offer advantages to the lifestyle of older citizens. Often, innovative and particularly affordable arrangements as this can provide the initiative that will decrease the psychological obstacles associated with moving to a new residence.

6. **Continue Community Development Attention to Energy**

Recommendation: Local governments should continue to make substantial portions of Community Development Block Grant funds available for low and no interest energy improvement loans to low-income families.

Rationale: Programs designed to encourage homeowners' investments in residential energy improvements have been extremely successful. It is evident there will be a continuing community interest in retrofitting homes. The impact of such loans on area economic activity makes this an especially appropriate use of community development money.

V. FINANCING ENERGY IMPROVEMENTS

PROBLEM STATEMENT

Financing is, of course, a determining and contentious factor in any plan for action. Financing is even more perplexing in the case of energy improvements for at least two reasons. First, most forms of energy efficiency improvements require a relatively large capital investment at the outset of the project. Secondly, recent energy price increases have made these improvements necessary at a time of poor economic conditions, decreasing the availability of loans.

Several main issues seemed to emerge from discussions on the financing of energy improvements. What constitutes "available and affordable" financing and what organizations should be responsible for providing it? What level of interest does society have in ensuring that financing is provided? Do owners have enough information to accurately assess the returns from an energy improvement investment? Information may be as important as the availability of financing in deciding whether energy investments are made. Energy improvements, then, may often be prompted by training consumers to determine the long-term economic value of their investment.

RECOMMENDATIONS

1. Government Should Examine the Value of Financial Assistance

Recommendation: The state of Minnesota, with the invited cooperation of other organizations, should work to determine the efficacy and cost-benefit of providing government assistance to initiate and support various energy conservation efforts.

Rationale: Extensive debate has taken place about the appropriateness of government financial assistance to individuals for energy improvements and to energy activities in general. In recognition of current federal energy policy and fiscal constraints at all levels of government, it seems imprudent to rely heavily on direct or indirect governmental involvement in financing. Yet there is a persistent, although perhaps minority, view that government financial assistance is not only appropriate, but economically justifiable.

Among the benefits that can be realized are improvement of the building stock, reduction of the energy dollar drain from the County and the State, and reductions in energy consumption and costs for all consumers. Two specific benefits of government intervention received particular emphasis during the workshops. First, this assistance will enable low-income households and many businesses to realize benefits from energy improvements that they could otherwise not afford. Secondly, governmental investment has the potential to generate new employment opportunities. In a period of high unemployment, this potential deserves particular attention.

Some workshop participants argued that energy prices, presently depressed due in part to the economic recession, may increase rapidly once recovery begins and demand increases. This would serve as a constraint on recovery. If some conservation improvements can be made during the recession or soon after, the effect of these price increases can be lessened and recovery can occur with fewer constraints.

2. Explore an Expanded Utility Role

Recommendations: The state of Minnesota, including the Legislature and the Public Utilities Commission should, in cooperation with utilities (and other energy suppliers),

thoroughly examine the potential role of utilities in financing and providing technical support to energy conservation efforts.

Rationale: The discussions gave considerable attention to the potential benefits of an expanded role for utilities in local energy efforts. This was not unexpected in view of the organizational resources and technical expertise of utilities and current constraints on government action. The staff received proposals suggesting that the utilities should provide complete energy conservation services, including direct financial assistance; provide an interest-free loan program; and expand the utility billing process to facilitate conservation improvement loan repayment, with or without subsidy. Although some of these services are already available, they are provided only to limited areas and selected customers. The proposals from the workshops encouraged extending these services to a wider range of consumers. The key to the success of these or other proposals involving utilities is the use of incentives and the identification of a potential financial return for the utility. Utilities are profit making entities and they must be provided with the potential for profit from their energy conservation activities.

As noted by several commenters, the issue implies a clarification and possible redefinition of a public utility's functions. Although the proposals presented in the workshops suggest a significantly altered role for utilities, the energy situation that may be faced by this area demands that such a re-examination occur.

3. **Use Cost-Benefit Analysis and Promote Low-Cost/No-Cost Improvements**

Recommendation: Energy education programs must identify and publicize the cost-benefit aspects of energy improvements as investments and emphasize implementation of low-cost and no-cost measures as the first stage in the consumers' energy conservation effort.

Rationale: Inadequate attention is being given to cost-benefit considerations in consumer decision making. The typical consumer continues to focus only on costs (including financing costs) of improvements. It has been argued that if the public better understood cost benefit calculation procedures and used accepted future energy price projections more consumers could justify, and would make, energy improvement investments.

The Neighborhood Energy Workshops and other efforts have logically focused on giving priority to low-cost energy improvements. Although most older structures may need extensive investments in insulation and heating plants, less extensive improvements may produce significant and immediate energy savings without great expense. Low-cost and no-cost improvements, in combination with better energy use habits, can reduce energy bills by 25 percent or more and may motivate the consumer to make other energy improvements. Most homes (and other structures) could benefit from further weatherization efforts, most of which can be accomplished without special skills and provide a pay back of one year or less. Low-cost and no-cost measures are not a substitute for more expensive improvements, but their energy and dollar saving potential can be quickly realized by most consumers.

VI. ENERGY ACTION COORDINATION

PROBLEM STATEMENT

Coordination helps avoid unnecessary duplication and allows the best use of limited resources. There are contrasting views on the proper level of coordination among energy supply and use. Current federal energy policy is based on a philosophy that market forces can best provide coordination by sending price signals that give consumers direction. A contrasting philosophy suggests that market direction alone is insufficient and some centralized coordination is necessary.

The experience of this project indicates local preference for some middle course, using elements from both approaches. There is substantial evidence that increasing energy prices have provided incentives for energy action, consistent with the market strategy and will continue to do so. However, social and economic problems relating to energy exist and will continue to exist despite, or perhaps because of, price increases. These problems are not being resolved by the market approach and, as a result, some form of intervention is necessary.

Energy decisions affect all area residents. The recommendations that follow do not attempt to provide specific answers on the coordination of energy action but instead outline a general direction for further discussion.

RECOMMENDATIONS

1. Overview

This section establishes the basis for the recommendations of subsequent sections. It addresses the roles of consumers and the private and public sectors and the need for coordination of energy actions in the current economic and political climate.

a. **Consumers**

- Individual consumers (households, businesses, institutions) must generally take responsibility for their own energy actions through consumer decisions.

- All consumers should have access to "self-help" programs (energy education, information and technical assistance), and government financial assistance (primarily in the form of loans and tax credits), only as resources allow.

- Upper and middle income consumers are expected to respond to energy market incentives, without significant government financial assistance.

- Low-income consumers should be the primary focus of any direct governmental financial assistance programs and of coordinated public and private sector efforts to reduce consumption through conservation improvements and energy use training.

b. **Private Sector**

- Private firms and organizations should provide services to consumers with expectations of consumer responsibility as described in 1.a. above.

- Private sector energy related firms are expected to respond to traditional market incentives and should be regulated or assisted by the public sector only when such assistance will promote the public interest. Public sector financial assistance to such firms (for example, research and development) should be considered, depending upon the potential public cost/benefit of taking such an action.

- Private sector firms should contribute as possible to efforts to assist low-income consumers.

- Utilities should expand their involvement in the efforts to conserve energy, with particular emphasis on meeting the needs of low-income consumers.

c. **Public Sector**

- Consumer income will be the primary factor in determining the appropriate public sector response to energy related consumer needs and requests.

- Public sector organizations should pursue general community oriented energy activities consistent with available resources and in cooperation with other existing private and public sector services.

- Public sector organizations should take the lead in assisting low-income consumers through coordination of available private and public sector resources.

2. **Consumer Support**

The income of consumers will be a main determinant in their ability to respond to the market incentives relied upon in energy policy. Public sector financial assistance is recommended for low-income consumers.

This approach suggests the elimination of energy tax credits for upper--and possibly middle--income consumers and implies that many consumers will have to accept greater responsibility for their own energy actions. This is not, however, significantly different from current circumstances. Although the economy and energy prices in particular combine to pose a severe hardship for many households, governmental resources can provide only selective and limited assistance. In

response to this situation, public and private sector organizations should concentrate on providing consumer services and assistance that will not require an unreasonable financial commitment:

- **Energy Education, Information and Technical Assistance**

  Recommendation: Through coordination of private and public sector efforts, ensure that appropriate energy education, information and technical assistance services are available.

- **Energy and Housing**

  Recommendation: Provide assistance to residential self-help efforts (for example, the Neighborhood Energy Workshops) through coordination of available community resources.

- **Financing**

  Recommendation: Provide education so that consumers may assess the cost-benefit of potential improvements. Organizations should work to secure financing from other sources, such as utilities and employers.

- **Support of Citizen Initiative**

  Recommendation: While the primary responsibility for initiating self-help efforts rests with consumers, it is recommended that the public sector provide support, particularly for early programs which may serve as models for further action. This is an appropriate role for the public sector and, again, one which will not require a substantial financial commitment. It is further recommended that this role be assumed by local government in cooperation with other local organizations. Energy

information exchanges and cooperative purchases of energy-saving devices are examples of self-help initiatives.

Low-income consumers face a different situation. While outside assistance appears necessary for any real progress on the problems faced by these consumers, they must take responsibility for their own situations where possible. In this regard the initiation of self-help efforts by low-income consumers or their representatives should be encouraged. There are several local examples of such self-help efforts; their continuation should be facilitated by local government and, where possible, assisted by private sector resources.

3. Private Sector

Energy will play an increasingly important role in future activities of private sector firms and organizations. Not only will the private sector continue to respond to higher energy costs through conservation efforts in their own facilities, but an increasing market can be expected to develop for various energy services. Another interesting development may be the future of private and public sector cooperative efforts on energy matters, particularly those directed to low-income residents of the area.

• Energy Services

Recommendation: Innovative energy services should be developed appropriate to current and future market situations.

Rationale: Limited financing options, new and confusing technologies and government assistance cutbacks are only a few of the problems facing consumers wishing to improve their energy situation. Although the energy industry has responded rapidly to developments of the last decade, there are still many gaps in the provision of energy services.

Further exploration of shared savings plans, multifamily housing energy management programs and other innovative approaches is recommended.

- **Assistance Within the Private Sector**

  Recommendation: Private sector assistance to firms and organizations that cannot respond to market incentives due to financial constraints should be considered.

  Rationale: Small businesses are important to the local economy. Many are facing severe economic difficulties and are unable to take constructive action to alleviate their increasing energy costs. Assistance to these firms should be pursued through innovative, cooperative private sector efforts arranged with the affected firms. Special attention should be given to the problems of energy consciousness, technical assistance and financing options.

- **Energy Industry Assistance**

  Recommendation: Public sector financial assistance to the energy industry should be considered only where such investment will yield significant and direct local benefit.

  Rationale: Limited public sector financial resources dictate extreme caution in their allocation. Given other areas of need, energy industry assistance must be considered a low priority. Research and development assistance may be an exception. However, it is recommended that this assistance be limited to selected situations where the primary benefit, including employment generation, will be local. (The private sector or federal government should be the source of research and development assistance in all other cases.)

- **Private Sector Low-Income Assistance**

  Recommendation: The private sector should contribute to efforts to assist low-income consumers.

  Rationale: Public sector fiscal difficulties are restricting the availability of assistance to low-income persons, at a time when this population and its problems are growing. Firms in this area have a reputation for social responsibility and their assistance is especially valuable now.

- **Public Utilities**

  Recommendation: Public utility energy services should be expanded to make best use of their resources and expertise.

  Rationale: Public utilities have extensive expertise in energy matters and yet a number of constraints limit their potential to effectual community energy improvements. Current circumstances suggest that a thorough evaluation of utilities' service roles is needed and should be undertaken by the industry, the legislature, and the Public Utilities Commission. Innovative programs and roles, both in Minnesota and elsewhere in the country, should be investigated for applicability to local needs.

4. **Public Sector**

The financial difficulties of the last several years have severely limited public sector ability to respond to energy concerns. Any energy services offered must be carefully selected and examined to insure that they are needed. By avoiding unnecessary duplication of available services, best use can be made of these limited resources.

As described previously, it is recommended that government at all levels assume leadership in energy matters. The nature of this leadership role must be dictated by local circumstances and resources. A limited but valuable part of this role involves initiating or maintaining communication--to facilitate access to information, to ensure coordination, and to encourage energy consciousness. This is a role which can assist the allocation of community resources without severely straining government resources. While such communication should take place on a state or even national level, it is most important that it be maintained at a local level.

A leadership role in energy matters should be assumed by all units of local government, even if that role is limited in extreme cases to referral to other resources. Other recommendations relating to specific government roles and responsibilities follow.

- **Income Factor**

  Recommendation: Consumer income should be the primary criterion in determining public sector energy assistance.

  Rationale: Limited government resources and the special needs of low income consumers dictate that assistance should be directed primarily to low income consumers. While some forms of assistance (education, information and technical assistance) may be valuable and should be accessible to all consumers, financial assistance in particular should be limited to those in greatest financial need.

- **Low Income Assistance**

  Recommendation: Public sector organizations should take the lead in assisting low-income consumers, through coordination of available private and public sector resources.

Rationale: All units of government have a responsibility for the health and welfare of their residents and, as such, it is appropriate that public sector organizations take the lead in addressing the hardship faced by low-income consumers. Both private and public sector resources will be needed. Although it may be difficult and time consuming to determine roles and responsibilities, this public/private partnership could be a most important one.

- **Internal Energy Use**

Recommendation: Public sector organizations must continue to monitor and reduce their own energy consumption in facilities and vehicles.

Rationale: Nearly all public sector organizations have taken at least some steps toward reducing their energy use. Government units often have been the first to use innovative technologies and practices; consequently, there is opportunity for transfer of energy-saving techniques. Public sector groups should at least pursue basic improvements in energy use for economic reasons. In addition, governments should be prompted to make further improvements by their capacity to set an example for residents and to prove the value of new designs and energy use habits.

REPORT SOURCE

Additional copies of "Development of an Energy Action Plan: A Participatory Approach" as well as other Urban Consortium Energy Task Force project publications are available from:

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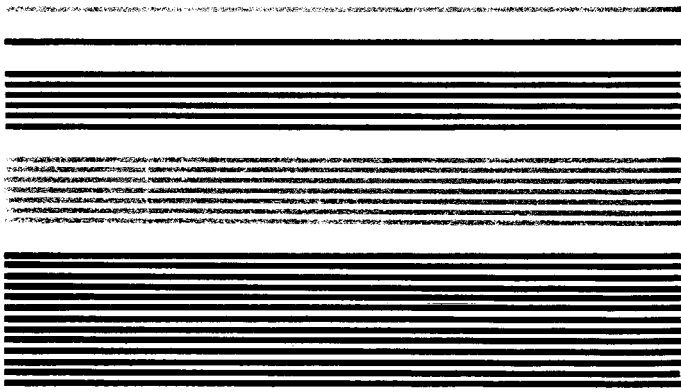

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