MINNESOTA
STATE GOVERNMENT

ISSUES

INDIGENOUS ENERGY RESOURCE OPPORTUNITIES

Team Leader: Marcia Janssen Keller

Subcabinet: Energy/Environment/
Natural Resources

Executive Branch Policy Development Program
1984-1985

INDIGENOUS ENERGY RESOURCE OPPORTUNITIES

Team Leader: Marcia Janssen Keller

Subcabinet: Energy/Environment/
Natural Resources

I. EXECUTIVE SUMMARY

This team recognizes that the stability of the state's economy depends on our ability to utilize conservation and indigenous energy resources. The state must pursue policies and strategies which encourage the growth of indigenous energy industries which enable Minnesota residents and businesses to minimize their energy costs. To make Minnesota an alternative energy center, and to keep energy dollars in the state, several steps must be taken now:

A. Legislative Initiatives

(1) Extension of Minnesota's Renewable Energy Tax Credit

(2) Initiation of a business energy investment tax credit

(3) Establishment of favorable utility buy-back rates for electricity produced by cogeneration and small power producers

(4) Development of a fiber fuels resource data base

(5) Continuation of the Wind Resource Assessment Program

(6) Support for emissions testing and air quality testing

(7) Establishment of standards for toxic pollutants

B. Administrative Action

(1) Centralization and coordination of energy information services

(2) Development of an alternative energy data base

(3) Establishment of an energy research information clearinghouse

(4) Establishment of policies to encourage fiber fuel use in state facilities

(5) Establishment of a policy on sampling and disposal requirements for bottom ash and fly ash

(6) Assistance to alternative energy industries in market development, including publication of market data already collected by state agencies

II. BACKGROUND

A. Issue Background

"States have an extraordinary opportunity to invest in their own future, as well as an obligation to share in the risk of renewable energy development in order to reduce damage to the environment, conserve scarce natural resources, and establish a secure and stable economy. We, in the State of Minnesota, hope to do our part to make renewable energy future a reality."

Governor Rudy Perpich
June 1, 1983

The work of this issues team has been to develop strategies to lead to greater development of Minnesota's indigenous energy resources. The goal is to provide cost-effective resource development that will protect and enhance Minnesota's economy.

The Arab Oil Boycott in 1973 and the subsequent OPEC price increases brought to an end the high rate of growth in the American Economy after World War II. That period had seen oil costs cut in half and real wages double. For very good reason during that time Americans increased their energy use in order to produce more goods at a lower cost.

Today, all that is changed. As a result of the 1973 boycott and later price increases, our state and nation have endured rampant inflation, severe recession, and high interest rates. The most telling statistic is that between 1973 and 1982, real wages dropped 16% while the price of oil increased about 500%. In other words, we have less money to spend today and need to spend much more of it on imported energy.

Some argue that government does not need to take action today because natural gas and oil prices have stabilized and, for the first time, there's a surplus of electrical generation. However, best evidence is that these are only short-term signals. Exploration costs for gas and oil have soared in recent years. A sea-going oil platform can now cost over a billion dollars while natural gas producers must drill over three miles into the earth to find new gas. Electrical demand is also going up. It is now projected to grow at a rate of about 5% this year compared to the earlier forecast between 1.5 and 2.5%. The decisions of OPEC notwithstanding, higher electrical demand and higher capital cost for fossil fuel exploration can only result in higher prices for Minnesota's energy customers.

The uniting principle of the team's recommendations is that it is possible to steadily reduce our citizens' dependence on expensive, imported fuels and at the same time improve our state's economy. A state policy that does so should emphasize more efficient energy consumption and economic use of our renewable energy resources.

One result should be that Minnesota will become an alternative energy center for the nation. Even more important, our existing and future businesses and institutions will be able to operate at lower cost and employ more people.

State government has already begun to move in this direction. A variety of legislative initiatives and administrative programs in recent years have encouraged significant investments in indigenous resource development. But we feel more can and should be done.

When making state policy, it must always be remembered that the high price for traditional sources of energy has been and will remain the single greatest reason for alternative energy development. The main reason our state should encourage conservation and development of renewable sources is that they are less expensive. We cannot forget that in the long run the free market prevails.

The energy development policy set out here recognizes the free market. Therefore, existing retailers of energy in our state should not be threatened by it. Instead, they, and other Minnesota businesses, should profit. It is a policy that emphasizes Minnesotans' greatest abilities--ingenuity, technical innovation, and cooperation in the face of adversity.

B. Issue Change: Submitted to the Subcabinet

Minnesota has extensive energy resources that are being developed to replace fossil fuels. The potential for indigenous energy resource utilization is great; biomass, peat, solar, wind and hydro can provide a significant portion of the state's energy needs by the end of the century. Conservation is a top priority and will be included with alternative energy development opportunities. The realization of this potential is essential to securing a stable and growing economy in the state.

Because innovative development of these resources is accelerating rapidly, there is a critical need for the design of coordinated strategies and programs. Much information is still needed about these technologies in the areas of resource availability, job generation potential, technical feasibility, finance, regulation and marketing. Currently, numerous state agencies and offices are studying alternative energy technologies and have specific programs and projects in progress. Industries are emerging, and such organizations as Minnesota Wellspring, the Minnesota Solar Industries Guild, and the Fiber Fuels Institute are examining issues ranging from industry standards to the need for marketing strategies. Existing efforts are fragmented and lack a clear direction, and it is essential that there be improved coordination and communication among those diverse entities.

The charge to the Indigenous Energy Resource Opportunities Team is to design a process that allows state government to foster the appropriate development of native energy sources. This requires five steps. The team must:

(1) recommend short term and long term policy goals for the state,
(2) assess the status of current programs,
(3) identify specific problems and opportunities and recommend action of these items,
(4) delineate the role of agencies and offices with state government and a process for coordinating their efforts, and
(5) suggest ways that state government can interact with other sectors.

The team will submit to the Energy/Environment Resources Subcabinet:

(1) suggested policy goals,
(2) a description of current programs,
(3) an outline of responsibilities of state agencies and offices and viable coordination mechanisms,
(4) an action plan that identifies ways in which the state can work with other sectors, including the business community, professional organizations, utilities, citizen groups, academic institutions, and
(5) a plan that identifies, for each indigenous energy resource considered, issues of concern, impediments to development and recommended actions.

C. Team Approach

A team was formed with representatives from all state agencies and offices involved in conservation and alternative energy issues. Membership includes:

Department of Energy and Economic Development

Marcia Janssen Keller, Team Leader; Energy Division
Frank Altman; Energy Finance Division
John Armstrong; Energy Division
Kathy Hahne; Energy Finance Division

Department of Economic Security

Dixie Diehl

Department of Natural Resources

John Krantz
Ron Visness

Department of Public Service

Ken Peterson

Environmental Quality Board

Greg Larson

Iron Range Resources and Rehabilitation Board

Gary Lamppa

Minnesota Housing Finance Agency

Mary Tingerthal

Minnesota Pollution Control Agency

Ken Haberman
Deborah Pile

Quality Environment Project

Frank Ongaro, Sr.
Nick Riley

Waste Management Board

Kirk Rosenberger

Support for the team was provided by:

Len Fricke; Department of Energy and Economic Development
Dennis Devereaux; Department of Energy and Economic Development
Susan Strate; Department of Energy and Economic Development
Jeanette Roesler; Department of Energy and Economic Development
Fae Bucher; Department of Energy and Economic Development

Work groups implemented studies focused upon the key areas in which governmental action was deemed to be necessary and appropriate:

(1) Information and Education
(2) Research and Development
(3) Resource Assessment
(4) Marketing
(5) Finance
(6) Environmental Issues
(7) Political Issues

III. FINDINGS AND RECOMMENDATIONS

A. Information and Education

Issue: Fragmentation of Programs

Components of a comprehensive state energy program are spread throughout state government. We have identified 24 state agencies that are involved in energy policy formulation, program implementation, and energy information and education programs. In most cases, efforts are not coordinated. Fragmentation of energy programs can lead to duplication, incorrect and/or incomplete data and information, unclear and possibly conflicting energy policies and programs, and confusion for constituents.

Even though the work group studying this issue identified three areas of action: 1) Biomass, Fiber Fuels; 2) Wind, Hydro, Solar and 3) Conservation, all solutions to the problems in each of the three areas will be resolved by implementation of the same recommendations.

Recommendations:

(1.) Use the Energy Policy Coordinating Board as a clearinghouse for information about all new energy programs and policies. The Energy Policy Coordinating Board should establish a formalized reporting and communication mechanism for all agencies involved in energy. Agencies will be able to use this forum to enhance awareness of programs and policies and to address efforts of cooperation and resolve disagreement.

(2) Build a standardized evaluation and data collection component for all programs The Department of Energy and Economic Development should be designated as the centralized data repository. SEE APPENDIX A.

(3) Coordinate all energy information phone and literature services. The Department of Energy and Economic Development should be designated the lead agency so that one information center will be the primary contact point for the public. Agencies using these services would contribute financially to the lead agency.

B. Research and Development

Issue: Coordination Needs

Not only are numerous agencies involved in information services, many are involved in a wide variety of research and development work in alternative energy fields. Two essential needs exist for coordination of these efforts: The first is

a need for a research information clearinghouse. the second is a need for an awareness among agencies of work accomplished or in progress. In addition, financial support for specific research must continue.

Recommendations:

1. Centralization of energy research information services in a single clearinghouse within the Department of Energy and Economic Development. The centralized research information function would require administrative action to consolidate information about existing research activities. The energy research information within the Department of Economic Security, Department of Natural Resources and the Minnesota Housing Finance Agency, in particular, should be integrated into DEED's programs, and this would be part of the responsibility of the information office. Facilitation of program consolidation involves:

   a) transfer of some resources to provide adequate staff and budget to the Energy Information Office

   b) systematic updating of information from each agency for DEED staff on research programs, contact person (staff person to contact in each area), publications and services.

2. Project coordination among agency staff can be accomplished within the authority of the Energy Policy Coordinating Board. Commissioners who are members of that Board should identify Office Directors, Activity Managers, project staff (up to three per agency) to meet on a monthly basis for the single purpose of making one another aware of program activities and projects in progress. Energy research should be reviewed by this group on an on-going basis.

3. In addition to improving informational services relating to research and development efforts, the state should provide resources to continue and initiate research and development efforts in the following areas:

   a) Support for conservation and alternative energy work at public research centers.

   b) Additional research should be encouraged in the private sector in new applications—photovoltaics, agriproducts for fuel, indoor air quality, emissions standards—fiber fuels, thermal storage systems, concentrating collectors and optimal weatherization standards. Joint ventures with private sector entities should be encouraged through grant and cost-sharing programs.

   b) Research findings should be utilized to design consumer protection standards and guidelines. Information about these standards should be disseminated through the centralized information center within DEED.

C. Resource Assessment

Issue : Need for a Biomass Resource Data Base

Both the production and industrial use of Minnesota's biomass and fiber fuels are in a rapid growth phase. Nearly 200 Minnesota institutions, industries and businesses are currently utilizing wood, peat and agricultural residues as alternative fuels. This represents $45 to $50 million not exported annually for fossil fuels. Technology using densified fuel pellets and briquettes as well as

gasification units and direct combustion of green and dry residue fuels have all been established in Minnesota.

In order to facilitate intelligent growth and wise investment decisions within the fiber/biomass fuel industry, the state must assist with the development and management of the resource by:

(1) providing reliable information on raw materials to fuel producers so they can plan production facilities and production levels with confidence.

(2) providing energy users documented assurances of an adequate resource base upon which to make energy system investment decisions.

Recommendations:

(1) The current availability and demand of the fiber/biomass resource for energy,

(2) the long-term availability of fiber/biomass resources,

(3) the future demand for fiber/biomass fuels in Minnesota, for all uses, including pulp, paper, lumber and lumber substitutes, and

(4) dissemination of the above information.

Approximately $150,000 for FY '86 and FY '87 will be needed to address this problem. Cooperators on this project will be: the Department of Energy and Economic Development, Department of Natural Resources, University of Minnesota and the Fiber Fuels Institute.

Issue: Need for Wind Resource Assessements

The Electric Power Institute has estimated that by the year 2000 up to two percent of the nation's energy will be generated by the wind. However, in Minnesota more complete resource data is needed before private business will begin large scale development of the resource.

Preliminary assessments of Minnesota Wind Resource has been done using a limited number of sites with anemometer at heights between 4 and 20 meters. Wind speeds are often quite different at 30 meters where a typical wind generation would operate. The Department of Energy and Economic Development has taken the first step in the resource assessment by installing 15 anenometer packages supplied by Western Area Power Administration on utility owned microwave towers.

Recommendations:

A Minnesota Wind Data Base should be established using wind speed and direction readings at 30 meters for 60 sites distributed around the state. This data could then be incorporated with existing low-level data from airports and weather stations to provide a reliable data base that could be used by research designers, manufacturers and investors to assess wind power's potential. Legislation has been proposed by the Department of Energy and Economic Development.

D. Market Development

Issue: Alternative Fuel Markets

To market alternative fuels we need to identify relevant markets, develop user awareness, and establish confidence in product.

To do that, there is a need to recognize short term and long term goals and to identify the role of the public and private sector in addressing these needs. The long term goal of establishing fiber fuels, wind, solar and legitimate energy sources must be assumed by the private sector but that will happen only if the public sector encourages that process in the short term by identifying immediate priorities, targeting public resources, and working closely with the private sector to encourage investment, industry regulations, and private promotion.

Recommendations:

(1) The public sector should take the lead in encouraging markets. One way to increase this already established trend is for the Department of Administration to use an accounting formula that includes secondary economic benefit of using locally produced renewable fuels.

(2) Continue targeting resources (including loan and grant capabilities) to establish "demonstration projects" to build a data base of case histories for educational and promotional efforts. Increased efforts to use the state's marketing capabilities (marketing office, promotional councils) should be encouraged. The data from existing work in alternative energies should be gathered in an efficient usable form and made available to the private sector to encourage private sector investment.

(3) Support efforts by the private sector and perhaps fund a demonstration project that addresses the need to create a reliable source of supply. Concepts like "brokers," or some mechanism to "smooth out" the supply needs to be established.

(4) Share existing market information. (SEE APPENDIX B)

E. Finance

Issue: Financial Barriers and Incentives

There are several major barriers which impede investments by private financial institutions in alternative energy and conservation projects. The most significant barrier is that of risk. Because many alternative energy companies or technologies are new and, in some cases untried, financial institutions are reluctant to provide debt financing to such ventures. In addition, many lenders are not aware of the technological advances which have occurred in the field of alternative energy development. Because they have had little or no experience with loans for alternative energy development, they are more prone to risk than is warranted. This financial problem is compounded by the lack of capital necessary for the development of prototypical technologies or the commercialization of test products. Unlike certain other industries, most notably the "high tech" industries, alternative energy industries have not exhibited the "high-risk/ high-reward" potential necessary to attract venture capital. Another barrier

is low buy-back rates for power produced by small producers. In most cases, current buy-back rates do not reflect the incremental costs of additional power generating capacity. For this reason they are lower than they would be if these costs were shown. This increases the risk of unprofitability for alternative energy producers.

Recommendations:

While the state has already put in place a number of financing incentives as part of the new Minnesota Energy and Economic Development Authority (MEEDA), there are several additional incentives which will encourage alternative energy development.

First, a more favorable utility buy-back rate for electricity produced by small power producers needs to be established. The Public Utilities Commission needs to be encouraged to establish a set of requirements that will enable small power producers using cogeneration, wind, and other electric technologies to sell electricity at a price equal to the purchasing utilities' marginal cost of electrical generation.

Second, a business tax credit for investment in energy conservation or conversion to alternative sources of energy is vital in today's economy. The renewal of residential alternative energy tax credits and the elimination of sales tax on capital acquisitions for alternative energy projects are also necessary.

Third, the MEEDA's enabling legislation should be broadened to allow it to assist in the development of alternative energy products. New powers should include the power to purchase prototypes, to purchase or hold patent rights or other forms of security in products or to reimburse certain product development costs in connection with the commercialization of alternative energy products, devices or processes.

Fourth, the Authority should also be enabled to take broader types of financial interest in the companies it financies. Such interest may include royalty rights, warrants or other forms of compensation. This would enable the Authority to more effectively meet the financing needs of new, start-up alternative energy businesses. Such interest should include the ability to finance certain short-term business costs.

F. Environmental and Social Considerations

Issue: Information About Regulations

Information on environmental rules, requirements and responsibilities relating to the utilization of indigenous energy resources is not uniformly available, and as a result, not uniformly distributed to the private sector. In order to ensure that project proposers are aware of all the requirements, that projects proceed without unnecessary delays, and that adequate time is allotted to environmental review and permitting, each agency with the potential to be involved with indigenous energy projects needs to be informed of the environmental regulations that apply to fiber fuels. Primarily due to the lack of adequate communication and coordination between governmental agencies, certain projects have progressed prior to receiving the appropriate environmental review.

Recommendations:

An informational "packet" including necessary information pertaining to environmental regulations and requirements, needs to be drafted and made available to the appropriate governmental agencies concerned with alternative fuels. Information from the packet also needs to be integrated into an overall information clearinghouse system so that the agencies and individuals can quickly and easily ascertain what is required and who is to be contacted. Once the packet is completed, it would be made available to any interested parties simply by contacting any of the governmental agencies.

Issue: Air Quality Standards

Many environmental and social cost and benefit questions remain unanswered with respect to alternative fuel usage, the most important of which relate to air quality. Because many of the boiler conversions have occurred only in recent years and because many of the facilities that use alternative fuels are not large enough to require an MPCA air quality permit, information at the present time is limited. In order to determine compliance with the emission standards required of all fuel burning facilities, to gain the necessary scientific information relating to alternative fuel combustion and also to relieve the users of alternative fuels from the financial commitment, emissions testing and/or monitoring needs to be conducted on facilities burning fiber fuels, and particularly, on facilities with small to medium sized boilers that presently have no emission control equipment.

Recommendations:

Funds should be made available to conduct emission testing on small to medium sized boilers burning alternative fuels. These funds would be used to expand upon the results obtained from a preliminary assessment of fiber fuel air emissions funded through a grant from the Council of Great Lakes Governors. Based on the results of the testing, long-term monitoring or ambient air quality monitoring programs may need to be conducted in areas and buildings where fiber fuel usage is common.

Funds should also be made available to conduct a literature search on the types and quantities of fiber fuel (primarily residential) heating and ventilating systems and, if necessary, to conduct indoor air quality testing. We are aware of, and support, the efforts of the Indoor Air Quality work group headed by the Environmental Quality Board and intend to provide input, where necessary, so that duplication of efforts does not occur.

Issue: Waste-to-Energy Facilities: Regulatory Needs

Since the implementation of waste-to-energy facilities in Minnesota is fairly recent, the regulatory requirements of these facilities is only recently being developed. Many questions about the environmental impact on air quality from air emissions and on groundwater from the disposal of bottom ash and fly ash remain outstanding.

Recommendations:

Standards for opacity and particulates for air emissions currently exist. However, standards do not exist at the federal or state level for toxic pollutants and acid gases. The MPCA should review existing technical literature, test existing Minnesota facilities, and, if appropriate, establish standards.

Standards currently exist for the disposal of ash from waste-to-energy facilities. In at least one instance the fly ash was tested to be an environmental hazard. When combined with the bottom ash, however, the ash could be deposited in a separate area of a sanitary landfill. Many facilities felt there was a problem with the sampling technique. Others felt that due to the Ph of the fly ash, there would not be a major environmental impact. After reviewing the literature and past experience in Minnesota, the MPCA should establish a policy on sampling and disposal requirements for bottom ash and fly ash.

G. Social and Political Barriers

Issue: Opposition of Community Private Interests and Financial Backers to Resource Development

Recommendations:

Political Leadership. Commitment to development of indigenous resources is needed from leaders at appropriate levels of government, whether at the state, county, or municipal level. Enthusiastic backing from leaders will actually avoid many problems, and help solve others. Without it, there is little chance for development. Moreover, aggressive and farsighted state leadership can set a tone for those on the local level to follow.

Coping with Community Opposition. Communities often oppose certain indigenous resource facilities, for the same reasons they used to oppose centralized power. That is, they perceive such facilities as a degradation of their environment for the benefit of others. Yet unlike most traditional centralized energy systems, indigenous energy systems usually provide their benefits to the same group of people that endure the environmental and social costs of such systems.

Issue: Support from the Financial Community Must be Accelerated

While basic indigenous energy resources may be free, such as solar or wind; or low cost, such as wood residues, the equipment needed to utilize these resources can be costly. Financing is usually required and financial institutions may be reluctant to loan money for such facilities. Even though these systems are cost effective, traditional lenders hesitate to make such loans. From the lender's perspective, indigenous energy sources do not have an established track record and they are hesitant to finance innovative concepts.

Recommendations:

Government financing programs, such as Minnesota Emergency Employment Development Act can help by establishing a track record for energy loans by direct financing and by sharing risks with private lenders.

The state agencies can also assist in providing education and information on cost-effectiveness to lenders. They should also publicize examples of successful indigenous energy projects.

Issue: Softening Opposition of Established Energy Suppliers

Utilities, and to a lesser extent, small fossil fuel suppliers, fear losing income to indigenous resource deliverers. Therefore, they will often oppose, or at least drag their feet, on this issue.

Recommendations:

Energy suppliers' opposition can be softened by creative public policy. One such approach is encouraging them to participate in indigenous resource development themselves, in effect, giving utilities a piece of the action. The legislative mandated Conservation Improvement Program (CIP) is one such means. A note of caution, however; utility participation should not be promoted to the extent of forcing other competitive enterprises out of the field.

Also, policy makers should not force utilities to pay the entire cost of promoting indigenous resources. Utility "buy back" rates should be high enough to furnish incentive to development, but they should not be in excess of a utility's long-term avoided costs.

APPENDIX A

Title: Indigenous Energy Programs Reference Data Base

Prepared by: Mark Berndt, Policy Analysis
Department of Energy and Economic Development

As the field of renewable energy technologies continues to expand, an increasing number of state agencies are being involved in renewable energy projects.

To address the problem of program coordination and to avoid the duplication of work tasks, the state should support a computerized information clearinghouse. Such a system would serve as a reference tool instantly available to department staff within state government, the legislature and appointed task groups (i.e. The Energy Policy Coordinating Board).

The system is envisioned as a series of information files placed in broad reference categories, possibly such as those in the outline at the end of this attachment. These files would contain project progress briefs, project milestones, abstracts from draft or final reports and a listing of project personnel. Particular projects and personnel could be located within the file by the use of search logic programming. The desired information would then be displayed on remote terminals or printers at the point of request.

To accomodate various departments and offices having access to the data base, the files and software would most likely be maintained on mainframe computers such as those located at the University of Minnesota. Information could be accessed by anyone with a phone modem, the access code and a remote display terminal or printer.

This type of clearinghouse system could offer many advantages. Information about the status of renewable energy projects would be easily and instantly available to all levels of staff personnel. It would serve as an effective tool in reducing the time required of higher level management for coordinating functions. Paper shuffling would be reduced. Update and maintenance time could be minimized by requiring personnel involved with indigenous energy projects to submit periodic "focus reports" and abstracts to a central maintenance person. Once in place the cost of maintaining such a system would be kept low by dividing costs among user departments.

OUTLINE OF INDIGENOUS ENERGY PROGRAMS REFERENCE SYSTEM

A. GENERAL ENERGY POLICY ISSUES

(1) Recent legislative/LCMR appropriations for projects

(2) Recent finance appropriations for energy development in the private sector

(3) Personnel and minutes for meetings from various committees on energy policy; i.e., the Energy Policy Coordinating Board and the Indigenous Energy Resource Opportunities Team.

(4) Briefs on current legislative action

B. SPECIFIC PROJECT STATUS AND PROJECT PERSONNEL

(1) FIBER FUELS:

a. resource assessments/forecasting
b. engineering/test burn studies/air quality
c. economic impact assessments

(2) SOLAR:

a. resource assessment/forecasting
b. market data/economic impacts

(3) WIND ELECTRIC:

a. resource assessment/forecasting
b. utility issues
c. market data/economic impacts

(4) SOLID WASTE/DISTRICT HEATING/COGENERATION:

a. resource assessment/forecasting
b. environmental quality issues
c. major installations/economic impact

C. RECENT PUBLICATIONS CONCERNING MINNESOTA'S INDIGENOUS ENERGY RESOURCES

(1) Bibliography of reports generated as a result of legislative funding

(2) Bibliography of reports generated from university research on indigenous energy technology.

(3) Bibliography of journal articles pertaining to Minnesota's indigenous energy resources.

D. KEY PERSONNEL FILE-STATE DEPARTMENTS

(1) Department of Energy and Economic Development
(2) Department of Natural Resources
(3) Department of Economic Security
(4) Department of Administration
(5) Department of Transportation
(6) Department of Economic Security
(7) Department of Public Service
(8) Department of Education
(9) Department of Health

E. KEY PERSONNEL FILE-STATE RELATED AGENCIES

(1) University of Minnesota
(2) Pollution Control Agency
(3) Waste Management Board
(4) Public Utilities Commission
(5) Minnesota Housing Finance Agency
(6) State Planning Agency
(7) Legislative Commission on Minnesota Resources
(8) Legislature
(9) Agricultural Extension Service
(10) Vocational Education Board
(11) State Community College System
(12) State University System
(13) Iron Range Resources and Rehabilitation Board
(14) Metropolitan Council

APPENDIX B

The Indigenous Energy Newsletter

Due to the in fancy of Minnesota's alternative energy industries, most alternative fuel vendors do not have the resources available to effectively develop and target product marketing programs. This problem might be best addressed by periodic publication and distribution of useful market data already collected by various state agencies.

The Energy Division of the Department of Energy and Economic Development is supporting a research position to collect data on cost, sales, inventories and market trends in solar, wind and fiber fuel technologies. This project is currently conducting a survey of persons who claimed a residential Energy Credit on their Minnesota Income Tax Returns. This is one example of data collection which would be used primarily for in-house policy analysis, but would also be of great use to private sector vendors. In addition to this type of survey information, a quarterly newsletter could address the following topics:

(1) Wind anemometer study results

(2) Buy-back rates of various utilities

(3) Major installations of boilers burning fiber fuels

(4) Legislative action affecting renewable fuels development in the private sector

(5) Average price and sales volume of solar collectors

(6) Average price and sales volume of pelletized fuels

(7) Average price and sales volume of wind generators

(8) Average price and sales volume of alcohol based fuels

(9) Degree day forecasts

(10) New product efficiency ratings

(11) A bibliography of publications concerning Minnesota's renewable fuels of industry

All of this data is already available or will soon be collected by the Energy Division. While ultimately such a publication should be a function of the private sector, the state could make a very positive statement by taking the initiative and supplying this information now.