Minnesota Chapter
American Society of Heating, Refrigerating and Air-Conditioning Engineers

Statement on Building Energy Efficiency and Minnesota's Electric Industry

The Minnesota Chapter of ASHRAE supports the State of Minnesota's commitment to improving energy efficiency in buildings, and believes that commitment can coexist with restructuring of the electric industry.

Energy Efficiency is Important to Minnesota.

- As our population grows and our use of technology increases, our use of electricity increases as well.[i]
- On a life-cycle cost basis, increased energy efficiency is often the lowest cost option to meet the energy needs of buildings in Minnesota.
- Investments in energy efficiency add diversity to our energy resources and reduce the risk of energy price shocks.[ii]
- Efficient use of energy reduces environmental impacts, including impacts of air pollution, acid rain, mercury contamination of lakes, generation of nuclear wastes and global warming.[iii]
- Efficient use of energy will help to build a sustainable economy for our children and grandchildren.
- Investments in energy efficiency rather than energy use can increase gross state product and employment.[iv]

Investments Encouraged by Utility Programs Have Had and Can Continue to Have a Major Impact on Energy Efficiency in Buildings.

- Utility programs have had a strong positive impact on investment decisions of building owners and managers. As engineers, and building designers, we have observed many cases where information and incentives provided by utilities have been the deciding factor in owners' selection of efficient equipment and system designs. For example, utility programs have radically changed the market for lighting, chillers and motor systems in commercial buildings in Minnesota.
- Notwithstanding the investments made as of the late 1990s, the remaining potential to improve energy efficiency in Minnesota buildings is very large. [v]

Without Stimulation, Investments in Energy Efficiency May Not Advance as Desired.

- Investments in energy efficiency face many market barriers:
  - Many other issues compete for building owners/managers' time.
  - Building owners/managers lack expertise in energy efficiency and have difficulty identifying and evaluating the merits of various efficiency investments.
  - Building owners/managers have difficulty evaluating and selecting competent, trustworthy service providers.
  - Building owners/managers frequently lack capital to make investments directed to added energy efficiency.
  - Building owners/managers have difficulty interpreting their energy bills and determining whether their investments have paid off.
- Energy-efficiency programs have a demonstrated ability to overcome private sector market barriers by bundling services to make them convenient, providing trustworthy information, researching, demonstrating and promoting effective technologies, training and certifying service providers, providing financing and incentives, and analyzing energy bills.

- Investments in energy efficiency offer benefits to the state of Minnesota as a whole in terms of energy resource diversity, environmental protection, sustainability and economic development, but building owners and managers do not and cannot take these societal benefits into account in their analysis of investment decisions.
- Incentives for energy efficiency leverage private investment and secure the benefits of energy efficiency for Minnesota citizens.

Funding of Energy Efficiency Is Completely Compatible with Restructuring.

- A number of states that have deregulated their electric utilities have provided for energy efficiency as part of restructuring.[vi]
- Charges to cover the costs of efficiency programs can be designed to be collected from all customers connected to the distribution system. These "non-bypassable" charges donot have a negative impact on the competitive position of any energy supplier.[vii]
- Appropriate mechanisms for implementation can ensure a competitive market for energy efficiency services.

The Minnesota Chapter of ASHRAE supports continuation of Minnesota's commitment to energy efficiency in buildings if a restructured electric industry emerges.

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[ii] In 1996, the Minnesota Department of Public Service reported that Minnesota's electricity consumption had grown by a factor of five from 1960 to 1994 (from 8900 GWh/y to 50,000 GWh/y), and that electricity consumption would grow by an additional 22,000 GWh over the 25 years from 1994 through 2020. They projected that, during this same 25 year period, electricity use per capita will increase 20%, while economic output per unit of electricity use will increase only 4%. (DPS 1996: *1996 Energy Policy and Conservation Report.*)

[ii] DPS 1996. Among the major risk factors influencing energy prices are potential early retirements of nuclear plants due to unfavorable economics, waste disposal problems, or age-related degradation; higher than anticipated natural gas prices due to slow progress in extraction technology, high demand for use in electricity generation, or smaller than anticipated reserves; and government actions to reduce climate change (see U.S. Energy Information Administration, 1997. *Annual Energy Outlook 1998.)*

[iii] The Minnesota Pollution Control Agency estimates that in 1995, electric utilities accounted for 82% of Minnesota's sulfur dioxide emissions, 65% of nitrogen oxide emissions, and 45% of lead emissions from stationary sources. According to the U.S. Environment Protection Agency, electric utilities produce about 38% of total Minnesota emissions of carbon dioxide, the most important greenhouse gas contributing to global warming. According to the EPA electric utilities are one of the largest sources of mercury emissions in the U.S. Electric utilities produce the majority of the State's nuclear waste, as well. (see MPCA 1998. "Air Quality Emission Inventory and Fees.") www.pca.mn.us/air/emissions.html , and "Environmental and Health Effects of Mercury." www.pca.mn.us/air/mercury-effects.html., and Isaak Walton League, 1997. *License to Pollute.*

[iv] A study conducted by Economic Research Associates in 1993 concluded that a million dollars spent on energy efficiency generates 36.6 jobs and $2.22 million of economic activity, whereas the same amount spent on utility services generates only 7.6 jobs and $1.47 million of economic activity. (*Energy Efficiency and Minnesota Jobs: The Employment Impacts of Electric Utility Demand-Side Management Programs.*)

[v] In their integrated resource plan in 1997, NSP estimated the economic potential for electricity savings in their Minnesota service territory in 2012, relative to a 1994 baseline sales projection, to be 5600 GWh/y. Economic potential was defined as the energy efficiency that is cheaper for society than generating electricity, based on a societal benefit/cost test. (NSP provides 54% of the electricity consumed in Minnesota). Rosenfeld et al. (1997) cite eight major recent studies, including studies by the National Academy of Sciences, Congressional Office of Technology Assessment, Environmental Protection Agency, Department of Energy, consultants working for the Electric Power Research Institute, and a consortium of environmental organizations, concluding that it is possible to reduce energy use per unit of GNP by an additional 30 to 50%. (Rosenfeld et al. 1997. "Energy Demand Reduction." in R.G. Watts, ed. *Engineering Response to Global Climate Change.* Boca Raton, FL: CRC Press.

[vi] For example, California (AB 1890), Rhode Island (GAB 96-H8124b), Massachusetts (ch. 164 Acts of 1997), Connecticut (Public Act 98-28, HB 5005), Montana (SB 390), New York (*PSC Opinion and Order Regarding Competitive Opportunities for Electric Service*, cases 94-E-0952 35 al., and subsequent settlements (e.g., Case 96-E0897, September 19, 1997)).

[vii] This approach has been used by states including California, Montana, Rhode Island, New Jersey, New York, Maine, Massachusetts and Connecticut. See legislation and orders cited above.