



MINUTES

Energy Efficiency Study Committee

DRAFT

November 13, 2007

Second Meeting

MEMBERS PRESENT:

Senator Robert M. Hogg,
Co-chairperson
Senator Joe Bolkcom
Senator Mary A. Lundby
Senator Rich Olive

Representative Nathan Reichert,
Co-chairperson
Representative Bob Kressig
Representative Brian J. Quirk
Representative Chuck Soderberg
Representative Ralph C. Watts

MEETING IN BRIEF

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- I. Procedural Business
- II. Energy Efficiency Approaches and Procedures — Potential Improvements
- III. State and Federal Energy Efficiency Initiatives
- IV. State Energy Code and Compliance
- V. Discussion and Recommendations
- VI. Materials Filed With the Legislative Services Agency



Energy Efficiency Study Committee

I. Procedural Business

Call to Order — Opening Remarks. Co-chairperson Hogg called the second and final meeting of the Energy Efficiency Study Committee to order at 9:04 a.m.

In his opening remarks, Co-chairperson Hogg emphasized the vital nature of the Committee's work by referring to testimony provided by Mr. Brent Kramer of Whirlpool during the first Committee meeting, in which Mr. Kramer noted that energy efficiency is the cleanest, cheapest, quickest, and most secure of energies.

Committee Business. The Committee unanimously approved the minutes of the October 18, 2007, meeting.

Adjournment. The meeting adjourned at 3:50 p.m.

II. Energy Efficiency Approaches and Procedures — Potential Improvements

Iowa Utilities Board (IUB) Member's Perspective. Ms. Krista Tanner, IUB Member, remarked that her discussions with energy industry representatives and officials from around the country, have led her to the conclusion that a number of states do nothing with regard to energy efficiency, while others, like Iowa, are very progressive. She described California as a beacon for other states. California's energy efficiency efforts are similar to Iowa's, but it is also decoupling sales from profit, which Iowa does not. Ms. Tanner stated that while she is proud of what Iowa has accomplished since 1990, there is room for improvement.

IUB Preliminary Survey Findings. Ms. Joan Conrad, Legislative Liaison, IUB, and Mr. Gordon Dunn, Energy Efficiency Programs Specialist, IUB, provided a status report regarding two studies mandated by 2007 Iowa Acts, H.F. 918. The first study relates to consumer knowledge of energy use and energy efficiency, and methods for increasing such knowledge, with the objective of reducing consumer energy utilization; and the goal of the second study is to determine the status and effectiveness of energy efficiency programs in the state offered by all public gas and electric utilities.

Consumer Study. The consumer study is being conducted by the Center for Social and Behavioral Research at the University of Northern Iowa (UNI). Representatives from UNI will present preliminary results from the survey at 1:00 p.m. at a public hearing held by IUB on December 10. Ms. Conrad noted the preliminary results from the first survey indicate that almost all Iowans believe that there is reason to be concerned about global warming, and most believe Iowans can do something about it. Iowans are fairly knowledgeable about energy efficiencies; understanding on/off peak demand hours, using ceiling fans, and turning lights off when they leave a room. Iowans also look to their utility company as a credible source of information, rating their utility companies as more credible than environmental groups and elected officials. The next step, Ms. Conrad suggested, is to figure out how to get Iowans to make more effort to be more energy-efficient.



Program Status and Effectiveness Study. With regard to the second study, Mr. Dunn summarized investor-owned electric and natural gas utility energy efficiency savings realized, cost-effectiveness calculations, and energy efficiency spending, and also distributed information relating to municipal and rural electric cooperative energy efficiency results and program highlights. Highlights of investor-owned utility (IOU) energy efficiency programs include the following:

- Of the electrical energy savings realized in 2006, three IOU nonresidential electric efficiency programs saved more than one-half of the MWh and nearly one-half of the MW in 2006.
- Of the natural gas energy savings realized in 2006, four of the IOU natural gas energy efficiency programs saved nearly one-half of the natural gas MCf and involved residential customers.
- The societal costs for electrical energy efficiency range from 1 to 5 cents per kWh; while the societal costs for natural gas energy efficiency range from 5 cents to \$1.46 per therm.
- Load management programs produced the greatest number of MW savings in 2006. Most customers participating in the programs are large industrial or commercial operations.

In response to questions, Mr. Dunn noted that the state's energy efficiency savings achievements did not come from simply going after the easiest-to-implement options, and it would be a mistake to believe that the state can accomplish significantly more energy efficiencies in the short term. The efforts require teamwork from entities such as the IUB, utilities, vendors, retailers, and customers. Everyone has to give energy efficiency a higher priority and implement continuous quality improvement. Ms. Tanner noted that it is hoped that the results of the survey will help IUB target customers, but she also noted that more effort to improve existing programs will require more dollars. Ms. Conrad agreed, and observed that the state needs to do more of what it is currently doing, while incorporating new technologies as they emerge.

Office of Consumer Advocate (OCA). Ms. Jennifer Easler, Attorney, OCA, suggested that the state's good energy efficiency program results are due to a strong mandate and state support. She agreed that the appliance recycling program offers great opportunities, but stressed the importance of having a recycling program that does not allow these appliances to return to the market. Refrigerators were the first appliances targeted for the program, but window air conditioning units have been added. Other programs that get good results include residential hot water heater blanket installation, residential audits, and insulation rebates. She noted that an increase in the insulation rebates would result in much higher rates of participation. The state is at a critical juncture and the OCA, she said, is trying to take energy efficiency to the next level. Climate change is a major issue and energy efficiency is a major component. The bulk of electrical energy efficiency savings comes from large nonresidential programs, but residential programs account for one-quarter of the savings; with natural gas, the proportions reverse, with residential and small commercial accounting for the bulk of the savings. She stressed the importance of reaching customers with energy efficiency methods, design, and technology as buildings are being constructed.



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Mr. Joseph Murphy, Utility Administrator, OCA, identified energy efficiency lighting as having significant residential energy savings potential. Residential customers who request an audit receive between five and seven compact fluorescent light (CFL) bulbs. He observed that in a 2002 study of electric savings, it was estimated that 58 percent of savings came from swapping regular electric light bulbs in residences with CFLs. Audits also often include installation of a hot water heater blanket. He suggested more could be done if IOUs, municipal utilities, and rural electric cooperatives worked together, and though he stated he was not necessarily advocating third-party administration of programs, he observed that a unified program would bring efforts together and make them available throughout the state. He singled out Alliant as having a superb program that other utilities are thinking about providing.

Committee discussion focused on the success of the appliance recycling programs; the number of appliances that end up in basements or garages rather than landfills; whether load management should be categorized with energy efficiency efforts; the advisability of limiting sales of appliances in the state to only those that meet energy star requirements; the validity of calculating "societal" costs and benefits; the value of replacing every light bulb in a residence with CFL bulbs rather than simply replacing the bulbs in the highest used fixtures; and the difficulties rural and senior lowans sometimes face that other lowans may not, such as accessing rebates for CFLs and installing CFLs, or installing setbacks on furnaces and blankets on water heaters, which some small utilities will not do for their customers. In response to a question, Mr. Murphy suggested that appliance recycling programs should continue to be given flexibility in contracting for disposal of the recycled appliances. Co-chairperson Hogg and Senator Lundby asked to be e-mailed data on the proportion of homes that have had energy audits.

IUB and OCA Recommendations. In response to a request by Committee members for specific recommendations, IUB and OCA staff suggested allocating additional money and offering additional incentives for existing energy efficiency programs and services which have been determined effective in order to achieve greater energy efficiency savings, providing guidance to the IUB in assessing savings realized from residential and commercial programs, requiring application of energy efficiency programs to all citizens of the state regardless of location or income level, maintaining flexibility in structuring energy efficiency programs and services so that innovative programs can be implemented, and preserving current financial allocations to load management programs.

III. State and Federal Energy Efficiency Initiatives

United States Department of Energy (DOE). Mr. Doug Seiter, Project Manager, Building Technologies Program, DOE, presented an overview of energy efficiency activities at the state and national level. He noted that DOE would designate 2008 as the "DOE Year of Efficiency."

As proof that government leads by example, he noted that 44 percent of Leadership in Energy and Environmental Design (LEED) Green Building Rating System certification applications are from government-owned buildings. Because buildings consume 39 percent of total U.S. energy, it is the mission of the DOE's Building Technologies Program to develop technologies, tools, and standards for making residential and commercial buildings and applications more energy-efficient, productive, and affordable. Disaster recovery and mitigation is an opportunity to combine energy



efficiency and disaster resistance during rebuilding. He noted that the Energy Policy Act of 2005 contained tax deductions for commercial building new construction and retrofits, along with production credits for geothermal, biomass, and landfill gas, and tax credits for solar power, hot water, fuel cells, and microturbines. These tax breaks have been extended to the end of 2008, and he anticipates that Congress will act to renew them beyond 2008. Mr. Seiter described the concept of zero-net-energy commercial building construction and observed that using today's technology, 27 percent of today's commercial buildings could be zero-net-energy buildings. The goal is for commercial buildings to realize a 70 percent reduction in energy usage by energy efficiency and become ultra-low-energy or zero-net-energy buildings by 2025. The department's integrated approach involves research and development of more efficient projects, market transformation, and mandatory appliance standards and building codes.

Mr. Seiter noted the energy efficiency advances being made in states such as Iowa and Colorado, and cities such as Portland, Oregon, and Burlington, Vermont. With regard to community energy, he recommended that the successes enjoyed by other cities be copied, that a full-time position for coordinating community energy efficiency and renewable energy policy and activities be created, that long-term funding be provided at levels commensurate with the goals identified, and that public-private partnerships be developed which engage the entire community. He also provided the Committee with a list of useful web sites relating to grants, green building, LEED certification, the Energy Policy Act of 2005, IRS regulations, and the Building Technologies Program. In response to a question, he recommended that a standard, such as that set by the American National Standards Institute, be set, but still allow for alternative compliance through market programs. He cautioned that once a regulation is set, it is most often seen as a ceiling, rather than the foundation. He advised flexibility to allow for the use of higher standards.

American Council for an Energy-Efficient Economy (ACEEE). Mr. Bill Prindle, Deputy Director, ACEEE, characterized energy efficiency as the "first fuel" for states, in that it does more for the economy than any energy resource; is the first response to high energy prices, capacity shortages, and carbon emissions challenges; and is a renewable resource which is always available. However, efficiency requires policy action and states are the leaders on energy policy and outspend the federal government by a ratio of three to one. New trends could drive energy efficiency to an even larger role in states' energy policy. He, too, characterized energy efficiency as the fastest, cheapest, and cleanest fuel. Dollars invested in efficiency create more jobs than dollars invested in supply. Mr. Prindle identified barriers to efficiency, such as the consumer's lack of time to study each purchase, and that builders do not necessarily care about a building's future energy savings when they are constructing buildings. Building codes are helpful in motivating builders.

Mr. Prindle observed that the Energy Efficiency Resource Standard (EERS), a market-based mechanism which consists of electric and/or gas energy savings targets for utilities, could significantly reduce load growth. He identified key national trends, such as a shift in electric industry strategy caused by slowing load growth, rising prices, capacity shortages, carbon risk, growing understanding of demand-side investment potential, and new business models. He also identified three key regulatory issues: allowing cost recovery for the direct costs of energy efficiency programs, removing disincentives of utilities' lost revenues, and creating earnings



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potential from energy efficiency program investments. Mr. Prindle also predicted that states may see a federal requirement driving energy efficiency as well as renewable energy resource acquisition.

He recommended that Iowa build on the success of utility energy efficiency programs, set long-term resource targets, and create resource priority policies for energy efficiency, renewable energy, and conventional energy. He also offered the following specific policy options: EERS (using Illinois and Minnesota as examples), Resource Load Order, Utility Regulatory Reform, developing combined heat and power and other distributed generation, and better building codes including training and enforcement.

Mr. Prindle indicated that Iowa ranks thirteenth in the nation based on an energy efficiency state scorecard developed by ACEEE and is well-positioned to improve its energy efficiency opportunities and thereby create a stronger state economy. Iowa would have ranked higher if the scorecard was limited to utility spending and results.

Center for Energy and Environment. Mr. Sheldon Strom, Director of Minnesota's Center for Energy and Environment, described the center's operations, including managing a One-Stop Efficiency Shop for three IOUs, recommissioning large complex buildings, conducting research projects, and developing greenhouse gas reduction plans. He outlined the history of energy efficiency efforts and savings in Minnesota. He summarized the provisions of the state's Next Generation Act, including energy savings goals, funding for applied research for all utilities, financial incentive for utilities, decoupling pilot projects, new conservation program strategies, and projected efficiency savings and projected carbon dioxide reductions. Mr. Strom stated that the paradigm shift from energy spending requirements to savings goals will be challenging for the state, and getting financial incentives and decoupling efforts right will be crucial to the legislation's success. He noted the new law will also shift emphasis from peak savings to energy savings, leading to greater overall savings in carbon dioxide levels. He described the law as the result of a bipartisan effort.

Mr. Strom listed 2008 legislative efficiency options, including Minnesota 2030 — Promoting Exceptional Buildings, a program to promote exceptional building and encourage utilities to provide incentives to builders. The program will be voluntary for all buildings except state buildings and, if cost-effective, some school buildings if state dollars are used to pay for the construction of those buildings. Other options include appliance efficiency standards and public education; efficiency financing for government buildings, such as tax-exempt lease-purchase or paying off loans with energy savings; and compact fluorescent recycling and marketing. He invited the Committee to view the center's web site, "Minnesota Energy Challenge," (<http://www.mnenergychallenge.org>) which offers money and energy saving tips for homeowners and allows homeowners to calculate their carbon footprint. The center also offers a Biomass Resources web page (http://www.mncee.org/public_policy/renewable_energy/biomass/index.php), which provides tools and information for evaluating biomass opportunities in Minnesota. In response to a question, he told members that under decoupling, gas utilities, for example, keep the revenues if they overearn, but if they underearn, are allowed to bill customers for the shortfall.



IV. State Energy Code and Compliance

Building Code Commissioner. Mr. W. Stuart Crine, Building Code Commissioner, Department of Public Safety, discussed the statutory basis for State Energy Code provisions, noting that Code section 103A.7, subsection 6, requires energy conservation standards for construction to be included in the State Building Code, applicable to buildings intended for human occupancy and use. The Commissioner adopted by reference, under Code chapter 661 of the Iowa Administrative Code, the International Energy Conservation Code (IECC), 2006 Edition, published by the International Code Council. The State Energy Code varies in application depending upon whether the building is state-owned or state-funded, the size and extent to which a building is heated or cooled, and whether the building is constructed in a political subdivision which has adopted a local building code. The State Energy Code is not applicable to new construction that is privately owned and financed and is less than 100,000 cubic feet of enclosed space, or is more than 100,000 cubic feet of enclosed space but not heated or cooled, and is located in a jurisdiction with no local building code.

State Energy Code. In addition, Mr. Crine described additional energy conservation tools in the Code, including an energy review, which is required for any building over 100,000 cubic feet of conditioned space; and a life cycle cost analysis, which is required for public facilities over 20,000 square feet that are heated or cooled, to optimize energy management over the life cycle of a building. Enforcement of the State Energy Code is by the State Building Code Bureau if construction is subject to the State Building Code, and primarily by a local building department if a local building code or department exists. Where no local building code or department exist, there is no enforcement of the State Energy Code. In fact, a significant portion of new construction is not subject to an energy code. He observed that the State Energy Code is inconsistently interpreted and applied by local departments.

Policy Options. Mr. Crine recommended applying the State Energy Code to all new construction in the state, providing training opportunities for local officials in energy code enforcement, providing resources for local enforcement regarding plan review and inspections, extending State Building Code inspection requirements to all new construction covered by the State Energy Code, and requiring or providing incentives for enhanced energy conservation features exceeding IECC requirements. He also suggested that if sustainable design standards are adopted as requirements for certain construction or as a basis for incentives, specific energy conservation goals of significant energy savings beyond those required by the IECC be incorporated into the standards; adoption of specific standards by administrative rule, rather than statute, to allow for rapid response to changes in standards; and flexibility for regulatory agencies to work through administrative issues, notably that certification as a green building does not occur until after construction is complete.

Discussion. In response to a question, Mr. Crine noted that in general, codes do not apply retroactively, unless there is a major renovation to a building, and then only the addition is required to be in compliance. He estimated that the costs per energy inspection for all new construction in the state would average \$300 per inspection, but stated the costs would vary greatly by city. During discussion, he observed that there is practically no code enforcement in rural Iowa, though some smaller communities enter Code chapter 28E agreements for building code inspection. He



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also added a recommendation to require builders to complete an energy compliance form, which he said would be less expensive than requiring an inspection.

V. Discussion and Recommendations

The Committee discussed load management and whether load management should be classified as an energy efficiency measure, third-party administration of energy efficiency programs and potential administrative costs, decoupling incentives and their return on investment, uniformity in program offerings versus the current patchwork of programs, duplication in programs, shifting to outcomes or proficiency standards, whether to set energy efficiency targets, making the appliance program a statewide program, and use of Iowa Power Fund funds for energy efficiency program support.

The Committee on a majority vote approved the following recommendations on energy efficiency:

Policy Statement. Improving energy efficiency — getting more energy services for less energy — is essential for Iowa's efforts for energy independence, for jobs and economic growth, and for the environment and future generations. As Whirlpool Corporation told the Committee, energy efficiency is "cheaper," "quicker," "cleaner," and "enhances security."

Recommendations. The Committee made the following recommendations:

1. Set an energy efficiency goal of 1.5 percent per capita per year. The current energy efficiency efforts are focused on providing particular cost-effective programs. The General Assembly needs to add a focus on the overall results to improve performance and accountability. The Committee recommends setting a statewide energy efficiency goal of 1.5 percent per capita per year which, if achieved, would save Iowans \$9 billion over the next 10 years. In the utility sector, the energy efficiency goal should apply to all utilities. The General Assembly should give utilities flexibility in meeting the goal, provide incentives for achieving the goal, and create remedies if the goal is not met such as proportional financing of a third-party administrator to achieve the goal. Impose a three-year phase-in period.
2. Provide tax incentives for the construction and rehabilitation of green buildings.
3. Provide basic energy efficiency services statewide so they are available for all Iowa families and businesses.
4. Improve compliance with state building energy code. Buildings are a major consumer of energy. The most cost-effective time to improve building energy efficiency is at construction. The General Assembly should establish the state building energy code as the minimum standard statewide, and support education, compliance, and enforcement of the state building energy code.
5. Encourage green building construction and renovation. The General Assembly should require and help finance green building construction for public buildings, and provide incentives for green building construction in the private sector.



6. Low-income energy efficiency efforts. Energy efficiency is an essential part of meeting low-income energy needs. The General Assembly should fully fund the assessment and resolution program for the community action agencies to promote energy efficiency.
7. Transportation efficiency improvements. The Committee did not have time to address transportation efficiency. The General Assembly should ask the Office of Energy Independence to work with the Department of Transportation, other state agencies, and the transportation industry to make recommendations for improving transportation efficiency including raising the fuel economy of Iowa's vehicle fleet.
8. Promote cogeneration of electricity to improve energy efficiency in electrical production. The Committee did not have time to address production efficiency. The General Assembly should ask the Office of Energy Independence to work with the Iowa Utilities Board, other state agencies, and the energy industry to make recommendations for improving production efficiency such as cogeneration of electricity.
9. Promote better workforce training to improve energy efficiency. Mr. Don Otto and other witnesses explained the importance of quality workmanship in improving energy efficiency, but the Committee did not have time to address these workforce issues. The General Assembly should ask Iowa's universities, private colleges, community colleges, the building trades, and the building industry for recommendations to improve the growing energy efficiency workforce.
10. Encourage the Iowa Power Fund Board to invest in energy efficiency.
11. Integrated planning and programming with energy efficiency (Minnesota model) — including rural electric cooperatives and municipal utilities.
12. Third-party administration pilot project.
13. Energy efficiency summit — promote statewide sharing of programs and cooperation.
14. Advisory council on energy efficiency for Office of Energy Independence.
15. Require economic impact assessment of energy efficiency programs.
16. Better consumer education.
17. Continue to study load management.
18. Easier implementation of energy efficiency programs for customers, including list of available contractors.



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VI. Materials Filed With the Legislative Services Agency

The following materials listed were distributed at or in connection with the meeting and are filed with the Legislative Services Agency. The materials may be accessed from the <Additional Information> link on the Committee's Internet web page:

<http://www.legis.state.ia.us/aspx/Committees/Committee.aspx?id=217>.

1. Appendix A to Responses, Office of Consumer Advocate.
2. Appendix B to Responses, Office of Consumer Advocate.
3. Energy Codes and Energy Code Enforcement in Iowa, Mr. Crine, Building Code Commissioner, Department of Public Safety.
4. Energy Efficiency: State and Federal Activities, Mr. Seiter, Project Manager, United States Department of Energy.
5. Energy Efficiency: The First Fuel in the Race for Clean and Secure Energy, Mr. Prindle, Deputy Director, American Council for an Energy-Efficient Economy.
6. Investor Owned Utilities Energy Efficiency Programs — 2006 Charts, Iowa Utilities Board Staff.
7. Office of Consumer Advocate Responses, Ms. Easler, Attorney, Office of Consumer Advocate, and Mr. Murphy, Utility Administrator, Office of Consumer Advocate.
8. Minnesota's Next Generation Energy Act of 2007, Mr. Strom, Center for Energy and Environment.
9. Preliminary Results for the Iowa Utilities Board Energy Efficiency Study, Mr. Dunn, Utilities Specialist, Energy Efficiency Programs, Iowa Utilities Board Staff.
10. Proposed Recommendations of Interim Committee on Energy Efficiency.
11. Questions and Answers Regarding Energy Efficiency, Iowa Utilities Board Staff.