

8 June 2011

The Honorable Jeff Bingaman
Chairman
Committee on Energy and Natural Resources
United States Senate
Washington, DC 20510

Dear Senator Bingaman:

On behalf of the Institute of Electrical and Electronics Engineers-United States of America (IEEE-USA), I am writing to commend the Senate Energy and Natural Resources Committee for holding a hearing on legislation aimed at promoting energy savings in residential and commercial buildings and industry. IEEE-USA strongly recognizes that the pursuit of energy efficiency in all sectors of the economy is an essential part of a policy portfolio aimed to achieve energy security and economic growth while reducing greenhouse gas emissions.

Minimum efficiency standards have been the basis for some of the most successful policies used by states and the federal government to save energy in the United States. For example, refrigerator-freezers manufactured to meet standards after July 2001, typically consume about 30 percent less energy than the maximum energy usage permitted under the previous regulations.

The *American Clean Energy and Security (ACES) Act of 2009* incorporates energy savings from improved building codes and equipment standards. The American Council for an Energy Efficient Economy (ACEEE) estimates that if the codes and standards are followed, national energy consumption can be reduced by 4.6 percent and eight percent in 2020 and 2030 respectively.

Efficiency standards eliminate products with excessive energy operating costs and hasten development of innovations that bring improved performance. Standards complement consumer education and incentive-based programs in promoting energy savings. Minimum efficiency standards help to overcome the market barriers that often block cost-effective energy savings.

Energy efficiency improvements in commercial buildings can be financially attractive. For example, the sustainable (LEED Existing Building criteria) retrofit of the Empire State Building in New York is expected to cost \$13.2 million. However, at the completion of the project, energy savings are estimated to be \$4.4 million per year, for a three-year payback. Designing new commercial buildings specifically for energy efficiency can generate even higher returns over the life of the structure.

Because lighting is such a large component of commercial energy consumption, the installation of high efficiency “intelligent” lighting systems can have paybacks of less than two years. These systems utilize daylight-responsive controls, occupancy sensors and advanced lighting designs to use energy only as needed. Improving lighting efficiency also has the secondary effect of reducing the size and cost of air conditioning and electrical distribution systems. The broad range of technologies allows a skilled lighting designer to improve efficiency while improving the quality of ambient and task lighting.

The National Academies' 2009 report, *America's Energy Future: Technology and Transformation*, identifies that from the beginning of the design process an integrated design should be used relating a building's heating, ventilation and air conditioning systems with those of the envelope systems and the lighting system and its controls. It is possible that with such a design concept new commercial buildings can reach a 50 percent savings in energy usage as compared to one that does not use an integrated energy design. Such a design could be encouraged by better building energy performance standards.

Again, we thank the Senate Energy and Natural Resources Committee for holding a hearing on energy efficiency and we urge the committee to pass legislation on this vital issue in a timely manner. For further information please refer to the Energy Efficiency addendum to the IEEE-USA National Energy Policy Recommendations at <http://ieeusa.org/policy/positions/EnergyEfficiency1110.pdf>

IEEE-USA advances the public good and promotes the careers and public policy interests of 210,000 engineering, computing and technology professionals who are U.S. members of IEEE. <http://www.ieeeusa.org>
If we can be of further assistance, please contact Bill Williams in our Washington office at (202) 530-8331 or email at bill.williams@ieee.org.

Sincerely,

A handwritten signature in black ink, appearing to read "Ronald G. Jensen". The signature is fluid and cursive, written in a professional style.

Ronald G. Jensen
IEEE-USA President

RGJ/ww:mcs

Cc: Committee on Energy and Natural Resources