August 2, 2011

Mr. Ryan M. Colker
Director, Consultative Council/Presidential Advisor
National Institute of Building Sciences
1090 Vermont Ave., NW, Suite 700, Washington, DC 20005

Dear Mr. Colker,

The National Electrical Manufacturers Association (NEMA) was pleased to be invited to participate in the July 18, 2011 representative hearing on Data Needs To Achieve High-Performance Buildings held at the American Institute of Architects. The purpose of this letter is to provide written testimony as requested by the hearing sponsors: the National Institute of Building Sciences (NIBS), the National Environmental Balancing Bureau (NEBB), and the New Buildings Institute (NBI).

We understand the next steps to include:

1. Information from the hearing, including testimony provided will be posted by NIBS.
2. Written testimony will be accepted through 5:00 PM EDT August 2 to hvelez@nibs.org.
3. A report consisting of all written and oral testimony is scheduled for distribution in October, after review by contributors.

Summary of NEMA's recommendations for the building industry:

1. Follow-up on the critical need to collect and publish building data
2. Data collected should be "performance" based, not "intended design" based
3. Bring together the members of the industry to determine the respective data needs
4. Determine the appropriate avenue for collecting, managing, and accessing the data in an unbiased secure manner
5. As much as possible, make use of an existing platform such as DOE's Commercial Buildings Energy Consumption Survey (CBECS) or ASHRAE's Database for Analyzing Sustainable and High Performance Buildings (DASH) if meet the needs, appropriately.

Please note that following the written testimony is a summary of background information with which you are very familiar, provided as a framework for the recommendations. Be sure to contact me regarding any clarifications on the material, which summarizes the perspective of a number of member companies that participate in NEMA's High Performance Buildings Council.

Respectfully,

Jim Lewis
Manager, High Performance Buildings and Industrial Energy Efficiency
National Electrical Manufacturers Association (NEMA)
1300 North 17th Street, Suite 1752, Rosslyn, VA 22209
703-841-3244 (office), 703-346-3895 (cell), Jim.Lewis@nema.org, www.nema.org

Written Testimony to the Representative Hearing On:
Data Needs To Achieve High-Performance Buildings
From
National Electrical Manufacturers Association
August 2, 2011

NEMA Testimony

Oral testimony from NEMA was provided by Jim Lewis, Manager High Performance Buildings and Industrial Energy Efficiency, at the July 18th hearing. NEMA agrees with many of the other organizations that gave testimony on July 18 regarding the critical need for up-to-date data on building performance ("CBECS-type" data).

Need for Data on Building Performance

NEMA member companies are deeply concerned that the Commercial Buildings Energy Consumption Survey (CBECS) database suffers from funding and statistical issues. Many benchmark and measurement platforms use the Department of Energy's EnergyStar platform to establish energy use benchmarks for buildings. Because the EnergyStar program measures a benchmark score by comparing a building to its peers, the value of making comparisons will diminish as the underlying CBECS data becomes older. With the last data being from 2003 the last reliable data is nearly a decade old. This is particularly important in light of the 2007 CBECS data discrepancies. Additionally, the USGBC's Leadership in Energy and Environmental Design (LEED) for Existing Buildings (LEED-EB) uses EnergyStar as a baseline.

This is disconcerting news at a time when America looks to protect its energy future by focusing on energy conservation and upgrading the performance of its commercial building stock. Further, high performance buildings are critical to initiatives like the smart grid as buildings have potential to respond with conservation of usage rather than firing-up generation resources to meet demand.

A strong and reliable third party data source like CBECS instills competition in building owners and managers as this peer comparison data gives clear indication of their ranking amongst competing properties. This competition then drives the building industry to push for ways to gain even higher levels of energy performance, with the nation as the beneficiary. NEMA would like to urge the careful examination of cutting funding for CBECS so that the high performance building community does not lose an important measure that drives The USA to greater accomplishments. Recommendations:

Overall

- In favor of supporting collection and publication of Commercial Buildings Energy Consumption Survey (CBECS) **type** data for use in benchmarking performance
- Data collected should be "performance" based, not "intended design" based

- Bring together the members of the industry to determine the respective data needs
- The building industry determines the appropriate avenue for collecting, managing, and accessing the data in an unbiased secure manner
- As solutions are developed, it is important that the management of the data is through a public/private consortium so that the data is not controlled through a single association or interest.
- Data should be used for industry reporting and benchmarking
- Caution and input from the industry must be exercised should the data be used for the development of codes and labels.
- Industry should define the categorization of data

Needs

- Building performance data based on actual verified performance
- Defendable consumption benchmarks based on contextual comparative data
- Building performance data based on design intent must be scrutinized carefully. Possible potential for use in meeting some green building standard or rating system.
- Voluntary industry engagement
- Trusted data that cannot be used against industry
- Annual reporting of aggregated data for trending, benchmarking, and direction

The Data

- Must be protected, private, and anonymous
- Must be as accurate as reasonably possible
- Aggregated in a way that protects individual consumption data
- Those who contribute data must be able to receive aggregated data in return
- Able to be queried by industry segments for specific needs, with anonymity
- Must have a high level of granularity, defined by industry, over time

How

- Voluntary submission by industry or mandatory submission by state or city regulation
- Data managed by a non-biased, non-industry associated organization

Contact at NEMA

Jim Lewis
Manager, High Performance Buildings and Industrial Energy Efficiency
National Electrical Manufacturers Association (NEMA)
1300 North 17th Street, Suite 1752, Rosslyn, VA 22209

703-841-3244 (office), 703-346-3895 (cell)
Jim.Lewis@nema.org
www.nema.org

Background Material - The Situation

U.S. Department of Energy (DOE)

The Commercial Buildings Energy Consumption Survey (CBECS) is a national sample survey that collects information on the stock of U.S. commercial buildings, their energy-related building characteristics, and their energy consumption and expenditures. Commercial buildings include all buildings in which at least half of the floor space is used for a purpose that is not residential, industrial, or agricultural, so they include building types that might not traditionally be considered "commercial," such as schools, correctional institutions, and buildings used for religious worship.

The CBECS was first conducted in 1979; the eighth, and most recent survey, was conducted in 2003. CBECS is currently conducted on a quadrennial basis.

In the spring of 2011 the U.S. Energy Information Administration (EIA) regretfully reported "that the 2007 Commercial Buildings Energy Consumption Survey (CBECS) has not yielded valid statistical estimates of building counts, energy characteristics, consumption, and expenditures. Because the data do not meet EIA standards for quality, credible energy information, neither data tables nor a public use file will be released. In the interim, EIA will develop key energy indicators for commercial buildings in collaboration with EIA's forecasting staff for the Annual Energy Outlook.

Factors contributing to this outcome include the use of a cheaper but experimental survey frame and sampling method by EIA's prime contractor, design errors in the construction of the method and selection of common building types, and an inability to monitor and manage its use in a production survey environment. EIA has reviewed and introduced significant changes in its procurement and project management standards that will prevent this type of loss in the future."

As reported in the EIA Press Release, "Immediate Reductions in EIA's Energy Data and Analysis Programs Necessitated by FY 2011 Funding Cut" (http://www.eia.gov/pressroom/releases/press362.cfm), work on the 2011 CBECS has been suspended at this time.

Legislative Initiatives – Observations

Report language in the current House Energy and Water appropriations bill permits EIA to use its budget as they determine. The EIA budget has been seen in a negative light on the House side of Congress. On the Senate side, there is a current lack of optimism that an appropriations bill will make it through the chamber. Without incentive, a Continuing Resolution (CR) will most

likely not help because DOE appears disinclined to undertake the CBECS survey without additional funding.

The Hearing Sponsors

Due to the announcements in spring 2011 by the U.S. Energy Information Administration (EIA) that the 2007 edition of the Commercial Building Energy Consumption Survey (CBECS) would not be released due to statistical errors and that the 2011 edition is suspended due to lack of funding stakeholders in the building industry determined to take action. The building industry needs building benchmark data on high-performance building attributes, including safety and security, accessibility, cost effectiveness, water use, and indoor environmental quality. There is a growing consensus that it has become necessary that metrics and the associated data must be developed and collected by the building community for the building community. In lieu of individual collection efforts for individual attributes, a collective approach is being considered that will produce better data at a lower cost with the added benefit of built in interoperability.

Therefore, in order to begin identifying the needed data and potential sources, the National Institute of Building Sciences scheduled a hearing for **July 18, 2011** at the American Institute of Architects (1735 New York Ave., NW) in Washington, D.C., to collect input from various sectors of the building community on data needs and existing data sources. Presiding over the hearing was Gordon Holness, Past President, American Society of Heating, Refrigerating and Air-conditioning Engineers (ASHRAE); Ron Skaggs, Past President, American Institute of Architects (AIA); and Henry Green, National Institute of Building Sciences President.

To facilitate a thorough discussion, sectors of the building community were grouped into sessions:

1. Architects/Engineers/Contractors/Specifiers
2. Building Owners/Facility Managers/Commissioning
3. Codes & Standards/Rating Systems
4. Government
5. Software Vendors and Manufacturers
6. Data Managers/Collectors/Reporters/Statisticians/Researchers
7. Insurance & Finance

Topics of Interest

1. Critical building data and data priority
2. Data currently collected by our organization and availability
3. Identify potential sources and collection processes for building-related data including survey mechanisms, sensors and other technologies, building personnel, and others.
4. Recommendations on how the Institute and the building community may proceed in identifying, collecting, funding, compiling and disseminating the desired building related data.