Comments of
Institute for Market Transformation
Natural Resources Defense Council
U.S. Green Building Council
On

Massachusetts Department of Energy Resources' Building Energy Asset Labeling Program White Paper
An MPG Rating for Commercial Buildings:
Establishing a Building Energy Asset Labeling Program in Massachusetts

February 14, 2011

I. INTRODUCTION

The Institute for Market Transformation, the Natural Resources Defense Council and the U.S. Green Building Council appreciate the opportunity to comment on the proposed commercial building energy asset labeling program in Massachusetts. We commend the DOER staff for showing national leadership, and believe that this program is capable of driving substantial new energy efficiency investments in commercial buildings, reducing energy costs for businesses, creating thousands of private sector green jobs in Massachusetts, and informing and protecting consumers by increasing the transparency of building energy information in the market.

II. GENERAL COMMENTS

We strongly support Massachusetts' commercial asset labeling program goal of encouraging energy efficiency investments in existing buildings. We agree with DOER that

- Asset ratings will encourage building owners and operators, as well as the commercial real estate marketplace, to value energy efficiency and implement energy upgrades.
- Operational ratings should be integrated with asset ratings.
- The program should be interconnected with retrofit financing options and incentives.
- A Building Energy Efficiency Recommendations Report with detailed, custom energy efficiency recommendations should be included in the program.
- The COMNET Modeling Guidelines and Procedures should be used to decrease the variability and increase the cost-effectiveness of energy modeling and ensure the comparability of asset ratings.
- Greenhouse gas emissions should be a secondary metric on the label
- A multi-year pilot with stakeholders from the commercial property, utility, government, nonprofit and financial services sectors is valuable to solicit program feedback, test ideas and technical procedures, and determine the scope of future asset labeling activities.
- A purely voluntary program will not create market transformation.
- A mandatory, statewide program that includes public disclosure of ratings should be fully explored.

This effort, along with a similar program by the California Energy Commission, can help establish asset labeling best practices for Federal agencies and state and local governments interested in implementing

similar programs. We encourage DOER to collaborate with CEC staff wherever possible and continue engaging government officials and commercial property stakeholders in Europe, where asset labeling schemes are being implemented and refined.

Our main recommendations, developed in greater detail below, are that the DOER asset labeling program should

- Use source energy as the primary performance metric.
- For asset ratings, consider referencing the zEPI technical scale and integrating statistical benchmarks.
- Leverage the EPA ENERGY STAR Portfolio Manager tool for operational ratings.
- Ensure that the rating scale is not overly simplistic and encourages positive movement.
- Include energy performance indicators of specific systems within a building on the label or in the Building Energy Efficiency Recommendations Report.
- Include mixed-use and condominium buildings in the project's pilot phase.
- Maximize engagement with the financial services sector to understand their needs related to financing and building energy assessment.
- Include an explicit goal of increasing energy transparency in the real estate market through the disclosure of ratings.

While we support the development of asset ratings for existing commercial buildings, we do not believe asset ratings are a *substitute* for operational ratings, which reflect actual (rather than predicted) energy consumption. As DOER recognizes, many U.S. states and cities are now implementing commercial building rating and disclosure schemes based on operational ratings. Given the technical, political and economic challenges of deploying a large-scale asset rating program, most European Member States are opting to require measured (operational) ratings instead of asset ratings for large nonresidential and government buildings.[1] We urge DOER to ensure that operational ratings are integrated into its asset rating program, and consider additional programs and policies based on operational ratings that can be implemented in Massachusetts prior to the implementation of an asset rating program.

III. DETAILED COMMENTS

Source energy should be the primary performance metric

We strongly suggest that DOER reference source energy as the primary metric for its asset rating. We agree with DOER that the most important metric for building owners and operators when comparing buildings is the one which is the best proxy for cost. Source energy provides a far better proxy for costs than does site energy. Using site energy substantially undervalues electricity measures relative to natural gas (by a factor of about three at current gas and electricity prices). It would even more dramatically undervalue measures that address peak demand.

Further, source energy, by including generation and transmission losses, presents a far more complete indication of total energy use across the system. Notably, other energy performance rating programs, such as Energy Star and ASHRAE bEQ, use source energy as the energy metric. Additionally, Massachusetts and most other states use source energy or energy cost (or in California's case, time-

[1] Policy Pathway: Energy Performance Certification of Buildings. IEA (International Energy Agency), 2010. OECD/IEA, Paris. Available at http://www.iea.org/papers/pathways/buildings_certification.pdf

dependent valued energy) as the metric for comparing the energy performance of new buildings against code minimums. Using site energy may create a dual standard whereby a building with a relatively good asset rating may not be more energy efficient than code minimum. Incentive programs typically compare the as-designed building against a code minimum.

For asset ratings, consider referencing the zEPI technical scale and integrating statistical benchmarks

There are many opinions on whether rating programs should reference technical or statistical scales. Both approaches have merit. We agree that a technical rating scale rooted at zero net energy achieves DOER's goal of encouraging deep-building retrofits toward zero net energy better than a statistical scale. To this end, we recommend DOER consider use of the Zero Energy Performance Index (zEPI).[2] zEPI references zero net energy and a static benchmark based on the representative building efficiency levels at the turn of the century, derived from U.S. Dept. of Energy's Commercial Building Energy Consumption Survey (CBECS). zEPI is proposed as a performance-path compliance option in the International Green Construction Code (IgCC) under development by the International Code Council.

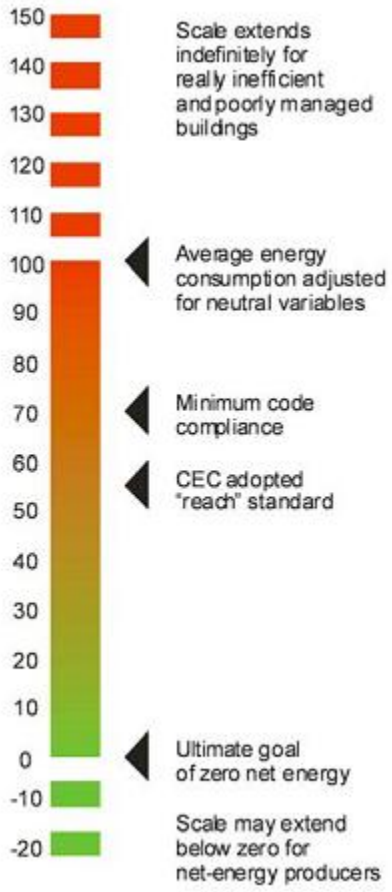

Figure 1: Zero Energy Performance Index (zEPI)

However, we disagree with DOER that a statistical scale is entirely inappropriate. The leading national tools for commercial energy rating, the U.S. Environmental Protection Agency's Energy Star Portfolio Manager (for operational ratings) and Target Finder (for asset ratings), reference a statistical scale that compares actual or predicted energy use intensity (EUI) to that of existing, similar buildings nationwide. Whether or not DOER chooses to integrate Energy Star operational ratings into its program, Energy Star is the nation's most popular rating tool among commercial owners and operators, and it carries significant brand name recognition with owners, operators and other real estate stakeholders, such as tenants. The Energy Star statistical scale is used effectively to baseline, compare, track and help reduce energy consumption, and the commercial sector – and most of all the companies recognized as energy efficiency "leaders" – may be hesitant to move to a new scale, especially one they perceive as casting their asset in a less favorable light.

DOER should take steps to anticipate and avoid market confusion that may result from transitioning the industry to a technical asset rating scale. DOER should consider integrating statistical benchmarks into the technical scale by referencing Energy Star rating scores, expressed as a percentile on the Energy Star statistical scale, alongside the building's rating on the technical scale. This would give buildings dual, non-conflicting energy performance indicators: one that represents an absolute value of energy use in

[2] Rethinking Percent Savings: The Problem with Percent Savings and the New Scale for a Zero Net-Energy Future. Architectural Energy Corp., 2009. Available at http://newbuildings.org/sites/default/files/Rethinking_Percent_Savings.pdf

relation to the existing building stock (zEPI), and one that represents a ranking in comparison to the existing building stock (Energy Star). It would also provide leadership recognition to owners of efficient buildings that score well on the statistical scale.

Leverage Energy Star Portfolio Manager for complementary operational ratings, even if another operational rating is referenced

DOER should seriously consider the use of Energy Star operational ratings as a complement to the asset rating. Doing so would leverage the billions of square feet of existing floor space that has already been benchmarked using this program. Building owners are required to benchmark using Portfolio Manager to demonstrate compliance with the U.S. Green Building Council's LEED for Existing Buildings certification platform and with a new energy efficiency leasing directive on all federal tenants.[3]

DOER has expressed interest in other operational rating systems, particularly the ASHRAE bEQ program. The choice need not be mutually exclusive. Because an ASHRAE operational rating would likely require a Level II audit, this rating would presumably be required only periodically and remain valid for several years to ensure cost-effectiveness for building owners. Annual Portfolio Manager ratings would help building owners and operators monitor energy performance and track incremental improvements. The software is free and the time commitment to generate a rating is minimal. DOER should engage real estate stakeholders and EPA Energy Star officials on this issue.

Ensure that the rating scale is not overly simplistic and encourages positive movement

DOER is approaching rating presentation the right way by engaging stakeholders and focusing on broad consumer appeal. We do caution against oversimplifying the scale, as can occur with the use of letter grades or other representational "bins", such as stars or globes. DOER should avoid creating a scale that is overly difficult for owners to achieve "marketable" improvement (i.e., moving up to the next bin or letter grade), despite demonstrable energy efficiency improvements to the building. That will have the effect of discouraging energy improvements.

DOER may consider subdividing bins, such as including "A+" and "A-" grades within the "A" category. A numeric scale may be desirable, although great care needs to be taken not to confuse the market. Top achievement on the Energy Star scale is a "100" on a "1" to "100" point scale, although many zero net energy scales naturally set "0" as the top achievement, which would make the scales polar opposites.

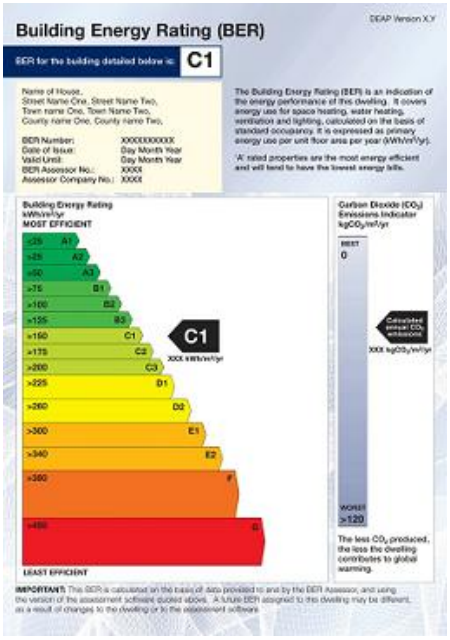

Figure 2: Building Energy Rating in Ireland (http://www.kkl.ie/faq.php)

[3] Public Law No. 110-140. The Energy Independence and Security Act of 2007 requires federal agencies to lease space only in buildings that earned the Energy Star label, which requires benchmarking. Some exemptions apply.

We also recommend allowing sufficient differentiation at the top of the scale. Once again, incrementally achievable bins should promote positive movement and keep building stakeholders from falsely perceiving that they have "maxed out" achievable gains in the context of the scale. For example, a letter grade scale should allow the owner or operator of an "A" building to demonstrate further improvement (See Figure 2).

Include energy performance indicators of specific systems within a building on the label or in the Building Energy Efficiency Recommendations Report

Some European Union Member States are providing performance indicators for specific building systems as supplemental information on labels or in accompanying label documentation. In addition to energy and cost data related to system upgrades, graphic indicators of the performance of systems may help consumers identify and prioritize areas for investment (see Figures 3 and 4). If additional costs to display this information are marginal, we recommend its inclusion in the Building Energy Efficiency Recommendations Report or on the label itself, depending upon space and design limitations.

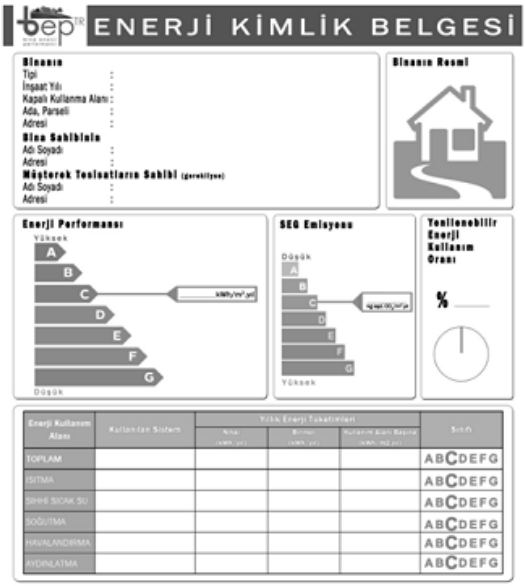

Figure 3: Label in Turkey showing performance of systems at bottom of label. (Istanbul Technical University, www.itu.edu.tr)

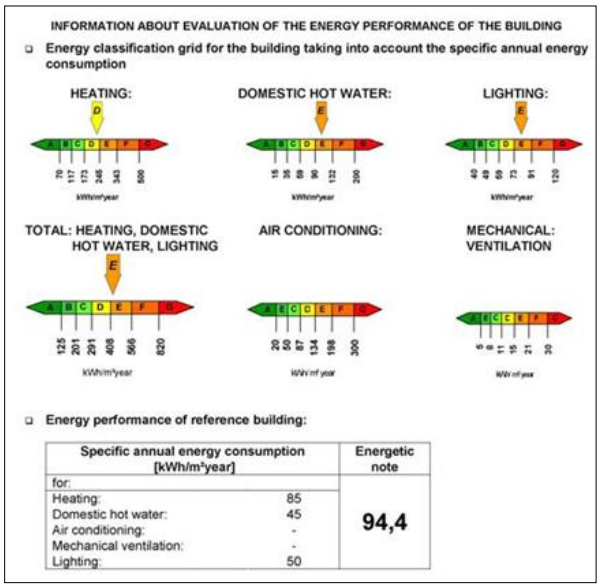

Figure 4: Label in Romania showing performance of systems. (Concerted Action Country Reports 2008)

Pilot Implementation Strategy

a) Mixed-use and condominium buildings should be part of the pilot

We agree with DOER's decision to begin the pilot with buildings in the office, multifamily and government sectors, but urge the additional inclusion of mixed-use and condominium buildings. A large share of buildings in urban areas, such as Boston and Cambridge, have at least two distinct space uses, and buildings with three or more space uses and complex ownership structures are not uncommon.

There are unique challenges in the mixed-use sector that DOER needs to address in the program's pilot phase. For example, there may be value in subdividing labeling requirements by space type, especially

from a consumer perspective. DOE should determine in its pilot how its proposed use of weighted averages for mixed-use buildings will impact whole-building asset ratings. Condominiums raise a number of issues, many of which overlap with mixed-use buildings, where ownership often differs by space type. Should a condominium sale trigger an asset rating for an entire building, or just the portion subject to the transaction? Are asset rating costs shared between condo owners if a partial sale triggers a rating? What if one condo owner wants to invest in energy efficiency upgrades but the other owner has no interest?

These are just some of the questions about mixed-use and mixed-ownership buildings that are emerging today in U.S. states and cities with commercial operational rating policies. DOER should pilot the asset rating in several mixed-use and condominium buildings and solicit stakeholder feedback to anticipate address these issues preemptively and anticipate additional challenges. In many cases, the mixed uses in a building are commercial office and multifamily, which dovetails with DOER's stated goals related to building types in the pilot.

b) Learn lessons on mandatory audits from New York City and San Francisco

DOER should engage with city officials and select commercial property stakeholders from New York City and San Francisco, where mandatory commercial audit provisions are enacted. Requirements in both cities reference ASHRAE level II audits for large buildings (50,000 square feet and greater), with San Francisco's provision additionally referencing ASHRAE level I audits for smaller buildings (10,000 square feet to 49,999 square feet). Insight from both cities will be helpful for DOER to develop implementation best practices related to mandatory audits, reporting requirements, workforce credentialing and assessor quality assurance and general program design.

c) Engage with the financial services sector in the pilot

DOER should prioritize engagement with commercial real estate lenders and appraisers in the pilot program. The proposed pre- and post-retrofit assessments are opportunities to educate these stakeholders on energy improvement projects and cost savings, and solicit their feedback on lending risks and other concerns.

Considerations for a mandatory asset rating scheme

a) New construction should trigger an asset rating

For large buildings, asset ratings are most cost-effective at the time of construction when energy modeling is already being conducted for design optimization, compliance with energy codes or LEED certification, which the city of Boston already requires for new construction. DOER should expand its trigger events to include construction. Construction is a trigger event for building labeling in all European Member States.

b) The overall building size threshold may need to be revised upward from 10,000 square feet

Experience in other jurisdictions suggests energy rating is less cost-effective for owners of smaller buildings. DOER should engage this group of stakeholders in the pilot process.

c) Massachusetts should consider requiring public disclosure of asset and/or operational ratings

Public disclosure diminishes the need to require ratings in commercial advertisements because consumers are free to access ratings at any point before, during or after a transaction. It will create accountability for building energy performance among building designers and operators. This disclosure method also reaches other important real estate stakeholders, including current tenants located within a building and shareholders in corporations or real estate investment companies. Triggers for asset versus operational ratings could be different and should be fully explored.

IV. Conclusion

Thank you again for the opportunity to comment on the development of an asset rating program for Massachusetts. We commend DOER for advancing commercial asset ratings and soliciting feedback on this important program.

Respectfully submitted,

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