



Johns Manville

A Berkshire Hathaway Company

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July 12, 2013

California Energy Commission
Dockets Office, MS-4
Re: Docket No. 12-EBP-1
1516 Ninth Street
Sacramento, CA 95814-5512

Re: **California Energy Commission Docket No. 12-EBP-1;
Comprehensive Energy Efficiency Program for Existing
Buildings (AB 758) Draft Action Plan Staff Workshop**

Dear Chairman Weisenmiller, Commissioner McAllister and Staff:

Thank you for all the hard work and planning that went into both the ***Draft Action Plan for the Comprehensive Energy Efficiency Program for Existing Buildings*** (Draft Plan) as well as the several recent workshops to present and solicit input and comments on the Draft Plan. The Draft Plan is a significant step toward addressing the truly huge challenge – and opportunity – to increase the energy efficiency performance of both residential and non-residential buildings in California so they can meet Title 24 energy efficiency standards.

The purpose of this letter is to provide the California Energy Commission and staff (CEC) brief comments from Johns Manville (JM) on this issue. JM, a Berkshire Hathaway company (NYSE: BRK.A, BRK.B), is a leading manufacturer and marketer of premium-quality products for building insulation, mechanical insulation, commercial roofing, cool roof membranes, and roof insulation, as well as fibers and nonwovens for commercial, industrial, and residential applications.

With world headquarters in Denver, CO, JM's 7,000 employees at our forty-five manufacturing facilities serve North American, European, and Asian markets that include residential and commercial construction and retrofit, wind energy, aerospace, automotive and transportation, air handling, appliance, HVAC, pipe and equipment, filtration, waterproofing, flooring, and interiors. Notably, JM is the only manufacturer to offer a complete line of certified Formaldehyde-freeTM fiber

glass building insulation. JM makes home insulation products that are certified to meet the ***Environmentally Preferable Insulation*** specification developed by U.S. EPA Region 9 and Alameda County, State of California. JM is a member of ***The Climate Registry*** and is also the first and only insulation manufacturer to have achieved the status of California **Climate Action Leader**.

One of our flagship North American manufacturing locations making Formaldehyde-freeTM fiber glass home insulation is in Willows, CA (Glenn County), about an hour north of Sacramento. The Willows plant makes faced and unfaced fiber glass batt and roll insulation. JM also operates a plant in Southgate (south of downtown Los Angeles) that makes built-up roofing materials.

The Draft Plan's overall approach is a good one. A foundation of No Regrets actions will support and maintain the many benefits of programs to increase the energy efficiency of existing buildings. Voluntary Pathways then support the market and provide additional and more effective incentives for owners and operators of existing buildings. Finally, Potential Mandatory Approaches can move the most effective voluntary practices into wider use.

Yet the CEC should consider strengthening the foundation for further efforts by making available early on sufficient energy use and savings data for all building owners. Building owners and operators need a sufficient quality and quantity of data in order to make good decisions on investments and participation in voluntary programs. These data could be made available by early mandatory programs that collect and analyze relevant energy use and savings data in both residential and commercial buildings. Such data, now more readily available with the widespread use of smart meters, will enable the market transformation that will be needed to achieve maximum energy savings.

Two related actions would be to both require that energy efficiency performance be incorporated into the realty appraisal and mortgage underwriting processes as well as allow the cost of basic energy efficiency upgrades to be rolled into the mortgage. Applying for a new mortgage or a refinance is a key trigger point for homeowners and home buyers. At that time decisions are being made concerning the borrower's ability to repay the loan and monthly energy bills (especially heating and cooling) can constitute significant monthly obligations. In addition, for many people the only time they may have access to large amounts of low-cost capital is when they apply for a new mortgage or a refinance. This convergence of energy efficiency performance data, information about energy efficiency upgrade opportunities, and low-cost capital will no doubt drive higher rates of residential energy efficiency upgrades.

Also, CEC should consider more study of the relationship between the dollar amount or percentage of the incentive made available and the rate of participation in voluntary programs. It has been noted that there should exist a sigmoid curve showing the how the participation rate increases (y-axis) as the incentive amount or percentage increases (x-axis). Expansion of existing voluntary programs or establishment of new ones could be well informed by understanding both how increases in incentives lead to increases in participation rates (movement along the curve) or how substantive changes to programs can significantly increase their effectiveness (change in location of curve).

Last October and in conjunction with the AB 758 Scoping Report JM submitted detailed comments related to improving the energy efficiency performance of existing homes.¹ We incorporate those comments here and make note of some additional issues.

The issue is not how to make existing homes more energy efficient. Basic improvements to the building envelope and HVAC distribution system are actions consistently proven to be effective in reducing residential energy use. The real issue is how to get those actions to scale in a short period of time. Only when a sufficiently large number of homes can be retrofitted in the near future can the State actually achieve its goals of greenhouse gas (and other) emissions reductions, expansion and integration of renewable energy sources, and system reliability.

JM believes that getting residential retrofits to scale will be enabled by minimizing both the cost of retrofits as well as and the time it takes to complete a retrofit. One way to do this is to focus on the two related actions that will typically achieve the most energy savings at the least cost: air sealing of attics and HVAC ducts; and, adding insulation to the attic and HVAC ducts. These actions are accomplished by using literally off-the-shelf products and easily learned and effective installation skills. Also, these measures can be completed in under three hours, which helps to overcome the inertia homeowners experience when contemplating multiple contractors in their home over multiple days or weeks.

JM agrees with the Draft Plan focus on small to medium commercial buildings. These buildings both comprise the vast majority of commercial buildings and tend to be underserved by the existing ESCo market. From a design standpoint, these buildings have greatest percentage of roofing square feet per total occupied square feet. This has significant implications for energy efficiency performance because a poorly performing roof can contribute to a much higher

¹ http://www.energy.ca.gov/ab758/documents/2012-10-08-09_workshop/comments/Johns_Manvilles_Comments_2012-10-23_TN-67998.pdf

cooling load, especially if there is inadequate roofing insulation and/or a roof cover with low reflectivity and emissivity.

In this respect, commercial buildings with low or flat roofs are quite different from homes. In a home, additional insulation can be added to an attic essentially at any time. In contrast, commercial roof insulation is installed on the roof deck with the cover or membrane on top of it. This means that additional insulation can be added to an existing roof only when the roof is recovered, something that takes place only every 20 to 30 years. Thus, if additional insulation is not installed when the roof is recovered, a significant opportunity to increase the energy efficiency performance of the building can be lost for a generation. Reaching commercial building owners and operators at this key critical trigger point will be essential to scaling up commercial roof energy efficiency improvements.

On this issue, JM strongly recommends that CEC and related agencies partner with commercial roofing contractors who are constantly in the field talking to building owners and operators about their roofs. Providing these contractors with the knowledge of various existing and new energy efficiency incentive programs should significantly improve participation rates.

Small and medium commercial buildings tend to feature diverse designs and construction details, which can make it more challenging to scale up energy efficiency retrofits. But there is one low-cost and effective retrofit that can be accomplished at any time at the vast majority of these buildings: application of an acrylic-based coating that converts a traditional dark roof into a Title 24 compliant cool roof.² Such an application can be done quickly and easily and is well suited for “direct install” programs made available at the time of initial customer engagement.

The benefits of cool roofs are well documented. Not only do cool roofs reduce the cooling load of a building, they also help limit urban heat islands that tend to increase cooling loads of nearby buildings. The U.S. Department of Energy's Oak Ridge National Laboratory has developed a calculator to quantify the energy savings from cool roofs.³

² While JM offers a line of such coating products (**Top Guard**® 4000 and 5000), there are many similar types of coatings available on the market today.

³ <http://www.ornl.gov/sci/roofs+walls/facts/CoolCalcEnergy.htm>.

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Thank you for the opportunity to comment. Johns Manville looks forward to continuing participation in the AB 758 docket. If you have any questions, please do not hesitate to contact me. Thank you.

Sincerely,

Bruce D. Ray

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