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STATE OF NEW HAMPSHIRE

Intra-Department Communication

DATE: May 27, 2016

AT (OFFICE): NHPUC

FROM: Barbara Bernstein, Energy Analyst

SUBJECT: Residential Bulk Fuel-Fed Wood Pellet Central Boilers
and Furnace Rebate Program - Proposed Modifications

TO: Martin P. Honigberg, Chairman
Robert R. Scott, Commissioner
Kathryn M. Bailey, Commissioner
Debra A. Howland, Executive Director and Secretary

CC: Karen P. Cramton, Director, Sustainable Energy Division
David K. Wiesner, Staff Attorney

In 2010 the Commission was awarded funding from the U.S. Department of Energy under the American Recovery and Reinvestment Act (ARRA) to develop a first-in-the-nation residential wood pellet boiler rebate program. The Residential Bulk Fuel-Fed Wood Pellet Central Boilers and Furnace Rebate Program (Program) transitioned in October 2012 to be one of the Commission Sustainable Energy Division's suite of rebate programs funded by the Renewable Energy Fund (REF) without an order of the Commission or assignment of a docket number.

On May 10, 2016, Commission Staff held a technical session and received comments related to proposed modifications to the Program. Issues discussed during the technical session relevant to the Program are detailed in the analysis below. After consideration of this input, additional written comments received from stakeholders, and further Staff analysis of the Program terms and conditions, Staff recommends the following modifications to the Program's terms and conditions.

Temporary Increase of the Incentive Level

Wood pellet boiler and furnace installers have requested that the incentive level be increased, to offset the negative market effects of current low oil prices. According to these installers, the recent drop in heating oil prices has negatively impacted their ability to sell wood pellet central heating systems, and therefore a temporary increase in the rebate level should be considered.

The current rebate level is 30% of total system costs up to a maximum rebate of \$6,000 for residential systems. Earlier this year, installers had suggested a rebate level of 40% of the total system cost up to \$8,000. At the recent technical session, an argument was made that the

industry really needs a rebate of 50% of the total system cost up to \$10,000. One participant suggested that a \$15,000 rebate might be needed to support continued growth in the industry under current market conditions.

The table below summarizes the number of Program rebate applications received, and tends to support the installers' assertion that system sales are dramatically lower than in previous years:

Calendar Year	Applications Received by June 30 th	Total Applications Received
2014	29	64
2015	25	44
2016 (to date)	6	6

Research shows the average cost for an installed oil-fired heating system ranges from \$3,271 to \$7,059, with more energy efficient systems costing in excess of \$10,000. Wood pellet boiler systems generally average \$20,000 installed, with systems that include thermal storage costing as much as \$28,000.

When considering an increase in the incentive amount, Staff must balance the level of Program participation with available funding constraints. If the incentive amount is set at a level that is too low, Program participation will decline and the allocated funds will not be put to productive use. On the other hand, if the incentive amount is set at a level that is excessive, Program participation may outstrip available funds and the Program will be oversubscribed with long application waitlists. The challenge of finding and maintaining this balance is exacerbated by the uncertainty resulting from annual fluctuations in the amount of alternative compliance payments (ACP) received, as ACP revenue is the sole source of funding for the REF.

Based on its review and analysis, Staff recommends that the rebate level be increased on a temporary basis to 40% of the total system cost up to a maximum limit of \$10,000. The Program currently has approximately \$320,000 in funding available, so this increased rebate amount would support the installation of 30-40 additional residential wood pellet boiler and furnace systems. The proposed increase would be in effect on a temporary basis and would be reviewed by Staff on a periodic basis as oil prices and industry market conditions change; if Staff concludes that a decrease is warranted, it would recommend such a modification to the Commission after receiving input from interested stakeholders.

Development of Rebate Adders

Additional incentive payments for larger storage bins and the inclusion of thermal storage was also discussed with stakeholders. Larger storage bins facilitate fewer pellet deliveries, which represents a significant benefit for homeowners and the developing bulk wood pellet delivery industry. The addition of a thermal storage incentive payment would assist the installation of systems that require or would benefit from thermal storage, making them more cost-competitive with systems that are designed to operate without thermal storage.

Staff recommends that the Commission approve an additional adder of \$100/ton for fuel storage systems larger than the three ton minimum requirement, up to a maximum of \$500, be provided to project applicants. A thermal storage adder is not recommended for the Program at this time.

Participation in the Class I Thermal REC market

The requirements of the current Puc 2500 rules make residential participation in the thermal renewable energy certificate (REC) market impractical, according to many installers. If the Commission proposes to amend the Puc 2500 rules, this situation should be discussed to determine if small residential systems and the required metering and validation requirements could be qualified as REC-eligible through a simpler process.

Inclusion of Other Biomass Fuels

One comment was received requesting that the Program be expanded to include other biomass fuels, in particular processed dried chips. This commenter noted that wood pellet boilers can also burn processed dried chips. Staff notes that an original goal of the Program was to stimulate the market for bulk wood pellet delivery. Since this goal has not yet been met and the market is still far from mature, Staff recommends that the Program continue to focus on wood pellets as the only eligible fuel source.

Emission Requirements

The Program's current standard for emissions of particulate matter (PM) is 0.32 lb/MMBtu heat output or less. Technical session participants agreed that the PM emissions standard should be decreased to match the Massachusetts requirement of total PM emissions of less than or equal to 0.10 lbs/MMBtu, as most systems can readily meet this standard. Staff recommends that the PM emissions standard be decreased to this lower amount.

Program Adoption and Ratification

Staff further recommends that the Commission take this opportunity to formally adopt and ratify the Program under RSA 362-F:10, VIII.

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