

REFERENCE: Electrification Using Heat Pumps

PREAMBLE TO IR (IF ANY): Coalition evidence prepared by Mr. Neme, including the recommendations on Page 19 as follows;

2. Direct Efficiency Manitoba to increase its emphasis on heat pumps as an electric efficiency measure promoted through its Home Renovations program. That should include increased financial incentives.
3. Direct Efficiency Manitoba to offer heat pumps as an electric efficiency measure for electrically heated low-income customers eligible to participate in its Income Qualified program. Such measures should be offered at no cost to the participating low-income customers. Furthermore, efforts should be made to ensure that such measures are installed in both single family and multi-unit residential buildings.
4. Direct Efficiency Manitoba to offer incentives for heat pumps to customers who currently (A) use propane or fuel oil for space heating and (B) qualify for the Affordable Energy Fund.

RATIONALE: MIPUG seeks additional information on the costs and impacts of Mr. Neme's recommendation related to geothermal heat pumps.

QUESTION:

- (a) Please explain the estimate cost impacts of Mr. Neme's recommendation for Efficiency Manitoba's Three-Year Plan relative to increased incentives for heat pump installations, including required incentive levels.
- (b) How do the cost of Mr. Neme's recommendation compare with the Community Geothermal program identified in the Efficiency Manitoba Plan.
- (c) What is the anticipated longer-term impacts to the Manitoba Hydro electric system and resource requirements arising from implementation of Mr. Neme's above noted recommendations.
- (d) Please explain how the targets referenced Mr. Neme's evidence are appropriate to a cold climate environment like Manitoba. Identify what modifications are required to address Manitoba's severe winter temperatures and what the cost implications of these modifications are to the Efficiency Manitoba Plan.

RESPONSE:

- a) EM has estimated that the heat pump incentives offered under its Home Renovation program would average \$3000 for ground source heat pumps (equal to about 15% of their cost) and \$2000 for air source heat pumps (equal to about 19% of their cost).¹ Generally-speaking, for non low income customers I would recommend that heat pump incentives be in the range of 40% of their cost. That said, I would include rebates for ductless heat pumps, which do not appear to be reflected in EM's offerings.² To assess the impacts of my proposed heat pump incentives on EM's budget would require estimating the likely customer

1 EM response to Daymark 13(d).

participation rates they would produce. I have not developed such estimates and could not do so without additional information and time. That is something EM should have done as part of its planning, but – to my knowledge – did not do.

As I stated in my testimony, there are literally hundreds of different efficiency measures and program permutations that EM could have put forward in its plan to meet its savings goals. In that context, EM's apparent failure to adequately consider and propose more aggressive efforts to promote the installation of cold climate heat pumps is highly problematic. For one thing, as also noted in my testimony, about 40% of Manitoban homes – and an even higher percentage of low-income homes – heat with electricity, the vast majority of them with very inefficient electric resistance heat. For virtually all of those homes, cold climate heat pumps are likely to be able to provide more electricity savings than any other measure – and perhaps even more than all other electric efficiency measures combined. Furthermore, more aggressive promotion of cold climate heat pumps as electric efficiency measures would build the market for a technology that is relatively new. That would better enable EM to meet savings goals in the future. It would also better enable future electrification efforts that will be necessary to address the climate crisis.

- b) I have not conducted that analysis.
- c) See my response to PUB I-2.
- d) See my response to PUB I-3.

² If \$2000 represents only 19% of total cost for an air source heat pump, that suggests the air source heat pump costs in excess of \$10,000. Given my own personal experience buying a ductless heat pump, as well as other data I have seen, a high performance, single head, ductless heat pump should cost on the order of \$5000 or less.