

MIPUG INTERROGATORIES TO PHILIPPE U. DUNSKY
2012/13 & 2013/14 HYDRO GENERAL RATE APPLICATION
NOVEMBER 23, 2012

MIPUG - CAC & GAC 1 DSM VALUE

- (a) Please confirm, based on Mr. Dunsky's comments that DSM is a "reliable resource" (page 29) that Mr. Dunsky views DSM spending in a single given year as being of enduring benefit to the utility over some period of future years?

Confirmed.

- (b) Given that DSM spending is linked to actions or assets or decisions that the utility does not directly control (i.e., customers can decide to cease use of the technology, asset, etc.) does that diminish the extent to which a utility can consider DSM spending as being of future value?

Not to the extent that savings forecasts properly account for the useful lives of measures. Typically (and I believe this is the case at Manitoba Hydro), energy savings associated with a given measure are assumed to have an estimated useful life, after which they are assumed to cease to provide value. Estimated useful lives should normally account for a variety of factors, including both the technical life of the technology, savings degradation and others.

MIPUG - CAC & GAC 2 EXPENSES

- (a) Mr. Dunsky indicates Manitoba Hydro projects a large scale reduction in their DSM efforts (page 32) and that one possibility is that Manitoba Hydro may be feeling "cost pressures". Was Mr. Dunsky aware that Manitoba Hydro previously amortized its DSM spending over a period of future years and now is proposing to expense all DSM spending in a given year? Given this proposed change to more directly reflect DSM spending in the current year bottom line, Does Mr. Dunsky view a greater risk that Manitoba Hydro will curtail DSM budgets to solve current year spending concerns than under the previous, amortized approach?

The inability to amortize spending over something approaching the life of an investment's value is likely to create undue pressure to reduce those investments. However, I do note that the impact of the change in generally accepted accounting rules regarding DSM investments applies to all utilities in North America, including the cohorts we examined.

MIPUG - CAC & GAC 3 CAPACITY

- (a) Mr. Dunsky's comments largely relate to energy-specific DSM (GW.h saved). Does Mr. Dunsky view there to also be a role for expanded capacity-specific DSM (MW of peak saved) to provide system relief under key periods of supply constraint?

Yes. While my testimony was focused primarily on energy savings, capacity savings can also provide economic value. To this end, I note that certain energy efficiency measures provide more capacity savings than others. Moreover, non-efficiency related opportunities also exist, whether they involve thermal storage, demand response (e.g. through time of use rates), direct load control, curtailable power options or others. My firm recently completed a demand response potential study for one Canadian client, and is currently working with another utility client to develop a capacity-focused, integrated energy efficiency plan.

MIPUG - CAC & GAC 4

PROGRAM TESTS

- (a) At page 33, Mr. Dunsky argues that Manitoba Hydro focuses on the wrong program screening tests (e.g., RIM, TRC). Does Mr. Dunsky agree with Hydro's description and specific arithmetic behind the calculation of each test as set out at Appendix F of the 2011 Power Smart Plan (Appendix 7.1).

TRC description: *"...to determine whether the benefits that are associated with an energy efficiency program are greater than the costs. This assessment is undertaken irrespective of who realizes the benefits and who pays the costs"*

This describes the original intent of the TRC perfectly well. However, in practice the test does not achieve this goal, primarily because it commonly fails to account for very significant customer benefits. For example, customers invest in home insulation and weatherization partly because of the energy savings, and partly because they seek to improve their comfort and/or reduce health issues. Yet the TRC only accounts for the former. Similarly, a customer with electric baseboard heat may seek to install a ductless heat pump in part to save energy, and in part to obtain cooling in summer months. Yet the TRC typically does not account for the cooling benefit to the participant, but *does* account for cooling as a cost (it slightly reduces net energy savings). To address this problem, the *"Non-priced' benefits enjoyed by participants (improved comfort, improved health)"*, currently included in the Societal Cost test, should rather be included in the TRC test, keeping in mind that the TRC is the sum of participant and non-participant perspectives.

For these reasons, the TRC is increasingly being modified (substantively – e.g. in B.C.) or replaced.

Arithmetic: I agree with most of the arithmetic to the extent that it is limited to a very general algorithm. Behind the algorithm is much more arithmetic that may

or may not be appropriate. However, I do note that the individual tests are meant to be expressed in a variety of ways – in B/C ratios, net present value (NPV), or unit costs (¢/kWh). The choice of how to express results matters deeply, and should be different depending on the purpose of the test. I note that the algorithms presented in Appendix 7.1 express only the B/C ratio, which is perfectly appropriate for certain decisions, but wholly inappropriate for others (see the discussion below).

- (b) In regard to the Levelized Utility Cost (LUC), Mr. Dunsky does not comment on this test. This test is generally described as a measure of how much the utility is paying to secure each unit of energy (or capacity), on a comparable basis to other supply options (e.g., new generation). Is this not a critical primary test of where the utility is appropriately securing DSM as a supply option, versus spending excessively on limited results?

Allow me to begin with a clarification: the LUC is not and should never be considered a “test”, because it does not compare costs to benefits. It is rather a cost metric.

As the question suggests, however, the LUC is a critically important metric, in that it subsequently allows us to compare costs (LUC = the unit cost) with benefits (e.g. avoided costs). The test that compares these is known as the Program Administrator Cost Test, or PACT (formerly known as the Utility Cost Test). The PACT is a simple and straightforward comparison of the utility’s cost of saved energy vs. the utility’s value of that saved energy (avoided costs). Please see my response to PUB/CAC & GAC 16(a).

It is important to note that the way in which utility costs and benefits are compared is as important as *what* is compared. In that sense, the PACT ratio (being LUC/ACs) may provide valuable information to determine whether an option is cost-effective, but the PACT NPV is needed to determine which among multiple options is preferable. Please see my response to PUB/CAC & GAC 16(b) – the “NPV” column in the table is in effect the NPV of the PACT test.

- (c) To what extent do changes in the value of power on export markets, or changes in the expected cost of alternative resources (e.g., new generation) drive changes in the targeted level of DSM investment under the tests proposed by Mr. Dunsky (e.g., GW.h saved/GW.h sold)?

DSM should be pursued for one or both of two reasons: when its cost is less than its benefits, or to meet specific policy objectives.

Setting aside the latter, the benefits of DSM are determined largely by the alternatives it can displace or defer (or, in some cases, the price it can fetch on export markets). As such, changes to these values can, in theory, be very important factors.

In practice, I note that Manitoba Hydro's current DSM Plan anticipates saving energy at a cost of 1.8¢/kWh, against a benefit in the range of 8.5¢/kWh. In other words, the margin of net benefit is so large that the change in benefits would have to be dramatic to significantly impact the amount of DSM that should be targeted. Even if the cost of saved energy were to double in order to achieve a much higher savings ratio, and even if the value of saved energy were to drop by half, that much higher savings scenario would still be the cheaper option.