



GUIDE TO THE DEMAND-SIDE MEASURES REGULATION

BC MINISTRY OF ENERGY AND MINES
ELECTRICITY AND ALTERNATIVE ENERGY DIVISION

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1 DISCLAIMER

This Guide contains the Ministry of Energy and Mines' interpretation of certain aspects of the Demand Side Measure Regulation. It is explicitly not intended to constitute advice with respect to the meaning of that regulation. Readers are advised to refer to the regulation itself, and seek their own advice with respect to its meaning and effect.

All examples in this guide are fictional and should not be construed as an endorsement of any specific demand-side measures.

2 INTRODUCTION AND HISTORY

Utility expenditures on energy efficiency and conservation (demand-side measures, or DSM) require acceptance from the British Columbia Utilities Commission (the commission) before rates can be set which recover those expenditures. The Demand-Side Measures Regulation (the regulation) sets out select rules that the commission must follow when assessing the adequacy and cost-effectiveness of proposed DSM expenditures.

The authority for the Demand-Side Measures Regulation comes from section 125.1(4) of the *Utilities Commission Act*:

The Minister may make regulations as follows:

(e) for the purposes of section 44.1 and 44.2:

- (i) prescribing rules for determining whether a demand-side measure, or a class of demand-side measures, is adequate, cost-effective or both,
- (ii) declaring a demand side-measure, or a class of demand-side measures, to be cost-effective and necessary for adequacy

The Regulation was enacted in the fall of 2008 as a part of the government's ongoing strategy to increase energy efficiency, reduce energy bills, and achieve provincial greenhouse gas emission reduction targets. Key elements included:

- a requirement for utilities to have programs for low-income households, rental accommodations, and schools (s. 3),
- a 30% adder to low-income program benefits, to account for non-energy benefits (s. 4(2))
- portfolio-level evaluation of education programs, energy efficiency training, community engagement, technology innovation programs, and effective public awareness programs, (sections 4(4) and 4(5)),
- a requirement that, in determining the cost-effectiveness of DSM by a bulk purchaser (a public utility purchasing electricity from BC Hydro for re-sale to its customers), the commission consider the benefit of avoided supply cost to be BC Hydro's long-term marginal cost of electricity (s. 4(3)),
- a stipulation that the commission cannot determine that a measure is not cost-effective on the basis of the Ratepayer Impact Measure test (s. 4(6)), and
- the ability for utilities to attribute a portion of savings from a regulated standard to a utility program that facilitates or advances the introduction of that standard (s. 4(7)).

In December 2011 an amendment to the Regulation was passed. It included:

- addition of sections 4(1.1) to (1.8),
- replacement of s. 4(7) with (1.4),
- replacement of s. 4(3) with (1.1)(b)(i),
- an addition to the list of “specified DSM” in s. 1,
- minor changes to sections 4(2)(b) and 4(1), and
- changes to, or the addition of definitions for “energy device”, “energy efficiency training”, “regulated item”, “specified proposal”, “specified standard”, and “technology innovation program”.

In July 2014 a second amendment was made which included:

- changes to the definition of “low-income household” in s. 1,
- changes to s. 3(a),
- changes to s. 4(1.1)(a),
- changes to s. 4(1.5),
- the addition of s. 4(1.9), and
- changes to s. 4(2)(b).

This Guide refers to the July 2014 version of the Regulation, as it applies to spending after December 31, 2014. Key changes from the previous version of this guide are noted in highlighted text. This guide does not provide a comprehensive review of the Regulation, but discusses certain complex portions of the Regulation.

The Demand-Side Measures Regulation can be accessed at www.bclaws.ca under the Utilities Commission Act.

3 KEY ELEMENTS

3.1 ADEQUACY – SECTION 3

Section 3 of the Demand-Side Measures Regulation requires utilities to include certain measures in their DSM portfolio in order for the portfolio to be considered adequate (for the purposes of s. 44.1(8)(c) of the *Utilities Commission Act*). This includes programs for low-income households, rental accommodations, and schools including post-secondary institutions.

The *Clean Energy Act* removed the requirement for BC Hydro to submit to the commission a long-term resource plan referenced in 44.1 of the *Utilities Commission Act*. Therefore, s. 3 does not apply to BC Hydro.

3.2 USE OF COST-EFFECTIVENESS TESTS – SECTION 4(1.1), (1.8), AND (6)

Standard practice across North America for evaluating the cost-effectiveness of DSM proposals is to use some combination of five tests¹: the Total Resource Cost Test (TRC), the Societal Cost Test (SCT), the Ratepayer Impact Test (RIM) (also called the Non-Participant Test), the Utility Cost Test (UCT), and the Participant Cost Test (PCT). Prior to the 2008 DSM Regulation, relative weighting and application of these tests was solely at the commission's discretion in BC, although the TRC has typically been the most important test. The DSM Regulation prescribes some rules for the application of these tests.

First, s. 4(6) of the DSM Regulation prevents the commission from using a RIM test result to determine that a measure is not cost-effective. The commission may continue to request and consider a demand-side measure's RIM test results.

Second, s. 4(1.1) requires that the commission "must make determinations of cost effectiveness by applying the total resource cost test" as set out in that subsection.

Third, s. 4(1.8) allows the commission to determine (with some exceptions) that a demand-side measure that fails the UCT is not cost-effective. This subsection does not suggest that the commission *must* or *should* reach this determination, it simply empowers it to do so even if s. 4(1.1) makes a measure cost-effective under the Modified TRC (see below).

3.3 TRC AND MODIFIED TRC – SECTION 4(1.1), AND (1.9)

In addition to requiring the use of a TRC, s. 4(1.1) also sets out steps for calculating this TRC. In this guide, we make a distinction between:

1. the TRC, which is altered only by s. 4(1.1)(b), and
2. the Modified TRC (or MTRC) which is altered by s. 4(1.1)(b), as well as (a), and (c), and the use of which is capped by s. 4(1.5),

as contemplated in s. 4(1.9)(b). The following table summarizes the differences between the TRC and MTRC.

¹ For more information on the typical makeup and use of these tests, see the California Standard Practice Manual (http://www.energy.ca.gov/greenbuilding/documents/background/07-J_CPUC_STANDARD_PRACTICE_MANUAL.PDF) or the Energy Efficiency Cost Effectiveness Guide by the National Action Plan for Energy Efficiency (<http://sedc-coalition.eu/wp-content/uploads/2011/05/NAPEE-08-11-01-Energy-Efficiency-Cost-effectiveness-guide.pdf>).

Requirement to...	TRC	MTRC
...use the zero-emission energy alternative for the avoided cost of natural gas?		✓
...use the long-run marginal cost of clean BC electricity for the avoided cost of electricity?	✓	✓
...adjust the calculations for non-energy benefits?		✓

Further details in sections below.

For instructions on the application of the MTRC to DSM expenditures made before January 1, 2015, please see the August 2012 version of this DSM Regulation Guide.

3.3.1 THE AVOIDED COST OF ELECTRICITY – SECTION 4(1.1)(B)

The TRC test is a cost-benefit calculation in which one of the benefits is the avoided cost of the energy saved by the DSM.

Section 4(1.1)(b) specifies the value to be used for the avoided cost of electricity. In the case of DSM by FortisBC Inc (i.e. the electric utility serving communities in BC's interior) this is the utility's long-run marginal cost of acquiring electricity generated from clean or renewable resources in BC; in all other cases (i.e. DSM by BC Hydro or by FortisBC Energy utilities, the natural gas delivery companies) it is BC Hydro's long run marginal cost of acquiring electricity generated from clean or renewable resources in BC. This value is to be used for electricity whether the DSM proposed is from a gas or an electric utility. However it is only to be used where electricity use is *decreased* (since it applies to the *avoided* electricity cost). Capacity reduction benefits of DSM are added to the energy benefits.

3.3.2 ZERO-EMISSION ENERGY ALTERNATIVE TO NATURAL GAS – SECTION 4(1.1)(A), (1.2) AND (1.3)

One of the principal components of the Modified TRC is the use of the price signal for a zero-emission energy supply alternative (ZEEA) as the avoided cost of energy for gas DSM. Section 4(1.1)(a) specifies that the ZEEA value for avoided natural gas from DSM be BC Hydro's long run marginal cost (LRMC) of acquiring electricity generated from clean or renewable resources in BC² (the ZEEA). This applies regardless of the type of utility or DSM being

² Electricity is typically measured in megawatt-hours (MWh) but the units can be readily converted into gigajoules (GJ), i.e. 1 MWh = 3.6 GJ.

carried out, i.e. gas or electric. So if an electric utility carries out DSM that reduces natural gas use, the MTRC must include as a benefit the avoided cost of natural gas, valued at the ZEEA. For example, a building envelope improvement program administered by an electric utility that reduces gas furnace and electric baseboard consumption would value the avoided natural gas at the ZEEA value. Note that s. 4(1.1)(a) is only applicable where natural gas use is *decreased*.

The fuel-specific capacity benefits of a DSM are added to the ZEEA energy benefits. In the building envelope example above, if a smaller furnace and fewer baseboards could be used, two additional capacity reduction benefits would be added to the ZEEA energy benefits (e.g. avoided gas distribution volume capacity and distribution wires amperage capacity).

The ZEEA would not apply to calculations that result in increased natural gas usage (e.g., an electric utility program to reduce electricity may have cross-effects resulting in higher natural gas use). In this case, the actual avoided cost of natural gas is used, not the ZEEA.

The ZEEA is only applied to measures that reduce the emissions associated with that natural gas use, according to s. 4(1.2). It would not, for example, apply to DSM measures for which the utility has sold or otherwise disposed of the associated environmental attributes.

Example A
<p><i>A measure reduces natural gas demand by 10 GJ for one year. If in that year, BC Hydro’s long-run marginal cost of acquiring clean or renewable BC electricity is \$100/MWh, the avoided cost of natural gas is calculated in the MTRC as:</i></p> $10 \text{ GJ} * \$100/\text{MWh} * 1 \text{ MWh}/3.6 \text{ GJ} *$ <p><i>= \$278 benefit</i></p>
Example B
<p><i>A gas utility proposes a program to replace gas boilers with geexchange heating systems. In its first year it will reduce natural gas use by 1,000 GJ and increase electricity use by 60 MWh.</i></p> <p><i>If the gas utility’s standard TRC uses an electricity tier 2 cost of \$113/MWh, and if BC Hydro’s long-run marginal cost of acquiring clean or renewable BC electricity is \$100/MWh, the avoided cost of energy for the program’s first year would be calculated in the MTRC as:</i></p> $(1,000 \text{ GJ} * 1 \text{ MWh}/3.6 \text{ GJ} * \$100/\text{MWh}) - (60 \text{ MWh} * \$113/\text{MWh})$ <p><i>= \$27,778 - \$6,780</i></p> <p><i>= \$20,998 benefit</i></p>

Note that according to s. 4(1.3), a ZEEA cannot be used for demand-side measures that reduce greenhouse gas emissions by encouraging a switch from propane or oil to natural gas or electricity. For example, a ZEEA would not be used to calculate the TRC for a program to get customers to replace their oil furnace with a gas furnace.

3.3.3 NON-ENERGY BENEFITS – SECTION 4(1.1)(C) AND (1.7)

While the California Standard Practice Manual does not include non-energy benefits (NEBs) in the Total Resource Cost test, practices vary across jurisdictions. Examples of NEBs include improved building occupant comfort (from reduced drafts or cold spots) or health (from improved ventilation), reduced maintenance costs (less frequent light bulb replacement), and/or reduced materials (e.g., soap in a clothes washer). The DSM Regulation s. 4(1.1)(c) requires the commission to allow inclusion of NEBs to customers and the utility. The amount of NEBs is determined either by the commission based on evidence from the utility, or by a set percentage specified in the regulation. Societal non-energy benefits (for example, job creation) are not addressed in (c). It also does not address the NEBs for low-income programs (measures “referred to in s. 3(a)”) since these are addressed in s. 4(2) with a **standard 40% NEB adder to the benefits.**

The first step in assigning non-energy benefits is carried out in (c)(i) after the ZEEA has been applied. A utility quantifies the NEBs of a measure, and the commission can use this or a lesser value which it believes is more accurate. If the utility only proposes a value for the participant NEB, the value used by the commission should represent only the participant and not the utility NEBs, and vice versa.

Once NEB values are assigned to all measures for which the utility has proposed quantified NEBs, if any, the remaining measures are assigned a uniform percentage adder using subparagraph (ii). The adder is represented as a percentage increase in a measure’s benefits. For example if a measure has \$100,000 of benefits after application of s. 4(1.1)(a) and (b)), a 15% NEB adder would result in an extra \$15,000, resulting in a new total benefit of \$115,000. NEBs are also to be applied to DSM associated with savings from codes and standards attribution and conservation rates.

The value of the NEB adder must be such that expenditure portfolio’s benefits (after the application of the ZEEA in s. 4(1.1)(a) and (b)) increase by 15%. As a result, if quantified NEBs are small, the adder may approach or even substantially exceed 15% per measure. If the quantified NEBs are large, the adder will be smaller.

The total NEBs for a portfolio can exceed 15% if all DSM NEBs are quantified by the utility and the amounts are accepted by the commission.

Example C – No quantified NEBs				
<i>In this example, the utility does not propose any quantified NEBs under subparagraph (i). As a result, all DSM are assigned a NEB adder of 15%.</i>				
Measure	Benefits	Non-Energy Benefits	% Increase	New Total Benefits
DSM A	\$100,000	\$15,000	15%	\$115,000
DSM B	\$50,000	\$7,500	15%	\$57,500
DSM C	\$75,000	\$11,250	15%	\$86,250
DSM D	\$10,000	\$1,500	15%	\$11,500
DSM E	\$20,000	\$3,000	15%	\$23,000
TOTAL	\$255,000	\$38,250	15%	\$293,250

Example D – Quantified NEBs are less than 15% of pre-NEB portfolio benefits

In this example, there are quantified NEBs for DSM A and D which on their own do not increase portfolio benefits by 15% or more. Remaining measures are assigned a NEB adder of 9% which results in a 15% increase in portfolio benefits.

Measure	Benefits	Non-Energy Benefits	% Increase	New Total Benefits
DSM A	\$100,000	\$20,000	20%	\$120,000
DSM B	\$50,000	\$4,569	9%	\$54,569
DSM C	\$75,000	\$6,853	9%	\$81,854
DSM D	\$10,000	\$5,000	50%	\$15,001
DSM E	\$20,000	\$1,828	9%	\$21,828
TOTAL	\$255,000	\$38,250.00	15%	\$293,250

Example E – Quantified NEBs exceed 15% of pre-NEB portfolio benefits

In this example, there are quantified NEBs for DSM A and D which on their own increase portfolio benefits by 15% or more. As a result, remaining DSM are not given a NEB adder.

Measure	Benefits	Non-Energy Benefits	% Increase	New Total Benefits
DSM A	\$100,000	\$30,000	30%	\$130,000
DSM B	\$50,000	-	-	\$50,000
DSM C	\$75,000	-	-	\$75,000
DSM D	\$10,000	\$10,000	100%	\$20,001
DSM E	\$20,000	-	-	\$20,000
TOTAL	\$255,000	\$40,000	16%	\$295,000

Section 4(1.7) gives the commission the ability to expand its definition of ‘expenditure portfolio’, for the purposes of s. 4(1.1)(c). This ensures that a uniform NEB adder can be calculated even if programs are proposed in separate expenditure schedules.

3.4 MTRC IMPACT CAP – SECTION 4(1.5), (1.6), (1.7, AND (1.9))

Section 4(1.1)(a) and (c) requires the commission to apply the TRC test in a particular manner. This will result in some measures passing this modified TRC test that would not pass the TRC. However, the Regulation limits expenditure on these measures to, in the case of a gas utility, 33% of the DSM portfolio expenditure, and, in the case of an electric utility, 10% of the DSM portfolio expenditure. Under s. 4(1.5), a DSM that causes this cap to be exceeded is considered to be not cost-effective. If the cap is exceeded, that doesn’t mean that the entire portfolio is not cost-effective. Rather, the commission should determine which demand-side measures are to be eliminated so that the cap is not exceeded. This is further emphasized in s. 4(1.6).

The cap does not apply to measures that pass the TRC after modifications in s.4(1.1)(b). “Specified demand-side measures” and effective “public awareness programs” (covered in s. 4(4) and 4(5) respectively) are exempt from

this cap. The cap does not apply to measures which fail the TRC after all modifications in s. 4(1.1). The cap does not apply to low-income measures that pass the TRC using the adder in s. 4(2).

Example G				
<i>A gas utility proposes an expenditure portfolio of \$3.1 million:</i>				
Measure	TRC with s.4(1.1)(b)	MTRC (TRC with all of s.4(1.1))	Subject to cap? (reason)	Expenditure \$ (%)
Efficient fireplace program	1.2	1.6	No (passes both tests)	\$500,000 (16%)
Residential boiler program	0.8	1.2	Yes (fails TRC)	\$500,000 (16%)
Commercial boiler program	1.0	1.4	No (passes both tests)	\$500,000 (16%)
Leaky condo retrofit pilot	0.5	0.8	No (fails both tests)	\$300,000 (10%)
Furnace program	0.6	1.0	Yes (fails TRC)	\$250,000 (8%)
Low income program with ZEEA avoided cost (along with s4(2) 30% adder)	0.8	1.1	Yes (fails TRC)	\$250,000 (8%)
Low income program without ZEEA avoided cost (along with s4(2) 30% adder)	1.1	1.6	No (passes both tests)	\$500,000 (16%)
Homebuilder training	-	-	No (specified DSM)	\$200,000 (6%)
Community conservation campaign	-	-	No (effective public awareness program)	\$100,000 (3%)
TOTAL				\$3,100,000 (100%)

Only the residential boiler program, the furnace program, and the low-income program (with ZEEA) are subject to the cap. These account for 32% of the proposed portfolio expenditure. This does not exceed the 33% cap set out in s. 4(1.5)(b)(iii) for utilities that recover DSM expenditures through gas rates. As a result, the commission may use s. 4(1.5) to find these measures are cost-effective.

Homebuilder training is a specified DSM and the Community Conservation Campaign is an effective public awareness program, therefore both are exempt from the cap. Also, programs that pass the TRC are exempt, including low-income programs that use the s. 4(2) 40% benefits adder and do not require the s. 4(1.1)(a) ZEEA avoided cost to pass.

The leaky condo retrofit pilot does not pass the TRC even after application of the ZEEA and NEBs, so it is not included in the cap. The commission could reject it, but could choose to accept the program if, for example, it believes the pilot will be useful in developing more cost-effective programs in future. Note that if the commission were to reject this pilot, the total portfolio expenditure would decrease, causing the cap to be exceeded. In that case, the commission would have to determine as not cost-effective some of the three capped measures to ensure the cap was not exceeded.

As noted in the example above, DSM that fails the MTRC (e.g., leaky condo retrofit program) can be approved by the commission, but with a caveat that the portfolio as a whole is still cost effective (as per s. 4(1)).

Section 4(1.7) gives the commission the ability to expand its definition of ‘expenditure portfolio’, for the purposes of s. 4 (1.1)(c). This ensures that the cap can be adhered to even if measures are proposed in separate expenditure schedules.

3.5 TREATMENT OF LOW-INCOME PROGRAMS – SECTION 4(2)

Non-energy benefits for low-income programs (referred to in s. 3(a)) are addressed in s. 4(2). Low income programs receive a benefits adder of 40%.

The 15% NEB adder referenced above does not apply to low income programs that receive the 40% adder.

If the low-income program is one to which s. 4(1.5) applies, then it is subject to the expenditure “cap” described in that section. In such a case, the 40% adder is applied *after* applying s. 4(1.1).

3.6 STANDARDS ATTRIBUTION – SECTION 4(1.4)

Some utility programs facilitate future energy savings by preparing the market for future mandatory energy efficiency standards. Section 4(1.4) allows utilities to incorporate some of the benefits from these standards into the TRC for such utility programs.

Standards are typically developed by government agencies in stages. An agency will usually announce its intent to regulate and hold public consultations on a proposed new standard. It will then pass the standard into law, usually with a delayed effective date. The DSM Regulation allows utilities to attribute a portion of the standard’s future benefits to demand-side measures that “increase the use of a regulated item” during the period *after* the standard is proposed or passed into law, but *before* it comes into force.

Only measures that are connected with a “specified standard” or “specified proposal” are eligible. These are defined in s. 1 of the DSM Regulation. Standards include those in the provincial Energy Efficiency Standards Regulation, the federal Energy Efficiency Regulations, the BC Building Code, local bylaws, and First Nation laws. Proposals are also defined: in the case of local bylaws they must have had a first reading by the council; in the case of first nation laws they must have been published by the first nation government; in the case of the federal standards, they must have been published in the Canada Gazette. In the case of provincial standards, the proposal must be published by the responsible minister and must make reference to the DSM Regulation. For example, the Ministry of Energy and Mines might publish a proposal for a new standard for gas boilers which has a footnote stating the proposal is valid for the purposes of the Demand-Side Measures Regulation.

The commission must be satisfied that the measure will increase the market share of the regulated item. The commission must also be satisfied with respect to the amount of the avoided capacity and energy costs attributed to the DSM. It is assumed that the standard *will* come into effect.

Given that the *Clean Energy Act* definition for a demand-side measure includes “a rate, measure, action or program undertaken to conserve energy or promote energy efficiency”, codes and standards can be defined as DSM and their benefits can be calculated using the ZEEA rate and including NEBs.

Example F

Attribution timeline:

Under the Pacific Coast Collaborative's West Coast Action Plan on Jobs, in May 2012, the utility and government discuss a future BC Energy Efficiency Act standard that adopts the California energy efficiency regulations for battery chargers, but no public proposal is issued. The utility launches a battery charger incentive program to increase the market share of this technology. No standards attribution is possible under s. 4(1.4).

In July 2013, the Minister issues a "Regulatory Impact Statement" on the Ministry website with a public proposal with respect to a future standard with a proposed effective date of July 2014. The proposal specifically refers to the DSM Regulation. In September 2013, the Minister passes the standard into law. Any portion of the program run between July 2013 and July 2014 is eligible to have savings from the standard attributed to it in accordance with s. 4(1.4).

In January 2015, the regulation is amended to match the Natural Resources Canada (NRCan) regulation, modeled off that of the US Department of Energy (DOE) standard, effective in 2017. This will not affect the utility's ability to recover its approved cost for the program to date.

Attributable amounts:

The commission believes the utility program will be successful in increasing the market share of efficient battery chargers sold in the province prior to regulation. The proposed standard is expected to result in avoided energy costs of \$1 million per year in the province, and increase consumer capital costs in the first year by \$\$100,000, for a net benefit of \$0.9 million. The amount eligible for attribution for each year of regulation is \$1 million in total avoided energy costs over the life of the product. The capital incremental costs paid by consumers after the regulation enters into force are not accounted for under the DSM regulation.

The portion of the standard's eligible avoided energy costs to attribute to the program is up to the commission's discretion. In this case, the commission decides that the program will likely be responsible for 50% of the efforts required to transform the market (e.g., increasing consumer awareness, developing product test standards and certification programs, training retail salespeople, ensuring product availability within various market segments, building acceptance among consumers and industry players) in advance of the regulation taking effect, and would thus accelerate market transformation by three years compared to normal market evolution (which would be completed when the 2017 NRCan/DOE regulation comes into place). The commission chooses to increase the utility battery charger program's MTRC benefits by \$1.5 million (50% of avoided energy costs from the regulation for three years after it takes effect, 2014-2017), over and above the benefits of the program before the regulation takes effect (2013-2014).

3.7 SPECIFIED DSM AND PUBLIC AWARENESS PROGRAMS – SECTION 4(4) AND (5)

Section 4(4) and (5) require that the cost-effectiveness of certain types of demand-side measures be evaluated at a portfolio level, rather than a measure level. As long as the portfolio containing these measures is considered cost-effective, these measures are to be considered cost-effective.

This special treatment is accorded to “specified demand-side measures” and effective “public awareness programs”, which are defined in s. 1 of the Regulation. Specified demand-side measures include:

- education programs for schools or post-secondary institutions,
- funding of energy efficiency training,
- community engagement programs,
- technology innovation programs, and
- measures that support development of, and compliance with, standards or government actions on energy efficiency in BC.

There are details on each of these measures in the regulation. For example, energy efficiency training includes training for people who:

- manufacture, sell or install energy-efficient products or products that conserve energy,
- design, construct or act as a real estate broker with respect to energy-efficient buildings,
- manage energy systems (including energy managers),
- conduct energy efficiency and conservation audits,
- on behalf of an organization, manage or advise with respect to the conservation or efficient use of energy in the organization’s facilities, or
- in an organization, educate other persons about the benefits of energy efficiency and conservation.

3.8 EXEMPTIONS FROM THE UCT – SECTION 4(1.8)

In s. 4(1.8) the commission is given the discretion to determine that a measure is not cost-effective if it fails the Utility Cost Test. However, the commission is not given the discretion to use the UCT to determine cost-effectiveness for: (a) specified DSM, (b) effective public awareness programs, (c) low-income programs, and (d) any demand-side measure which passes the TRC after it is attributed a portion of savings from regulated standards (i.e. application of s. 4(1.4)) but without a ZEEA or NEBs (i.e. application of s. 4(1.1)(a) and (c)).

3.9 EVALUATION LEVEL – SECTION 4(1)

Section 4(1) provides that the commission may determine the cost-effectiveness of a demand-side measure by considering either the cost-effectiveness of the measure itself, the measure along with other measures in a portfolio, or the portfolio as a whole. Exceptions are specified DSM and effective public awareness programs, which must be determined at a portfolio level (as set out in s. 4(4) and (5)). The commission’s discretion is also subject to s. 4(1.5), which requires evaluation at a measure level in order to determine if the MTRC impact cap is exceeded.

4 FREQUENTLY ASKED QUESTIONS

How is the ZEEA applied when a program increases one fuel and decreases another?

The ZEEA only applies when natural gas use or electricity use is decreased. See heading 3.3.1 above and Example B.

What is the “the authority’s long-run marginal cost of acquiring electricity generated from clean or renewable resources in BC”?

It is the amount that the commission is satisfied represents BC Hydro’s long-run marginal cost of acquiring electricity generated from clean or renewable resources in BC. This will typically be based on evidence provided by the utility proposing the DSM.

“Clean or renewable resource” is defined in the *Clean Energy Act*. The long-run marginal cost must be for energy produced in British Columbia, so cannot be based on the cost of imports.

Is it mandatory to use the long-run marginal cost of clean BC electricity in the TRC?

For DSM expenditures made after December 31, 2014, yes. All calculations of the TRC and the MTRC must set the avoided cost of electricity as the long-run marginal cost of acquiring electricity generated from clean or renewable resources in BC. The value may be different for each utility. See heading 3.1.1 above.

Does the MTRC impact cap apply to demand-side measures that fail the MTRC?

No. The expenditure cap set out in s. 4(1.5)(b)(iii) and (iv) only applies to measures that fail the TRC without application of s. 4(1.1)(a) and (c), but pass the TRC with application of s. 4(1.1)(b). See heading 3.4 above for more detail.

What if a measure fails the MTRC? Does the MTRC have to be applied at a measure level, or can it be done at a group or portfolio level?

The steps to calculate the TRC and the MTRC are done at a measure level in s. 4(1.1). However, s. 4(1) provides that the commission may determine the cost-effectiveness of a demand-side measure at the evaluation level it chooses (see heading 3.9 above).

Note also that the decision to accept or reject a schedule of expenditures on demand-side measures is based on a variety of considerations of which cost-effectiveness is only one—other considerations are set out in section 44.2 of the *Utilities Commission Act*.

Is inclusion of non-energy benefits obligatory?

Yes. The commission must apply the TRC test in the manner set out in s. 4(1.1). Section 4(1.1)(c) requires the commission to include either:

- (1) participant or utility NEBs proposed by the utility and accepted by the commission, or
- (2) NEBs calculated in accordance with the formula in s. 4(1.1)(c)(ii).

Do attributed benefits from regulated standards include non-energy benefits?

No. Section 4(1.4) only allows attribution of avoided capacity and energy costs.

When applying s. 4(1.4), is the benefit of avoided energy and capacity costs from a regulated standard offset by the standard's capital costs, prior to attribution to a utility DSM?

No. Only the avoided energy and capacity costs are attributed to the utility DSM. For example, if a new standard has benefits of \$3 million in avoided energy and capacity costs (net present value), and a capital cost of \$2 million (net present value), the commission could allow a portion of the \$3 million to be attributed to a utility program that increases the use of the regulated item, as opposed to a portion of the \$1 million.

What portion of a regulated standard's avoided costs should be attributed to utility programs?

Section 4(1.4) describes the benefits which are eligible for attribution to utility measures, but leaves it to the commission to decide what portion of these to attribute. In general, these should relate to the market transformation impacts of the DSM program(s) that enable the regulation to be successful.

Must a measure that fails the Utility Cost Test be determined to be not cost-effective?

No. See headings 3.2 and 3.8 above for more detail.

APPENDIX:

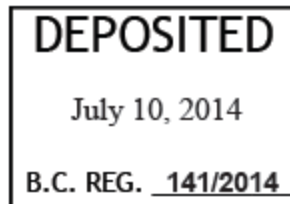
AMENDMENT TO THE DEMAND-SIDE
MEASURES REGULATION

PROVINCE OF BRITISH COLUMBIA
REGULATION OF THE MINISTER OF ENERGY AND MINES AND MINISTER
RESPONSIBLE FOR CORE REVIEW

Utilities Commission Act

Ministerial Order No. 233

I, Bill Bennett, Minister of Energy and Mines and Minister Responsible for Core Review, order that the Demand-Side Measures Regulation, B.C. Reg 326/2008, is amended as set out in the attached Schedule.



Date June 4, 2014


Minister of Energy and Mines and Minister
Responsible for Core Review

(This part is for administrative purposes only and is not part of the Order.)

Authority under which Order is made:

Act and section: *Utilities Commission Act*, R.S.B.C. 1996, c. 473, s. 125.1

Other: M271/2008

May 23, 2014

R/290/2014/27

SCHEDULE

1 Section 1 of the Demand-Side Measures Regulation, B.C. Reg. 326/2008, is amended by repealing the definition of “low-income household” and substituting the following:

“low-income household” means a household whose residents receive service from the public utility and

- (a) the residents have, in a taxation year, a before-tax annual household income equal to or less than the low-income cut-off established by Statistics Canada for that year for households of that size, multiplied by 1.3, or
- (b) the account holder receives one or more of the following:
 - (i) guaranteed income supplement under the *Old Age Security Act* (Canada);
 - (ii) allowance under the *Old Age Security Act* (Canada) for persons aged 60 to 64 with spouses or common-law partners who receive a pension under that Act and are eligible for a guaranteed income supplement;
 - (iii) survivor’s allowance under the *Old Age Security Act* (Canada);
 - (iv) disability benefits under the *Canada Pension Plan* (Canada);
 - (v) National Child Benefit Supplement;
 - (vi) shelter aid for elderly renters under the *Shelter Aid for Elderly Renters Act*;
 - (vii) income assistance for persons with persistent multiple barriers to employment under the *Employment and Assistance Act*;
 - (viii) Provincial senior’s supplement under the *Employment and Assistance Act*;
 - (ix) income assistance under the *Employment and Assistance Act*;
 - (x) hardship assistance under the *Employment and Assistance Act*;
 - (xi) disability assistance under the *Employment and Assistance for Persons with Disability Act*;
 - (xii) rental assistance provided by the British Columbia Housing Management Commission.

2 Section 3 (a) is repealed and the following is substituted:

- (a) a demand-side measure intended specifically
 - (i) to assist residents of low-income households to reduce their energy consumption, or
 - (ii) to reduce energy consumption in housing owned or operated by
 - (A) a housing provider incorporated under the *Society Act* or the *Cooperative Association Act*, or
 - (B) a band within the meaning of the *Indian Act* (Canada),if the benefits of the reduction primarily accrue to
 - (C) the low-income households occupying the housing,
 - (D) a housing provider referred to in clause (A), or

(E) a band referred to in clause (B) if the households in the band's housing are primarily low-income households.

3 Section 4 is amended

(a) in subsection (1.1) (a) by striking out “, multiplied by 0.5”,

(b) in subsection (1.5) by striking out “subject to subsections (4) and (5),” and substituting “subject to subsections (1.9), (4) and (5),”

(c) by adding the following subsection:

(1.9) The references in subsections (1.5) and (1.8) to subsection (1.1) must be read as references

(a) to subsection (1.1) (a), (b) and (c) for the purposes of a demand-side measure that is part of an expenditure portfolio for any period before January 1, 2015, and

(b) to subsection (1.1) (a) and (c) for the purposes of a demand-side measure that is part of an expenditure portfolio for any period after December 31, 2014., *and*

(d) in subsection (2) (b) by striking out “130%” and substituting “140%”.