



IN THE MATTER OF

**PACIFIC NORTHERN GAS LTD. AND
PACIFIC NORTHERN GAS (N.E.) LTD.**

**2015 CONSOLIDATED ENERGY MANAGEMENT AND
EFFICIENCY PROGRAM FUNDING PLAN**

DECISION

December 16, 2015

Before:

**H. G. Harowitz, Commissioner/Panel Chair
B. A. Magnan, Commissioner
I. F. MacPhail, Commissioner**

TABLE OF CONTENTS

Page No.

EXECUTIVE SUMMARY	(i)
1.0 INTRODUCTION.....	1
1.1 Application and orders sought.....	1
1.2 Legislative framework.....	1
1.3 Regulatory process.....	2
1.4 Previous Commission decisions	2
2.0 REVIEW OF THE DSM PORTFOLIO	3
2.1 Approach used	3
2.2 Overall size of the funding envelope	4
2.3 Cost-effectiveness framework and input assumptions	6
2.3.1 Cost-effectiveness framework.....	6
2.3.2 Input assumptions.....	7
2.3.3 Cost-effectiveness of the portfolio	10
2.4 Other British Columbia’s energy objectives	11
2.4.1 Emission reduction objective	11
2.4.2 Fuel switching.....	12
2.5 Interests of persons in BC.....	13
2.5.1 Effectiveness.....	13
2.5.2 Balance	16
2.6 Length of acceptance period	17
3.0 REVIEW OF INDIVIDUAL PROGRAMS	18
3.1 Programs designed to meet adequacy requirements	19
3.1.1 Low income programs	19
3.1.2 Rental accommodations	21
3.1.3 Conservation, education and outreach (CEO).....	23
3.2 Additional programs	25
3.2.1 Commercial Pre-rinse Sprayer Program	25
3.2.2 Efficient boiler pilot project	26

TABLE OF CONTENTS

Page No.

3.3	Enabling activities.....	27
3.4	Program delivery partners.....	28
4.0	OTHER ISSUES AND NEXT STEPS	29
4.1	Cost allocation.....	29
4.1.1	Allocation of DSM costs between companies.....	29
4.1.2	Allocation of DSM costs amongst customer classes	31
4.2	Funding transfer rules.....	32
4.3	Accounting treatment and utility incentives	33
4.4	Evaluation, measurement and verification	37
4.5	Reporting.....	38
5.0	SUMMARY OF DIRECTIVES	39

COMMISSION ORDER G-203-15A

APPENDICES

Appendix A – Exhibit List

Appendix B – List of Acronyms

EXECUTIVE SUMMARY

Pacific Northern Gas Ltd. and Pacific Northern Gas (N.E.) Ltd. (collectively, PNG) is seeking the British Columbia Utilities Commission's acceptance pursuant to section 44.2(3) of the *Utilities Commission Act* (UCA) of the Demand Side Measure (DSM) expenditures schedule as set out in the following table.

PNG DSM Expenditure Schedule (2015 - 2018)

Total 2015 - 2018	2015	2016	2017	2018
\$1,240,266	\$67,000	\$400,203	\$362,639	\$410,424

Summary intervener positions are:

- BC Sustainable Energy Association and the Sierra Club of British Columbia (BCSEA) support Commission acceptance of PNG's 2015-2018 DSM expenditure schedule. BCSEA note that, while PNG's proposed DSM expenditure schedule is for a portfolio that focuses on programs aimed at the adequacy requirements of the DSM Regulation, the portfolio does include the addition of programs aimed at commercial customers. BCSEA applaud these improvements to the portfolio, and encourage PNG to consider applying for funding of new programs or expansions of existing programs during the 2015-2018 period if the conservation potential review results support it.
- British Columbia Pensioners' and Seniors' Organization, Active Support Against Poverty, BC Coalition of People With Disabilities, Counsel of Senior Citizens' Organizations of BC, and the Tenant Resource and Advisory Centre (BCOAPO), subject to concerns regarding the manner in which PNG proposes to allocate DSM costs, also support PNG's proposal as being a first start into providing DSM in its service territory.

Key Panel findings and determinations

The Commission Panel approves PNG's 2015-2018 DSM expenditure schedule and the programs contained in the Application as an initial first step only. Despite the acceptance of the proposed expenditures, the Panel is concerned about the cost-effectiveness of PNG's DSM expenditures and the lack of broad opportunities for PNG's customers to participate in DSM programs. The Panel therefore encourages PNG to file supplemental DSM expenditure schedules for funding of new programs (or expansion of existing programs) during the 2015-2018 period if/as identified by the conservation potential review and/or other investigation.

Looking to future DSM filings, the Panel provides a number of recommendations and directives for expanding the scope and breadth of PNG's DSM programs and improving the effectiveness of the portfolio, including (but not limited to):

- Finding opportunities to offer programs aimed at new construction;
- Finding opportunities to expand funding to under-served customer segments, including industrial and residential customers not covered by PNG's adequacy programs; and
- Reducing the disproportionate share of total portfolio costs accounted for by enabling activities, both by expanding the programming elements and by better allocating overhead costs to individual programs where possible.

The Panel approves PNG's proposals for reallocating expenditures amongst DSM programs and between program years.

The Panel approves the creation of a rate base regulatory asset deferral account to capture DSM expenditures, to be amortized over a five year period, as opposed to the ten year period requested by PNG in the Application. PNG argues that a ten year amortization most appropriately matches the expected average benefit life of the DSM programs. However, the Panel puts significant weight on the fact that Enabling Activities, and Conservation Education and Outreach comprise the overwhelming majority of the total DSM budget, and affording these costs a ten year amortization is not reasonable from a perspective of matching total benefits to total costs.

The Panel accepts PNG's proposed evaluation measurement and verification (EM&V) approach as being adequate for this nascent DSM program but looks forward to a parallel evolution of PNG's EM&V planning in line with the anticipated expansion of its DSM program offerings.

The Panel has set an annual reporting structure, beginning with a report in April of 2017.

1.0 INTRODUCTION

1.1 Application and orders sought

Pacific Northern Gas Ltd. has a western division (PNG-West) that owns and operates a natural gas transmission and distribution system in west central British Columbia (BC). PNG-West serves approximately 20,400 natural gas customers as well as approximately 150 propane customers in the community of Granisle, BC. Pacific Northern Gas Ltd. is also the parent company of Pacific Northern Gas (N.E.) Ltd. [PNG(N.E.)] which owns and operates natural gas distribution systems and a gas processing plant in northeastern BC and provides service to approximately 20,000 natural gas customers in the communities of Fort St. John, Dawson Creek and Tumbler Ridge. PNG(N.E.) maintains separate rate schedules for both the Fort St. John/Dawson Creek (FSJ/DC) Division and the Tumbler Ridge (TR) Division.

On June 26, 2015, Pacific Northern Gas Ltd. and Pacific Northern Gas (N.E.) Ltd. (collectively, PNG) filed with the British Columbia Utilities Commission (Commission) an Application for Acceptance of the 2015 Consolidated Energy Management and Efficiency Program Funding Plan (PNG DSM Expenditure Application, or Application), pursuant to section 44.2 of the *Utilities Commission Act* (UCA). Specifically, PNG is requesting acceptance and approval of the following:

- i. demand side measure (DSM) expenditures of up to \$67,000 for 2015, up to \$400,203 for 2016, up to \$362,639 for 2017, and up to \$410,424 for 2018;
- ii. allowing PNG flexibility in the reallocation of expenditures amongst DSM programs and between program years, subject to the total amount spent by PNG on DSM activities between the date of approval and 2018 not exceeding the total amount of \$1.240 million sought in the Application, unless otherwise approved by the Commission;
- iii. that all expenditures as set out in the Application be recorded in a rate base regulatory asset deferral account; and
- iv. that the amortization period be set at 10 years for all expenditures charged to this regulatory asset deferral account.¹

1.2 Legislative framework

PNG is seeking acceptance of the Application under section 44.2 of the UCA. Subsection 44.2(3) of the UCA gives the Commission the discretion to either accept the expenditure schedule, if the Commission determines that to carry it out would be in the public interest, or to reject it, subject to the discretion given the Commission in subsection 44.2(4) to accept or reject a part of an expenditure schedule.²

Section 2 of the *Clean Energy Act* (CEA) sets out BC's energy objectives. Those most relevant to this proceeding include:

- (b) to take demand-side measures and to conserve energy;

¹ Exhibit B-1, pp. 1-2.

² http://www.bclaws.ca/Recon/document/ID/freeside/00_96473_01#section44.2.

(g) to reduce BC greenhouse gas emissions ... ;

(h) to encourage the switching from one kind of energy source or use to another that decreases greenhouse gas emissions in British Columbia.³

In addition, page 5 of the 2007 BC Energy Plan: A Vision for Clean Energy Leadership states: "... the plan supports utilities in British Columbia and the BC Utilities Commission pursuing all cost-effective and competitive demand side management programs" and "ensure a coordinated approach to conservation and efficiency is actively pursued in British Columbia."

The Demand-Side Measures Regulation, BC Reg. 326/2008 (DSM Regulation), defines the DSM cost-effectiveness tests to be used by the Commission in evaluating a DSM expenditure schedule under subsection 44.2(5)(d) of the UCA.

1.3 Regulatory process

Upon receipt of the Application, the Commission established a written hearing process for the review of the Application with two rounds of information requests. In this proceeding, British Columbia Pensioners' and Seniors' Organization, Active Support Against Poverty, BC Coalition of People With Disabilities, Counsel of Senior Citizens' Organizations of BC, and the Tenant Resource and Advisory Centre (BCOAPO) and BC Sustainable Energy Association and the Sierra Club of British Columbia (BCSEA) registered as interveners.

1.4 Previous Commission decisions

By Order G-60-13 with Reasons for Decision dated April 18, 2013, the Commission accepted the PNG(N.E.) 2012 Resource Plan pursuant to section 44.1(6) of the UCA, with the exception of the DSM part of the plan. Pursuant to section 44.1(7) of the UCA, the Commission directed PNG(N.E.) to resubmit the DSM part of the 2012 PNG(N.E.) Resource Plan at the same time as PNG submits its resource plan for the PNG-West pipeline system.

In the PNG-West 2014 Resource Plan and DSM Resubmission application, PNG proposed a limited initial DSM portfolio, with programs focused on the sectors identified in section 3 of the DSM Regulation regarding adequacy. PNG submitted that "this is a good starting point in that the company can comply with the regulations and assess market acceptance of these programs before expanding its DSM portfolio beyond section 3 requirements."⁴ By Order G-140-14, the Commission accepted the 2014 DSM Plan "as an initial first step in conservation programs for PNG-West and PNG (N.E.)," and provided additional determinations and guidance in the Reasons for Decision contained in Appendix A to the order.⁵

³ http://www.bclaws.ca/civix/document/id/complete/statreg/10022_01#section2.

⁴ PNG 2014 Resource Plan for the PNG-West Pipeline System and PNG (N.E.) Resubmission of the DSM Portion of the 2012 Resource Plan for PNG (N.E.) Pipeline Systems (PNG 2014 Resource Plan & DSM), Order G-140-14 dated September 16, 2014, Reasons for Decision, p. 12.

⁵ PNG 2014 Resource Plan & DSM, Order G-140-14 dated September 16, 2014, Appendix A, p. 13.

2.0 REVIEW OF THE DSM PORTFOLIO

2.1 Approach used

Subsection 44.2(5) of the UCA sets out four matters that the Commission “must consider” in determining whether to accept a DSM expenditure schedule as in the public interest:

- the most recent long-term resource plan (LTRP) filed by the utility under section 44.1;
- whether the demand-side measures are cost-effective within the meaning prescribed by regulation;
- the applicability of British Columbia’s energy objectives; and
- the interests of persons in BC who receive or may receive service from the utility.

The following discussion provides the reader with an overview of where in this Decision the Panel addresses each of these four factors.

Consistency with the most recent LTRP

In the PNG-West 2014 Resource Plan and PNG(N.E.) DSM Resubmission application, PNG proposed a limited initial DSM portfolio with programs focused on the sectors identified in section 3 of the DSM Regulation.

Order G-140-14 accepted the DSM Plan “as an initial first step” only, with various determinations and guidance provided.⁶ The table below shows where in this decision these determinations and guidance have been considered.

Table 1: Consideration of the most recent long-term resource plan (G-140-14)

	G-140-14 Determination/Guidance	Where considered in this Decision
1.	Commission Panel therefore accepts the DSM Plan as an initial first step in conservation programs for PNG-West and PNG(N.E). ... While the Commission Panel accepts the DSM plan as presented, it has concerns related to the DSM proposal ... (page 13)	Section 2.2 Overall size of the funding envelope
2.	PNG is encouraged to pursue partnerships with BC Hydro and FEI to design and deliver programs and reduce costs. (page 13)	Section 3.4 Program delivery partners
3.	... the Panel urges PNG to consider all potential economic alternatives, including outsourcing, for DSM implementation. (page 13)	Section 2.5.1 Effectiveness
4.	... without a specific Expenditure Schedule and associated evidence on the DSM programs flowing from the Schedule, it is unable to make a determination with respect to whether the DSM program will meet the adequacy requirements of the DSM Regulation (page 14)	Section 3.1 Adequacy
5.	... the Panel directs PNG to include the results of its research and analysis of the applicability of an efficient boiler program for multi-unit residential buildings in the PNG-West and PNG(N.E.) service territories in the DSM Application. (page 14)	Section 3.2.2 Efficient Boiler Program

⁶ PNG 2014 Resource Plan & DSM, Order G-140-14 dated September 16, 2014, Appendix A, pp. 12-13.

	G-140-14 Determination/Guidance	Where considered in this Decision
6.	... the Panel directs PNG and PNG(N.E.) to include the detailed results of the cost-effectiveness evaluation of the DSM Programs in the DSM Application, demonstrating how the DSM portfolio meets the cost-effectiveness requirements of section 4 of the DSM Regulation. (page 15)	Section 2.3 Cost-effectiveness
7.	The Commission Panel directs PNG to include in its DSM Application a description and justification of the cost allocation methodology by which to divide program budgets to each service area. (page 16)	Section 4.1 Cost allocation
8.	The Panel acknowledges PNG's proposal to defer DSM expenditures and amortize them over a multi-year period; however the Panel defers any determination on the amortization period to the Commission Panel that considers PNG's DSM Application and Expenditure Schedule. (page 17)	Section 4.3 Accounting treatment and utility incentives

Cost-effectiveness of DSM

Considerations of whether the DSM measures are 'cost-effective within the meaning prescribed by regulation' are addressed in section 2.3 (Cost-effectiveness framework and input assumptions).

British Columbia's energy objectives

The BC energy objective to take demand-side measures and reduce BC green-house gas emissions, and the 2007 BC Energy Plan that supports pursuit of all cost-effective and competitive demand side management programs are considered in Section 2.2 (Overall size of the funding envelope). BC emissions reduction and fuel switching objectives are further considered in Section 2.4 (Other BC's energy objectives).

Interests of persons in BC

These considerations are addressed in section 2.5 (Interests of persons in BC).

2.2 Overall size of the funding envelope

PNG requested \$1.240 million in DSM funding over 4 years.⁷ In undertaking a review of the overall size of PNG's proposed DSM funding envelope, the Panel considered: (i) the Commission's acceptance of the 2014 PNG DSM Plan in Order G-140-14 as an 'initial first step only'; (ii) the BC Energy Plan support for utilities to pursue all cost-effective and competitive DSM programs; and (iii) BC's energy objectives to take demand-side measures and reduce BC green-house gas emissions.

PNG estimated that the proposed DSM funding envelope represents approximately 0.54% of distribution revenues.⁸ Comparison of this estimate with data provided in the same Information Request (IR) response indicates that this level is approximately five times lower than that of FortisBC Energy Inc. (FEI) and the average of other Canadian gas utilities reported.⁹ PNG anticipates that the DSM programs will in aggregate result in

⁷ Exhibit B-1, p. 1.

⁸ Exhibit B-6, BCUCIR 2.4.2.

⁹ Ibid.

3,019 GJ in reduced energy consumption over 4 years.¹⁰ This represents 0.02% of PNG's GJ natural gas sales, as compared to a 0.77% of sales level achieved by gas utilities in the US and Canada,¹¹ (greater by a factor of 35).

PNG acknowledges that its schedule of DSM expenditures is modest in comparison to other utilities in North America. However, PNG submits that such a comparison does not take into consideration the maturity of other utilities' DSM programs.¹²

This is PNG's first DSM expenditure application, and PNG submits that it arrived at its overall DSM funding request by developing a portfolio that meets the requirements of section 3 of the DSM Regulation and includes additional programs that improve the cost-effectiveness of the overall DSM portfolio.¹³ PNG states that its modest launch of DSM programs has been made in consideration of the cost-effectiveness of the programs and the small number of customers in its service territories, and represents an appropriate and measured initial response to the Commission's direction to give consideration to DSM.¹⁴

PNG further states that it has committed to participate in the joint BC conservation potential review (CPR) and expects that the results of this exercise will be available in the first quarter of 2016.¹⁵ PNG explains that the purpose of the CPR is to develop estimates of electricity and natural gas conservation potential in BC, including analyzing a broad range of energy-saving technologies and behaviour/lifestyle changes. PNG states that this information will be used to provide input for future DSM Plans and to develop new conservation programs/modify existing ones.¹⁶ PNG submits that, over the long term, its DSM Plan should evolve to achieve all cost-effective DSM savings and that it intends to add other cost-effective programs to its portfolio based on the results of the CPR and other studies.¹⁷

PNG submits that it has not identified other cost-effective DSM programs at this time, and that it did not specifically ask FEI if FEI could expand its DSM programs into PNG's service territory under the FEI brand in a similar manner that the City of New Westminster has done with BC Hydro for Power Smart Programs.¹⁸

BCOAPO consider that PNG's DSM Application is modest, however overall they support the program portfolio put forward by PNG as being a first start into providing DSM in its service territory. BCOAPO "strongly support" PNG working with BC Hydro and FEI to deliver DSM programs.¹⁹

BCSEA note that PNG has prepared the 2015-2018 DSM portfolio on the basis of industry experience rather than a CPR, but consider this approach acceptable given that completing a CPR would take more time than was available.²⁰ BCSEA submit that, while they would have preferred to see a more robust DSM portfolio proposed

¹⁰ Exhibit B-1, p. 10.

¹¹ Exhibit B-6, BCUC IR 2.4.1.

¹² PNG Final Argument, p. 8.

¹³ Ibid.

¹⁴ Ibid. p. 4.

¹⁵ Exhibit B-5, BCSEA IR 1.6.1, 1.6.2.

¹⁶ Exhibit B-6, BCUC IR 2.6.1.2.

¹⁷ Exhibit B-3, BCUC IR 1.7.1; Exhibit B-5, BCSEA IR 1.5.2.1.

¹⁸ Exhibit B-5, BCSEA IR 1.5.3; Exhibit B-6, BCUC IR 2.6.2.

¹⁹ BCOAPO Final Argument, pp. 2-3.

²⁰ BCSEA Final Argument, p. 3.

by PNG, they are willing to support PNG's current proposal as a first step in delivering a DSM portfolio.²¹ BCSEA further submit that PNG should apply for more spending if DSM opportunities arise during the 2015-2018 period, and emphasise the importance of PNG vigorously pursuing the DSM portfolio, including by actually spending the approved funds (assuming cost-effectiveness).²²

Commission discussion

The Panel accepts this DSM expenditure schedule for 2015-2018, but views it as an initial first step only. The Commission Panel notes that PNG's DSM proposed spending (as a percentage of GJ sales and revenues) is significantly less than DSM expenditures by other utilities in North America. However, the Panel gives weight to the fact that this is PNG's first foray into offering DSM programs to its customers and that the results of the joint BC conservation potential review will not be available until 2016. In addition, PNG requires Commission acceptance of its proposed DSM Expenditure Schedule to be able to proceed with the programs that it has proposed.

The Panel is encouraged by PNG's submission that, over the long-term, its DSM Plan should evolve to achieve all cost-effective DSM savings.

The Panel encourages PNG to make supplemental DSM expenditure applications to the Commission at any time during this period if/as it identifies additional cost-effective DSM programs and gains experience with the programs it has proposed.

Further, to the extent PNG finds that the small number of customers in its service territories makes it difficult to identify cost-effective DSM programs that would bring DSM funding levels more in line to those of other jurisdictions, the Panel urges PNG to consider all potential economic alternatives, including outsourcing, for DSM implementation.

2.3 Cost-effectiveness framework and input assumptions

2.3.1 Cost-effectiveness framework

Section 4 of the DSM Regulation generally requires that individual demand side measures or the portfolio as a whole are cost-effective from a BC perspective (i.e. they provide a net benefit to BC). The DSM Regulation sets out two variations of the test that the Commission must use to measure whether demand side measures provide a net benefit to BC:

- The Total Resource Cost (TRC) test, which compares the benefits of the avoided supply costs to the total costs of the demand side program, including both the participants' and the utility's costs (i.e. avoided supply costs divided by total DSM program costs); and
- In the case of gas utilities, up to 33 percent of the total DSM funding can instead be evaluated using the modified Total Resource Cost (mTRC) test, which differs from the TRC test in that it specifies how externalities (environmental and non-energy benefits) are to be included in the numerator.

²¹ Ibid., p. 9.

²² Ibid., pp. 3, 9.

The Commission has the option to either apply the TRC/mTRC test to each individual program, or to apply the test to the portfolio as a whole. A TRC/mTRC result of greater than one indicates that BC benefits exceed BC costs.

For those components of the DSM portfolio that pass the mTRC test but not the TRC test, the DSM Regulation also allows (but does not require) the Commission to reject programs where it is cheaper for the utility to supply the additional energy to customers rather than undertake a DSM program to encourage customers to use energy more efficiently. This is measured by the Utility Cost Test (UCT) which compares the utility's avoided supply costs to the cost of the DSM program (incentive and utility administrative costs). A UCT result of greater than one indicates that utility benefits exceed utility costs over the long term.

2.3.2 Input assumptions

Avoided supply costs

The benefits included in the TRC are the avoided cost of gas (priced in accordance with PNG's commodity price forecast) and the avoided carbon tax. PNG has included the value of the avoided carbon emissions as a benefit in the TRC, based on the current level of the BC carbon tax. PNG considers that the BC carbon tax is the only actualized valuation available of the impact of greenhouse gas emissions resulting from the combustion of fossil fuels, specifically natural gas in this case.²³ PNG submits that it did not include avoided capacity costs as a benefit because: PNG does not expect capacity constraints on its PNG-West system; the avoided capacity cost on the PNG(N.E.) system is expected to be small; and modest energy savings are expected from its DSM programs.²⁴

Discount rate and program life

In the FortisBC Inc. (FBC) 2015-2016 DSM Decision, the Commission directed FBC to review the TRC discount rate assumptions in the next DSM expenditure request. PNG submits that the choice of discount rate and the time period may have a significant influence on the results of the tests, and that it has used its consolidated pre-tax weighted average cost of capital as the inflation adjusted discount rate for the TRC/mTRC and the UCT.²⁵ PNG's assumed measure life (the length of time over which PNG's demand-side measures will generate energy savings) is based on similar programs offered by FEI, information from Food Service Technology Centre and Ontario Energy Board approved DSM assumptions.²⁶

Non-energy benefits

Non-energy benefits reflect benefits a customer receives from installation of a demand side measure that are not related to reduced energy consumption, such as increased comfort, noise reduction and health benefits. For low-income customers, the DSM Regulation requires a 40 percent uplift in the value of benefits to reflect non-energy benefit. For other DSM programs using the mTRC, the value of non-energy benefits can be individually determined, or set at a deemed non-energy benefits value provided it does not increase total portfolio benefits by more than 15 percent.

²³ Exhibit B-3, BCUC IR 1.28.2.

²⁴ Exhibit B-1, p. 27; Exhibit B-5, BCSEA IR 1.16.1.

²⁵ Exhibit B-1, p. 25.

²⁶ Exhibit B-3, BCUC IR 1.21.3.

For low income programs, PNG has applied the 40 percent adder to reflect non-energy costs.²⁷ PNG has also increased the benefits of its other programs using the mTRC by a deemed value of 16 percent so as to achieve a 15 percent non-energy benefit adder for the portfolio as a whole.²⁸

DSM program costs

DSM program costs include both the participants' and the utility's costs.²⁹ PNG's incentive levels (an input to the UCT) are based on discussions with BC Hydro and FEI, and industry participants' cost of equipment and installation cost.³⁰

Free ridership and spillover

In estimating energy savings from DSM programs, savings can be adjusted downwards for free riders (persons who would have undertaken the demand-side measure anyway without an incentive) and adjusted upwards for spillover effects (where a person undertakes a demand-side measure as a result of a DSM program, but does not actively participate in the DSM program).

PNG has estimated free ridership rates for its DSM programs only and has not estimated spillover effects. A comparison of free ridership rates to those of similar programs offered by FEI is shown in the table below:

Table 2: Free ridership Assumption Used by PNG compared to FEI³¹

	PNG Free ridership rate	FEI Free ridership rate
Low-income ESK	0%	27%
Low-income ECAP	0%	4%
Rental – ESK	0%	10%
Rental – Domestic Hot Water	0%	5%
Commercial – Pre-Rinse Sprayer	12%	18%
Commercial – Boiler Replacement	0%	18%

PNG submits that, in general, PNG's free ridership rates are lower than FEI's as PNG does not have any data from participant surveys and so has assumed a 0% free ridership rates for residential programs. For PNG's low income energy saving kits (ESK), low-income energy conservation assistance program (ECAP), and rental ESK programs, PNG assumed a free ridership rate of 0% and reduced the energy saving estimates. PNG submits that it used data from Statistics Canada on the market penetration of some ESK measures to reduce the energy saving estimates and, in that manner, accounts for the free ridership effect in its cost-effectiveness test calculations.³²

²⁷ Ibid., BCUCIR 1.25.1.

²⁸ Ibid., BCUCIR 1.4.3.

²⁹ Exhibit B-1, p. 26.

³⁰ Exhibit B-3, BCUCIR 1.21.4.

³¹ Ibid., BCUCIR 1.21.1.

³² Ibid., BCUCIR 1.27.3.

PNG's free ridership assumption for the water heater rental program and commercial boiler replacement program were based on a survey of apartment and commercial buildings. PNG's pre-rinse sprayer program's free ridership assumption was based on food service technology centre and the Ontario Energy Board approved DSM assumptions for its food services.³³

BCOAPO submit that PNG's assumed free ridership of 0% is too low, and makes PNG's DSM programs seem more cost-effective than they are. BCOAPO recognize, however, that PNG has adjusted the benefits to some extent to reflect that there will be some free ridership, and accept PNG's proposal on this point.³⁴

Commission determination

The Panel has reviewed PNG's input assumptions and considers them reasonable, subject to the comments on discount rates and free ridership rate assumption below.

Regarding PNG's submission that the discount rate used for the TRC/mTRC can have a significant influence on the results, the Panel considers that, given the start-up nature of PNG's DSM portfolio, discount rates are not a decisive issue for this filing. However, the Panel notes that FBC has been directed by the Commission to review the TRC/mTRC discount rate assumption in their next DSM expenditure request, and encourages PNG to consider the results of this review in PNG's next DSM expenditure schedule filing.

With regard to assumptions for free rider and spillover effects, **the Panel directs PNG to include in future DSM expenditure requests, estimates of free rider and spillover effects for each DSM program together with justification used to support these estimates.** PNG should use reliable assumptions that are supported by credible sources and is encouraged to reference other jurisdictions for benchmarking purposes.

While free rider and spillover effects may not substantively impact the TRC/mTRC results, they are important when it comes to the UCT. A program with a high free rider rate raises a concern that the utility's DSM program is not sufficiently targeted towards its intended audience, hence incurring unneeded costs. A program with a high spillover rate, by contrast, indicates that the DSM program is being successful at generating yet additional BC benefits that have not otherwise been quantified.

The Panel therefore considers it important for PNG to make reasonable efforts to estimate and monitor the free rider effect of its proposed DSM program, both to assist in effective program design and to better calculate the UCT result. The Panel recognizes that spillover rates can be harder than free ridership to estimate, but is also concerned that excluding recognition of spillover estimates could result in the rejection of otherwise cost-effective DSM programs.

The Panel also has concerns with PNG's approach of reducing measure energy savings estimates as a proxy to account for the free ridership effect. Replacing a variable (free ridership) that primarily affects the UCT with a variable (energy savings) that affects both the UCT and TRC/mTRC could result in incorrectly and artificially lowering TRC/mTRC values, potentially to the point where an otherwise attractive program is incorrectly valued

³³ Ibid.

³⁴ BCOAPO Final Argument, p. 5.

at a level below one and thus rejected. Measure energy savings and free rider effects are different concepts with different effects on the cost-effectiveness tests and must be accounted for separately.

The Panel therefore finds that PNG's methods for estimating free rider and spillover effects and incorporating them into its cost analysis are not robust. However, in light of the start-up nature of the DSM portfolio, they are considered acceptable as an interim approach. The Panel expects PNG to improve this aspect of its program cost analysis in future filings.

2.3.3 Cost-effectiveness of the portfolio

PNG submits that the portfolio meets the cost-effectiveness criteria of section 4 of the DSM Regulation on the basis of the portfolio weighted mTRC and the portfolio's conformance with the section 4(1.5) spending cap.³⁵

The Commission has the option to either apply the TRC/mTRC test to each individual program, or to apply the test to the portfolio as a whole.

- On an individual program basis, every program proposed by PNG has an mTRC of greater one, and 23.3 percent of the total expenditure is spent on programs that are subject to the mTRC cap, well under the 33 percent spending cap defined by section 4(1.5) of the DSM Regulation.³⁶
- On a portfolio basis, the overall TRC/mTRC for the portfolio is 0.64.³⁷

Table 3 below shows the cost-benefit test results by program:

Table 3: Program and Portfolio Cost-benefit Test Results³⁸

Measure		Gas Savings	Cost-Benefit Tests					Costs Applied to Cap	
Sector	Name	GJ	TRC	TRC w. s 4(2) 40% Adder	mTRC	Subject to mTRC Cap?	TRC/mTRC	\$	Portion
Low Income	ESK	4,575	1.01	1.42	7.28	N	1.01	\$ -	0.0%
Low Income	ECAP	4,524	0.42	0.59	3.00	Y	3.00	\$ 39,500	3.2%
Rental	ESK - Rental Buildings	9,360	0.28	NA	1.67	Y	1.67	\$ 141,800	11.4%
Rental	Domestic Hot Water - Rental Buildings	11,520	0.24	NA	1.45	Y	1.45	\$ 88,300	7.1%
Commercial	Pre-Rinse Sprayers	2,376	0.57	NA	3.46	Y	3.46	\$ 19,050	1.5%
Commercial	Boiler Replacement	57,280	1.07	NA	6.31	N	1.07	\$ -	0.0%
Education	K-12	-	-	NA	-	N	-	\$ -	0.0%
Education	Post Secondary	-	-	NA	-	N	-	\$ -	0.0%
Outreach	Community Engagement	-	-	NA	-	N	-	\$ -	0.0%
Admin	Enabling Activities	-	-	NA	-	N	-	\$ -	0.0%
Portfolio Total		89,635	0.22		1.33		0.64	\$ 288,650	23.3%

PNG submits that the administrative costs and costs of the conservation education and outreach activities, to which no energy savings are directly attributed, comprise two thirds of the total DSM expenditures. As PNG increases the scale of its DSM activities, the relative spending on administration, and conservation education and outreach activities is expected to decrease, thereby increasing the TRC of the portfolio.³⁹

³⁵ PNG Final Argument, p. 6.

³⁶ Ibid., p. 6.

³⁷ Exhibit B-6, BCUC IR 2.14.1.

³⁸ Ibid.

³⁹ Ibid., p. 7.

BCSEA submit that they expect PNG will actively pursue reasonable expansion of its DSM portfolio beyond the initial “first step” scale, so as to achieve more cost-effective energy savings while maintaining an acceptable portfolio TRC.⁴⁰

Commission determination

The Panel determines that PNG’s DSM portfolio is not cost-effective. That said, the Panel accepts PNG’s DSM portfolio for reasons stated below.

Notwithstanding that each of the six DSM programs pass the TRC/mTRC test on an individual program basis, the overall portfolio weighted TRC/mTRC result of 0.64 is clearly not cost-effective. As discussed more fully in section 3.3 (Enabling Activities), this discrepancy arises due to the significant level of overhead in PNG’s portfolio that has not been allocated to individual programs.

While the Panel does not consider that PNG’s DSM portfolio is cost-effective, the Panel notes that cost-effectiveness is not a necessary condition, but rather is only one of many considerations in determining whether the DSM programs included in the portfolio are in the public interest. In deciding to accept the DSM portfolio, the Panel took into account that PNG’s individual programs are cost-effective (i.e., PNG is encouraging customers to make efficient investment and consumption decisions from a BC perspective), and that the poor portfolio level cost-effectiveness result arises from the high level of overhead in relation to the size of PNG’s DSM programs, which the Panel expects PNG to improve over time.

The Panel therefore encourages PNG to make supplemental DSM expenditure applications to the Commission as additional cost-effective DSM programs are identified, such that the DSM expenditure schedule is cost-effective on a portfolio basis. **The Panel directs PNG in its next DSM expenditure schedule application to demonstrate how the DSM portfolio meets the cost-effectiveness requirement of section 4 of the DSM Regulation.**

2.4 Other British Columbia’s energy objectives

In undertaking a review of the PNG’s DSM expenditure schedule, the Commission Panel considered the BC’s energy objectives to reduce greenhouse gas emissions and encourage the switching from one kind of energy source or use to another that decreases greenhouse gas emissions in British Columbia.

2.4.1 Emission reduction objective

PNG submits that its proposed DSM initiatives are designed to conserve natural gas, which will in turn reduce BC’s greenhouse gas (GHG) emissions.⁴¹ PNG estimates that the cumulative GHG emission reduction from its DSM portfolio at 323 tonnes by the end of 2018.⁴²

⁴⁰ BCSEA Final Argument, p. 9.

⁴¹ Exhibit B-1, p. 19.

⁴² Ibid., p. 10.

PNG used alternative values to quantify the benefits of these emission reductions:

- Avoided emissions are valued at the avoided cost of the carbon tax (at the current level of \$1.4898 per gigajoule) in the TRC cost-effectiveness calculations;⁴³
- the mTRC allows for the use of zero-emission energy supply alternative (ZEEA) in determining the avoided cost of energy for DSM; and⁴⁴
- PNG(N.E.) assumes a carbon tax of \$153/tonne in the competitive electricity scenario in its 2015 resource plan.⁴⁵

PNG states that it has committed to participate in the joint BC CPR currently under development by FBC, FEI and BC Hydro. PNG expects that the results of this exercise will inform and support PNG's next DSM expenditure schedule filing.⁴⁶

Commission determination

The Panel directs PNG to specifically consider emission reduction benefits in the 2016 CPR, and to include the results of this analysis in the next DSM expenditure schedule filing. The Panel considers that in order for the 2016 CPR to identify all cost-effective and competitive demand-side measures, it is important that emission reduction benefits are considered.

2.4.2 Fuel switching

PNG submits that if it became apparent that a program to encourage switching from a high GHG emitting fuel to a low GHG emitting fuel within PNG's service territory is feasible and can improve the cost-effectiveness of the overall DSM portfolio, PNG may seek Commission approval of funding for such a program during the course of the current DSM expenditure schedule.⁴⁷

BCSEA support the concept of low carbon fuel switching, and request that the Commission direct PNG to explore the opportunities for low carbon fuel switching within its service territory during the course of the 2015-2018 DSM expenditure schedule and to develop and apply for acceptance of funding for a low carbon fuel switching program if one is feasible and cost-effective.⁴⁸ PNG submits that direction from the Commission to include an analysis of opportunities for low-carbon fuel switching programs based on the outcomes of the CPR is not necessary. However, PNG is not opposed to such directions, but notes that there will be additional costs associated with complying with any such directives.⁴⁹

In addition, PNG states that it does not plan to offer DSM incentives to customers who switch from electricity to gas as this could encourage switching from electricity to natural gas and so would be inconsistent with BC's fuel switching objective.⁵⁰

⁴³ Exhibit B-3, BCUCIR 1.28.1.

⁴⁴ Exhibit B-1, p. 29.

⁴⁵ Exhibit B-6, BCUCIR 2.15.0.

⁴⁶ Exhibit B-3, BCUCIR 1.7.2.1.

⁴⁷ Exhibit B-5, BCSEA IR 1.15.2.

⁴⁸ BCSEA Final Argument, p. 11.

⁴⁹ PNG Reply Argument, pp. 4-5.

⁵⁰ Exhibit B-3, BCUCIR 1.12.1.2.

Commission discussion

The Panel notes that PNG has not proposed DSM programs to encourage switching from a high GHG emitting fuel to a low GHG emitting fuel within PNG's service territory. We also take note of PNG's openness to exploring these opportunities in the future, and that the soon-to-be completed CPR may shed additional light in this regard. Thus, while declining BCSEA's request that the Panel direct PNG to explore whether such opportunities exist during the course of the 2015-2018 DSM period, we do encourage PNG to do so and to develop and apply for acceptance of funding for a low carbon fuel switching program if one is feasible and cost-effective.

The Panel is supportive of PNG's position not to offer DSM incentives to customers who switch from electricity to natural gas, as this could encourage switching that results in an increase in greenhouse gas emissions in BC and so would be inconsistent with BC's fuel switching objective.

2.5 Interests of persons in BC

In considering the interests of persons in BC who receive or may receive service from the utility, the Commission Panel considered both the effectiveness and balance of PNG's DSM portfolio:

- effectiveness - consideration of UCT results, addressing 'lost opportunities' (e.g., new construction) and maintaining a level of customer and trades engagement; and
- balance - providing broad opportunities for customers to participate, in particular for 'hard to reach' customers such as low-income groups and renters.

2.5.1 Effectiveness

The Panel's portfolio level review of the effectiveness of PNG's DSM portfolio included: (i) a review of the average cost of energy saved in PNG's portfolio, and (ii) a review of lost opportunities and potential missing DSM programs. A review of the funding/UCT results by individual program is addressed in section 3.0.

Average cost of saved energy

PNG provided the following comparison of the portfolio cost of energy saved to that of gas utilities in other jurisdictions:

Table 4: Comparison of the cost of energy saved with other jurisdictions⁵¹

	Cost of Saved Energy (\$/GJ)	Source
PNG Total	\$ 13.84	Total Expenditures (\$1.2 million from Table 1 on page 1 of the Application) / Total undiscounted energy savings (89,635 GJ from Table 39 on page 55 of the Application)
FEI	\$ 6.55	Preamble to BCUC IR 1.19.1
ACEE Average	\$ 3.32	Exh. A2-3, p.30 and BCUC 2.4.3.1
Cdn Utilities Average	\$ 4.78	IndEco DSM Best Practices Report (Appendix A of Appendix C to the Application)

PNG also estimated the DSM cost per GJ saved for each year (2016: \$18.48/GJ, 2017: \$14.37/GJ; 2018: \$9.60/GJ).⁵²

PNG calculates incentives as a percentage of program costs as 15% in 2016, 22% in 2017 and 29% in 2018. This compares to 58% for FEI and 60% to 85% for a 2014 ACEE report estimated US average.⁵³

PNG submits that nearly half of the annual costs of the DSM program are related to enabling activities and are fixed, regardless of the number of participants, and that a larger utility is expected to have much lower fixed costs on a per customer basis.⁵⁴ PNG submits that, as PNG's DSM programs mature over subsequent periods, PNG expects its costs to fall further.⁵⁵

BCSEA state they expect PNG to actively pursue reasonable expansion of the DSM portfolio beyond the initial "first step" scale, so as to achieve more cost-effective energy savings while maintaining an acceptable portfolio TRC.⁵⁶

Commission discussion

The Panel notes that the cost of PNG's saved energy is significantly higher than in other jurisdictions, and considers that this is primarily a result of the small size of PNG's DSM programs in relation to its fixed costs. The Panel encourages PNG to identify and pursue additional cost-effective DSM programs in order to improve the effectiveness of the DSM portfolio, and to consider all potential economic alternatives for DSM implementation.

⁵¹ Exhibit B-6, BCUC IR 2.4.4.

⁵² Exhibit B-3, BCUC IR 1.19.1.

⁵³ Ibid.

⁵⁴ Exhibit B-3, BCUC IR 1.6.2.

⁵⁵ Exhibit B-6, BCUC IR 2.4.4.

⁵⁶ BCSEA Final Argument, p. 9.

The Panel expects to see a significant improvement in PNG's DSM portfolio effectiveness in the next DSM expenditure schedule application.

Lost opportunities and missing programs

PNG identifies the following programs offered by FEI which are not offered by PNG:

Table 5: DSM Programs offered by FEI but not PNG⁵⁷

Program	TRC	mTRC	UTC
Residential			
Energy Efficiency Home Performance (HERO)	0.7	2.8	1.0
Furnace Replacement	0.5	1.5	0.9
Enerchoice Fireplace Program	2.2	n/a	1.0
ENERGY STAR Domestic Hot Water Technologies	0.4	1.8	0.9
Low Flow Fixtures / Domestic Hot Water Conservation	2.0	n/a	2.5
New Home Program	2.0	n/a	2.4
Commercial			
Customized Equipment Upgrade	1.1	n/a	2.5
EnerTracker	0.9	n/a	1.2
Continuous Optimization	1.4	n/a	2.9
Commercial Energy Assessment	1.7	n/a	1.3
Industrial			
Industrial Optimization	1.3	n/a	1.7

PNG submits that FEI has been offering DSM programs for a number of years and has developed a full suite of DSM programs over this period, and that the DSM portfolio proposed in the Application represents PNG's first endeavor into developing and offering DSM programs.⁵⁸

PNG states that 'lost opportunities' are opportunities that, if not undertaken during the current planning period, will no longer be available, their implementation will be substantially delayed, or will be substantially more expensive to implement in a subsequent planning period. PNG submits that its proposed Commercial Boiler Replacement program is intended to partially address 'lost opportunities' as the life expectancy of commercial boilers is typically 20 years or more and if a boiler is not replaced with a more energy efficient unit, that opportunity is lost for many years.⁵⁹

PNG submits that there is a risk of 'lost opportunities' by not offering a residential new home program similar to that provided by FEI, however PNG does not consider that it is experiencing extensive housing starts and therefore the size of the lost opportunity remains small (828 building permits were issued in Fort St. John, Dawson Creek and Tumbler Ridge in 2014). PNG submits it may consider broader DSM programs, which include new construction programs in the future.⁶⁰

⁵⁷ Exhibit B-3, BCUCIR 1.21.2.

⁵⁸ Ibid.

⁵⁹ Ibid., BCUCIR 1.9.1.2.

⁶⁰ Exhibit B-5, BCSEA IR 1.9.1; Exhibit B-6, BCUCIR 2.9.3.

PNG submits that, while it plans to support municipalities in its service territory in increasing compliance with the energy code, it cannot fund a municipal compliance officer as building inspectors and building code enforcement officers are responsible for enforcing all aspects of the building code.⁶¹

Commission determination

The Panel directs PNG to include the results of its research and analysis of the applicability of the programs currently offered by FEI in the next DSM expenditure schedule filing, and to specifically include a review of the costs and benefits of offering ‘new construction’ program(s) to mitigate lost DSM opportunities.

The Panel accepts PNG’s position that the DSM portfolio proposed in the Application represents PNG’s first endeavour into developing and offering DSM programs, and so it is reasonable that the suite of programs offered by PNG are narrower in scope than that offered by FEI. However, the Panel encourages PNG, as it looks to expand its DSM portfolio, to give particular attention to programs that address lost opportunities as a delay in implementing these programs could result in higher costs in subsequent periods.

The Panel also considers that, while enforcement of compliance with building code is within the jurisdiction of municipalities, this does not preclude PNG from developing a DSM program to support municipalities in reducing non-compliance where it is cost-effective for PNG to do so.

2.5.2 Balance

The Panel considered whether PNG’s DSM portfolio provides broad opportunities for customers to participate, in particular for ‘hard to reach’ customers such as low-income groups and renters. The Panel considers PNG’s targeting of ‘hard to reach’ customers in Section 3.1 (Programs designed to meet adequacy requirements). The focus of this section is therefore on determining whether there is a reasonable level of DSM programs offered to each customer class.

PNG submits that it has expanded its proposed DSM programs for its initial DSM portfolio to more than the minimum requirements of Section 3 of the DSM Regulation, which broadens the opportunities for customers to participate. PNG submits that, as it evaluates the performance of its DSM offering and gains more expertise in delivering DSM programs, it anticipates that it will expand its DSM portfolio to broaden opportunities for more customers to participate in cost-effective DSM programs.⁶² Table 6 below shows PNG’s DSM expenditure for each customer class as a percentage of class revenue:

Table 6: PNG’s 2016 DSM expenditure by customer class as a percentage of revenue⁶³

	Residential	Commercial	Other	Total
PNG-West	0.5%	0.7%	0%	0.5%
FSJ/DC	0.6%	0.9%	0%	0.6%
TR	0.6%	0.2%	0%	0.4%

⁶¹ Exhibit B-6, BCUCIR 2.9.4.

⁶² Exhibit B-3, BCUCIR 1.9.1.1.

⁶³ Exhibit B-6, BCUCIR 2.7.1.

PNG states that it has not taken any steps to identify DSM opportunities for its industrial customers, however based on the results of the forthcoming CPR it may consider industrial DSM programs in the future.⁶⁴

The proposed DSM portfolio does not include measures aimed at residential customers who are not low-income or renters living in the majority of housing types, i.e., single-family, duplex, and row house. PNG submits that based on the results of the forthcoming CPR, PNG may consider broader residential DSM programs in the future.⁶⁵

BCSEA submit that it would be helpful for the Commission to direct PNG to include with its next DSM Plan a detailed analysis of DSM opportunities for large customers based on, among other things, the results of the joint CPR that is now being conducted.⁶⁶ PNG submits that direction from the Commission to include an analysis of opportunities for DSM for large customers is not necessary.⁶⁷

Commission determination

The Panel directs PNG to include in its next DSM Expenditure Application a review and discussion of whether opportunities exist to cost-effectively expand DSM funding to under-served customer segments, specifically industrial customers and residential customers not covered by PNG's adequacy programs.

The Panel does not consider that PNG should aim to have the same level of DSM spending as a percentage of revenues across all customer classes, as the DSM portfolio should instead be an outcome of the planning process. However PNG should ensure that its DSM portfolio provides broad opportunities for all customers to participate and the Panel notes that PNG's proposed DSM portfolio does not at present do this. Specifically, there are no DSM programs for PNG's industrial customers, and programs for residential customers are limited to programs required for adequacy.

The Panel considers that the existing suite of DSM programs is reasonable considering the start-up nature of PNG's DSM portfolio, however, PNG is expected to address the Panel's concerns regarding the lack of balance in PNG's DSM portfolio in future filings.

2.6 Length of acceptance period

PNG has asked for acceptance of a DSM funding envelope covering the period 2015-2018.⁶⁸ The Panel considered whether the length of the funding period was in the public interest.

Alignment with the LTRP

Ideally, a utility should first file a LTRP and then file a DSM expenditure schedule under section 44.2 of the UCA. This allows the utility to receive guidance regarding the overall size and approach of the DSM funding proposal prior to filing the detailed DSM expenditure schedule. PNG has been directed by the Commission to file the next

⁶⁴ Ibid., BCUC IR 2.8.2.1.

⁶⁵ Exhibit B-5, BCSEA IR 1.11.1; Exhibit B-6, BCUC IR 2.8.2.2.

⁶⁶ BCSEA Final Argument, p. 12.

⁶⁷ PNG Reply Argument, p. 4.

⁶⁸ Exhibit B-1, p. 1.

LTRP no later than April 8, 2019.⁶⁹ The Commission has also previously suggested that the next PNG DSM expenditure filing be limited to a two year period (2019 to 2020) to bring the LTRP and DSM expenditure schedule filings back into alignment.⁷⁰

Alignment with the conservation potential review

The purpose of the CPR is to develop estimates of electricity and natural gas conservation potential in BC. PNG has committed to participate in the joint BC CPR, and expects that the results of this exercise will be available in the first quarter of 2016.⁷¹

Commission discussion and determination

The Panel considers that that acceptance of PNG's DSM expenditure schedule for the period 2015-2018 is in the public interest.

From the perspective of improving alignment with PNG's next LTRP filing, the Panel considers the most effective approach is to approve this expenditure filing to cover the 2015-2018 period, with the expectation that the next filing will cover the 2019-2020 period.

The Panel also puts considerable importance on the start-up nature of PNG's DSM proposal and the need for assurance of stable DSM funding during the start-up period (i.e. arguing for a longer approval period).

That said, the Panel also notes that the results of the CPR will be available to PNG well before the end of the current funding period. Hence, the Panel encourages PNG to apply for new programs (or expansion of existing programs) during the 2015-2018 period, based on the results of the new CPR.

3.0 REVIEW OF INDIVIDUAL PROGRAMS

In addition to reviewing the DSM portfolio as a whole, the Panel also reviewed each program proposed by PNG. A summary of PNG's proposed programs is included in the table below:

⁶⁹ PNG 2014 Resource Plan & DSM, Order G-140-14 dated September 16, 2014, Appendix A, p. 17.

⁷⁰ PNG(N.E.) 2015 Resource Plan, Decision G-155-15 dated September 30, 2015, p. 23.

⁷¹ Exhibit B-5, BCSEA IR 1.6.1, 1.6.2.

Table 7: PNG Program Summary⁷²

Measure		Utility Expenditures		Gas Savings		Cost per Saving 2015-2018 (\$/GJ)	Cost-Benefit Test					
Sector	Name	2015-2018	% of total	2015-2018 (GJ)	% of total		TRC	mTRC	UCT (ratio)	UCT (\$/GJ)	PCT	RIM
Low Income	ESK	\$ 19,076	2%	4,575	5%	\$ 4.17	1.01	7.28	0.73	\$ 5.34	10.95	0.23
Low Income	ECAP	\$ 39,500	3%	4,524	5%	\$ 8.73	0.42	3.00	0.31	\$ 12.95	5.33	0.16
Rental	ESK - Rental Buildings	\$ 141,800	11%	9,360	10%	\$ 15.15	0.28	1.67	0.20	\$ 19.47	1.94	0.13
Rental	Domestic Hot Water - Rental Buildings	\$ 88,300	7%	11,520	13%	\$ 7.66	0.24	1.45	0.36	\$ 11.13	1.38	0.19
Commercial	Pre-Rinse Sprayers	\$ 19,050	2%	2,376	3%	\$ 8.02	0.57	3.46	0.41	\$ 9.39	4.51	0.20
Commercial	Boiler Replacement	\$ 124,739	10%	57,280	64%	\$ 2.18	1.07	6.31	1.01	\$ 3.98	6.61	0.28
Education	K-12	\$ 57,800	5%		0%		-	-	-	na	-	-
Education	Post Secondary	\$ 48,000	4%		0%		-	-	-	na	-	-
Outreach	Community Engagement	\$ 98,000	8%		0%		-	-	-	na	-	-
Admin	Enabling Activities	\$ 604,000	49%		0%		-	-	-	na	-	-
Portfolio total*		\$ 1,240,264	100%	89,635	100%	\$ 13.84	0.22	1.33	0.18	\$ 22.65	3.53	0.12

Portfolio Weighted TRC: 0.22

3.1 Programs designed to meet adequacy requirements

The DSM Regulation describes the adequacy requirements for DSM plan portfolios when considering utility long-term resource plans filed under section 44.1 of the UCA. The DSM Regulation states in section 3 that a public utility's plan portfolio is adequate for the purposes of section 44.1 (8) (c) of the UCA only if the plan portfolio includes all of the following:

- 1) measures specifically to assist low-income households to reduce their energy consumption;
- 2) measures specifically to improve the energy efficiency of rental accommodations; and
- 3) education program for students enrolled in schools and post-secondary institutions in the public utility's service area.⁷³

In reviewing adequacy considerations for PNG's 2014 Resource Plan & DSM application, the Commission stated that, without a specific expenditure schedule and associated evidence on the DSM programs flowing from the schedule, it was unable to make a determination with respect to whether the DSM program will meet the adequacy requirements of the DSM Regulation.⁷⁴

PNG submits that the DSM portfolio of programs proposed in its Application meet the adequacy requirements set out in section 3 of the DSM Regulation.⁷⁵ BCOAPO concurs.⁷⁶

3.1.1 Low income programs

PNG plans to provide ESK and the ECAP to low income residential ratepayers. A comparison of the cost-effectiveness of these programs compared to the same programs provided by FEI is provided in the table below:

⁷² Exhibit B-3, BCUC IR 1.14.1.

⁷³ http://www.bclaws.ca/Recon/document/ID/freeside/10_326_2008#section3.

⁷⁴ PNG 2014 Resource Plan & DSM, Order G-140-14 dated September 16, 2014, Appendix A, p. 14.

⁷⁵ PNG Final Argument, p. 3.

⁷⁶ BCOAPO Final Argument, p. 2.

Table 8: PNG's Low Income Program Comparison with FEI⁷⁷

	PNG						FEI					
	TRC	mTRC	UCT	Incentive	Free-Rider	Measure Life	TRC	mTRC	UCT	Incentive	Free-Rider	Measure Life
Low-income ESK	1.01	7.28	0.73	\$ 22.51	0%	8	6.3	n/a	5.3	\$ 13.51	27%	8
Low-income ECAP	0.42	3.00	0.31	\$ 300	0%	13	0.5	1.7	0.5	\$ 178	4%	10

Energy Savings Kits (ESK)

PNG proposes to allocate \$19,076 for 2015 to 2018 to the low income ESK program. The low income ESK program is expected to generate 4,575 GJ of energy savings at \$4.17/GJ over the life of the measure, and has a TRC of 1.01 and an mTRC of 7.28.⁷⁸

PNG submits that the ESKs are intended to reach a wide range of low income households in single family dwellings, duplexes, townhomes, mobile homes, and apartments. PNG further submits that ESKs are designed to allow customers to take some simple steps towards saving energy by installing a bundle of easy-to-install items that are delivered to their door. The bundle may include low-flow plumbing fixtures, water heater pipe wrap, caulking, draft proofing tape, outlet gaskets, and window film.⁷⁹

PNG proposes to partner with BC Hydro to implement the low income ESK program, where BC Hydro will administer the program and process the applications, and PNG will market and promote the program.⁸⁰ PNG will pay the cost of gas-related measures plus 50% of the cost of shipping and handling.⁸¹

Energy Conservation Assistance Program (ECAP)

PNG proposes to allocate \$39,500 for 2015 to 2018 to the low income ECAP program. The low income ECAP program is expected to generate 4,524 GJ of energy savings at \$8.73/GJ over the life of the measure, and has a TRC of 0.42 and an mTRC of 3.00.⁸²

PNG submits that the ECAP is targeted at low income households to help participants achieve greater energy savings. The program offers a personalized home energy evaluation, personalized energy efficiency advice, and the installation of energy saving products by a qualified contractor. PNG further submits that the bundle of measures may include low-flow plumbing fixtures, water heater pipe wrap, professional draft proofing, outlet gaskets, window film, insulation, improved ventilation, and carbon monoxide detectors.⁸³

PNG proposes to partner with BC Hydro for delivering ECAP in PNG's service territory. Under the proposed partnership, BC Hydro would administer the program on behalf of PNG, while PNG will provide additional

⁷⁷ Exhibit B-3, BCUCIR 1.21.1.

⁷⁸ Ibid., BCUCIR 1.14.1.

⁷⁹ Exhibit B-1, p. 33.

⁸⁰ Exhibit B-3, BCUCIR 1.25.4.

⁸¹ Ibid., BCUCIR 1.25.2.

⁸² Ibid., BCUCIR 1.14.1.

⁸³ Exhibit B-1, p. 34.

marketing.⁸⁴ PNG will pay the cost of the gas-related measures plus 50% of the contractor visit fees for gas participants.⁸⁵

Intervener comments

BCOAPO support the provision of ESKs and ECAP to low income residential ratepayers as an initial first step, and look forward to an expansion of DSM programs to other residential ratepayers.⁸⁶ BCSEA also support PNG's low income DSM programs.⁸⁷

Commission determination

The Commission Panel accepts PNG's low income DSM programs as meeting the low-income adequacy requirement of the DSM Regulation.

3.1.2 Rental accommodations

In its DSM Plan, PNG committed to completing a more detailed analysis of the rental market. Subsequent to the Commission's approval of the DSM Plan, PNG retained Boreas Consulting Ltd. and Energitix Management & Consulting Corporation to complete a survey of commercial customers, with a particular focus on apartment buildings, and to recommend appropriate DSM programs based on their analysis of the survey results. PNG states the report found almost all (93 percent) of the apartment building accounts surveyed are rental buildings, and so PNG submits that a DSM program targeted at owners/managers of apartment buildings would cover the rental accommodation sector efficiently.⁸⁸

Based on the results of the survey and the recommendations of the consultants' report, PNG plans to offer the energy saving kits program and the rental domestic hot program targeted at apartment buildings. PNG submits that the applicability criteria for the rental ESK program extends to all housing types, including customers living in rented single family dwellings, duplexes and row houses that receive service under a residential tariff.⁸⁹ The table below compares PNG's rental programs with similar programs offered by FEI.

Table 9: PNG's Rental Program Comparison with FEI⁹⁰

	PNG						FEI					
	TRC	mTRC	UCT	Incentive	Free-Rider	Measure Life	TRC	mTRC	UCT	Incentive	Free-Rider	Measure Life
Rental - ESK	0.28	1.67	0.20	\$150	0%	8	9.9	n/a	9.3	\$4.94 per showerhead \$1.03 per aerator	10%	10
Rental - Domestic Hot Water	0.24	1.45	0.36	\$1,000	0%	12	1.1	n/a	2.2	\$1,654	5%	12

⁸⁴ Exhibit B-3, BCUCIR 1.25.4.

⁸⁵ Ibid., BCUCIR 1.25.2.

⁸⁶ BCOAPO Final Argument, p. 2.

⁸⁷ BCSEA Final Argument, p. 6.

⁸⁸ Exhibit B-1, pp. 36-37.

⁸⁹ Ibid., p. 38; PNG Reply Argument, p. 3.

⁹⁰ Exhibit B-3, BCUCIR 1.21.1.

Rental ESK

PNG proposes to allocate \$141,800 for 2015 to 2018 to the rental ESK program. The rental ESK program is expected to generate 9,360 GJ of energy savings at \$15.15/GJ over the life of the measures, and has a TRC of 0.28 and an mTRC of 1.67.⁹¹

PNG proposes to offer ESKs to occupants of apartments that are similar to the kits offered in the low-income ESK but that exclude certain items not suitable for apartments. The kits will include a bundle of easy-to-install items designed to allow occupants or building owners to take some simple steps towards saving energy. The bundle may include lowflow plumbing fixtures, hot water pipe wrap, draft-proofing tape, outlet gaskets, and window film. PNG may promote these kits through several channels, including bill inserts, print ads, direct mail, and on-line.⁹²

With regards to the difference between PNG and FEI's Rental ESK program, PNG explains that PNG's incentive cost is based on possibly partnering with BC Hydro and/or FEI who are planning a pilot program using the same contractor who may have to travel to PNG's service territory.⁹³ PNG further submits that the primary difference in the cost-effectiveness test results for the Rental ESK program between PNG and FEI is that PNG's unit costs are significantly higher owing to the logistics of completing installations in PNG's more remote service areas. PNG expects that FEI's contractors will be primarily located in southwestern B.C. and that they will have to travel to PNG's service areas in order to complete the installations.⁹⁴

PNG proposes to partner with BC Hydro or FEI to implement the program, where BC Hydro or FEI will administer the program and process applications, and PNG will market and promote the program.⁹⁵ PNG will pay the cost of gas-related measures and shares the cost of the contractor visit fees for gas participants if the installation includes both gas and electric measures. If the installation only includes gas measures, then PNG pays the cost of the contractor visit.⁹⁶

Rental Domestic Hot Water Program

PNG proposes to allocate \$88,300 for 2015 to 2018 to the rental domestic hot water program. The rental domestic hot water program implemented from 2015 to 2018 is expected to generate 11,520 GJ of energy savings at \$7.66/GJ over the life of the measure, and has a TRC of 0.24 and an mTRC of 1.45.⁹⁷

PNG states this program provides rebates for the installation of high-efficiency commercial water heaters with thermal efficiencies greater than or equal to 84 percent. Condensing storage and volume type water heaters, near condensing storage and volume type water heaters, and condensing on-demand water heaters would be eligible for incentives under this program. PNG submits it may promote this program through several channels, including bill inserts, print ads, direct mail, on-line, and industry partners.⁹⁸

⁹¹ Ibid., BCUCIR 1.14.1.

⁹² Exhibit B-1, p. 38.

⁹³ Exhibit B-3, BCUCIR 1.21.1.1.

⁹⁴ Exhibit B-6, BCUCIR 2.16.3.

⁹⁵ Exhibit B-3, BCUCIR 1.25.4.

⁹⁶ Ibid., BCUCIR 1.25.2.

⁹⁷ Ibid., BCUCIR 1.14.1.

⁹⁸ Exhibit B-1, p. 40.

With regards to the difference between PNG and FEI's Rental Domestic Hot Water Heater program, PNG explains that PNG's incentives are lower than FEI as the apartment buildings in PNG service territory are generally smaller than those in FEI service territory and PNG expects that their water heating equipment will be smaller.⁹⁹

FEI currently offers a commercial water heating program to its commercial customers. PNG states it has initiated discussion with FEI in regard to the offering of this program in PNG's service territory and may partner with FEI in offering an efficient water heater program to the apartment segment.¹⁰⁰ PNG proposes to partner with FEI to implement the program, where FEI will administer the program and process applications, and PNG will market and promote the program.¹⁰¹ PNG will pay the full cost of the measure plus cost of each application processed by FEI.¹⁰²

Intervener comments

BCSEA support PNG's focus on apartment buildings for the rental accommodations program.¹⁰³

Commission determination

The Panel accepts PNG's proposed rental program as meeting the rental program adequacy requirement under the DSM Regulation. The Panel encourages PNG to continue to explore DSM programs that could be applicable and effective for all rental customers.

3.1.3 Conservation, education and outreach (CEO)

The adequacy requirement prescribed under section 3 of the DSM Regulation include "an education program for students enrolled in schools in the public utility's service area," and "an education program for students enrolled in post-secondary institutions in the public utility's service area."

General CEO

PNG proposes to allocate \$98,000 between 2016 and 2018 to the general CEO program.¹⁰⁴ PNG submits that this program will provide information to customers and the general public on energy efficiency with an emphasis on natural gas conservation by engaging customers on-line and through other appropriate means. Activities may include print and on-line communications and engagement campaigns, as well as educational seminars and PNG participation at home and trade shows and other community events. The budget includes onetime set up costs associated with developing material, email databases, and websites.¹⁰⁵

PNG states that the findings from PNG's residential end-use survey indicate a low level of knowledge of energy efficiency measures by low income and rental respondents and that these households are generally

⁹⁹ Exhibit B-3, BCUCIR 1.21.1.1.

¹⁰⁰ Exhibit B-1, p. 39.

¹⁰¹ Exhibit B-3, BCUCIR 1.25.4.

¹⁰² Ibid., BCUCIR 1.25.2.

¹⁰³ BCSEA Final Argument, p. 6.

¹⁰⁴ Exhibit B-1, p. 51.

¹⁰⁵ Exhibit B-1, pp. 47, 48; Exhibit B-3, BCUCIR 1.20.4.

characterized by low-efficiency infrastructure, hence PNG sees value in conservation outreach targeted at these segments.¹⁰⁶

PNG may seek opportunities for partnerships in order to achieve cost efficiencies in these activities. PNG has explored partnership opportunities with FEI, where FEI may license its content to PNG, which includes ‘how to’ videos, e-newsletters, and online content.¹⁰⁷

Kindergarten to Grade 12 (K-12)

PNG proposes to allocate \$30,600 in 2016, \$13,600 in 2017, and \$13,600 in 2018 to the K-12 CEO program.¹⁰⁸ PNG states that only six of the 60 school districts in BC are situated in PNG’s service areas, limiting the market for an education program that can be incorporated in the school curriculum. PNG submits that, based on the experience of other utilities, incorporating an energy efficiency education program into the school curriculum can take several years, making it very difficult and costly for PNG to deliver an education program in the short term.¹⁰⁹

PNG states it has explored partnership opportunities with FEI, where FEI would train and teach PNG’s staff to deliver the program in PNG’s service territories. Under this arrangement, FEI would also provide rebranded activity books, PowerPoint presentations and bookmarks to PNG. PNG submits partnership with FEI would allow PNG to quickly and cost-effectively deliver its energy efficiency and conservation message to K-12 students in schools in PNG’s service areas.¹¹⁰

Post-secondary

PNG proposes to allocate \$19,000 in 2016, \$12,000 in 2017, and \$17,000 in 2018 to the post-secondary CEO program.¹¹¹ PNG states there are two post-secondary institutions in PNG’s service territories: the Northwest Community College in the PNG-West service territory, and the Northern Lights College in PNG(N.E.)’s service territory.¹¹² The Northern Lights College has recently offered an Applied Certificate in Clean Energy program.¹¹³

PNG proposes to pursue partnerships with local and other post-secondary institutions that have existing energy efficiency related programs. These partnerships may include funding support for post-secondary programs, which may include on-line programs and on-campus education campaigns, delivering on campus workshops and information sessions, webinars, on campus educational posters, and energy efficiency website.¹¹⁴

Partnerships for on-line programs may include partnering with local post-secondary institutions and other post-secondary institutions in the province that offer education programs related to energy efficiency, and providing

¹⁰⁶ Exhibit B-1, p. 48.

¹⁰⁷ Exhibit B-1, p. 48.

¹⁰⁸ *Ibid.*, p. 51.

¹⁰⁹ *Ibid.*, pp. 48-49.

¹¹⁰ *Ibid.*, p. 49.

¹¹¹ *Ibid.*, p. 51.

¹¹² *Ibid.*, pp. 49-50.

¹¹³ *Ibid.*, p. 50.

¹¹⁴ *Ibid.*

funding for development of on-line material that can be offered through local post-secondary institutions. PNG submits that this will allow PNG to take advantage of existing infrastructure and programs to quickly and cost-effectively deliver energy efficiency related educational programs to post-secondary students in their service territories.¹¹⁵

Commission determination

The Panel accepts the CEO programs proposed PNG as meeting the educational adequacy requirement of the DSM Regulation.

3.2 Additional programs

PNG has included two commercial programs not previously identified in the DSM Plan filed with the PNG-West 2014 Resource Plan and DSM Resubmission. PNG submits the TRC test results of the pre-rinse sprayer and boiler replacement programs are higher than the average of those for the low income and rental programs and serve to increase the overall cost-effectiveness of the portfolio.¹¹⁶ PNG further submits that the two proposed commercial programs may be considered “low hanging fruit” as these programs are relatively easy to implement and require relatively little resources from the trade allies.¹¹⁷

The table below provides a comparison of the cost-effectiveness of these programs with similar programs provided by FEI.

Table 10: PNG’s Commercial Program Comparison with FEI¹¹⁸

	PNG						FEI					
	TRC	mTRC	UCT	Incentive	Free-Rider	Measure Life	TRC	mTRC	UCT	Incentive	Free-Rider	Measure Life
Commercial – Pre-Rinse Sprayer	0.57	3.46	0.41	\$150	12%	5	1.0	n/a	1.5	\$1,918	18%	9
Commercial – Boiler Replacement	1.07	6.31	1.01	\$19,385	0%	20	2.0	n/a	1.9	\$13,055	18%	20

3.2.1 Commercial Pre-rinse Sprayer Program

PNG proposes to allocate \$19,050 for 2015 to 2018 to the pre-rinse sprayer commercial program. The pre-rinse sprayer program is expected to generate 2,376 GJ of energy savings at \$8.02/GJ, and has a TRC of 0.57 and an mTRC of 3.46.¹¹⁹

PNG states that a pre-rinse spray valve program targeted at the food services sector provides a low risk opportunity for helping a segment of its small commercial customers achieve cost-effective energy savings. This program offers the direct installation of low flow pre-rinse spray valves at no charge to program participants in order to reduce the demand for hot water from gas fired water heaters.¹²⁰

¹¹⁵ Ibid.

¹¹⁶ PNG Final Argument, p. 7.

¹¹⁷ Exhibit B-6, BCUCIR 2.9.6.

¹¹⁸ Exhibit B-3, BCUCIR 1.21.1.

¹¹⁹ Ibid., BCUCIR 1.14.1.

¹²⁰ Exhibit B-1, p. 44.

Although the TRC of the commercial pre-rinse spray program is below one, PNG notes that the pre-rinse sprayer program exhibits a TRC and UCT ratio that is higher than those of the programs required under the Adequacy provisions of the DSM Regulation. For this reason, PNG has included the pre-rinse sprayer program in order to increase the cost-effectiveness of the DSM portfolio as a whole.¹²¹

FEI currently offers low flow pre-rinse valves as part of its food services program. PNG has initiated discussions with FEI about offering this program in its service territory and may partner with FEI or outsource the installation of pre-rinse spray valves to third party service providers.¹²² PNG proposes to partner with FEI to implement the program, where FEI will administer the program and process applications, and PNG will market and promote the program.¹²³ Under the proposed partnership, PNG will pay the full cost of the measure plus the cost of each application processed by FEI.¹²⁴

BCSEA applaud the addition of programs aimed at commercial customers, i.e., the pre-rinse sprayer and boiler replacement programs, to the portfolio.¹²⁵

Commission determination

The Panel accepts the pre-rinse sprayer program as an initial step in expanding beyond programs required under the adequacy requirement of the DSM Regulation. The Panel notes that the pre-rinse sprayer program fails both the TRC and UCT, however spending on this program amounts to only 1.5 percent of the total expenditure and the Panel considers that this program could provide insight for future DSM portfolio improvements.

3.2.2 Efficient boiler pilot project

The Commission directed PNG in its decision on the PNG 2014 Resource Plan & DSM application (Order G-140-14) to include the results of its research and analysis of the applicability of an efficient boiler program for multi-unit residential buildings in the PNG-West and PNG(N.E.) service territories in the next DSM Application.¹²⁶

In its Application, PNG proposes to allocate \$124,739 for 2015 to 2018 to a commercial boiler replacement pilot program. The commercial boiler replacement pilot program is expected to generate 57,280 GJ of energy savings at \$2.18/GJ, and has a TRC of 1.07 and an mTRC of 6.31.¹²⁷

PNG submits that the average gas consumption of apartment buildings in PNG's service territory is considerably lower than the average gas consumption of participants in FEI's boiler program. PNG states that both the small number of rental buildings and the fact that almost 80 percent of PNG's apartment building customers use less than one half the gas used by the average participant in FEI's efficient boiler program, preclude any cost-

¹²¹ Exhibit B-3 BCUCIR 1.17.1.1.

¹²² Exhibit B-1, p. 44.

¹²³ Exhibit B-3, BCUCIR 1.25.4.

¹²⁴ Ibid., BCUCIR 1.25.2.

¹²⁵ BCSEA Final Argument, p. 3.

¹²⁶ PNG 2014 Resource Plan & DSM, Order G-140-14 dated September 16, 2014, Appendix A, p. 14.

¹²⁷ Exhibit B-3, BCUCIR 1.14.1.

effective program targeted solely at this market.¹²⁸ As a result, PNG decided to expand the scope of the program and offer an efficient commercial boiler pilot program for all its commercial customers.¹²⁹

PNG states that while the program will be available to all commercial customers, PNG expects that only its larger commercial customers will benefit from the program. This program provides rebates for the installation of high efficiency commercial boilers.¹³⁰ ENERGY STAR certified boilers sized up to 299 MBH and eligible mid-efficiency and condensing boilers sized 300 MBH and higher would be eligible for incentives under this program.¹³¹ PNG expects few participants in the pilot program because of the small size of the market and average life of the existing boilers in the market.¹³²

PNG submits that its incentives are higher than FEI's because the average gas use for PNG's large commercial customers is higher than the average gas use of FEI customers eligible for FEI's boiler program.¹³³

PNG proposes to partner with FEI to implement the program, where FEI will administer the program and process applications, and PNG will market and promote the program.¹³⁴ PNG will pay the full cost of the measure plus the cost of each application processed by FEI.¹³⁵

BCSEA applaud the addition of programs aimed at commercial customers, i.e., the pre-rinse sprayer and boiler replacement programs, to the portfolio.¹³⁶ BCSEA further submit they would tend to prefer a permanent program, however they accept PNG's explanation of the decision to propose a pilot program.¹³⁷

Commission determination

The Panel accepts the commercial boiler replacement pilot program and commends PNG for expanding its DSM portfolio to include a cost-effective DSM measure beyond those required for adequacy.

3.3 Enabling activities

Enabling activities are initiatives that support delivery and development of PNG's DSM programs. Enabling activities do not have any direct energy savings associated with them and therefore cannot be evaluated by the DSM cost-effectiveness tests, however, these costs are included at the portfolio level and evaluated as part of the overall DSM program mix.¹³⁸

PNG proposes to allocate \$604,000 to enabling activities. The budget breakdown by year for each cost item is presented in Table 11 below:

¹²⁸ Exhibit B-1, p. 41.

¹²⁹ Exhibit B-5, BCSEA IR 1.4.7.

¹³⁰ Exhibit B-1, p. 45.

¹³¹ *ibid.*, p. 46.

¹³² Exhibit B-5, BCSEA IR 1.4.4.

¹³³ Exhibit B-3, BCUCIR 1.21.1.1.

¹³⁴ *ibid.*, BCUCIR 1.25.4.

¹³⁵ *ibid.*, BCUCIR 1.25.2.

¹³⁶ BCSEA Final Argument, p. 3.

¹³⁷ *ibid.*, p. 7.

¹³⁸ Exhibit B-1, p. 51.

Table 11: Enabling Activities Budget¹³⁹

	2015	2016	2017	2018	Total
DSM Program Manager	\$50,000	\$150,000	\$150,000	\$150,000	\$500,000
Cost Benefit Model	\$17,000	-	-	-	\$17,000
Evaluation, Measurement & Verification	-	-	\$43,500	\$43,500	\$87,000
TOTAL	\$67,000	\$150,000	\$193,500	\$193,500	\$604,000

PNG proposes to allocate \$500,000 over the 2015 to 2018 period (40% of its total DSM budget) to a DSM program manager position. PNG expects the work load to vary somewhat from year to year, but would average one full-time equivalent (FTE) over the 3 years.¹⁴⁰

Commission determination

The Panel accepts the proposed costs for the DSM cost benefit model and EM&V costs as reasonable.

The Panel accepts the proposed costs for the DSM Program Manager. The Panel considers that request for one FTE at a cost of \$150,000/year appears excessive if viewed narrowly in the context of the small size of the current DSM portfolio. However, the Panel accepts these costs under the expectation that a key focus of this position will be to identify additional cost-effective DSM programs and so improve the costs-effectiveness and balance of the DSM portfolio.

To aid transparency, the Panel also directs PNG to better attempt to allocate its DSM overhead costs (including but not limited to the DSM program manager) to individual programs, and to include in its next DSM expenditure schedule application a description of the cost allocation method used.

3.4 Program delivery partners

The Commission stated in the Reasons appended to Order G-140-14 that “PNG is encouraged to pursue partnerships with BC Hydro and FEI to design and deliver programs and reduce costs.”¹⁴¹

PNG states it has obtained proposals from BC Hydro and FEI for administering some of the proposed DSM programs. Subject to the Commission approving PNG’s funding Application, PNG will finalize agreements with BC Hydro and FEI for administering the DSM programs for PNG.¹⁴²

In addition to FEI and BC Hydro, PNG considered Ecofitt Corporation for administering and delivering the low-income program. PNG determined that partnering with BC Hydro on the low-income program is the most economical option. PNG has also had some preliminary discussions with BCSEA with respect to the provision of

¹³⁹ Exhibit B-3, BCUCIR 1.24.3.

¹⁴⁰ Ibid., BCUCIR 1.24.2.

¹⁴¹ Order G-140-14, Appendix A, p. 13.

¹⁴² Exhibit B-5, BCESA IR 1.1.3.

some CEO programs. PNG determined that partnering with FEI was the best option since FEI has content that is directly related to gas DSM programs.¹⁴³

PNG submits that its partnerships with BC Hydro and FEI take advantage of economies of scale that PNG is otherwise unable to achieve.¹⁴⁴

BCOAPO strongly support PNG working with BC Hydro and FEI to deliver DSM programs. BC Hydro and FEI have established and recognizable DSM programs, and partnerships make sense.¹⁴⁵ BCSEA's view is that the Commission should be satisfied with PNG's pursuit of DSM outsourcing opportunities to date.¹⁴⁶

Commission discussion

The Panel supports PNG's efforts to pursue partnerships with BC Hydro and FEI to design and deliver programs and reduce costs.

4.0 OTHER ISSUES AND NEXT STEPS

4.1 Cost allocation

PNG proposes to (i) allocate DSM expenditures to each region on the basis of market size, and (ii) allocate regional DSM costs to all customer classes on the basis of their relative contribution to the gross margin in each division.¹⁴⁷ These two issues will be dealt with separately.

4.1.1 Allocation of DSM costs between companies

Since the Application is a joint application pertaining to both PNG-West and PNG(N.E.), a determination must be made regarding the allocation of both forecast and actual DSM costs between the two entities.

In its 2014 Decision accepting PNG's DSM plan, the Commission raised concerns regarding the allocation method PNG had proposed at that time, and asked PNG in its DSM expenditure application to bring forward an analysis of various allocation options and its preferred allocation option.¹⁴⁸

Evidence and parties' positions

PNG provides the following information on alternative cost allocation methods.

¹⁴³ Exhibit B-3, BCUCIR 1.8.1.1.

¹⁴⁴ PNG Final Argument, p. 4.

¹⁴⁵ BCOAPO Final Argument, p. 2.

¹⁴⁶ BCSEA Final Argument, p. 5.

¹⁴⁷ Exhibit B-1, pp. 12-13.

¹⁴⁸ PNG 2014 Resource Plan & DSM, Order G-140-14 dated September 16, 2014, Appendix A, p 16.

Table 12: Alternative methods for allocating DSM costs between service areas¹⁴⁹

Allocation method	PNG-West	PNG (N.E.)
Gross margin	70%	30%
Shared services method	65%	35%
Market size (proposed by PNG)	52%	48%
Number of customers	50%	50%
GJ's delivered	42%	58%
Revenue	58%	42%

In recommending the Market size approach (line 3 of the above table), PNG provides the following supporting information.

Table 13: Allocation of DSM expenditure on the basis of the market size¹⁵⁰

Program	Allocation	PNG-West	FSJ/DC	TR
Low Income	Estimated number of low income customers	59.0%	38.2%	2.7%
Rental Accommodations	Estimated number of rental buildings	51.1%	48.3%	0.6%
Commercial Food Services	Estimated number of qualifying customers	46.1%	53.6%	0.3%
Commercial Boiler Replacement	Estimated number of qualifying customers	55.6%	42.6%	1.9%
Education and Outreach	Number of residential and commercial customers	50.5%	46.4%	3.1%
Enabling Activities	Allocated costs of all programs	52.3%	45.6%	2.2%
Average		52.3%	45.6%	2.2%

PNG states in its Final Argument that using market size as the allocation method “is appropriate because it is based on the anticipated distribution of costs amongst PNG’s divisions. Moreover, this allocation method results in a consistent distribution of costs, as measured by the ‘DSM spend per gigajoule,’ the ‘DSM expenditures per revenue,’ and the ‘DSM expenditure per customer’.”¹⁵¹

BCSEA state that they agree with PNG’s recommended approach.¹⁵² BCOAPO did not raise any concerns regarding PNG’s proposed cost allocation between the regions.

¹⁴⁹ Exhibit B-1, pp. 12-14; Exhibit B-6, BCUC IR 2.7.1.

¹⁵⁰ Exhibit B-1, p. 14.

¹⁵¹ PNG Final Argument, p. 9.

¹⁵² BCSEA Final Argument, p. 12.

Commission determination

The Panel approves PNG’s proposed method of allocating costs between PNG-West and PNG(N.E.) using the market size approach as set out more fully in the Application. The Panel is satisfied that PNG has adequately considered various allocation options and arrived at a method that is both straightforward and equitable.

4.1.2 Allocation of DSM costs amongst customer classes

While the Panel is required to consider the balance of DSM spending amongst customer classes as part of its review of this Application, there is no requirement for this review to also determine how these costs should be recovered from customers (a matter addressed in rate applications). That said, parties to this Application have indicated a desire to have this Panel provide its views on the appropriateness of PNG’s proposed allocation method, as guidance to future rate setting.¹⁵³

The following discussion sets out the Panel’s review of the evidence and our views as to the appropriateness of PNG’s proposed allocation method, but makes no determinations thereon.

Evidence and parties’ positions

PNG proposes to allocate DSM expenditures to all customer classes in each division on the basis of their relative contribution to the gross margin in each division,¹⁵⁴ and provides the following information on how their proposed allocation method would translate into percentage allocations of costs within each division.

Table 14: Relative gross margins for each customer class¹⁵⁵

	Residential	Commercial	Industrial	Other	Total
PNG-West	50.3%	34.7%	14.5%	0.5%	100.0%
FSJ/DC	52.3%	30.7%	17.1%	0.0%	100.0%
TR	44.9%	34.8%	20.3%	0.0%	100.0%
Total	50.7%	33.6%	15.4%	0.3%	100.0%

In support of this approach, PNG states that it: is consistent with how revenue deficiencies are allocated in PNG’s revenue applications; recognizes that benefits (such as lower carbon emissions) accrue to all customers; allocates over 80% of costs to the two classes (residential and commercial) that are the program’s direct beneficiaries; and enjoys the benefits of simplicity.¹⁵⁶

BCOAPO argue that this approach violates the principle of “cost causality,” arguing that program costs should be allocated to customer classes according to the DSM spending on each. BCOAPO note that whereas commercial customers would benefit most from the DSM plan spending and benefits, the bulk of costs would be allocated to residential customers. They further argue that it is in the public interest to have all customers pay for the costs of low income DSM programming by way of a fixed percentage of revenues from each class.¹⁵⁷

¹⁵³ Exhibit B-3 BCUC IR 1.11.4; BCOAPO Final Argument, p. 3.

¹⁵⁴ Exhibit B-1, p. 14.

¹⁵⁵ Exhibit B-6, BCUC IR 2.9.2.

¹⁵⁶ PNG Final Argument, p. 9.

¹⁵⁷ BCOAPO Final Argument, pp. 3-4.

BCSEA agree with PNG's proposed approach, noting in particular that it has the benefit of simplicity and that the overall portfolio is too small to warrant a more fine-tuned approach.¹⁵⁸

Commission discussion

The Panel considers PNG's approach to be reasonable, essentially for the same reasons as argued by PNG.

With regard to BCOAPO's arguments that the approach is at odds with the principle of cost causality, we note that the non-program costs (i.e. enabling costs, and conservation education and outreach costs) represent more than 50 percent of the total DSM budget. Imposing a causality approach would (amongst other things) require decisions on how those costs would be allocated, and it is not clear that the end result would actually conform to causal relationships.

With regard to BCOAPO's suggestion that low-income program costs should be allocated to all classes on a fixed percentage basis (based on revenues), we note that PNG's proposed approach does in fact result in a similar outcome.

By way of final comment, we emphasize that:

- This discussion is not determinative and not intended to provide specific direction to any future rate application; and
- As PNG gains experience with DSM programming and further develops and expands the scope of its programs, the arguments that support a simplified approach in this instance may well not apply to future situations.

4.2 Funding transfer rules

PNG requests that the Commission grant approval allowing PNG flexibility in the reallocation of expenditures amongst DSM programs and between program years, subject to the total amount spent by PNG on DSM activities between the date of approval and 2018 not exceeding the total amount of \$1.240 million sought in this Application, unless otherwise approved by the Commission.¹⁵⁹

Evidence and parties' positions

PNG submits that this approach is consistent with FEI's DSM program, as approved under Order G-138-14. In largely mirroring the transferability parameters of that program, PNG proposes that it would be governed by the following rules:

- Funding transfers under 25 percent from one approved Program Area to another approved Program Area would be permitted without prior approval of the Commission.
- In cases where a proposed transfer out of an approved Program Area is greater than 25 percent of that approved Program Area, prior Commission approval would be required.

¹⁵⁸ BCSEA Final Argument, p. 12.

¹⁵⁹ Exhibit B-1, pp. 1-2.

- In cases where a proposed transfer into an approved Program Area is greater than 25 percent of that approved Program Area, prior Commission approval would be required.
- In the event that PNG spends more or less than the full approved amount for a particular year, the difference can be allocated to the DSM program spending in the following year, subject to the total expenditures by PNG on DSM activities between the date of approval and 2018 not exceeding the total amount sought in this Application, unless otherwise approved by the Commission.¹⁶⁰

BCOAPO express support for this framework,¹⁶¹ and BCSEA make no comment.

Commission determination

The Panel approves PNG's proposed framework for reallocating expenditures amongst DSM programs and between program years as set out in the Application, on the basis that we find the approach to be reasonable and appropriate for managing the portfolio.

4.3 Accounting treatment and utility incentives

PNG has asked for approval to record all DSM expenditures authorised in this Application in a rate base regulatory asset deferral account, for which the amortization period would be set at 10 years.¹⁶²

Section 60(i)(b) of the UCA states that, in setting a rate, the Commission must have due regard to setting a rate that:

- Provides the utility with a fair and reasonable return on any expenditures made by it to reduce energy demands; and
- Encourages public utilities to increase efficiency, reduce costs and enhance performance.

Order G-55-95 (Amendments to the uniform system of accounts for gas and electric utilities) states on pages 1 to 2 of Appendix A:

- Significant or material, non-recurring DSM costs shall be deferred and amortized using a rapid write-off (2 to 3 years) for the purpose of smoothing rates; and
- Direct program costs, administration costs and overhead DSM costs shall be (i) expensed if they are research related costs, and (ii) deferred over 3 to 10 years if they are development related costs. A utility can apply for a write-off longer than 10 years.

In Order G-140-14, the Commission stated in Directive No. 3: "The Commission accepts that PNG and PNG(N.E.) may defer their DSM expenditures and amortize them over a multi-year period; however the Commission defers any determination on the amortization period to the Commission Panel that considers PNG's DSM Application and Expenditure Schedule."

¹⁶⁰ Exhibit B-1, p. 11.

¹⁶¹ BCOAPO Final Argument, p. 6.

¹⁶² Exhibit B-1, p. 2.

Evidence and parties' positions

DSM expenditures that PNG proposes to capitalize are summarized by category in the following table.

Table 15: DSM Funding Request by Program Area¹⁶³

Program	2015	2016	2017	2018
Low Income	-	\$24,468	\$17,054	\$17,054
Rental Accommodation	-	\$65,100	\$71,700	\$93,300
Commercial Food Services	-	\$5,350	\$6,100	\$7,600
Commercial Boiler Replacement	-	\$41,685	\$31,685	\$51,370
Conservation Education & Outreach	-	\$113,600	\$42,600	\$47,600
Enabling Activities	\$67,000	\$150,000	\$193,500	\$193,500
Total	\$67,000	\$400,203	\$362,639	\$410,424

Based on PNG's recommended allocation of DSM costs across divisions and regions, PNG provides estimates of the annual burner tip impact over the next five years for various amortization periods.

Table 16: Burner tip rate impact for various amortization periods¹⁶⁴

Burner tip rate impact for various amortization periods (\$ per GJ)					
Expensed	2016	2017	2018	2019	2020
PNG-West	\$ 0.058	\$ 0.053	\$ 0.060	\$ 0.060	\$ 0.060
FSJ/DC	\$ 0.039	\$ 0.036	\$ 0.040	\$ 0.040	\$ 0.040
TR	\$ 0.032	\$ 0.022	\$ 0.024	\$ 0.024	\$ 0.024
3-Year	2016	2017	2018	2019	2020
PNG-West	\$ 0.008	\$ 0.038	\$ 0.064	\$ 0.087	\$ 0.088
FSJ/DC	\$ 0.005	\$ 0.025	\$ 0.042	\$ 0.058	\$ 0.058
TR	\$ 0.004	\$ 0.020	\$ 0.031	\$ 0.039	\$ 0.036
5-Year	2016	2017	2018	2019	2020
PNG-West	\$ 0.006	\$ 0.026	\$ 0.044	\$ 0.063	\$ 0.080
FSJ/DC	\$ 0.004	\$ 0.017	\$ 0.028	\$ 0.041	\$ 0.052
TR	\$ 0.003	\$ 0.014	\$ 0.021	\$ 0.028	\$ 0.035
10-Year	2016	2017	2018	2019	2020
PNG-West	\$ 0.005	\$ 0.017	\$ 0.029	\$ 0.041	\$ 0.053
FSJ/DC	\$ 0.003	\$ 0.011	\$ 0.018	\$ 0.026	\$ 0.033
TR	\$ 0.002	\$ 0.009	\$ 0.013	\$ 0.018	\$ 0.023

¹⁶³ Exhibit B-1, p. 10.

¹⁶⁴ Exhibit B-3, BCUCIR 1.2.3.1.

Comparing the rate impacts above with data provided by PNG on the last five years rate changes indicates that general burner tip rate increases have been much higher than the estimated rate impacts of DSM. For example, in April 2014 FSJ/DC customers experienced a \$2.211/GJ rate increase (56 times greater than the rate increase if DSM costs were expensed in 2016).¹⁶⁵

PNG makes the following points in support of its suggested approach:

- In the Commission's Decision accepting PNG's 2014 Resource Plan, it accepted that PNG may defer their DSM expenditures;
- Deferral account treatment is consistent with the guidelines established by Order G-55-95 and with the UCA;
- A 10 year amortization period is consistent with the cost-weighted average life of the DSM portfolio (9.5 years); and
- The proposed amortization period is also consistent with FEI's treatment of DSM program costs by that was accepted by the Commission in Order G-138-14.¹⁶⁶

BCOAPO support the amortization of DSM program costs capitalized and subsequently amortized over a 10 year period, but argue that administrative costs should be expensed in the year incurred rather than capitalized.¹⁶⁷ BCSEA concur with the accounting treatment proposed by PNG on the basis that a 10 year amortization matches the duration of expected benefits.¹⁶⁸

Commission determination

The Panel determines that all DSM expenditures approved in this Decision shall be captured in a rate base regulatory asset deferral account, to be amortized over a five year period. Our decision to support the use of deferral account treatment rests predominantly on the following factors:

- The prior Commission decision on PNG-West 2014 Resource Plan and DSM Resubmission indicated that this treatment seemed in order;
- The treatment is in accordance with existing legislation and guidelines;
- It generally conforms with treatment afforded other British Columbia utilities for their DSM programs;
- BCOAPO's suggestion that administrative costs be expensed is rejected on the basis that the suggestion runs counter to existing guidelines; and
- The consideration of other models is best left to a separate proceeding (discussed more fully later in this subsection).

¹⁶⁵ Ibid., BCUCIR 1.2.3.1, IR 1.2.3.2.

¹⁶⁶ PNG Final Argument, pp. 10-11.

¹⁶⁷ BCOAPO Final Argument, p. 4.

¹⁶⁸ BCSEA Final Argument, p. 11.

The choice of a five year amortization period rested on a combination of factors meriting consideration :

- The Panel recognizes the principle of matching the amortization period with the expected life of benefits. To that point, a ten year amortization is, on the face of it, consistent with the cost-weighted average life of the DSM portfolio at 9.5 years.
- That said, the amortization period set in this Decision will apply to the entire DSM expenditure envelope, and not just the specific conservation programs. The Panel notes that almost 50% of total DSM expenditures relate to enabling activities, and Conservation Education and Outreach (which also does not have direct benefits attached to it) comprises another 20 percent of total expenditures. Thus, notwithstanding that individual programs have a cost-weighted average life of 9.5 years, this is significantly offset by the relatively limited percentage of total expenditures that these programs (in aggregate) represent.
- With regard to the question of rate smoothing, the Panel notes that the portfolio in its entirety in this initial phase of PNG building a fully robust DSM program is sufficiently small that choice of any one or another amortization period will not have a material impact on rates.
- Finally, while this Panel is not prepared to prescribe an alternative to deferral account treatment as a means for compensating/incenting PNG for their DSM expenditures, we take into account that long amortization periods present additional transition challenges if there is a determination sometime in the future to migrate away from deferral accounts to some other method.

Balancing the above, the Panel determines that a five year amortization (as opposed to the 10 year period asked for in the Application) is appropriate.

As noted, the Panel has chosen to not address the question of whether rate base deferral treatment is the best option for compensating/incenting utilities to pursue DSM activities. We do, however, share the views expressed by the Commission in the FortisBC Energy Utilities 2012-13 Revenue Requirements and Rates Decision, which states:

[T]he issue is how to get the most value for the dollars being expended on DSM programs. Within the regulatory world there are a variety of methodologies for handling DSM and related expenditures. To this point this jurisdiction has not undertaken a comprehensive review of what is in place elsewhere and the effectiveness of other models. Therefore, it is not known whether there are alternative models which could potentially result in British Columbia ratepayers getting more value for the dollars expended and yet still incent the utility to pursue DSM while being treated fairly as prescribed by the UCA. ... With increased emphasis on DSM programs and increasing levels of spending, the answers to these questions become increasingly important. The Commission Panel believes that it is appropriate that these questions be explored in a separate review process.¹⁶⁹

¹⁶⁹ FortisBC Energy Utilities 2012-2013 Revenue Requirement and Rates Application, Decision dated April 12, 2012, pp. 185-186.

We believe that there is a compelling case for addressing these issues, but agree with both PNG and interveners that a separate process, involving all affected utilities and interveners in British Columbia, is a more appropriate avenue for addressing this matter.

4.4 Evaluation, measurement and verification

PNG is proposing to undertake evaluation, measurement and verification (EM&V) activities using the same resource used to manage evaluation studies and program delivery, stating that this approach is appropriate in order to efficiently use its limited DSM budget.¹⁷⁰

Evidence and parties' positions

PNG indicates that it may use a combination of internal and external resources to conduct the full range of evaluation studies, "based on the availability of qualified resources, the costs, the timing, the possibility of conducting a joint evaluation with program partners, and the appropriate evaluation methodology to be deployed."¹⁷¹ It further elaborates on its proposed approach by stating that it "may include use of partner resources, evaluation consultants, and a stakeholder advisory group, combined with PNG's EM&V Framework which includes guidelines for documentation and transparency."¹⁷²

PNG considered an independent EM&V approach, and provides the following comments on why it favours the approach it has put forward in this Application:

- While PNG has not conducted a detailed cost comparison between using the same resource to manage EM&V versus using a third party, it expects that adopting an independent approach would require additional resources.¹⁷³
- PNG submits it has established a set of objectives and principles for its EM&V activities that will minimize potential drawbacks of using the same resource to manage both evaluation studies and program delivery.¹⁷⁴
- PNG plans to partner with BC Hydro and FEI to deliver programs developed by these organizations, creating separation between the program designer and evaluators.¹⁷⁵ PNG anticipates that since BC Hydro and FEI will be conducting EM&V studies of their programs, PNG may be able to partner with BC Hydro and FEI in conducting EM&V studies of joint programs.¹⁷⁶ Furthermore, both organizations use some consultants to perform evaluation work, which also creates a degree of separation.¹⁷⁷

¹⁷⁰ PNG Final Argument, p. 7.

¹⁷¹ Exhibit B-5, BCSEA IR 1.7.1.

¹⁷² Ibid., BCSEA IR 1.7.3.

¹⁷³ Exhibit B-3, BCUCIR 1.30.3.

¹⁷⁴ PNG Final Argument, p. 7.

¹⁷⁵ Exhibit B-3, BCUCIR 1.30.1.1.

¹⁷⁶ Exhibit B-6, BCUCIR 2.22.1.

¹⁷⁷ Ibid., BCUCIR 2.22.3.

- PNG submits that its approach to conducting EM&V, which is based on guidelines for documentation and transparency, provides a level of independence, allows for ongoing process improvements, and is of a degree of complexity appropriate to the scope and scale of PNG's DSM program.¹⁷⁸

BCOAPO do not support PNG's approach, suggesting that the evaluation should be done by an independent third party to maximize the effectiveness of the evaluation, even if this might cost a bit more than PNG's suggested approach.¹⁷⁹

BCSEA accept that PNG has at least actively considered an independent EM&V approach, and consider the proposed approach to be adequate for this "first step" DSM portfolio. BCSEA are of the view that PNG should revisit independent EM&V for the next DSM expenditure schedule.¹⁸⁰

Commission determination

The Panel accepts PNG's proposed EM&V approach as being adequate for the purposes of this DSM portfolio.

We note that PNG has left itself considerable latitude in its EM&V plan, suggesting that specific decisions on resources and methods for each specific evaluation will be made as the overall DSM program unfolds. That said we accept that the EM&V objectives and principles provide a useful foundation for making those decisions.

Echoing a recurring theme of this Decision, we accept that PNG has put forward a reasonable EM&V approach for what we consider to be a nascent DSM program. As PNG gains experience with DSM and expands the scope of its programming, we look forward to seeing a parallel evolution and development of its EM&V planning.

4.5 Reporting

PNG states that it is agreeable to filing annual DSM reports to the Commission, however, if directed to do so requests a two-year exemption to accommodate the start-up period of its DSM program.¹⁸¹

PNG considers that annual DSM reports filed in the two years following acceptance could reasonably include: (i) a comparison of the DSM accepted budget to amounts spent; and (ii) a description of key milestones achieved in the delivery of programs, without being overly burdensome to the utility. PNG intends to track its program performance and include the completion of the DSM report in the roles and responsibilities of the DSM program manager.¹⁸²

BCOAPO argue that it is "appropriate for PNG to provide annual DSM reports in order to allow the Commission and all stakeholders to track PNG's actual spending v. approved spending on an annual basis from the outset."¹⁸³

In reply, PNG submits that: it is not practicable to deliver meaningful reports in the first year following approval of the Application as the first year will be largely taken up with setting up the program and only beginning to

¹⁷⁸ PNG Final Argument, p. 8.

¹⁷⁹ BCOAPO Final Argument, p. 6.

¹⁸⁰ BCSEA Final Argument, p. 10.

¹⁸¹ Exhibit B-3, BCUCIR 1.33.4.1.

¹⁸² Exhibit B-6, BCUCIR 2.24.3.

¹⁸³ BCOAPO Final Argument, p. 5.

implement measures for qualified customers; and that to effectively measure the performance of these programs, PNG would require data from a suitably large sample of installed measures over at least a 12-month period.¹⁸⁴

Commission determination

The Panel instructs PNG to file annual DSM reports covering each year of the 2015-2018 expenditure schedule period (with the exception of 2015) by no later than April 30 of the immediately following year. Each annual report would provide at a minimum:

- A comparison of the DSM accepted budget to amounts spent (for each year and period to date);
- A description of key milestones achieved in the delivery of programs;
- An update on PNG's progress towards its commitment to apply for funding of new programs or expansions of existing programs during the 2015-2018 period based on the results of the new CPR;
- A summary of the role, responsibility and key achievements of the DSM manager position; and
- EM&V results of PNG's DSM programs as they become available (including TRC/mTRC and UCT results).

The Panel considers annual reporting to be an important component of the DSM program. We agree with PNG that given the timing of this Decision, there is little if any merit in reporting on 2015 progress, and hence the Panel exempts PNG from its annual reporting requirement for the 2015 year (which would otherwise have required a filing by April 2016). On the other hand, while recognizing PNG's observations that by the end of 2016 there may not yet be rich data on program results/impacts, we reject the notion that this means that a report at the end of 2016 would be premature. Per the topic areas outlined above, there is still much that can be reported upon that will provide useful information on actual progress to date.

5.0 SUMMARY OF DIRECTIVES

This summary is provided for the convenience of readers. In the event of any difference between the Directions in this summary and those in the body of the decision, the wording in the decision shall prevail.

Directive	Page
The Panel accepts this DSM expenditure schedule for 2015-2018, but views it as an initial first step only.	6
The Panel has reviewed PNG's input assumptions and considers them reasonable, subject to the comments on discount rates and free ridership rate assumption below.	9
The Panel directs PNG to include in future DSM expenditure requests, estimates of free rider and spillover effects for each DSM program together with justification used to support these estimates.	9

¹⁸⁴ PNG Reply Argument, pp. 5-6.

Directive	Page
The Panel determines that PNG's DSM portfolio is not cost-effective. That said, the Panel accepts PNG's DSM portfolio for reasons stated below.	11
The Panel directs PNG in its next DSM expenditure schedule application to demonstrate how the DSM portfolio meets the cost-effectiveness requirement of section 4 of the DSM Regulation.	11
The Panel directs PNG to specifically consider emission reduction benefits in the 2016 CPR, and to include the results of this analysis in the next DSM expenditure schedule filing.	12
The Panel directs PNG to include the results of its research and analysis of the applicability of the programs currently offered by FEI in the next DSM expenditure schedule filing, and to specifically include a review of the costs and benefits of offering 'new construction' program(s) to mitigate lost DSM opportunities.	16
The Panel directs PNG to include in its next DSM Expenditure Application a review and discussion of whether opportunities exist to cost-effectively expand DSM funding to under-served customer segments, specifically industrial customers and residential customers not covered by PNG's adequacy programs.	17
The Panel considers that that acceptance of PNG's DSM expenditure schedule for the period 2015-2018 is in the public interest.	18
The Panel accepts PNG's low income DSM programs as meeting the low-income adequacy requirement of the DSM Regulation.	21
The Panel accepts PNG's proposed rental program as meeting the rental program adequacy requirement under the DSM Regulation.	23
The Panel accepts the CEO programs proposed PNG as meeting the educational adequacy requirement of the DSM Regulation.	25
The Panel accepts the pre-rinse sprayer program as an initial step in expanding beyond programs required under the adequacy requirement of the DSM Regulation.	26
The Panel accepts the commercial boiler replacement pilot program and commends PNG for expanding its DSM portfolio to include a cost-effective DSM measure beyond those required for adequacy.	27
The Panel accepts the proposed costs for the DSM cost benefit model and EM&V costs as reasonable.	28
The Panel accepts the proposed costs for the DSM Program Manager.	28
To aid transparency, the Panel also directs PNG to better attempt to allocate its DSM overhead costs (including but not limited to the DSM program manager) to individual programs, and to include in its next DSM expenditure schedule application a description of the cost allocation method used.	28
The Panel approves PNG's proposed method of allocating costs between PNG-West and PNG(N.E.) using the market size approach as set out more fully in the Application.	31
The Panel approves PNG's proposed framework for reallocating expenditures amongst	33

Directive	Page
DSM programs and between program years as set out in the Application.	
The Panel determines that all DSM expenditures approved in this Decision shall be captured in a rate base regulatory asset deferral account, to be amortized over a five year period.	35
The Panel accepts PNG's proposed EM&V approach as being adequate for the purposes of this DSM portfolio.	38
<p>The Panel instructs PNG to file annual DSM reports covering each year of the 2015-2018 expenditure schedule period (with the exception of 2015) by no later than April 30 of the immediately following year. Each annual report would provide at a minimum:</p> <ul style="list-style-type: none"> • A comparison of the DSM accepted budget to amounts spent (for each year and period to date); • A description of key milestones achieved in the delivery of programs; • An update on PNG's progress towards its commitment to apply for funding of new programs or expansions of existing programs during the 2015-2018 period based on the results of the new CPR; • A summary of the role, responsibility and key achievements of the DSM manager position; and • EM&V results of PNG's DSM programs as they become available (including TRC/mTRC and UCT results). 	39

DATED at the City of Vancouver, in the Province of British Columbia, this 16th day of December 2015.

Original signed by:

H. G. HAROWITZ
PANEL CHAIR / COMMISSIONER

Original signed by:

B. A. MAGNAN
COMMISSIONER

Original signed by:

I. F. MACPHAIL
COMMISSIONER



**BRITISH COLUMBIA
UTILITIES COMMISSION**

**ORDER
NUMBER G-203-15A**

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IN THE MATTER OF
the *Utilities Commission Act*, R.S.B.C. 1996, Chapter 473

and

Pacific Northern Gas Ltd. and Pacific Northern Gas (N.E.) Ltd.
Application for Acceptance of the 2015 Consolidated Energy Management
and Efficiency Program Funding Plan

BEFORE: H. G. Harowitz, Panel Chair/Commissioner
B. A. Magnan, Commissioner December 16, 2015
I. F. MacPhail, Commissioner

O R D E R

WHEREAS:

- A. On June 26, 2015, Pacific Northern Gas Ltd. and Pacific Northern Gas (N.E.) Ltd. (collectively, PNG) filed with the British Columbia Utilities Commission (Commission) an Application for Acceptance of the 2015 Consolidated Energy Management and Efficiency Program Funding Plan (Application), pursuant to section 44.2 of the *Utilities Commission Act* (UCA), for acceptance and approval of the following:
- v. of demand side measure (DSM) expenditures of up to \$67,000 for 2015, up to \$400,203 for 2016, up to \$362,639 for 2017, and up to \$410,424 for 2018;
 - vi. allowing PNG flexibility in the reallocation of expenditures amongst DSM programs and between program years, subject to the total amount spent by PNG on DSM activities between the date of approval and 2018 not exceeding the total amount of \$1.240 million sought in the Application, unless otherwise approved by the Commission;
 - vii. that all expenditures as set out in the Application be recorded in a rate base regulatory asset deferral account; and
 - viii. that the amortization period be set at 10 years for all expenditures charged to this regulatory asset deferral account;
- B. By Order G-115-15 dated July 7, 2015, the Commission established a written hearing process and a regulatory timetable, with two rounds of information requests to review the Application;

**BRITISH COLUMBIA
UTILITIES COMMISSION**

**ORDER
NUMBER** G-203-15A

2

- C. In this proceeding, British Columbia Pensioners' and Seniors' Organization, Active Support Against Poverty, BC Coalition of People With Disabilities, Counsel of Senior Citizens' Organizations of BC, and the Tenant Resource and Advisory Centre (BCOAPO), and BC Sustainable Energy Association and the Sierra Club of British Columbia (BCSEA), registered as interveners;
- D. During the course of the proceeding, information requests were submitted to PNG, and PNG responded to two rounds of information requests;
- E. On September 30, 2015, PNG submitted its final argument in which it sought acceptance of the detailed DSM expenditure schedules contained in the Application totalling up to \$67,000 for 2015, up to \$400,203 for 2016, up to \$362,639 for 2017, and up to \$410,424 for 2018;
- F. On October 9, 2015, BCOAPO and BCSEA submitted their final arguments;
- G. On October 19, 2015, PNG submitted its reply argument; and
- H. The Commission reviewed the Application and the evidence submitted through the review process.

NOW THEREFORE the British Columbia Utilities Commission, for reasons set out in the decision, orders as follows:

1. Pursuant to section 44.2(3) of the *Utilities Commission Act*, the Pacific Northern Gas Ltd. and Pacific Northern Gas (N.E.) Ltd. (collectively, PNG) demand side measure (DSM) expenditure schedules in the Application of up to \$67,000 for 2015, up to \$400,203 for 2016, up to \$362,639 for 2017, and up to \$410,424 for 2018, are accepted.
2. The Commission approves the flexibility requested by PNG in its Application in the reallocation of expenditures amongst DSM programs and between program years.
3. Establishment of a rate base regulatory asset deferral account to record the accepted DSM expenditures is approved.
4. PNG's request for a 10 year amortization period of the DSM rate base regulatory asset deferral account, is denied. The amortization period is set at 5 years for all DSM expenditures charged to this rate base regulatory asset deferral account.
5. PNG must comply with all additional determinations and directives as set out in the decision attached to this order.

**BRITISH COLUMBIA
UTILITIES COMMISSION**

**ORDER
NUMBER** G-203-15A

3

DATED at the City of Vancouver, In the Province of British Columbia, this 16th day of December 2015.

BY ORDER

Original signed by:

H. G. Harowitz
Panel Chair/Commissioner

IN THE MATTER OF
the *Utilities Commission Act*, RSBC 1996, Chapter 473

and

Pacific Northern Gas Ltd. and Pacific Northern Gas (N.E.) Ltd.
Application for Acceptance of the 2015 Consolidated Energy Management and
Efficiency Program Funding Plan

EXHIBIT LIST

Exhibit No.

Description

COMMISSION DOCUMENTS

- A-1 Letter dated July 7, 2015 - Appointing the Commission Panel for the review of the Pacific Northern Gas Ltd. and Pacific Northern Gas (N.E.) Ltd. Application for Acceptance of the 2015 Consolidated Energy Management and Efficiency Program Funding Plan
- A-2 Letter dated July 7, 2015 – Commission Order G-115-15 establishing a Regulatory Timetable
- A-3 Letter dated July 28, 2015 – Response to CEC’s Filing Extension Request
- A-4 Letter dated August 5, 2015 – Commission Information Request No. 1 to PNG
- A-5 Letter dated September 4, 2015 – Commission Information Request No. 2 to PNG

COMMISSION STAFF DOCUMENTS

- A2-1 Letter dated July 30, 2015 – Commission Staff filing Ontario Energy Board Draft Report of the Board: Demand Side Management Framework for Natural Gas Distributors, September 15, 2014
- A2-2 Letter dated July 30, 2015 – Commission Staff filing Ontario Energy Board Report of the Board: Demand Side Management Framework for Natural Gas Distributors, December 22, 2014
- A2-3 Letter dated July 30, 2015 – Commission Staff filing American Council for an Energy-Efficient Economy, The Best Value for America’s Energy Dollar: A National Review of the Cost of Utility Energy Efficiency Programs, March 2014
- A2-4 Letter dated August 17, 2015 - FortisBC Energy Utilities –Energy Efficiency and Conservation Program –2014 Annual Report

APPLICANT DOCUMENTS

- B-1 **PACIFIC NORTHERN GAS LTD. AND PACIFIC NORTHERN GAS (N.E.) LTD. (PNG)** Letter dated June 26, 2015 - Application for Acceptance of the 2015 Consolidated Energy Management and Efficiency Program Funding Plan
- B-2 Letter dated July 27, 2015 - PNG Submitting Comments on BCSEA Request to Vary Timetable
- B-3 Letter dated August 26, 2015 - PNG Submitting Response to BCUC IR No. 1
- B-4 Letter dated August 26, 2015 - PNG Submitting Response to BCOAPO IR No. 1
- B-5 Letter dated August 26, 2015 - PNG Submitting Response to BCSEA IR No. 1
- B-6 Letter dated September 16, 2015 - PNG Submitting Response to BCUC IR No. 2
- B-7 Letter dated September 16, 2015 - PNG Submitting Response to BCOAPO IR No. 2

INTERVENER DOCUMENTS

- C1-1 **BRITISH COLUMBIA PENSIONERS' AND SENIORS' ORGANIZATION, ACTIVE SUPPORT AGAINST POVERTY, BC COALITION OF PEOPLE WITH DISABILITIES, COUNSEL OF SENIOR CITIZENS' ORGANIZATIONS OF BC, AND THE TENANT RESOURCE AND ADVISORY CENTRE (BCOAPO)** Letter dated July 13, 2015 – Request for Intervener Status by Sarah Khan and James Wightman
- C1-2 Letter dated July 27, 2015 - BCOAPO Submitting Comments on BCSEA Request to Vary Timetable
- C1-3 Letter dated August 12, 2015 – BCOAPO Information Request No. 1 to PNG
- C1-4 Letter dated September 4, 2015 – BCOAPO Information Request No. 2 to PNG
- C2-1 **BC SUSTAINABLE ENERGY ASSOCIATION AND THE SIERRA CLUB OF BRITISH COLUMBIA (BCSEA)** Letter dated July 24, 2015 – Request for Intervener Status by William Andrews and Thomas Hackney and Filing Extension Request
- C2-2 Letter dated August 8, 2015 – BCSEA notice that it will not be filing expert evidence
- C2-3 Letter dated August 12, 2015 – BCSEA Information Request No. 1 to PNG
- C2-4 Letter dated September 4, 2015 – BCSEA notice that it will not be filing Information Request No. 2 to PNG

INTERESTED PARTY DOCUMENTS

- D-1 **FORTISBC ENERGY INC. (FEI)** Letter dated July 10, 2015 – Request for Interested Party Status by Diane Roy

LIST OF ACRONYMS

BC	British Columbia
BC Hydro	British Columbia Hydro and Power Authority
BCOAPO	British Columbia Pensioners' and Seniors' Organization, Active Support Against Poverty, BC Coalition of People With Disabilities, Counsel of Senior Citizens' Organizations of BC, and the Tenant Resource and Advisory Centre
BCSEA	BC Sustainable Energy Association and the Sierra Club of British Columbia
CEA	<i>Clean Energy Act</i>
CEO	Conservation, education and outreach
CPR	Conservation potential review
DSM	Demand Side Measure/Demand Side Management
DSM Regulation	Demand-Side Measures Regulation, BC Reg. 326/2008
ECAP	Energy conservation assistance program
EM&V	Evaluation measurement and verification
ESK	Energy saving kits
FBC	FortisBC Inc.
FEI	FortisBC Energy Inc.
FSJ/DC	Fort St. John/Dawson Creek
FTE	Full-time equivalent
GHG	Greenhouse gas
GJ	Gigajoule
IR	Information request
K-12	Kindergarten to Grade 12
LTRP	Long-term resource plan
mTRC	Modified Total Resource Cost
PNG	Pacific Northern Gas Ltd. and Pacific Northern Gas (N.E.) Ltd.
PNG(N.E.)	Pacific Northern Gas (N.E.) Ltd.
PNG DSM Expenditure Application, or Application	Application for Acceptance of the 2015 Consolidated Energy Management and Efficiency Program Funding Plan
PNG-West	Pacific Northern Gas Ltd. western division

TR	Tumbler Ridge
TRC	Total Resource Cost
UCA	<i>Utilities Commission Act</i>
UCT	Utility Cost Test
ZEEA	Zero-emission energy supply alternative