IndEco
Strategic Solutions for a Changing World™

Energy+ Inc. (Brant County) 2011-2015 LRAMVA

Energy+ Inc. (Brant County) lost revenue related to Conservation and Demand Management

2011-2015

This document was prepared for Energy+ Inc. by IndEco Strategic Consulting Inc.

For additional information about this document, please contact:

IndEco Strategic Consulting Inc.
77 Mowat Avenue, Suite 412
Toronto, ON, Canada
M6K 3E3

Tel: 416 532-4333
E-mail: **info@indeco.com**

IndEco report B6110

16 November 2016

Contents

Introduction

The Lost Revenue Adjustment Mechanism ("LRAM") was developed to remove a disincentive electricity local distribution companies ("LDCs") may have to promote conservation and demand management ("CDM") programs. CDM programs are designed to provide energy savings and peak demand reductions for the customers of LDCs, which directly impact the LDC's revenue. The LRAM allows LDCs to be compensated for lost revenue that resulted from CDM programs the LDC offered to its customers.

Starting in 2011, the Ontario Energy Board ("OEB") authorized LDCs to establish an LRAM variance account ("LRAMVA") to capture the impact of CDM programs on the revenue of LDCs. The variance in the LRAMVA is between the lost revenue due to independently verified load impacts of CDM and the lost revenue from any CDM impacts an LDC included in the LDC's load forecast.[1]

Effective January 1, 2016, Cambridge and North Dumfries Hydro Inc. ("CND") and Brant County Power Inc. ("BCP") legally amalgamated to become Energy+ Inc. The legal amalgamation was approved by the Ontario Energy Board on February 4, 2016. OEB License No. ED-2002-0574 was subsequently amended by the Ontario Energy Board to reflect the name change, as well as to incorporate the licensed service territories of the former CND and BCP under one license. In this document, "Energy+ (Brant County)" is used to describe the former Brant County Power, or the part of Energy+'s service territory that was formerly Brant County Power.

Energy+ (Brant County) contracted with the Ontario Power Authority (OPA, which has now been merged into the Independent Electricity System Operator – IESO) to offer a suite of conservation and demand management (CDM) programs to customers in a variety of rate classes for the 2011-2014 period and subsequently with the IESO for the 2015-2020 period.

Energy+ is required to use "the most recent and appropriate final CDM evaluation report from the IESO in support of its lost revenue calculation."[2] The final 2015 annual verified results report is the most recent final CDM evaluation report available from the IESO. Thus, Energy+ may claim lost revenue from CDM programs offered by Energy+ (Brant County) up to and including 2015 in Energy+'s 2017 IRM application (EB-2016-0060).

Energy+ (Brant County) submitted, but subsequently withdrew, a claim for lost revenues for programs offered between 2011 and 2014 with its 2016 IRM application (EB-2015-0054). The withdrawal allowed

[1] *Guidelines for Electricity Distributor Conservation and Demand Management*. Ontario Energy Board. April 26, 2012 (EB-2012-0003).

[2] *Filing Requirements For Electricity Distribution Rate Applications - 2016 Edition for 2017 Rate Applications - Chapter 2 - Cost of Service*, Ontario Energy Board. July 14, 2016.

Energy+ (Brant County) to revise its submission to address comments offered by Board staff, and to incorporate recent Board guidance on how to address CDM results measured in demand units (kW).

This document addresses those issues, specifically:

- It calculates the net lost revenues, after accounting for CDM captured in the 2011 load forecast, as approved in EB-2010-0125.
- It uses a methodology for demand savings that is consistent with the Board's *Updated Policy for the Lost Revenue Adjustment Mechanism Calculation: Lost Revenues and Peak Demand Savings from Conservation and Demand Management Programs*, (EB-2016-0182) of May 2016.

This report determines the variance account balance for the following revenue losses:

- Lost revenues in 2011 related to programs offered in 2011,
- Lost revenues in 2012 related to programs offered in 2011,
- Lost revenues in 2012 related to programs offered in 2012,
- Lost revenues in 2013 related to programs offered in 2011,
- Lost revenues in 2013 related to programs offered in 2012,
- Lost revenues in 2013 related to programs offered in 2013,
- Lost revenues in 2014 related to programs offered in 2011,
- Lost revenues in 2014 related to programs offered in 2012,
- Lost revenues in 2014 related to programs offered in 2013,
- Lost revenues in 2014 related to programs offered in 2014.
- Lost revenues in 2015 related to programs offered in 2011,
- Lost revenues in 2015 related to programs offered in 2012,
- Lost revenues in 2015 related to programs offered in 2013,
- Lost revenues in 2015 related to programs offered in 2014, and
- Lost revenues in 2015 related to programs offered in 2015.

The carrying charges on the above variances through April 2017 are also reported.

Methodology

In principle, the determination of lost revenues is a simple calculation:

LR = (CDM results – CDM results in the load forecast) * rate

In practice, it is somewhat more complicated than that because of the limitations of the information available to calculate CDM results, the different time periods of results data and the rate year, and the need to determine carrying charges on the lost revenues.

The most recent input assumptions currently available have been used to calculate the lost revenue values.

CDM results

From 2011 through 2015, Energy+ (Brant County) offered provincial programs in partnership with the Independent Electricity System Operator (IESO). Energy+ (Brant County) did not offer custom programs beyond the IESO programs.

IESO evaluation results

The IESO performs evaluations of all of its programs, which examine gross energy savings from the programs, and the net-to-gross ratio (NTGR), and then from those calculates net energy savings by initiative within program group (residential, business, industrial and low-income). Peak load reductions are also calculated, and reported in the same way.

Provincial results are allocated to individual LDCs based on each LDC's individual performance where possible, or through an allocation process.

The IESO reports energy savings and peak demand reductions, by initiative in the current year, adjustments to the previous year, based on updated validation, and contribution to total savings or reductions to the end of the 2011 to 2014 period and the 2015 to 2020 period. The savings and demand reductions for a particular year for a number of programs persist in the following years. The savings and demand reductions for demand response programs do not persist beyond the year in which those particular savings and demand reductions occur. The IESO was requested to provide the persistence into future years of savings and reductions for each program in each year.

These are the best, most definitive and defensible estimates of results associated with these programs, and incorporate the most appropriate estimates of results from the measures installed.

However, these data have some limitations, and require some adjustments for use in lost revenue calculations.

Allocating results to rate classes

The IESO reports results by 'initiative', within four main programs: residential, business (commercial and institutional), industrial and low-income. These only partially map onto rate classes. For initiatives that apply to more than one rate class, Energy+ (Brant County) staff estimated the split by rate class, drawing on participant-specific information where available.

Application of reported results

As previously mentioned, the IESO reports both energy savings and reductions in demand. Depending on the rate class, distribution revenue is based on either kilowatt-hours used, or the customer's monthly peak kilowatt use. For rate classes where the customer is charged for distribution by energy use (kWh), the IESO reported energy savings are used to calculate lost revenues related to CDM results. For customer classes where the LDC charges for distribution based on the customer's peak monthly demand (kW), the IESO reported demand reductions are used to calculate lost revenues related to CDM results. The demand reductions in the IESO reports should be multiplied by a multiplier based on the number of months a specific program impacts a customer's peak demand. "The IESO indicated that the demand savings from energy efficiency programs shown in the Final CDM Results should generally be multiplied by twelve (12) months to represent the demand savings the distributor has experienced over the entire year…In the case of the Building Commissioning initiative, the demand savings provided in the Final CDM Results should only be multiplied by three (3) as these savings are related to space cooling and do not occur throughout the full year, but only during the summer months, typically."[3]

The OEB has decided that lost revenue cannot be claimed from the kW values reported by the IESO for the Demand Response 3 (DR3) program. "The monthly peak demand of a demand-billed customer used for billing purposes may not correspond with the demand response event; even if it did, the lost revenues would only be related to a difference between the customer's peak demand absent the demand response event and the next highest peak demand for the customer in that month… Since the IESO's evaluations cannot confirm the nature of the demand savings relative to the billing period for demand-billed customers, it is not appropriate that distributors be credited with lost revenues from demand response programs, except for those situations where the distributor can explicitly demonstrate revenue impacts."[4]

---

[3] Ontario Energy Board, *Updated Policy for the Lost Revenue Adjustment Mechanism Calculation: Lost Revenues and Peak Demand Savings from Conservation and Demand Management Programs*, EB-2016-0182, May 19, 2016, p. 4.

[4] Ibid. p. 7.

Load reductions accounted for in the load forecast

In recent years, LDCs have tried to account for load losses due to CDM programs in their load forecasts, submitted as part of their Cost of Service applications. These forecasted reductions need to be deducted from load losses attributable to CDM programs, to determine the final impact of CDM on revenues. That is, the impact is the *variance* between the results accounted for in the load forecast and the results attributable to the programs.

Overall impact of CDM on load, by rate class

The overall impact of CDM energy savings and demand reductions on load is calculated from the IESO energy savings and peak demand reductions, allocated by rate class. Finally the difference is calculated between the overall estimated impact on loads and the load reductions attributable to CDM that were captured in the most recent load forecast.

Distribution rates

Revenue impacts to the LDC associated with CDM are calculated using the distribution volumetric rate. Most other rate components (e.g. service charges, global adjustment, transmission charges) are either fixed charges or pass-throughs for the utility that do not affect the LDC's revenues. An exception is for certain rate riders related to taxes, and these are added to the distribution volumetric rates for lost revenue calculations, where applicable.

For most electricity distribution utilities in Ontario, including Energy+ (Brant County), distribution rates are set for the period from 1 May to 30 April of the next year. CDM results are reported for the calendar year, so average rates for the calendar year need to be calculated. For simplicity, the average rate is estimated based on the rate being four twelfths of the previous year's rate (for January through April), and eight twelfths of the current year's rate (for May through December).

Lost revenues variance

Lost revenues in a particular rate class are the product of the savings or demand reductions in that class, less what was accounted for in the load forecast, multiplied by the average rate for that class in the calendar year for which the energy savings or demand reductions were reported.[5] The variance is the difference between these lost revenues and the quantity of CDM in the load forecast, or what is called 'the LRAMVA threshold'.

Because these revenues are lost throughout the year, and are only recovered through rate riders in subsequent years, the Ontario Energy

[5] Where distribution rates are monthly rates for the peak kW in that month, the annual loss of revenue is the monthly rate times the number of months it applies to – usually twelve.

Board has permitted the LDCs to claim carrying charges on these lost revenues at a rate prescribed by the OEB, and published on the Board's website. The carrying charges are simple interest, not compounded and are calculated on the monthly lost revenue balance. Because the IESO final results estimates are reported annually, and monthly estimates are not available, the incremental results are assumed to be equally distributed across the months. So 1/12 of the annual results are allocated to each month of the year.

Carrying charges accrue from the time of the results, until disposition.

The LDC reports these lost revenues on its financial statements in Account 1568, and the associated rate class-specific sub-accounts.

Results

Following the methodology described above, lost revenues were calculated for Energy+ (Brant County).

CDM results

IESO evaluation results

The most recent and appropriate final CDM evaluation reports from the IESO were used in support of the lost revenue calculations. A working Microsoft Excel file copy of each IESO evaluation report has been filed separately by Energy+. The net verified final 2011-2014 results can be found in Table 1 of the *Verified 2011-2014 Final Results Report for Brant County Power Inc.* file released by the IESO on September 1, 2015. The net adjustments to verified final 2011, 2012, and 2013 results can be found in Table 2 of the *Verified 2011-2014 Final Results Report for Brant County Power Inc.* file released by the IESO on September 1, 2015. The net verified final 2015 results can be found in the "Net Incremental First Year Energy Savings" and "Net Incremental First Year Peak Demand Savings" sections of the "LDC Progress" tab in the *Final 2015 Annual Verified Results Report for Brant County Power Inc.* file released by the IESO on June 30, 2016.

The IESO provided Energy+ (Brant County) with persistence data for 2011-2015 results and 2011-2013 adjustments at the initiative level. The data provided are presented in new Tables 16 to 22 on Tab 6 of the OEB LRAMVA work form that is filed with this document.

Table 16 of the OEB LRAMVA work form shows the persistence of 2011 results into future years. Table 17 of the OEB LRAMVA work form shows the persistence of 2012 results into future years. Table 18 of the OEB LRAMVA work form shows the persistence of 2013 results into future years. Table 19 of the OEB LRAMVA work form shows the persistence of 2014 results through 2015. Table 20 of the OEB LRAMVA work form shows the persistence of 2011 adjustments into future years. Table 21 of the OEB LRAMVA work form shows the persistence of 2012 adjustments into future years. Table 22 of the OEB LRAMVA work form shows the persistence of 2013 adjustments into future years. No adjustments were provided for 2014 final results.

Allocating results to rate classes

Energy+ (Brant County) provided information on the allocation of results to rate classes. In most cases, the allocation is straightforward. Initiatives that can span multiple rate classes include Retrofit, Building Commissioning, New Construction, Energy Audit, Demand Response 3, Process & Systems Upgrades, Monitoring & Targeting, Energy Manager, Electricity Retrofit Incentive Program and High Performance New

Construction. No allocation was provided for programs for which Energy+ (Brant County) has no program results.

Energy+ (Brant County) billed customers in different rate classes using different volumetric units, either kilowatt-hours (kWh), or customer peak monthly kilowatts (kW). The rate classes (and billing units) for Energy+ (Brant County) were:

- Residential (kWh)
- GS <50 kW (kWh)
- GS 50-4999 (kW)
- Large user (kW)[6]
- Unmetered scattered load (kWh)
- Sentinel lighting (kW)
- Street lighting (kW).

Table 7 of the OEB LRAMVA work form shows the percentage allocation by rate class for 2011 results and adjustments. Table 8 of the OEB LRAMVA work form shows the percentage allocation by rate class for 2012 results and adjustments. Table 9 of the OEB LRAMVA work form shows the percentage allocation by rate class for 2013 results and adjustments. Table 10 of the OEB LRAMVA work form shows the percentage allocation by rate class for 2014 results. Table 11-a of the OEB LRAMVA work form shows the percentage allocation by rate class for 2015 results. In each year the rate class allocation percentage totals for each program may not add up to 100% in cases were kWh savings are allocated to rate classes billed by kWh and kW demand reductions are allocated to rate classes billed by kW.

Load reductions accounted for in the load forecast

The last cost of service application filed for the former Brant County Power Inc. was for the 2011 rate year (EB-2010-0125). The load forecast associated with that application accounted for load losses from 2011 – 2014. Table 3 of the OEB LRAMVA work form shows the estimates of load reductions, by rate class that were included at the time of the load forecast. Previous load forecasts did not account for the impact of 2011 – 2014 CDM programs.

Overall impact of CDM on load, by rate class

Multiplying the adjusted energy savings or demand reduction reported for Energy+ (Brant County) for each program by the allocation by rate class provides the impact on load of that CDM program within the appropriate rate class. The sum of the energy savings and demand reductions for all of the programs for each rate class provides the overall impact of CDM on load by rate class. The overall load impact

[6] This rate class existed until April 30, 2011 and was then removed.

for each calendar year includes the results for the CDM programs and any adjustments to the results in that year.

The bottom of Table 7 of the OEB LRAMVA work form shows the overall impact of CDM on load by rate class for 2011. The bottom of Table 8 of the OEB LRAMVA work form shows the overall impact of CDM on load by rate class for 2012. The bottom of Table 9 of the OEB LRAMVA work form shows the overall impact of CDM on load by rate class for 2013. The bottom of Table 10 of the OEB LRAMVA work form shows the overall impact of CDM on load by rate class for 2014. The bottom of Table 11-a of the OEB LRAMVA work form shows the overall impact of CDM on load by rate class for 2015.

Distribution rates

The distribution rates that are used to calculate the CDM impact on distributor revenue for each rate class for Energy+ (Brant County) are shown in Table 5 of the OEB LRAMVA work form. The distribution rates are pro-rated from the rate year to the calendar year, as needed, using the number of months of each rate year in each calendar year in the 2011 to 2015 time period. Table 6 of the OEB LRAMVA work form shows the pro-rated rates used for each calendar year.

Lost revenues

The lost revenues for each year by rate class for Energy+(Brant County) calculated from final CDM program results are shown in Table 1 of the OEB LRAMVA work form. The lost revenue for each year is based on the load impact for each rate class in that year multiplied by the rate for that rate class in that year. The load impact in a given year will include the impact of CDM programs in that year and the persistence of the CDM program impact from previous years in that year.

The lost revenue for 2011-2015 is based on final verified results provided by the IESO.

Table 1 of the OEB LRAMVA work form also shows the lost revenue in each year due to CDM that has already been incorporated into Energy+ (Brant County)'s applicable load forecast. The impact on Energy+ (Brant County)'s revenue is the variance between what is calculated from final CDM program results and what has already been accounted for in the load forecast.

Carrying charges

The monthly carrying charges by rate class on Energy+ (Brant County)'s lost revenue variance are shown in Table 15 of the OEB LRAMVA work form. The carrying charges are reported monthly, from the time the lost revenues resulted, through to April 30, 2017.

Conclusions

The LRAMVA balance at the end of December 2015 for Energy+ (Brant County) that includes results from 2011 – 2015 CDM programs and adjustments to 2011 to 2013 results is $141,415.45. The total carrying charges on this LRAMVA balance accumulated to April 30, 2017 are $3,505.45. These balances are attributable to individual rate classes according to the following table:

Rate class	LRAMVA	Carrying charges	Total
Residential	$40,422.91	$987.89	$41,410.80
GS < 50 kW	$99,931.13	$3,224.81	$103,155.94
GS 50 to 4999 kW	$2,166.33	$-620.52	$1,545.81
Totals	**$142,520.37**	**$3,592.18**	**$146,112.55**

NOTE: There are no LRAMVA or carrying charge values associated with rate classes not included in this table.

Where negative values are shown, that indicates that for some years, the actual reduction in load from CDM programs was less than the amount included in the load forecast.

providing environmental and energy consulting
to private, public and non-governmental organizations

IndEco Strategic Consulting Inc

77 Mowat Avenue Suite 412 Toronto ON M6K 3E3

*1 888 INDECO1 416 532 4333 **info@indeco.com** **www.indeco.com***