



Report of the OEB

EB-2014-0219

New Policy Options for the Funding of Capital Investments: Supplemental Report

January 22, 2016

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1 Executive Summary

This Report outlines the OEB's policy with respect to the matters addressed in a supplemental phase of the consultation on *New Policy Options for the Funding of Capital Investments* (EB-2014-0219).

The OEB engaged KPMG and formed a working group composed of utility and stakeholder representatives. The OEB has considered the work of KPMG and OEB staff, and the feedback provided by working group participants. In this Supplemental Report the OEB has determined that:

- No changes will be made to the manner in which the OEB applies the half-year rule in a test year and its persistence over the incentive rate-setting (IR) term.
- The materiality threshold formula will be modified as follows:
 - A multi-year formula
 - An annualized growth factor
 - A dead band of 10% (down from the previous 20%)
 - Use of the stretch factor assigned to the middle cohort (currently 0.3%) for every distributor for the determination of the materiality threshold, irrespective of the actual stretch factor at any one point in time

This Supplemental Report augments the policies adopted in the September 2014 ACM Report, and must be read in conjunction with that report. The changes adopted herein will be reflected in the Filing Requirements applicable to cost of service and IR applications when the Filing Requirements are next updated by the OEB. The ACM excel model used by the OEB has been updated to reflect the changes adopted in this Supplemental Report.

2 Background

The OEB initiated this policy review in 2014. The review considered two aspects on the OEB's approach to funding capital additions:

- The effect of the half-year rule on test year capital additions for the intervening years between rebasing applications
- The introduction of a new funding mechanism that would enable review during a cost of service application for the need and prudence of any incremental capital module (ICM) funding requests for discrete projects that are part of a distributor's Distribution System Plan, and that are planned to come into service during the IR period (i.e., the Advanced Capital Module (ACM))

On September 18, 2014, following work by OEB staff and a consultation with a working group of utility and stakeholder representatives, the OEB issued its [Report of the Board, New Policy Options for the Funding of Capital Investments: The Advanced Capital Module](#) (the ACM Report).

In the ACM Report, the OEB established the Advanced Capital Module. This is a new mechanism to assist electricity distributors in their progress towards developing and justifying a long-term strategy for delivering distribution services that their customers value and that reflect manageable rate impacts over the long term. The ACM advances the review and approval process for incremental capital from the year in which the proposed projects will be entering service (i.e. the IR term) to the preceding cost of service application in which a distributor is required to file a five year Distribution System Plan (DSP) encompassing the cost of service test year and the four subsequent incentive rate-setting years.

The OEB retained an incremental capital module (the ICM) for the IR years for projects not included in a DSP filed with the most recent cost of service application, and for projects that were included in the DSP but which did not contain sufficient information at the time of the cost of service application to address need and prudence.

The ACM Report also revised certain of the existing criteria and established new criteria to assist with the testing of incremental capital requests (under both an ACM and ICM).

In the ACM Report, the OEB did not make a determination with respect to the elimination of the effect of the half-year rule on test year capital additions for the IR

years. There were other matters on the ACM/ICM approach which were considered during the initial work, particularly related to the materiality threshold formula, which remained unresolved as well. The OEB indicated that it would continue to review these matters. This Supplemental Report provides the result of that additional review.

KPMG was retained to assist OEB staff and a new working group was established for this latest policy review. In addition to continuing the assessment of the impact of the half-year rule, the working group and KPMG reviewed specific components of the ICM materiality threshold formula.

KPMG was specifically tasked with reviewing two rate making issues:

- The half-year rule
 - A jurisdictional review of the treatment of new capital additions in rate base and revenue requirement (i.e., the use of the half-year rule or other approaches)
 - The adequacy of price-cap adjustments for funding capital investments under the OEB's Price Cap IR regime in which the half-year rule persists during the term
- The materiality threshold formula
 - A review of the appropriateness of the current definition of the growth (g) factor
 - A review of the appropriateness of the current definition of the dead band due to any impacts arising from the adoption of the following on the suitability of the materiality threshold formula and its parameters
 - Total Factor Productivity (TFP) versus the use of the previous Partial Factor Productivity (i.e. OM&A benchmarking) for deriving the productivity adjustment under IR
 - International Financial Reporting Standards (IFRS)
- Related to another project, a jurisdictional review of how the Working Capital Allowance (WCA) is established for rate regulation.

The research on the WCA is related to the *Policy Review of Electricity and Natural Gas Distributors' Residential Customer Billing Practices and Performance: A Review of Cash Working Capital Funding (EB-2014-0198)*, and was considered in the consultation of that project. It has no further impact on this project.

The working capital portion of the KPMG report was issued in draft form on June 3, 2015 along with the OEB's letter setting out the new default WCA. That excerpt has now been finalized with no changes and is included for completeness in KPMG's final report,

New Policy Options for the Funding of Capital Investments: EB-2014-0219, supporting this supplemental phase of the consultation and can be found on the OEB's website, at http://www.ontarioenergyboard.ca/oeb/Documents/EB-2014-0219/KPMG_Report_EB-2014-0219_20150626.pdf.

3 The Half-Year Rule

The application of the half-year rule has been the subject of much discussion since it was first adopted by the OEB in the context of an incentive rate-setting mechanism. Distributors have been generally concerned that the persistence of the half-year rule into an IR period deprives them of half of the depreciation and return on their test year investments during the IR term and that this effect has been exacerbated by the extension of the IR term from four to five years under the Renewed Regulatory Framework for Electricity (the RRFE).

This section reviews and assesses the current OEB policy. For the reasons set out below, the OEB has determined that no changes will be made to the manner in which the OEB applies the half-year rule in a test year and its persistence over the IR term.

3.1 Test Years

The current OEB policy, established in the OEB Report on the *2006 Electricity Distribution Rate Handbook*, allows for recovery of a half-year depreciation and a half-year of the return on capital for the year that capital assets enter service, while the full year's depreciation and cost of capital is recovered on assets already in service.¹ This policy was adopted as most new capital additions only come into service part-way through the year. Since ratepayers only receive the benefit of the capital additions once the assets enter into service, earning a full year's depreciation and return would over-compensate the utility relative to the benefit that ratepayers receive during that first year.

Specifically, the half-year of the return on capital is accomplished through the calculation of the average net book value of in-service assets during the year, calculated as the average of opening (January 1) and closing (December 31) balances. For depreciation expense, one-half of the annual straight-line depreciation expense is allowed in the year that assets enter service. In subsequent test years, the full annual depreciation expense for the assets is reflected in the revenue requirement and recoverable in rates, until the last year of that asset class' expected useful life, when the final half-year of depreciation expense is recovered.²

For electricity distributors, the OEB has employed this default approach as a means of ensuring that the full year's depreciation and return on capital are not included in rates

¹ [Report of the Board: 2006 Electricity Distribution Rate Handbook \(RP-2004-0188\)](#), May 11, 2005, p. 15 (regarding the ½ year treatment for new in-service additions).

² [Filing Requirements for Electricity Distribution Rate Applications – 2015 Edition for 2016 Rate Applications – Chapter 2: Cost of Service](#), July 16, 2015, p. 41

in the absence of more detailed information as to the specific in-service dates of projects. This is commonly referred to as the “half-year” rule. For non-rebasing years subsequent to a test year, assets that went into service in the preceding test year would continue to attract only a half year of return of and return on capital, until the next rebasing application.

The half-year rule is an approximation of when, during a test year, assets enter service. In the absence of more detailed forecasts, the half-year rule assumes that all new assets enter service on July 1 (half way through the test year) for ratemaking purposes. In some cases, more refined in-service date forecasts are available which result in “partial-year” treatment, as appropriate, as opposed to exactly “half-year” treatment.

KPMG identified alternative methods that have been used in other jurisdictions that provide more refined calculations based on when assets enter service. These include the following:³

- Average of quarter-end balances. The average net book value is the average of the four quarterly balances, and depreciation expense is comparably calculated. This provides a slightly more accurate representation than the half-year of the average net book value, but with additional accounting and slightly more complex calculations for rate-setting.
- 12-month average of month-end balances. This is a more refined and accurate representation of when assets actually enter service, but which requires additional accounting and more complex calculations for rate-setting. Ontario natural gas distributors and some electricity distributors employ this approach as they generally forecast monthly in service dates for their new assets.
- 13-month average of month-end balances. Some U.S. jurisdictions use 13-months, calculated as the values for December 31 of the prior year, plus the twelve month-end values in the test year. This provides an average from the opening test year to closing test year balances but provides a more accurate average NBV of assets during the year than does the half-year rule as it reflects more accurately when assets enter service. Like other approaches, it requires more accounting of data and more complexity in rate-setting calculations.

KPMG’s review found that the half-year rule or a more detailed quarterly or monthly approach is used for rate-setting purposes in Canadian and U.S. jurisdictions

³ KPMG’s Report, *New Policy Options for the Funding of Capital Investments: EB-2014-0219* – Summary, pp. 3-6

surveyed.⁴ Ofgem in the United Kingdom provides for no depreciation expense to be recovered in the year that assets enter service, but provides for full year recovery in subsequent years. No jurisdiction surveyed allows the full amount of depreciation and return in the test year for assets that enter service in that year.

3.2 *Incentive Rate-setting Years*

In the traditional environment of annual cost of service rate applications, the use of the half-year rule or a more detailed variation does not pose an issue for subsequent years following the inclusion of an asset into rate base for the first time. The rate base and the revenue requirement are updated every year; assets that receive half-year (or partial-year) treatment in the year that they enter service receive full-year treatment in subsequent years.

The nature of economic regulation, particularly rate-setting, has evolved. Since the 1980s, performance-based regulation (PBR)/incentive regulation mechanisms (IRM) have evolved as an alternative to more traditional cost of service regulation. PBR/IRM can provide for any form of regulatory oversight that may be a better representation of the market forces that discipline the performance of firms in competitive markets.

With the OEB's performance based incentive rate-setting methodology, rates are no longer established on an annual cost of service approach. As a result, the half-year rule, or similar treatment, continues during the IR years. During the IR years, depreciation expense is the return of originally invested capital that is available for re-investment in the replacement assets when the original assets reach end-of-life. On that theoretical basis, a utility can invest in future capital with no adverse impact on financial metrics. However, the theoretical approach does not consider inflation or growth in electricity demand and growth in number of customers.

KPMG undertook various analyses to assess the impact of the half-year rule under the OEB rate setting approach of a cost of service review followed by four years of IR adjustments. KPMG compared the OEB approach against annual cost of service applications, where the utility was held whole through the annual update of the rate base and revenue requirement, and also against the scenario of cost of service and IR with full-year depreciation.

⁴ However, in most cases, it appears to the OEB that the approach adopted has been so long institutionalized that the justification for the approach is long forgotten. Nor does there appear to be questions of the appropriateness of the approach persisting during non-rebasing periods and whether it raises concerns of sufficiency or deficiency of recoveries.

While the analyses were hypothetical, KPMG used data that would be representative of a “typical” utility. Various assumptions of growth, capital additions-to-depreciation, and other parameters were modelled. The analyses demonstrate how sensitive the results can be to assumptions about the parameters. Nonetheless, the OEB considers that the analyses were informative.

KPMG concluded that the half-year rule creates a notional deficiency assuming no customer growth when capital expenditures are greater than or equal to the amount of capital expenditures notionally reflected in base rates. However, KPMG also noted that, with revenue growth above 1.1%, a revenue sufficiency could result.⁵ KPMG notes that results can vary as they are sensitive to the operational circumstances and parameters of individual distributors.

The jurisdictional review by KPMG does not reveal any general concerns with the use of the half-year rule or a similar mechanism persisting into non-rebasing years. KPMG recommended that “IR rates not be normalized for the effect of the half year rule in the rebasing year on a pro forma basis for all distributors due to the potential for normalized IR rates to be greater than those associated with an annual cost of service rates scenario”. KPMG noted that whether any revenue deficiency was material was dependent on the circumstances of each utility.⁶ While there was no consensus in the working group on whether IR rates should be normalized for the effect of the half year rule, there was general agreement that the level of any deficiency would be dependent on the circumstances of each utility.

The OEB recognizes that, due to inflation, the replacement value of many assets will be higher than the original price of that asset. However, there are many other factors to consider, such as contributed capital policies, customer growth, changes in technology and the age demographic of assets (and when they become fully depreciated) that can vary from distributor to distributor. Setting rates through the IR mechanism inherently disconnects the rates from the underlying costs of the utility in order to incent efficiency improvements. The very nature of the mechanism recognizes that there can be many different factors that can influence both positively and negatively on a utility’s return. The half-year rule is just one of these factors.

The OEB will not alter its policy of allowing the half-year rule (or analogous approaches) to persist through the Price Cap IR period. It is not appropriate to adjust for one factor, such as any shortfall due to the use of the half year rule, without considering all other factors that arise through an IR period. The OEB has already included several options

⁵ KPMG’s Report, *New Policy Options for the Funding of Capital Investments: EB-2014-0219*, p. 12

⁶ *Ibid.*, p. 44

that distributors can leverage to address their unique circumstances. In 2012, the OEB established rate-setting options for distributors, including the Custom IR method. With Custom IR, a five-year forecast of a distributor's costs is considered. Distributors opting for the Price Cap IR option have access to a capital module (either the ACM or ICM) to fund material capital costs.⁷ As part of this Supplemental Report, the OEB is reducing the dead band in the materiality threshold calculation for both the ACM and ICM, making these mechanisms more accessible to distributors. In addition, distributors experiencing extraordinary events can file an application for a Z-factor to recover costs of material events that are beyond their control.

⁷ The ICM option has been available since its introduction in late 2008 for 3rd Generation IR, and continued under the RRFE options. The ACM Report, issued in September 2014, introduced the ACM concept as an evolution of the ICM and modifying some of the policies applicable to both ACM and ICM requests.

4 The ACM/ICM Materiality Threshold Formula

In the [Supplemental Report of the Board on 3rd Generation Incentive Regulation for Ontario's Electricity Distributors \(EB-2007-0673\)](#), (the 3rd Gen IR Supplemental Report) the OEB introduced the Incremental Capital Module. The ICM included a materiality threshold to determine qualifying capital projects and the associated incremental capital amounts that would be recoverable during the IR period, until the distributor's next cost of service application. The ICM materiality threshold is discussed in section 2.3 of the 3rd Gen IR Supplemental Report.

The OEB established the following formula to be used by a distributor to calculate the materiality threshold that will apply to it:⁸

$$\text{Threshold Value (\%)} = 1 + \left[\left(\frac{RB}{d} \right) \times (g + PCI \times (1 + g)) \right] + 20\%$$

This formula has been used since that time.

In September of 2014, the OEB issued the ACM Report. The ACM Report retained the same materiality formula while providing further guidance and clarity on its application on ICM and the new ACM options for funding eligible incremental capital. At that time, the OEB noted that it intended to further review certain components of the formula in light of the experiences with ICM applications to date and in consideration of the evolution of the ACM/ICM concept in support of the OEB's RRFE rate-setting approach.

KPMG examined the growth factor g and the dead band, currently at 20%. OEB staff also considered how to adapt the formula, which was single-year in nature, to be applicable to the multi-year Price Cap IR term currently in place. A further consideration was whether the use of the actual distributor-specific stretch factor is reasonable given the purpose of the formula is to derive an incremental amount of capital that may be eligible for funding during the IR term.

The following concepts of the materiality threshold formula are discussed below.

- The Multi-Year Formula
- The Growth Factor
- The Dead Band
- The Stretch Factor

⁸ Definitions of the terms are provided in Appendix B.

4.1 *The Multi-Year Formula*

The original materiality threshold formula for an ICM was structured to support a single year-over-year change (i.e., from the cost of service rebasing to the first IRM rate adjustment application in the following year). However, a distributor could apply for an ICM as part of its annual IRM rate adjustment for any year subsequent to its cost of service application. The single year-over-year formula does not take into account the passage of time over the subsequent IRM period (i.e., the cumulative impacts of cost, inflation, productivity and changes in customers and demand). In addition to the lack of multi-year impacts, as originally conceived and applied, the formula would give the same value regardless of which IR year past rebasing the application was addressing.⁹

Under 3rd Generation IR, there were originally three annual price rate adjustments between rebasing applications. Now there are routinely four under the Price Cap IR regime instituted as part of the RRFE. Further, in conjunction with the OEB's recent policy relating to deferring rebasing pursuant to executed mergers, acquisitions, amalgamations and divestitures, the period between rebasing applications could be considerably longer.¹⁰

Having reviewed more than a dozen ICM applications since adopting the ICM, the OEB is of the view that the materiality threshold should change over time during the IR term. The amount of capital that is funded each year should change relative to what was funded in rebased rates to reflect the current price cap adjustment and growth in demand.

This concept may not have been as important when the ICM was first introduced because at that time the normal cycle was four years (cost of service to rebase rates followed by three years of IR adjustments). With the adoption of a five year cycle (rebasings followed by four years of Price Cap IR) and the introduction of the ACM review for projects in conjunction with the 5-year DSP, the cumulative temporal impact is more significant.

In the recent working group, OEB staff proposed a variation on the formula to address this matter, noting that it would be the multiplicative and cumulative impact of both the price cap adjustment and growth that increases the amount effectively funded through

⁹ This is true for an ACM application where the variables in the formula are not affected by which year of the IR period the ACM is being requested. However, for an ICM, the PCI will change from year to year during the IR period and this will change slightly the corresponding threshold amount.

¹⁰ [Report of the Board: Rate-Making Associated with Distributor Consolidation \(EB-2014-0138\)](#)
March 26, 2015, section C

rates in each subsequent price cap year. OEB staff prepared a modified formula to be used for ACM and ICM applications. No concerns were raised by the working group.

The OEB adopts the multi-year formula to be used for ACM and ICM applications. This applies both with respect to ACM proposals reviewed in cost of service applications, and to ACM/ICM applications for rate riders to fund qualifying ACM/ICM capital projects coming into service during the Price Cap IR term.

4.2 *The Growth Factor*

In the OEB's view, a reasonable growth estimate should also be accounted for in the materiality threshold calculation. Capital additions are often, at least in part, to connect and serve new customers. However, new customers and demand also mean new revenues that help to recover the costs to serve the new demand. This is in addition to increased revenue due to the $I - X$ (i.e., price cap index or *PCI*) price cap adjustment to base rates each year.

As originally formulated and implemented in the 3rd Gen IR Supplemental Report, growth is represented by the change in (economic) demand¹¹ between two time periods. Economic demand is composed of three elements for electricity distribution:

- Number of customers
- kilowatt hours (kWh) of electricity consumption
- kilowatts (kW) of energy demand, for demand-billed customers

Growth is estimated as the weighted average of the change in each of these demand components between two time periods, where the weights correspond to the revenue weights. For this calculation, prices are held fixed between the two periods, as the impact of changes in prices due to price cap adjustments is captured by the *PCI* variable in the formula.

4.2.1 *Weather Normalized vs. Weather Actual Data*

The original growth calculation established by the OEB compares the weather-normalized load forecast from the most recent cost of service application to recent weather-actual demand. Variability in weather (and in other factors, notably economic activity) can influence the period-over-period change in demand. Comparing weather-normal against weather actual demand introduces variability into the results.

¹¹ The use of the term “economic demand” is used to distinguish it from “electricity demand” (i.e. peak demand in *kW*).

However, KPMG determined that this is largely unavoidable given the methodology. It also noted that there is no tangible quantitative evidence that the present calculation is resulting in a systematic bias in the materiality threshold formula, resulting in a misspecification of the amount of capital that is reflected in rates.¹²

The OEB observes that any error introduced is reduced by the proportion of revenues that are from non-weather-sensitive charges – the monthly fixed service charge, variable charges for non-weather-sensitive customer classes, and due to the fact that there is base load consumption even for weather-sensitive customers. The rate design initiative implemented following the completion of the KPMG Report, for the Residential customer class, will also reduce the distribution revenues subject to weather variability, so that any weather-sensitive errors will be further minimized.

Accordingly, the OEB will not revise this component of the approach to the calculation of the growth factor.

4.2.2 Annualized Growth Factor

Consideration of the previous issue, and of potential options, revealed another matter related to the operationalization of the ACM/ICM policy. As originally derived (and discussed above), the materiality threshold is a single year-over-year change.

The ICM spreadsheet, and now the new ACM module, compare the most recent actuals (excluding the cost of service year) against the cost of service test year forecast. A review by OEB staff revealed that with the previous formula, a two-year growth is calculated for ICM applications that are filed in year three of the IR period. This is because it is dependent on the year of the most recent actuals relative to the test year, as documented in Appendix C of this Supplemental Report. The analysis indicated that this was unlikely to have been an issue when the ICM was introduced in 3rd Generation IR, when there were normally only three years of price cap adjustment applications between cost of service applications to rebase rates. A review of ICM applications to date has indicated that no ICM applications with two-year growth rates have been considered.

With the extended term for Price Cap IR, whereby there are now normally four years between rebasing applications, there is an increased possibility that a two-year growth factor will occur for an ACM/ICM application. Also, where an ACM is filed as part of a cost of service application there is, almost without exception, a two-year difference between the most recent historical actuals and the test year forecast.

¹² KPMG's Report, *New Policy Options for the Funding of Capital Investments: EB-2014-0219*, p. 35

With the adoption of a multi-year formula, it is appropriate that the growth factor g , like the approach to the current PCI, be annualized. Where the module calculates a two-year growth rate (i.e. for the ACM in a cost of service application or in the fourth Price Cap IR application), a proxy for the annual growth rate is realized by dividing the growth rate calculation by two.^{13,14} The proposed revision to the growth factor was discussed and no concerns were raised by the working group.

The ACM materiality threshold formula will be modified to incorporate an annualized growth factor.

4.3 *The Dead Band*

As enunciated by the OEB in the 3rd Gen IR Supplemental Report:

Certain participants suggested that there should be a dead band added to the calculated materiality threshold to prevent marginal applications. The suggested levels ranged from adding 10 percent to 50 percent to the calculated percentage thresholds. The Board finds merit in the suggestion of adding a dead band. However, a high adder may be unreasonably prohibitive for distributors genuinely in need of incremental CAPEX during the term of 3rd Generation IR, as it would connote a regime that is not related to revenue requirement considerations. The Board is satisfied that a 20 percent adder is sufficient at this time.¹⁵

In the end, the choice of the level of the dead band is not founded on any theoretical basis, but is a practical decision to balance identification of legitimate proposals for necessary incremental capital funding versus numerous marginal applications.

The KPMG analysis, and in particular its modelling of various scenarios, examined the influence of the dead band and the impacts of the adoption of TFP and IFRS on the dead band variable. In its report, KPMG concluded that the adoption of TFP as the basis for the productivity factor for Price Cap IR and the adoption of IFRS have no

¹³ While a more exact calculation is possible, this proxy is simpler. Further, as growth in demand is typically less than 2%, any error is likely immaterial.

¹⁴ Under the recent report on rate setting under distributor consolidation (see footnote 5), three-year, four-year or longer period growth rates in the ACM spreadsheet could result under extended deferral periods. Dividing by 3, 4, etc., as appropriate, would give a suitable annualized growth rate. These will be exceptions dealt with on a case-by-case basis.

¹⁵ [*Supplemental Report of the Board on 3rd Generation Incentive Regulation for Ontario's Electricity Distributors EB-2007-0673*](#), September 17, 2008, p. 33

material or sustained impacts on the materiality threshold formula as it was first derived in 2008.¹⁶

However, KPMG recommended that the dead band could be reduced, even to zero, in order to balance what it viewed as competing objectives such as encouraging effective distributor planning, including the development of appropriate asset management plans, while reflecting the static nature of the materiality threshold formula and protecting rate payers from paying for incremental capital expenditures that are already notionally reflected in base rates. KPMG noted that the determination of the dead band is ultimately a discretionary matter for the OEB, using its expert judgment to balance competing objectives. KPMG also provided an analytical example that if the dead band is maintained at the 20% level, the materiality threshold formula would generate a dollar value of capital in rates which is larger than the notional capital reflected in rates throughout the IR period.

For the reasons set out in the 3rd Gen IR Supplemental Report, the OEB is of the view that the dead band should remain above zero. The dead band being set at zero means that any qualifying incremental capital above what is factored into rates, and adjusted by the Price Cap Index and growth, would be fundable through an ACM/ICM rate rider. However, the OEB recognizes the imprecision in the Price Cap IR formula, and in the estimates and data used in the formula and in rate-setting generally.

Further, a utility's management is expected to control or influence what it needs to do from both a capital project perspective and ongoing operations to distribute electricity to customers in a safe, reliable and high quality manner. Regulatory approaches such as IR, and augmented by the OEB's RRFE approach, provide flexibility for the utility's management to do so.

With this in mind, the OEB considers that a dead band remains an appropriate means to allow for appropriate funding for qualifying ACM/ICM projects, while discouraging numerous applications for marginal amounts that the utility would be expected to manage under the RRFE and Price Cap IR framework. However, maintaining the dead band at 20% may not be responsive to the OEB's RRFE objectives of enhanced distributor planning and effective access to available regulatory tools to facilitate pacing and prioritizing needed capital investments.

Furthermore, with the adoption of the multi-year formula discussed in 4.1 above, the OEB concurs that the dead band should decrease. The materiality threshold has been

¹⁶ KPMG's Report, New Policy Options for the Funding of Capital Investments: EB-2014-0219, p. 38 and pp. 40-41

used in its original formulation regardless of which year in the IR term the ICM application was proposed. The multi-year formula now explicitly and appropriately factors in the cumulative, multiplicative impact of both growth and the price cap index over the years since the utility's last cost of service rebasing application. In part, this may have been captured implicitly (and imperfectly) through the earlier dead band.

The OEB has determined that a dead band of 10% is more appropriate in light of the changes being made to the materiality threshold formula, and balancing the need for appropriately funding necessary incremental capital investments while avoiding numerous marginal applications and providing some protection that amounts are not already funded through rates.

In the OEB's view the redefined materiality threshold formula and the redefined growth and dead band variables should provide better information on when incremental capital projects qualify and on the quanta of qualifying capital investment dollars that should be funded in advance of the next cost of service application.

4.4 The Stretch Factor

Currently, as an input to the materiality threshold formula, a utility uses the most recent stretch factor applicable to it, as derived from the annual benchmarking analysis commissioned by the OEB. The stretch factors are primarily used for calculating the price cap adjustment for IR applications. Under the current IR framework, the stretch factors range from 0% to 0.6%, with more efficient utilities, as determined through the econometric analysis, assigned a lower stretch factor. However, most utilities will be grouped into the middle cohort and have a 0.3% stretch factor. The stretch factors are updated annually, and can change over time, although movements are typically gradual.

As part of the working group's discussions, OEB staff noted that, with the multi-year formula, the stretch factor could change from year to year. In addition, the stretch factor has an impact on the materiality threshold calculation, as it is included in the PCI variable. OEB staff observed that the impact of the stretch factor on the materiality threshold is counter to the incentive that underpins the price cap adjustment: a more efficient utility would have a lower stretch factor and a higher PCI and, consequently, a higher materiality threshold result than would a less efficient utility. This means that a more efficient utility would have less available capital for incremental funding than would a less efficient utility, all else being equal.

OEB staff recommended that the middle stretch factor of 0.3% be used as a default, instead of updating with the distributor's most recently published stretch factor. This would eliminate any counter-intuitive impacts as mentioned above and put utilities on an

equal footing regardless of their efficiency ranking with respect to access to qualifying incremental capital. Use of the 0.3% would also simplify calculations.

There was no consensus on this proposal, as one view suggested that this was a change in the methodology that needed to be considered from the start, or as part of a review of the entire materiality threshold formula. The change would disadvantage utilities with less efficient rankings.

The OEB considers that the proposal to use the 0.3% stretch factor as the default is reasonable in that it neutralizes the threshold test in terms of being impacted by performance. An analysis conducted by the OEB staff using filed ICM models from previous applications indicates that the impact of using a 0.3% stretch factor instead of 0.6% is approximately 4% on the resulting capital expenditure threshold, even with the adoption of the multi-year formula. While the difference in available capital is not insignificant, on an annual revenue requirement basis it is likely below a distributor's materiality threshold as outlined in the OEB's Filing Requirements¹⁷. Since a 0.3% stretch factor would apply to most utilities, and in most years, any bias would be minimal.

The OEB has determined that the stretch-factor assigned to the middle cohort (currently 0.3%) be used in the materiality threshold calculation for any ACM/ICM application.

4.5 The New ACM/ICM Materiality Threshold Formula

As a result of the work of KPMG and OEB staff, and considering the feedback from the working group members, the OEB will alter the materiality threshold formula by adding the highlighted portion as follows:

$$\text{Threshold Value (\%)} = \left(1 + \left[\left(\frac{RB}{d} \right) \times (g + PCI \times (1 + g)) \right] \right) \times \left((1 + g) \times (1 + PCI) \right)^{n-1} + X\%$$

where n is the number of years since the cost of service rebasing. Other parameters are as defined in the original formula, except for the following changes:

- the growth factor g is annualized
- the dead band X has been reduced to 10%
- the stretch factor used in the PCI will be the factor assigned to the middle cohort (currently 0.3%) for all distributors

¹⁷ *Filing Requirements For Electricity Distribution Rate Applications - 2015 Edition for 2016 Rate Applications, Chapter 2, pp. 13-14*

Appendix B provides further details on the updated formula and parameters.

The right-hand side of the equation has been altered to reflect the cumulative and multiplicative impact of both growth and the price cap adjustment over time during the Price Cap IR term.

5 Filing Requirements

Section 5 of the ACM Report provided information on the filing requirements related to ACM and ICM applications as part of cost of service or Price Cap IR applications. The nature of the information required for an ACM or ICM application is unchanged by the policies adopted by the OEB in this Supplemental Report.

The OEB-issued model for the ACM/ICM has been updated to reflect the changes in the materiality threshold formula and associated parameters adopted in this Supplemental Report. The updated ACM/ICM model is posted on the OEB's website, and applicants should use that version in cost of service or Price Cap IR applications, as necessary.

The changes to the materiality threshold formula adopted herein and the determinations made by the OEB on the half-year rule will be reflected in the Filing Requirements applicable to cost of service and Price Cap IR applications for electricity distributors when the Filing Requirements are next updated.

Appendix A
The Capital Module Policy [Unchanged from the ACM Report]

Capital Modules	Cost of Service Application	Price Cap IR Year (in which the capital project goes into service)	Next Cost of Service Application
ACM (Advanced Capital Module)	<ul style="list-style-type: none"> Identify discrete projects in DSP which may qualify for ACM treatment. Establish need for and prudence of these projects based on DSP information. Provide preliminary calculation of materiality threshold based on information in cost of service application. 	<ul style="list-style-type: none"> Update materiality threshold based on current information to confirm that the project continues to qualify for ACM treatment. Provide means test calculation and explanation if overearning in last historical actual year. If costs are less than 30% above what was documented in the DSP, explain differences in cost forecasts from DSP forecast. Explain any differences in project timing. If costs are 30% or more above what was documented in the DSP, re-file business cases as new ICM if seeking recovery of incremental costs. In all cases, explain any significant differences in capital budget forecast from DSP forecast. Provide incremental revenue requirement calculation and proposed ACM rate riders. 	<ul style="list-style-type: none"> Review of actual (audited) costs of ACM project. Explanation for material variances between actual and forecasted costs (and timing, if applicable). Based on above, the OEB may determine if any over- or under-recovery of ACM rate riders should be refunded to or recovered from ratepayers. ACM capital assets reflected in new rate base based on January 1 actual NBV.
ICM (Incremental Capital Module)	<ul style="list-style-type: none"> Not applicable 	<ul style="list-style-type: none"> Provide explanation for any ICM that could not have been foreseen or sufficiently planned as part of DSP. Establish need for and prudence of proposed projects. Provide materiality threshold calculation. Provide means test calculation and explanation if overearning in last historical actual year. Provide incremental revenue requirement calculation and proposed ICM rate riders. Explain significant differences in capital budget forecast from DSP forecast. 	<ul style="list-style-type: none"> Same as above

Appendix B

Materiality Threshold Calculations [Updated]

The following table explains the variables used to determine the preliminary materiality threshold for ACM/ICM proposals in both cost of service applications and as part of Price Cap IR applications for rate riders to recover qualifying ACM/ICM incremental capital investments.

General Formula:		$\text{Threshold Value (\%)} = \left(1 + \left[\left(\frac{RB}{d}\right) \times (g + PCI \times (1 + g))\right]\right) \times ((1 + g) \times (1 + PCI))^{n-1} + 10\%$	
Parameters		Preliminary Calculation for proposed ACM-qualifying capital projects, as part of a Cost of Service Application	Final Calculation for pre-qualified ACM projects or for proposed ICM projects, as part of a Price Cap IR Application
Rate Base	<i>RB</i>	In its application, the utility should use its proposed test year rate base.	The distributor should use the approved rate base from its last cost of service application.
Depreciation	<i>d</i>	In its application, the utility should use its proposed depreciation expense for the test year.	The distributor should use the approved depreciation expense from its last cost of service application.
Growth	<i>g</i>	<p><i>g</i> is always to be expressed as an annual growth rate.</p> <p>Growth is calculated based on the percentage difference in distribution revenues between the forecast distribution revenues for the test year and the distribution revenues from the most recent complete year. There is normally a two-year gap between the most recent actuals and the test year forecast in the cost of service application, so the growth factor is annualized by dividing by two.</p>	<p><i>g</i> is always to be expressed as an annual growth rate.</p> <p>Growth is calculated based on the percentage difference in distribution revenues between the most recent complete year and the distribution revenues from the most recent approved test year in a cost of service application.</p> <p>In the first and second Price Cap IR years following rebasing, a distributor will not have a complete year of data following the cost of service base year. For these years, the growth factor reflects the difference between the OEB-approved distribution revenues from the last cost of service application and the most recent complete year prior to the rebasing year. By the fourth year of Price Cap IR following rebasing, there will be a two year gap between the most recent actuals and the approved cost of service test year forecast; the growth factor is annualized in this situation by dividing by two.¹⁸</p>
Price Cap Index (IPI – stretch_factor)	<i>PCI</i>	Distributors should use the IPI from its most recent Price Cap IR application and the stretch factor assigned to the middle cohort.	Distributors should use the IPI from its most recent Price Cap IR application as a placeholder for the initial application filing. This information is updated if new information becomes available during the proceeding. Distributors must use the stretch factor assigned to the middle cohort as the default stretch factor.
Years Since Rebasing	<i>n</i>	<i>n</i> is the number of years after rebasing	<i>n</i> is the number of years since the last rebasing.

¹⁸ See Appendix C for a more detailed breakdown

Appendix C
Growth Factor Calculation for Final ACM/ICM Materiality Threshold
2016 Test Year Example

Price Cap IR Year (past rebased in 2016)	Year	Growth Factor Revenues		Is Growth one-year or multi-year?
		Numerator	Denominator	
1	2017	OEB-approved 2016 test year	2015 historical actuals	One-year
2	2018	OEB-approved 2016 test year	2015 historical actuals	One-year
3	2019	2017 historical actuals	OEB-approved 2016 test year	One-year
4	2020	2018 historical actuals	OEB-approved 2016 test year	Two years (will be annualized)
5 ¹⁹	2021	2019 historical actuals	OEB-approved 2016 test year	Three years (will be annualized)
etc.				

¹⁹ If longer than four years on Price Cap IR (e.g. due to a merger or amalgamation, or approved deferred rebasing)