# Oshawa PUC Networks Inc.

Custom IR Rate Application

Rate Period 2015 - 2019

# Agenda

1. OPUCN Custom IR Proposal
2. Distribution System Plan
3. Custom IR and Report of the Board - Renewed Regulatory Framework for Electricity Distributors: A Performance-Based Approach ("RRFE")
4. Benchmarking and Outcomes Measurement
5. Incentives for Continuous Improvement
6. Rate Impacts and Smoothing
7. Annual Reporting

# OPUCN Custom IR Proposal for Rates

* Five year plan with smoothed rate adjustment profile.
* Addresses accelerated customer growth in Oshawa and customer preferences.
* Annual rate adjustment process for predefined external drivers.
* Two mechanisms to incent continuous improvements.

# Oshawa PUC Networks Inc.

Distribution System Plan ("DSP")
[Exhibit 2, Tab B]

# OPUCN Capital Drivers

Three (3) Key Drivers :

1. On average, residential and commercial peak demand (MW) growth of approximately 3% annually.
2. Customer connections growing by approximately 15% over the five year period.
3. Grid modernization to improve system reliability and resilience to enhance customer value.

# Listening to our Customers

[Exhibit 1, Tab D]

* On going customer communications and recent customer survey indicates that Infrastructure renewal and reliability is a high priority.
* As per OPUCN 2014 customer survey conducted by UtilityPULSE, the top three (3) priority investments identified by customers are:
  1. *Maintaining and upgrading equipment (86%).*
  2. *Reducing time to restore power with frequent outage status (80%).*
  3. *Investing more in the grid to reduce number of outages (75%).*

# OPUCN Capital Requirements

* Total net capital expenditure is approximately $60.8 million or an average annual spend of more than $12.1 million.
* Controllable capital expenditure is approximately $40.4 million.
* Non-controllable capital expenditure (driven by external parties) is approximately $20.4 million.

# Controllable Capital Investments

* Infrastructure renewal to maintain & improve grid reliability (~$23.9M).
  * *These investments include overhead, underground and stations rebuilds and are based on results of the Asset Condition Assessment, root cause analysis outage reports, and maintenance and operational reports.*
* New substation ("MS9") - distribution capacity for projected increase in customer peak demand (~$9.0M).

# Controllable Capital Investments

- Grid modernization – customer value and grid reliability (~$2.6M).
  - *Installation of automated and self-healing devices and equipment to allow remote automated switching and fault isolation to reduce restoration time and outage impact to customers.*
  - *Software applications to help improve line losses and manage peak consumption to reduce transmission charges, resulting in lower customer electricity costs.*
- General Plant includes non-system physical plant upgrades or replacements (~$4.9M).
  - *Outage management system (fully integrated with SCADA, GIS, AMI/MAS, CIS, IVR, and complementary to OPUCN's "smart grid" investments).*
  - *Operational data storage replacement.*
  - *Fleet replacements for vehicles that are approaching end of useful life and undergo frequent or high maintenance, or become unreliable in the field.*
  - *IT server infrastructure replacement due to end of life.*

# Non-Controllable Capital Expenditures

- Durham Region and City of Oshawa requests for non-discretionary plant relocations (~$7.7M).
  - *DSP includes the locations and high level designs identified by these agencies.*
  - *Actual annual expenditures and contributions will be dependent on final designs and work schedules.*
- Customer connections and developments/expansions including metering requirements (~$6.2 million).
  - *These investments and their timing are contingent on the advancement of the developments anticipated by the planning authorities.*

# Non-Controllable Capital Expenditures

* Contributions to HONI for transmission capacity (~$6.5M).
  * *HONI has been unable to date to confirm OPUCN's contribution for a permanent capacity constraint relief solution (transmission station), but has indicated that such contribution "could be in the range of $10 million to $12 million".*
  * *At the time the application was filed, the planned contribution was ~$6.5M.*

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Custom IR and RRFE

# 4th Generation IR – Why Not?

* Considered 4th Generation IR parameters:

| Plan Period | Deficiency | |
|---|---|---|
| Rate Year | ROE | Cumulative Income |
| 2015 | N/A | N/A |
| 2016 | -2.09% | $0.9M |
| 2017 | -2.13% | $2.0M |
| 2018 | -2.57% | $3.3M |
| 2019 | -2.01% | $4.4M |

* IR adjusted rates would result in earnings erosion throughout the plan period.
* Cumulative earnings shortfall exceeds $4 million.

[Exhibit 1, Tab C, page 6]

# Custom IR and RRFE

**RRFE:**

- *"Custom IR":*
  - *Distributors with multiyear capital expenditure needs that exceed historical levels. [RRFE, page 19]*
  - *Distributors that apply under this method will file robust evidence of cost and revenue forecasts over a five-year horizon. [RRFE, page 19]*
- *Rates over the term will be determined by the Board on a case-by-case basis informed by empirical evidence including:*
  - *Distributor's forecasts of revenues and costs. [RRFE, page 19]*
  - *Inflation and productivity gains will be built into the rate adjustments over the term. [RRFE, page 20]*
  - *Benchmarking to assess the reasonableness of distributor forecasts. [RRFE, page 20]*
- *Ability to manage within the rates set, given that actual costs and revenues will vary from forecast. [RRFE, page 19]*

# Capital Expenditures

*Distributors with multiyear capital expenditure needs that exceed historical levels…*

* OPUCN capital expenditure requirements for five year plan period measured against depreciation:

| | 2015 | 2016 | 2017 | 2018 | 2019 |
|---|---|---|---|---|---|
| Capital | $13.5 | $11.6 | $12.4 | $12.5 | $10.8 |
| Depreciation | $4.5 | $4.8 | $5.0 | $5.2 | $5.4 |
| Difference | $9.0 | $6.8 | $7.4 | $7.3 | $5.4 |
| Multiple | 3.0 | 2.4 | 2.5 | 2.4 | 2.0 |

[Exhibit 1, Tab C, page 6]

# Benchmarking and Outcome Measurements

*Rates over the term will be determined by the Board on a case-by-case basis informed by empirical evidence including…*

* OPUCN's forecast revenues and costs:
  * Includes expected inflation, efficiencies and productivity gains.
* Metrics compiled by the Board and used to provide comparative data on distributor's performance (data sourced from annual OEB Yearbooks).
  * Illustrate OPUCN's current efficiencies relative to comparable Ontario LDCs, and ***future*** OPUCN efficiencies relative to current efficiencies of comparable Ontario LDCs.
* Benchmarking study by PACIFIC ECONOMICS GROUP RESEARCH LLC ("PEG").
  * Illustrates efficiencies and measures OPUCN's productivity gains over the plan period using an econometric total cost benchmarking approach.

# "Customized" Aspects of the Rate Proposal Allocation of Plan Term Risks

*Ability to manage within the rates set, given that actual costs and revenues will vary from forecast…*

* Revenue related to controllable costs fixed for plan term (That is – incentive and risk).
* Annual rate adjustments for uncontrollable costs: [Exhibit 10, Tab D]
  * Forecast revenue changes from updated customer connections, demand and consumption forecasts to minimize cumulative impact of customer growth differing from City plans.
  * Forecast cost of capital changes updated per annual Board parameters and forecast changes in working capital requirements subject to changes in cost of power to mitigate cumulative impact on revenue for changes outside of OPUCN's control.
* One time rate adjustments for external factors: [Exhibit 10, Tab D]
  * Adjustment for final variances in Hydro One contribution/regional planning costs.
  * End of term true up for variances in plant relocation costs.

# Custom IR and RRFE

**Hydro One Decision: [EB-2013-0416, page 14, emphasis added]**

*"Incentive rate-setting differs from cost of service rate-setting in that it relies less on a utility's internal cost, output and service quality to establish rates, and more on* ***benchmarks of cost, output, and service quality that are external to the utility revealing superior performance and encouraging best practice****. The decoupling of rates from the utility's own costs simulates a competitive market environment and is more compatible with* ***an outcomes-based approach*** *to regulation."*

- OPUCN engaged a number of third party experts to:
  - Externally benchmark its costs and productivity gains (PEG).
  - Assert its asset condition assessment (Metsco).
  - Independently validate forecast costs for controllable capital related to MS9 and system renewal (NBM).
- OPUCN compared its performance against statistical data collected by the Board.
- Internal and external incentives for continuous improvements.

# Oshawa PUC Networks Inc.

Benchmarking and Outcomes Measurement

# Current Efficiencies

* OPUCN has the second lowest OM&A cost per Customer and the lowest Net Fixed Assets per Customer compared with similar size LDCs.

| Net OM&A Per Customer | Kitchener | Oshawa | Newmarket | Veridian | Brantford | Halton Hills | Waterloo |
|---|---|---|---|---|---|---|---|
| 2013 | 186 | 208 | 215 | 221 | 230 | 241 | 244 |

| Net OM&A Per Customer | Milton | Burlington | Whitby | Oakville | Cambridge | Guelph | Industry Average |
|---|---|---|---|---|---|---|---|
| 2013 | 248 | 260 | 266 | 270 | 275 | 298 | 325 |

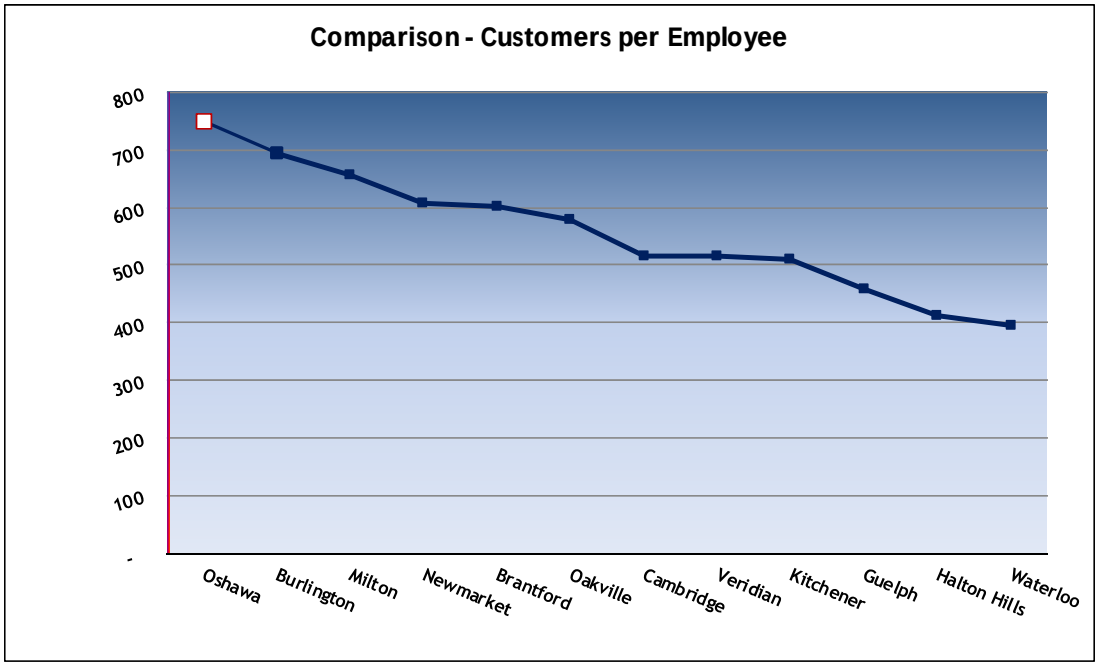
| Net Fixed Assets Per Customer | Oshawa | Brantford | Burlington | Newmarket | Whitby | Veridian | Milton |
|---|---|---|---|---|---|---|---|
| 2013 | 1,436 | 1,547 | 1,553 | 1,597 | 1,671 | 1,720 | 1,784 |

| Net Fixed Assets Per Customer | Cambridge | Kitchener | Halton Hills | Oakville | Guelph | Waterloo | Industry Average |
|---|---|---|---|---|---|---|---|
| 2013 | 1,999 | 2,011 | 2,125 | 2,422 | 2,561 | 3,279 | 3,080 |

[Exhibit 1, Tab C, pages 29 and 32]

# Current Efficiencies

* OPUCN posts the highest customer count per FTE for the LDCs listed:

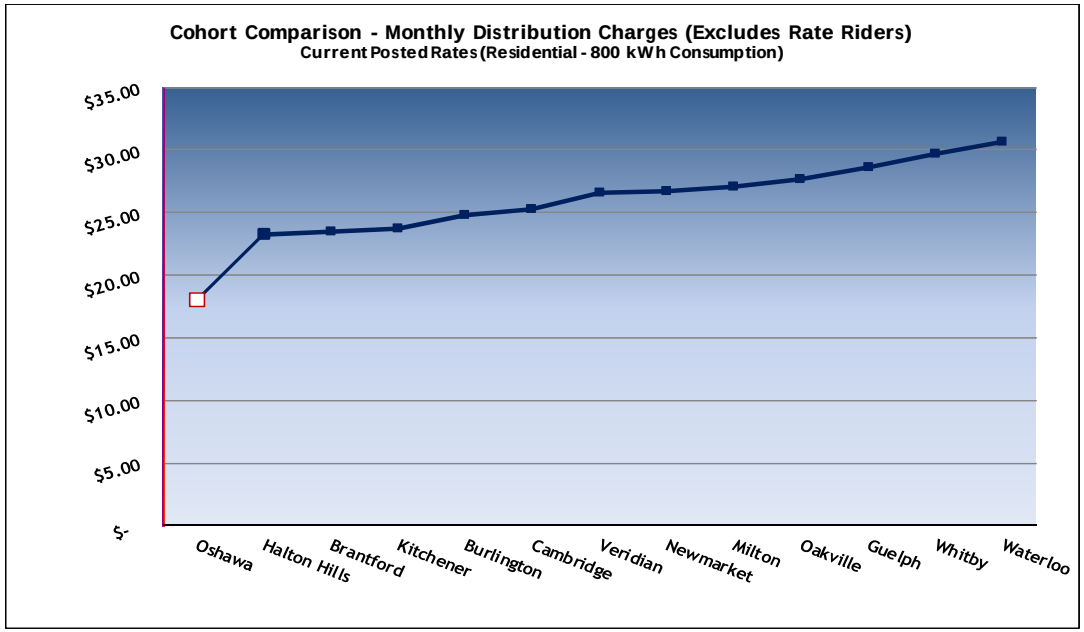



* FTE's typically represent between 65% and 70% of total OM&A costs.

[Exhibit 1 Tab C, page 33]

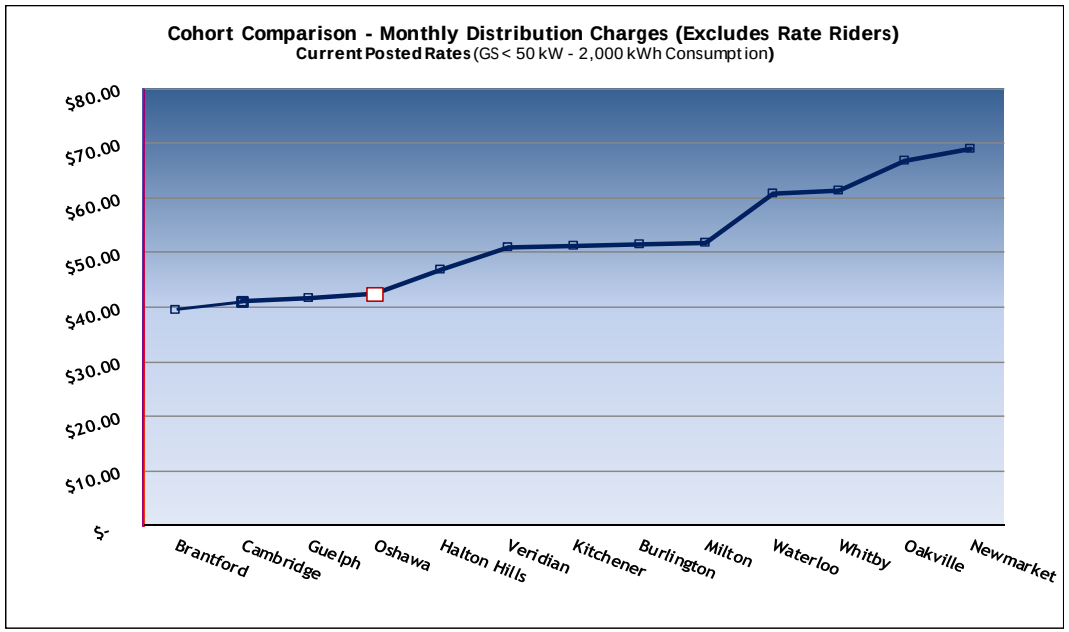
# Current Efficiencies

* OPUCN posts the lowest residential rates for the comparable LDCs listed (rate riders are excluded to compare only rates contributing to revenue requirement):



# Current Efficiencies

* OPUCN posts the 4th lowest commercial rates for the comparable LDCs listed (rate riders are excluded to compare only rates contributing to revenue requirement):



# Current Efficiencies

* PEG's July 2014 Report to the Board - 2013 Benchmarking Update:
  * OPUCN was assigned to the second most efficient Stretch Factor Group.
  * Benchmarking results were in the top quartile of LDCs.
* PEG's November 2013 Report to the Board – Productivity and Benchmarking Research in Support of Incentive Rate Setting in Ontario:
  * OPUCN ranked 13th in benchmarking results.

# Efficiencies for the Plan Term

* PEG's Benchmarking Study determined the OM&A and total factor productivity trends for OPUCN during the plan term are well above the average historical trends for Ontario power distributors which PEG calculated in their recent work for the Board.
* Comparison of productivity trends:

| Cost | OPUCN | Ontario Distributor Averages | |
|---|---|---|---|
| | 2015 - 2019 | 2003 - 2011 | 2003 - 2012 |
| OM&A | 2.17% | 0.51% | -0.40% |
| Capital | 0.12% | 0.01% | -0.26% |
| Total Cost | 0.87% | 0.19% | -0.33% |

[Exhibit 10 Tab A, page 19]

# Efficiencies for the Plan Term

* PEG's Benchmarking Study determined the OM&A and total factor productivity trends for OPUCN increase over the period 2015 through 2019.

| Year | Productivity | | |
|---|---|---|---|
| | OM&A | Capital | Total Cost |
| 2015 | -2.0% | -3.4% | -2.9% |
| 2016 | 1.1% | 0.4% | 0.6% |
| 2017 | 3.2% | 0.7% | 1.6% |
| 2018 | 3.7% | 0.9% | 1.9% |
| 2019 | 4.9% | 2.0% | 3.0% |

[Exhibit 10 Tab A, table 5]

# Efficiencies for the Plan Term

* Forecast 2019 metrics at forecast customer growth rate:
  * OM&A per customer remains at $208 – unchanged from 2013 levels. [Exhibit 1, Tab C, page 32]
  * Net fixed assets per customer of $1,818 is lower than average for comparable LDC's for ***2013***. [Exhibit 1, Tab C, page 30]
  * Customers per FTE is expected to be 782 – the increase from ***2013*** (750 – lowest amongst comparable LDC's) is the equivalent of avoiding approximately 6 FTEs. [Exhibit 1, Tab C, page 33]
* 2019 metrics at historical trend in customer growth rate: [Exhibit 1, Tab C, page 26]
  * $226 OM&A per customer – 4$^{th}$ among comparable LDC's at 2013 levels.
  * $1,978 net fixed assets per customer – median level with comparable LDC's in 2013.
  * 718 customers per FTE – more than all comparable LDC's in 2013.

# Oshawa PUC Networks Inc.

Incentives for Continuous Improvement

# Incentives for Continuous Improvement

*"Additional regulatory mechanisms may be necessary to achieve the objectives of the renewed regulatory framework...*

*Development of incentives to; ...*

* *Encourage innovation*
* *Encourage asset optimization" [RRFE Report, page 61]*

* To recognize continuing value to customers of innovation and asset optimization (that is, avoided rate base) – OPUCN is proposing a Controllable Capital Investment Efficiency Incentive Mechanism ("CCIEIM").

# Controllable Capital Investment Efficiency Incentive Mechanism ("CCIEIM")

* Variance account will track difference between approved (total $28.8M) and actual capital costs of two controllable projects:
  * MS9: Forecast $9.0M. [Exhibit 2, Tab B]
  * System Renewal Program: Forecast $19.8M. [Exhibit 2, Tab B]
* Attributes of projects selected for incentive:
  * Projects are sizeable and discrete controllable projects, which makes them amenable to innovation, efficiency, validation, tracking AND outcome verification.
* Any component of project (i.e. system renewal) not completed is excluded from calculations.
* Onus on OPUCN to demonstrate completion of capital program and results in accord with scope and criteria in approved DSP.

# Controllable Capital Investment Efficiency Incentive Mechanism ("CCIEIM")

| | Underspend | Overspend |
|---|---|---|
| Approved Capital | $28,750 | $28,750 |
| Actual Capital | $27,750 | $29,750 |
| Difference | $1,000 | $(1,000) |
| Rate Base Impact for Incentive Calculation (50%) | $500 | $(500) |
| | | |
| Rate Rider Calculation (2020): | | |
| Return on Equity ($500.0 * 40% * 9.3%) | $19 | $(19) |
| Return on Debt ($500.0 * 60% * 4.45%) | $13 | $(13) |
| Amortisation ($500.0 * 4.59%) | $23 | $(23) |
| Incentive / Rate Rider Amount | $55 | $(55) |

1. Revenue impact beyond 2020 subject to depreciation of principal amount of rate base adjustment at average life of OPUCN 2020 rate base. Using average depreciation of 4.59% per PEG's Report to the OEB November 2013 (page 16).

# Incentives for (Further) Continuous Improvement

*"...one of the shortcomings of IR is a focus on short-term cost-cutting rather than sustainable efficiency improvements, particularly at the end of the plan term. The Board finds that it is appropriate in a Custom IR plan to attempt to address this shortcoming."* [EB-2012-0459, page 17]

* Total Cost Efficiency Carryover Mechanism ("TCECM") proposed to remove disincentive for late period efficiency improvements.
* Excludes costs and revenues associated with the two controllable capital programs subject to the CCEIEM.

# Total Cost Efficiency Carryover Mechanism ("TCECM")

| Year | Forecast Rate Base | Deemed Equity (40%) | OEB ROE | OPUCN ROE | Difference % |
|---|---|---|---|---|---|
| 2015 | $104,991 | $41,996 | 9.3% | 9.7% | 0.4% |
| 2016 | $112,853 | $45,141 | 9.3% | 10.0% | 0.7% |
| 2017 | $119,891 | $47,956 | 9.3% | 8.9% | (0.4%) |
| 2018 | $127,128 | $50,851 | 9.3% | 9.3% | 0.0% |
| 2019 | $133,201 | $53,281 | 9.3% | 9.7% | 0.4% |
| Average Difference - Positive (Negative) | | | | | 0.22% |
| Portion eligible for "rate rider" - 50% (to maximum of 0.50%) | | | | | 0.11% |

| Incentive Calculation - $000's | 2020 | 2021 |
|---|---|---|
| Estimated Deemed Equity | $55,710 | $58,139 |
| | 0.11% | 0.11% |
| Incentive / Rate Rider Amount | $61 | $64 |

*** OPUCN ROE/Rate Base are estimated amounts for illustration only ****

# Oshawa PUC Networks Inc.

Rate Impacts and Rate Smoothing

# Rate Impacts – Before Rate Smoothing

| Customer Class | | Year over Year % Change | | | | |
|---|---|---|---|---|---|---|
| | | 2015 | 2016 | 2017 | 2018 | 2019 |
| **Sub-Total B - Distribution** (includes DVA, Smart Meter rate riders & line loss on Cost of Power) | | | | | | |
| Residential | 800 kWh | 15.4% | 1.3% | 1.6% | 2.6% | 0.4% |
| GS Less Than 50 KW | 2000 kWh | 10.2% | (0.5)% | 1.4% | 2.5% | 0.4% |
| GS 50 To 999 KW | 480 KW | 14.5% | 5.6% | 1.4% | 2.3% | 0.3% |
| GS 1,000 To 4,999 KW | 919 KW | 1.3% | 4.1% | 1.2% | 0.5% | (1.8)% |
| Large Use | 7828 KW | 7.2% | 5.9% | 1.3% | 2.1% | 0.3% |
| Street Lighting | 0.12/0.08 KW | (1.2)% | 5.3% | 1.2% | 3.0% | 0.4% |
| Sentinel Lighting | 0.4 KW | 4.9% | 3.8% | (0.2)% | 1.2% | (1.0)% |
| Unmetered Scattered Load | 750 kWh | 22.1% | 6.0% | 1.4% | 3.6% | 0.8% |

# Rate Impacts – Including Rate Smoothing

| Customer Class | | Year over Year % Change | | | | |
|---|---|---|---|---|---|---|
| | | 2015 | 2016 | 2017 | 2018 | 2019 |
| **Sub-Total B - Distribution** (includes DVA, Smart Meter rate riders & line loss on Cost of Power) | | | | | | |
| Residential | 800 kWh | 5.6% | 5.7% | 6.0% | 6.5% | 5.9% |
| GS Less Than 50 KW | 2000 kWh | 3.6% | 3.7% | 4.2% | 3.4% | 3.9% |
| GS 50 To 999 KW | 480 KW | 6.6% | 6.8% | 6.5% | 6.5% | 6.2% |
| GS 1,000 To 4,999 KW | 919 KW | 1.3% | 4.1% | 1.2% | 0.5% | (1.8)% |
| Large Use | 7828 KW | 7.2% | 5.9% | 1.3% | 2.1% | 0.3% |
| Street Lighting | 0.12/0.08 KW | (1.2)% | 5.3% | 1.2% | 3.0% | 0.4% |
| Sentinel Lighting | 0.4 KW | 4.9% | 3.8% | (0.2)% | 1.2% | (1.0)% |
| Unmetered Scattered Load | 750 kWh | 8.6% | 9.7% | 9.1% | 10.2% | 9.6% |

# Oshawa PUC Networks Inc.

Annual Reporting

# Annual Reporting

*… the Board will monitor capital spending against the approved plan by requiring distributors to report annually on actual amounts spent.* [RRFE Report, page 20]

* Annually file program level capital spending updates and an annual comparison of updated capital program spending compared to the DSP spending, with variance analysis/explanation.
* Include RRR filings in OPUCN's annual rate adjustment materials.
* Information in support of annual rate adjustments.
* Status report on incentive mechanisms for continuous improvements.
* OPUCN also proposes to include in its annual reporting additional information not already included in its RRR filings or in the evidence required to support its annual rate adjustments or incentives.

[Exhibit 10, Tab E]

# Questions/Comments/Feedback

* Thank You.