

Cost Allocation – Unmetered Loads Working Group Meeting:

Session 4 – Cost Allocation with Respect to Different Streetlighting Configurations

EB-2012-0383

February 11, 2015

These notes are intended to be indicative of discussion points and progress at the meeting, rather than an exhaustive summary of comments made by the working group members. They are provided to allow others to follow the progress of the working group.

Upon convening at: 9:35am

Attendance/Participants

In person (17):

- Paula Zarnett, BDR Consulting, on behalf of Rogers Cable Communications (Rogers)
- Lindsey Arseneau, Horizon Utilities Corporation
- Gord McGuire, City of Hamilton
- Mike Field, City of Hamilton
- Peter Locs, City of Hamilton
- Henry Andre, Hydro One Networks Inc.
- Ken Robertson, Cornerstone Hydro Electric Concepts (CHEC)
- Ralph Frebold, City of Toronto
- Shane Beirnes, City of Brampton
- Craig Kummer, City of Brampton
- Roger Higgin, on behalf of Energy Probe Research Foundation (EP)
- David McIntosh (10.30am), on behalf of Energy Probe Research Foundation (EP)
- Bill Harper, Econalysis Consulting Services, on behalf of the Vulnerable Energy Consumer's Coalition (VECC)
- Vincent Cooney, Takis Plagiannakos, and Stephen Vetsis, OEB Staff
- Trent Winstone, Navigant Consulting Limited
- Todd Williams, Navigant Consulting Limited

By Phone (3):

- Tom Chessman, City of Hamilton, on behalf of The Association of Municipalities of Ontario (AMO)
- George Shaparew, Innpower Corporation (formerly Innisfil Hydro)
- April Barrie, Hydro Ottawa, on behalf of the Coalition of Large Distributors (CLD)

Introductory Remarks

Vince Cooney, OEB staff, welcomed the group and made some introductory remarks regarding administrative matters, as well as some notes concerning outstanding issues (particularly with respect to definitions and terminology as raised by some working group members). Some background on the single issue of one-to-one vs. daisy chain cost allocation to be discussed at Meeting #4 was provided.

Presentation by Navigant

Trent went through Navigant's presentation. Staff has included comments from working group members with respect to the presentation and the slide references for these comments are provided.

Slide reference	Comments
7 Comparison of streetlighting data for a range of connection ratios	<p>VECC pointed out that the 7 utility cross-section may not be sufficient to support the conclusions being made in the presentation. Energy Probe made similar comments, that no statistical conclusions could be drawn from a 7 utility sample.</p> <p>Navigant indicated that the purpose of the analysis was not to draw statistically significant results, or a trend that applies to all utilities, but instead to show some of the varying results in asset</p>
12 SL Demand Cost & Connections Graph	<p>Hydro One indicated that much of the cost allocation change between 1:1 and 15:1 is "really just math" because the costs are allocated on the basis of connections. The group agreed.</p>
14 Streetlighting configuration/layout comparison of assets needed	<p>City of Hamilton indicated that GIS is only as good as the underlying data, and indicated that some of the challenges faced by the city still stem from, or relate to, problems with the terminology for unmetered loads.</p>
15 LDC secondary assets	<p>There was some discussion amongst the group that the proposal might suggest that the "streetlighting shouldn't be paying at all" argument was in effect. VECC argued that the question still remains not so much how do you allocate the costs of future systems, rather, how do you go about the process of allocating the costs that are already there.</p> <p>Hydro One raised the point that there is a minimum system which needs to be taken into account when considering any allocation of costs.</p> <p>City of Hamilton noted that its definition of "secondary" includes all service laterals. In a standard residential layout there are equal lengths of lateral and "main line" wires. City of Hamilton suggested that streetlights do not use secondary laterals and while a minor point they are included in the secondary asset.</p>
17 LDC primary assets + line transformers	<p>VECC took issues with the slide saying that "for a given number of devices or load" and suggested that it should be either devices or load, but that the finding would not make sense with both.</p> <p>With respect to the allocation of primary assets, Hydro One raised the point</p>

	<p>that there is a minimum system which needs to be taken into account when considering any allocation of costs. A fundamental principle of the current cost allocation model is that minimum system costs are allocated “equally” across all customers (where “customer” = “connection” under current CAM), independent of actual usage.</p>
<p>18 Primary & Line Transformer (LT) Allocation</p>	<p>In developing a connection factor, VECC commented that “average residential” as a term would be open to a broad number of values for kW and kWh depending on the utility, among other things.</p> <p>Energy Probe indicated that it would like confirmation that the proposals here would not have a material impact on residential customers.</p>
<p>19 Connection Factor for Primary and LT</p>	<p>Some parties indicated that something in the 3:1 or 4:1 range might make sense.</p> <p>Innpower pointed out that the values on this slide would more appropriately be: Assuming a typical residential transformer = 75kVA (75,000VA) Residential: demand = 7.5 kW, energy = 800 kWh, (fraction of) transformer = 1/10th LED Streetlight: demand = 100W, energy = 35 kWh, (fraction of) transformer = 1/750th</p> <p>The resulting ratios for demand and energy for residential-to-LED streetlight device are: demand = 75x, energy = 23x, transformer = 75x ¹</p> <p>Others pointed out that from a design perspective, a typical residential transformer (75kVA), would be expected to serve 10-12 homes. Most in the room concurred this was the design standard.</p> <p>Vigorous debate around appropriate custom numbers and default numbers for a connection factor ensued. Hydro One noted that the Board will need to be very clear about whether same connection factor would be mandated or whether utilities would be free to, or expected to, develop their own connection factor.</p>

¹ It should be noted that these ratios are an oversimplification and do not take into account the impact of distance and the associated voltage drop. Distance from the transformer and the associated voltage drop would ultimately be a more limiting factor with respect to the number of streetlights which could be accommodated by a single residential transformer, as opposed to load on a given transformer.

	Some members of the group put forward the idea of a default number with a floor. i.e. the utility would have to use at least a value of 4 for the connection factor, but could apply for a higher factor with supporting evidence
22 Revenue Requirement Per Device Sensitivity Analysis	Hydro One pointed out that the results on these slides were just a mathematical result based on the modeling. Hydro One also pointed out that for a connection factor of 5 or 10, a 15:1 daisy-chain streetlighting customer would have higher costs allocated to them.
23	Board staff asked if account 1830-5 poles should receive the same treatment as Primary and Line Transformers and the answer seemed to be a strong 'no', indicating that there was too much variation among utilities.
25 Summary of Findings	<p>The idea of a floor value for any default connection factor value was further discussed.</p> <p>Parties indicated that making the connection factor somehow tied to load, and a reduction thereof, would provide a better incentive for municipalities to invest in more efficient lighting systems than the current cost modeling framework. City of Brampton noted that business cases for retrofit of streetlighting or using LED in new subdivisions never win on non-commodity savings. Staff suggested that tying the connection factor to load would be in line with broader public objectives of the province with respect to conservation and demand management.</p>

MORNING BREAK

OEB staff has attempted to summarize discussion topics from the session below.

Can't we just use of Streetlighting Load as a Connection factor? (proposed by Innpower)

VECC suggested that using load to determine connection factors would be the same as allocating costs on a 100% demand basis, without even thinking about the number of connections.

Unintended consequences on the allocation of costs across rate classes

Todd/Navigant indicated that unintended consequences on the allocation of costs across rate classes should be avoided whatever the ultimate implementation would be. The City of Hamilton wondered whether the unintended consequence the high dollars assigned to streetlighting customers. VECC added that, if you can understand the current process, and doesn't lead to unintended consequences, and we somehow have to come up with a different principle, then other consequences should be consistent with the redefined principle.

City of Hamilton supported the approach where the secondary assets are associated with the connections. On the primary side, if you pull apart the connection factor, City of Hamilton supports the approach up to that point.

Proposal from Navigant regarding connection factor development:

- 1) Connection factor can be applied, that is other than 1. Navigant would like to investigate further what that methodology should be. If a sufficient methodology can be developed, Navigant can go out to a few utilities and ask what the connection factors would be given the sample methodologies.

****ACTION: Distributors said they were ok with preparing this. Navigant to develop methodologies and circulate to the working group, and distributors to compute resulting sample connection factor based on these proposed methodologies.**

- 2) The floor value for the connection factor would be set at 4 or 5. The default would not be below 4 making light of the PLCC adjustment's treatment of load (i.e., 400W/ 100W device = 4).

VECC – the methodology should support the 'change principle'. If you go with the suggestion that the floor could be 4, then the factor could be at least 9 for Hydro One where the minimum system PLCC is actually a little higher than the default PLCC amount that most distributors use.

Some discussion of how PLCC applies to different utilities occurred.

**** ACTION: Board to investigate how this proposal would affect the USL class, and why the connection factor should or should not apply to other classes.**

**** ACTION: Energy Probe wants Navigant to see the effect on the residential customer class (likely deminimis) Navigant/Board staff agreed to produce this analysis.**

Fixed Rate Billing

Some comments were made with respect to 100% fixed rate billing. OEB staff's view was generally to leave this alone for now and work within the framework that we have, and with the connection factor work that has been done.

City of Hamilton indicated that it is looking to restring secondary to reduce the number of connections. Navigant indicated that the current CA model creates a bit of a "perverse economy" that might lead to decisions to restring secondary to reduce the number of connections, and allocated costs. City of Hamilton indicated that LED retrofit programs, economically speaking, are barely favoured to restringing

secondary, and suggested this is not an ideal solution to the alleged problems with the street lighting rate class cost allocation.

Hydro One comment – raises an interesting point about rate design, which is outside of the scope of this consultation. If you reduce the secondary to single connections, that might have a little impact on costs, but a huge impact on rates. The issue of rate design is less important for utilities with a single lighting customer, but will be very important for utilities with multiple lighting customers. OEB and Navigant indicated that this is a bit of a scope creep issue, and will monitor.

Next Steps

Is the working group supportive of the recommendation from Navigant to develop a connection factor? (OEB Staff)

VECC: if you can follow through the logic of why it doesn't apply to other classes, then VECC is OK. The connection factor approach cannot be "unprincipled", and you may be comfortable with the "patch approach" that is *unprincipled* if the impact on other rate classes is de minimis but it would be a weak argument to bring to the OEB Board.

****ACTION: Navigant to demonstrate why the allocation being contemplated for streetlighting shouldn't apply to other classes.**

AMO: Raises the issue of tax increases, but OEB staff and others pointed out that these are matters that are outside the scope of the allocation exercise.

City of Hamilton – Noted that changes in technology (e.g. switch to LED lights) could alter the connection factor. Noted desire to have updates to technology reflected in rates as soon as possible.

Board staff - Noted that current IRM structure has distributors rebasing every 5 years. Updating street lighting rates to reflect changes in the IRM term is beyond the scope of the mechanistic adjustments that typically take place between cost of service applications.

City of Hamilton – huge concerns about the rate filing cycle and update period. Probably something for the Board to consider as it looks at its ultimate report from this process.

VECC made similar comments to City of Hamilton, Board staff needs to report the results, definitely an implementation issue here.

Hydro One suggested that there are lost revenue problems which can present challenges for utilities, depending on the quantum of change in kWh assume when setting rates, and the actual values being billed.

****ACTION: AMO – could be working on something with respect to streetlighting load, and forecasting of reduction of demand across its member municipalities. This information would be useful for distributors as they plan their load forecasts, and to provide reasonable information with respect to declining use for the streetlighting class. (After the meeting, the City of Hamilton provided a Procurement Report prepared for the Ontario Power Authority by the Canadian Urban Institute and this report has been posted to the page for this consultation with the permission of Canadian Urban Institute for those who wish to read it.)**

RECAP OF ACTION ITEMS

	Action Item	Responsible	Status
1a	Navigant to prepare a Methodology or methodologies and circulate to the working group	Navigant to prepare and circulate	New; targeting February 25
1b	Distributors to provide sample connection factors calculated using proposed methodologies.	Distributors	Early March
2	Navigant to demonstrate why the proposed broad methodology to apply a connection factor should apply only to selected classes (streetlighting) while not applying to all other classes	Navigant to prepare and circulate	New; targeting February 25
3	Should the connection factor approach also apply to USL?	Board staff to prepare and circulate	New; targeting February 25
4	Energy Probe wants to see the effect on the residential customer class.	Navigant	New; Targeting February 25
5	Association of Municipalities (AMO) to look into surveying its members regarding capital planning and projections with respect to reduction of load/throughput over the next several years.	AMO	New; Timing TBD, based on AMO feedback

Timeline for remaining items

Subject to a suitable proposed and principled methodology (or methodologies) Navigant intends to complete its consultant's report in early March, circulate to working group members for comment, and then issue its report shortly thereafter.

Meeting Adjourned: 12.30pm