

# Recommendations for the Establishment of Electricity Legal Units of Measurement Outside an Approved Meter

Revenue Metering Standing Committee

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- Back in October 2007, Measurement Canada presented a final report on the establishment of legal units of measurement for electricity outside an approved electricity meter.
- MC was soliciting general comments from stakeholders in regards to the final report.
- The consultation period ended December 31<sup>st</sup>, 2007.

- LUM:** A Legal Unit of Measure as defined in the EGIAR and can be used for the sale of electricity.
- PLUM:** Processed Legal Unit of Measure derived outside an approved and verified meter from one or more SLUM.
- SLUM:** Source Legal Unit of Measure means an approved and verified LUM extracted from an approved and verified meter.

- 1.0% accuracy and 0.1% resolution for PLUMs
- Only LUM measurements can be used for establishing VA demand.
- The process for deriving PLUM shall be subject to validation.

- Calculating PLUM from SLUM is limited.

$$Wh_{SLUM} = Wh_{PLUM}$$

$$VARh_{SLUM} = VARh_{PLUM}$$

$$VAh_{SLUM} = VAh_{PLUM}$$

$$Wh_{SLUM} + VARh_{SLUM} \neq VAh_{PLUM}$$

$$VAh_{SLUM} + Wh_{SLUM} \neq VARh_{PLUM}$$

$$VAh_{SLUM} + VARh_{SLUM} \neq Wh_{PLUM}$$

$$Wh_{SLUM\_1} + Wh_{SLUM\_2} = Wh_{PLUM\_T}$$

$$VARh_{SLUM\_1} + VARh_{SLUM\_2} = VARh_{PLUM\_T}$$

$$VAh_{SLUM\_1} + VAh_{SLUM\_2} \neq VAh_{PLUM\_T}$$

$$Wh_{SLUM\_T} + VARh_{SLUM\_T} \neq VAh_{PLUM\_T}$$

## Section 5.0

- PLUM generated outside a meter shall be based on SLUM data and shall comply with appropriate verification criteria. (i.e. verification of totalization tables).

## Section 8.0

- The accuracy of any computed output value of a conversion device or function, compared to the input value have a maximum permissible error of +/- 0.01%.

## Section 9.0

- Transporting SLUM data from a meter to calculate a PLUM (communication protocols).

## Section 10.0

- Loss calculations shall be considered an agreement between contractor and purchaser.

- All totalization tables processed by the IESO would have to be MC approved. This would delay the registration process and be almost impossible to accomplished.
- All systems used by the IESO to collect, transport and calculate LUM would have to be MC approved. Makes it difficult to implement patches or quick implementations.

- Synchronizing time from meters relative to each other with a maximum tolerance of 9 seconds is virtually impossible. Geographical and electrical challenges. Would need GPS clock for every meter.
- Increased cost of data storage (store SLUM, transported data, then PLUM etc...).
- Moving to a 3 minute sub-interval is contrary to the design of the Ontario market.

- Meters used for demand must record 12 previous maximum demands within the meter.
- Daily time adjustments often exceeds the +/- 2 seconds requirement. Discarding data that exceeds the limit will degrade accuracy if estimates are used.
- It is unclear where the E&GI Act provides MC the authority to impose the LUM regulations.

