



# Legal Units of Measure



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Product Manager



# Purpose – LUM Working Group

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- § To identify the legal conditions which will be used to support the establishment of legal units of measurement for electricity demand outside of an approved meter.
- § Establish the criteria, conditions and rules that will be applied to establish a processed LUM outside of an approved meter.

# Membership

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- § Vuong Nguyen, MC Engineering Division
- § George Smith, MC Pacific Region
- § Guy Dacquay, MC Utility and Measuring Division (UMD)
- § Reg Byman, Manitoba Hydro
- § Wayne Cross, BC Hydro
- § Clarence Batterink, Elster Metering
- § Roger Ersil, PowerStream (observer)

# Measurement Canada Concerns

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§ The following “Concerns” statements were tabled:

- § The Electricity and Gas Inspection Act (EGIA) and Regulations do not currently recognize the establishment of electricity demand units of measurement outside an approved meter.
- § The accuracy of time-related demand calculation is dependent on the security and integrity of the energy consumption data provided by telemetering systems. There appears to be a need to safeguard the security and integrity of the consumption data.
- § There are inequity concerns as a result.

# Possible Calculated Values

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- § Demand calculations
  - § kVA from kWh and kVARh interval data
  - § kVA from kWh and kQh interval data
- § kVAh from kWh and kVARh
- § Average PF

# Definitions

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- § LUM: Legal unit of measure as defined in the Act and Regulations and can be used for the sale of electricity.
- § Source LUM: extracted from an approved and verified/sealed device. (Examples) Wh, varh, Vah, joule, W, var, volt amp (VA)
  - § For the purposes of the WG considered correct.
- § Processed LUM: a unit of measurement that has been derived from one or more source LUM, or voltage and current transformer ratios, through a mathematical algorithm or formula.

# Considerations

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- § Time synchronization
- § Data transportation
- § There is a need to clarify the differences between mass memory, Load Profile recorders and interval pulse recorders.
- § Impact on:
  - § S-E-02
  - § LMB-EG-07
- § Implementation strategy

# Potential recommendations

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- § The following criteria shall be applied for the transportation of SLUM and associated data<sup>1</sup> from an approved metering device used to externally calculate a PLUM:
  - § **The integrity of the transported data used to calculate a PLUM shall be ensured through the correct retrieval and representation of that data.**
  - § **The data being transported from the source meter shall not be altered<sup>2</sup> during transportation.**
  - § **The transported source meter data shall be capable of being authenticated at the destination where the PLUM is calculated and have means to indicate if the metered data had been altered.**
  - § Note 1: the expression “data” is used as it may include metrological, time, and meter identification information.
  - § Note 2: the expression “altered” means that the data has been changed either as a result of system error or tampering.

# Data Transportation

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- § Method of evaluation of data transportation:
  - § validate source of data (meter approved and verified)
  - § retain record of source meter data
    - § validate data transported to each destination
    - § validate the process of converting valid data to PLUM
  - § retain transported source meter data
  - § retain PLUM data
- § The above evaluation method shall be documented by the contractor and subject to MC acceptance.

# Conclusions

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- § MC has indicated that PDD intends to issue a new unique specification that we will be applicable for LUM outside an approved meter.
- § You will have the opportunity to comment.

# Recommendations

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- § Minutes of LUM meetings posted on MC's web site.
  - § Electricity > Projects and Initiatives
  - § Read them and comment
- § WG recommendations are expected to go to MC in Nov.
- § MC has indicated that PDD intends to issue a new unique specification that will be applicable for LUM outside an approved meter.
  - § You will have the opportunity to comment.
- § Register for MC's On-Line Subscription
  - § [www.mc.ic.qc.ca](http://www.mc.ic.qc.ca)

