



Manitoba Hydro's Prospective Cost of Service Study Methodology

Overview of Evidence of
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Agenda

1. Scope of Elenchus Evidence
2. Definitions Matter
 - 2.2. What is Cost Causality?
 - 2.2. What are Directly Allocated Costs?
3. Allocation of NER: With or Without Direct Costs?
4. Street and Sentinel Lighting: One Class or Two?
5. Issues Arising from Intervenor Evidence
 - 5.1 Classifying Generation as Demand & Energy
 - 5.2 Weighted Energy Allocator
 - 5.3 Allocating DSM Cost: The Efficiency NS Approach

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1. Scope of Elenchus Evidence

- Scope based on City of Winnipeg intervention
- Primary concern: A&RL class issues
 - Largest category is Directly Allocated Costs (70%)
 - Also significant distribution costs
 - Little energy consumed; hence, allocation of generation and transmission has little impact
- Secondary Concern: GSS and GSM
 - These classes have separate representation

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2.1 Definitions Matter: Cost Causality

- Sounds easy and clear cut, but it isn't
- Filled with notional concepts and fictions
- Without them, we would not be able to develop cost allocation methodologies
- Fictions are useful if they serve a purpose, e.g.,
 - Minimum system or zero intercept – what is appropriate minimum bill – cost of being connected (standby for seasonal properties and self-generation)
- Cost allocation can inform rate design
- Challenge: Principle-driven vs. Results-driven

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Who caused the goal?



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Cost Causality Drives Cost Allocation

- Cost allocation “invents” ways that notionally reflect a causal link to assign blame for the costs.
- For example, how share cost of producing energy:
 - Share of kWh forecast
 - But energy is a joint product with demand
 - But cost varies by hour
- Which class caused the costs associated with this cost allocation review?
 - No causal relationship?
 - What costs were caused by each participant?

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Defining Directly Allocated Costs

- General Causality Principle
 - Costs are directly allocated when facilities are used exclusively by a single class of customer; hence, caused directly by
- Direct Costs in PCOSS14: most classes have some

➤ Residential	\$ 6,615	6.8%
➤ GSS	\$10,538	10.9%
➤ SEP	\$ 642	0.7%
➤ GSM	\$ 6,429	6.6%
➤ GSL	\$10,226	10.5%
➤ ARL	\$15,331	15.8%
➤ Diesel	\$ 9,948	10.3%
➤ Export	\$37,297	38.4%

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Two Types of Directly Allocated Costs

- Type #1: Asset is used exclusively and the asset type is also used for system on shared basis
 - Transformers; Poles; Wires; DSM
- Type #2: Asset is used exclusively and the asset type is not used for system on shared basis
 - Luminaires (light and fixture)
- Key question: Should inclusion of some Type #2 assets in direct allocation disqualify all directly allocated cost from the allocation of NER?
 - If practical, perhaps split directly allocated costs by type

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2.2 Definitions: Directly Allocated Costs



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- Primary Electricity Distribution**
- Electrical Transformers**
- Secondary Electrical or Communications Zone**
Also known as the "comm zone," which typically features cables used for cable TV, landline telephone, & various fiber-optic cable providers
- Cobra Head Streetlight operated by PG&E**
- Proposed Transmitting & Receiving Antenna**
Typically mounted on a sidearm extension either midway down the pole (as shown), or an extension arm directly above the top of the pole.
- Equipment Enclosures**
Cabinets or radio relay units which provide signal processing, akin to computers, and route power and signals through cables to the antenna(s). These enclosures do not transmit radio-frequency energy into the air around them.
- Disconnect Switch**
Smaller enclosure which allows line workers, wireless carrier, or emergency responders to shut down power to the antenna.
- Electric Meter**
Allows electric utility to monitor and bill wireless carrier for electricity usage.

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Shared vs. Exclusive Poles

Based on MH 1989 Study (2015/16 GRA, COW/MH II – 4a-I, Attachment 1)

	<u>Distribution (Shared)</u>	<u>Exclusive</u>
A. R/C Ratio	115%	125%
B. Average Rate	\$9.37	\$14.84
C. Ave. Cost	\$8.15	\$11.90
D. Cost Difference	100%	146%

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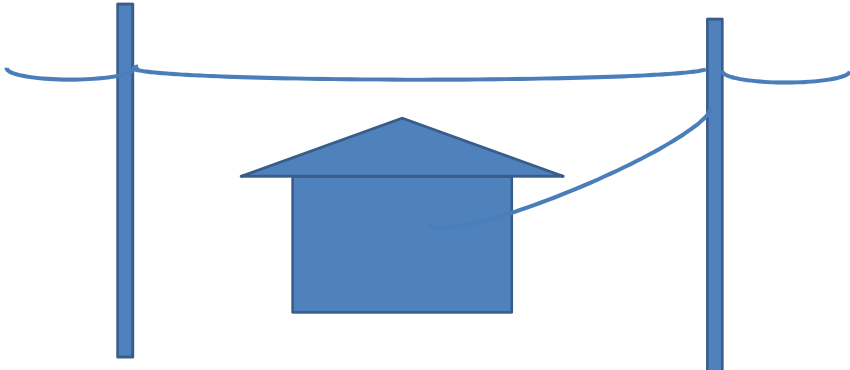
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Distribution Poles/Wires Configuration

Exclusive Pole: Residential



No directly allocated costs

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2.2 Definitions: Directly Allocated Costs



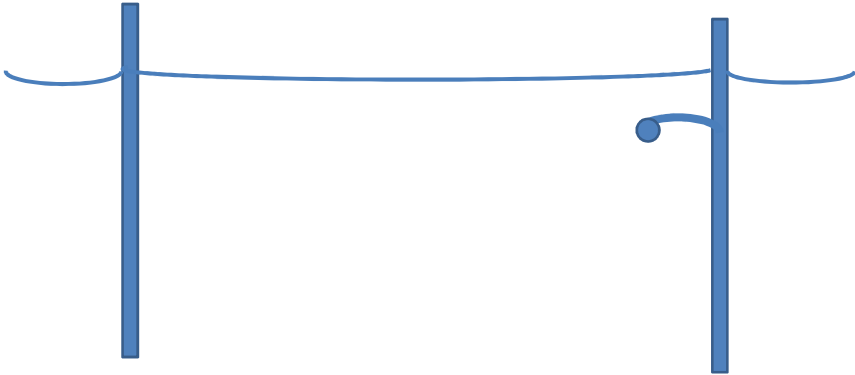
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Distribution Poles/Wires Configuration

Exclusive Pole: Luminaire



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Poles and Wires Configurations




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Distribution Poles/Wires Configuration

Shared Pole: Residential + Luminaire

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What is analogous to appliances

Shared Pole: Residential + Luminaire

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OUTDOOR LIGHTING RATE - *TARIFF NO. 2016-80*

- Exclusive Pole: A corporate-owned pole for the primary purpose of supporting outdoor lighting devices.
- Shared Pole: A pole of the primary purpose of supporting electrical circuits other than outdoor lighting.

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Exclusives may be Hydro Standard



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3. Allocation of Net Export Revenue

- The purpose will determine the method.
- What is the intended use of NER?
 - Purpose #1: Provide a dividend based on customer bill (total allocated costs a proxy)?
 - Purpose #2: Provide a dividend based on cost of electricity services provided (exclude fixture costs)?
 - Purpose #3: Create a segregated reserve (portion of retained earnings)
- Purposes #1 and #2 can be embedded in the cost allocation model (transparent & consistent)
- Impact of a segregated reserve will be to reduce retained earnings, given rate increase scenario

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3. Allocation of Net Export Revenue

- Recommendation
 - Board should determine the intended purpose
 - There is no right answer
 - There is logic to Purpose #2
- How to implement Purpose #2
 - Define relevant Hydro assets
 - Include all poles and wires?
- Being pragmatic:
 - Avoid a split
 - Include all or nothing – which is less unfair?

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4. Why Separate Street and Sentinel Classes

- Outdoor and Sentinel Lighting have different tariffs
 - Outdoor Lighting Rate – Tariff No. 2016-80
 - Sentinel Lighting Rate – Tariff No. 2016-83
- Billing allocator (C11) = weight (0.0006) * # customers (C90)
- Customer billing costs (COW/MH-I-3a-c, page 3) shows:

	<u>Street</u>	<u>Sentinel</u>	<u>Class</u>
2014 Alloc. Cost			\$263,000
2014 # Bills	785	25,974	26,759
1991 cost/bill	\$37.04	\$1.98	\$2.50
2014 cost/bill	\$145.57	\$7.78	\$9.83