

Chugach Electric Association

**Line Loss
Presentation**

Chugach Board of Directors

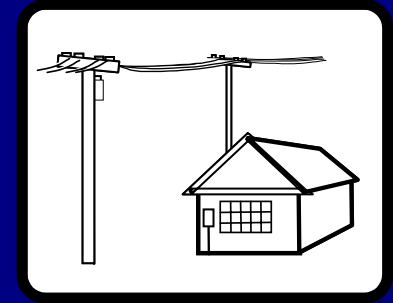
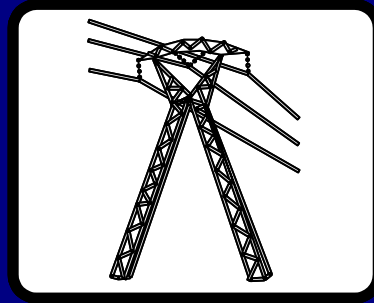
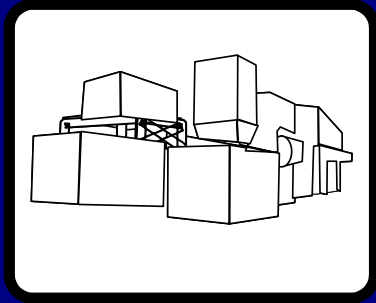
Finance Committee

September 27, 2006

Purpose

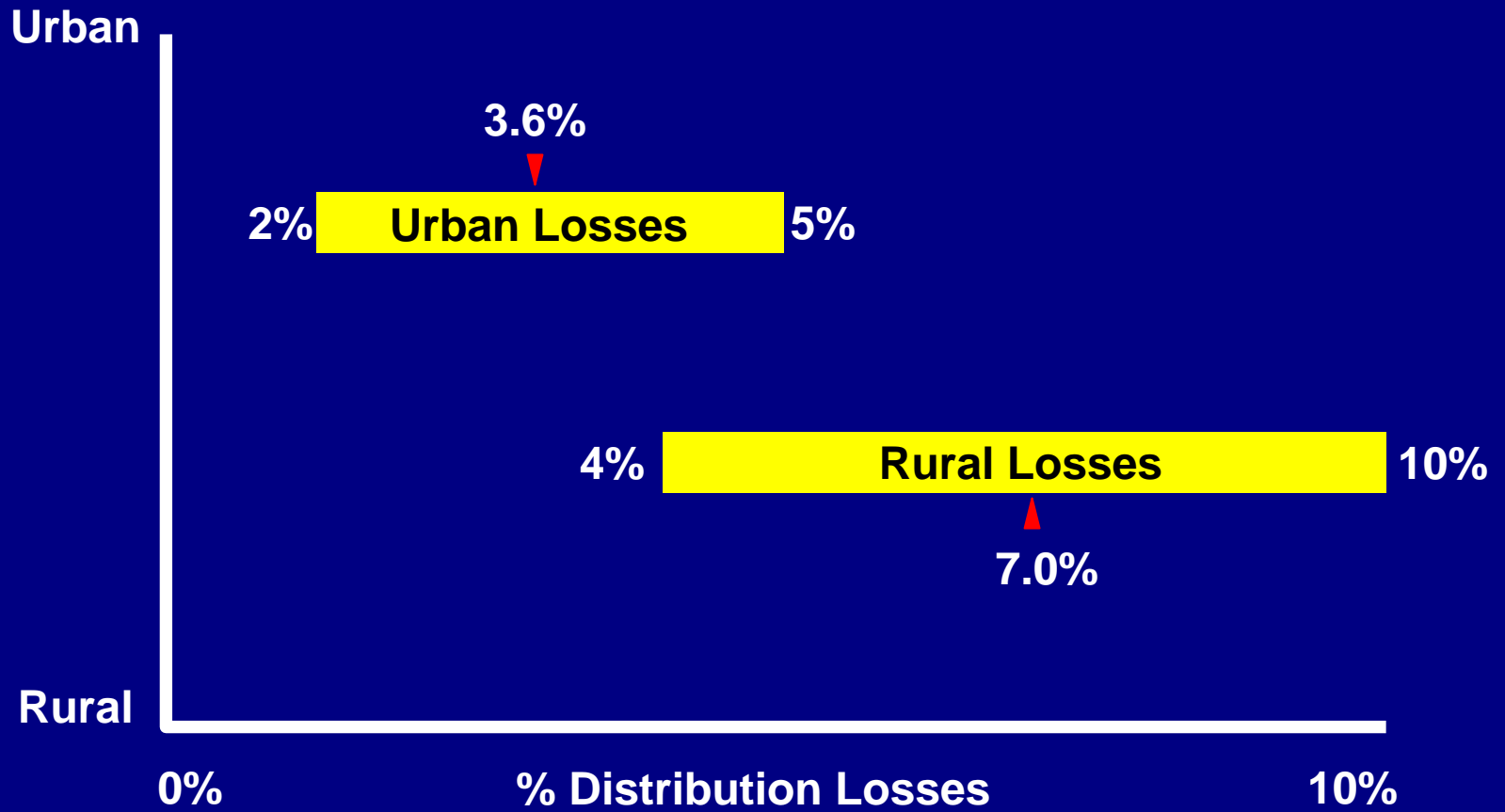
- 1. What are losses?**
- 2. What are typical losses?**
- 3. How do Chugach's losses compare?**
 - a. Distribution**
 - b. G&T**
 - c. Retail (Distribution and G&T)**

What are losses?



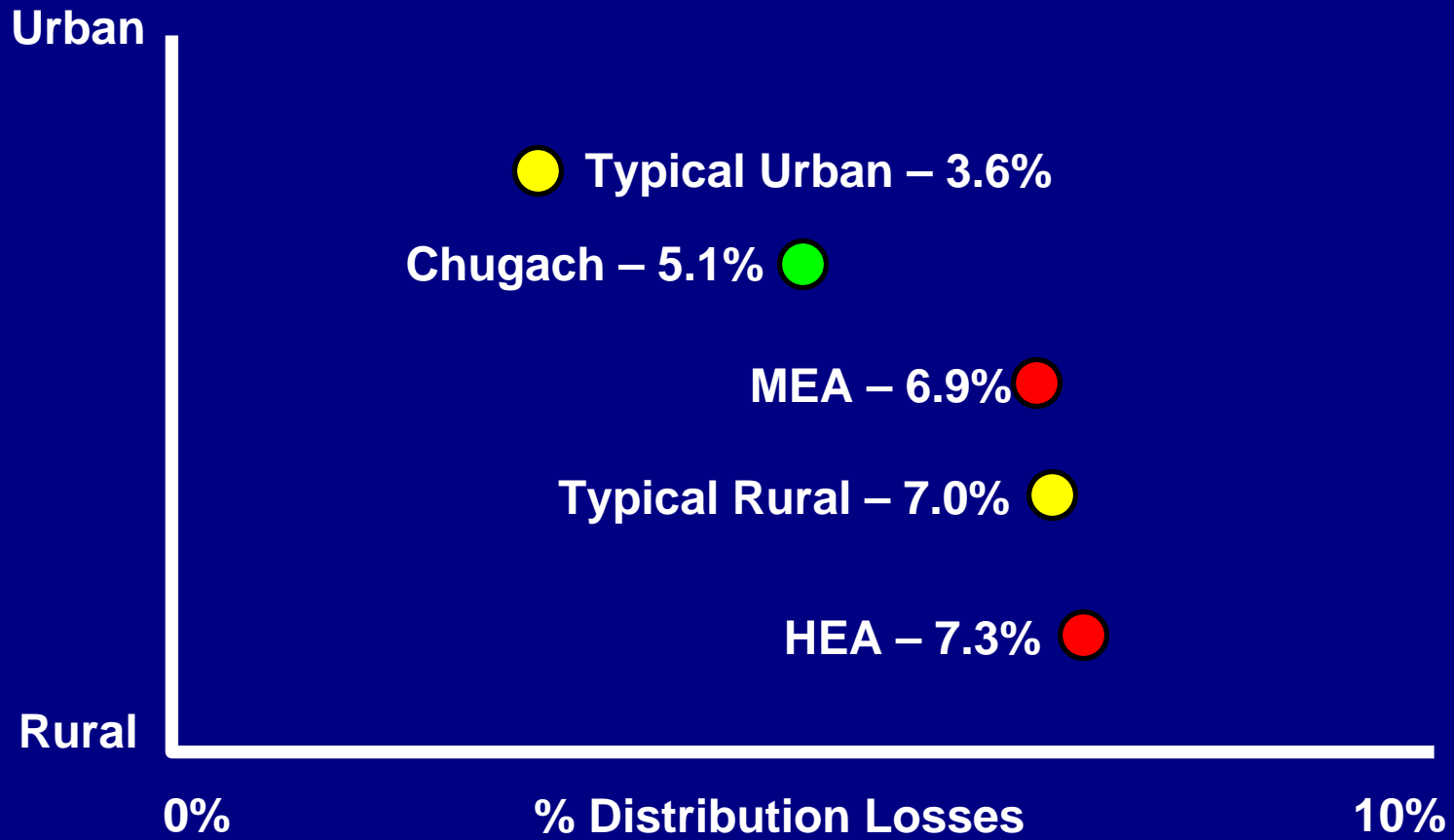
- Losses refer to energy that has been “lost” in the production and delivery of energy to consumers.
- Losses are comprised of technical (transformers, conductors) and non-technical losses (theft, meters).
- Technical losses on distribution systems occur primarily through heat dissipation resulting from current passing through conductors and magnetic losses in transformers.

What are typical distribution losses?



Comparison of Distribution Losses

(2005 values for CEA, MEA & HEA)



Comparison of G&T Losses

Typical G&T Cooperative has about 3% losses

<u>Chugach</u>	<u>Percent Losses</u>
2005	2.6%
2006	3.1%

The percent range of G&T losses for any specific utility primarily depends on the location of generation relative to load center.

Comparison of Total Losses, GT&D

(2005 values for CEA, GVEA and ML&P)

<u>Utility</u>	<u>Percent Losses</u>
Chugach <ul style="list-style-type: none">• generation located outside of load center• largely residential and small commercial	8.2%
GVEA <ul style="list-style-type: none">• mix of remote and local generation• significant commercial and industrial loads	7.0%
ML&P has lower losses: <ul style="list-style-type: none">• generation located within load center• mostly commercial consumers	2.4%

Conclusion

The percent range of losses for any specific utility depends on:

- urban vs. rural
 - location of generation relative to load center
 - system operations
 - weather
 - load level
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Comparatively, Chugach's losses are within the expected range of losses given:

- mix of urban and rural service area
- base-loaded generation located away from load center