

Background

- Project sponsored by Salt River Project (SRP)
- Managed by Electric Power Research Institute (EPRI)
- Builds on work from a larger EPRI tailored collaborative
- Analysis conducted by XENERGY Consulting Inc. under contract to EPRI

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Key Findings Method Assessment

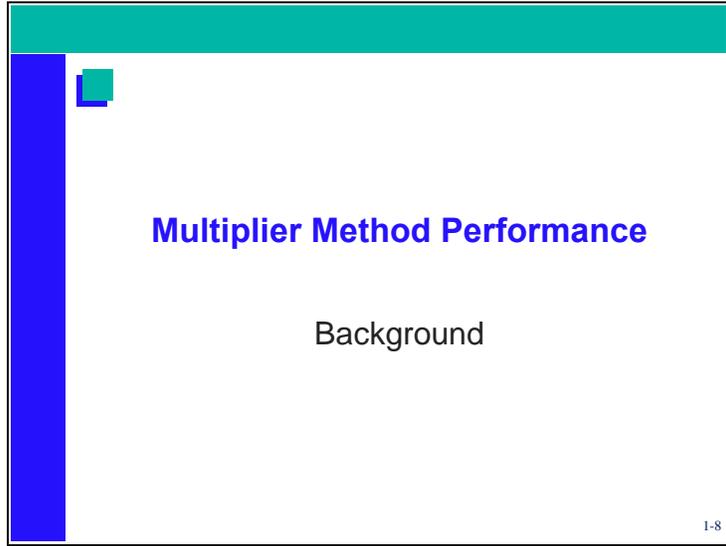
- Method works well in simulation tests for SRP
- Expected to work well in other contexts, on theoretical grounds
- Results in slight cost-shifting from residential to commercial class, 0.1 mil/kWh.

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Key Findings Method Assessment (cont.)

- Volatility of assigned costs
 - ◆ worse than if class average load shapes were known perfectly
 - ◆ better than another method tested with estimated class profiles

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Multiplier Method Performance

Background

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Method Description

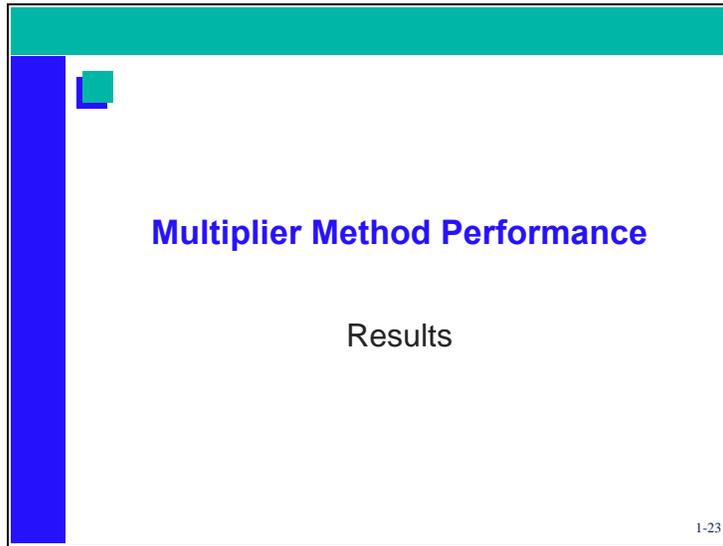
- Metered monthly kWh are distributed over hours in the meter reading period according to the class load profile.
- Estimated loads at the meter are multiplied by system loss factors.
- Loss-adjusted loads are rescaled so that the sum matches observed system hourly loads.

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Method Performance Basis

- Simulated SRP system with “known” hourly data for each customer, hypothetical suppliers.
- Implemented multiplier method using simulated monthly customer data and hourly system data.
- Compared multiplier estimates of load responsibility with known.

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Multiplier Method Performance

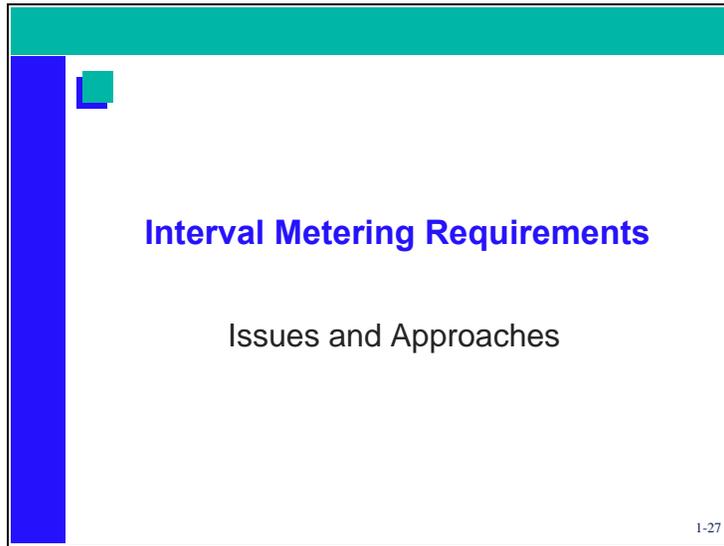
Results

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Bias Compared to Other Methods

- No statistically significant energy bias
- Any method using class load shapes has price bias because subgroup load shapes don't match class load shapes.
- Multiplier Method adds additional unit price bias
 - ◆ $\sim -1/2$ % for residential
 - ◆ $\sim +1/2$ % for commercial
 - ◆ \rightarrow Cost shift ~ 0.1 mil/kWh

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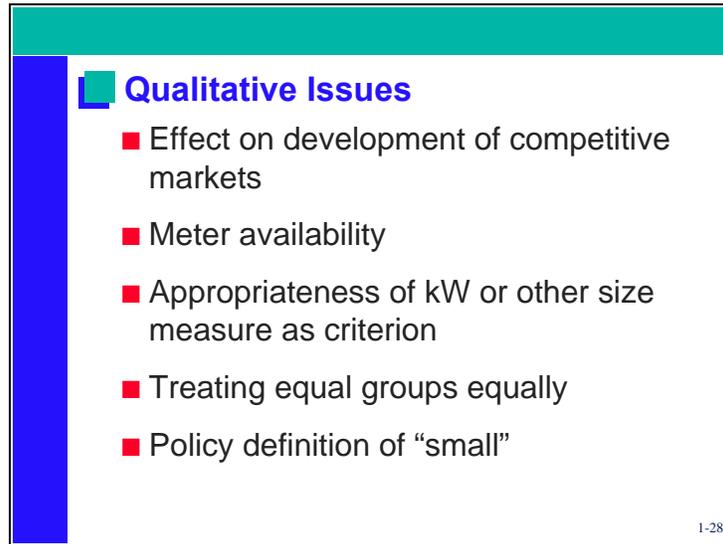


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Interval Metering Requirements

Issues and Approaches

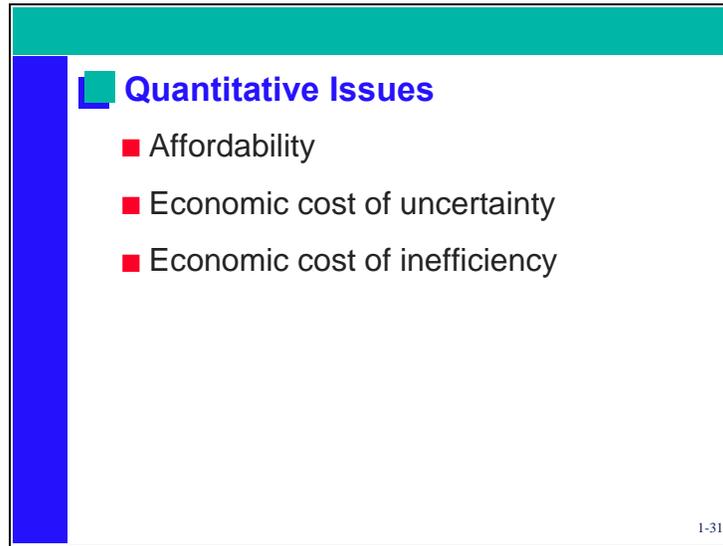
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Qualitative Issues

- Effect on development of competitive markets
- Meter availability
- Appropriateness of kW or other size measure as criterion
- Treating equal groups equally
- Policy definition of “small”

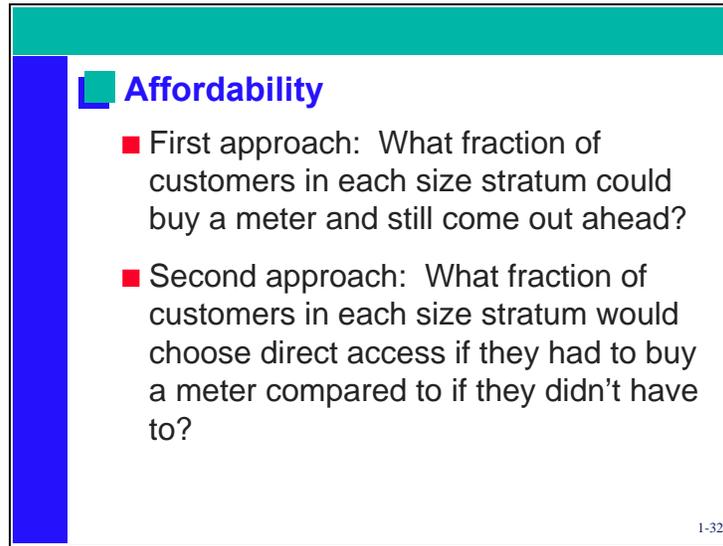
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Quantitative Issues

- Affordability
- Economic cost of uncertainty
- Economic cost of inefficiency

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Affordability

- First approach: What fraction of customers in each size stratum could buy a meter and still come out ahead?
- Second approach: What fraction of customers in each size stratum would choose direct access if they had to buy a meter compared to if they didn't have to?

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