Comparators and Cohorts Workgroup Update to EDR Stakeholders

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Presentation Outline

Mandate of the C&C Workgroup

Questions of Scope

Assumptions and Definitions

Conceptual Approach

Progress to Date

Limitations and Concerns

Alternatives to the Use of Comparators and Cohorts

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Questions of Scope

- Should Comparators and Cohorts be used for screening purposes only?
- Should C&C be used to set rates?
- Should C&C not be used at all for the 2006 rate setting process?

Mandate of the C&C Workgroup

Broadly, to examine and report on C&C issues:

- Produce report for the Board on the use of C&C in assessing prudence of proposed 2006 costs
- Propose an approach to establishing a set of C&C to assist in the consideration of 2006 rate applications
- Produce draft sections of DRH2 & filing requirements for 2006
- Provide input and information for use by the Board's consultant

Working Assumptions …

- Any use of C&C in connection with 2006 rates is limited to screening applications, rather than setting rates
  - This assumption needs to be confirmed by the Board
- Did ***not*** assume C&C would be workable, but attempting to find out if it could be
- Made no assumption as to future use of C&C
  - ***However,*** utilities should be aware that the C&C approach and/or data may be further developed for future use
  - This underlines the importance of good data definitions and consistent application by utilities

Working Assumptions

- Did assume that 'inherited' utility systems are a given
  - For example, voltage levels, tx/dx connection configuration, age of system etc.
  - The degree of change in physical systems since re-structuring has been minor compared to the existing systems in most cases, though in some areas there has been significant growth

Working Definitions …

<u>Cost Driver</u>: an external condition, requirement, or environmental characteristic that has a material and direct influence on utility cost levels

- Examples include service area terrain, customer density, age of system, rates of growth etc., etc.
- We distinguished between drivers of cost levels, and drivers of cost reporting – e.g., differences in accounting treatment that influence ***how*** costs are reported
- We also distinguished between input cost drivers and output cost drivers, most notably service quality and reliability

Working Definitions

<u>Comparator</u>: a measurable indicator of utility costs or operations that can be compared across utilities

- Examples include O&M/customer, capital expenditures/customer, customers/employee etc., etc.

<u>Cohort</u>: a grouping of utilities based on similar values for cost drivers (not comparators!)

- Examples include cohorts based on stratified values of customer density, age of system, rate of growth etc.
- Different cohorts could exist for different cost drivers, and there could be multiple cohorts for a given cost driver

Progress to Date …

Defining the Conceptual Model …

- Basic purpose is to find a valid, meaningful method of comparing results across utilities
- Everyone recognizes that raw (naïve) comparisons of costs (i.e., comparator values) across utilities can be misleading for at least two reasons:
  - Fails to account for differences in input cost drivers
  - Fails to account for differences in the way costs are reported
- A third level could involve 'correcting' for differences in output cost drivers – i.e., service quality and reliability

Stage 1: Identify Input Cost Drivers and Link to Comparators

- Identify the most important and direct input cost drivers and link them to the associated comparators
- Different comparators will have different cost drivers
- Obtain reliable data on cost drivers across different utilities (for each cost driver, every utility should have a value, which could include zero for not relevant)
- Some cost drivers may have continuously variable data (e.g., customer numbers, load, etc.) while others may have discrete data (e.g., yes/no, low-medium-high), and some may only have qualitative measures (e.g., municipal policy re forestry, undergrounding, etc.)

Stage 2: Define Cohort Groups

- For each comparator, define the most important cost driver(s)
- Analyze the range of input cost driver values for that comparator, and group utilities into cohorts based on cost driver values
- Judgement required to define meaningful groupings:
  - If there is a continuous range of cost driver values, what is the best number of groups? 2? 3? 6? 10?
  - Cost driver values should be 'similar' to define a cohort – outliers should not be forced into a cohort

Stage 3: Validate Reported Comparator Values

- To make valid comparisons of comparator values, the reported results must be stated on the same basis, or if not, adjustments must be made to account for differences
- For example:
  - Selected comparator is Billing Cost/Customer
  - Utility A does billing in-house, and reports costs in Billing and Collection category
  - Utility B out-sources billing, and reports costs in Administration category
- Utility A and B have same real billing costs and cost driver values, but appear to have different costs on paper

Fig. 1: Cost Levels vs. Cost Reporting

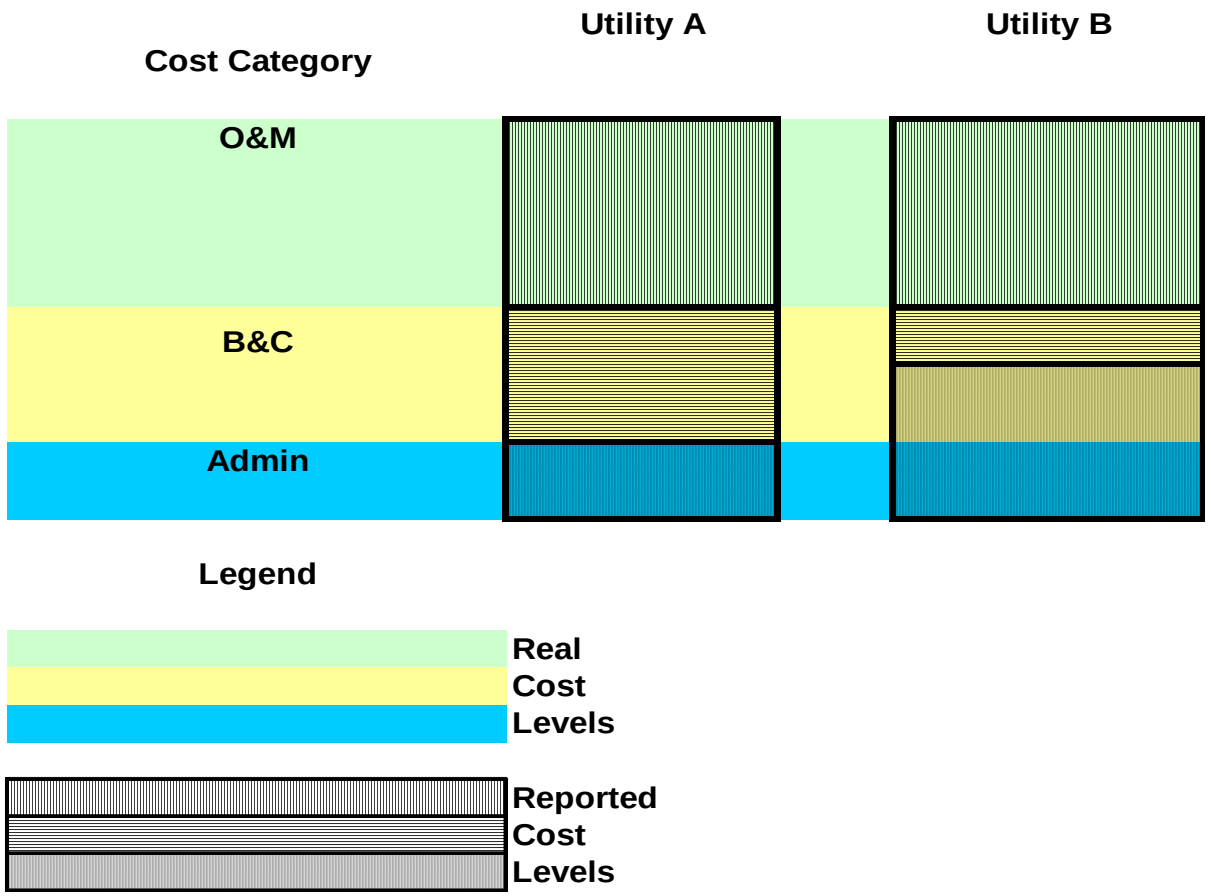

Illustration of Cost Drivers, Cohorts, and Comparators

Cost Driver	Cohort	Comparator
CUSTOMER DENSITY		**O&M / CUSTOMER**
0-250 / Sq. Kilometre	Abilene	412
	Salt Lake City	308
	Pacific Grove	375
251-750 / Sq. Kilometer	Denver	352
	Buffalo	287
	Redmond	336
Over 750 / Sq. Kilometer	Chicago	262
	Miami	348
	Boston	338

Stage 4: Analyze Validated Comparator Values

- For each Cohort/Comparator combination, analyze the validated comparator values
- If outliers are observed, ask:
  - Has an important cost driver been omitted? For example, if the cohorts for the B&C comparator have been defined on number of customers, does the outlier have a much higher degree of customer churn?
  - Are there significant differences in output cost drivers? Does an outlier (either way) have a lower or higher performance on related service quality measures (e.g., telephone service)?

Progress to Date …

Identification of Cost Drivers and Comparators …

- Many input cost drivers have been identified
- Several comparators have been identified
- Preliminary linkages have been made between cost drivers and comparators
- Cost reporting/classification issues also noted:
  - Different capitalization of expense policies
  - Outsourcing
  - Differing accounting policies within APH and GAAP

Identification of Cost Drivers and Comparators

- Service quality and reliability identified as output cost drivers

Example Cost Drivers	Example Comparators
Age and Type of Plant	**O&M / customer**
Customer Numbers and Demographics	**O&M / kilometer of line**
Growth Rates	**O&M / MWh**
Customer Churn	**Capital Expenditures /customer**
Operating Voltages	**Administration / customer**
	Billing and Collection / customer
Capitalization Policies	**Standardized Bill / class consumption profile**
Reliability and Service Quality	**Customers / Employee**

Progress to Date …

Preliminary Findings …

- Some observations of tradeoffs have been made
- Granularity of Comparators is important
  - For example, high level comparators (e.g., Cost per customer) may avoid problems of cost classification and reporting, but could be too broad to permit analysis of meaningful differences in sub-categories
  - Low level comparators can focus on discrete operating areas (e.g., billing), but data may not be comparable

Preliminary Findings

- High level comparators may have more than one significant cost driver
- Tradeoffs also exist between capital and operating expenses independently of reporting differences

Identified Limitations and Concerns

Data Related

- Available data that has been submitted by utilities:
  - Relates mostly to comparators rather than cost drivers
  - Has been compiled and reported under differing assumptions and accounting practices
  - Has been declared confidential (in part) by the OEB
- Identification and development of data on cost drivers is at an early stage and availability for 2006 is uncertain
- APH and GAAP practices and categories may not mesh exactly with the needs of C&C

Model Related …

- It is unclear:
  - What amount of historical data might be required to avoid the 'snapshot' effect of just looking at one year
  - How to proceed if a given comparator has multiple important cost drivers, but the cost drivers give rise to different cohorts
  - How to account for pre-existing, differing circumstances between utilities (e.g., 2004 effects of 1999 losses being deemed a zero return)

Model Related …

- It is unclear:
  - How to quantitatively account for differences in service quality and reliability levels, but neither should they be ignored
  - What degree of difference from average comparator values should prompt a request for additional information – should it differ in cases where values are closely clustered versus widely dispersed?
  - How many utilities are required to form a robust cohort – 2? 6? 10?

Model Related

- It is unclear:
  - By what criteria extraordinary events (Z-factors) would be identified and adjusted for
  - How to account for linkages between capital expenditures and O&M – can either be considered in isolation?
- There are inherent tradeoffs between accuracy, completeness, and fairness versus simplicity, timeliness, and manageability, which may be difficult to balance

Alternatives to C&C …

Need for Alternatives

- Alternative approaches would be required if:
  - Reliable data cannot be assembled in time
  - Cohorts for a given comparator or set of comparators could not be defined for one or more utilities
- Should C&C apply to utilities that choose to file forward test year applications?

Alternatives to C&C

Alternative 1: Trend Analysis of a Utility's Own History …

- This approach may avoid some problems with data inconsistency
- Questionable trends may be apparent from examining sufficiently detailed data
- This approach could be difficult in cases where there have been major structural changes (mergers, amalgamations etc.)

- History alone may not provide a sufficient basis for the identification by reviewing staff of filings requiring more explanation

Alternative 2: ???

Continuing Work

- Identification of additional cost drivers
- Refinement of identified cost drivers
- Identification and refinement of comparators, and linkages to cost drivers
- Identification of relevant external points of reference
- Identification and assessment of data sources and issues
- Proposal for 2006 filing requirements for C&C-related data
- Proposal on methodology for determining cohorts (not composition of cohorts themselves)
- Development of alternatives to C&C