DISTRIBUTION BENCHMARKING STUDIES

In its Decision on Hydro One's 2006 Distribution rates (RP-2005-0020/EB-2005-0378, dated April 12, 2006), the Ontario Energy Board directed Hydro One to engage an independent party to develop a list of comparable North American companies with similar business models, to submit a report on high level comparative performance and cost information for Hydro One and these companies as part of its next Distribution rate application. The Board also directed the submission of a comparison of labour rates and overtime policies amongst Hydro One, other comparative Ontario electricity distributors and other Canadian utilities as identified in the high level benchmarking study.

Accordingly, Hydro One engaged independent consultants to provide the expertise and experience needed to complete the necessary studies. The PA Consulting Group and Hay Group were selected to undertake the Distribution Benchmarking and Comparison of Labour Rates and Overtime Policy studies, respectively.

Distribution Benchmarking Study

The resulting high level Distribution Benchmarking study, Attachment A to this Exhibit, presents the results of Hydro One Distribution's performance among 13 "peer" utilities in North America, across a range of cost, reliability and safety measures. When measures are utilized which take into account the long, radial nature of Hydro One's distribution system and the low customer density of its service territory, overall performance is good to very good.

Comparison of Labour Rates and Overtime Policy Study

The Comparison of Labour Rates and Overtime Policy study is Attachment B to this Exhibit. As part of its response to the OEB directives on benchmarking from the 2006 Distribution rates proceeding, Hydro One met with stakeholders as part of the process for

preparing its 2006 Transmission application to get guidance on the positions to be benchmarked and the approach to be taken in this study. Consequently, this study compares three representative utility job functions among 14 "peer" Canadian electrical utilities. In Hydro One these positions, which represent a large component of its workforce, are staffed by three different employee groups: trades (Power Workers Union), professional (the Society), and management. It should be noted that executive positions are not considered in this study as their future compensation will reflect the Government-directed implementation of its Agency Review Panel (the "Arnett Panel") recommendations in this matter.

The benchmarking study compares the range of minimum to maximum hourly wages for each of the three representative utility job functions. The results indicate that Hydro One's management function (Field Operations Manager position) wage is below the sample average; the professional function (Design Engineer position) wage is at about the sample average; and the trades function (Powerline Maintainer position) wage range is below the sample average minimum and above the average maximum.

In terms of overtime policies, the survey results show that Hydro One is in line with the majority of survey respondents for each of the three positions.

Customer Care Services Benchmarking

The Customer Care services delivered through the outsourcing contract with Inergi LP are not included in the benchmarking studies being conducted for this Application. These services include contact handling, billing, collections, and other back-office support activities, which were part of the Customer Service Benchmarking Report, *Review of Hydro One-Inergi Customer Service Pricing*, completed in 2005 and submitted to the Ontario Energy Board during the Hydro One Distribution 2006 rate proceeding, RP-2005-0020/EB-2005-0378. The results of the 2005 benchmarking study showed the

annual prices paid by Hydro One for Inergy's services were within 1% of the average fair market value. As such, no additional benchmarking was pursued beyond that required in the Inergi agreement, which established benchmarking at years three, six and nine, of the 10-year agreement. The year six benchmarking is planned to be initiated in the last quarter of 2007.

PA Consulting Group

Hydro One

Distribution Benchmarking Study Using Information from 2004-2006

October 24, 2007

Hydro One

Distribution Benchmarking Study Using Information from 2004-2006

October 24, 2007

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TABLE OF CONTENTS

1. EXECUTIVE SUMMARY

Hydro One commissioned execution of a high-level Distribution benchmarking study, with the purpose of understanding its relative position among a group of "peer" utilities across a range of cost, reliability, and safety metrics. PA Consulting Group has performed that study, with the attached report as the result. We briefly outline below the approach taken to the study, the types of results found, and some steps to be taken in the future.

Background and Study Objectives

Hydro One was asked by the Ontario Energy Board to perform a high-level benchmarking study in support of revenue requirements in a rates proceeding. That request came as part of the decision published April 12, 2006 by the OEB in response to Hydro One's Distribution Rates Application and was reinforced in the recent decision on Hydro One's Transmission Application. Hydro One took the opportunity to perform the study to meet the directive of the OEB, while at the same time investigating two specific areas within its distribution operations (vegetation management and meter reading) that may offer improvement opportunities.

Approach

The approach followed a direct series of steps designed to identify an appropriate peer panel of utilities for comparison while simultaneously selecting a group of performance measures for tracking the performance of the companies. These steps were followed by data collection from the selected peer group of companies, and summary and analysis of the resulting data. The summary consisted of development of charts and graphs showing the outcomes for the performance measures, and then review of what those results say about the performance of Hydro One.

A key element of the approach to the project was in selecting the appropriate metrics for tracking success in a distribution company characterized by a very low density service territory. A low density territory requires substantial amounts of electric system assets to serve each customer, and therefore the appropriate performance metrics are required to address that fact of the electric system. Measures based on, or normalized by, the length of distribution lines are appropriate for a company like Hydro One.

Findings and Conclusions

The overall results of the benchmark comparisons are the following:

Cost

When compared on a per-km of line basis, Hydro One's costs are in line with the norm of the group, and in some cases even leading. Their costs are higher than average for the comparison panel when measured on a per-customer basis. Where capital spending is concerned, particularly with respect to per-km metrics, the costs are below the mean for the group.

Asset Replacement Rate

Hydro One's asset replacement rate is low in comparison to the group. This is measured in terms of the amount of capital spending in relationship to the existing asset base. A very low value for the long term could indicate underinvestment in the electric system.

Reliability

When the reliability figures are normalized for the km of line, Hydro One's performance is in line with the norms of the group. Hydro One has comparatively poor reliability within the panel group, when measured by metrics such as SAIDI and SAIFI.

Safety

Safety performance for Hydro One is overall about average for the group of utilities who reported data for the study, but the results are mixed. When reviewing recordable incidents, Hydro One falls above (worse than) the average performance for the panel of companies. On the lost-time incident rate, Hydro One is significantly better than the average of the group.

Meter Reading

Meter reading costs for Hydro One are relatively low compared to the panel, when normalized by distance. When viewed on a per-customer or per-read basis, the costs are very high. This is reasonably explained by the very low density of the territory, which leads to long distances, either walking or driving, between meters for reading.

Tree Trimming

For vegetation management, the Hydro One costs are higher than the average for the comparison panel. The service territory demographics (e.g. size and density of territory, vegetation coverage, electric system configuration) substantially influence the performance results for this area.

Summary

The study has produced some useful results for the company. In particular, the results provide an accurate portrayal of the performance of the company, while at the same time demonstrating the importance of measuring and reporting performance in an appropriate manner to fit the individual situation for each utility. Hydro One's service territory has some unique characteristics, most notably its low density, and the performance of the company appears different depending on whether or not those characteristics are taken into account in measuring performance. Overall performance of the company rates as "good to very good" when performance is normalized by the volume of assets (e.g. km of line). However, when measures that are normalized by customer base (e.g. spending or customer hours per customer served) are used, Hydro One performance appears to be less efficient. The low density/rural nature of the Hydro One system leads to this, since customer-normalized metrics tend to favor higher density systems.

In using the results of this (or any other benchmarking study), it is important to understand both the benefits and limitations of the work. This is a high-level study, and it is important to take care in analyzing and applying the results, assuring a substantial degree of understanding of the underlying data and analysis.

2. INTRODUCTION

2.1 STUDY BACKGROUND

The Ontario electricity industry has undergone significant restructuring over the past seven years. On December 9, 2004, the Ontario Legislature passed the *Electricity Restructuring Act, 2004* to stabilize prices for consumers that reflect the full cost of electricity, facilitate new supply additions, and promote conservation and demand management. The act also created the Ontario Power Authority (OPA), which has a mandate to ensure an adequate, long-term supply of electricity in Ontario. Under the new market structure, wholesale electricity consumers pay a blend of regulated, contracted and wholesale spot market prices for electricity.

The Transmission and Distribution Businesses are separately regulated by the Ontario Energy Board (OEB); and cost allocation approaches are used within the company to appropriately assign costs to the Businesses. The OEB sets rates in proceedings through oral or written public hearings based on the level of revenue required to operate the regulated businesses and to earn the approved rate of return. The OEB, in its April 12, 2006 decision regarding Hydro One's Distribution Rates Application, identified a desire for Hydro One to pursue additional benchmarking studies. The OEB directed Hydro One to submit the results of these studies with the next Distribution Rates Application. A specific related excerpt from the April 12th Distribution rates decision is as follows:

> "While the Board is not prepared to order a comprehensive benchmarking study, the Board sees value in a high level benchmarking study for initial review at the next rate proceeding. The Board directs Hydro One to engage an independent party to develop a list of comparable North American companies with similar business models (transmission and/or distribution) and to report on high level comparative performance and cost information for Hydro One and these companies. In future rate cases, this information may assist with determination of areas for a more comprehensive benchmarking review. The Board does not anticipate that the high level benchmarking study will be overly costly. The Board anticipates that Hydro One will want to consult with interveners regarding the scope of the study. The independent study should be submitted as part of Hydro One's next main application for distribution rates."

With the above information as the drivers, Hydro One Networks, Inc. has prepared a filing in support of a rate review, as directed by the OEB. Hydro One engaged PA Consulting Group as the "independent party" identified above to perform a benchmark study of distribution companies with similar characteristics to Hydro One. This report summarizes the execution of that study, and the resulting conclusions.

The OEB reinforced the need to carry out performance benchmarking studies in their decision on Hydro One's 2007and 2008 Transmission Business Revenue Requirement Application and stated they expect the performance and compensation benchmarking study deficiencies in past studies will be corrected for 2009 Transmission rate filing if not possible for 2008 Distribution filing.

2.2 GOALS AND OBJECTIVES

The primary goal of the study was to provide a high-level set of benchmarks of cost and business performance for Hydro One that could be used in the 2008 Distribution rates proceeding. This involved determination of how to select both an appropriate comparison panel of utilities and an appropriate set of performance measures for use in the comparisons. Appropriate peer utilities in this case means, to the extent possible, those whose operating circumstances are similar to those faced by Hydro One, so that the resulting performance results can be compared with minimal levels of adjustment. Appropriate performance measures means a sufficient sample of measures which accurately represents the overall performance of the distribution utility, recognizing the need for a balanced view, including costs, service levels, and employee safety.

2.3 THE PROJECT TEAM

The project team that performed the study was made up of consultants from PA Consulting Group, augmented by a few of its former employees, and with input from several individuals from Hydro One. The consultants were drawn from the team that created and performed for many years the annual PA Benchmarking studies, while the Hydro One individuals were from the Performance Analysis Department within Hydro One. The support provided by Hydro One was primarily with respect to scope of the study, and to provide Hydro One operations data for comparison against those of the other utilities in the comparison panel. The PA team then executed the study, analyzed the results, and prepared this report.

The primary reason PA Consulting was selected for the engagement is because of their experience in executing benchmarking studies in the utility industry. The two primary consultants engaged in the project have between them almost 40 years of experience in performing such studies, including developing appropriate performance metrics and analyzing results across a broad array of different companies. Many of the elements of comparison for this project were built on the experiences of the project team in executing other studies in the past.

Ken Buckstaff was the primary architect and leader of an electric transmission & distribution benchmarking study which has been run annually since 1989, and similarly developed and led an annual utility customer service study since 1992. In the course of performing those studies, it was possible to build and test dozens of hypotheses about the various impacts of density, size, voltage levels and many other variables on the resulting performance of utilities.

Debi McLain has been the key person actually performing the data handling and analytics for the annual benchmarking studies described above for the past 18 years. Her deep familiarity with the kinds of data availability and potential inaccuracies is invaluable in assuring that proper comparisons are made and that appropriate data are used.

Understanding the interactions between different elements is a critical point in being able to produce appropriate benchmark studies, including the right types of performance metrics, ways to evaluate success based on individual company circumstances, and how to assure the right demographics are considered. In addition to the annual studies, the project team for this engagement has performed dozens of individual benchmark studies ranging in scope from high-level studies such as the one that is the subject of this report down to very detailed analyses of the best practices in place for such narrowly-scoped subjects as substation

maintenance or construction project management. That experience makes the team uniquely qualified to execute this project for Hydro One.

2.4 ABOUT HYDRO ONE

Hydro One is a unique distribution company in many ways, from the organization and operating structure to the regulatory regime it works under to the physical circumstances of its service territory. The service territory situation particularly drives a lot of the management and operating decisions, as well a much of the results achieved in terms of costs and service levels. A few of the external circumstances which have an impact on the results achieved by the company include the following:

- Large, low-density service territory
- Weather patterns
- Tree density/vegetation
- Operating structure

Described below are some of the impacts of these features.

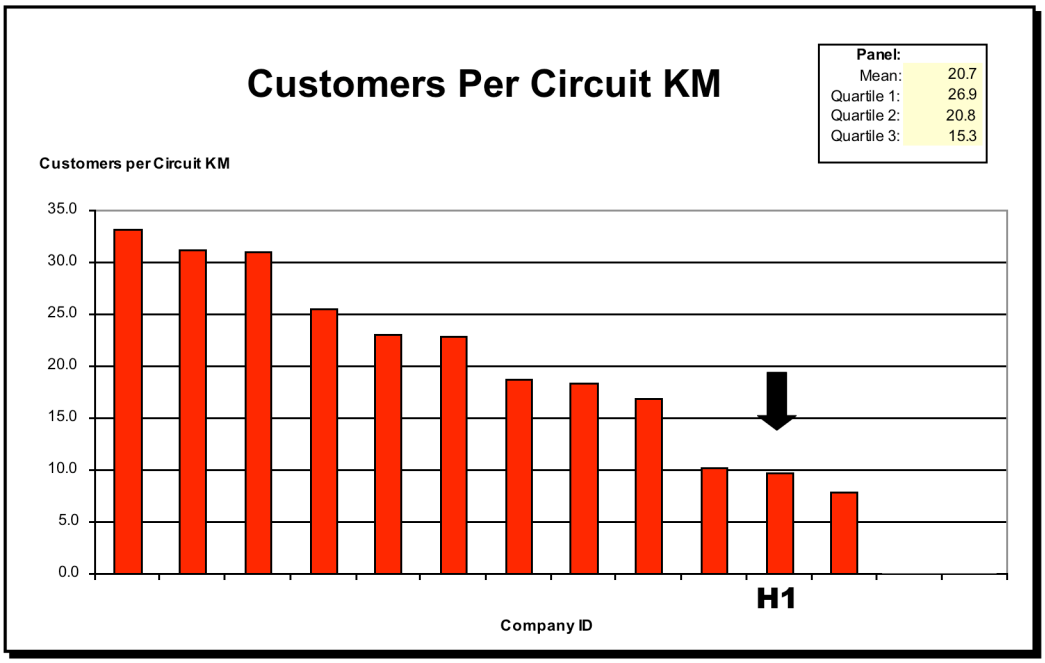
2.4.1 Large, low-density service territory

The Hydro One service territory is very large, with extended geographical areas with very few customers. In selecting utilities for comparison to Hydro One, it was a challenge to find others with the low density that characterizes Hydro One's territory. The sheer size of the territory imposes some requirements on the company for staffing in remote locations, including people, equipment, and facilities, all of which are difficult to effectively utilize at the level that would be possible in a more densely-populated area.

The chart titled "Customers per circuit km" highlights the customer density situation for the utilities in a panel of companies selected for comparison to Hydro One. As can be seen, Hydro One (black arrow) is at the low end for density, even within a selected a panel of companies with similar characteristics.

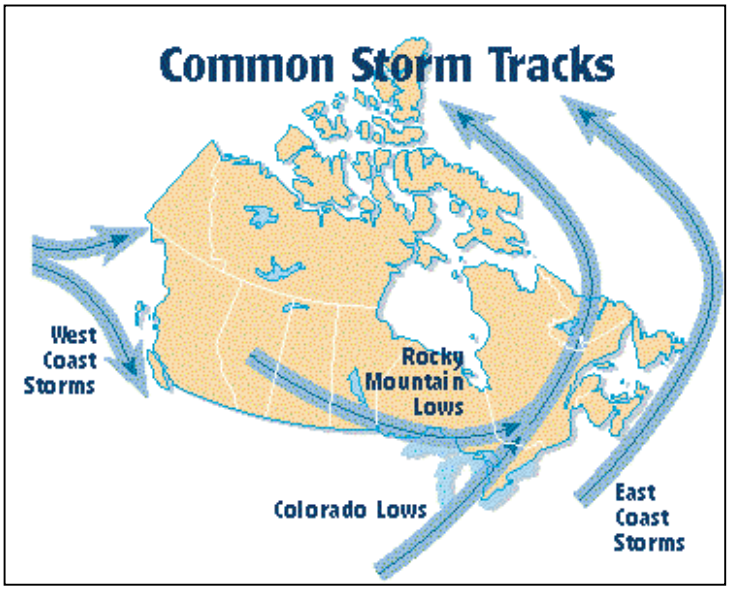
The low density of the service territory also imposes some practical realities on the design of the electric system. The costs associated with putting lines underground are economically unjustifiable for the majority of the Hydro One electric system, with long lines serving relatively few customers. Similarly, it is most economical to design the system in a low density area as a radial-feed system for most of the circuits. The net result is a radial-design, overhead-line system which has substantial exposure to weather, trees, and ordinary wear and tear that might be avoided or minimized in a different service territory.

The system design affects both the costs and reliability achievable by Hydro One. With substantial exposure comes a higher outage frequency for the system. With the long drives to get to parts of the system comes extended outage durations. The net result is poorer reliability than might otherwise be the case.



2.4.2 Weather Patterns

Hydro One is in an area of North America which experiences some weather extremes. Prevailing storm patterns that come across the Hydro One service territory include both the Rocky Mountain Lows and the Colorado Lows, as shown in the map below. Both of these affect the Hydro One customers around the Great Lakes. The Colorado Lows tend to cause the most severe damage to the Hydro One Distribution system.

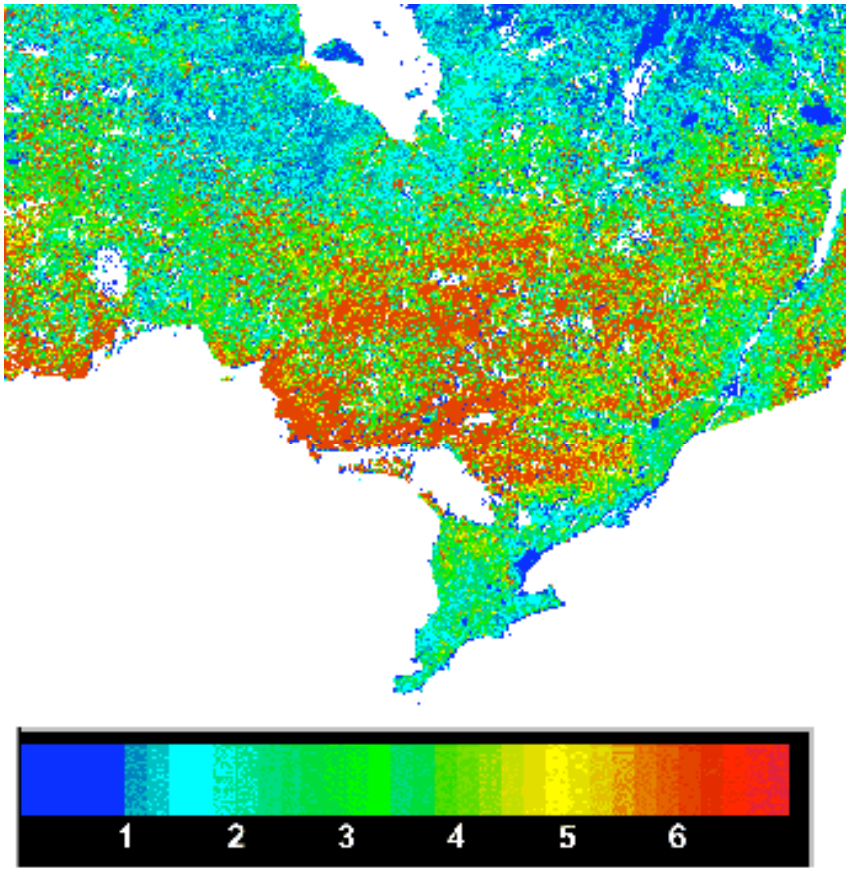


Hydro One's province-wide presence results in a situation where a major storm can actually impact multiple locations in the service territory. The net effect of these storm patterns is a regular storm frequency that is higher than many other utilities in North America experience. In turn, that high frequency and severity of storms creates reliability problems for Hydro One.

2.4.3 Tree Density/Vegetation

Another important factor in electric system operation and performance is the density of forestry within the service territory. Trees tend to have both a cost and reliability impact on an electric system. Failure to trim the trees adequately leads to reliability problems, when tree limbs contact the electric lines. Trimming the trees to keep them from affecting the lines is one of the more expensive activities in the maintenance program. Particularly with a predominantly overhead system, Hydro One's system is exposed to substantial tree-related problems, and the company is therefore required to spend significant amounts of money for this maintenance effort.

The service territory served by Hydro One is characterized by a relatively high density of trees. The leaf index map below shows the concentration of trees in Ontario. As can be seen from the map, Hydro One is affected by a large number of trees that have impact on its electric system. In the map, red (6) is the highest density, with blue (1) low density and most of the red areas in Ontario are serviced by Hydro One. As the map shows, the path of the weather patterns goes through the highest density areas.



Ontario Leaf Density

2.4.4 Operating Structure

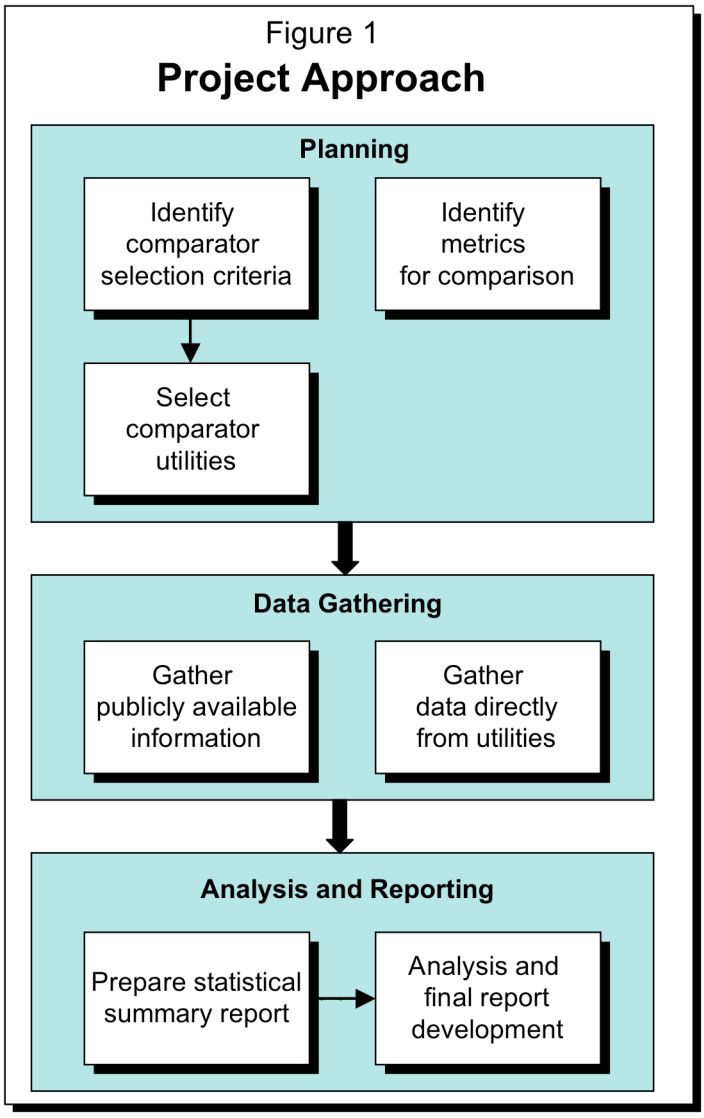
The operating structure of the industry within Ontario has some influence on Hydro One. Because Hydro One is the largest distribution company supplying power to most rural locations and local communities that may have their own Local Distribution Company (LDC), there are some responsibilities created which might not otherwise be there. In particular, Hydro One is in the position of providing sub-transmission delivery services and utilizing its distribution network for large deliveries of power to over 30 smaller embedded utilities (LDC's) in the province. The net result of this additional responsibility is that the Hydro One distribution network has to be bigger and more robust than it would need to be to serve the needs of Hydro One alone. The need to build and maintain the line, transformation and spare assets required to service the embedded LDC's makes Hydro One's costs look higher than they might otherwise be if it also had responsibility for serving just end-use customers. The per-customer performance metrics do not always address this issue since the LDC's end-use customers are discounted and instead each LDC is treated as "one customer" for the purpose of normalizing Hydro One's results.

2.4.5 Summary of Introduction

As with every utility, Hydro One has some similarities to other utilities, and some unique characteristics. This introduction has attempted to identify some of the unique aspects of the Hydro One service territory and business situation. In selecting peers for comparison to Hydro One, these features have had influence on the selection criteria, in order to maximize the probability of achieving a true "peer" group. The most important of these characteristics is the low density of the service territory, since that drives the electric system design, and the need to disperse its resources over a wide area. These factors have a substantial impact on the long-term costs of operating the system, as well as the reliability performance of the system. The remainder of this report explains the benchmarking study and outcomes for Hydro One.

The approach to this study involved several steps, as shown in Figure 1 below:

Figure 1
Project Approach



The first major step in the project was a planning step, designed to determine the right companies to compare Hydro One against for performance results, and then to determine the right performance metrics for actually making the comparisons. The second major step involved collection of comparative data from all available sources, particularly the comparator companies themselves. The final step in the project was the analysis of the data gathered in the preceding step, developing conclusions leading to this final report.

3.1 COMPARATOR/PEER SELECTION

Using the basic project plan and schedule, the project began with peer selection. This required two major steps. First was development and final agreement as to the appropriate

criteria for selecting peer companies. Second required actually applying those criteria against a population of utilities to determine which companies to use for a comparison panel. The key purpose was to find a collection of utilities with similarities to Hydro One, so that the affects of differences of circumstance could be minimized, and the team could focus on the differences in performance levels.

An alternative approach would have been to select from a broader array of potential comparator companies, and then attempt to adjust for the many differences among the resulting comparison panel. Given the difficulties in determining the appropriate adjustment factors for the many external variables which can affect performance, the team concluded that it was better to start with a more comparable panel to begin with.

The project team brainstormed potential selection criteria for use in determining similarity of circumstance, explored each, and then narrowed down the criteria to a relatively small group. The criteria needed to be tight enough to narrow the field of potential comparators, but loose enough to assure a broad enough panel of participants to allow robust comparison and analysis. In order to achieve this large enough final panel, it required the identification of a somewhat larger group of potential comparators than might otherwise be the case, since it is clear that some companies, when approached, would not be willing to participate in this type of study.

The final criteria included:

- Size of company, as measured by
  - Size of service territory
  - Customer Count
  - MWH Sales
  - Number of kilometers of distribution line
  - Distribution capacity
- Geography/weather characteristics (regional location)
- Customer Density
  - Customers per km of distribution line
  - Customers per sq. km
- Business structure (although here the goal was to get some similar and some not-so-similar companies)

The criteria used were as shown in the following table. The specific decision points for each of the criteria are shown in the second column of the table.

Service Territory size	More than 100,000 Sq KM
Customer Count	Between 500k and 5.2M
Customer Density	Fewer than 30 customers per Sq KM

Customers per distribution KM	Less than 40 customers per Pole KM
MWH Sales	More than 30,000,000 MWh Sales
Regional location	Some were chosen for proximity to Hydro One thus sharing weather conditions, others were chosen for similar vegetation density

For the business structure criterion, the goal was to gather some utilities with a fully-integrated transmission & distribution (T&D) wires business, and some with the functions more fully separated. In all cases the goal included companies who supply both Transmission and Distribution, but wanted a mix of operating structures for balance in the peer group.

In the case of the "MWH Sales" criterion, it was used based on publicly available data. Once the companies were selected, the number of MWH *transported* was used as a normalizing factor, rather than the MWH sales. The logic was that the MWH sales was reasonably available and useful for selection, while the MWH transported would be a better normalizing factor, and could be gathered once the study began.

A few additional criteria were suggested, but for either analytic or practical reasons, were not included. An example in this category is the condition of the distribution assets. Without a site visit/survey of each possible utility, it would be impossible to have a proper understanding of the condition of each utility's system, so that criterion, although intellectually appropriate, was rejected as impractical. Using the criteria finally selected, the project team identified a group of North American utilities that fit those criteria, and approached them to participate in the project.

Within the identified group of approximately 35 utilities, we were able to get commitments for participation from a total of 13 of them, in addition to Hydro One. Within that group of 13, not all companies were able to provide all of the data elements desired for the project, but the majority of the questions received enough answers to provide adequate information for comparisons. The group of companies who are represented in the comparison panel for the project includes the following:

- ATCO Electric
- BC Hydro
- Energie NB Power
- Fortis BC
- Hydro Quebec
- Manitoba Hydro
- National Grid
- Northwestern Energy
- Nova Scotia Power
- Oncor Energy Delivery
- Pacific Gas & Electric
- WE Energies
- Westar

Observing the final group of companies, it is a reasonable panel for comparison for Hydro One, and certainly effective for use in providing peer comparisons for the analysis.

3.2 METRIC SELECTION

Metric selection presented the next challenge to the project team. As directed by the OEB the goal was to provide a high-level set of metrics, to allow comparisons of final performance, while also allowing the team to understand differences among the utilities that drive some of the performance differences. A comprehensive set of metrics would allow all the desirable comparisons. Conversely, a brief set of metrics would make the data collection effort manageable, and thereby encourage more companies to participate, as well as meeting the OEB's guidance of a study that would not be overly costly.

The team, drawing upon years of experience in performing benchmark studies for distribution companies, established a provisional set of indicators. It covered the key areas of cost, reliability, and safety. Further refinements resulted in a final listing of metrics which were then pursued through the rest of the study. The final list is shown along with the resulting values in Section 4 of this report.

The metrics the project team decided upon fell into 4 major categories:

- Cost
  - Compared against several normalizing factors (customers, km of lines, asset base, MWh delivered, etc.)
  - Differentiating between investment (capital) versus consumption (expense)
- Asset Replacement Rates
  - Replacement rates are tracked as a means of indicating capital efficiency and asset utilization
- Reliability
  - The primary means of measuring service levels delivered
- Employee Safety
  - Measured using recordable and lost-time incident rates

At a more detailed level, some additional information was gathered about vegetation management, since that is the largest contributor to maintenance costs, and a significant contributor to reliability metrics. Similarly, some information was gathered in the area of meter reading.

The employee safety metrics identified are based on the reports done in the U.S. for OSHA, the Occupational Safety and Health Administration. OSHA specifies the reporting requirements as "recordable incidents" and "lost-time incidents". Recordables are those incidents which are noted as safety problems, and which typically result in very minor injuries. They are "recorded" in order to highlight the frequency of potentially serious safety incidents. These incidents do not result in the employee needing to take any time off from the job. "Lost-time" incidents, conversely, are in fact injuries that do result in the employee needing to take time off. For most companies, these are much less frequent occurrences than recordable incidents, but of course, they represent more serious injuries.

In the cost and service level categories, care was taken to address the central issue of the Hydro One electric system, the fact of the very low-density service territory. In each of the

areas, metrics were selected that track success based on "per-km" values. These give an accurate picture of the performance of the company in terms of the variables they can control.

The asset replacement metrics are measures of investment related to the existing asset base. In the tables in section 4 and Appendix D of this report, the asset replacement metrics are described as "excluding new business". The point of these measures is to track the amount of money being invested to replace or rehabilitate the existing asset base, not the investment in adding new customers or capacity. To that end, the capital investment for additions of customers has been excluded from the calculation, thus leaving the "replacement capital investment". While the measure isn't perfect, because some amount of the replacement capital might also enhance capacity, it is directionally correct, and very useful.

3.3 DATA GATHERING

Data collection also involved a number of steps, with two primary parallel work activities. The first of these was gathering of publicly available data, through use of published financial statements, regulatory reports, and other available information. The second was gathering of data directly from the comparator companies themselves.

Gathering data directly from the target companies began with contacting each potential participant company, both to determine the right individual to work with for the project, and to determine their level of interest and willingness to gather and supply the data for the project.

Following initial contact and solicitation, the participants were provided the partially-completed data collection sheet identifying the information the project required. The companies gathered and verified the information, and submitted it for analysis and inclusion in the report. The data collection sheet provided guidelines and definitions for what costs to include, and how to summarize the data. During the course of the data collection period, it became clear that some clarifications were needed to the guidelines and instructions, and these were provided. The resulting definitions for the data collection are shown in Appendix A to the report. Appendix B provides a listing of FERC accounts that gave guidance for collecting cost data for the project.

The project team determined that the best approach to gathering accurate, representative data would be to assemble data for a 3-year period. Experience in other studies has shown that an individual year might show substantial anomalies for an individual company, both in costs and in other performance areas. For example, a significant one-year investment in construction of a major substation would inaccurately suggest that the company routinely invests large amounts of capital annually, or a large storm that would affect reliability results for that year can skew the outcome for an otherwise relatively reliable electric system. By using a 3-year figure, one-year anomalies can be mitigated. At the other extreme, trying to gather (for example) 5 years of data becomes onerous for the participating companies. 3-year figures were agreed upon as representative of recent, relevant performance, while bypassing the risks associated with a one-year assessment.

3.4 ANALYSIS AND REPORTING

The data were summarized into a statistical report (shown as appendix C to this report) showing the various performance metrics in graphical form, so that each of the companies could see where it stood on the costs and performance metrics. Analysis of the submitted data has led to the development of this report.

Within the analysis of the data that the companies provided, there was a specific need to convert the data to a single currency. The final results have been converted to Canadian dollars for all companies. The currency conversion rates were chosen to fit the three individual years for which we gathered data. Those conversion rates changed about 7% across this three-year period, from 1.22 Canadian$/US$ to 1.13 Canadian$/US$. The net result is that the Canadian companies have tended to look less and less cost-efficient over the three-year period. The exchange rates used for the three years, as provided by the U.S. Treasury Department, are the following:

2004 -- .8178
2005 -- .8759
2006 -- .8818

No adjustments have been made in the analysis for inflation of the costs during the 3-year period. Inflation would have been relatively consistent across the panel of companies, and would therefore not have a significant impact on the relative performance of the companies.

For reliability, industry standard metrics (SAIDI, SAIFI) were used, along with some designed to include the factors associated with extended lines for delivery. The standard metrics are generally comparable between companies, although there are a few potential differences. In particular, though the industry has been working to standardize, there are still differences among companies in the definition of “major events” for exclusion from reliability statistics. These have no impact on metrics that include all outages, but can have an impact where major events are excluded. Similarly, there are different definitions of “sustained” or conversely “momentary” outages. These range in duration from 1 minute to 2 minutes to 5 minutes. These different definitions typically make very little difference in the SAIDI value but they can have an impact of about 10% on the SAIFI value.

Analysis of the costs began at the top level, measuring total costs (capital plus O&M) for the entire electric system, and then splitting them out to individually cover capital and O&M. Those elements were compared against the basis of km of line, asset base, MWH transported, and number of customers. In the tables shown in section 4, the terminology “lines and subs” is used throughout the table. That is to describe the electric system in terms of distribution lines and distribution substations, which are significantly different classes of assets, although both are needed to serve customers. In the case of the asset replacement measures, separate measures were used for lines versus substations, to get an understanding of the replacement rates for the two types of asset.

4. FINDINGS AND CONCLUSIONS

4.1 FINDINGS FROM THE BENCHMARK ANALYSIS

The following table has been developed from the statistical report. The table shows the high-level results from the benchmark data collection. While the statistical report provides the detailed graphs showing all responses from the panel companies, the table represents the key summary statistics that the project team decided were the most important to use in reviewing performance. The metrics are listed in the same order here as they are shown in the statistical report in Appendix C. All monetary figures in the table are shown in Canadian dollars. Value judgments are evident in the table in the rankings. Lower rankings (e.g. 3 of 10) indicate better performance than higher rankings.

The asset replacement rates are calculated based on the capital additions for the year, excluding the portion of capital additions that went toward adding facilities for new customers. In broad terms, the remaining capital spending is designed to capture that portion of the annual capital expenditure related to replacements of existing assets, not to growth of the system to meet needs of new customers. It therefore provides an indication of the overall rate of replacement of the existing infrastructure. It is slightly overstated, to the extent that capital expenditures are used to enhance reliability or otherwise upgrade the system, rather than simply replace existing aged assets.

	Mean	Median	1st Q	Std Dev	H-1	Rank
Cost Metrics						
3-yr Avg Dist Lines & Subs Capital + O&M Spending per Pole KM	$5,774	$6,387	$4,000	$2,521	$3,707	3 of 10
3-yr Avg Dist Lines & Subs Capital Spending per Pole KM	$3,511	$3,851	$2,419	$1,402	$2,103	3 of 10
3-yr Avg Dist Lines & Subs O&M Spending per Pole KM	$2,263	$1,978	$1,534	$1,246	$1,604	4 of 10
3-yr Avg Dist Lines & Subs Capital + O&M Spending per Gross Asset Value	$0.085	$0.084	$0.080	$0.011	$0.075	2 of 11
3-yr Avg Dist Lines & Subs Capital Spending per Gross Asset Value	$0.054	$0.052	$0.047	$0.010	$0.043	1 of 11
3-yr Avg Dist Lines & Subs O&M Spending per Gross Asset Value	$0.031	$0.033	$0.025	$0.009	$0.033	6 of 11
3-yr Avg Dist Lines & Subs Capital + O&M Spending per MWh Transported	$9.48	$9.69	$9.06	$1.46	$9.49	3 of 6
3-yr Avg Dist Lines & Subs Capital Spending per MWh Transported	$5.97	$5.67	$5.32	$1.10	$5.38	3 of 6
3-yr Avg Dist Lines & Subs O&M Spending per MWh Transported	$3.51	$3.78	$2.84	$0.92	$4.10	5 of 6
3-yr Avg Dist Lines & Subs Capital + O&M Spending per Customer	$266	$259	$249	$46	$325	10 of 11
3-yr Avg Dist Lines & Subs Capital Spending per Customer	$171	$164	$142	$45	$184	9 of 11
3-yr Avg Dist Lines & Subs O&M Spending per Customer	$95	$92	$77	$29	$140	10 of 11
Asset Replacement Rates						
3-yr Avg Dist Lines & Subs Asset Replacement Rate (excludes new business)	3.11%	2.70%	2.38%	1.06%	1.97%	2 of 9
3-yr Avg Dist Lines Asset Replacement Rate (excludes new business)	2.84%	2.54%	2.20%	1.12%	2.03%	2 of 9
3-yr Avg Dist Subs Asset Replacement Rate (excludes new business)	3.67%	2.97%	2.34%	1.93%	1.65%	1 of 8
Reliability						
3-yr Avg Customer Hours per Circuit KM (Include Major Events)	121.6	118.4	90.7	58.2	160.6	7 of 10
3-yr Avg Customer Interruptions per Circuit KM (Include Major Events)	44.3	41.8	34.8	23.7	39.4	5 of 10
3-yr Avg SAIDI (Include Major Events)	5.8	4.4	3.8	4.1	16.6	14 of 14
3-yr Avg SAIFI (Include Major Events)	2.2	1.9	1.5	1.0	4.1	14 of 14
3-yr Avg Customer Hours per Circuit KM (Exclude Major Events)	56.1	65.0	33.6	28.3	69.6	6 of 9
3-yr Avg Customer Interruptions per Circuit KM (Exclude Major Events)	34.6	29.7	28.1	20.5	28.7	4 of 9
3-yr Avg SAIDI (Exclude Major Events)	3.0	2.6	2.0	1.7	7.2	12 of 12
3-yr Avg SAIFI (Exclude Major Events)	1.8	1.4	1.2	0.8	3.0	11 of 12
Safety						
3-yr Avg Recordable Incident Rate - Total Corporate	3.45	3.13	1.49	2.35	4.76	8 of 10
3-yr Avg Lost Time Incident Rate - Total Corporate	0.82	0.93	0.42	0.45	0.40	3 of 10
3-yr Avg Recordable Incident Rate - Distribution	3.94	3.04	1.61	2.41	6.60	8 of 9
3-yr Avg Lost Time Incident Rate - Distribution	1.05	0.65	0.52	1.13	0.52	3 of 9

The summary figures in the table are built on a 3-year average for each of the cost metrics. Both the 3-year values and the values showing only the most recent year were calculated during the course of the study. Given the long-term nature of capital investments for distribution assets, it was deemed important to base conclusions on the 3-year figures shown in the table.

The table provides a view of both the critical results and the variability in those results. In particular, by showing the values for mean, median, and first quartile, as well as the standard deviation, a reader can discern how the figures vary across the panel. Finally, the last two

columns show the results for Hydro One on each of the metrics, and what rank that performance level places Hydro One in within the panel group.

During the course of the project, the team also looked at the costs associated with meter reading, and with tree-trimming/vegetation management. The results of that investigation are shown in the table below. In the case of tree-trimming, only about one third of the companies were able to provide the cost data for their vegetation management programs, but the information is still directionally useful. In the case of these two areas, costs were only captured for the most recent year, so unlike the numbers above, these figures are only for a 1-year period (2006), rather than a multi-year average.

	Mean	Median	1st Q	Std Dev	H-1	Rank
Meter Reading						
1-yr Meter Reading Expense per Pole KM	$200.14	$187.79	$150.48	$117.10	$160.77	3 of 8
1-yr Meter Reading Expense per Customer	$9.16	$9.07	$6.58	$3.78	$13.97	8 of 8
1-yr Meter Reading Expense per Read	$1.43	$0.87	$0.59	$1.21	$3.65	9 of 9
Tree Trimming						
1-yr Tree Trimming Expense per Trees Managed	$3.07	$2.70	$2.27	$1.89	$5.69	4 of 4
1-yr Tree Trimming Expense per Tree Trimmed	$53	$52	$39	$28	$83	3 of 3
1-yr Tree Trimming Expense per KM Trimmed	$3,392	$3,061	$2,796	$792	$4,367	5 of 6
1-yr Cycle Time Actuals	5.3	5.5	3.7	3.4	11.5	7 of 7

When viewing the 1-year figures, care is needed, since particularly for tree-trimming, the process is a long-term process, but the program can be changed quickly, leading to significant swings for an individual company from year to year. As noted, only a third of the companies could provide the data for a single year, so asking for multiple years wasn't a viable option. Even though this is a very important aspect of both costs and reliability for electric system operation, it remains a relatively poorly-measured activity within the industry.

4.2 DISCUSSION

In terms of outcomes for Hydro One, a review of the tables above suggests several observations:

- Hydro One's costs compare favorably to the peer group, particularly when measured on a per-kilometer basis. This is also true when the measurements are made on a per-asset basis or a per-kWh transported basis. As a result of Hydro One's low customer density, costs are noticeably higher than average when they are compared on a per-customer basis.
- When normalized by the circuit KM of line, Hydro One's reliability results fall into the middle of the group of companies. Hydro One's reliability is generally poor in comparison to the group when measured only by SAIDI and SAIFI.
- Hydro One's safety performance is about average for the group of companies, both at the corporate level and at the Distribution level. The recordable incident rate is higher than average, while the lost-time incident rate is better than average.
- Hydro One's meter reading costs are in the low end of the group when they are normalized by distance (pole km). When measured on a per-customer or a per-read basis, the costs appear high.
- For the tree-trimming/vegetation management area, Hydro One's costs are high in comparison to the panel. In this particular area, the number of companies with

adequate data for comparison is relatively small, but the results provide an indication of the relative position for Hydro One.

As with all utilities, the demographics of the service territory served by Hydro One have a substantial impact on their operating performance. The density (or lack thereof) of the territory drives the radial design of the electric system, and the prevailing weather patterns influence both costs and reliability levels. At the more detailed level, the high density of trees creates a need for substantial amounts of tree-trimming and brush clearance, which drives costs and reliability. When the performance is normalized for the added exposure created by the long electric lines needed to serve the territory, Hydro One's performance is in line with that of its peers.

4.2.1 Costs

The cost results for Hydro One indicate good performance in managing costs when the circumstances of the service territory and electric system design are considered. Except on a cost-per-customer basis, almost all of the overall cost metrics fall at or below the mean values for the panel of companies, and some are very low. In general terms, and with all other items held equal, this would be considered good.

4.2.2 Asset Replacement Rates

In the area of asset replacement rates, the low cost numbers provide some reason for concern. In particular, Hydro One is replacing its assets at a very low rate, both in comparison to the panel and in general. While the figures investigated are only on a 3-year average basis, if the replacement rate is indicative of the long-term capital replacement rate, it would indicate an extraordinarily long life expectancy for some of the electric system.

4.2.3 Reliability

Reliability is typically measured using metrics such as SAIDI and SAIFI. These track the average customer experience in terms of outage frequency and duration. For this study, these metrics were tracked, and then additional metrics were provided, to follow the frequency and duration of outages as normalized by km of line. Both methods of measurement have merit in this circumstance, given the exposure levels created by Hydro One's operating circumstances.

For Hydro One, using reliability metrics as modified for line length, which better represents the rural nature of the Hydro One electric system, shows Hydro One performance is average, with reasonable expectations of improvements. Using SAIDI and SAIFI metrics, the electric system reliability compared against its peers is poor on a "customer experience" basis. Given the nature of the service territory, the ability to compare favorably on the customer experience basis is very limited. It is possible to improve on the current performance, but it would be extraordinarily expensive to achieve first-quartile performance on the SAIFI/SAIDI metrics.

4.2.4 Safety

In the safety area, Hydro One's performance is average for the panel. Recordable incidents are somewhat high, while lost-time incidents are relatively low. The net is average performance. "Average" performance within the utility industry is actually quite good when

compared against other industries with similar hazards, where the safety records aren't as good. In comparisons made outside of this study, the utility industry has shown to be an overall leader in terms of safety performance.

At any rate, safety is an area where the status quo is never acceptable, because even the top-performing companies can improve, and there is a clear target of having no injuries. For Hydro One, a continued emphasis on maintaining and improving on the current safety record will serve the company and its employees well.

4.2.5 Meter Reading

The costs of manually reading meters are highly affected by the service territory characteristics. In the case of Hydro One, the meter reading costs are relatively low compared to the group, when normalized by the distance meter readers have to travel (pole KM). However, when viewed on a per-customer or per-read basis, the costs are at the high end of the panel of companies. This is reasonably explained by the very low density of the territory, which leads to long distances, either walking or driving, between meters for reading.

4.2.6 Tree Trimming

Tree-trimming appears as a high-cost activity for Hydro One. The costs for Hydro One would be expected to be high, given the long distribution lines through substantially forested areas. With average tree density, the exposure levels for the extensive system would create large amounts of tree-trimming requirements. With the high tree density levels in the Hydro One territory, the exposure is that much greater.

The above comments notwithstanding, it would appear there is an opportunity to improve the overall costs of tree-trimming for Hydro One. The key metrics shown in the table above measure the costs on a per-tree or per-km basis, and could be expected to be roughly comparable across companies. However, as noted below, there are differences between utilities in the factors impacting tree trimming performance.

The only variable about the tree-trimming practices which was tracked for this study is the length of the tree-trimming cycle for each of the companies. Hydro One has by far the longest cycle time between consecutive trimming of each tree. It would be worth investigating to see whether that has led to greater difficulty in performing the trimming when the time comes for each tree or circuit. It is also conceivable that this long cycle leads to more "hot-spot" trimming than usual, which is typically more expensive than routine cycle trimming. Previous studies executed by PA Consulting have indicated that the optimum tree-trimming cycle length is nearer to 5-6 years than to the 11 currently in practice at Hydro One.

One additional area of interest for further study would be the relationship between the long cycle time of tree-trimming and the reliability results. Shortening of the cycle time will probably have the benefit of reducing the frequency of tree-caused outages for circuits and customers. It would require further investigation of the % of interruptions caused by trees, and how much those could be reduced by a differently-structured tree-trim program.

4.2.7 Summary

Overall, this benchmarking effort has provided some valuable insights for Hydro One. Clearly it has highlighted some areas of opportunity, as well as some of the circumstances that create

challenges for achieving superior performance. By carefully analyzing the results, Hydro One can target some improvement opportunities. At the same time, there are issues to be considered in using the study results, as discussed in Section 5 of this report.

5. CONSIDERATIONS IN USE OF THE STUDY RESULTS

This is a high-level study, providing a comparison of Hydro One versus a panel of comparable utilities. When reviewing the results it is necessary to appreciate that several factors can affect the results. Among those factors are the shift in the US/Canadian $ exchange rate through the three year survey period of the study; the variation in the age and design of systems run by each of the utilities; variations in the provision of services (e.g. delivery across the distribution network for other distributors) by the various distribution companies; as well as potential accounting differences in the cost data provided by the companies.

As there are a limited number of truly comparable distribution operators, the comparison panel is by definition limited. However, the number of companies against whom Hydro One is compared provides a useful group against which to compare results and highlight Hydro One performance. The study can be quite useful in providing directional guidance, but should not be used to create definitive numeric targets.

As noted in section 3.4 above, the currency exchange rate between Canadian and U.S. currency changed about 7% during the course of the 3 years under study. This came on the heels of an even larger shift in the two years immediately preceding this study. This has caused the Canadian companies in the study to see their relative performance in the overall panel slip somewhat, even for those whose underlying performance really didn't change at all.

A longer-term factor influencing the comparisons is the combined impact of the variation in the age and design of systems run by each of the utilities. Put simply, the average age and demographic profile of the equipment in each utility's system will have an impact upon cost results and reliability. For instance a utility whose average equipment age is before midlife will probably be spending less on capital replacements and O&M repairs as well as have higher reliability levels than a utility whose average equipment age is well beyond the midlife time frame. Similarly, with regards to system design, if due to low population density levels a distribution system is characterized by a large proportion of radial lines, it will have lower reliability performance than a system with a larger proportion of parallel and redundant pathways to customers. PA has been unable to gather adequate data through survey techniques in past studies about age and condition of electric systems. Utility records have proven inadequate to produce "average age" information, and there is no industry standard regarding definitions of equipment condition. As noted in 3.1, it wasn't practical to perform an inspection of each company's electric system to develop an objective, consistent view of system conditions, so this factor has been entirely left out of the analysis. Such an analysis would also be a very costly exercise.

Finally, there are differences in the accounting structures between utilities, both within Canada and between Canadian utilities and U.S. utilities. These manifest themselves in differences in what is treated as capital versus what is treated as O&M, as well as in differences in depreciation rates, etc. By looking at the total of capital and O&M, the majority of impact of these differences has been negated, so this is considered a relatively minor issue for this study.

In closing, this benchmarking study has taken the steps necessary to meet the requirements of providing a high level comparison of distribution utilities for Hydro One. However, as in any

benchmarking study, one must be careful in reviewing and applying these results without a substantial degree of understanding of the underlying data and analysis.

APPENDIX A: DEFINITIONS

Glossary of terms

Term	Definition
Accumulated Depreciation	a.k.a. FERC form page 219, section B, column B. The total amount of depreciation calculated for all assets which are still in service.
CAIDI	Customer Average Interruption Duration Index. Total # of Sustained Customer Hours of Interruption / Total # of Customer Sustained Interruptions.
Capital Additions	Capital additions for any of the following: to hook up a specific new customer at the distribution level to generate additional revenues, to replace in kind, to improve reliability, or to meet general increase in system load.
Clearance distances	The distance in meters between the power lines and the closest point on the tree
Corporate Safety Statistics	Include the safety statistics of your entire corporation (customer service, T&D, corporate services, administrative, etc.)
Cycle time	Years between consecutive trim of dist. circuits
Distribution Circuit KM	Physical kilometres of line multiplied by the number of circuits per line. For purposes of this survey circuit kilometres refers to both overhead and underground line. One structure kilometre with 2 circuits = 2 circuit 2 circuit kilometres
Distribution End-Use Customer	Please provide the count reported on your FERC Form 1. If you do not report to FERC, use the following definition: an entity (usually defined as a metered point of delivery) who receives electric distribution services.
Distribution Fleet Ops & Maint.	Fleet operations and maintenance expense for trucks used only by Distribution field staff.
Distribution Line KM	Physical kilometres line irrespective of the number of circuits. For purposes of this survey structure kilometres refers to both overhead pole kilometres and underground trench kilometres.
Distribution Plant in Service	FERC Accts 360 to 374 or Total Asset base for the following: Land and Land Rights, Structures & Improvements, Station Equipment, Poles, Towers & Fixtures, Overhead Conductors, Line Transformers, Services, Meters, Installation on Customer Premises, Leases.
Electric Meter Reads	Total Reads for Year. A meter read 12 times per year would contribute 12 reads to the total.
Gross Plant in Service	Original installation costs of distribution assets, before any depreciation.
Line KM	Physical kilometres of line irrespective of the number of circuits. For purposes of this survey structure kilometres refers to both overhead pole kilometres and underground trench kilometres.
Load distribution	Percent of customers served by each voltage level
Loop circuits	Circuits with more than one feed, such that an outage on a line can be mitigated by switching around the failure point.
Lost Time Incident Rate	Rate for Total Lost time Incidents calculated: ((Total of OSHA 300A Column H) x 200,000) / Total Hours Worked

Maintenance Expense	Includes FERC accounts 590 to 598 or Maintenance of Distribution Substations and Transformers, OH Line, UG Line, Street Lighting and Signals, Meter, Structures, Misc Dist. Plant and other.
Maintenance Expense (cont.)	Includes activities such as Supervision & Engineering, Vegetation Management
Meter Read Inaccuracy	Error rates per 1000 meter reads
Meter Reading Expense (Electric Only)	a.k.a. FERC account 902. O&M cost for reading meters, including scheduling, routing, and data handling as well as the physical reading.
Minimum time counted as a sustained outage (Hours)	Definition for when an outage is considered sustained, rather than momentary.
MWh Sales	Total Megawatt Hours Sold to end-use customers. (Refer to FERC Form No. 1 page 300, line 10, column d.)
MWh Transported on Distribution Circuit KM	Total MWh moved across the distribution network, whether to your end-use customers or for another utility.
Network, network circuits	Lead cable, downtown/metropolitan network.
New Business Capital Additions	Capital additions primarily to hook up a specific new customer at the distribution level to generate additional revenues. Does not include expenditures to replace in kind, to improve reliability, or to meet general increase in system load.
Number of Trees Managed	Includes all of the trees in your service territory that you monitor, trim, inventory, etc.
Number of Trees Trimmed	Only those trees actually trimmed in the given year.
Operations Expense	Includes FERC accounts 581 to 589 or Operations or Installation Distribution Substations and Transformers, OH Line, UG Line, Street Lighting and Signals, Meter, Customer Installation Expenses, Rents and other.
Operations Expense (cont.)	Includes activities such as Load Dispatching, Supervision & Engineering and Mapping & Drafting, Trouble calls, Line patrols
Radial circuits	Circuits with only one feed for the circuit, such that a line failure of any type leads to an outage for all customers "downstream" of the failure point.
Read Completion Rate	Meters that were actually read that were assigned/scheduled to be read.
Recordable Incident Rate	Rate for Total Recordable Incidence calculated: ((Total of OSHA 300A Columns G + H + I + J) x 200,000) / Total Hours Worked
SAIDI	System Average Interruption Duration Index. Total # of Sustained Customer Hours of Interruption / Total # of Customers.
SAIFI	System Average Interruption Frequency Index. Total # of Sustained Customer Interruptions / Total # of Customers.
Trouble Call Response Expense	Costs associated with incoming trouble calls, dispatch, field activity and reporting related to trouble calls.
Vehicle Accident Rate	Total of vehicle accidents or collisions to total kilometres driven calculated: (total # of accidents x 1,000,000) / (total kilometers driven)

APPENDIX B: FERC ACCOUNT DESCRIPTIONS

This appendix contains the listing of FERC account descriptions for the cost categories under study for this project. It was used by the participating companies as they gathered the cost data for Hydro One.

580 Operation supervision and engineering.

This account shall include the cost of labor and expenses incurred in the general supervision and direction of the operation of the distribution system.

Direct supervision of specific activities, such as station operation, line operation, meter department operation, etc., shall be charged to the appropriate account. (For Major utilities, see operating expense instruction 1.)

581 Load dispatching (Major only).

This account (the keeping of which is optional with the utility) shall include the cost of labor, materials used and expenses incurred in load dispatching operations pertaining to the distribution of electricity.

ITEMS

Labor:

1. Directing switching.
2. Arranging and controlling clearances for construction, maintenance, test and emergency purposes.
3. Controlling system voltages.
4. Preparing operating reports.
5. Obtaining reports on the weather and special events.

Expenses:

6. Communication service provided for system control purposes.
7. System record and report forms.
8. Meals, traveling and incidental expenses.

581.1 Line and station supplies and expenses (Nonmajor only).

582 Station expenses (Major only).

583 Overhead line expenses (Major only).

584 Underground line expenses (Major only).

Accounts 581.1 through 584 shall include, respectively, the cost of labor, materials used and expenses incurred in the operation of overhead and underground distribution lines and stations.

ITEMS

Line Labor:

1. Supervising line operation.
2. Changing line transformer taps.
3. Inspecting and testing lightning arresters, line circuit breakers, switches and grounds.
4. Inspecting and testing line transformers for the purpose of determining load, temperature or operating performance.
5. Patrolling lines.
6. Load tests and voltages surveys of feeders, circuits and line transformers.
7. Removing line transformers and voltage regulators with or without replacements.
8. Installing line transformers or voltage regulators with or without change in capacity provided that the first installation of these items is included in account 368, Line transformers.
9. Voltage surveys, either routine or upon request of customers, including voltage tests at customers' main switch.
10. Transferring loads, switching and reconnecting circuits and equipment for operation purposes.
11. Electrolysis surveys.
12. Inspecting and adjusting line testing equipment.

Line Supplies and Expenses:

13. Tool expenses.
14. Transportation expenses.
15. Meals, traveling and incidental expense.
16. Operating supplies, such as instrument charts, rubber goods, etc.

Station Labor:

1. Supervising station operation.
2. Adjusting station equipment where such adjustment primarily affects performance, such as regulating the flow of cooling water, adjusting current in fields of a machine, changing voltage of regulators or changing station transformer taps.
3. Keeping station log and records and preparing reports on station operation.
4. Inspecting, testing and calibrating station equipment for the purpose of checking its performance.
5. Operating switching and other station equipment.
6. Standing watch, guarding and patrolling station and station yard.
7. Sweeping, mopping and tidying station.
8. Care of grounds, including snow removal, cutting grass, etc.

Station Supplies and Expenses:

9. Building service expenses.
10. Operating supplies, such as lubricants, commutator brushes, water and rubber goods.
11. Station meter and instrument supplies, such as ink and charts.
12. Station record and report forms.
13. Tool expenses.
14. Transportation expenses.
15. Meals, traveling and incidental expenses.

NOTE (MAJOR ONLY): If the utility owns storage battery equipment used for supplying electricity to customers in periods of emergency, the cost of operating labor and of supplies, such as acid, gloves, hydrometers, thermometers, soda, automatic cell fillers, acid proof shoes, etc., shall be included in this account. If significant in amount, a separate subdivision shall be maintained for such expenses.

585 Street lighting and signal system expenses.

A. For Nonmajor utilities, this account shall include the cost of labor, materials used and expenses incurred in the operation of street lighting and signal system plant.

B. For Major utilities, this account shall include the cost of labor, materials used and expenses incurred in: (a) The operation of street lighting and signal system plant which is owned or leased by the utility; and (b) the operation and maintenance of such plant owned by customers where such work is done regularly as a part of the street lighting and signal system service.

ITEMS

Labor:

1. Supervising street lighting and signal systems operation.
2. Replacing lamps and incidental cleaning of glassware and fixtures in connection therewith.
3. Routine patrolling for lamp outages, extraneous nuisances or encroachments, etc.
4. Testing lines and equipment including voltage and current measurement.
5. Winding and inspection of time switch and other controls.

Materials and Expenses:

6. Street lamp renewals.
7. Transportation and tool expense.
8. Meals, traveling, and incidental expenses.

586 Meter expenses.

This account shall include the cost of labor, materials used and expenses incurred in the operation of customer meters and associated equipment.

ITEMS

Labor:

1. Supervising meter operation.
2. Clerical work on meter history and associated equipment record cards, test cards, and reports.
3. Disconnecting and reconnecting, removing and reinstalling, sealing and unsealing meters and other metering equipment in connection with initiating or terminating services including the cost of obtaining meter readings, if incidental to such operation.
4. Consolidating meter installations due to elimination of separate meters for different rates of service.
5. Changing or relocating meters, instrument transformers, time switches, and other metering equipment.
6. Resetting time controls, checking operation of demand meters and other metering equipment, when done as an independent operation.
7. Inspecting and adjusting meter testing equipment.
8. Inspecting and testing meters, instrument transformers, time switches, and other metering equipment on premises or in shops excluding inspecting and testing incidental to maintenance

Materials and Expenses:

9. Meter seals and miscellaneous meter supplies.
10. Transportation expenses.
11. Meals, traveling, and incidental expenses.
12. Tool expenses.

NOTE: The cost of the first setting and testing of a meter is chargeable to utility plant account 370, Meters.

587 Customer installations expenses.

This account shall include the cost of labor, materials used and expenses incurred in work on customer installations in inspecting premises and in rendering services to customers of the nature of those indicated by the list of items hereunder.

ITEMS

Labor:

1. Supervising customer installations work.
2. Inspecting premises, including check of wiring for code compliance.
3. Investigating, locating, and clearing grounds on customers' wiring.
4. Investigating service complaints, including load tests of motors and lighting and power circuits on customers' premises; field investigations of complaints on bills or of voltage.
5. Installing, removing, renewing, and changing lamps and fuses.
6. Radio, television and similar interference work including erection of new aerials on customers' premises and patrolling of lines, testing of lightning arresters, inspection of pole hardware, etc., and examination on or off premises of customers' appliances, wiring, or equipment to locate cause of interference.
7. Installing, connecting, reinstalling, or removing leased property on customers' premises.
8. Testing, adjusting, and repairing customers' fixtures and appliances in shop or on premises.
9. Cost of changing customers' equipment due to changes in service characteristics.
10. Investigation of current diversion including setting and removal of check meters

and securing special readings thereon; special calls by employees in connection with discovery and settlement of current diversion; changes in customer wiring and any other labor cost identifiable as caused by current diversion.

Materials and Expenses:

11. Lamp and fuse renewals.
12. Materials used in servicing customers' fixtures, appliances and equipment.
13. Power, light, heat, telephone, and other expenses of appliance repair department.
14. Tool expense.
15. Transportation expense, including pick-up and delivery charges.
16. Meals, traveling and incidental expenses.
17. Rewards paid for discovery of current diversion.

NOTE A: Amounts billed customers for any work, the cost of which is charged to this account, shall be credited to this account. Any excess over costs resulting therefrom shall be transferred to account 451, Miscellaneous Service Revenues.

NOTE B: Do not include in this account expenses incurred in connection with merchandising, jobbing and contract work.

588 Miscellaneous distribution expenses.

This account shall include the cost of labor, materials used and expenses incurred in distribution system operation not provided for elsewhere.

ITEMS

Labor:

1. General records of physical characteristics of lines and substations, such as capacities, etc.
2. Ground resistance records.
3. Joint pole maps and records.
4. Distribution system voltage and load records.
5. Preparing maps and prints.
6. Service interruption and trouble records.
7. General clerical and stenographic work except that chargeable to account 586, Meter expenses.

Expenses:

8. Operating records covering poles, transformers, manholes, cables, and other distribution facilities. Exclude meter records chargeable to account 586, Meter Expenses and station records chargeable to account 582, Station Expenses (For Nonmajor utilities, account 581.1, Line and Station Expenses), and stores records (For Nonmajor utilities, station records) chargeable to account 163, Stores Expense Undistributed (For Nonmajor utilities, account 581.1, Line and Station Expenses).
9. Janitor work at distribution office buildings including snow removal, cutting grass, etc.

Materials and Expenses:

10. Communication service.
11. Building service expenses.
12. Miscellaneous office supplies and expenses, printing, and stationery, maps and records and first-aid supplies.
13. Research, development, and demonstration expenses (Major only).

589 Rents.

This account shall include rents of property of others used, occupied, or operated in connection with the distribution system, including payments to the United States and others for the use and occupancy of public lands and reservations for distribution line rights of way. (See operating expense instruction 3.)

590 Maintenance supervision and engineering (Major only).

This account shall include the cost of labor and expenses incurred in the general supervision and direction of maintenance of the distribution system. Direct field supervision of specific jobs shall be charged to the appropriate maintenance account. (See operating expense instruction 1.)

591 Maintenance of structures (Major only).

This account shall include the cost of labor, materials used and expenses incurred in maintenance of structures, the book cost of which is includible in account 361, Structures and Improvements. (See operating expense instruction 2.)

592 Maintenance of station equipment (Major only).

This account shall include the cost of labor, materials used and expenses incurred in maintenance of plant, the book cost of which is includible in account 362, Station Equipment, and account 363, Storage Battery Equipment. (See operating expense instruction 2.)

592.1 Maintenance of structures and equipment (Nonmajor only).

This account shall include the cost of labor, materials used and expenses incurred in maintenance of structures, the book cost of which is includible in

account 361, Structures and Improvements, account 362, Station Equipment, and account 363, Storage Battery Equipment. (See operating expense instruction 2.)

593 Maintenance of overhead lines (Major only).

This account shall include the cost of labor, materials used and expenses incurred in the maintenance of overhead distribution line facilities, the book cost of which is includible in account 364, Poles, Towers and Fixtures, account 365, Overhead Conductors and Devices, and account 369, Services. (See operating expense instruction 2.)

ITEMS

1. Work of the following character on poles, towers, and fixtures:
a. Installing additional clamps or removing clamps or strain insulators on guys in place.
b. Moving line or guy pole in relocation of pole or section of line.
c. Painting poles, towers, crossarms, or pole extensions.
d. Readjusting and changing position of guys or braces.
e. Realigning and straightening poles, crossarms, braces, pins, racks, brackets, and other pole fixtures.
f. Reconditioning reclaimed pole fixtures.
g. Relocating crossarms, racks, brackets, and other fixtures on poles.
h. Repairing pole supported platform.
i. Repairs by others to jointly owned poles.
j. Shaving, cutting rot, or treating poles or crossarms in use or salvaged for reuse.
k. Stubbing poles already in service.
l. Supporting conductors, transformers, and other fixtures and transferring them to new poles during pole replacements.
m. Maintaining pole signs, stencils, tags, etc.
2. Work of the following character on overhead conductors and devices:
a. Overhauling and repairing line cutouts, line switches, line breakers, and capacitor installations.
b. Cleaning insulators and bushings.
c. Refusing line cutouts.
d. Repairing line oil circuit breakers and associated relays and control wiring.
e. Repairing grounds.
f. Resagging, retying, or rearranging position or spacing of conductors.
g. Standing by phones, going to calls, cutting faulty lines clear, or similar activities at times of emergency.
h. Sampling, testing, changing, purifying, and replenishing insulating oil.
i. Transferring loads, switching, and reconnecting circuits and equipment for maintenance purposes.
j. Repairing line testing equipment.
k. Trimming trees and clearing brush.
l. Chemical treatment of right of way area when occurring subsequent to construction of line.
3. Work of the following character on overhead services:
a. Moving position of service either on pole or on customers' premises.
b. Pulling slack in service wire.
c. Retying service wire.
d. Refastening or tightening service bracket.

594 Maintenance of underground lines (Major only).

This account shall include the cost of labor, materials used and expenses incurred in the maintenance of underground distribution line facilities, the book cost of which is includible in account 366, Underground Conduit, account 367, Underground Conductors and Devices, and account 369, Services. (See operating expense instruction 2.)

ITEMS

1. Work of the following character on underground conduit:
a. Cleaning ducts, manholes, and sewer connections.
b. Moving or changing position of conduit or pipe.
c. Minor alterations of handholes, manholes, or vaults.
d. Refastening, repairing, or moving racks, ladders, or hangers in manholes or vaults.
e. Plugging and shelving ducts.
f. Repairs to sewers, drains, walls, and floors, rings and covers.
2. Work of the following character on underground conductors and devices:
a. Repairing circuit breakers, switches, cutouts, network protectors, and associated relays and control wiring.
b. Repairing grounds.
c. Retraining and reconnecting cables in manholes including transfer of cables from one duct to another.
d. Repairing conductors and splices.
e. Repairing or moving junction boxes and potheads.
f. Refireproofing cables and repairing supports.
g. Repairing electrolysis preventive devices for cables.
h. Repairing cable bonding systems.
i. Sampling, testing, changing, purifying and replenishing insulating oil.
j. Transferring loads, switching and reconnecting circuits and equipment for maintenance purposes.

k. Repairing line testing equipment.
l. Repairing oil or gas equipment in high voltage cable systems and replacement of oil or gas.
3. Work of the following character on underground services:
a. Cleaning ducts.
b. Repairing any underground service plant.

594.1 Maintenance of lines (Nonmajor only).

This account shall include the cost of labor, materials used and expenses incurred in the maintenance of distribution line facilities, the book cost of which is includible in account 364, Poles, Towers and Fixtures, account 365, Overhead Conductors and Devices, account 366, Underground Conduit, account 367, Underground Conductors and Devices, and account 369, Services. (See operating expense instruction 2.)

ITEMS

1. Work of the following character on poles, towers, and fixtures:
a. Installing additional clamps or removing clamps or strain insulators on guys in place.
b. Moving line or guy pole in relocation of pole or section of line.
c. Painting poles, towers, crossarms, or pole extensions.
d. Readjusting and changing position of guys or braces.
e. Realigning and straightening poles, crossarms, braces, pins, racks, brackets, and other pole fixtures.
f. Reconditioning reclaimed pole fixtures.
g. Relocating crossarms, racks, brackets, and other fixtures on pole.
h. Repairing pole supported platform.
i. Repairs by others to jointly owned poles.
j. Shaving, cutting rot, or treating poles or crossarms in use or salvage for reuse.
k. Stubbing poles already in service.
l. Supporting conductors, transformers, and other fixtures and transferring them to new poles during pole replacement.
m. Maintaining pole signs, stencils, tags, etc.
2. Work of the following character on overhead conductors and devices:
a. Overhauling and repairing line cutouts, line switches, line breakers, and capacitor installations.
b. Cleaning insulators and bushings.
c. Refusing line cutouts.
d. Repairing line oil circuit breakers and associated relays and control wiring.
e. Repairing grounds.
f. Resagging, retying, or rearranging position or spacing of conductors.
g. Standing by phones, going to calls, cutting faulting lines clear, or similar activities at times of emergencies.
h. Sampling, testing, changing, purifying, and replenishing insulating oil.
i. Transferring loads, switching, and reconnecting circuits and equipment for maintenance purposes.
j. Repairing line testing equipment.
k. Trimming trees and clearing brush.
l. Chemical treatment of right of way area when occurring subsequent to construction of line.
3. Work of the following character on underground conduit:
a. Cleaning ducts, manholes, and sewer connections.
b. Moving or changing position of conduit or pipe.
c. Minor alterations of handholes, manholes, or vaults.
d. Refastening, repairing or moving racks, ladders, or hangers in manholes or vaults.
e. Plugging and shelving ducts.
f. Repairs to sewers, drains, walls and floors, rings and covers.
4. Work of the following character on underground conductors and devices:
a. Repairing circuit breakers, switches, cutouts, network protectors, and associated relays and control wiring.
b. Repairing grounds.
c. Retraining and reconnecting cables in manhole including transfer of cables from one duct to another.
d. Repairing conductors and splices.
e. Repairing or moving junction boxes and potheads.
f. Refireproofing cables and repairing supports.
g. Repairing electrolysis preventive devices for cables.
h. Repairing cable bonding systems.
i. Sampling, testing, changing, purifying and replenishing insulating oil.
j. Transferring loads, switching and reconnecting circuits and equipment for maintenance purposes.
k. Repairing line testing equipment.
l. Repairing oil or gas equipment in high voltage cable system and replacement of oil or gas.
5. Work of the following character on services:
a. Moving position of service either on pole or on customers' premises.
b. Pulling slack in service wire.
c. Retying service wire.
d. Refastening or tightening service bracket.
e. Cleaning ducts.

595 Maintenance of line transformers.

This account shall include the cost of labor, materials used and expenses incurred in maintenance of distribution

line transformers, the book cost of which is includible in account 368, Line Transformers. (See operating expense instruction 2.)

596 Maintenance of street lighting and signal systems.

This account shall include the cost of labor, materials used and expenses incurred in maintenance of plant, the book cost of which is includible in account 373, Street Lighting and Signal Systems. (See operating expense instruction 2.)

597 Maintenance of meters.

This account shall include the cost of labor, materials used and expenses incurred in the maintenance of meters and meter testing equipment, the book cost of which is includible in account 370, Meters, and account 395, Laboratory Equipment, respectively. (See operating expense instruction 2.)

598 Maintenance of miscellaneous distribution plant.

This account shall include the cost of labor, materials used and expenses incurred in maintenance of plant, the book cost of which is includible in accounts 371, Installations on Customers' Premises, and 372, Leased Property on Customers' Premises, and any other plant the maintenance of which is assignable to the distribution function and is not provided for elsewhere. (See operating expense instruction 2.)

ITEMS

a. Work of similar nature to that listed in other distribution maintenance accounts.

b. Maintenance of office furniture and equipment used by distribution system department.

901 Supervision (Major only).

This account shall include the cost of labor and expenses incurred in the general direction and supervision of customer accounting and collecting activities. Direct supervision of a specific activity shall be charged to account 902, Meter Reading Expenses, or account 903, Customer Records and Collection Expenses, as appropriate. (See operating expense instruction 1.)

902 Meter reading expenses.

This account shall include the cost of labor, materials used and expenses incurred in reading customer meters, and determining consumption when performed by employees engaged in reading meters.

ITEMS

Labor:

1. Addressing forms for obtaining meter readings by mail.
2. Changing and collecting meter charts used for billing purposes.
3. Inspecting time clocks, checking seals, etc., when performed by meter readers and the work represents a minor activity incidental to regular meter reading routine.
4. Reading meters, including demand meters, and obtaining load information for billing purposes. Exclude and charge to account 586, Meter Expenses, or to account 903, Customer Records and Collection Expenses, as applicable, the cost of obtaining meter readings, first and final, if incidental to the operation of removing or resetting, sealing, or locking, and disconnecting or reconnecting meters.
5. Computing consumption from meter reader's book or from reports by mail when done by employees engaged in reading meters.
6. Collecting from prepayment meters when incidental to meter reading.
7. Maintaining record of customers' keys.
8. Computing estimated or average consumption when performed by employees engaged in reading meters.

Materials and Expenses:

9. Badges, lamps, and uniforms.
10. Demand charts, meter books and binders and forms for recording readings, but not the cost of preparation.
11. Postage and supplies used in obtaining meter readings by mail.
12. Transportation, meals, and incidental expenses.

903 Customer records and collection expenses.

This account shall include the cost of labor, materials used and expenses incurred in work on customer applications, contracts, orders, credit investigations, billing and accounting, collections and complaints.

ITEMS

Labor:

1. Receiving, preparing, recording and handling routine orders for service, disconnections, transfers or meter tests initiated by the customer, excluding the cost of carrying out such orders, which is chargeable to the

Appendix C

Statistical Report - Charts & Graphs

3 year values are 2004-2006, 1 year values are 2006.

Data updated: as of October 15, 2007

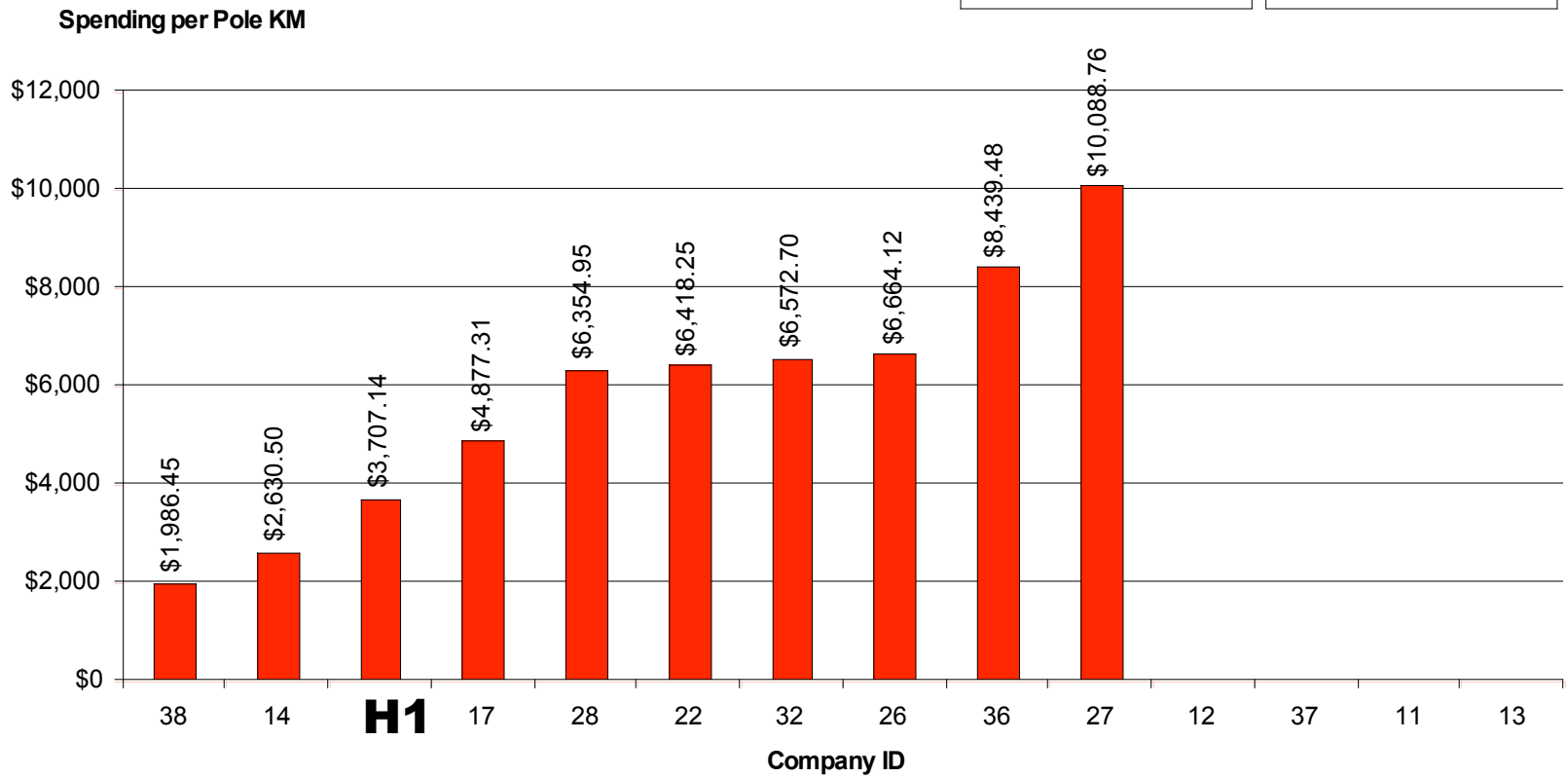
Cost Metrics

3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Dist Lines & Subs Capital + O&M Spending per Pole KM

HydroOne:	
Value:	$3,707
Quartile:	Q1
Rank:	3

Panel:	
Mean:	$5,774
Quartile 1:	$4,000
Quartile 2:	$6,387
Quartile 3:	$6,641

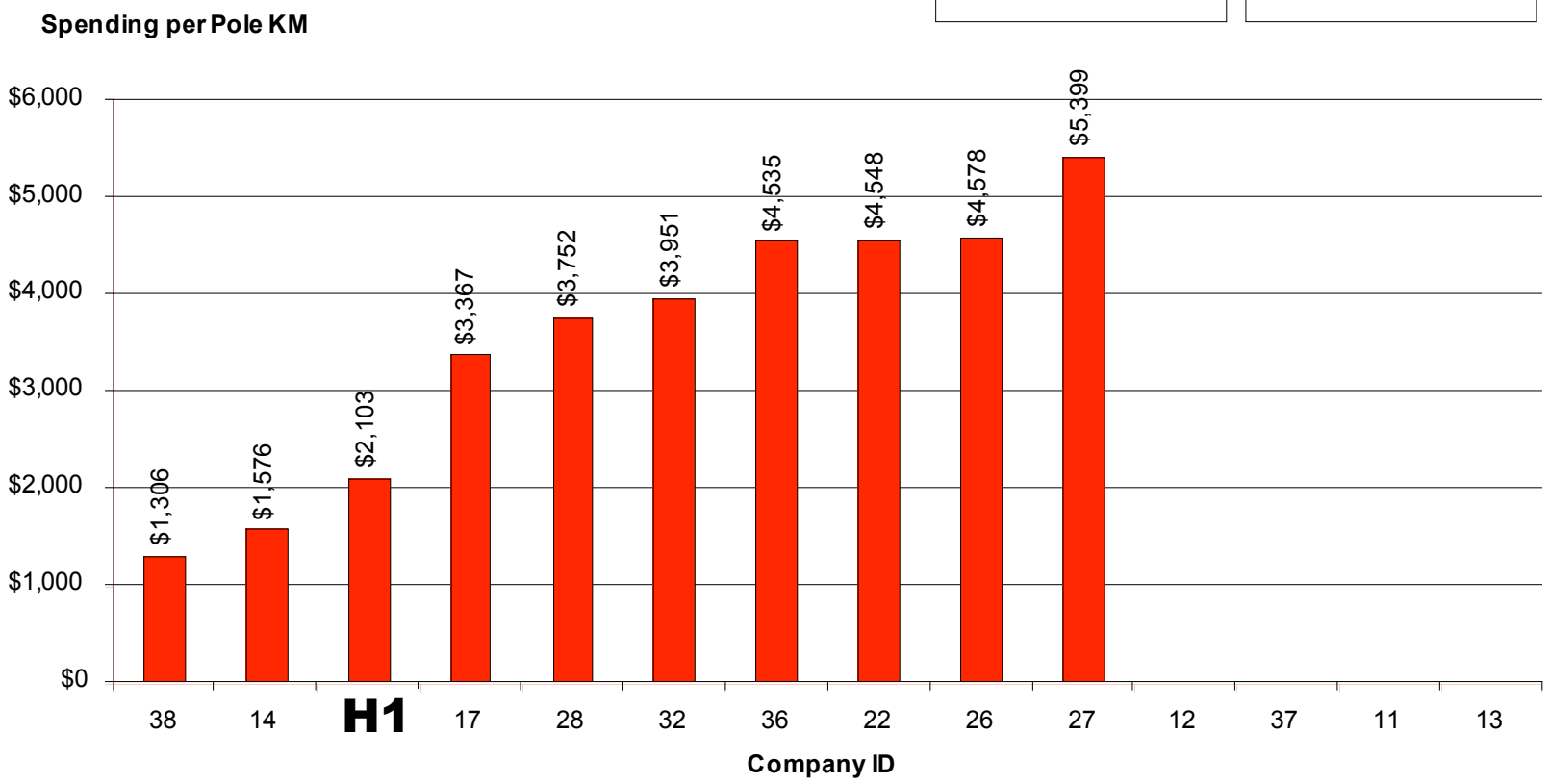


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Dist Lines & Subs Capital Spending per Pole KM

HydroOne:	
Value:	$2,103
Quartile:	Q1
Rank:	3

Panel:	
Mean:	$3,511
Quartile 1:	$2,419
Quartile 2:	$3,851
Quartile 3:	$4,545

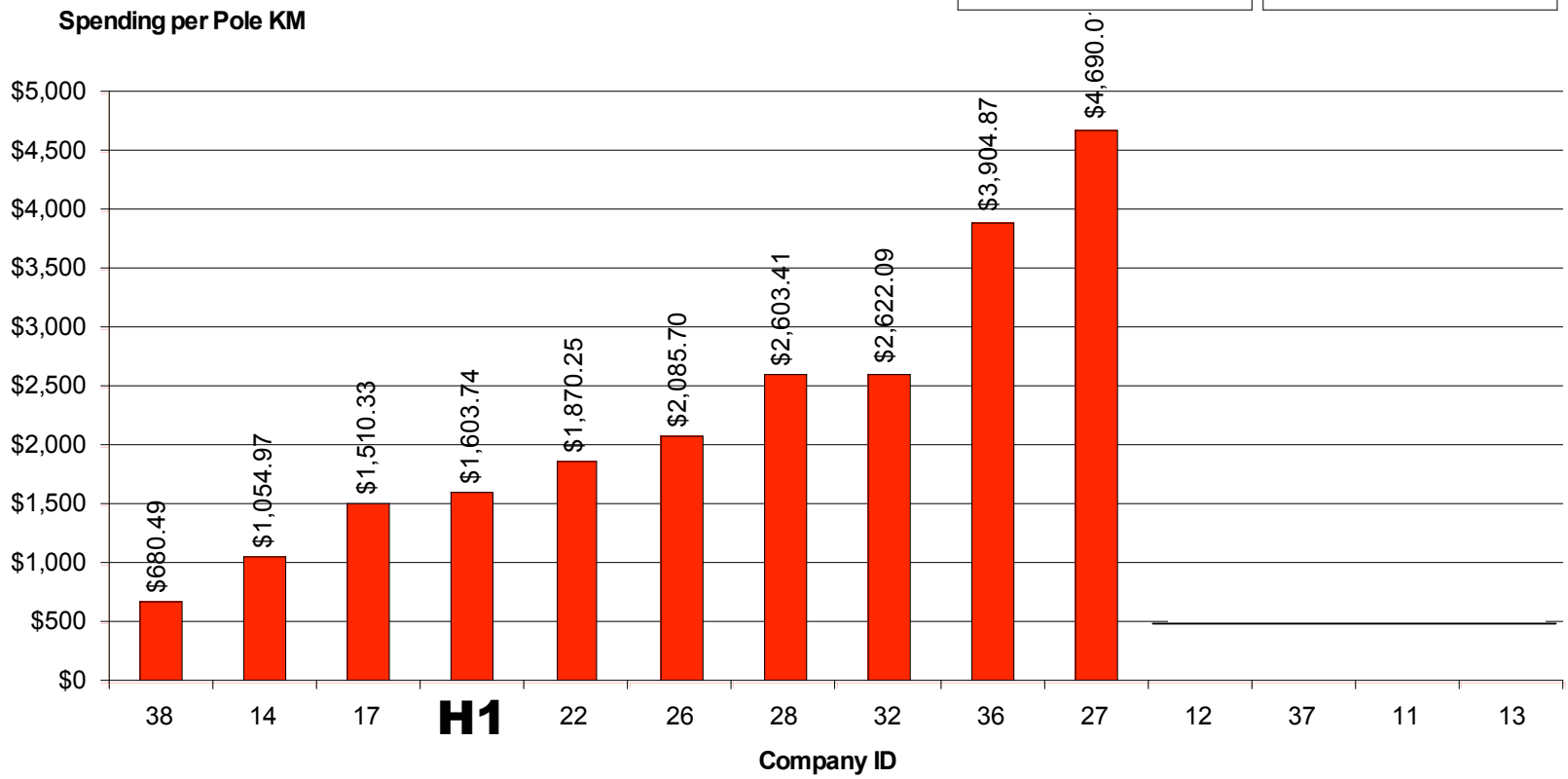


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Dist Lines & Subs O&M Spending per Pole KM

HydroOne:	
Value:	$1,604
Quartile:	Q2
Rank:	4

Panel:	
Mean:	$2,263
Quartile 1:	$1,534
Quartile 2:	$1,978
Quartile 3:	$2,617

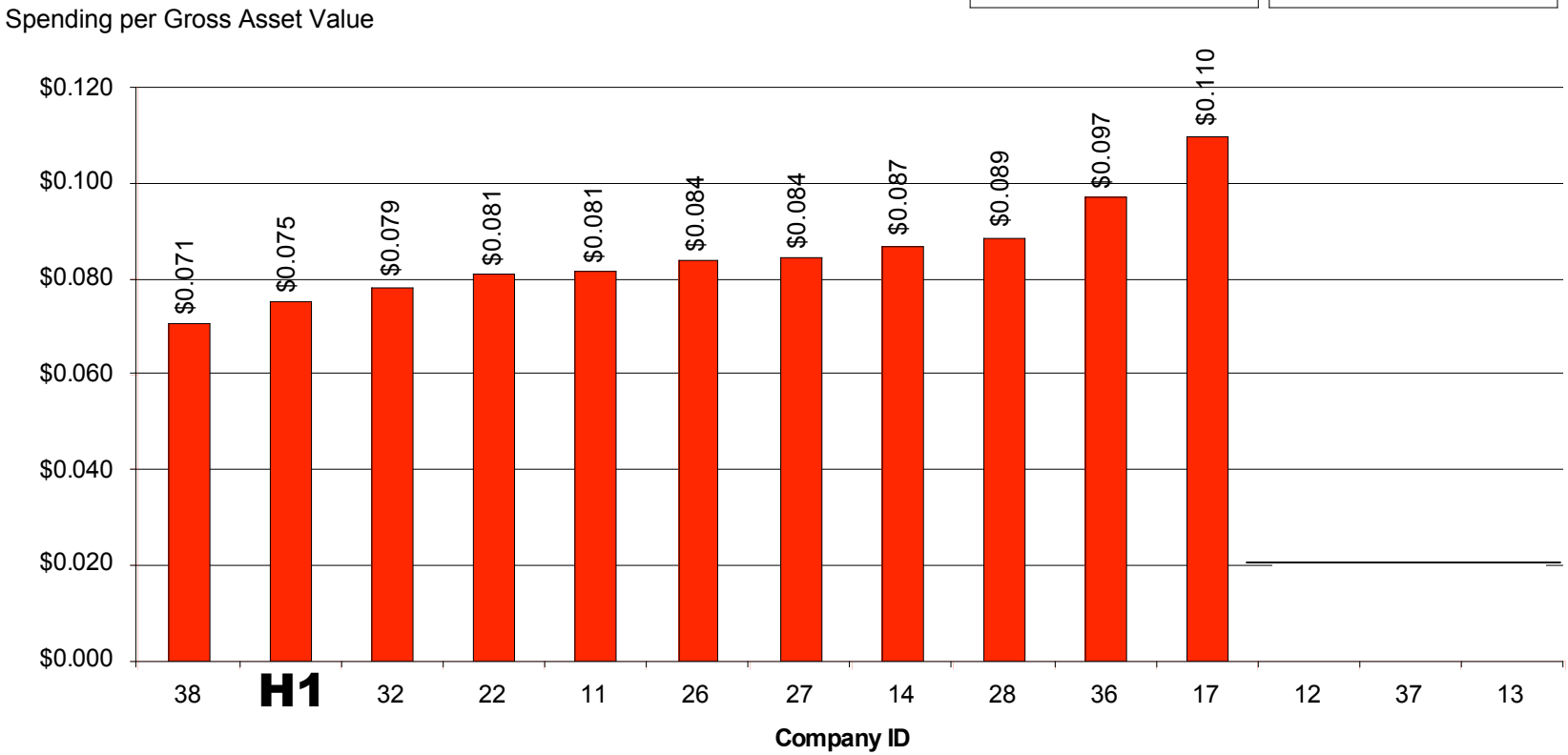


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Dist Lines & Subs Capital + O&M Spending per Gross Asset Value

HydroOne:	
Value:	$0.075
Quartile:	Q1
Rank:	2

Panel:	
Mean:	$0.085
Quartile 1:	$0.080
Quartile 2:	$0.084
Quartile 3:	$0.088

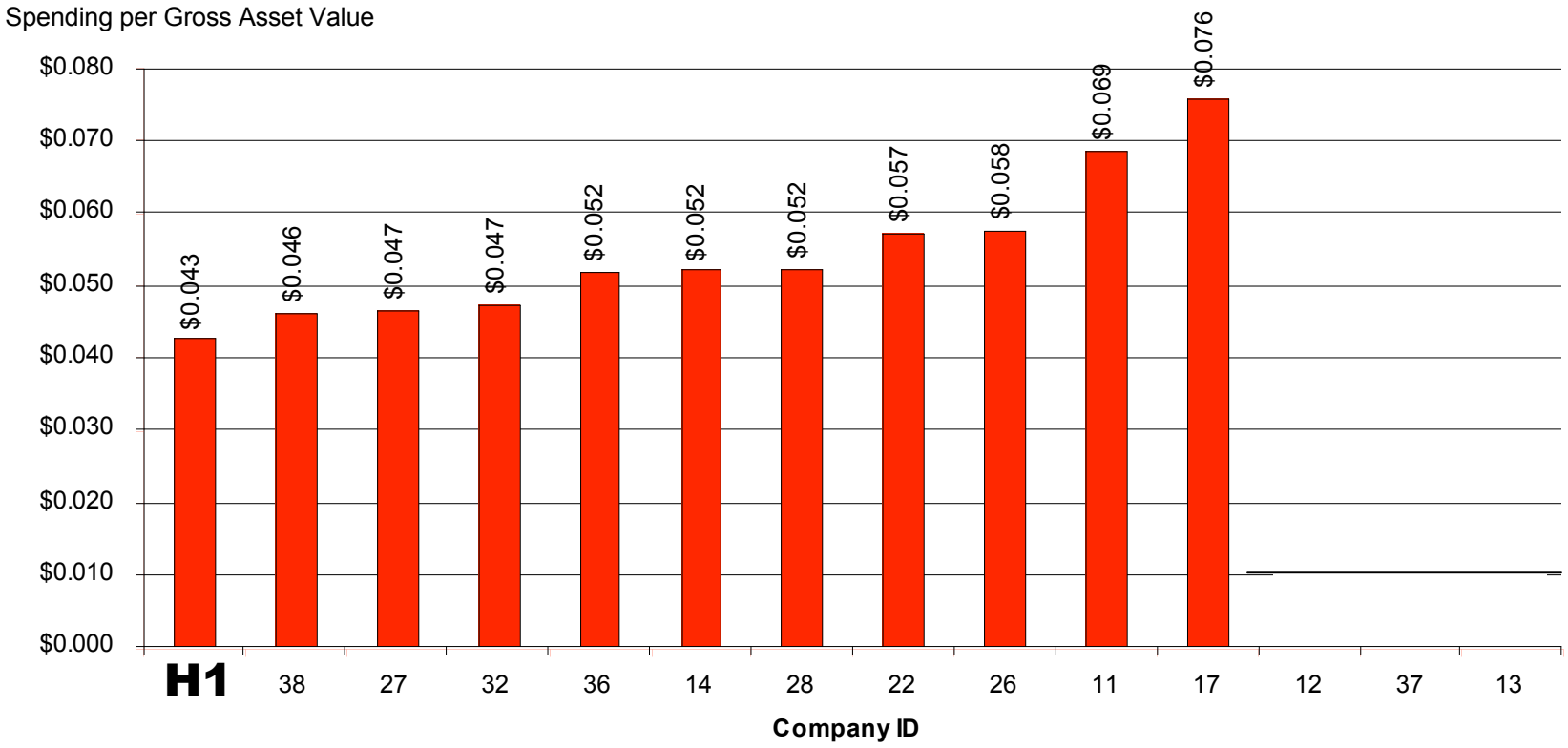


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Dist Lines & Subs Capital Spending per Gross Asset Value

HydroOne:	
Value:	$0.043
Quartile:	Q1
Rank:	1

Panel:	
Mean:	$0.054
Quartile 1:	$0.047
Quartile 2:	$0.052
Quartile 3:	$0.058

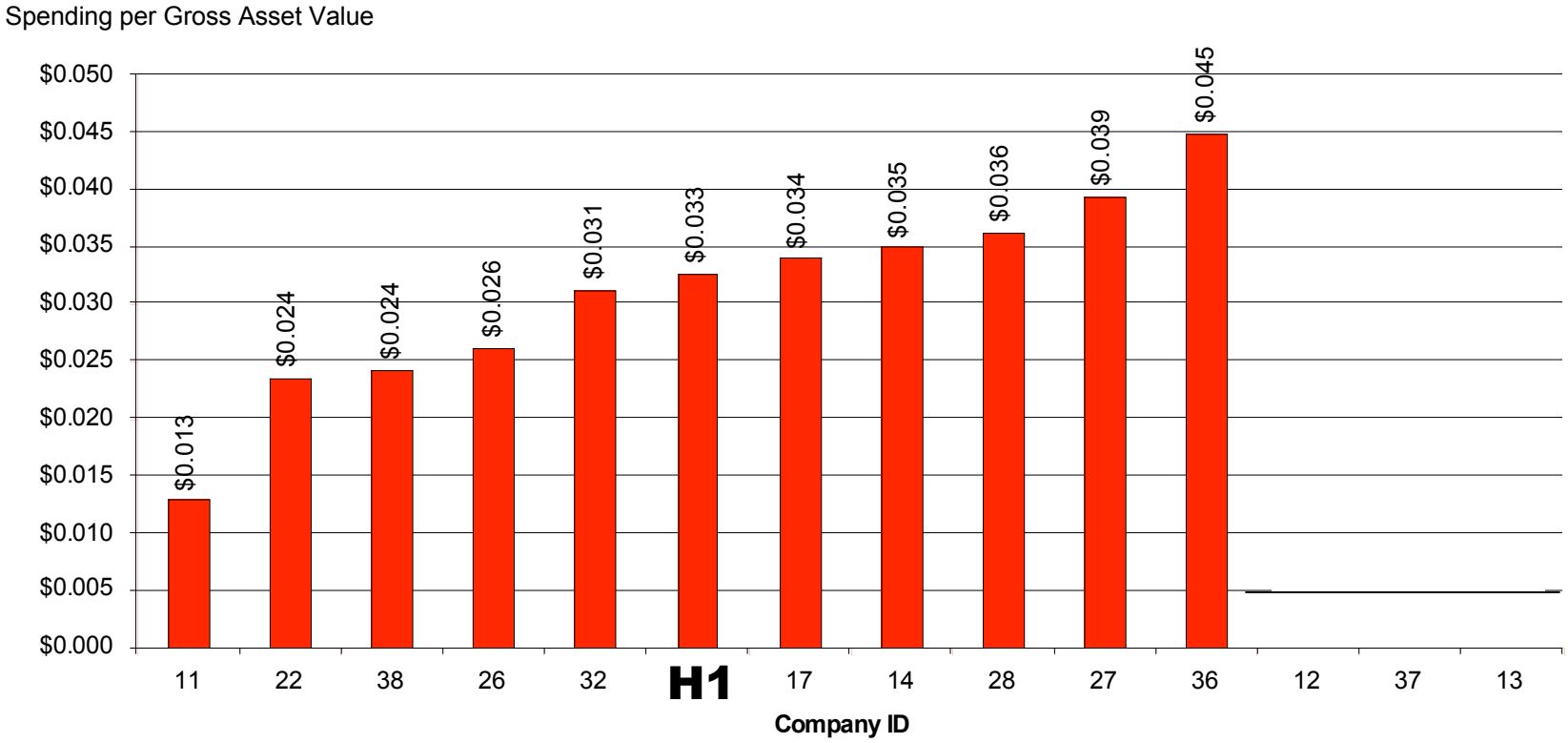


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Dist Lines & Subs O&M Spending per Gross Asset Value

HydroOne:	
Value:	$0.033
Quartile:	Q3
Rank:	6

Panel:	
Mean:	$0.031
Quartile 1:	$0.025
Quartile 2:	$0.033
Quartile 3:	$0.036

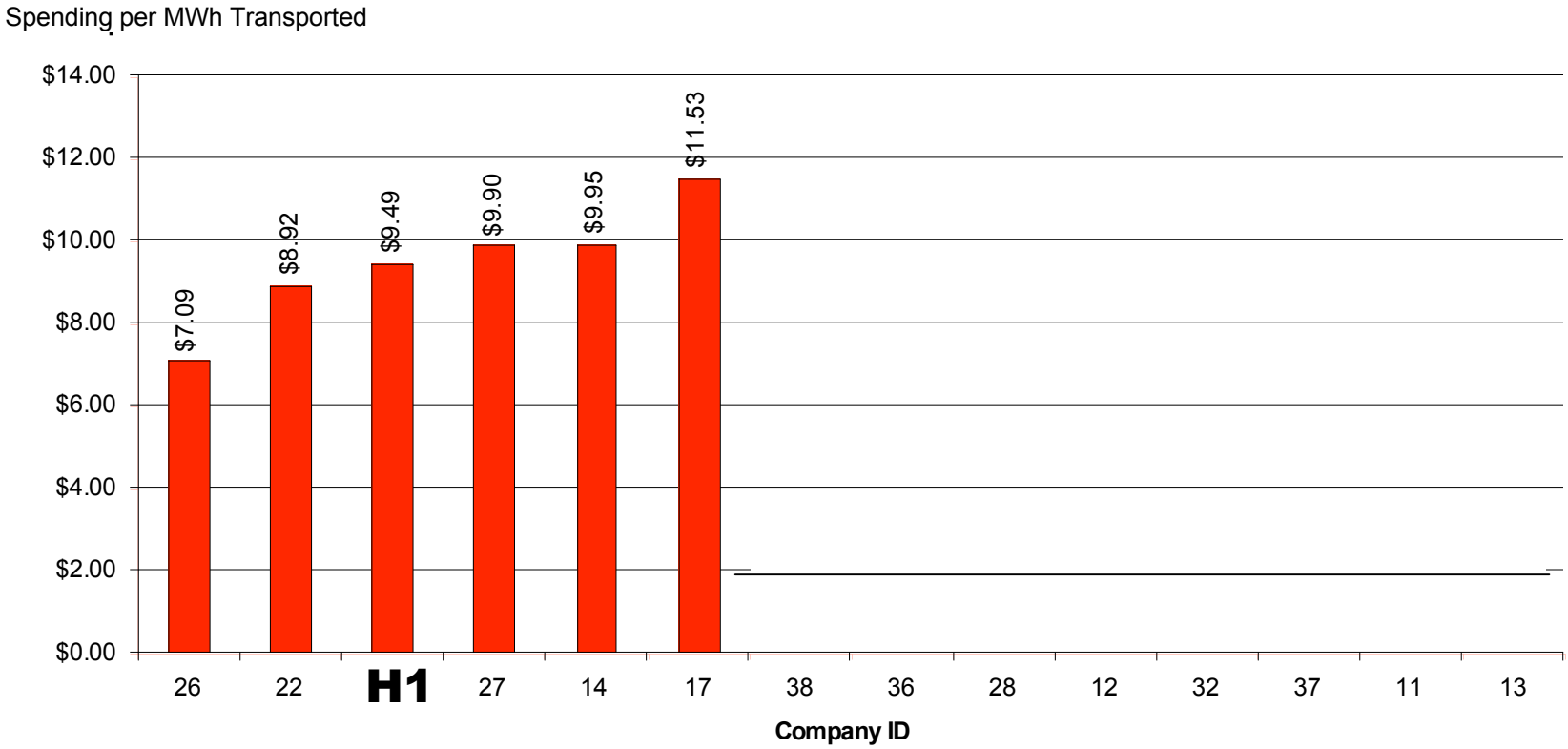


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Dist Lines & Subs Capital + O&M Spending per MWh Transported

HydroOne:	
Value:	$9.49
Quartile:	Q2
Rank:	3

Panel:	
Mean:	$9.48
Quartile 1:	$9.06
Quartile 2:	$9.69
Quartile 3:	$9.94

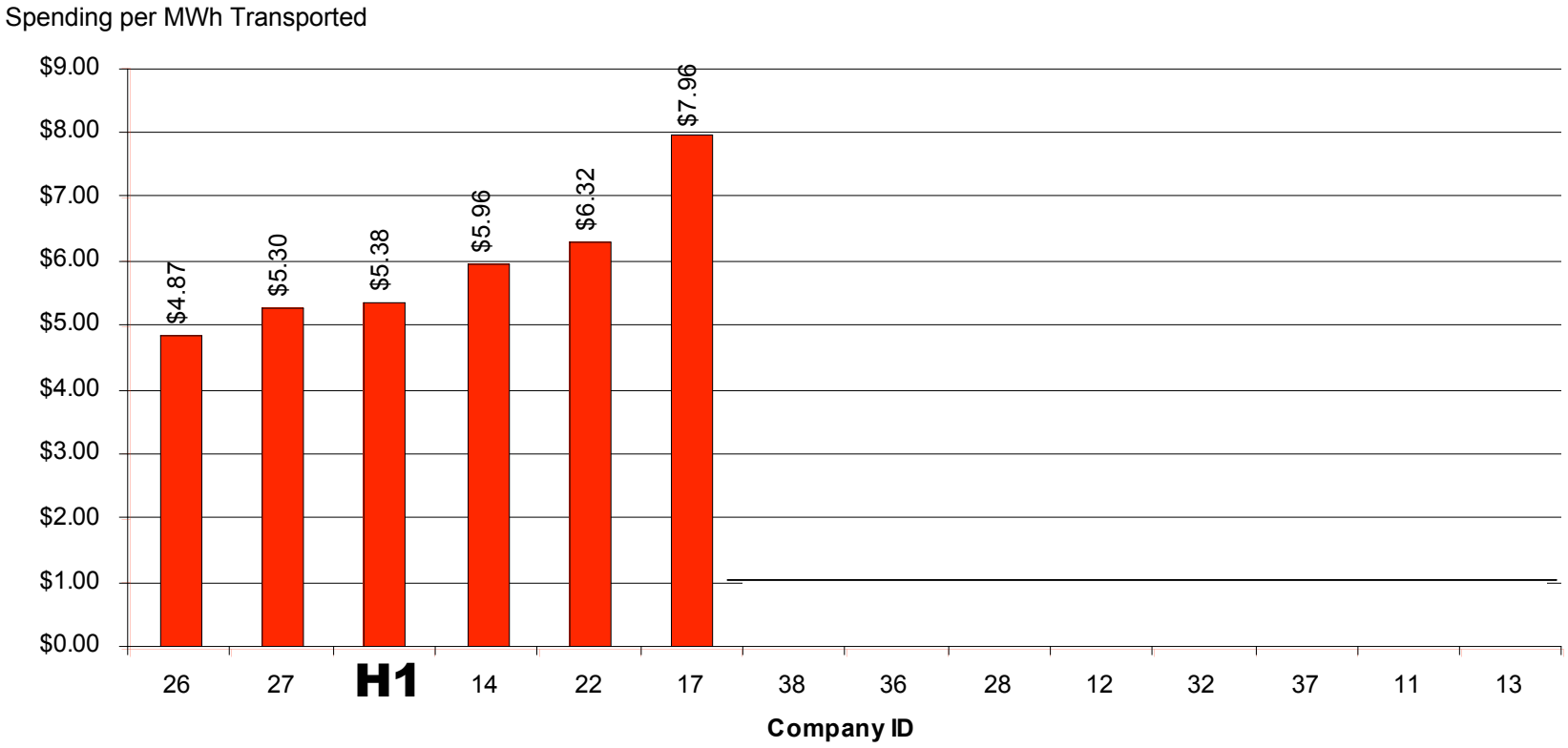


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Dist Lines & Subs Capital Spending per MWh Transported

HydroOne:	
Value:	$5.38
Quartile:	Q2
Rank:	3

Panel:	
Mean:	$5.97
Quartile 1:	$5.32
Quartile 2:	$5.67
Quartile 3:	$6.23

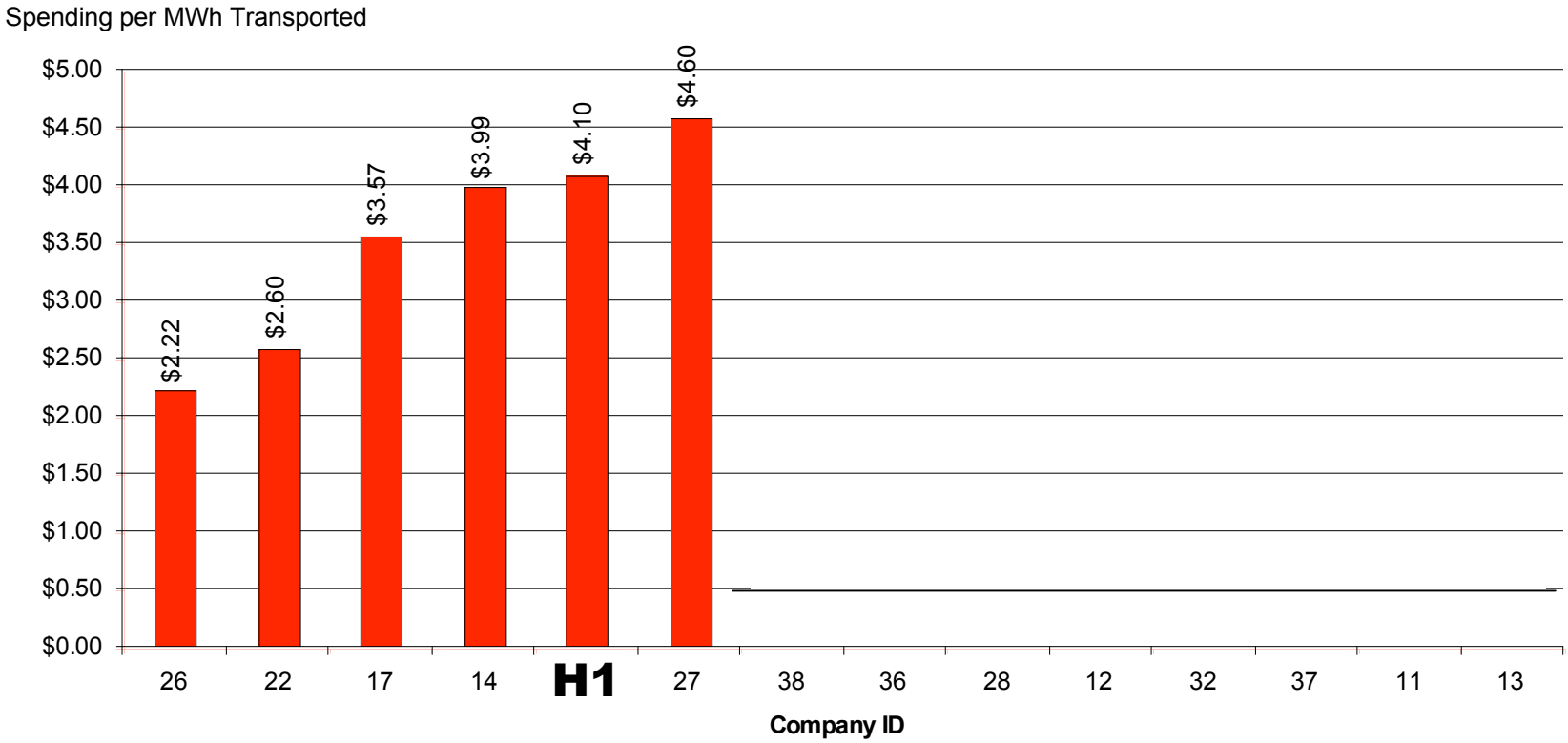


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Dist Lines & Subs O&M Spending per MWh Transported

HydroOne:	
Value:	$4.10
Quartile:	Q4
Rank:	5

Panel:	
Mean:	$3.51
Quartile 1:	$2.84
Quartile 2:	$3.78
Quartile 3:	$4.07

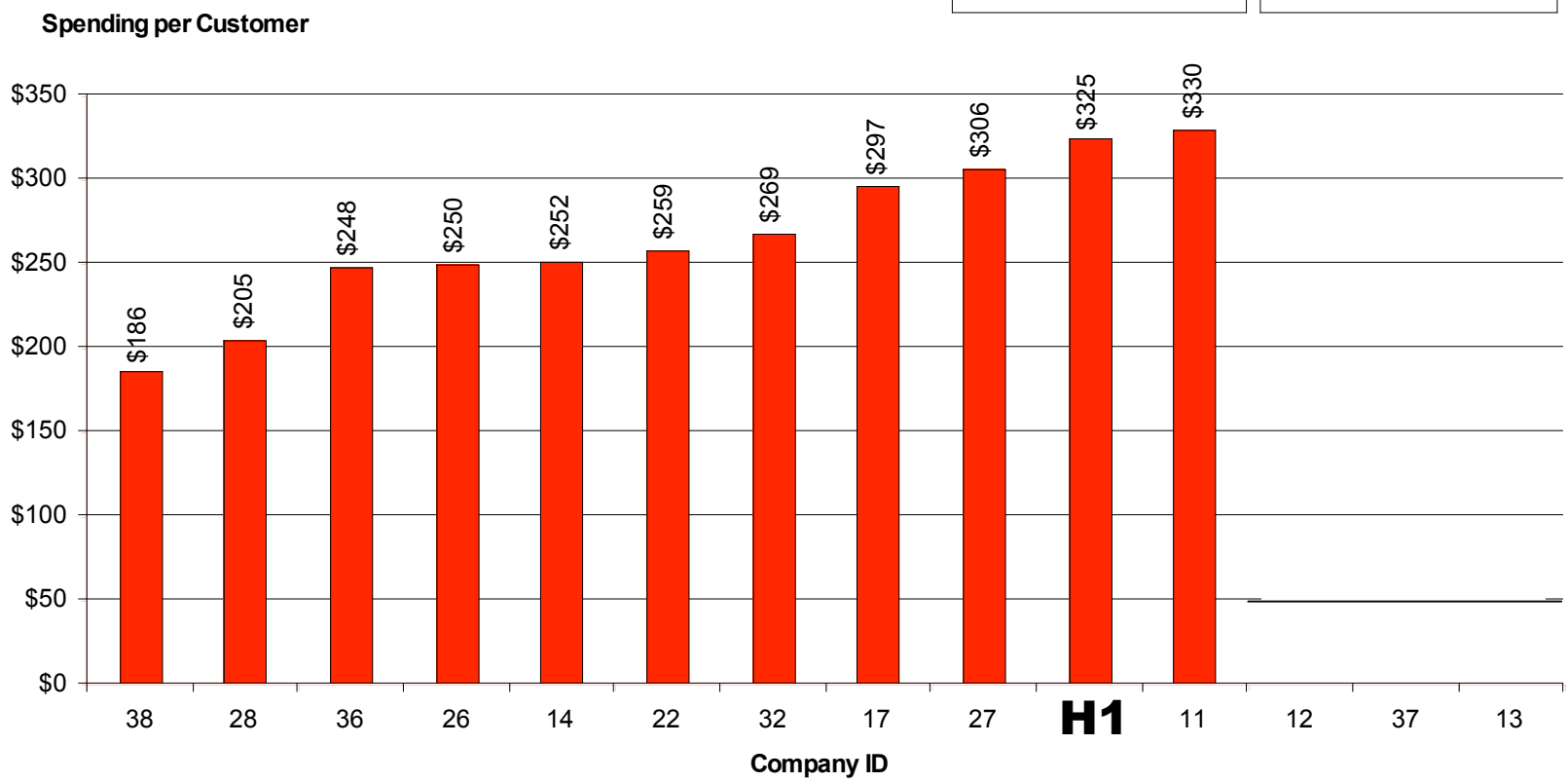


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Dist Lines & Subs Capital + O&M Spending per Customer

HydroOne:	
Value:	$325
Quartile:	Q4
Rank:	10

Panel:	
Mean:	$266
Quartile 1:	$249
Quartile 2:	$259
Quartile 3:	$302

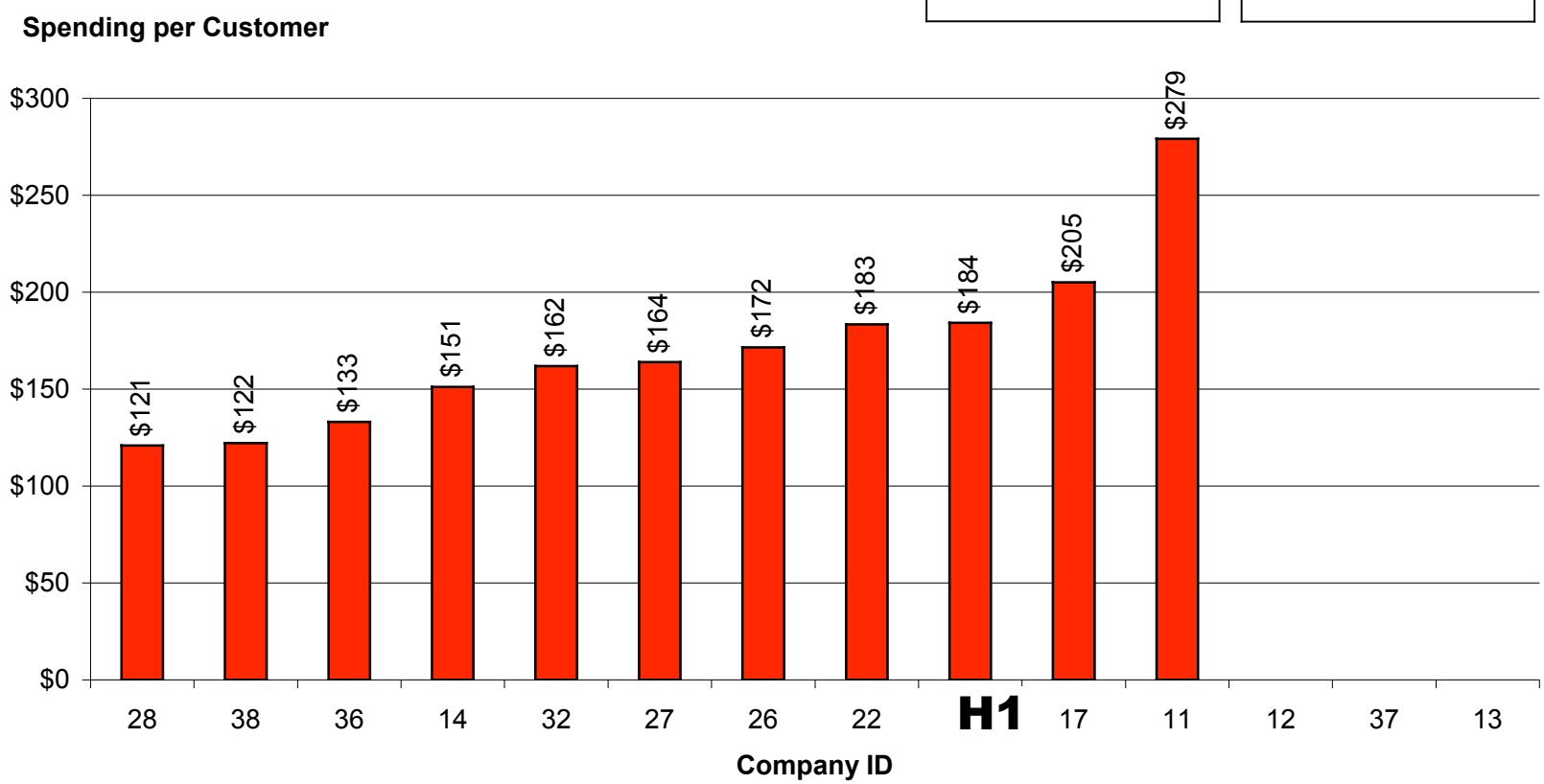


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Dist Lines & Subs Capital Spending per Customer

HydroOne:	
Value:	$184
Quartile:	Q4
Rank:	9

Panel:	
Mean:	$171
Quartile 1:	$142
Quartile 2:	$164
Quartile 3:	$184

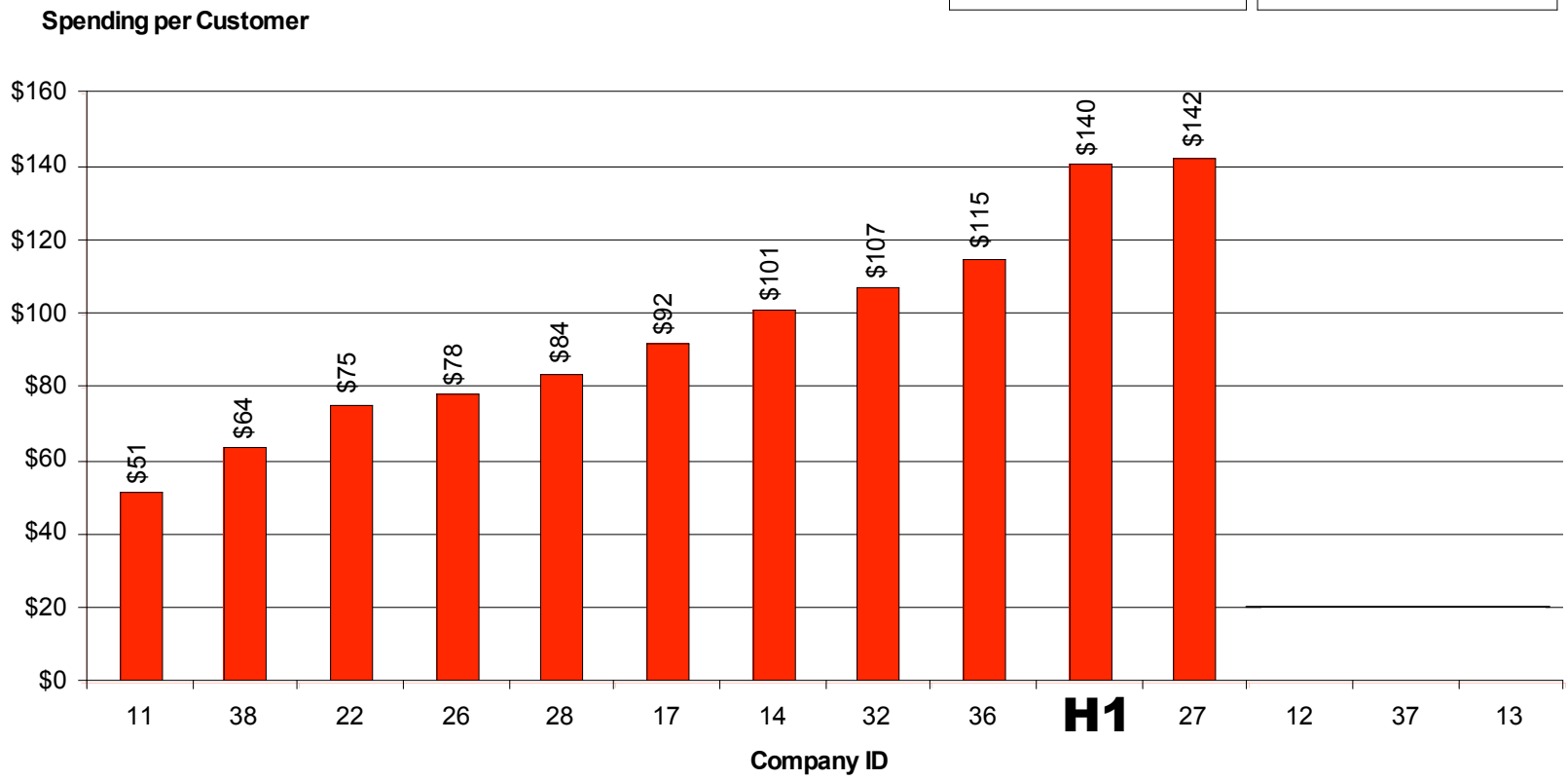


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Dist Lines & Subs O&M Spending per Customer

HydroOne:	
Value:	$140
Quartile:	Q4
Rank:	10

Panel:	
Mean:	$95
Quartile 1:	$77
Quartile 2:	$92
Quartile 3:	$111



3 year values are 2004-2006, 1 year values are 2006.

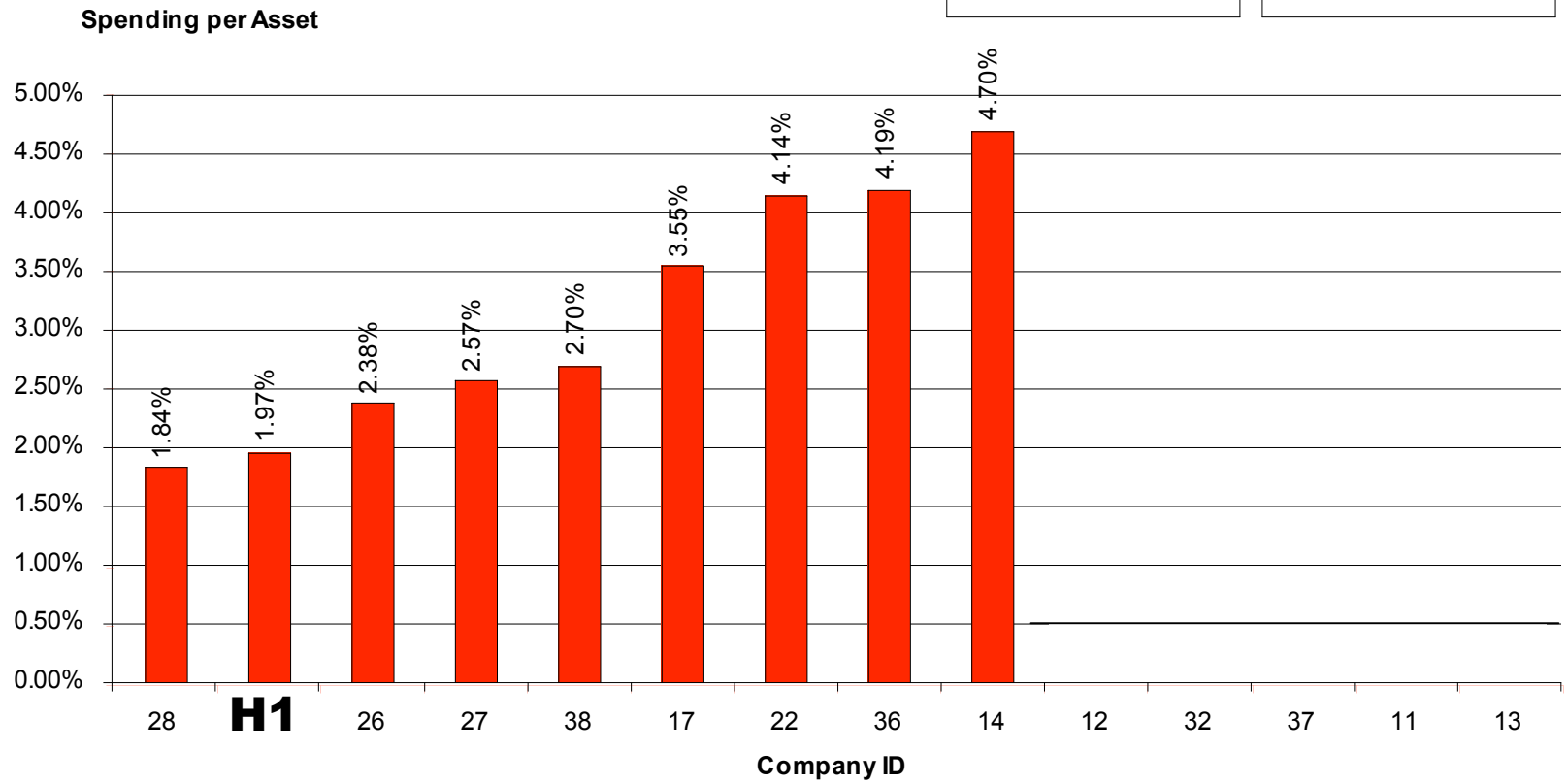
Asset Replacement Rates

3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Dist Lines & Subs Asset Replacement Rate (excludes new business)

HydroOne:	
Value:	1.97%
Quartile:	Q1
Rank:	2

Panel:	
Mean:	3.11%
Quartile 1:	2.38%
Quartile 2:	2.70%
Quartile 3:	4.14%

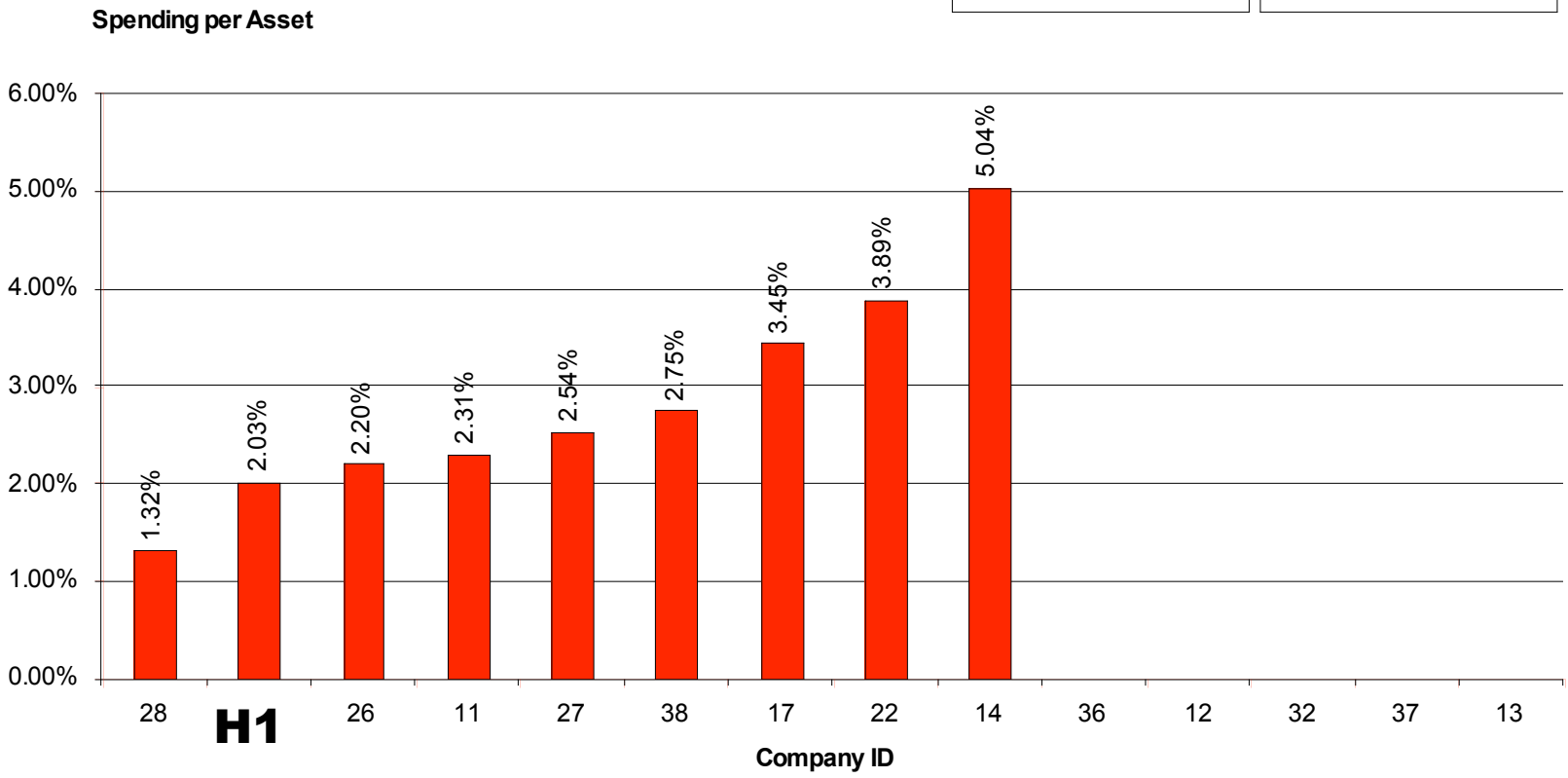


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Dist Lines Asset Replacement Rate (excludes new business)

HydroOne:	
Value:	2.03%
Quartile:	Q1
Rank:	2

Panel:	
Mean:	2.84%
Quartile 1:	2.20%
Quartile 2:	2.54%
Quartile 3:	3.45%

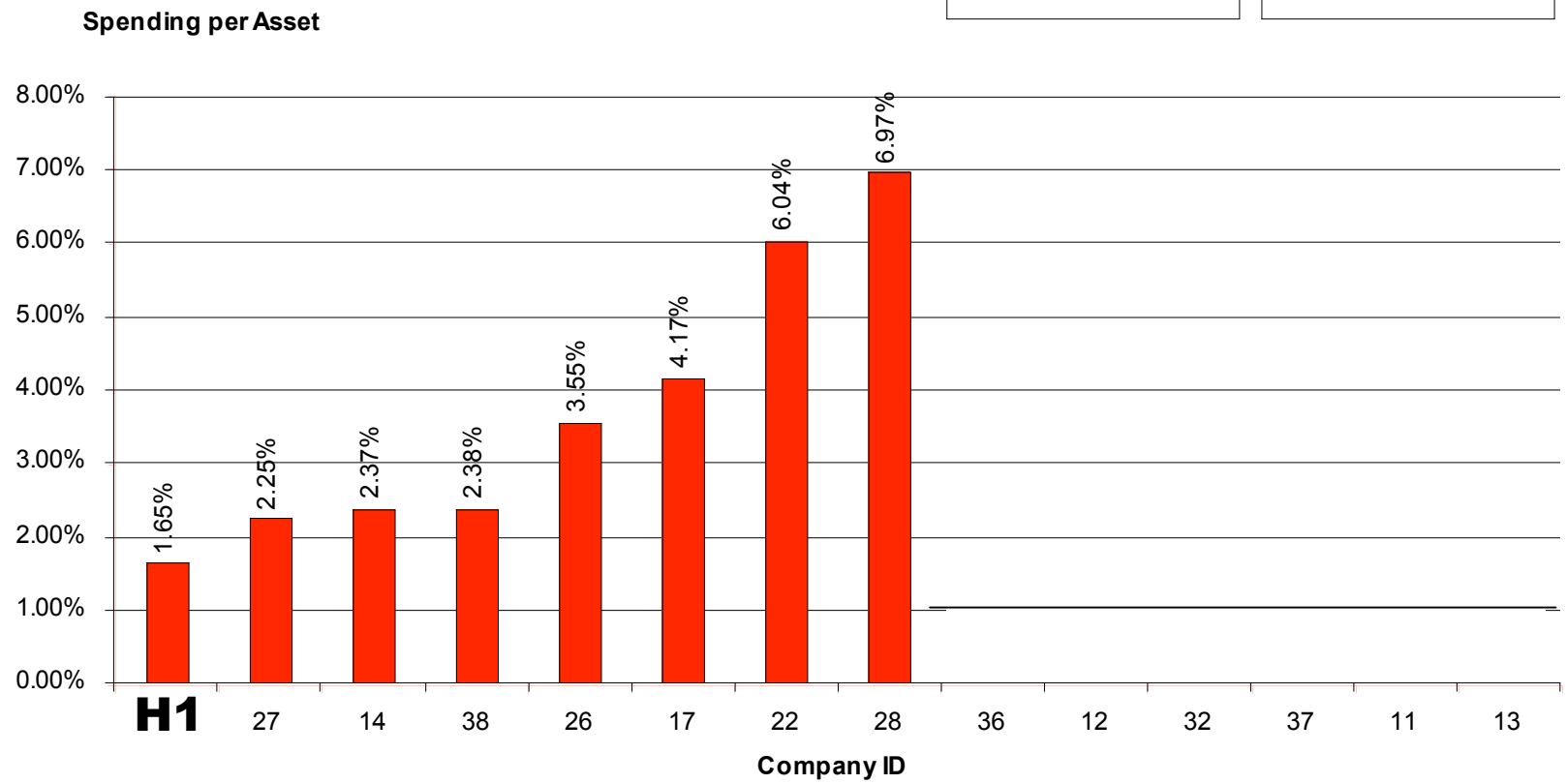


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Dist Subs Asset Replacement Rate (excludes new business)

HydroOne:	
Value:	1.65%
Quartile:	Q1
Rank:	1

Panel:	
Mean:	3.67%
Quartile 1:	2.34%
Quartile 2:	2.97%
Quartile 3:	4.64%



3 year values are 2004-2006, 1 year values are 2006.

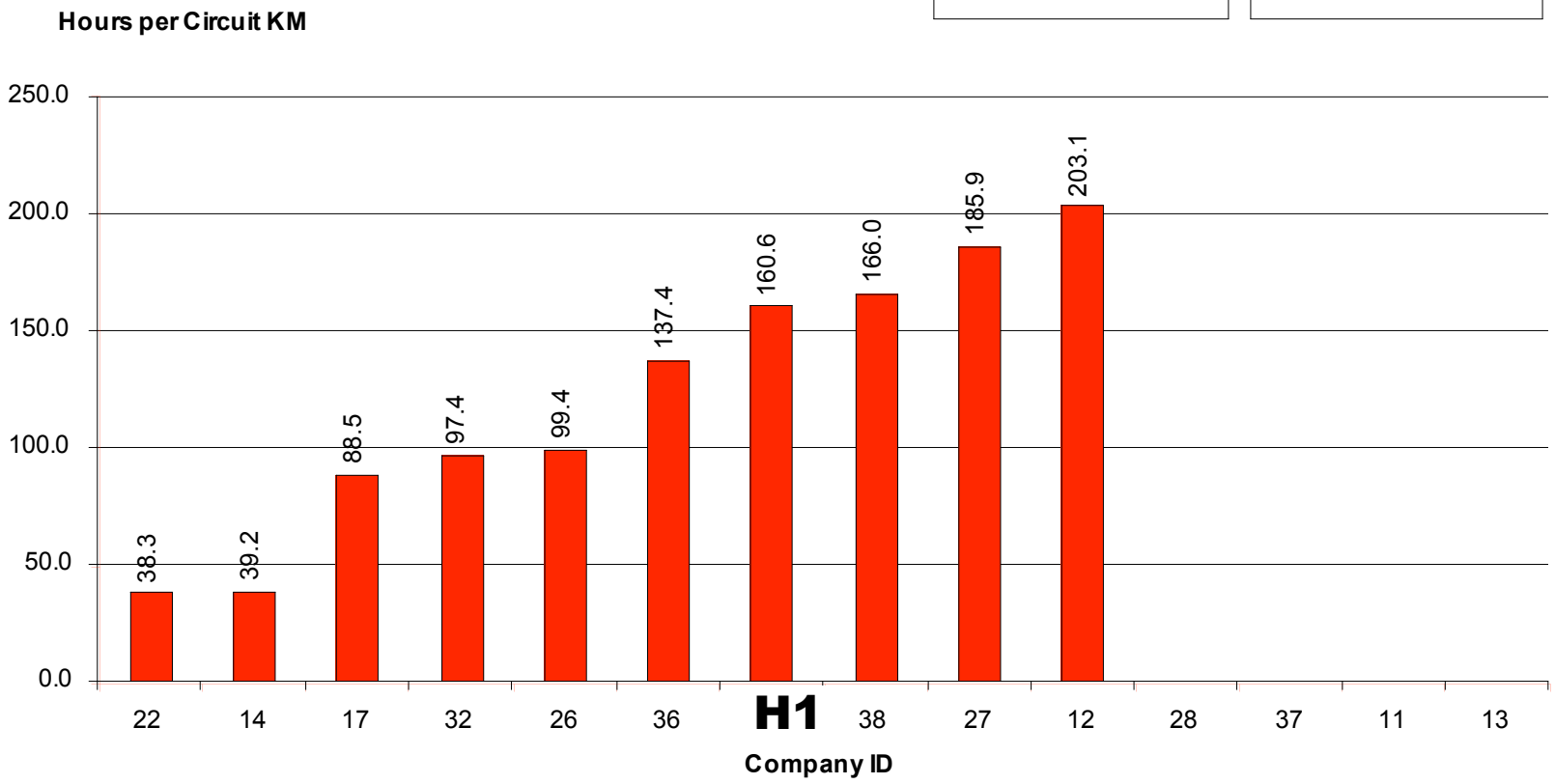
Reliability

3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Customer Hours per Circuit KM (Including Major Events)

HydroOne:	
Value:	160.6
Quartile:	Q3
Rank:	7

Panel:	
Mean:	121.6
Quartile 1:	90.7
Quartile 2:	118.4
Quartile 3:	164.7

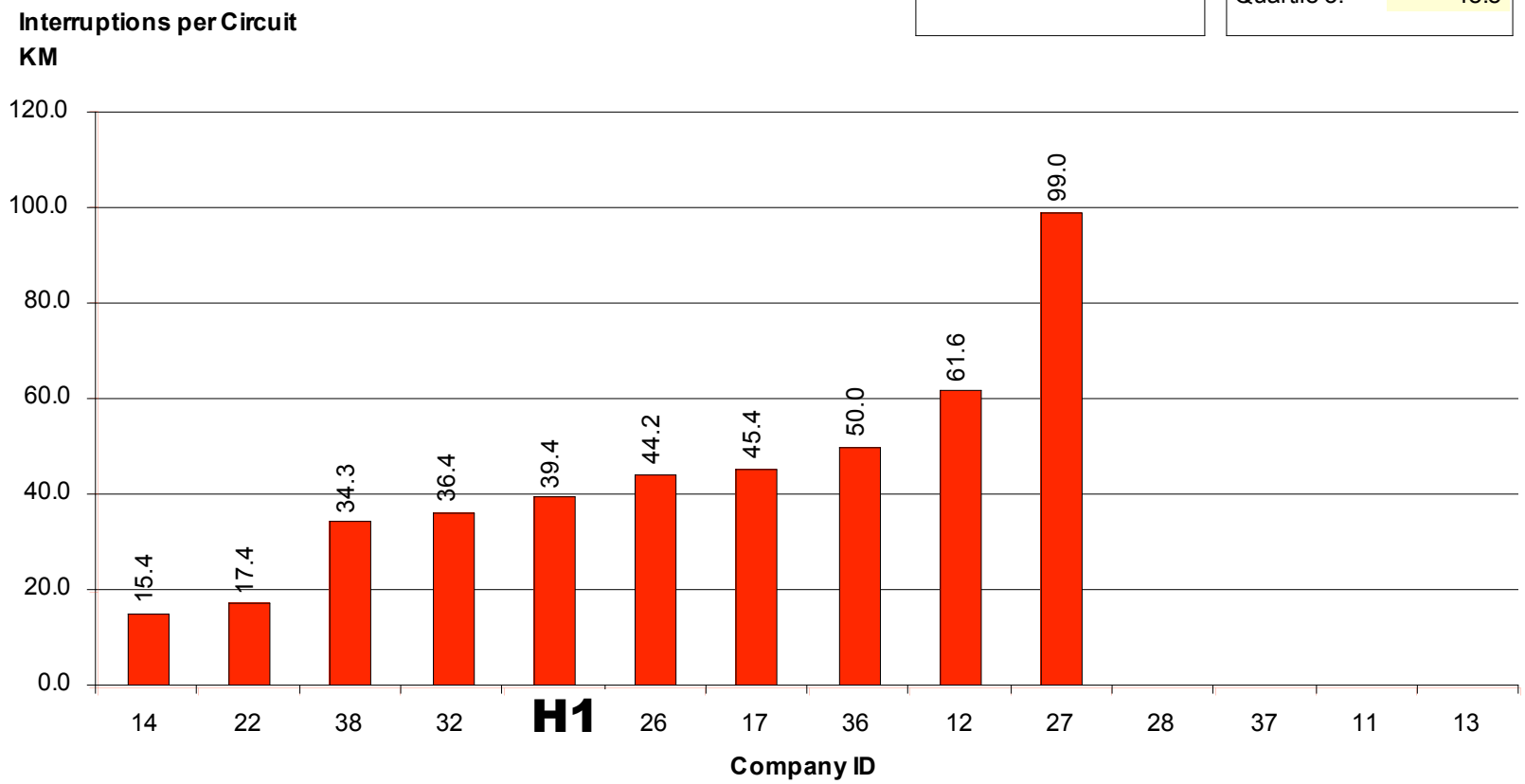


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Customer Interruptions per Circuit KM (Including Major Events)

HydroOne:	
Value:	39.4
Quartile:	Q2
Rank:	5

Panel:	
Mean:	44.3
Quartile 1:	34.8
Quartile 2:	41.8
Quartile 3:	48.8

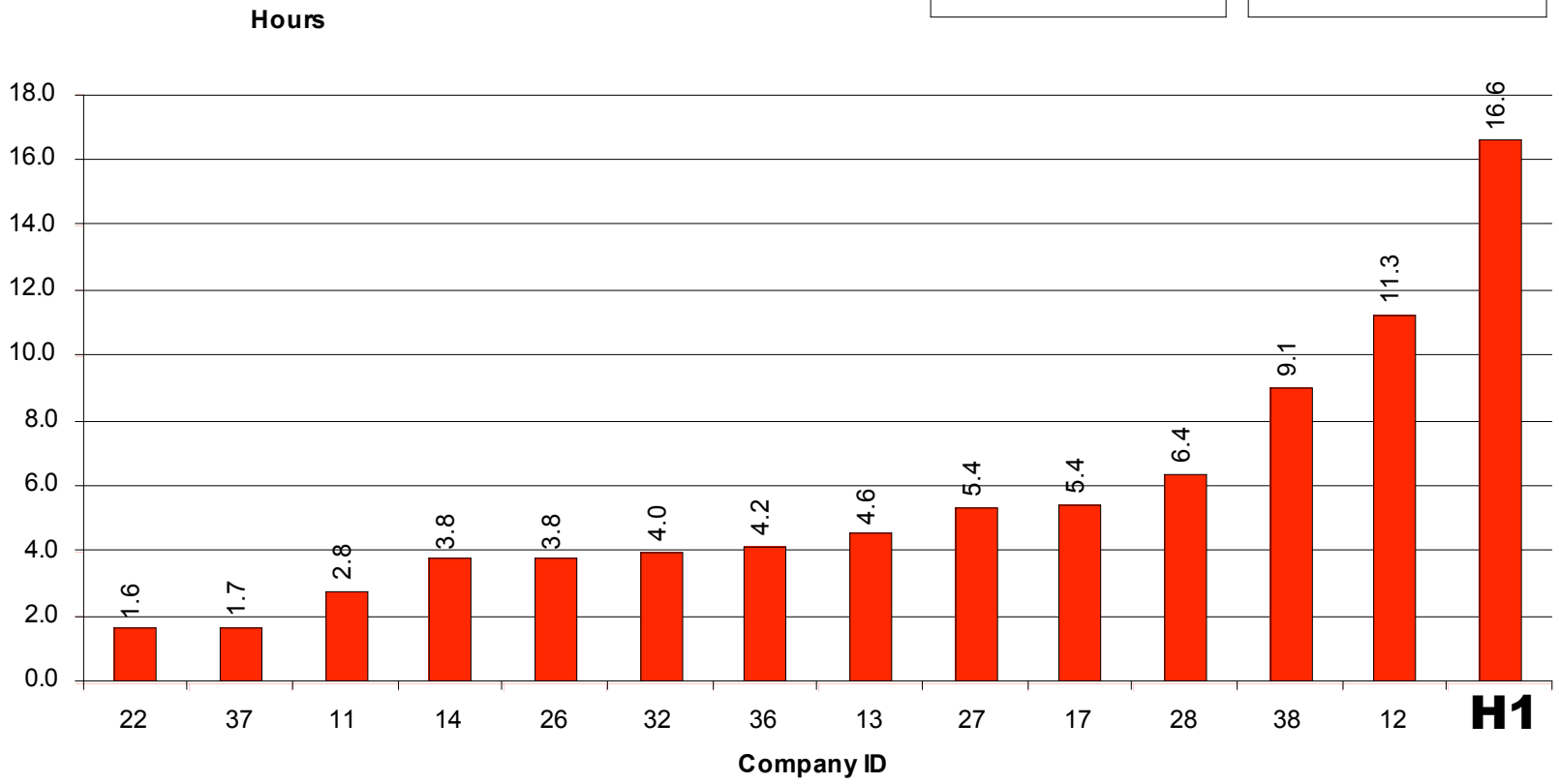


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg SAIDI (Including Major Events)

HydroOne:	
Value:	16.6
Quartile:	Q4
Rank:	14

Panel:	
Mean:	5.8
Quartile 1:	3.8
Quartile 2:	4.4
Quartile 3:	6.2

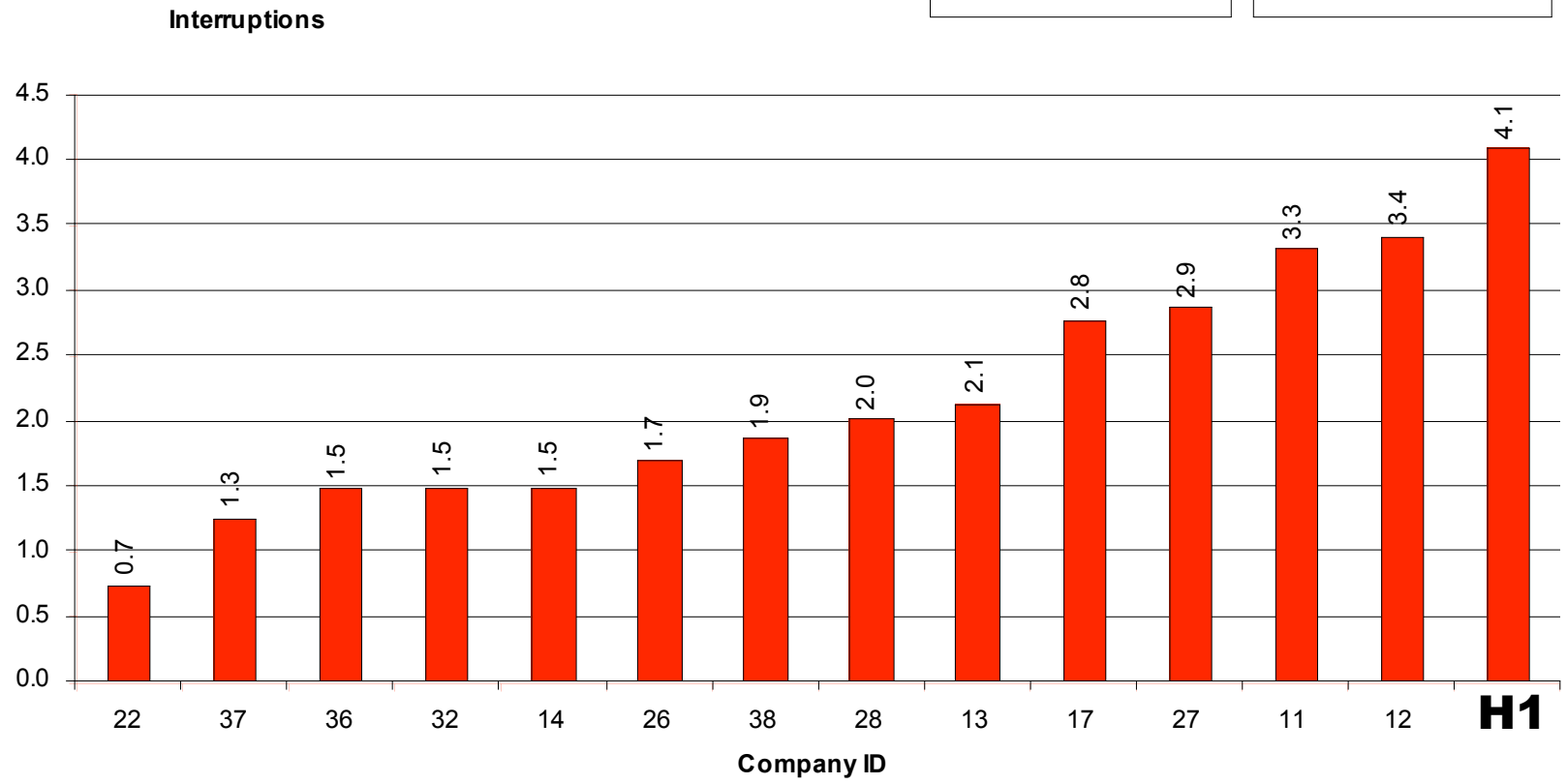


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg SAIFI (Including Major Events)

HydroOne:	
Value:	4.1
Quartile:	Q4
Rank:	14

Panel:	
Mean:	2.2
Quartile 1:	1.5
Quartile 2:	1.9
Quartile 3:	2.8

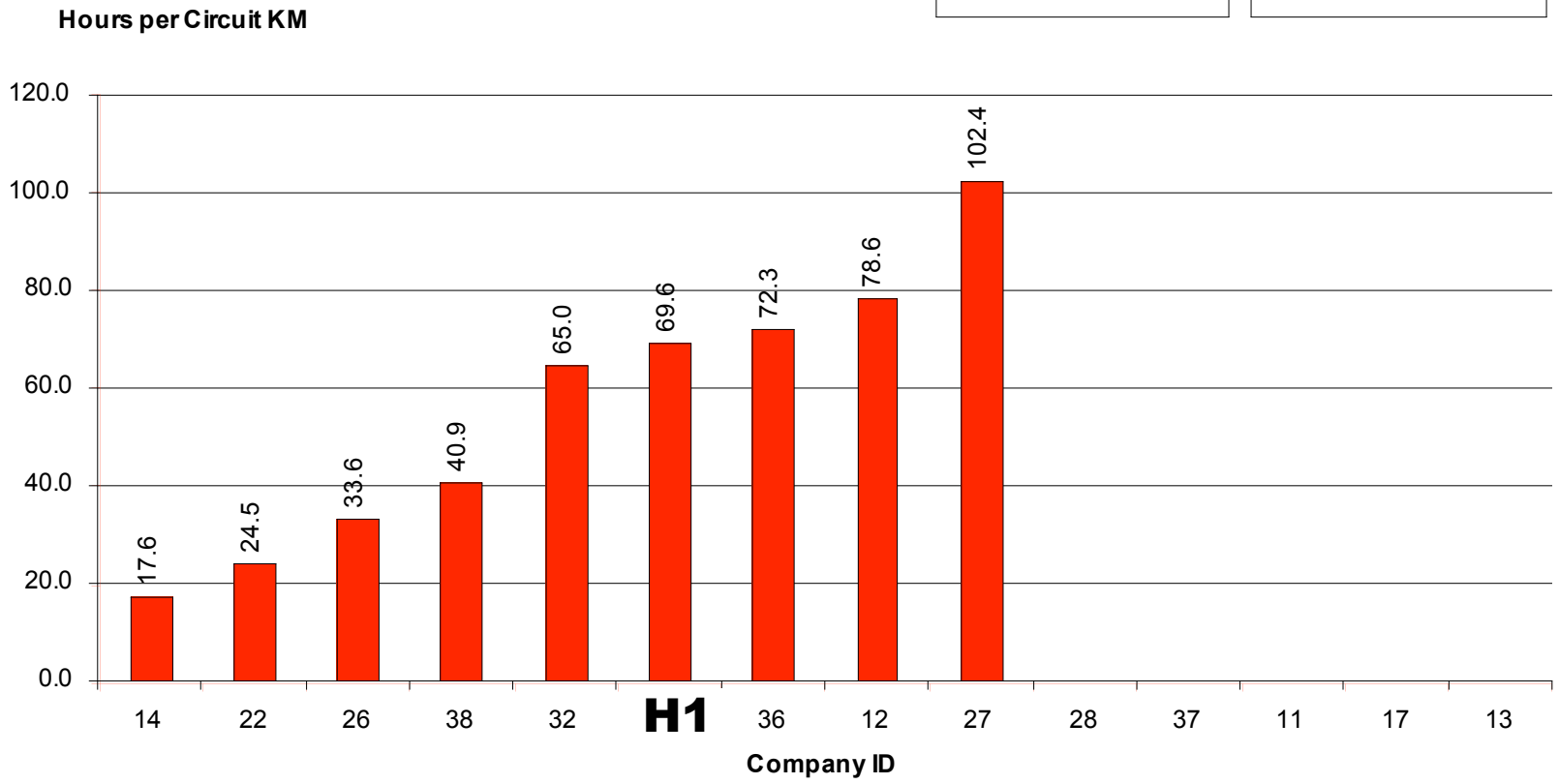


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Customer Hours per Circuit KM (Excluding Major Events)

HydroOne:	
Value:	69.6
Quartile:	Q3
Rank:	6

Panel:	
Mean:	56.1
Quartile 1:	33.6
Quartile 2:	65.0
Quartile 3:	72.3

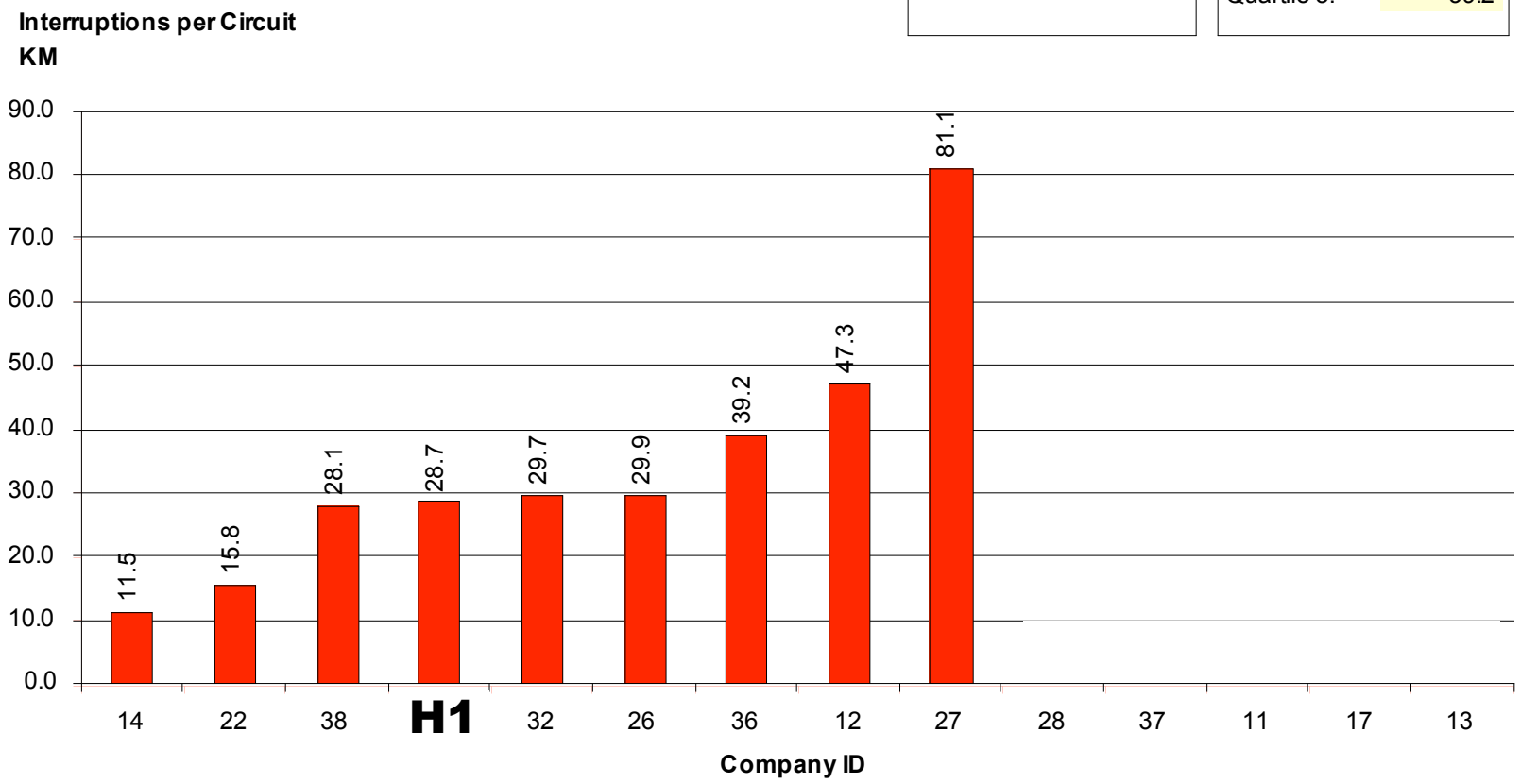


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Customer Interruptions per Circuit KM (Excluding Major Events)

HydroOne:	
Value:	28.7
Quartile:	Q2
Rank:	4

Panel:	
Mean:	34.6
Quartile 1:	28.1
Quartile 2:	29.7
Quartile 3:	39.2

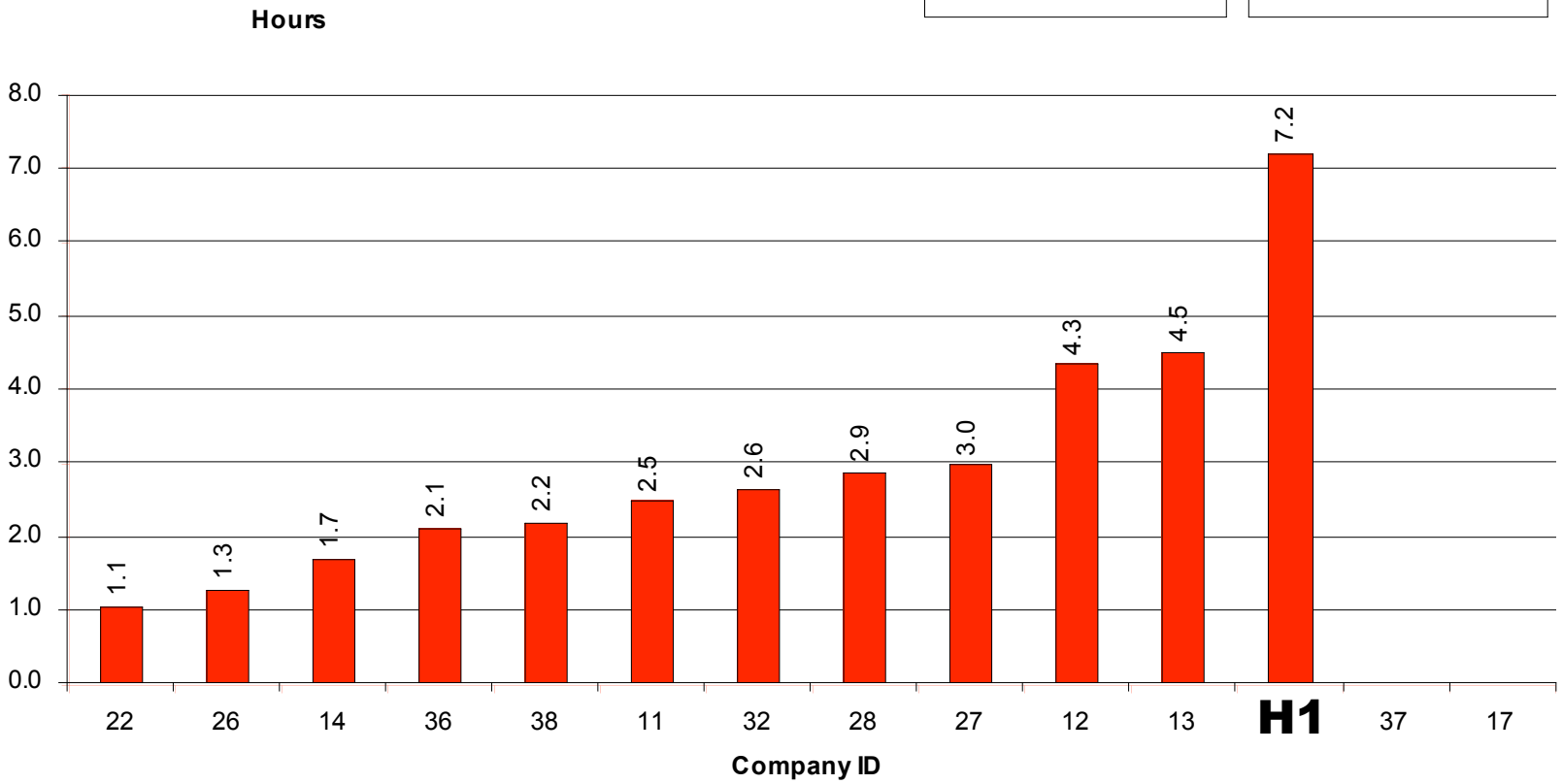


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg SAIDI (Excluding Major Events)

HydroOne:	
Value:	7.2
Quartile:	Q4
Rank:	12

Panel:	
Mean:	3.0
Quartile 1:	2.0
Quartile 2:	2.6
Quartile 3:	3.3

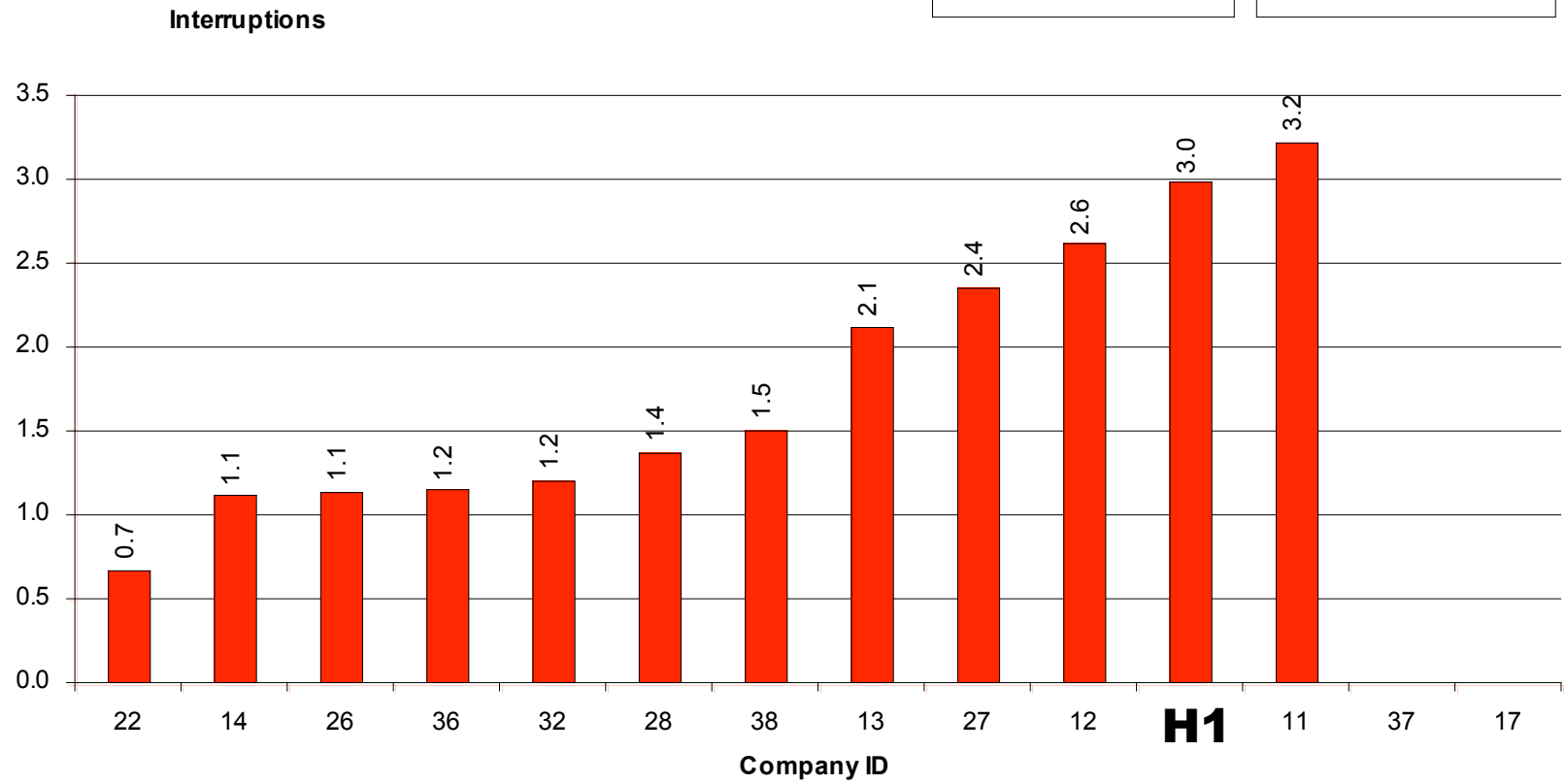


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg SAIFI (Excluding Major Events)

HydroOne:	
Value:	3.0
Quartile:	Q4
Rank:	11

Panel:	
Mean:	1.8
Quartile 1:	1.2
Quartile 2:	1.4
Quartile 3:	2.4



3 year values are 2004-2006, 1 year values are 2006.

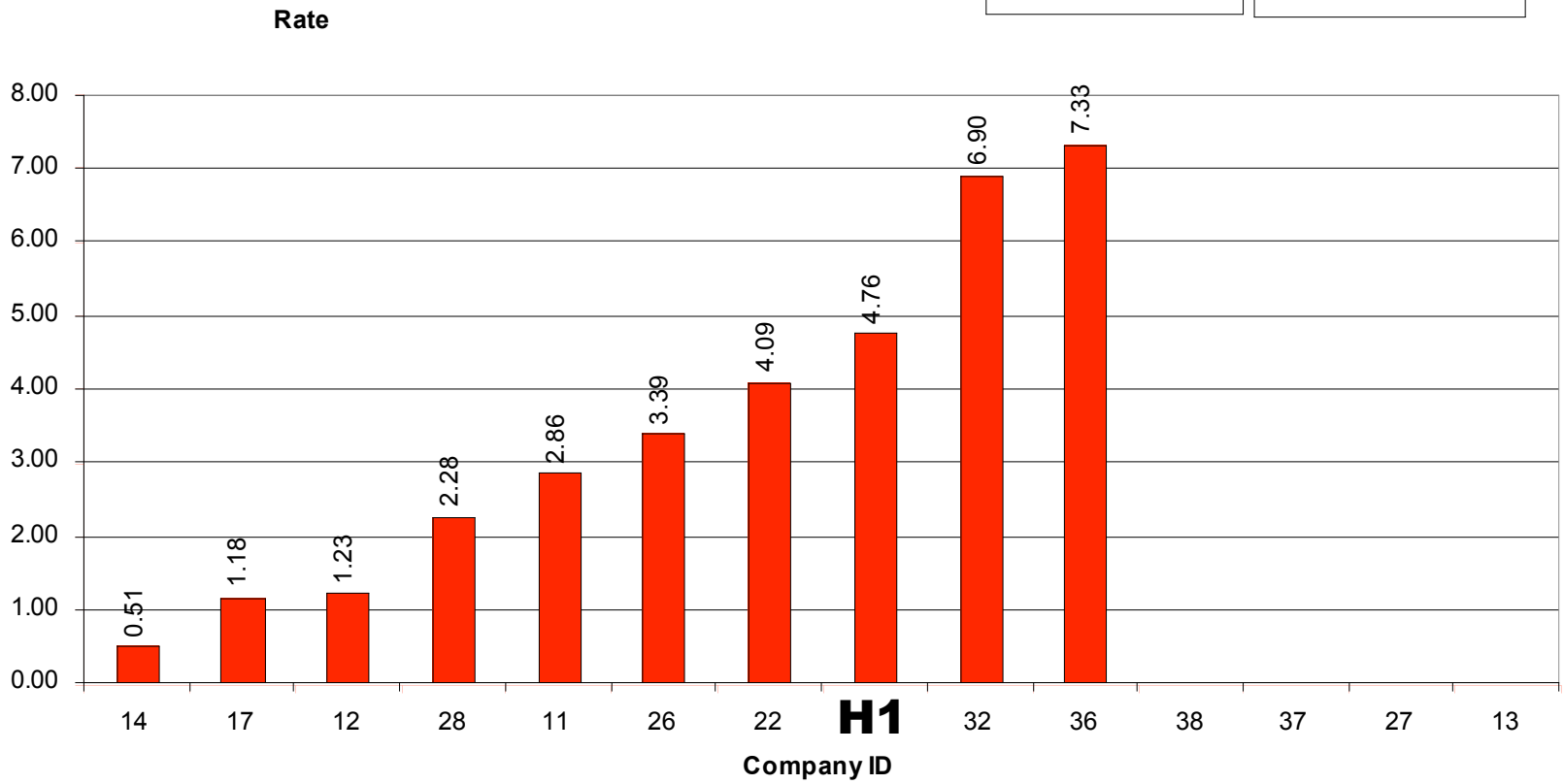
Safety

3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Recordable Incident Rate - Total Corporate

H-O	
Value:	4.76
Quartile:	Q4
Rank:	8

Panel:	
Mean:	3.45
Quartile 1:	1.49
Quartile 2:	3.13
Quartile 3:	4.59

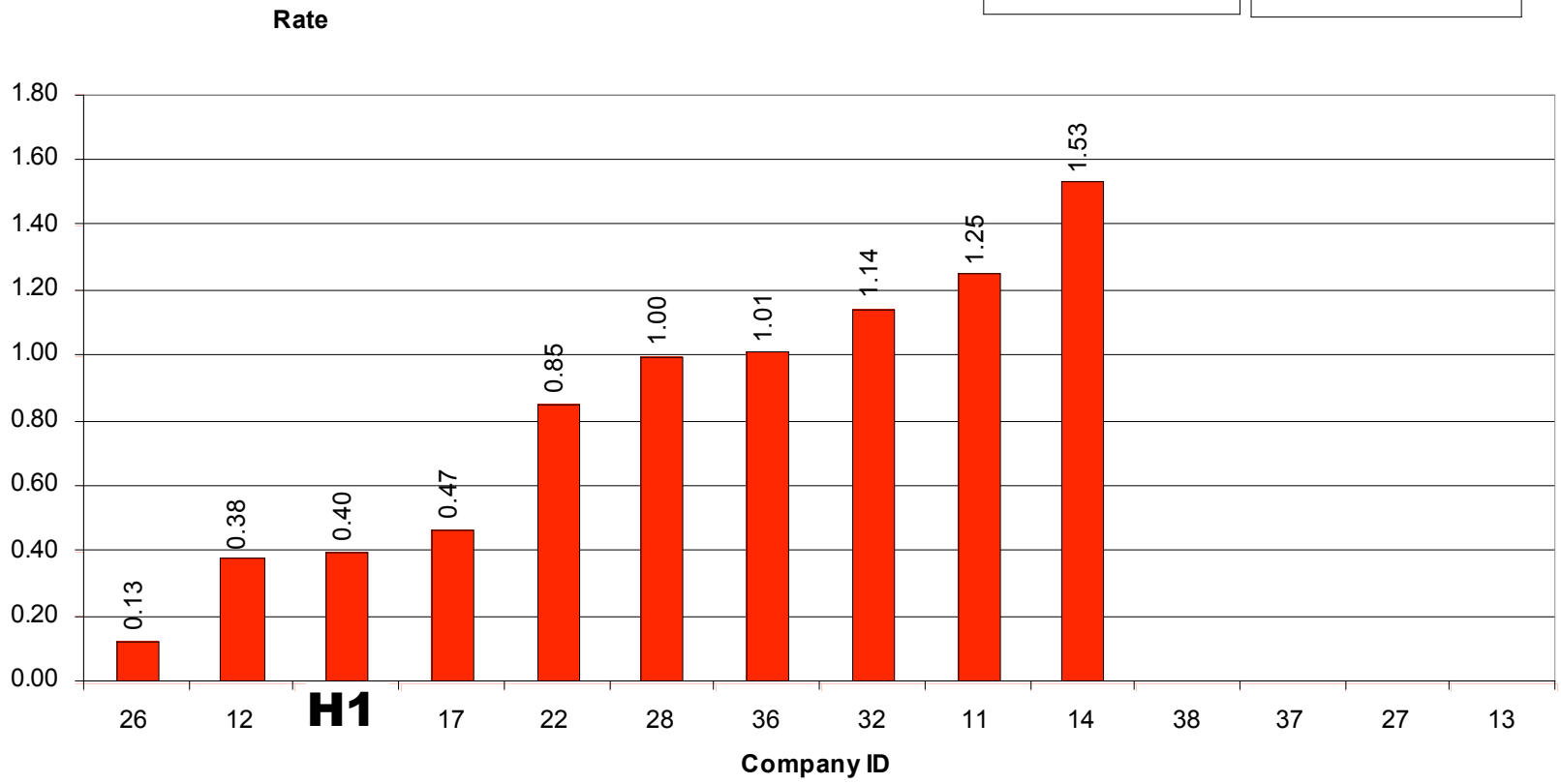


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Lost Time Incident Rate - Total Corporate

H-O	
Value:	0.40
Quartile:	Q1
Rank:	3

Panel:	
Mean:	0.82
Quartile 1:	0.42
Quartile 2:	0.93
Quartile 3:	1.11

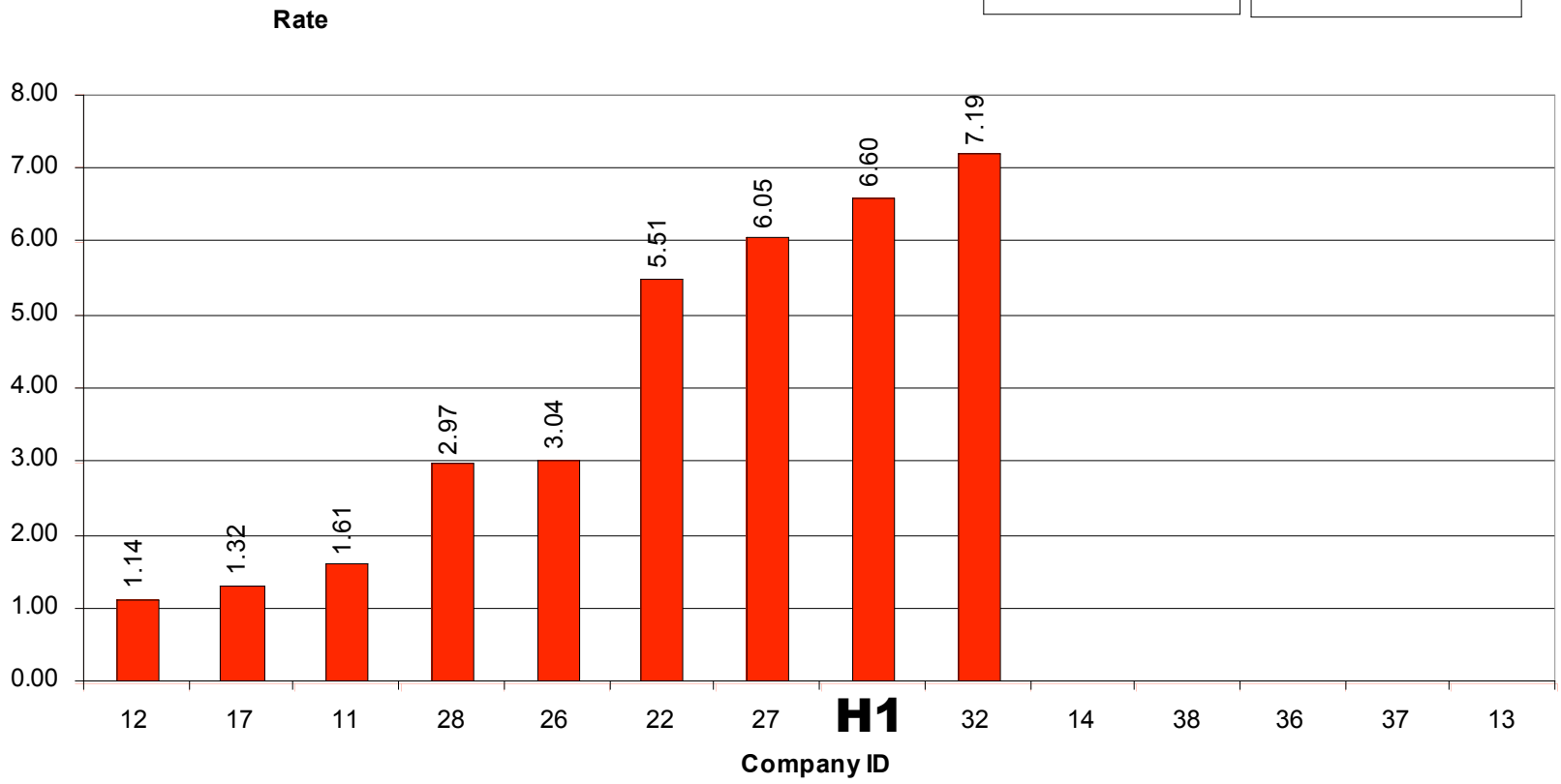


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Recordable Incident Rate - Distribution

H-O	
Value:	6.60
Quartile:	Q4
Rank:	8

Panel:	
Mean:	3.94
Quartile 1:	1.61
Quartile 2:	3.04
Quartile 3:	6.05

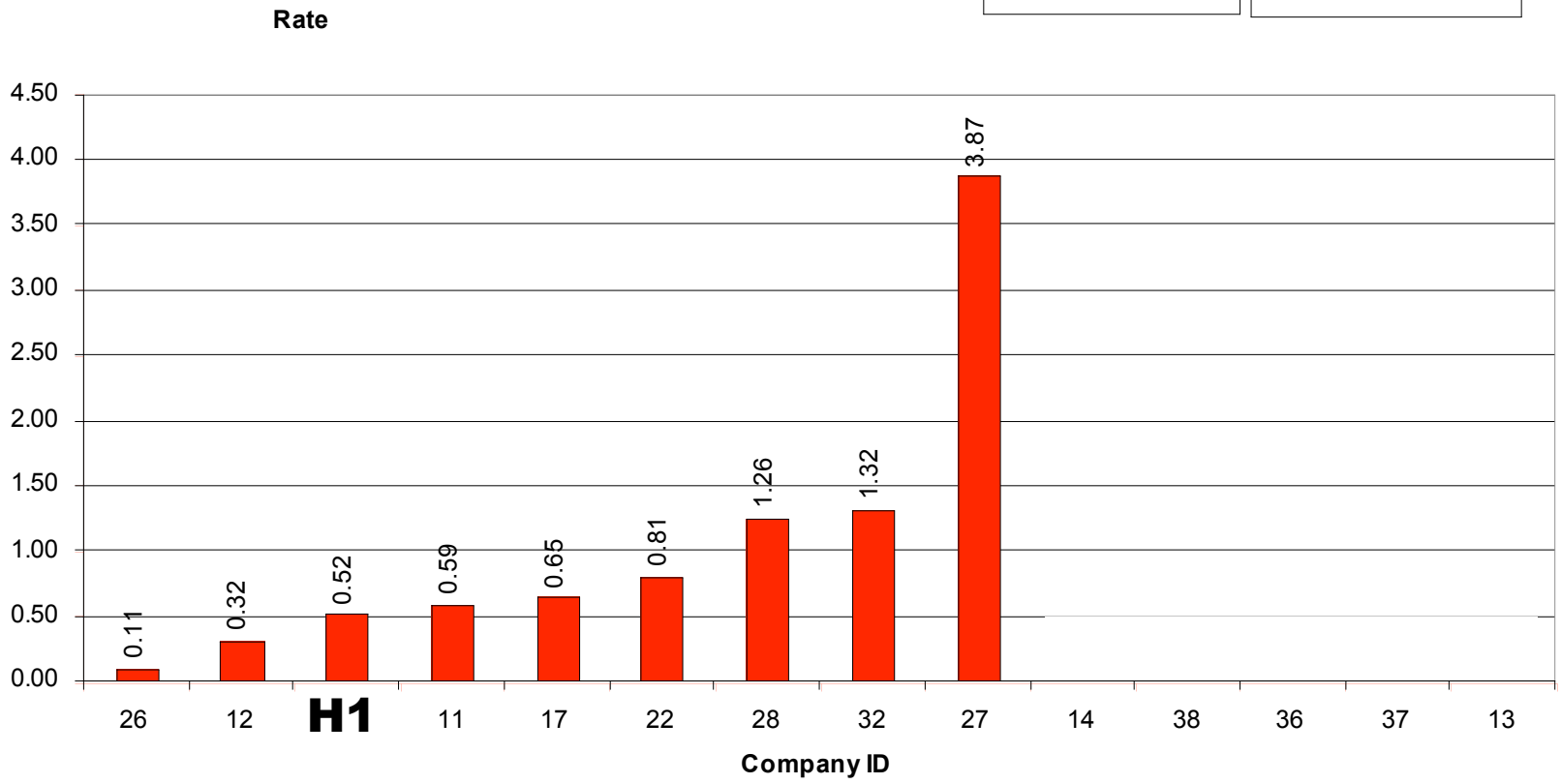


3 year values are 2004-2006, 1 year values are 2006.

3-yr Avg Lost Time Incident Rate - Distribution

H-O	
Value:	0.52
Quartile:	Q2
Rank:	3

Panel:	
Mean:	1.05
Quartile 1:	0.52
Quartile 2:	0.65
Quartile 3:	1.26



3 year values are 2004-2006, 1 year values are 2006.

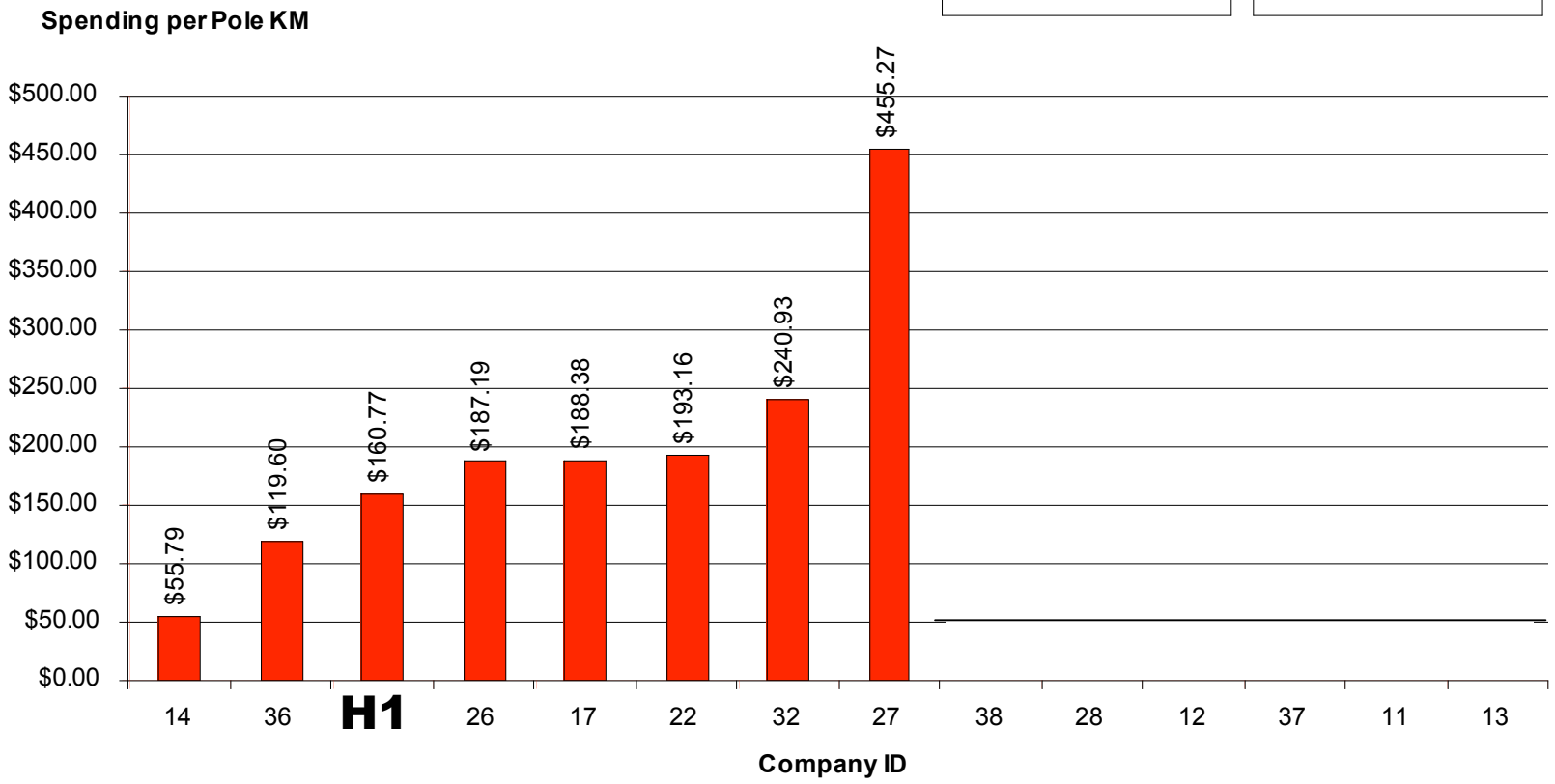
Meter Reading

3 year values are 2004-2006, 1 year values are 2006.

1-yr Meter Reading Expense per Pole KM

HydroOne:	
Value:	$160.77
Quartile:	Q2
Rank:	3

Panel:	
Mean:	$200.14
Quartile 1:	$150.48
Quartile 2:	$187.79
Quartile 3:	$205.11

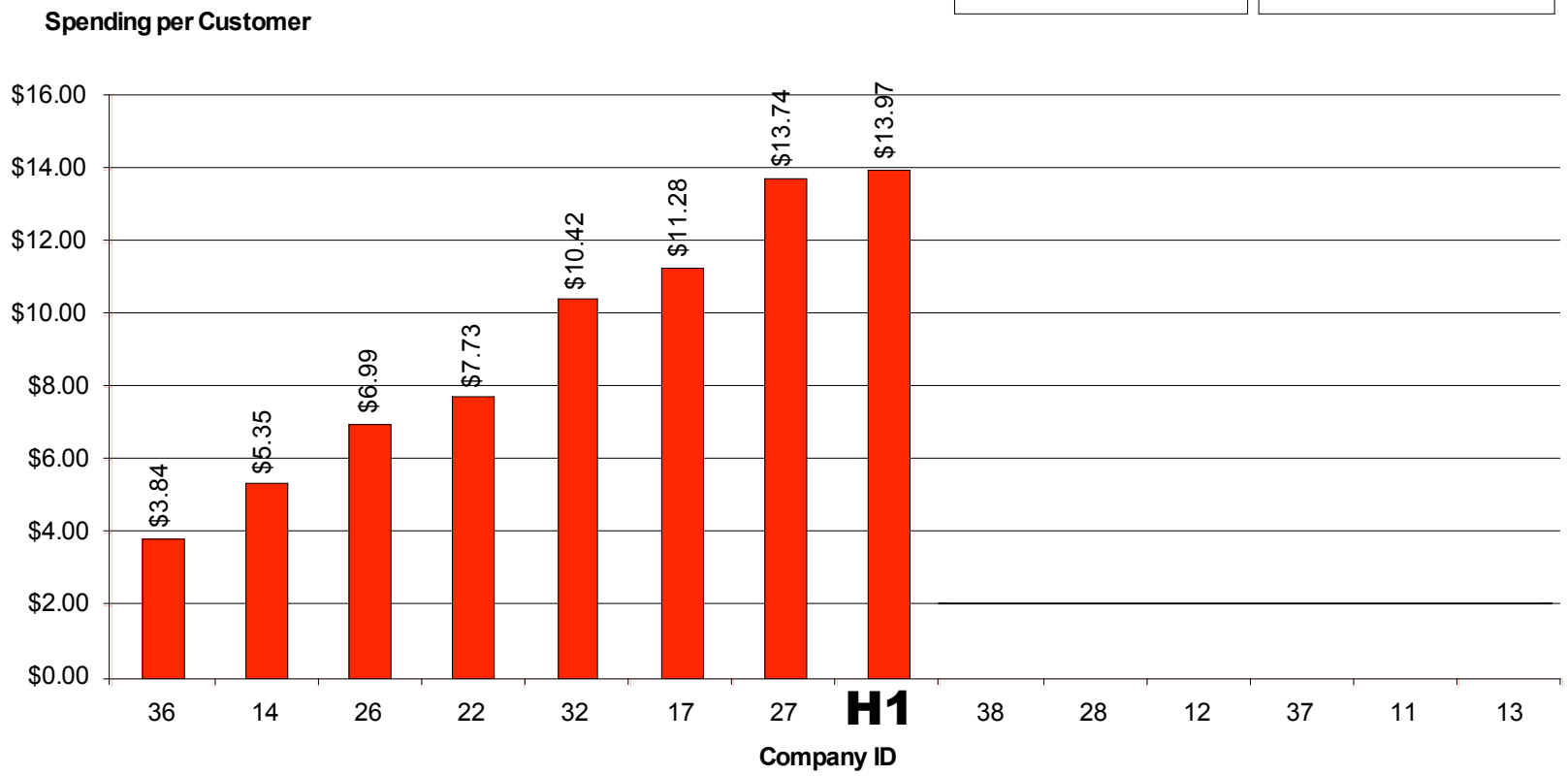


3 year values are 2004-2006, 1 year values are 2006.

1-yr Meter Reading Expense per Customer

HydroOne:	
Value:	$13.97
Quartile:	Q4
Rank:	8

Panel:	
Mean:	$9.16
Quartile 1:	$6.58
Quartile 2:	$9.07
Quartile 3:	$11.90

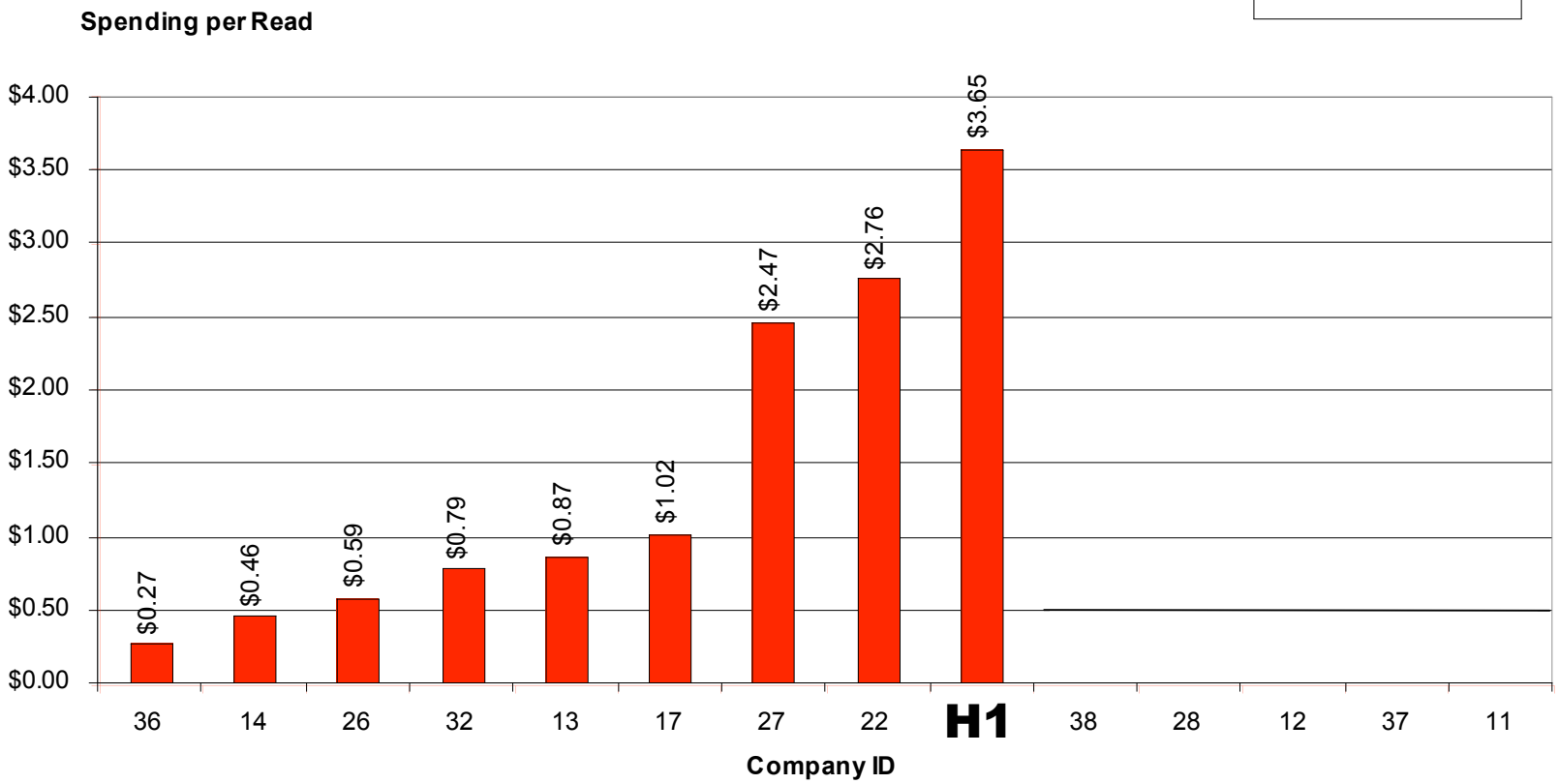


3 year values are 2004-2006, 1 year values are 2006.

1-yr Meter Reading Expense per Read

HydroOne	
Value	$3.65
Quartile	Q4
Rank	9

Panel:	
Mean:	$1.43
Quartile 1:	$0.59
Quartile 2:	$0.87
Quartile 3:	$2.47



3 year values are 2004-2006, 1 year values are 2006.

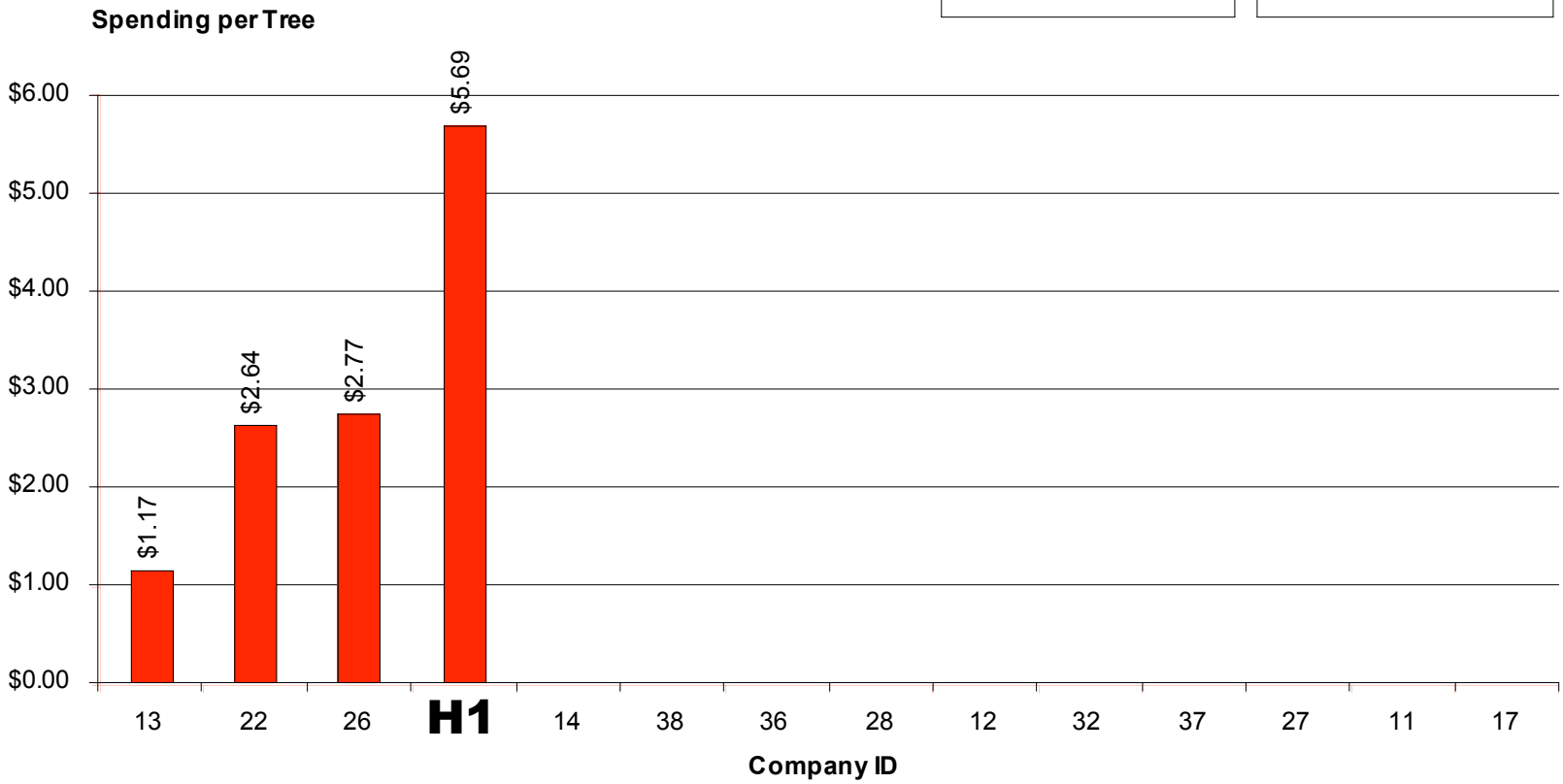
Tree Trimming

3 year values are 2004-2006, 1 year values are 2006.

1-yr Tree Trimming Expense per Trees Managed

HydroOne:	
Value:	$5.69
Quartile:	Q4
Rank:	4

Panel:	
Mean:	$3.07
Quartile 1:	$2.27
Quartile 2:	$2.70
Quartile 3:	$3.50

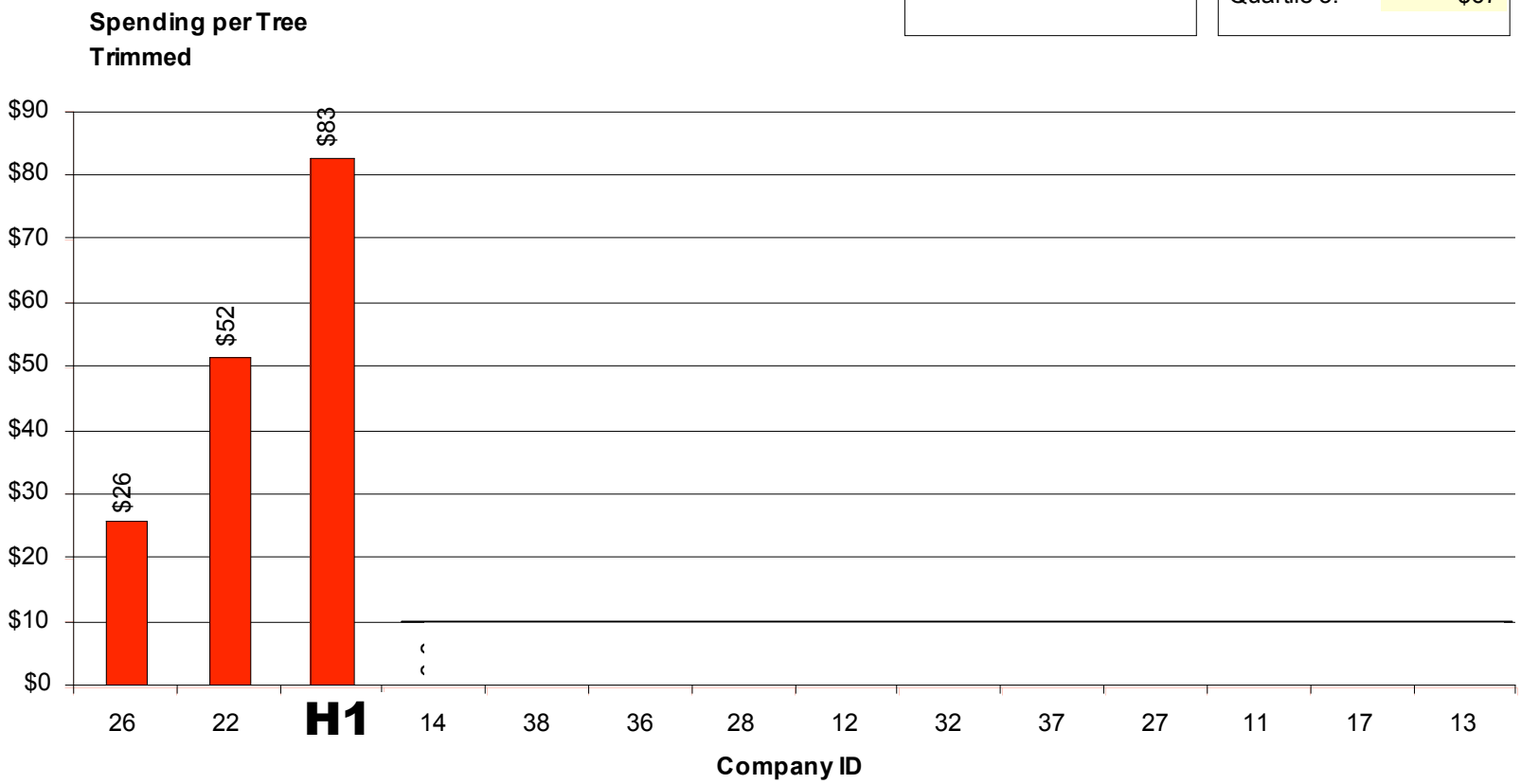


3 year values are 2004-2006, 1 year values are 2006.

1-yr Tree Trimming Expense per Tree Trimmed

HydroOne:	
Value:	$83
Quartile:	Q4
Rank:	3

Panel:	
Mean:	$53
Quartile 1:	$39
Quartile 2:	$52
Quartile 3:	$67

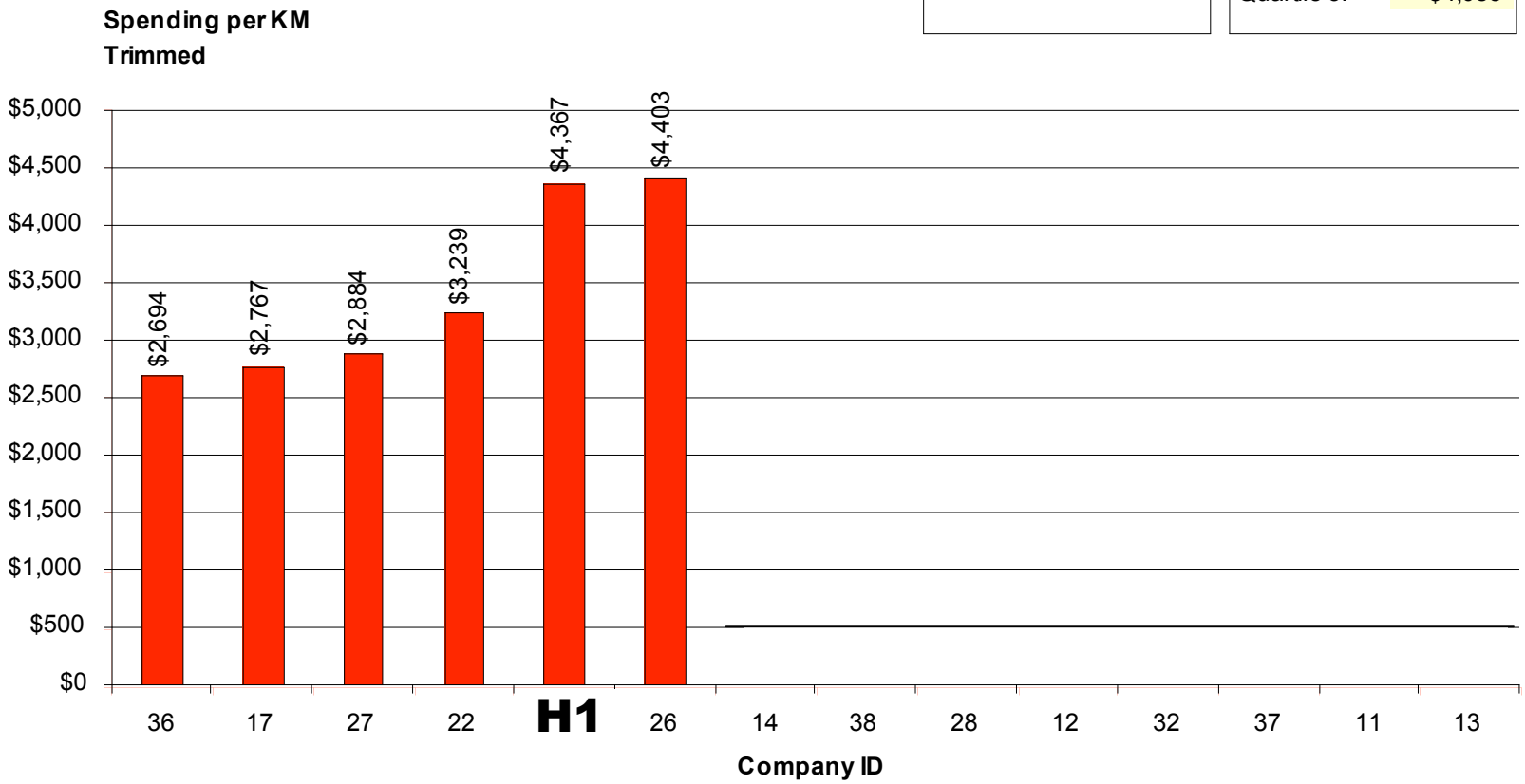


3 year values are 2004-2006, 1 year values are 2006.

1-yr Tree Trimming Expense per KM Trimmed

HydroOne:	
Value:	$4,367
Quartile:	Q4
Rank:	5

Panel:	
Mean:	$3,392
Quartile 1:	$2,796
Quartile 2:	$3,061
Quartile 3:	$4,085

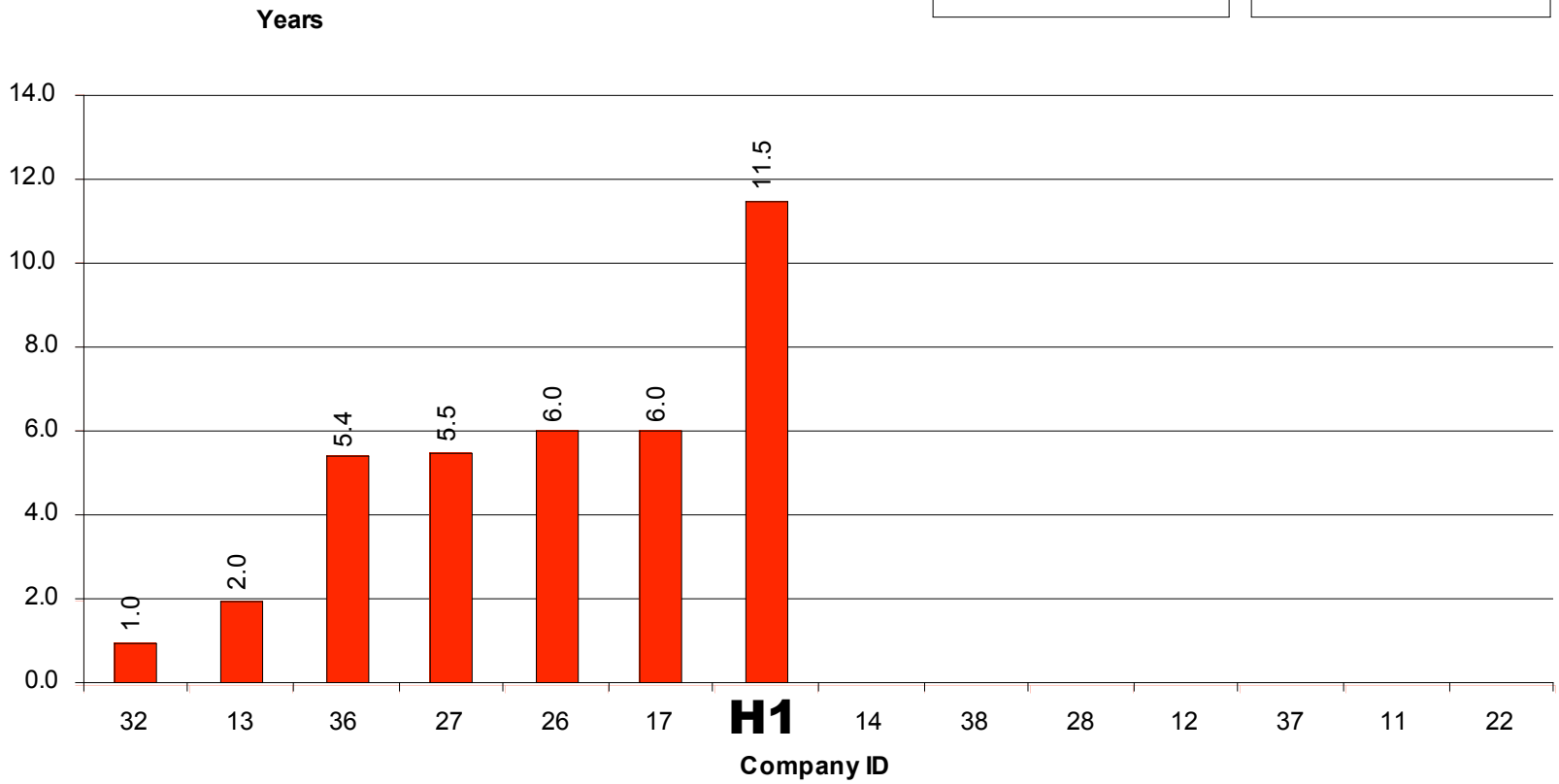


3 year values are 2004-2006, 1 year values are 2006.

Cycle Time Actuals

HydroOne:	
Value:	11.5
Quartile:	Q4
Rank:	7

Panel:	
Mean:	5.3
Quartile 1:	3.7
Quartile 2:	5.5
Quartile 3:	6.0



3 year values are 2004-2006, 1 year values are 2006.

2007 Comparison of Labour Rates and Overtime Policy

FINAL REPORT

October, 2007

Prepared By:

Karl Aboud
Stephanie Hudakoc

Table of Contents

Section

Appendices

I. Introduction

Purpose

The Ontario Energy Board (OEB) directed Hydro One Networks (Hydro One) to engage an independent party to, "Develop a comparison of labour rates and overtime policies amongst Hydro One, other comparative Ontario electricity distributors, and other Canadian utilities as identified in the high level benchmarking survey." As a result, Hydro One issued a Request for Proposal (RFP) from which Hay Group was selected to conduct a custom survey on labour rates and overtime policies of three benchmark positions among a selected group of organizations. The purpose of this report is to provide comparisons of Hydro One pay values relative to those of the market.

Survey Benchmark Positions

The following three positions were selected as the survey benchmark positions as they represent a large component of the workforce and are typical of job classifications across the utility industry (see Appendix A for full descriptions):

1. Field Operations Manager
2. Design Engineer
3. Powerline Maintainer

II. Executive Summary

Field Operations Manager

Hydro One is below market on both the hourly wage rate minimum and maximum. Hydro One's hourly wage rate minimum of $35.55 is 24% below the market's average of $46.92, while Hydro One's hourly wage rate maximum of $56.73 is 10% below the market average of $62.96. The Field Operations Manager at Hydro One is not eligible for overtime. Two out of the eleven market survey participants that matched to Field Operations Manager are eligible for overtime. Neither Hydro One nor any of the market survey participants have union representation for the Field Operations Manager.

Design Engineer

Hydro One is in-line with market on both the hourly wage rate minimum and maximum. Hydro One's hourly wage rate minimum of $37.22 is comparable to the market's average of $37.16, while Hydro One's hourly wage rate maximum of $53.38 is 4% above the market average of $51.55. The Design Engineer at Hydro One is eligible for overtime. Seven out of the fourteen market survey participants that matched to Design Engineer are eligible for overtime. Hydro One and four out of the fourteen market survey participants have union representation for the Design Engineer.

Powerline Maintainer

Hydro One's hourly rate wage minimum of $18.72 is considerably below the market on the hourly wage rate minimum, however the hourly wage rate maximum is above the market. Hydro One's hourly wage rate minimum of $18.72 is 30% below the market's average of $26.76, while Hydro One's hourly wage rate maximum of $36.10 is 12% above the market average of $32.31. The Powerline Maintainer at Hydro One is eligible for overtime. All of the thirteen market survey participants that matched to the Powerline Maintainer are eligible for overtime. Hydro One and all of the thirteen organizations that matched to the Powerline Maintainer have union representation.

III. Survey Participation & Organizational Profile

Reference Market

Hay Group contacted seventeen prospective organizations to be invited to participate in the survey. The selected comparator market is a statistically relevant sample, comprised of the following fourteen organizations that agreed to participate in the survey:

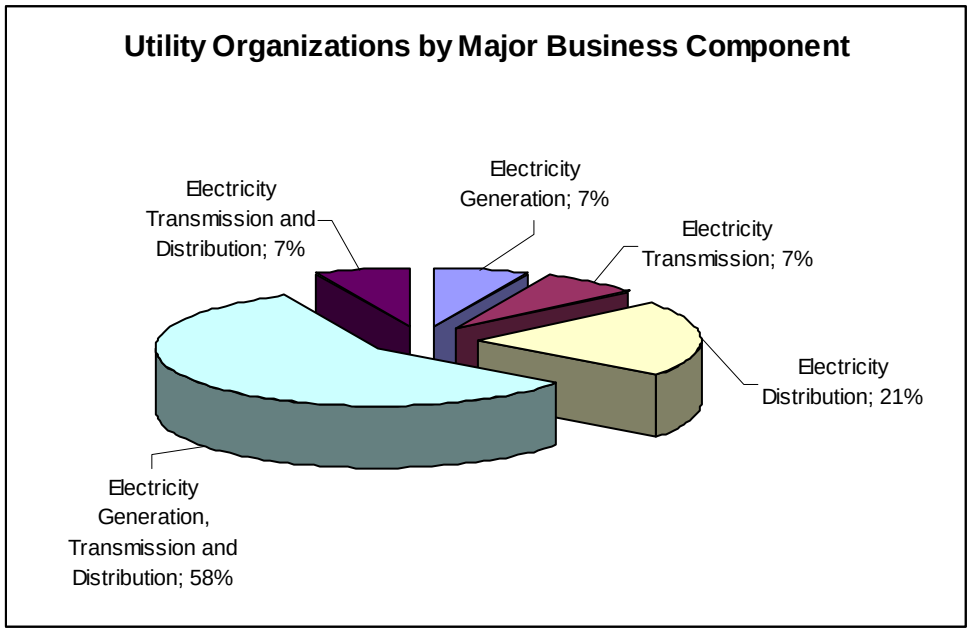
- ATCO Electric
- British Columbia Hydro and Power Authority
- EPCOR
- FortisAlberta Inc.
- FortisBC Inc.
- Hydro Ottawa Limited
- Hydro-Québec
- Manitoba Hydro
- New Brunswick Power Corporation
- Newfoundland Power Inc.
- Nova Scotia Power Inc.
- Ontario Power Generation Inc.
- SaskPower
- Toronto Hydro Corporation

Organization Profile

The average and median organizational profiles of the fourteen organizations are as follows:

Statistical Reference	Gross Revenue / Operating Budget ($Millions)	Total Assets ($Millions)
Hydro One	***$4,545.0***	***$12,234.0***
Average	$2,255.4	$9,018.1
Median	$1,456.0	$3,408.0

The chart below summarizes the major business component of the participating utility organizations:



IV. Terms and Methodology

Compensation Elements and Overtime Principles

This report provides comparative data for specific elements of cash compensation and overtime principles as defined below.

Hourly Rate Minimum	– The minimum hourly wage rate that the organization is willing to pay an incumbent for the job in question.
Hourly Rate Maximum	– The maximum hourly wage rate that the organization is willing to pay an incumbent for the job in question.
Number of Wage Steps	– The number of hourly wage rate steps for each job, including minimum and maximum.
Standard Length of Time From Minimum to Maximum Wage Rate	– The number of months an incumbent must be in the job in order to progress from the minimum to the maximum hourly wage rate.
Number of Hours in a Standard Work Week	– The standard number of hours that an incumbent in the job is required to work each week.
Overtime Eligibility	– Whether the job is eligible for overtime.
Overtime Wage Standards and Rates	– The applicable levels of overtime rates.
Union Representation	– Staff represented by a union.

Statistical References

Market data are reported using the following statistics:

P90 – **the 90th percentile**, below which 90% of the values fall (requires a minimum of 11 organizations to illustrate).

P75 – **the 75th percentile**, below which 75% of the values fall (requires a minimum of 7 organizations to illustrate).

P50 – **the 50th percentile (Median)**, below which 50% of the values fall (requires a minimum of 4 organizations to illustrate).

P25 – **the 25th percentile**, below which 25% of the values fall (requires a minimum of 7 organizations to illustrate).

P10 – **the 10th percentile**, below which 10% of the values fall (requires a minimum of 11 organizations to illustrate).

Average – **the arithmetic mean** of all values (requires a minimum of 3 organizations to illustrate).

Methodology

Hay Group designed and sent a custom survey questionnaire. For each benchmark position, a brief profile was developed, which is included in Appendix A. Participants were asked to match positions in their organization with the benchmark position profiles and to provide more insights into their jobs, such as the number of overall reports and other accountabilities not specified in the profile. The survey also included questions regarding the organization's overtime policies. Once the completed surveys were returned to Hay Group, participants were contacted for data verification as necessary. Hay Group also initiated a number of follow-up actions to clarify information provided by the participants.

Using the Hay Job Evaluation Method, a Hay Group consultant evaluated the three Hydro One benchmark positions and the matched positions submitted from each of the survey participants. A summary of the Hay Evaluation Method is provided in Appendix B. The evaluation points assigned to each of the three Hydro One benchmark positions are as follows:

Field Operations Manager	543 Total Points (i.e., the standard Price Point for any Hydro One Band 7 position)
Design Engineer	479 Total Points
Powerline Maintainer	203 Total Points

The job comparisons from the various organizations were "point-adjusted" to account for the different aspects of the total job content, defined as Know-How, Problem Solving and Accountability.

The submitted survey data were either annual salary dollars or hourly wage rates. To eliminate any skewing of results due to different weekly hours, the results were presented as hourly wage rates rather than annual salary.

The aggregate wage rate data were adjusted to Hydro One's specific point levels of each of the three jobs in order to account for the differences amongst the matched jobs. The raw data was compiled into dollar per Hay point ratios and then multiplied by Hydro One's points.

The following example illustrates the adjustment methodology that was used, which is a standard approach by which to adjust for complexity and responsibility differences amongst generally similar jobs in the marketplace.

Example of adjustment methodology using hypothetical data:

Participants	Maximum Hourly Wage Rate Not Adjusted for Hay Points	Hay Points Assigned	Maximum Hourly Wage Rate Per Hay Points Assigned	Maximum Hourly Wage Rate Adjusted for Hay Points (i.e., Hay Points x Wage Rate Per Point)
A	50.22	469	0.107	54.61
B	60.63	450	0.135	68.71
C	60.40	539	0.112	57.15
D	59.00	438	0.135	68.70
E	58.67	469	0.125	63.80
Client	**53.48**	**510**		**53.48**
Median	59.00			63.80
Average	57.78	473		62.59
N	5			5
vs Market Average	**-7.4%**			**-14.6%**

V. Benchmark Position Survey Results

Job Evaluation Results

The table following summarizes the findings collected from the selected organizations in setting the evaluation points for each benchmark position surveyed.

Summary of Job Evaluation Results

Survey Code	Survey Position	Hydro One Evaluation	Average Market Evaluations	Comparable Job Findings
1	Field Operations Manager	543	491	– 2 have more points than Hydro One's job – 2 have similar points than Hydro One's job – 7 have less points than Hydro One's job
2	Design Engineer	479	455	– 1 has more points than Hydro One's job – 9 have similar points than Hydro One's job – 4 have less points than Hydro One's job
3	Powerline Maintainer	203	204	– 1 has more points than Hydro One's job – 12 have similar points than Hydro One's job

Survey Results

This section compares Hydro One to the average wage values, overtime policies and union representation for each of the surveyed positions.

Summary of Market Comparison

Survey Position	Hourly Wage Rate Minimum			Hourly Wage Rate Maximum			Overtime Policies		Union Representation	
	Hydro One	Market Average*	Variance from Market Average*	Hydro One	Market Average*	Variance from Market Average*	Hydro One (# yes)	Market (# yes)	Hydro One (# yes)	Market (# yes)
Field Operations Manager	35.55	46.92	-24%	56.73	62.96	-10%	0	2	0	0
Design Engineer	37.22	37.16	0%	53.38	51.55	4%	1	7	1	4
Powerline Maintainer	18.72	26.76	-30%	36.1	32.31	12%	1	13	1	13

** Market data have been adjusted at Hydro One's Hay Point Values.*

Detailed Market Comparisons

The three following tables illustrate the full array of comparable data and aggregate statistical values for each job relative to the marketplace.

Survey Position 1: Field Operations Manager

Adjusted to Hay Points at 543

	Hay Points	Adjusted Minimum Hourly Wage Rate	Adjusted Maximum Hourly Wage Rate	No. of Wage Rate Steps	Standard Length of Time From Minimum to Maximum Wage Rate (Months)	No. of Hours in the Standard Work Week
Hydro One Networks Inc.	543	35.55	56.73	0		40.0
vs. Market Average		-24%	-10%			
Market Survey Participants						
P90		*	*	*	*	*
P75		51.38	68.71	*	*	40.0
Average	491	46.92	62.96	4	72	37.9
Median(P50)		42.81	56.11	3	48	37.5
P25		39.67	53.21	*	*	37.2
P10		*	*	*	*	*
Number of Respondents	11	11	11	5	5	11

	Overtime Eligible	First Level of Overtime Rate Eligible		Second Level of Overtime Rate Eligible		Union Representation
Hydro One Networks Inc.	No	No		No		No
Market Survey Participants	Yes = 2	Yes = 2	1.5 x standard wage	Yes = 1	3.0 x standard wage	Yes = 0

Notes:

** Insufficient sample to disclose results.*

Survey Position 2: Design Engineer

Adjusted to Hay Points at 479

	Hay Points	Adjusted Minimum Hourly Wage Rate	Adjusted Maximum Hourly Wage Rate	No. of Wage Rate Steps	Standard Length of Time From Minimum to Maximum Wage Rate (Months)	No. of Hours in the Standard Work Week
Hydro One Networks Inc.	479	37.22	53.38	9	96	35.0
vs. Market Average		0%	4%			
Market Survey Participants						
P90		42.62	59.69	*	*	40.0
P75		38.65	55.33	5	*	39.4
Average	455	37.16	51.55	5	68	37.6
Median(P50)		36.99	52.40	4	54	37.5
P25		35.66	47.03	3	*	36.9
P10		31.01	43.50	*	*	35.0
Number of Respondents	14	13	14	8	7	14

	Overtime Eligible	First Level of Overtime Rate Eligible		Second Level of Overtime Rate Eligible		Union Representation
Hydro One Networks Inc.	Yes	Yes	1.5 x standard wage	Yes	2.0 x standard wage	Yes
Market Survey Participants	Yes = 7	Yes = 3 Yes = 4	1.5 x standard wage 2.0 x standard wage	Yes = 2 Yes = 1	2.0 x standard wage 3.0 x standard wage	Yes = 4

Notes:

** Insufficient sample to disclose results.*

Survey Position 3: Powerline Maintainer

Adjusted to Hay Points at 203

	Hay Points	Adjusted Minimum Hourly Wage Rate	Adjusted Maximum Hourly Wage Rate	No. of Wage Rate Steps	Standard Length of Time From Minimum to Maximum Wage Rate (Months)	No. of Hours in the Standard Work Week
Hydro One Networks Inc.	203	18.72	36.10	9	72	40.0
vs. Market Average		-30%	12%			
Market Survey Participants						
P90		*	35.67	*	*	40.0
P75		32.56	34.40	6	60	40.0
Average	204	26.76	32.31	5	41	38.9
Median(P50)		26.91	32.82	5	54	40.0
P25		20.58	29.75	3	24	37.5
P10		*	28.44	*	*	37.1
Number of Respondents	13	9	13	9	9	13

	Overtime Eligible	First Level of Overtime Rate Eligible		Second Level of Overtime Rate Eligible		Union Representation
Hydro One Networks Inc.	Yes	Yes	1.5 x standard wage	Yes	2.0 x standard wage	Yes
Market Survey Participants	Yes = 13	Yes = 2 Yes = 11	1.5 x standard wage 2.0 x standard wage	Yes = 1 Yes = 1	2.0 x standard wage 3.0 x standard wage	Yes = 13

Notes:

** Insufficient sample to disclose results.*

VI. Discussion/Analysis

The data collected for each of the three benchmark positions included the minimum and maximum hourly wage rates that an organization is willing to pay an incumbent for the job in question, overtime eligibility and policies, and union representation. Each of these factors is important for any organization as they provide the framework for making salary decision. The following results were found for each of the benchmark positions:

Field Operations Manager

Hydro One is below market on both the hourly wage rate minimum and maximum. Hydro One's hourly wage rate minimum of $35.55 is 24% below the market's average of $46.92, while their hourly wage rate maximum of $56.73 is 10% below the market average of $62.96. The Field Operations Manager at Hydro One is not eligible for overtime, while two out of the eleven market survey participants that matched to Field Operations Manager provide their job overtime. Neither Hydro One nor the market survey participants have union representation for the Field Operations Manager.

Design Engineer

Hydro One is in-line with market on both the hourly wage rate minimum and maximum. Hydro One's hourly wage rate minimum of $37.22 is comparable to the market's average of $37.16, while their hourly wage rate maximum of $53.38 is 4% above the market average of $51.55. The Design Engineer at Hydro One is eligible for overtime, while seven out of the fourteen market survey participants that matched to Design Engineer provide their job overtime. Hydro One and four out of the fourteen market survey participants have union representation for the Design Engineer.

Powerline Maintainer

Hydro One's hourly rate wage minimum of $18.72 is considerably below the market on the hourly wage rate minimum, however the hourly wage rate maximum is above the market. Hydro One's hourly wage rate minimum of $18.72 is 30% below the market's average of $26.76, while their hourly wage rate maximum of $36.10 is 12% above the market average of $32.31. The Powerline Maintainer at Hydro One and all thirteen market survey participants is eligible for overtime. Hydro One and all of the thirteen organizations that matched to the Powerline Maintainer have union representation.

VII. Conclusion

The custom survey of labour rates and overtime policies collected data on each of the three benchmark positions from fourteen organizations. Each submission was reviewed by Hay Group and job evaluation comparisons were made to account for the differences of the jobs. The market data was adjusted at Hydro One's Hay point values for each of the three jobs to account for these differences.

For the Field Operations Manager, Hydro One is below market on both the hourly wage rate minimum and maximum. For the Design Engineer, Hydro One is in-line with market on both the hourly wage rate minimum and maximum. For the Powerline Maintainer, Hydro One's hourly rate wage minimum is considerably below the market on the hourly wage rate minimum, however the hourly wage rate maximum is above the market.

Hydro One's overtime eligibility, overtime policies and union representation seem generally similar to the norms of the market survey participants.

Appendix A Benchmark Position Profiles

1. Field Operations Manager

Responsible for the provision of a wide range of electrical services such as connections, upgrades and emergency repairs, construction program and project activities within a specific geographic zone. Manage and supervise staff, organize schedule and assign routine and special duties to clerical, technical, trades and engineering staff, providing instruction, guidance and inspections as necessary to ensure work quality and accuracy and conformity to governing regulations.

Representative Activities / Responsibilities

1. Supervise Operations Centre technical activity by planning and directing the day-to-day prevention and maintenance to lines, new customer connects, service upgrades and new construction.
2. Supervise Operations Centre office, ensuring the appropriate processes related to accounting and clerical activities associated with the billing and collection of authorized charges relative to the installation of services and/or revenue from sale of power, the maintenance of area stores and accounting for tools and office equipment.
3. Responsible for the environmental practices and compliance with approved legislation by ensuring that adequate security, fire and safety measures are taken and precautions are observed in the Operations Centre; and personnel are provided adequate training, workloads are monitored and measures are taken to maintain operating efficiency.
4. Participate in meetings of both local and province-wide scope and contribute to the formulation of new or revised policy affecting Provincial Lines and Zone operations.
5. Provide advice and recommendations on service capabilities, price, service levels and other deliverables as part of negotiation of Service Level Agreements or Contracts.
6. Assist with the customer service requirements by providing advice to customers relative to their electrical problems, interpreting wiring code, drawing attention to hazards, dealing with complaints, and advising new customers on new construction, rates and application procedure and costs. React to storm activity through ensuring efficient restoration of power grid to associated customers.
7. Manage assigned work processes, monitor, evaluate and recommend changes and/or improvements to ensure efficient and effective completion of work. Ensure necessary Transport and Work Equipment is available for the efficient completion of the work.
8. Interact with municipal and ministry officials (Ministry of Transportation, Ministry of Labour, Ministry of Environment), as single point of contact for customer and contractual issues.

Typical Reporting Relationship

Reports to a Superintendent of Lines.

2. Design Engineer

Responsible for the development of structural/mechanical/electrical designs for major and/or complex transformer, switching, frequency changer and condenser stations projects, and all associated systems. Achieves the concepts, layouts, and requirements as specified for the project and provides technical guidance and work supervision to junior engineers.

Representative Activities / Responsibilities

1. Collaborate with development/construction/operations staff in the various phases leading to the final design, prepare sketches, instructions and other data as required for drawing production, and provide advice and guidance as required throughout.
2. Responsible for examining concepts, equipment and material tenders to ensure that design, equipment, or purchase agreements, meet the intent and requirements of the structural/mechanical/electrical design and collaborate with various groups within and external to the company to complete any necessary changes.
3. Investigate and aid in the resolution of design problems that arise during construction by visiting field locations and providing design revisions as required.
4. Recommend the need for new or revised design standards and assist in their development.
5. Provide expert advice and guidance as a design “specialist”, to various internal and external parties on designs pertinent to transformer, switching, frequency changer, and condenser stations, and the switchyard features of generating stations.
6. Periodically supervise staff assigned to assist on major or complex projects, attending to the assigning of work or areas of responsibility.
7. Requires eight to ten years of practical experience in the respective design field to ensure familiarity with the practical approaches, methods and techniques pertinent to structural/mechanical/electrical design for stations projects, and appreciation of the application and characteristics of various types of station equipment, and the requirements for drawing production, standards and practices. Also requires field experience to fully appreciate construction and installation practicalities.

Typical Reporting Relationship

Reports to a Supervisor.

3. Powerline Maintainer

Responsible for performing duties as necessary to work on the construction and maintenance of transmission and distributed lines and associated apparatus, using a range or mechanical and electrical skills and knowledge. Typically reports to Union Trades Supervisor.

Representative Activities / Responsibilities

1. Understand and has a working knowledge of the limits and capacities of electrical apparatus, hydraulic equipment and motorized vehicles, such as radial boom derricks, aerial devices, tension-stringing equipment and portable generators, and make minor repairs.
2. Understand and is familiar with operating procedures, standards manuals associated with the trade, and procedures related to the use of live-line tools and equipment.
3. Erect towers, poles and structures for power lines; install conductors and associated apparatus.
4. Perform maintenance of service, troubleshoot and restore electrical power during emergencies to municipal, industrial and rural customers.
5. Install, connect, troubleshoot and repair underground, submarine and overhead conductors to service customers.
6. Repair and maintain power line towers, poles, structures and conductors at various heights.
7. Install, operate and maintain line apparatus, i.e., transformers, regulators, reclosures, sectionalizers, capacitors, airbreak switches and fused cutouts.
8. Perform approved live-line work using live-line tools, rubber gloves and barehand techniques.
9. Install various types of metering equipment including power meters, current and potential transformers for municipal, industrial and rural customers.

Typical Reporting Relationship

Reports to a Union Trades Supervisor.

Appendix B Hay Guide Chart-Profile Method

Our Hay Guide Chart-Profile Method is a worldwide standard that has been used in thousands of profit and non-profit organizations around the world to evaluate jobs at every level and for all types of work. It is comprised of four standardized factors:

Know-How

This Guide Chart measures the total of every kind of knowledge and skill, however acquired, needed for acceptable job performance. It consists of three dimensions:

- practical procedures and knowledge, specialized techniques, and learned skills;
- the real or conceptual planning, coordinating, directing, and controlling of activities and resources associated with an organizational unit or function; and,
- active, practicing, person-to-person skills in the area of human relationships.

Problem Solving

This Guide Chart measures the thinking required in the job by considering two dimensions:

- environment in which the thinking takes place; and,
- challenge presented by the thinking to be done.

Accountability

This Guide Chart measures the relative degree to which the job, performed competently, can affect the end results of the organization or of a unit within the organization. It reflects the level of decision-making and influence of the job through consideration, in the following order of importance, of:

- nature of the controls that limit or extend the decision-making or influence of the job;
- immediacy of the influence of the job on a unit or function of the organization; and,
- the magnitude of the unit or function most clearly affected by the job.