

## **Research Summary**

# **Meter Reading Profiles & Best Practices 2009**

## ***A Benchmark Study of Meter Reading***

Meter reading is the critical first-step in the utility revenue collection process, and for most utilities, a labor-intensive activity. While the use of automated meter reading technologies (AMR) is increasing, the majority of meters are still read manually, once a month. Any errors or delay in the meter reading process negatively impacts customer satisfaction.

Not only is it critical to effectively and efficiently read meters every month, the meter reader also plays an important community relations role — the “gatekeeper” who looks for leaks, problems, hazards, safety issues, and serves as a neighborhood watch. For many customers, the meter reader is often the only utility employee ever seen. These customer touch-points form the basis of customer opinion.

The meter reader position is usually an entry-level job. As such, meter reading departments can incur high turnover, thereby increasing the cost to hire and train effective and efficient meter readers, and ultimately, increasing the cost to read a meter.

With all the changes in the industry and the economy, most utilities have been forced to reduce operating costs. At the same time, companies are being asked by regulators, customers, members, and shareholders to increase customer service and satisfaction—essentially to “do more with less.” This is a daunting challenge for any organization.

Utilities are also faced with growing need for more timely access to energy usage information—to support real-time pricing initiatives, load forecasting, demand-side management, load control, competition, and customer demand. Additionally, status and usage information is needed on an event basis to improve reliability, power quality, and to identify outages. These more complex data requirements are driving the need for advanced metering infrastructures, smart metering, and further automation.

The American Recovery and Revitalization Act (ARRA) Smart Grid Investment Grant Program is also spurring interest in “smart” metering, “smart grid”, and advanced metering infrastructure projects. The overall purpose of the Smart Grid Investment Grant Program (SGIG) is to accelerate the modernization of the nation’s electric transmission and distribution systems and promote investments in smart grid technologies. The ARRA was signed into law in February 2009. In late June 2009, The U.S. Department of Energy announced the availability of \$3.4 billion in stimulus funding under the SGIG program. Interested parties must file a letter of intent to be eligible to apply for funding. There are three application periods with letters of intent deadlines of July 16, 2009, October 23, 2009, and February 10, 2010. Several utilities have

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already announced filing letters of intent for grant applications of matching funds, including Westar Energy, Delmarva Power, Atlantic City Electric, and PEPCO.

Clearly the meter reading organization is evolving with the introduction of automation. The diversity of metering and AMR equipment, complexity of accounts and billing, the challenges of service territory, and needs of different customer classes dictate different solutions for different companies.

Regardless of the implementation rate, the transition from manual reading to automated is challenging from a technology and people perspective. Routes must be consolidated and optimized, employee roles and responsibilities change with changing priorities, performance measurement metrics shift to accommodate the mix of automation and manual effort, processes and systems change... it's a challenging time for any organization. Even after automation, metering devices must be visited periodically to ensure proper operation and to protect assets. Access problems that were solved through automated meter reading will soon challenge meter maintenance and revenue protection initiatives.

In this transition to automation and the quest for reduced operating expenses, most utilities are focusing on three basic approaches to meter reading improvement:

- Automated meter reading—large-scale implementation as well as strategies to pinpoint “high read cost” meters, unsafe meter locations, and high-turnover premises. Some companies have automated “key accounts” and commercial accounts to accommodate real-time pricing and/or prepare for the competitive market.
- Contract meter reading to reduce overhead, tackle seasonal peaks, and as a strategy to transition to automation.
- Reducing costs of manual reads through contract negotiations, rerouting, more sophisticated hand-held equipment and meters, productivity improvement, and lowering overhead; many have maxed out these options; Some utilities have reduced costs to a point that makes it difficult to justify AMR, for residential accounts.

The promise of automation—AMR/AMI implementation remains the top plan for the future, partial or complete, for our utility panel. Other automation plans indicate a continuing interest in route optimization software and handheld technology upgrades.

To better understand how utilities are dealing with the challenges facing the meter reading function and its day-to-day operations, the Ascent Group conducted its sixth annual benchmarking project to evaluate Meter Reading performance and practices. Forty-three utilities participated in the research. A list of participants is included at the end of this report.

## **Benchmark Study of Meter Reading Practices**

The main objective of the study was to evaluate the various tactics and strategies used today to read customer meters in order to identify best practices or opportunities for improvement. Secondary objectives included understanding:

- The practices linked to “best-in-class” performance;
- The range of performance by company and by industry segment;
- How utilities are using technology to reduce costs and improve customer satisfaction;
- Other effective process improvement or cost-reduction techniques;
- How utilities measure individual, team, and center-level performance and encourage high productivity and performance;
- The role of meter reading training and its impact on performance.
- How companies are resolving the hard issues, such as inaccessible meters.
- To know what is possible.

Participants were asked to share management tactics and strategies, as well as identify any improvement in performance. The study also asked utilities to include considerations, successes, and plans moving forward.

Study participants range in size from 2,258 meters to be read to as many as 18.7 million. Eighty-one percent of participants read less than the participant average of 966,900 meters per month. The majority of study participants were from the United States, however we did have four utilities from Canada, two from the U.K., and one from India. Bargaining units represent 51 percent of participants’ meter readers.

## **Benchmarking Meter Reading Performance**

When evaluating performance of any organization, it is best to look at performance from three perspectives: Productivity, Cost, and Service.

We asked companies to report meter reading operational data so we could calculate several performance benchmarks. The following benchmark metrics were collected and calculated, based on participant feedback:

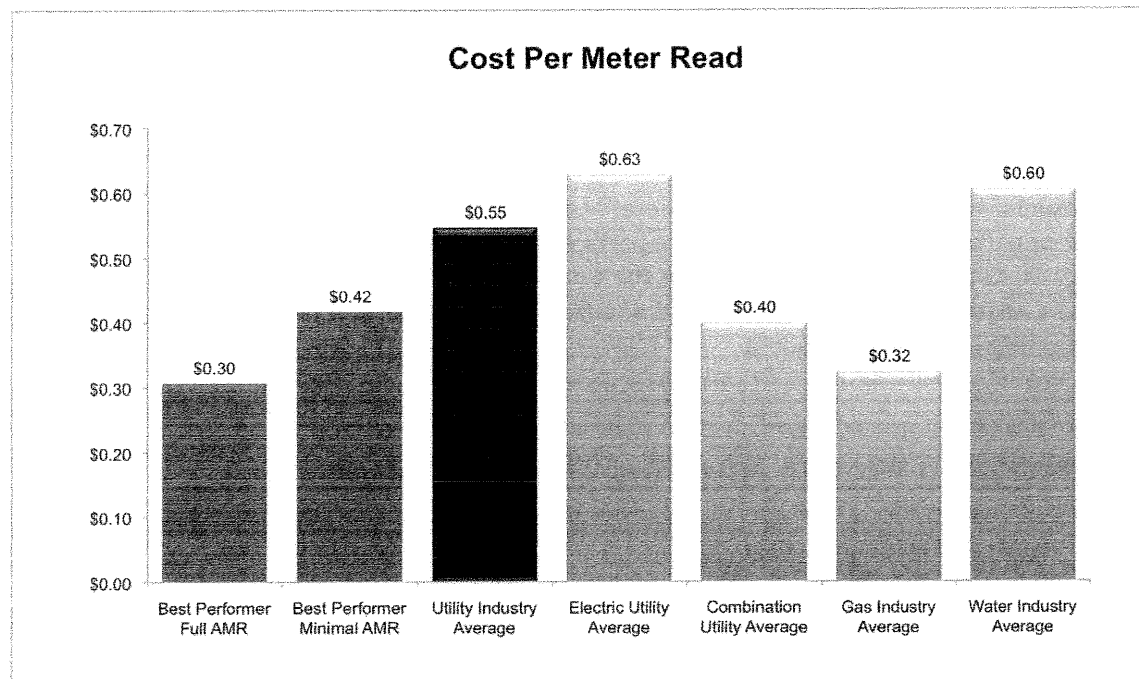
- Unit cost (cost per meter read – Operational & Maintenance costs only – direct labor, contractor costs, overtime, and non-labor O&M; no capital costs or overheads)
- Meter Reading Accuracy (for a representative month)
- Percent Meters Read (for a representative month)
- Meter Reading Productivity (meters read per FTE (per month))

Based on these benchmark metrics, we identified the “best performers” for each industry-segment (electric, natural gas, combination utility, and water/wastewater). Best performers were identified as those companies that deliver low cost meter reading, high productivity, and high service (low errors, low skips). We then calculated a “best performer” average for these high performing companies.

The “best performer” averages are depicted on the chart appearing on the following page. This is one of seven benchmarking metrics analyzed in this report. We also calculated an industry-segment average for each of the benchmark metrics, to demonstrate the performance of industry, by segment.

To gain an understanding of how your company’s meter reading performance compares and to identify opportunities for improvement, you can compare your performance against the “best performer” average and the industry and industry-segment averages.

“Cost per Meter Read” was calculated based on cost data submitted by each participant. Unit cost in this analysis represents Operational & Maintenance costs only—direct labor, contractor costs, overtime, and non-labor O&M—no capital costs or overhead.



Because AMR heavily influences labor and other O&M costs, we included two Best Performer averages for comparison—best performers with “Full AMR” and “Minimal AMR”. In this analysis, “Full AMR” best performers averaged 91 percent AMR meters and “Minimal AMR” best performers averaged .7 percent AMR meters.

Similar analysis was conducted on six other meter reading benchmark metrics captured by this research. The full results of our meter reading benchmarking analysis are published in *Meter Reading Profiles & Best Practices 2009*. More information can be found on our website at [www.ascentgroup.com](http://www.ascentgroup.com).

## Characteristics of a Best Performer

1. *Use AMR Strategically* – to address inaccessible meters, unsafe meter locations, high turnover premises, and other high-read cost meters.
2. *Continually Optimize Routes* – to maximize productivity and reduce costs.
3. *Implement Clear and Concise Measures of Meter Reader Performance* – give employees a clear idea of job expectations and performance.
4. *Encourage High Performance through Incentives and Rewards* – encourage the right behavior through incentive programs and/or informal or formal reward programs.
5. *Train and Equip Meter Readers* – provide employees with the tools, safety equipment, clothing, and training to do the job right the first time.

## Study Findings & Recommendations

### ***Best performing utilities use AMR strategically to address inaccessible meters, unsafe meter locations, high turnover premises, and other high-read cost meters.***

Sixty-seven percent of our participants use AMR or a similar technology to remotely read meters in difficult access locations. Sixty-three percent of our best performers have deployed AMR. As a group, best performers average 26.8 percent AMR meters.

Strategic deployment of AMR/AMI technology is an effective way to reduce cost, improve safety, and increase customer satisfaction. Best performing companies are utilizing AMR to tackle the problem-meters and high-read-cost meters. Companies have also automated meter reading for large businesses and commercial customers, in preparation of deregulation. While a company-wide implementation may not be feasible, a strategic deployment to address problem meters can be very effective.

AMR/AMI is the most popular “plan for the future” mentioned by participants.

***Best performing utilities continually optimize routes to maximize productivity and reduce costs.*** The “best performers” identified in this study (above average performance—low cost, high productivity, high service) reported continuous or frequent rerouting and route optimization to maximize productivity and reduce costs. Companies with AMR implementations also stressed the importance of route consolidation and optimization throughout the transition to automation.

As long as there are routes to be read there will be room for optimization. Utilities can gain 10 to 20 percent efficiency on a company-wide rerouting. Rerouting is critical in areas of high growth, after an acquisition or merger, and during the transition to AMR. Many AMR solutions require route reading, either with a walk-by or drive-by technology. In many instances, achieving the gains of AMR on a mixed route requires rerouting. Software is available to help with the route optimization, however it's not essential.

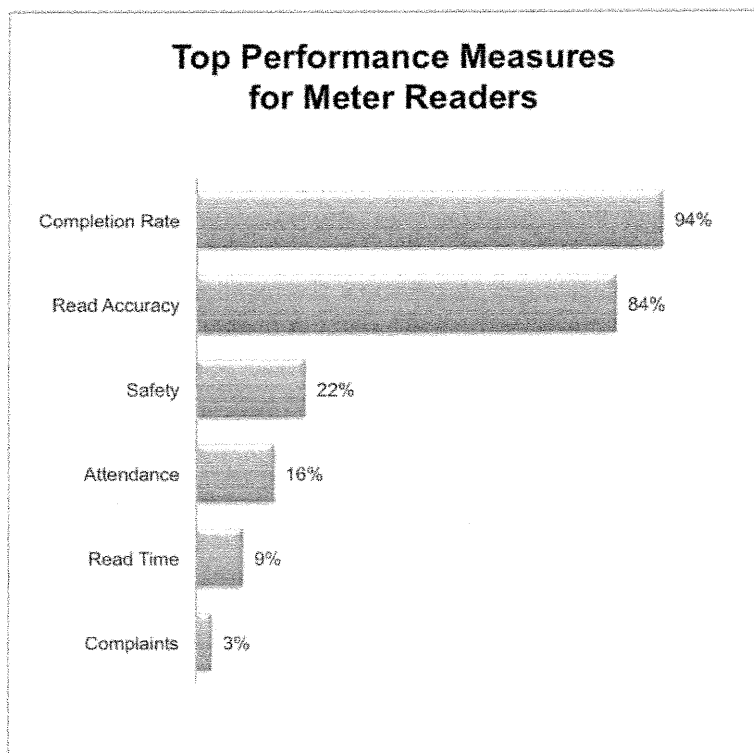
**Best performing utilities implement clear and concise measures of meter reader performance—give employees a clear idea of job expectations and performance.**

The “best performers” identified in this study were deliberate in their measurement of employee, group, and departmental performance—cost, service, and productivity. Best performers reported providing employees with a clear idea of job expectations and performance.

Employees want to perform to expectation—make sure they clearly understand what is expected, the measures that will be used, how they are collected and calculated, and how they impact performance. Performance measures will change in the transition to AMR—route expectations change, employees may be performing other duties in addition to reading meters, emphasis will be shifting to other priorities—make sure your expectations and measures change accordingly.

Participants were asked to identify the measures used to evaluate meter reader performance. Nearly all participants report measuring individual meter reader performance.

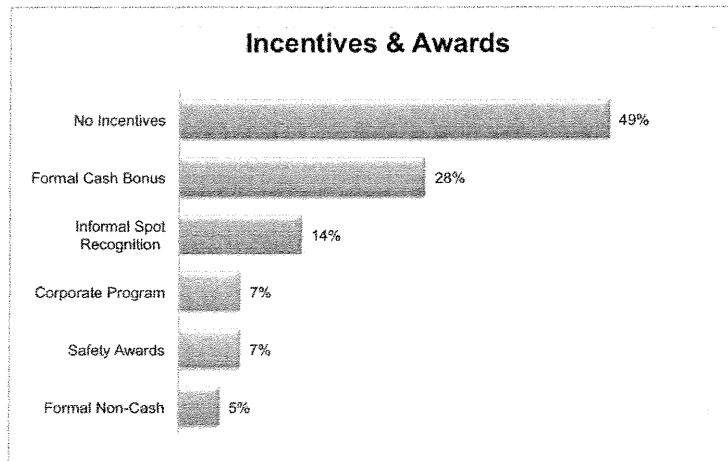
For those reporting meter reading performance measures, the most popular were completion rate—the number of meters read per assigned route and read accuracy or error rate.



Most companies reported having multiple measures in place, a combination of effectiveness and efficiency metrics.

**Encourage the right behavior through incentive programs and/or informal or formal reward programs.** Formal “cash bonus” incentives are the most popular reward—meter readers have the opportunity to earn bonuses based on superior performance. Informal spot recognition awards are the next popular.

Forty-nine percent of participating utilities offer no incentives or rewards to meter readers.



Make sure you are motivating the right behavior and encouraging superior performance in the right areas. Incentives and rewards can become stale with time, be sure to rotate emphasis on various measures to keep interest in the program. Also make sure the rewards are fair and worth the extra effort—ask employees for suggestions on types of rewards. Involvement is key to a successful reward program.

**Best performing utilities train and equip meter readers—provide employees with the tools, safety equipment, clothing, and training to do the job right the first time.** Effective classroom and on-the-job training (OJT) improves overall accuracy. Our analysis shows a direct correlation between increased training, especially OJT, and reduced errors. Companies reporting shorter than average training programs tended to have higher error rates, skip rates, and increased unit cost.

Forty percent of participants deliver refresher training to meter readers. Refresher training is an effective way to keep employees up-to-date on technical and customer service skills as well as address seasonal challenges, difficult customers, bad dogs, and other work challenges.

Invest in your front-line—provide them with the tools, equipment, and training to get the job done right the first time. Make sure they are equipped and trained to handle all situations. Help them understand the customer perspective and how their job fits into the overall picture of customer service and satisfaction.

Incorporate classroom and OJT into your training program to reinforce techniques. Take advantage of testing and computer-based instruction to increase learning comprehension. Refresh training periodically to keep employees in top performance and up-to-date on customer service and technical skills. Simulation is another technique that can give candidates hands-on experience in a controlled setting. Training is recognized as a key factor for success in

reducing error rates, detecting tampering and lost meters, improving safety, and improving customer service.

***Persistence, focus, and technology are key to resolving difficult-access meters.***

Inside and inaccessible meters continue to challenge the effectiveness of utility meter reading organizations. AMR can eliminate access problems and repeat trips to the premise to obtain a reading. Other techniques, such as letters, calls, and appointments are labor intensive and tend to be hit-or-miss.

Companies reporting significant improvement in the reduction of chronically inaccessible meters have established a dedicated working group or organization to focus communication and resolution efforts. These working groups serve to establish and communicate policy, enforce policy, and provide follow-through until resolution. Create a special working group or desk to concentrate and focus your difficult-to-access meter effort. In doing so, you will encourage more consistent enforcement and resolution.

Key success factors for resolving difficult-to-access meters:

- AMR or remotely read meters.
- Dedicating resources to address chronic issues to significantly reduce problems.
- Performance metrics that hold meter readers accountable for getting the reading.
- Proactive communications with customer.

## **Measure & Track Your Performance**

Utilities are still reading meters manually and are likely to be reading them manually for some time. In the mean time, companies are challenged to read meters efficiently and effectively. As a cost reduction and service improvement initiative, many utilities are strategically deploying AMR, especially in high read-cost situations. This trend will continue until the cost of AMR becomes more attractive for the residential meter. AMR implementation remains the top plan for the future for our utility panel. Other automation plans indicate a continuing interest in route optimization software and handheld technology upgrades.

Make sure your meter reading processes, both the people and technology-driven processes are effective and efficient. Review work tasks, route standards, and systems periodically to identify opportunities for improvement.

In order to improve, performance must be measured and tracked. This includes individual measures of performance as well as group or departmental measures. Employees must understand the importance of their role in customer satisfaction—through accurate readings and bills, good company relations, and efficiently read routes. This importance should be communicated clearly and reinforced through performance metrics and rewards and incentives.

Benchmarking is an effective technique to understand your level of performance as well as your improvement opportunities. Not only can you learn more about how your peers approach similar work tasks, you often learn more about your own organization simply by participating in the process. You may confirm what management already knows as well as confirm the belief that there really is a need to change. The point is—just do it. Both the process and the results will benefit your organization.



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Austin Energy  
Centrica PLC  
Chesapeake Utility Corporation  
Cheyenne Light, Fuel and Power Company  
City of Antioch  
City of Aurora - Water Department  
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City of Garland  
City of Tulsa  
Dayton Power & Light  
Denver Water  
Enmax  
Grant County PUD  
Imperial Irrigation District  
JEA  
Lansing Board of Water & Light  
Los Alamos Department of Public Utilities  
Louisville Water Company  
Macon Water Authority  
Memphis Light, Gas and Water  
Nashville Metro Water Services  
North Delhi Power Limited  
Northeastern REMC  
Okaloosa Gas District  
Oklahoma Gas and Electric Company  
Orange County Utilities  
OWASA  
PacifiCorp  
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