

# ***PPL Electric Utilities' Automated Meter Reading System***

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January 25, 2006***



# ***Scope of PPL Electric Utilities' AMR system***

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- **Approx. 3 years in deployment including a small-scale test to confirm technical capabilities, installation techniques, and procedures.**
- **Replaced over 1.3 million meters.**
- **Installed communications equipment in over 300 substations.**
- **Modified meter data systems and billing systems.**
- **Total cost of about \$160 million.**

# ***Overview of PPL Electric Utilities' AMR System***

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- **1.3 million meters utilizing power line communications**
- **About 6,200 meters at higher voltages utilizing cellular communications**
- **Operationally...**
  - **Meter stores data in registers within the meter**
  - **Communications server signals the meter**
  - **Meter responds with data**
  - **Data is routed to billing system, load research system, customer rep, etc.**

## ***Tangible economic benefits offset carrying charges on a present worth basis***

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- **Meter reading workforce eliminated.**
- **Reduction in customer calls regarding estimated reads and access to meters results in fewer customer rep positions.**
- **Eliminates most special reads for final bills and high usage thereby reducing service positions.**
- **Fewer positions required to maintain newer meter population.**
- **Fewer positions to monitor data quality.**
- **Elimination of a few significantly under-recording meters resulting in an increase in revenue.**

## ***Additional non-economic benefits are being experienced by customers***

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- **Avoid dissatisfaction associated with estimated bills.**
- **Use of daily usage to increase understanding and decrease dissatisfaction associated high usage.**
- **Avoid customer inconvenience associated with gaining access to meters.**
- **Ability to query on demand via power lines provides valuable data for outage restoration.**
- **Ability to determine whether an outage is related to customer or utility immediately.**

## ***Development of additional functionality will provide additional benefits***

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- **The addition of a data repository, meter data management system, billing interface, and application software can lead to the following:**
  - **Ability to support new rate options.**
  - **Enhanced load scheduling, settlement, and reconciliation.**
  - **More optimal utilization and upgrading of the distribution system.**
  - **Ability to identify theft of service and correctable losses.**

## ***PPL Electric Utilities' has taken a phased approach to development***

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- **Accommodates evolving technologies.**
- **Accommodates evolving regulation.**
- **Accommodates evolving needs of competitive markets (retail and wholesale).**
- **Avoids exposing ratepayers and shareowners to inappropriate risks.**
- **Permits concepts to be tested prior to implementation.**