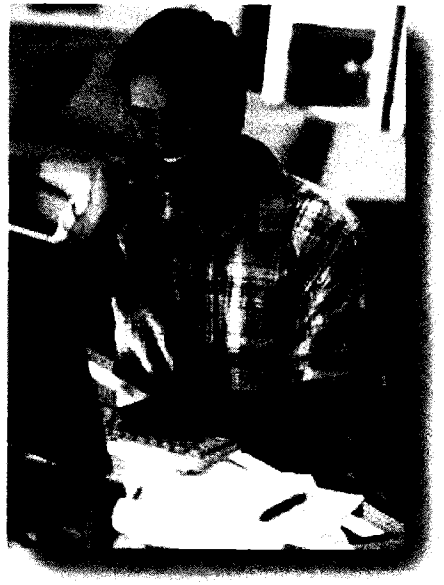
Avista's Plans for Advanced Metering Infrastructure (AMI)

January 29, 2015

(Presented in Docket Number UE-143218)



Trends in Advanced Metering

Evolution of Metering Technologies

Advanced Metering Infrastructure

Current Plans for the Washington Advanced Metering Project

Advanced Metering Benefits

Project Cost & Benefits

Implementation Timeline

Questions

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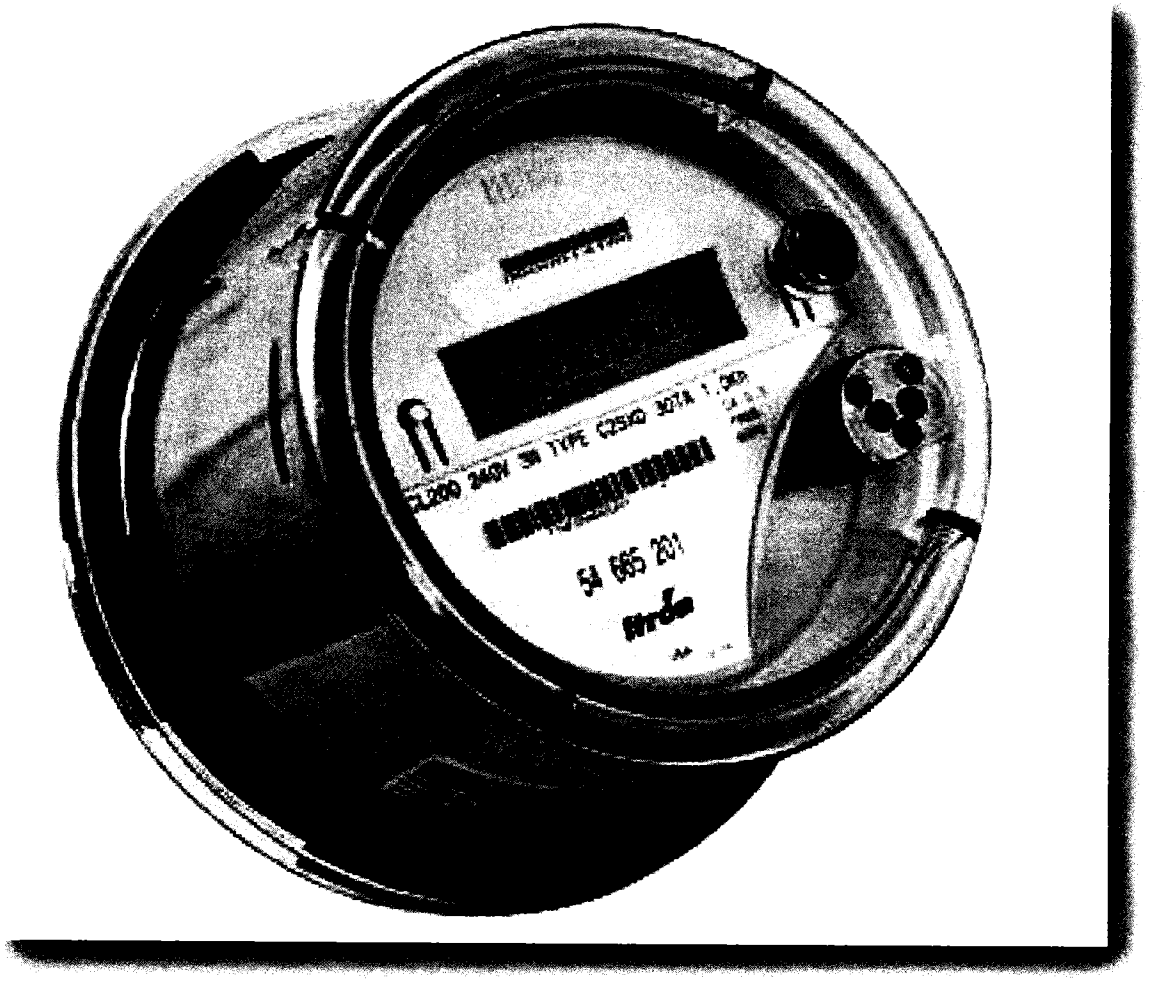
...ds in Advanced Metering



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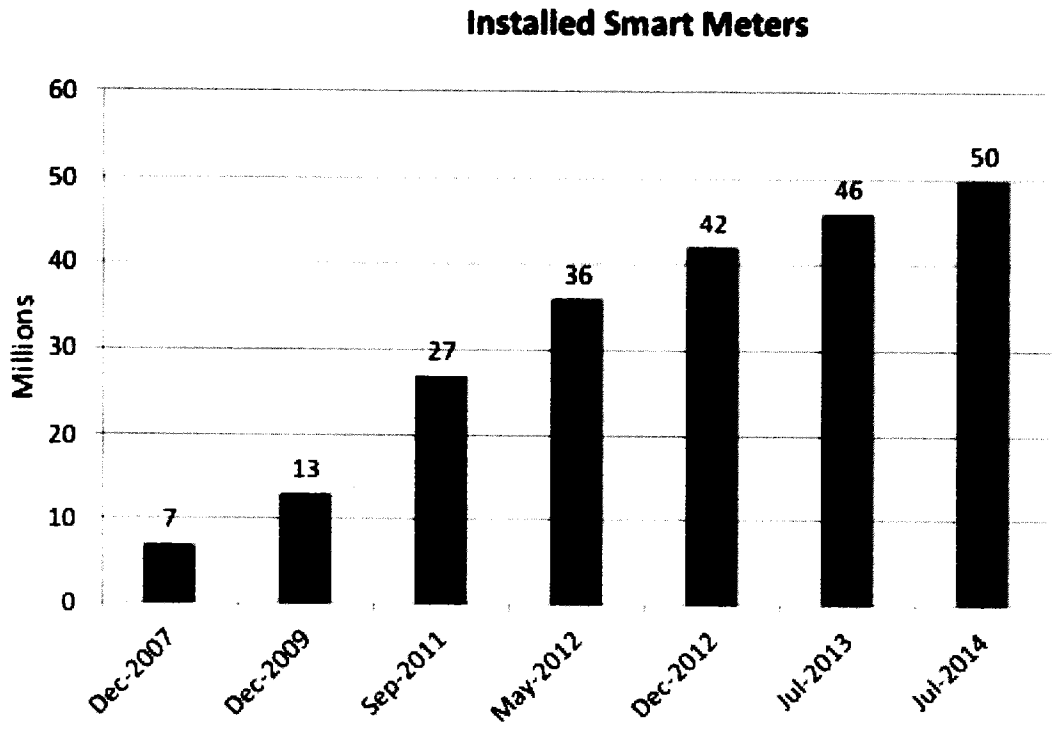
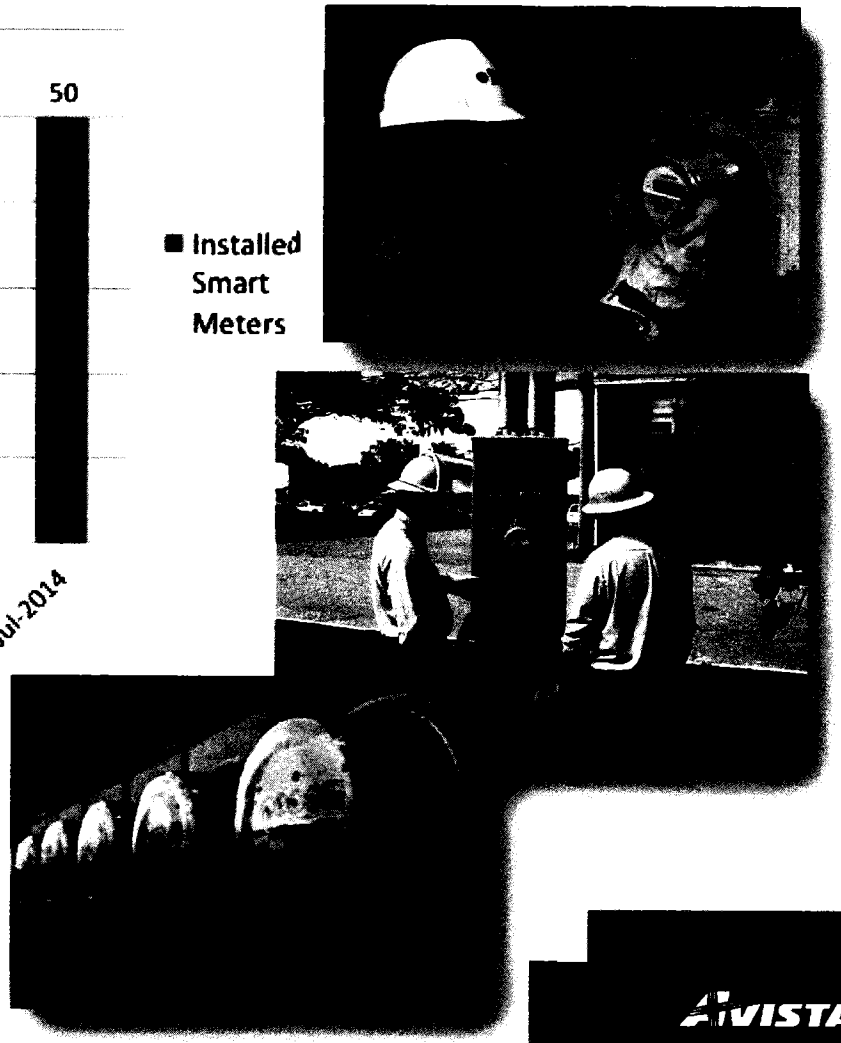
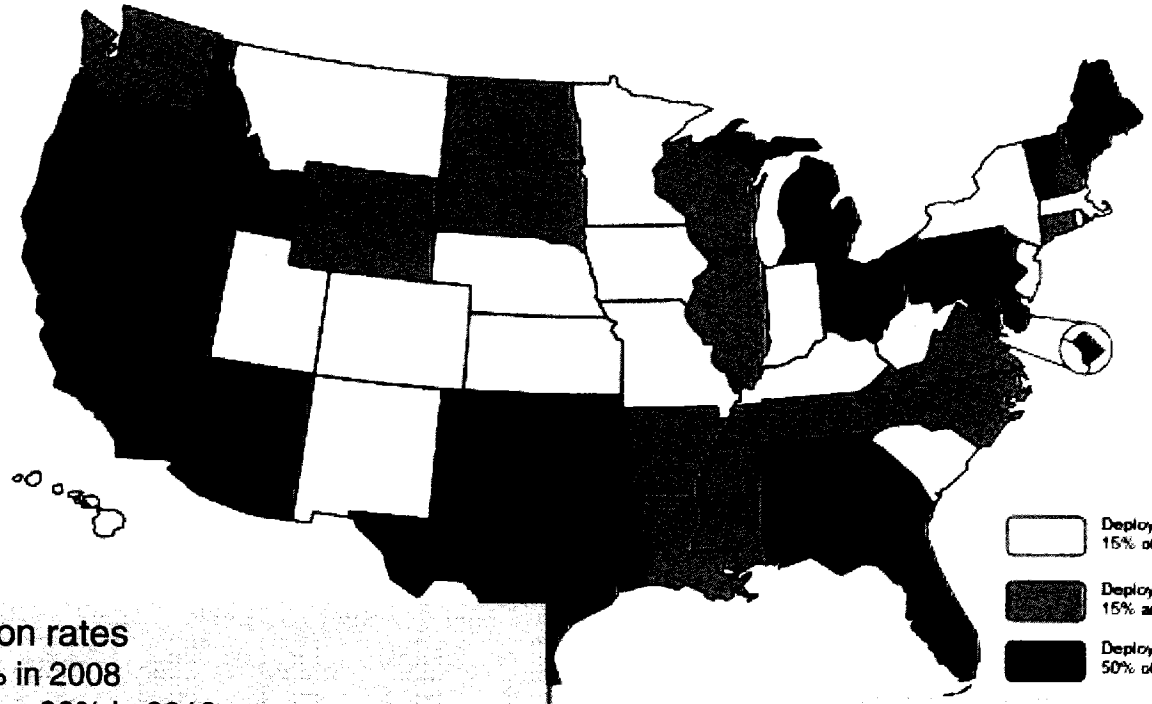
[redacted] in Advanced Metering





Source: Utility-Scale Smart Meter Deployments: Building Block of the Evolving Power Grid. IEI Report, September 2014, page 1.

[redacted]ds in Advanced Metering



Penetration rates
- 5% in 2008
- Over 30% in 2013
- Forecasts range from 50-70% by 2020

Promoted with Broad Support
- Regulatory Organizations
- State Mandates
- Range of Regulatory Policies

Inland Power and Light Company

Seattle City Light

TACOMA POWER

PNGC Power Smart. Local. Connected.

PGE

KootenaiElectric COOPERATIVE

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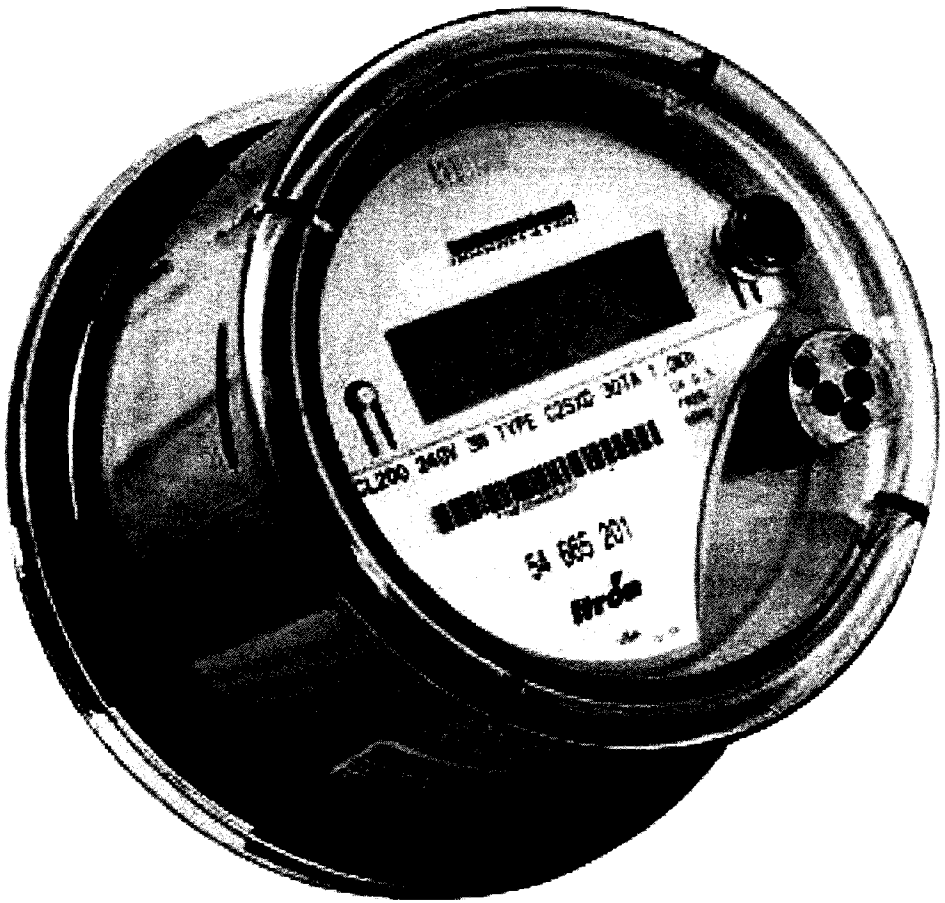
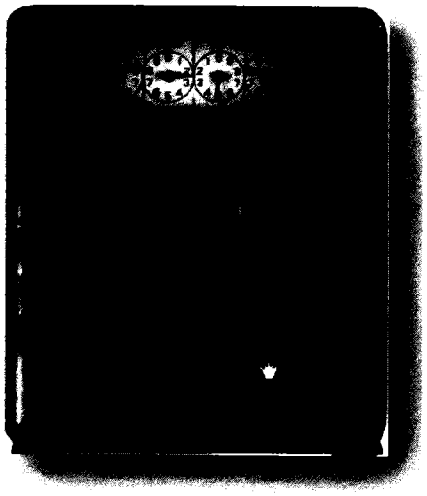
Map Source: Utility-Scale Smart Meter Deployments: Building Block of the Evolving Power Grid. IEI Report, September 2014, page 2.

Metering Technology

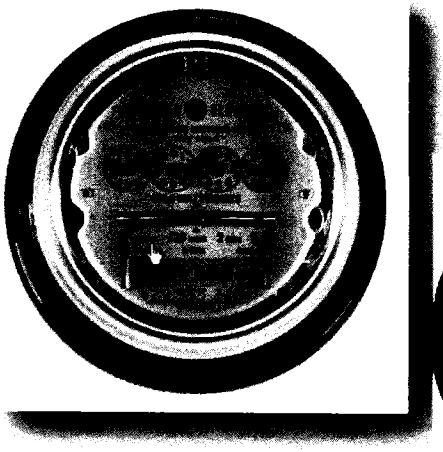


Benchmarks

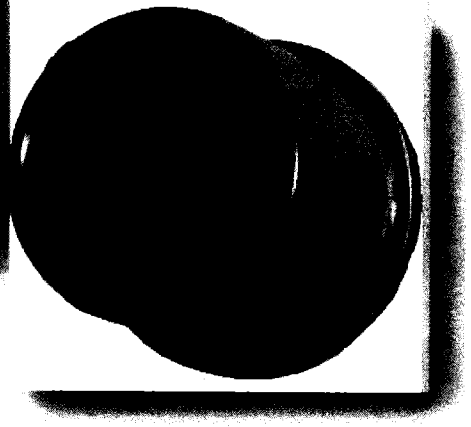
1908



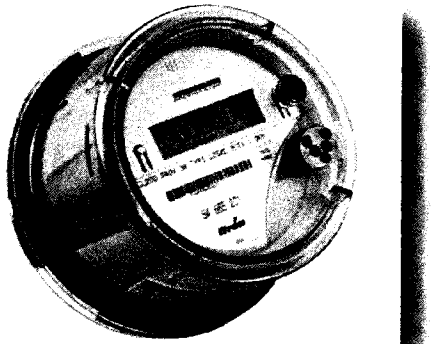
1950



1993



2014



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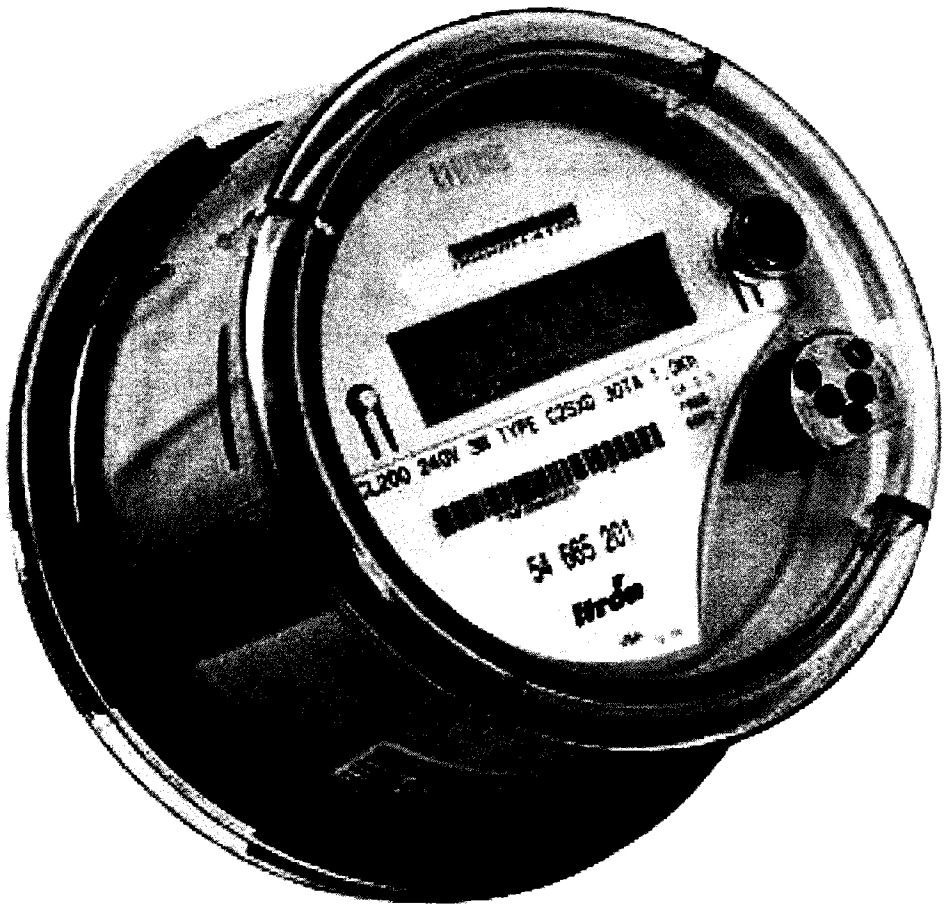
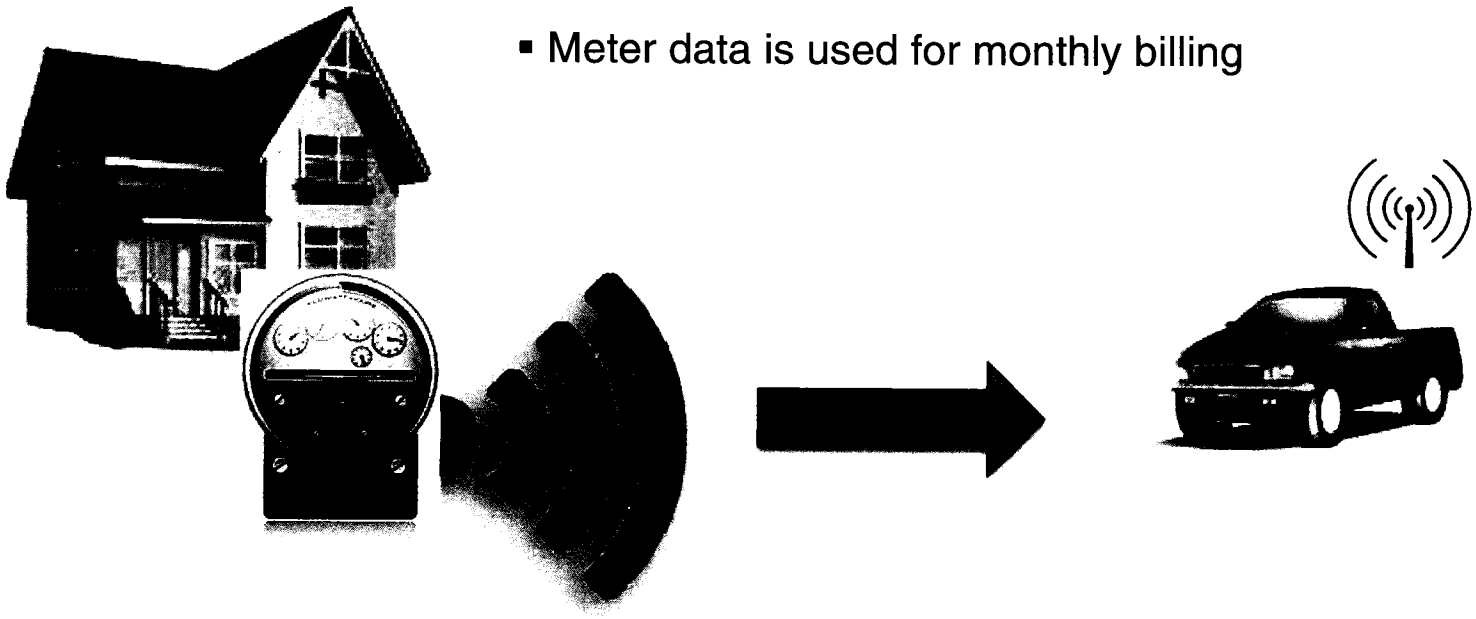
Metering Infrastructure



Mobile Meter Reading (AMR)

- Meters have one-way communication modules
- Meter data is collected and stored in a database
- Meter data is used for monthly billing



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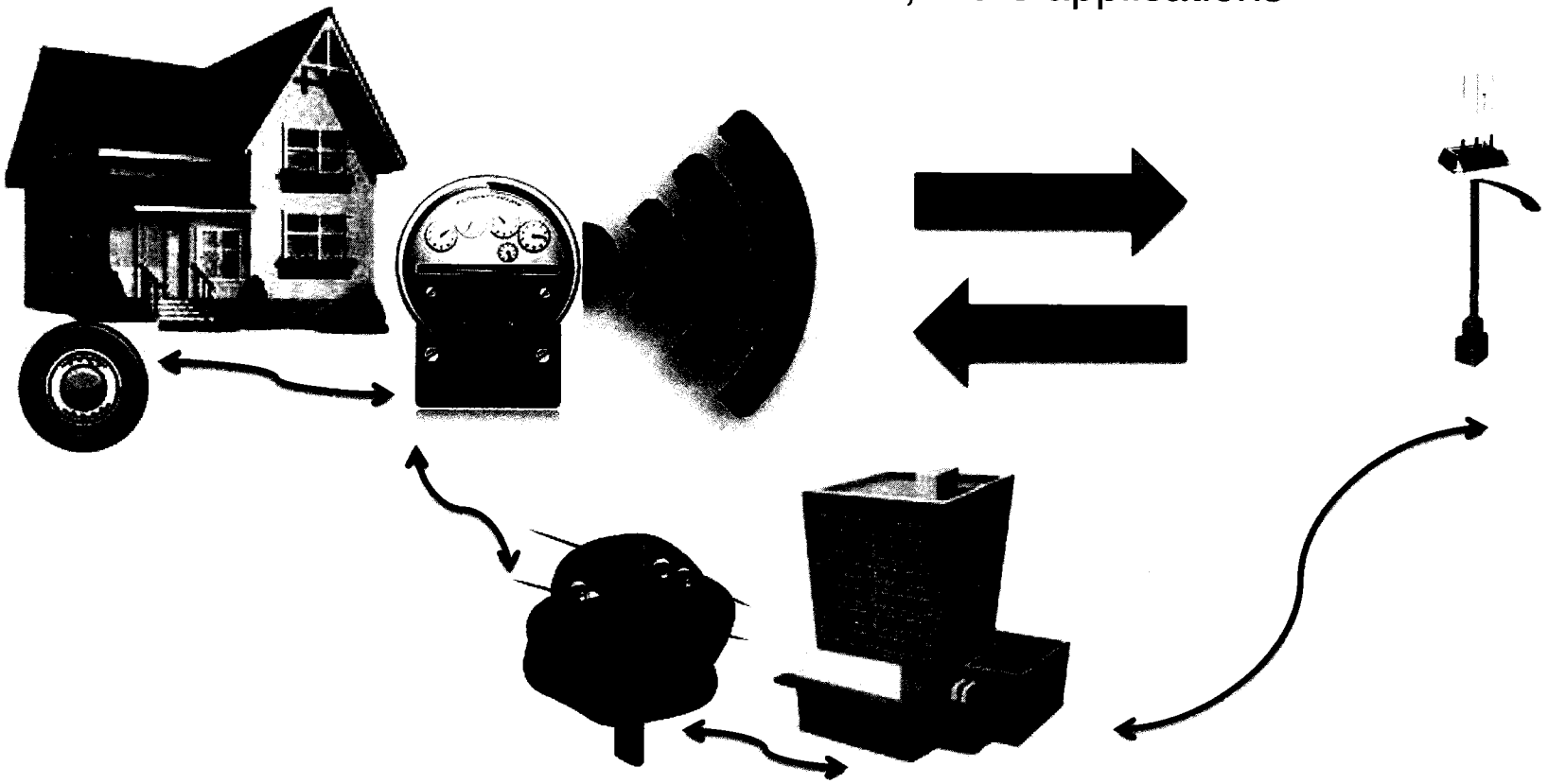
tering Infrastructure (AMI)

- Two-way communication
- More information, more applications



Metering Infrastructure

Meters are only part of the advanced metering system – other infrastructure is also necessary to create the network to collect and manage the data

Metering Infrastructure

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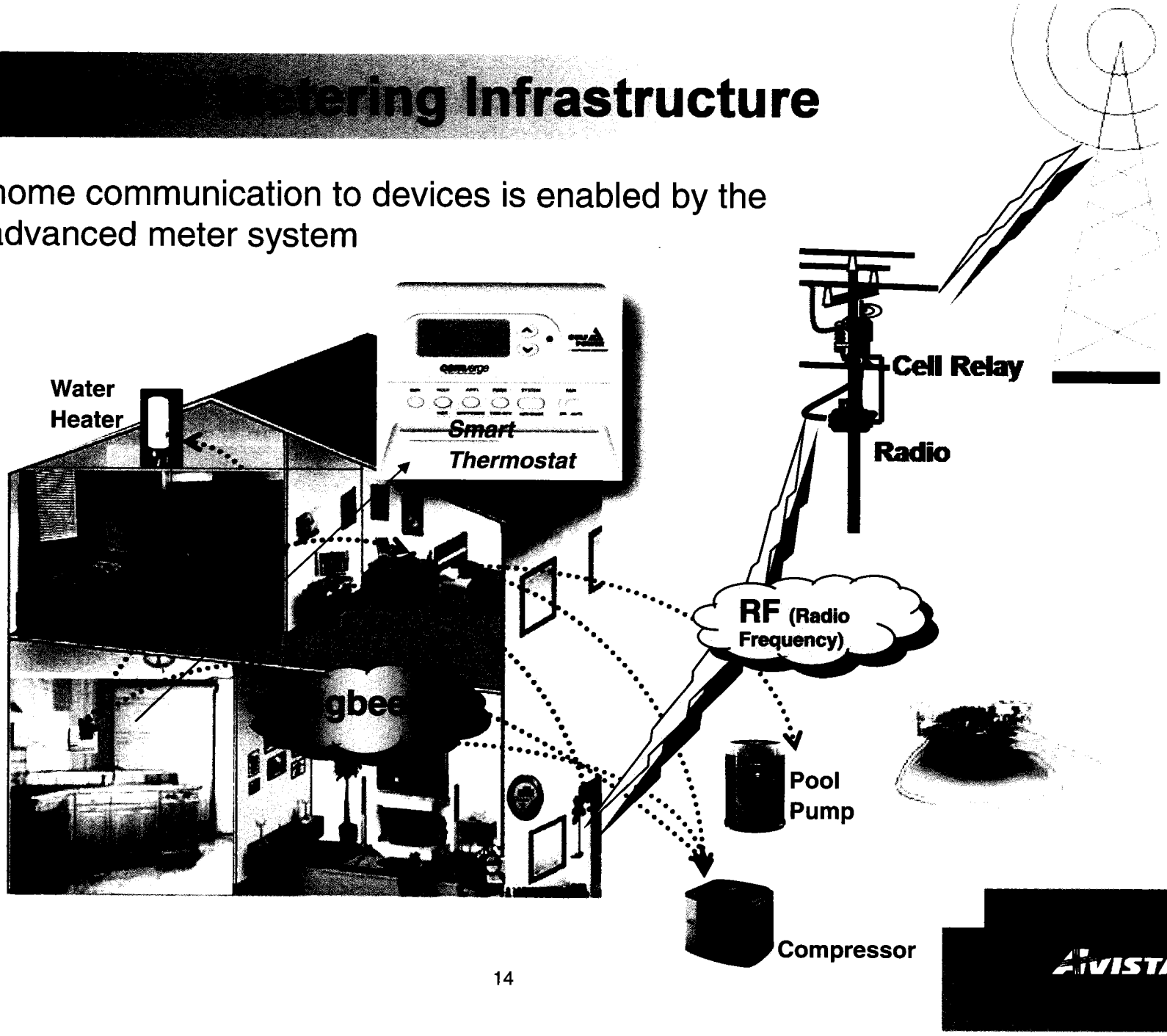
Metering Infrastructure

In home communication to devices is enabled by the advanced meter system



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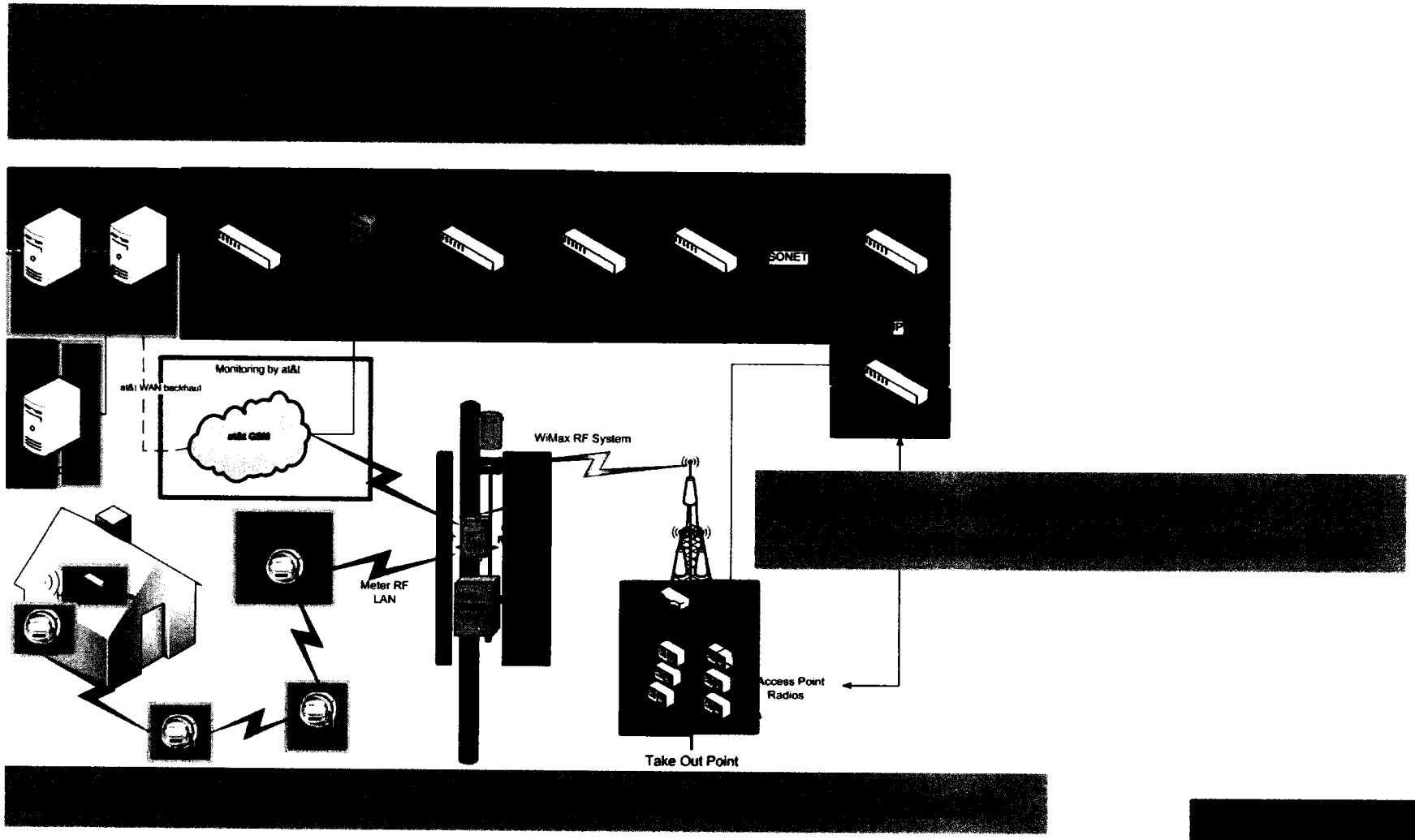
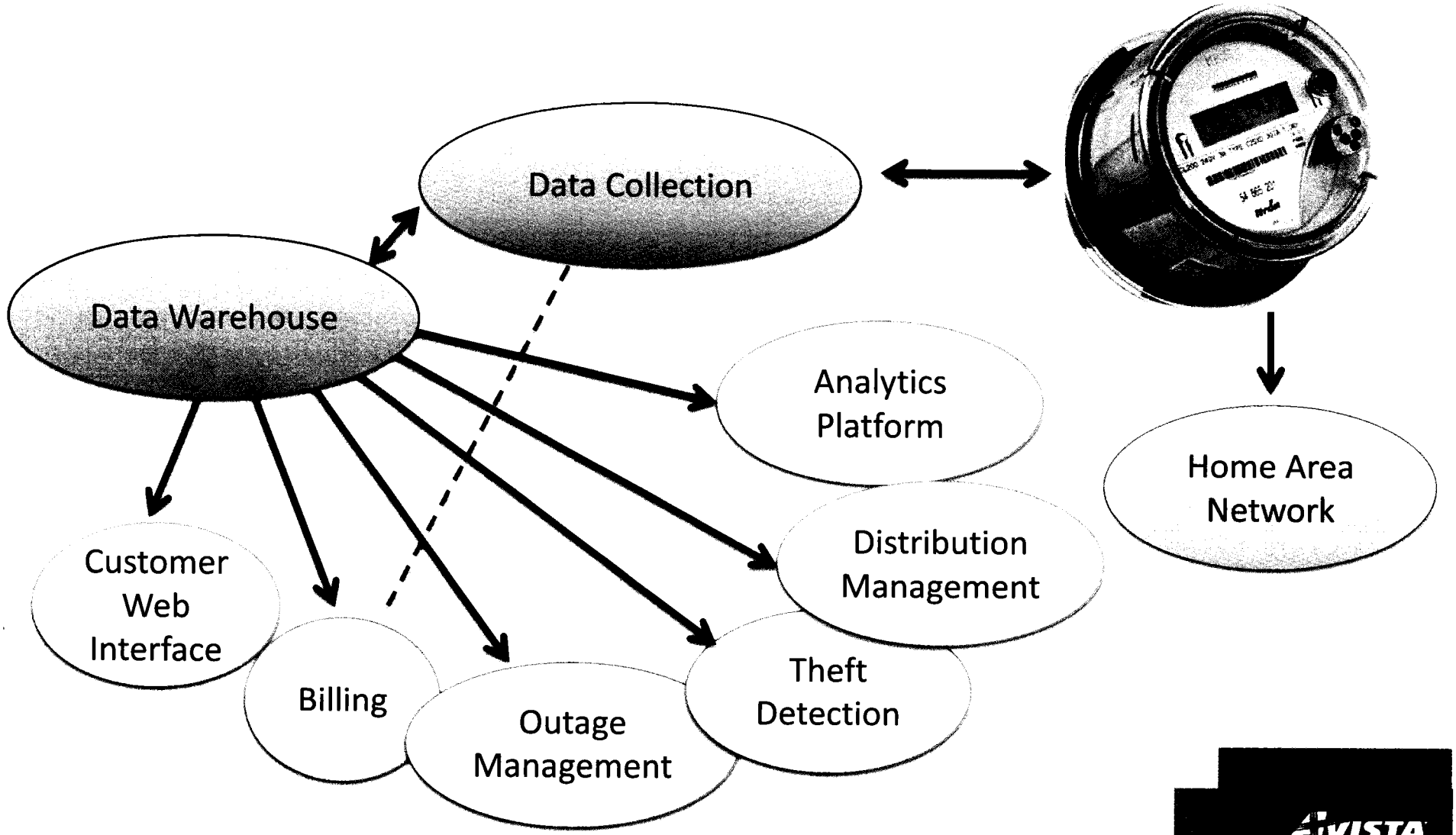
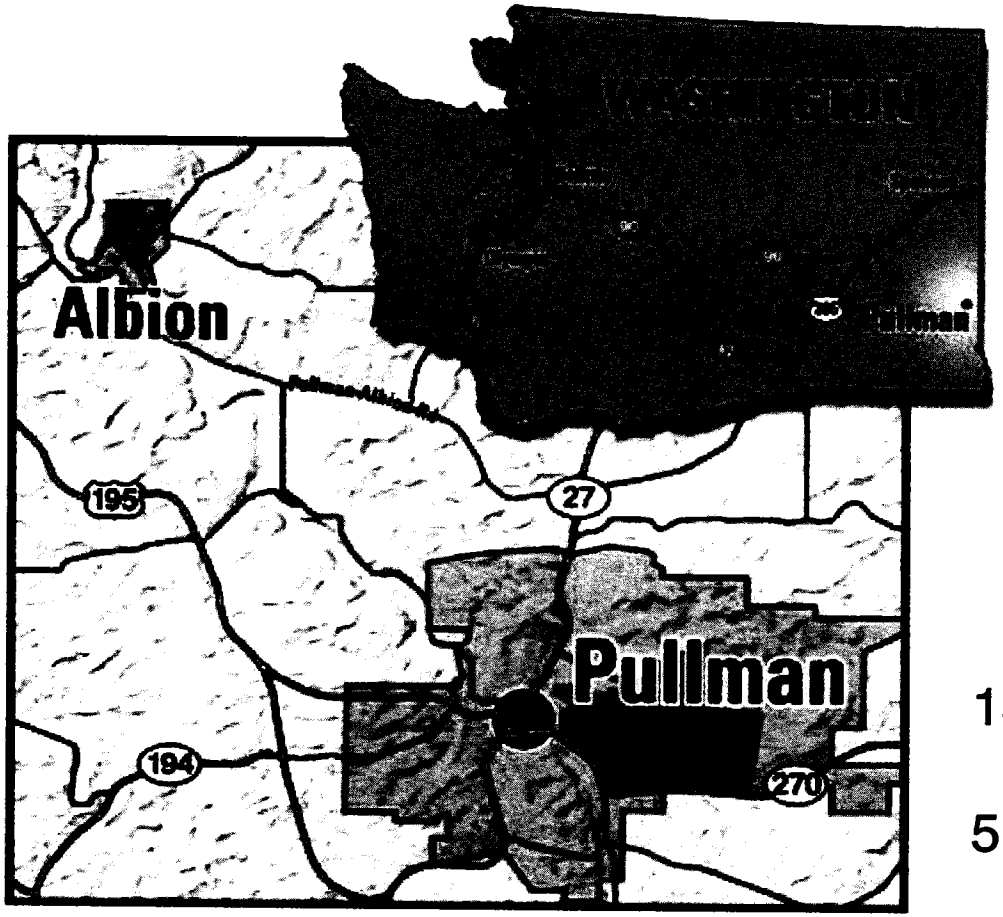
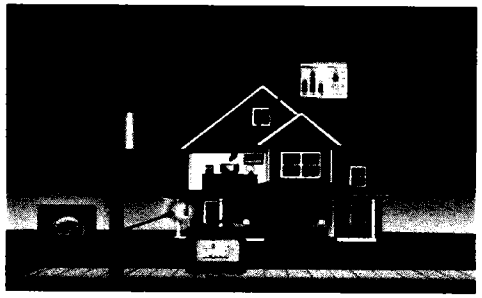


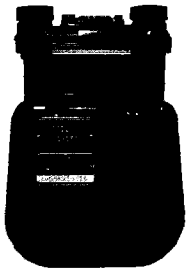
Utility Operations Systems



Demonstration Project







13,000 Electric Customers

5,000 Gas Customers

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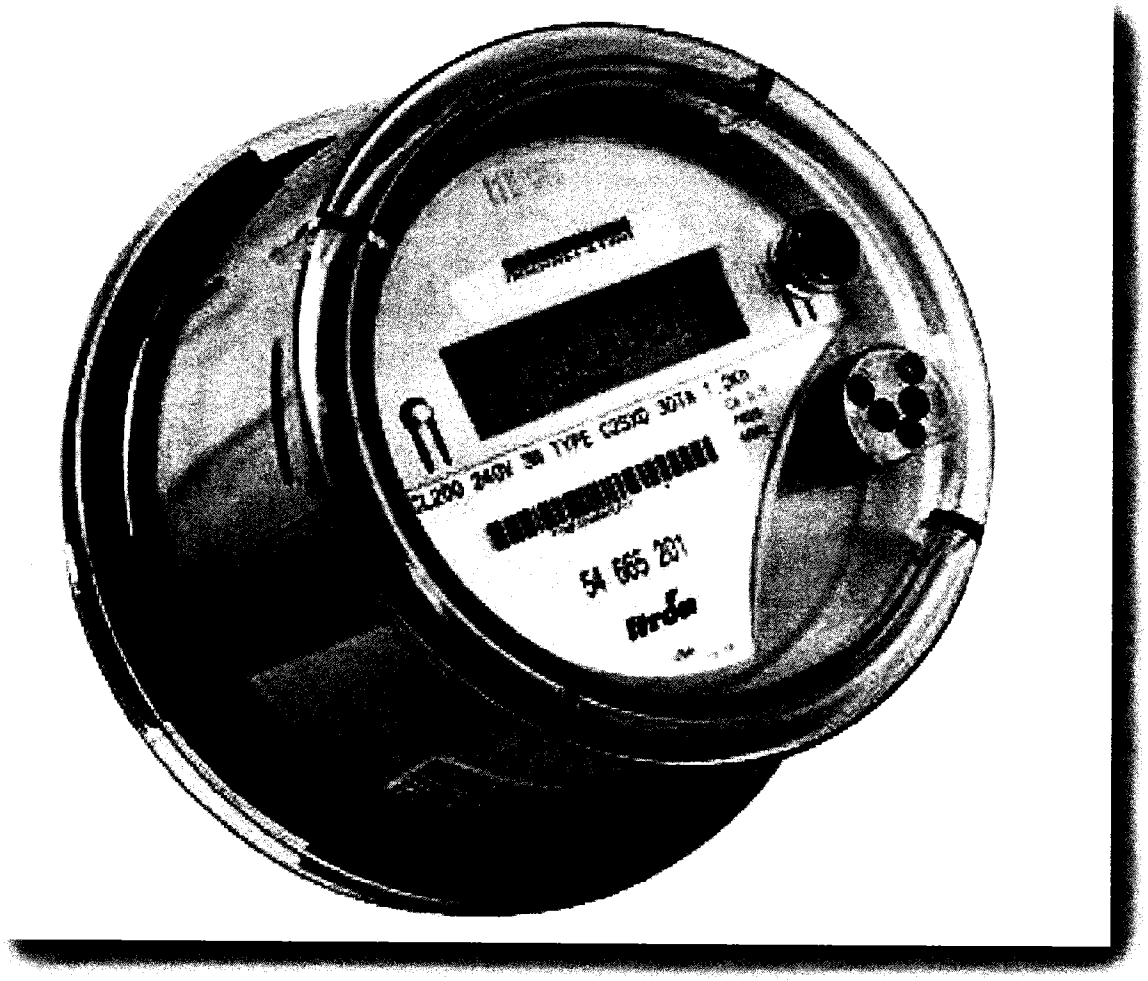
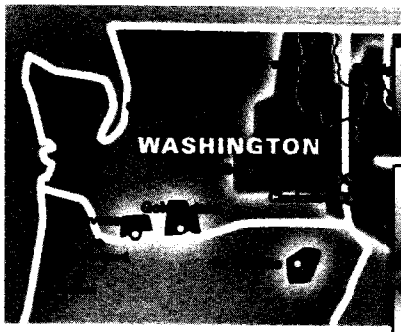
for the Washington Advanced ject

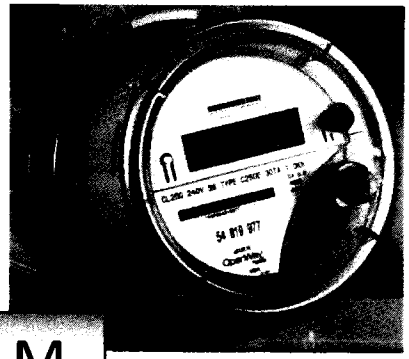


Advanced Metering Project

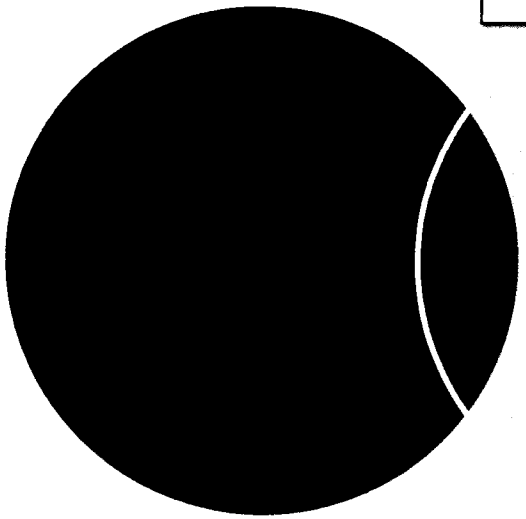


253,000 Electric Meters

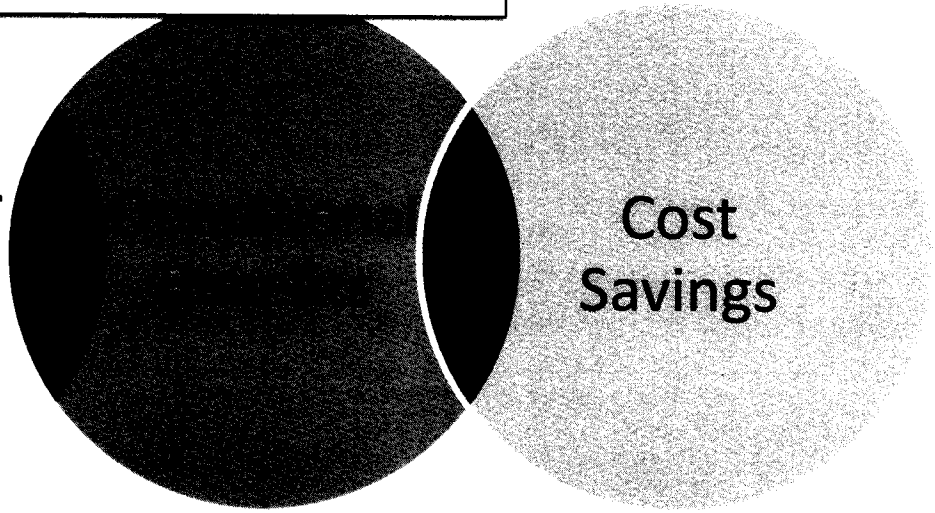
155,000 Gas Meters



Estimated Capital Cost $142 M



Customer Benefits



Cost Savings

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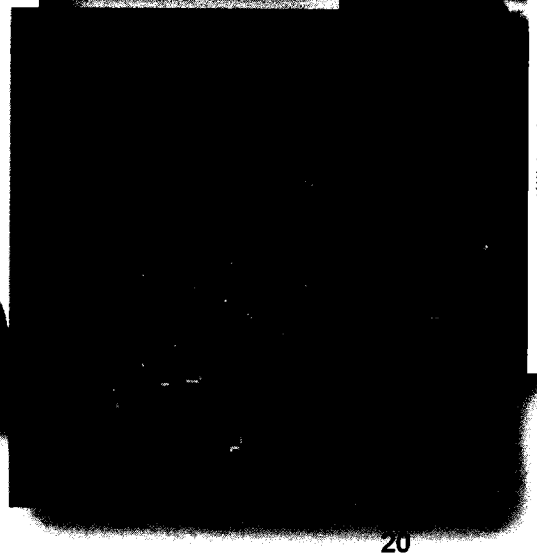

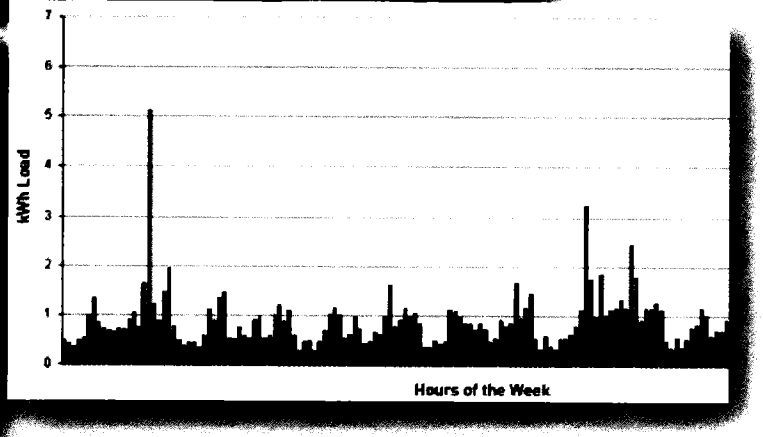

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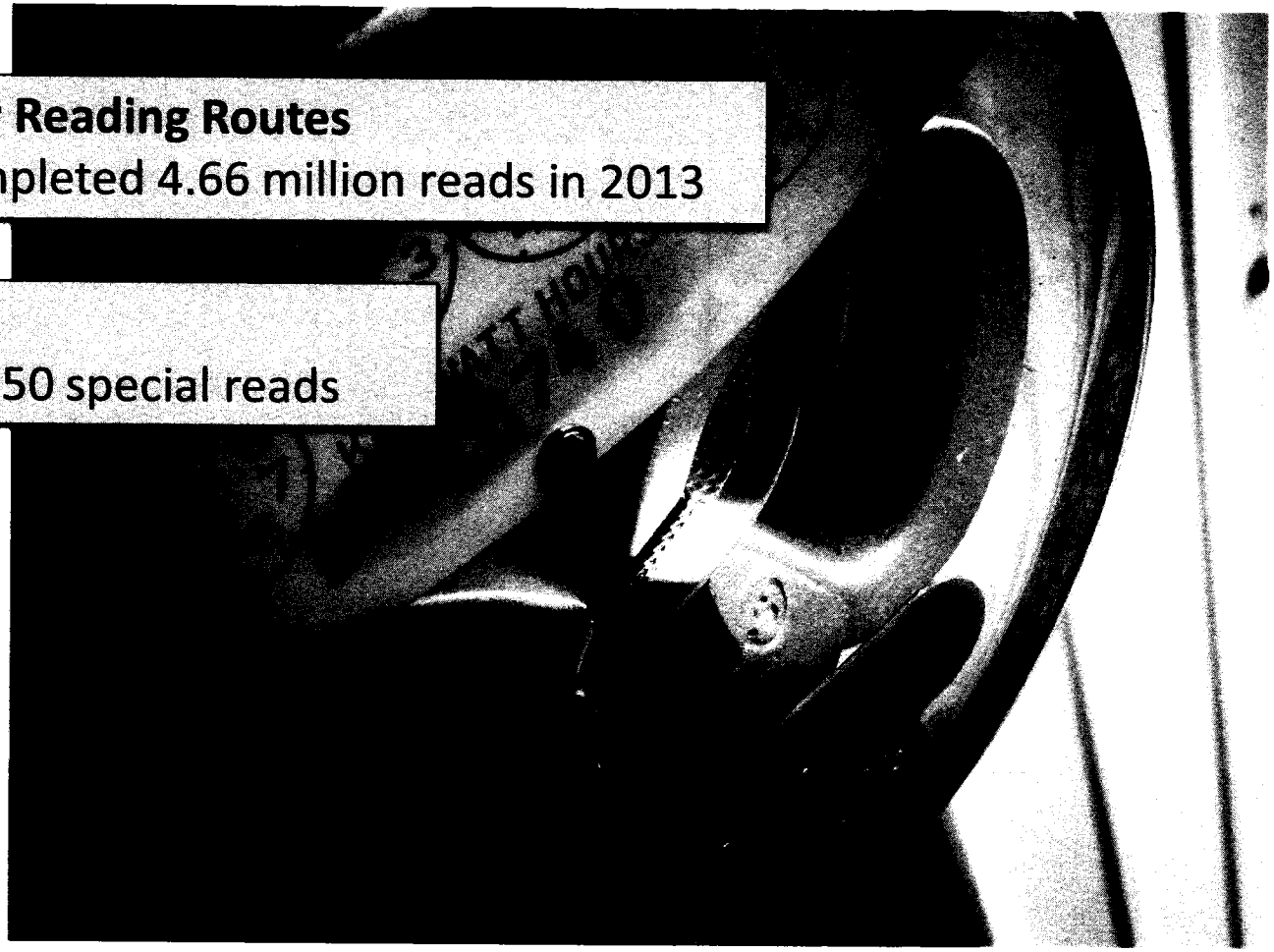
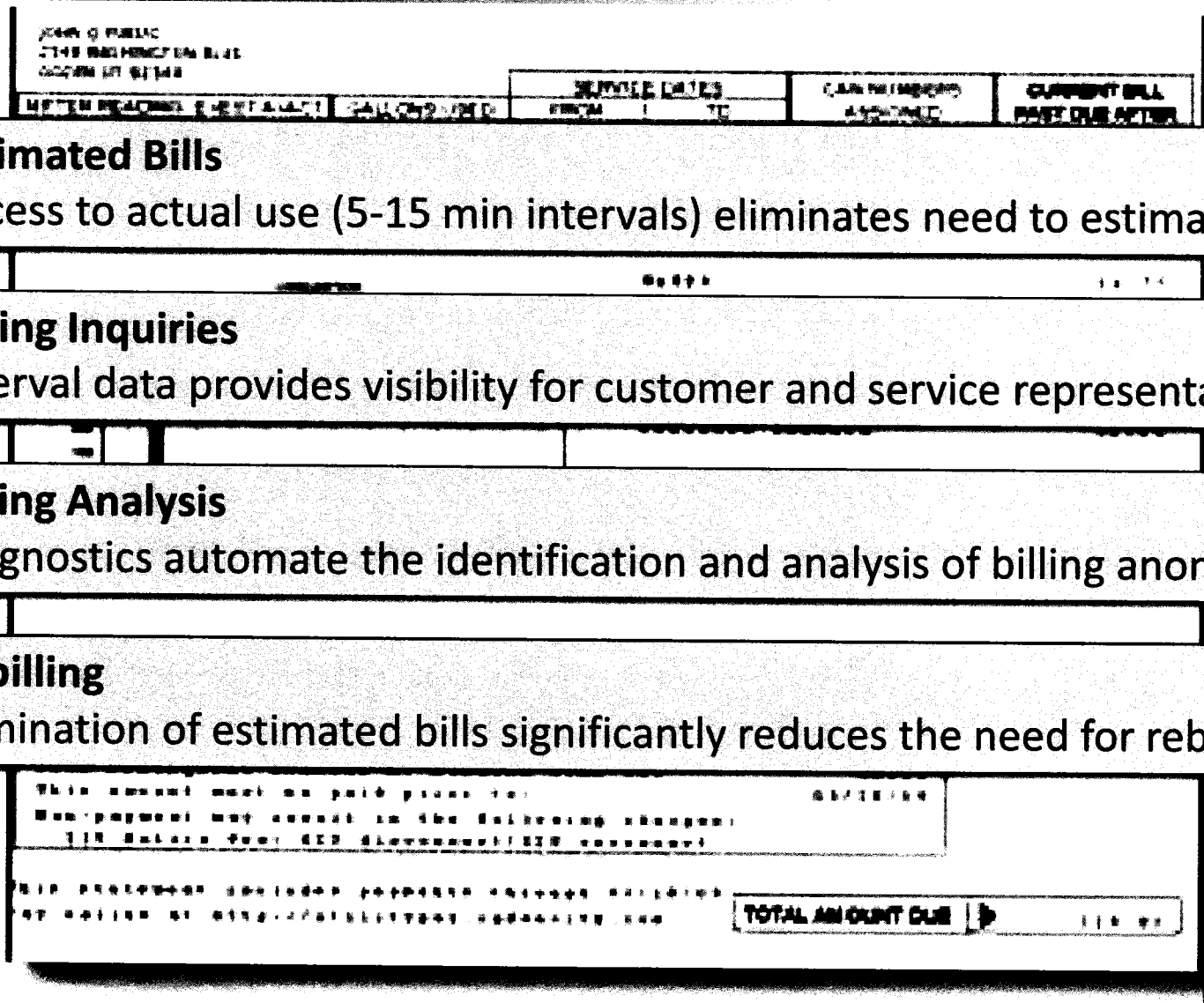
Manual Meter Reading

Regular Meter Reading Routes
Forty staff completed 4.66 million reads in 2013

Special Reads
Completed 7,750 special reads



Accuracy



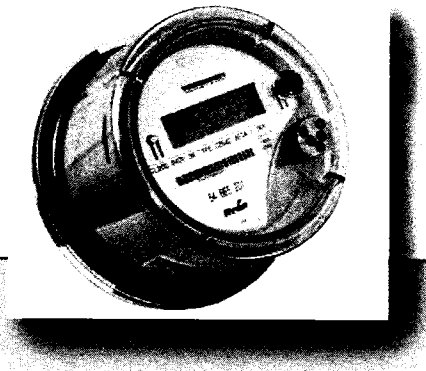
Estimated Bills
Access to actual use (5-15 min intervals) eliminates need to estimate bills

Billing Inquiries
Interval data provides visibility for customer and service representative

Billing Analysis
Diagnostics automate the identification and analysis of billing anomalies

Rebilling
Elimination of estimated bills significantly reduces the need for rebilling

[redacted] Reconnect



Account Open/Close Transfer
150,000 transactions in Washington in 2013
14,702 cases where field personnel were dispatched for disconnect/reconnect

Credit Disconnects/Connects/Collections
Over 30,000 cases where field personnel were dispatched in 2013

Immediate Restoration of Service
Significant reduction in restoration time

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[redacted] & Unbilled Usage

Meters are equipped with tamper alarms

Theft Diversion
In 80% of cases a customer has activated an inactive meter or has significantly damaged a working meter

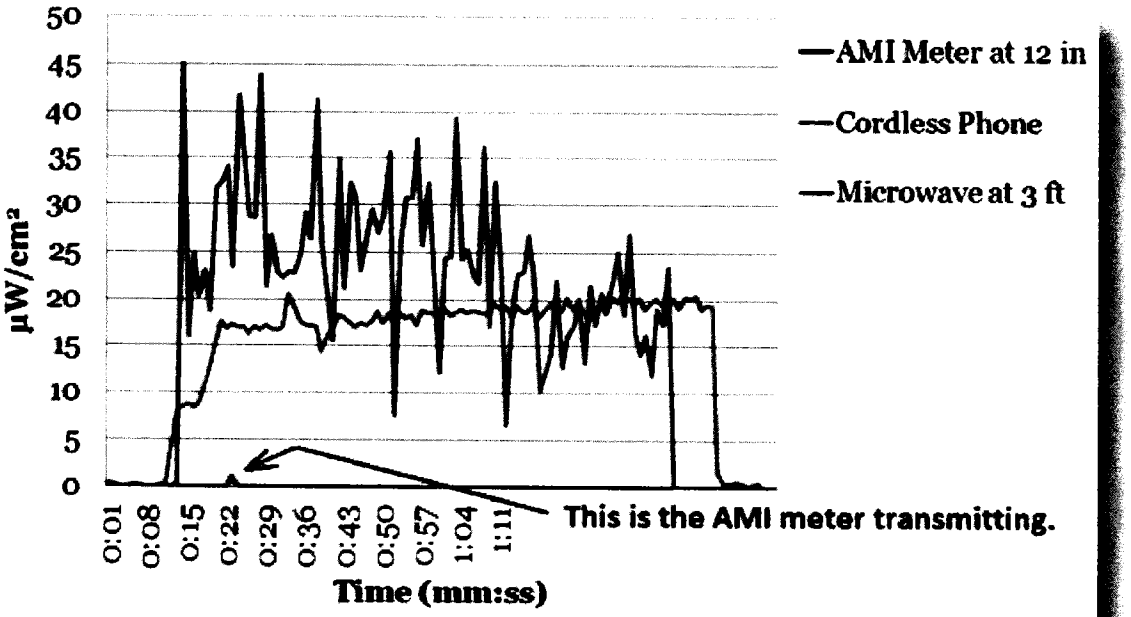
Unbilled Usage
Meter can be switched off or set to alarm for inactive accounts

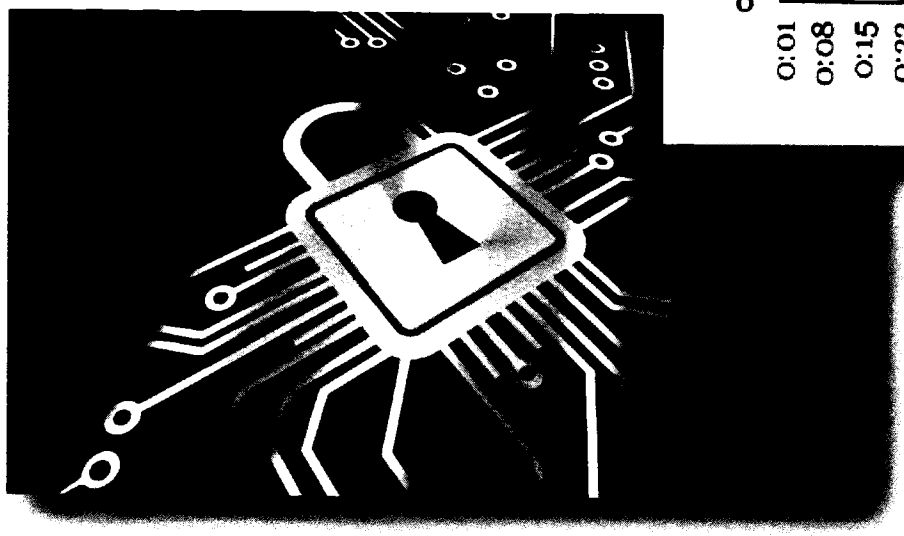
Slow/Failing Meters
Can be very difficult to isolate with conventional metering

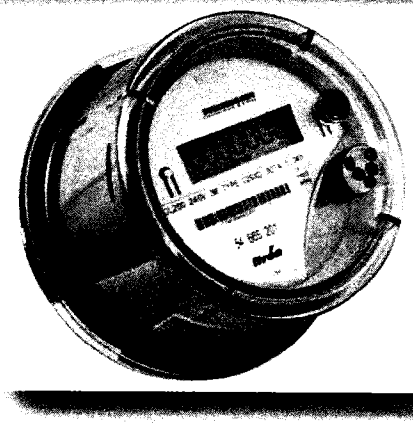
Stopped Meters
Advanced meter analytics can reduce the number of meters investigated

Protections

- Customer Health & Safety
- Customer Opt Out Program
- Advanced Meter Security



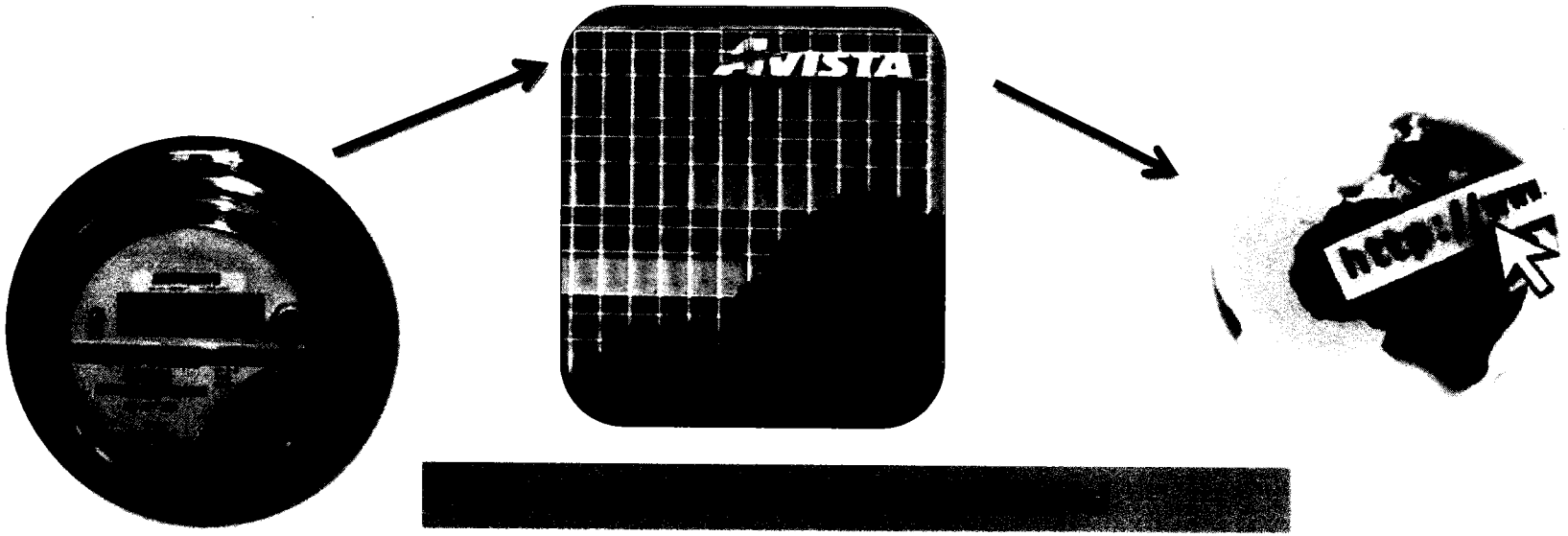




[redacted] Information Security

Avista Customer Privacy Policy

[redacted]



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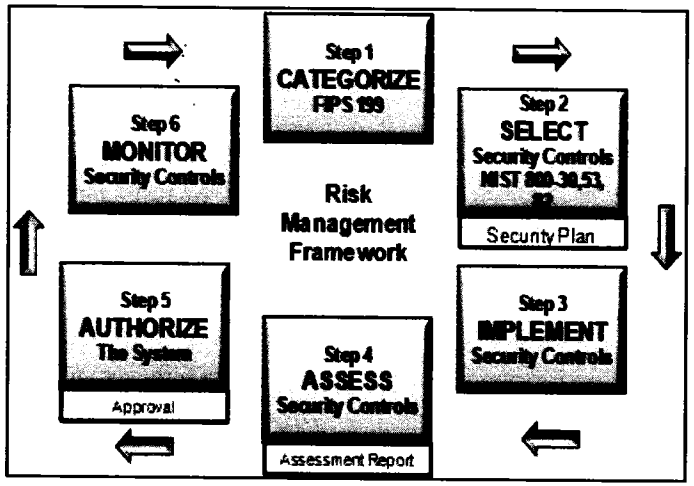

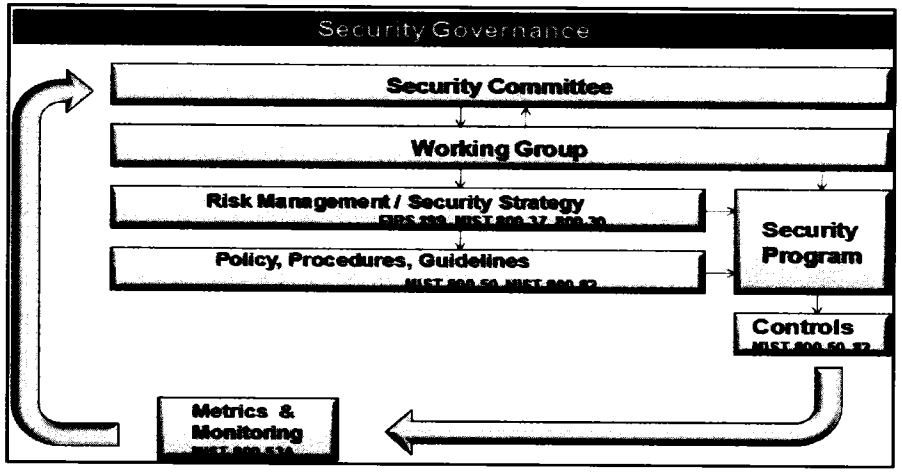

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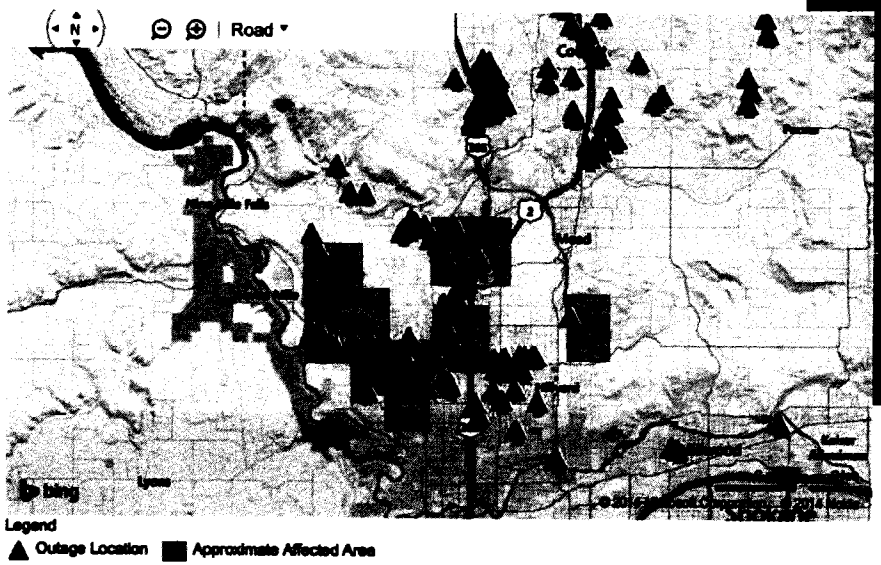
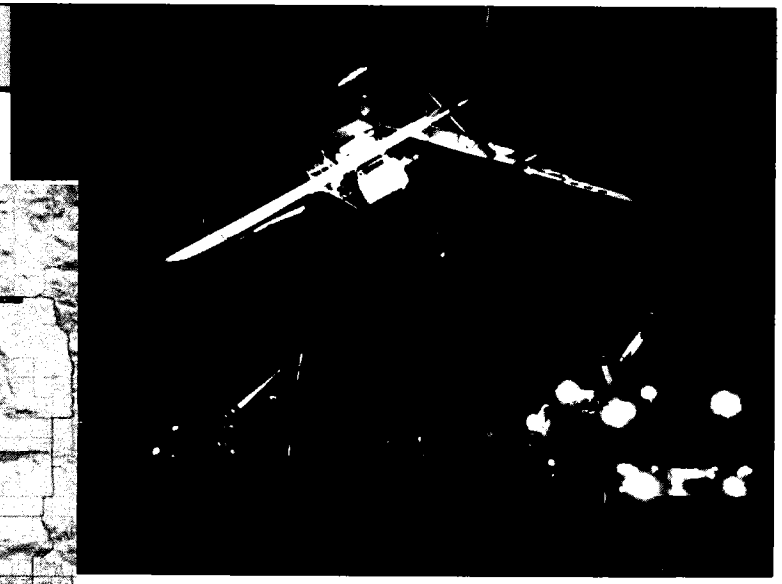
Meter signals utility when power to the meter is disrupted & restored

Integrated with utility's outage management system – better visibility

More efficient and shorter restoration times





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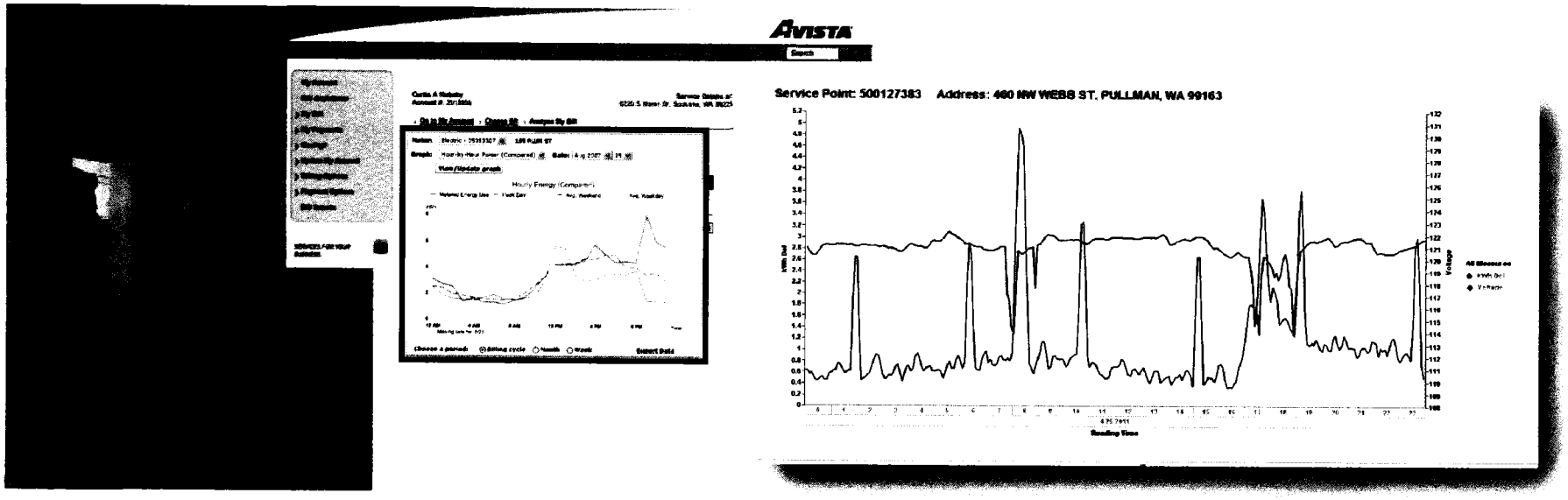
Conservation Voltage Reduction

More efficient regulation of distribution voltage

Optimized with advanced metering – voltage alarming capability

Customer Installed Measures

Access to energy use information coupled with conservation education



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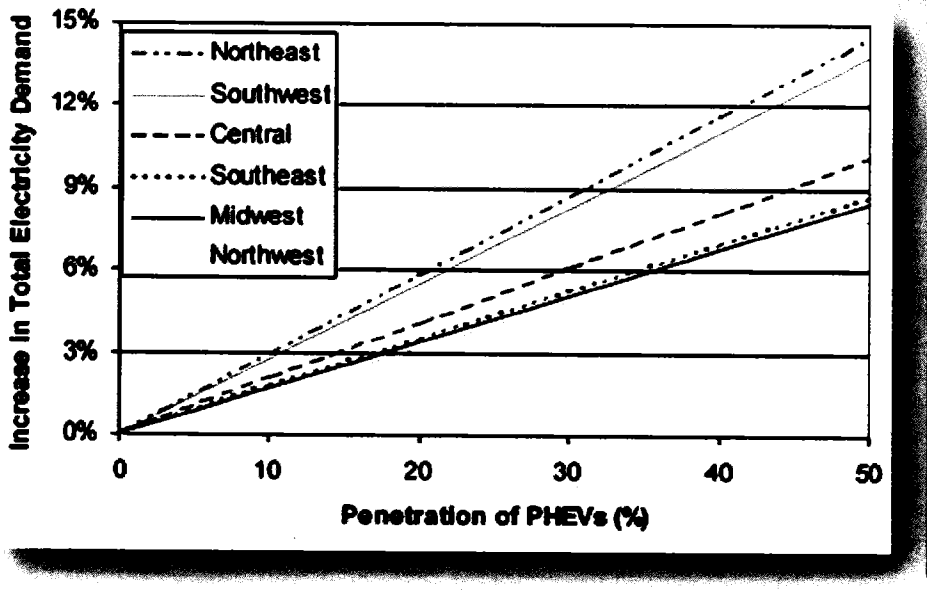
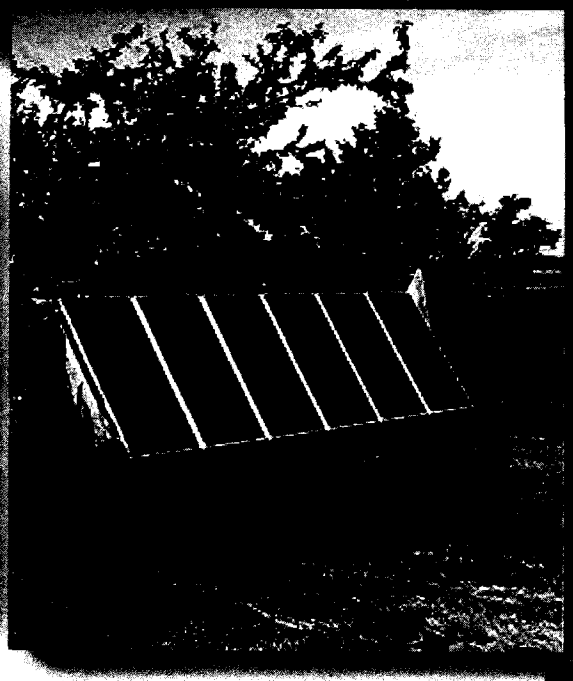
Retail Load Studies

Meter Testing

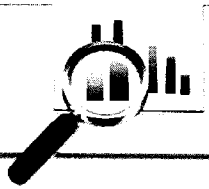
Engineering Studies



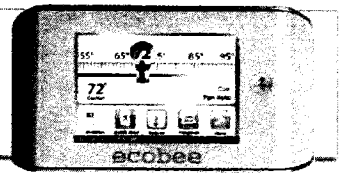


Experience

Web Portal
Customer access to their interval energy usage data (5-15 min)



Home Area Network
In-home interface provides access to real-time energy use



Text Alerts
Outbound messaging on customer-selected status of energy use

Billing Inquiry & Service Changes
Eliminate estimated bills; streamline open, close, transfer of service

Privacy
Reduced visits of Avista employees on customer property

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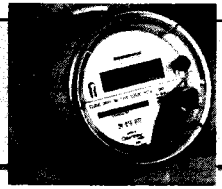
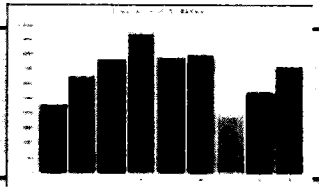
[redacted] for Future Benefits

Rate Options
Time of use, prepay, critical peak, demand pricing

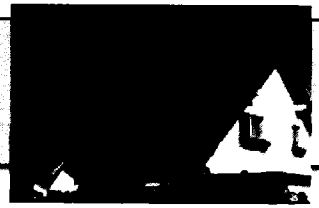


Micro Grids & Smart Cities
Opportunities for multi-application networks

Data Analytics
Platform for new uses of data to benefit customers



Distributed Generation
Better understand and integrate customer-owned resources



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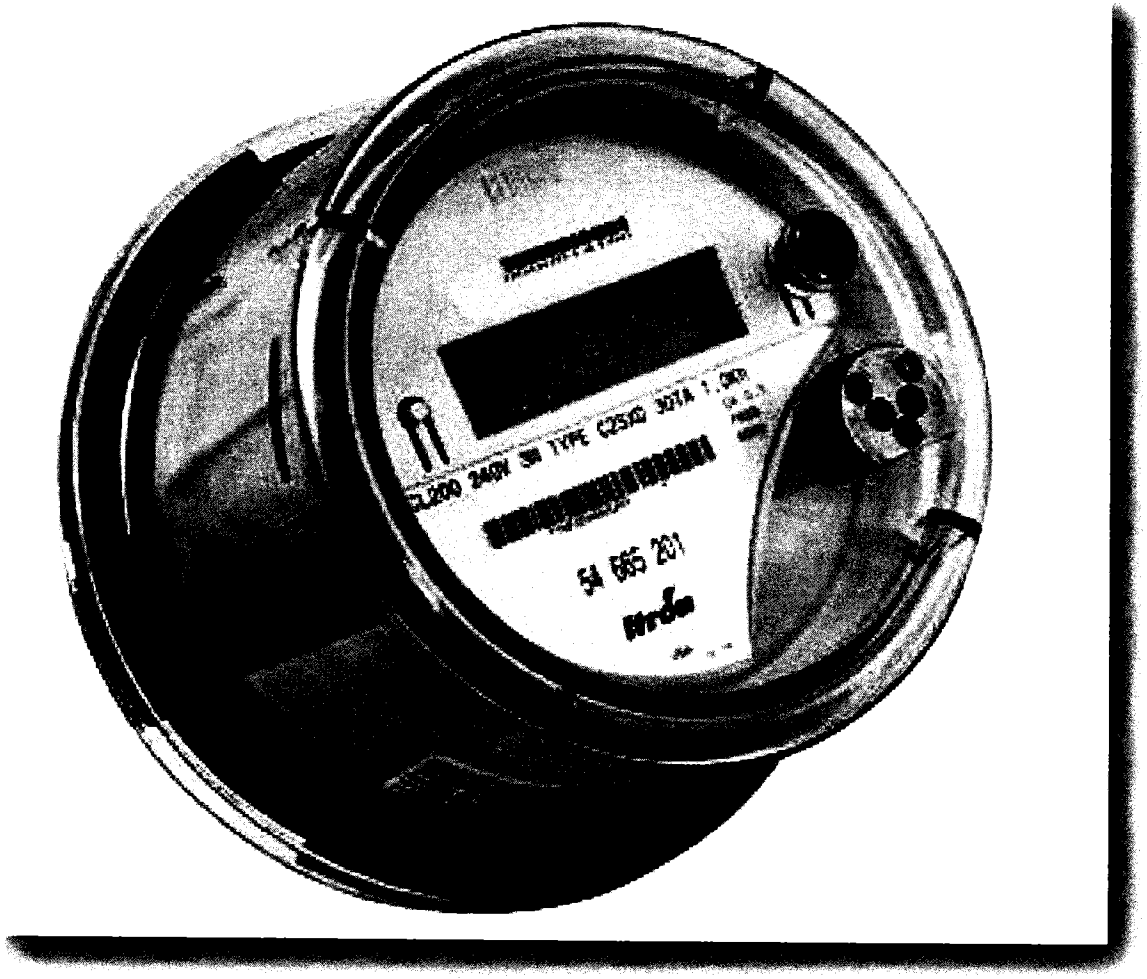
and Benefits



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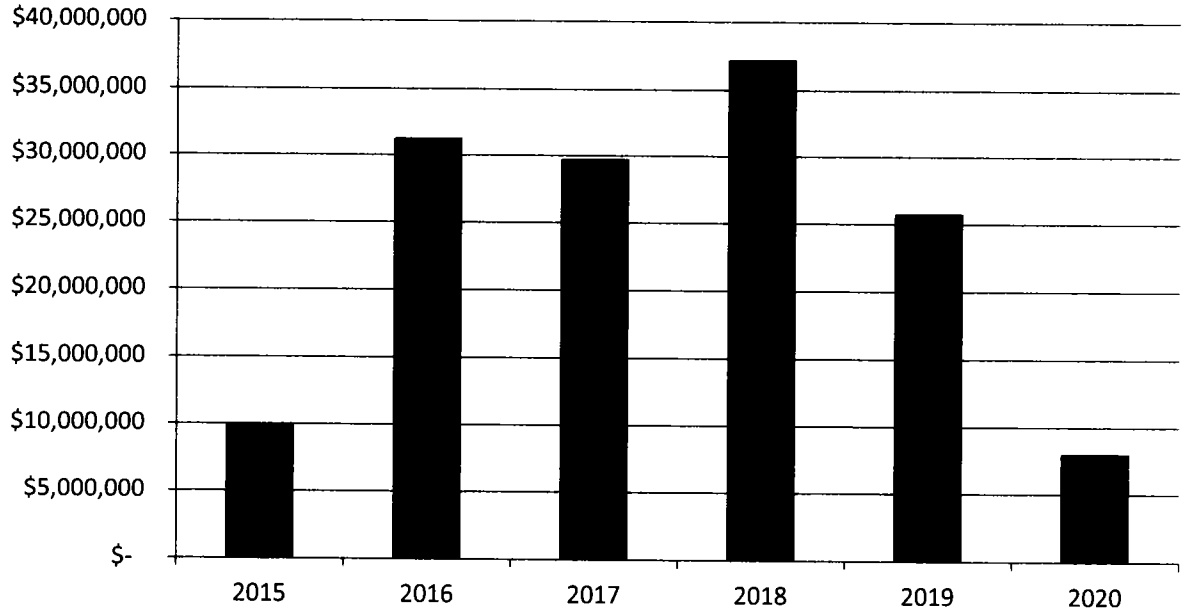
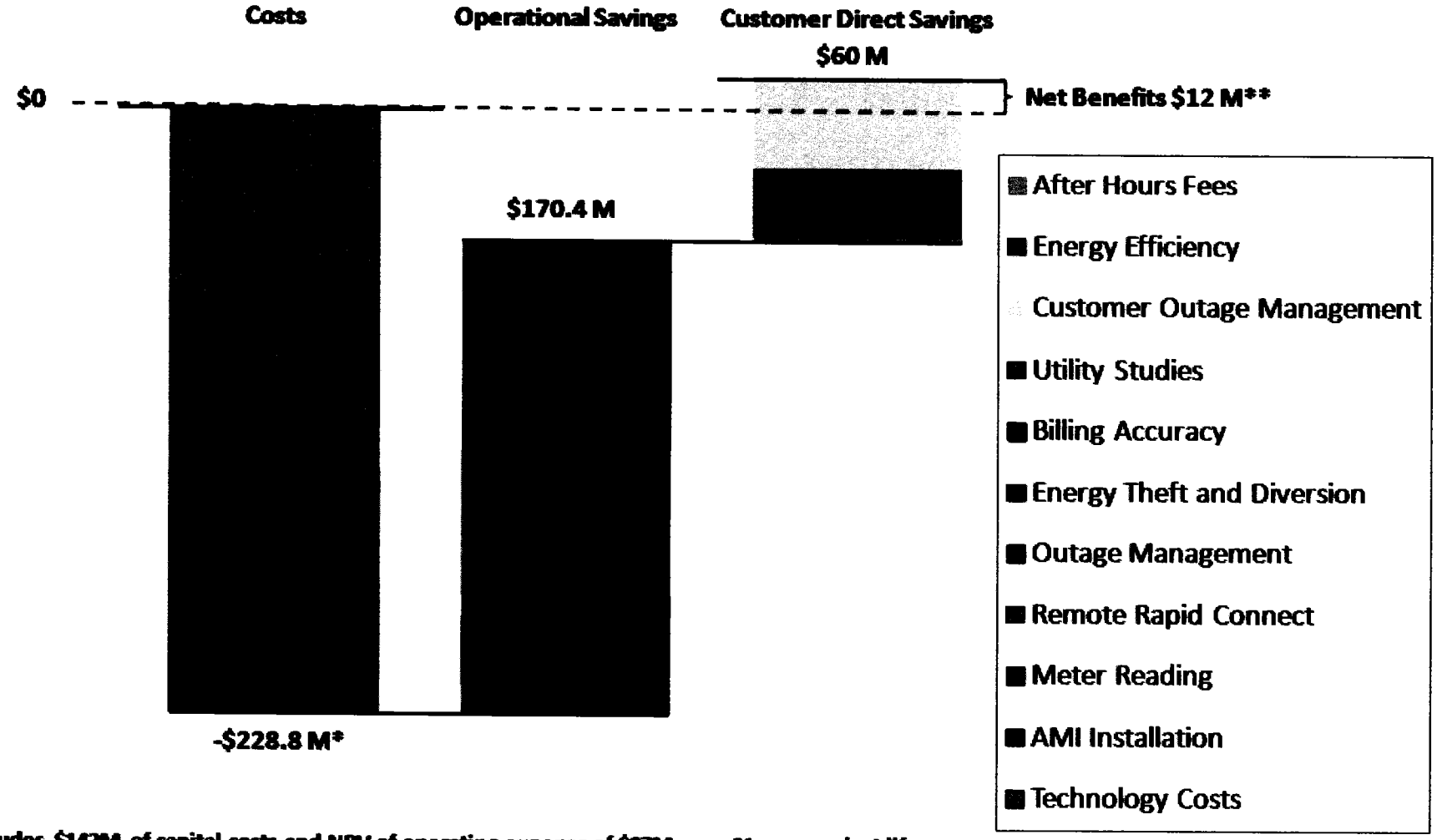
Preliminary estimate of the capital investment is $142.1 million

Preliminary estimate of NPV of operating expenses is $87 million over the 21 year life of the project

Preliminary Estimate of Forecasted Capital Expenditures through 2020



Preliminary Estimate of Lifetime Net Benefits of Washington AMI



* Includes $142M of capital costs and NPV of operating expense of $87M over 21 year project life

** Does not include the unquantifiable customer experience benefits (e.g., text alerts, web portal, access to real time data, etc.)

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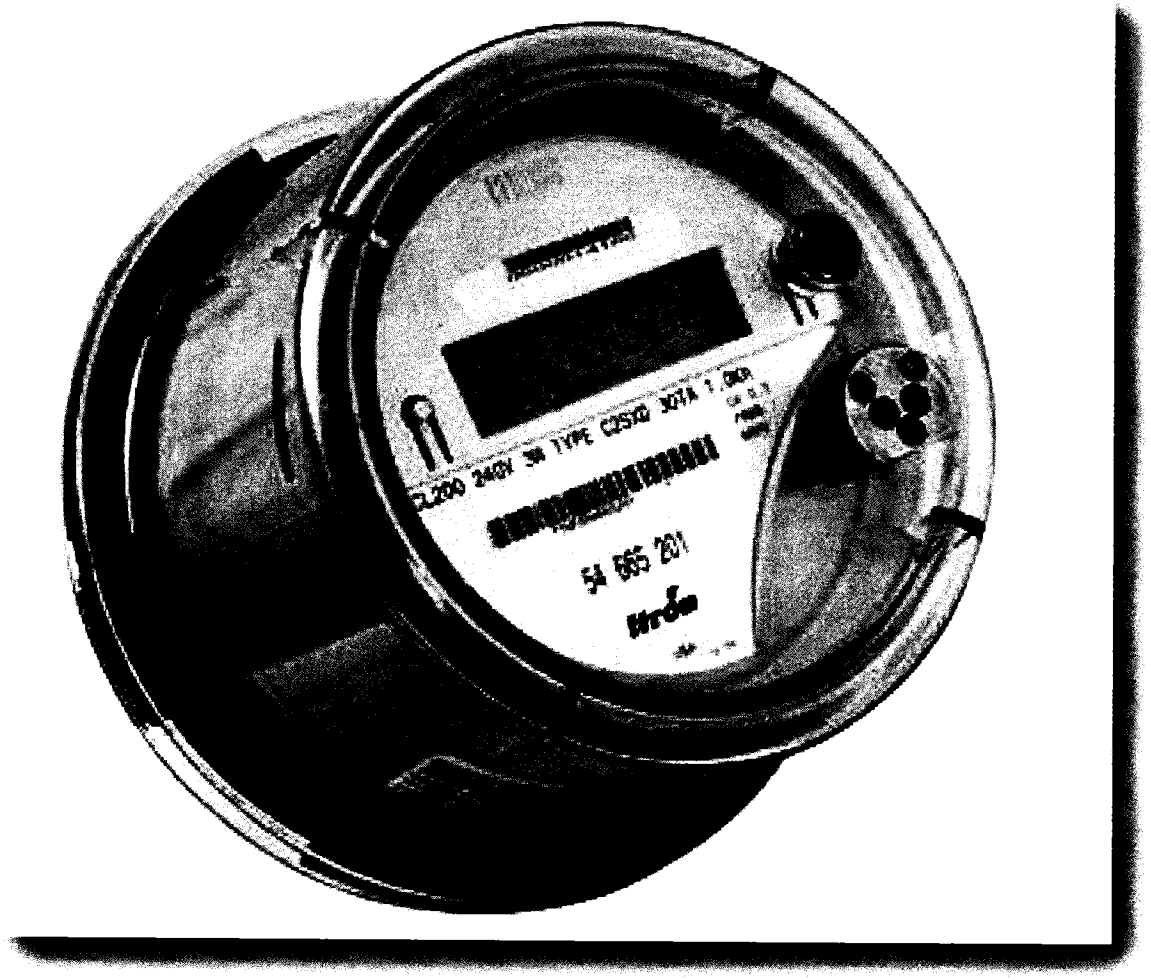
[redacted] Timeline



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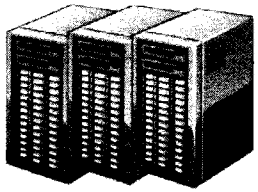
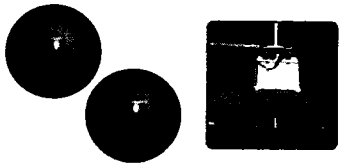
Timeline

2015 — **Project Kickoff**
Servers, Software, Security



2016 — **Field Installation and System Integration**
Residential Meters, Commercial Meters, Communications Infrastructure, System Integration



2018 — **90% Functional**
Residential meter install complete
Continue with commercial metering & communications infrastructure

2020 — **Project Complete**

The industry is rapidly moving to advanced metering systems

Timing takes advantage of maturing technology and lowered costs

Measurable benefits balance deployment costs – meter reading, billing accuracy, remote rapid reconnect, energy theft /unbilled use, outage management, energy efficiency, utility studies

Customer Experience is improved, albeit the benefits are unquantified

Protections will ensure customer choice, health, safety, and security

Optionality for future programs for customers is enabled