DTE Energy®

Smart Grid & Advanced Metering Infrastructure (AMI)

House Energy & Technology Committee

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President & COO
Detroit Edison
February 24, 2009

What is the Smart Grid?

DTE Energy

- Creates a new, intelligent infrastructure for delivery of electricity
- Applies digital information technology to optimize the electrical power system
- Enables two-way communication between the customer and the power generator

Why move to Smart Grid technology?

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Enable active participation by customers:

Facilitate choices in programs and prices best suited to a customer's needs

Accommodate all generation and storage options:

Enable interconnection to any source of power, including renewable energy and energy storage systems

Provide power quality for the digital economy:

Electricity free of sags, spikes, disturbances or interruptions

Why move to Smart Grid technology?

DTE Energy

Optimize asset utilization and operate efficiently:

Permits more power to be put through existing systems, reducing the need for new infrastructure and costs associated with operations and maintenance

Anticipate and respond to system disturbances:

Detect and respond to routine problems to minimize downtime and financial losses

Operate resiliently against attack and natural disaster:

Build security in the from the ground up

Smart Grid technology = two-way communication between customers and power generation

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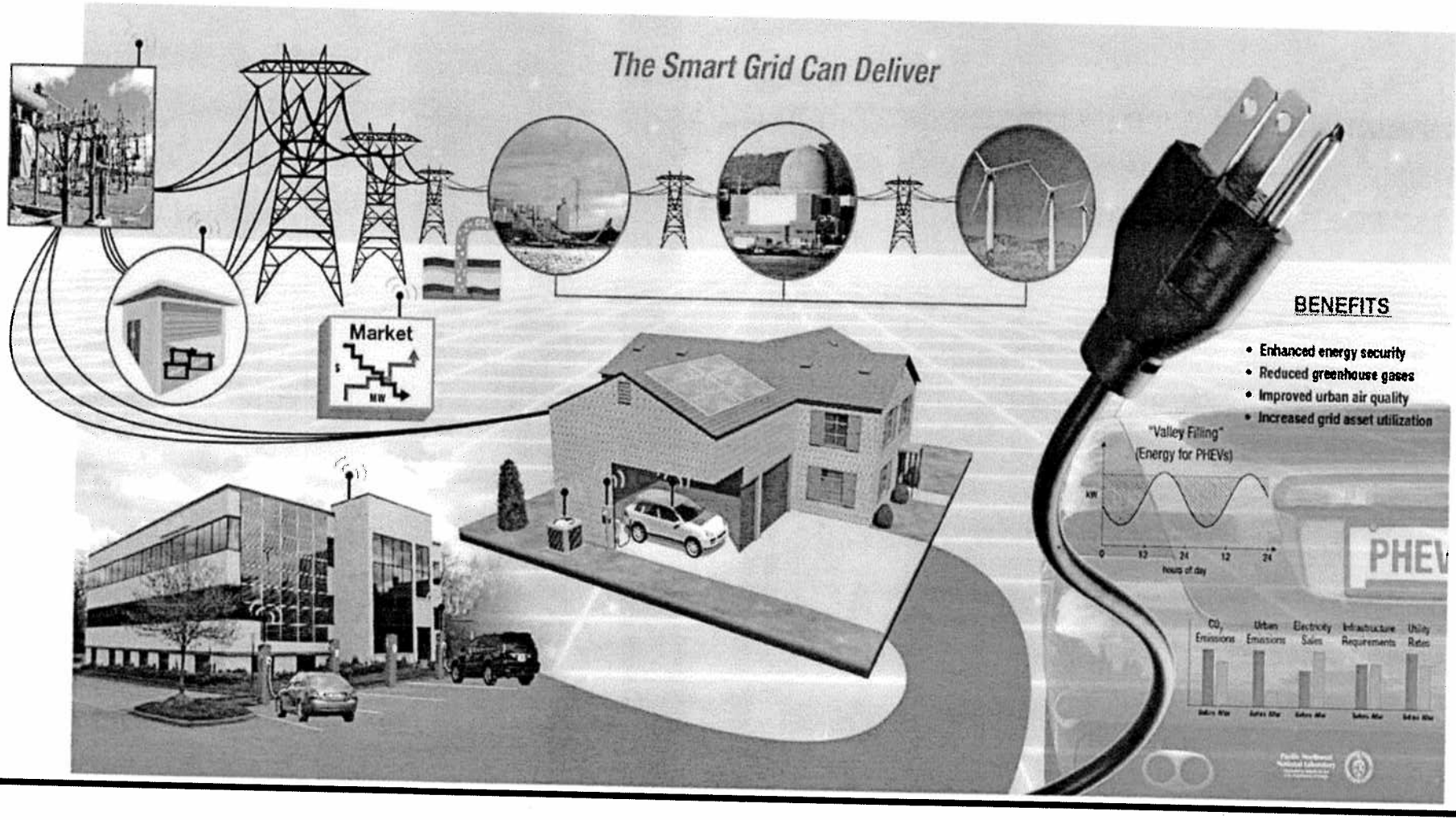

Advanced Metering Infrastructure (AMI)

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AMI system will serve as foundation for the Smart Grid

AMI network

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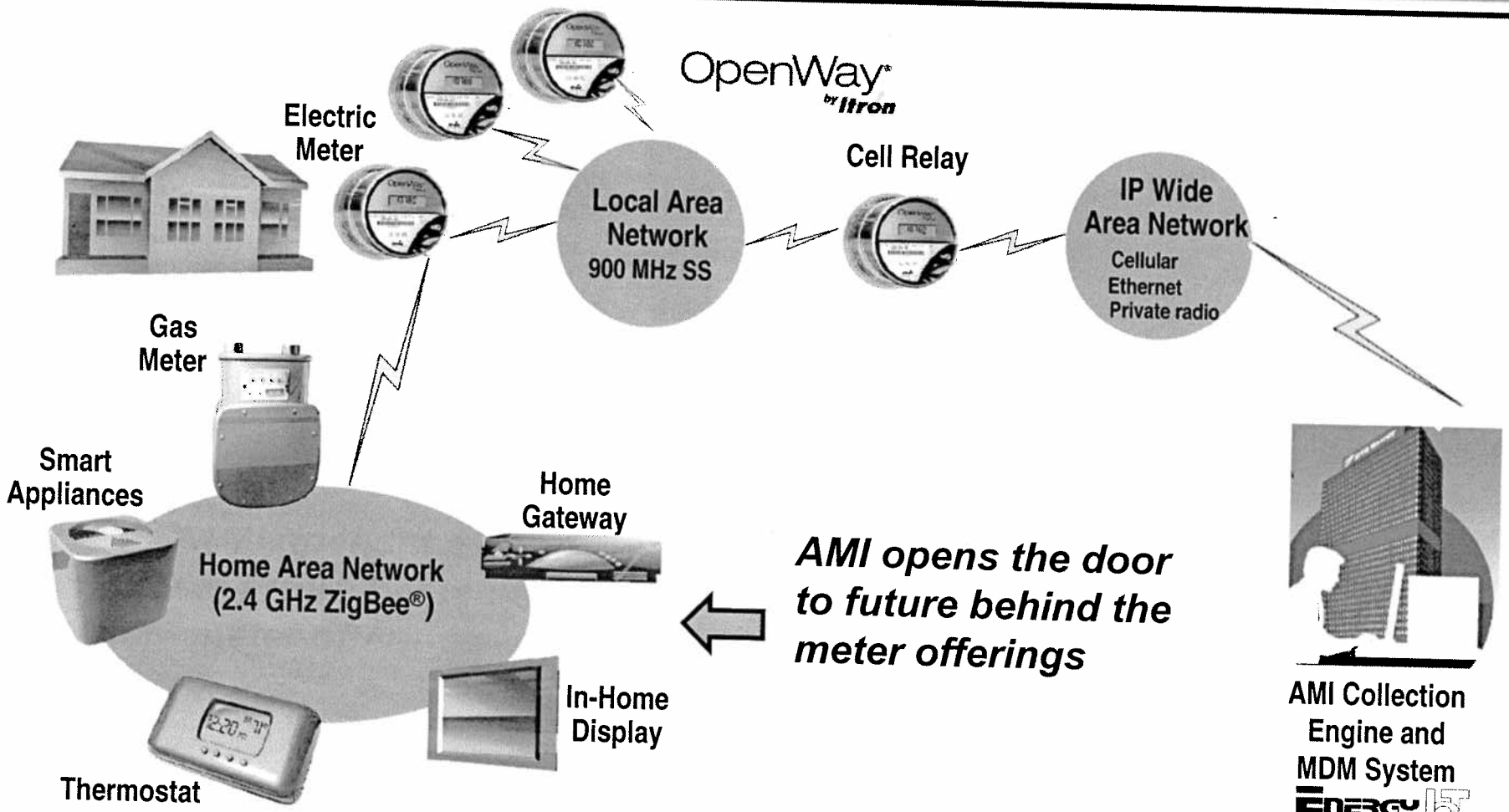

Illustrations courtesy of Itron Inc.

AMI supports low-income customers

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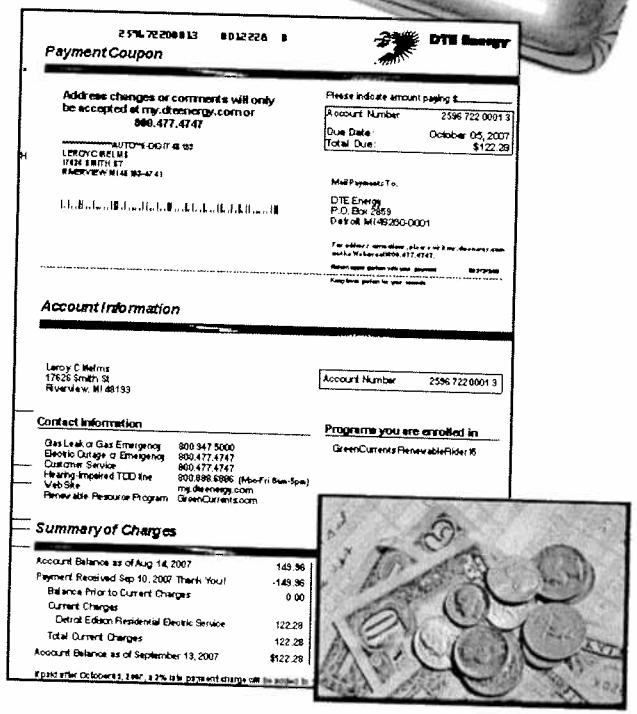
Payment Coupon

DTE Energy

Address changes or comments will only be accepted at my.dteenergy.com or 800.477.4747

Please indicate amount paying $

Account Number 2596 722 0001 3

Due Date October 05, 2007

Total Due: $122.28

DTE Energy
P.O. Box 2859
Detroit MI 48260-0001

Account Information

Leroy C Helms
17626 Smith St
Riverview, MI 48193

Account Number 2596 722 0001 3

Contact Information

Gas Leak or Gas Emergency 800.947.5000
Electric Outage or Emergency 800.477.4747
Customer Service 800.477.4747
Hearing-Impaired TDD line 800.889.6886 (Mon-Fri 8am-5pm)
Web Site my.dteenergy.com
Renewable Resource Program GreenCurrents.com

Programs you are enrolled in

GreenCurrents RenewableRider 16

Summary of Charges

Account Balance as of Aug 14, 2007	149.96
Payment Received Sep 10, 2007 Thank You!	-149.96
Balance Prior to Current Charges	0.00
Current Charges	
Detroit Edison Residential Electric Service	122.28
Total Current Charges	122.28
Account Balance as of September 13, 2007	$122.28

- Automatic heating and A/C controls to help customers reduce energy consumption
- In-Home energy display to help customers adjust their energy consumption according to budgets
- Pre-pay billing options to offer customers an option to purchase energy as their budget allows
- Improved billing accuracy and reduction in estimated bills
- New tools to allow customers to analyze high bill situations
- Ability for customers to select a more convenient billing cycle to meet their income timing

Detroit Edison's pilot with AMI

DTE Energy

We have a pilot project underway in Grosse Ile

8,500 of 10,000 electric and gas meters have been automated

Testing expected to be completed by mid-2009

Assuming successful test results, DTE Energy will install an additional 20,000 advanced meters and gas modules

Upon further testing and approvals, DTE Energy envisions proceeding with full AMI deployment

2.7 million electric meters

1.3 million gas meters

Pending successful testing phases, our system will be automated over the next ~6 years

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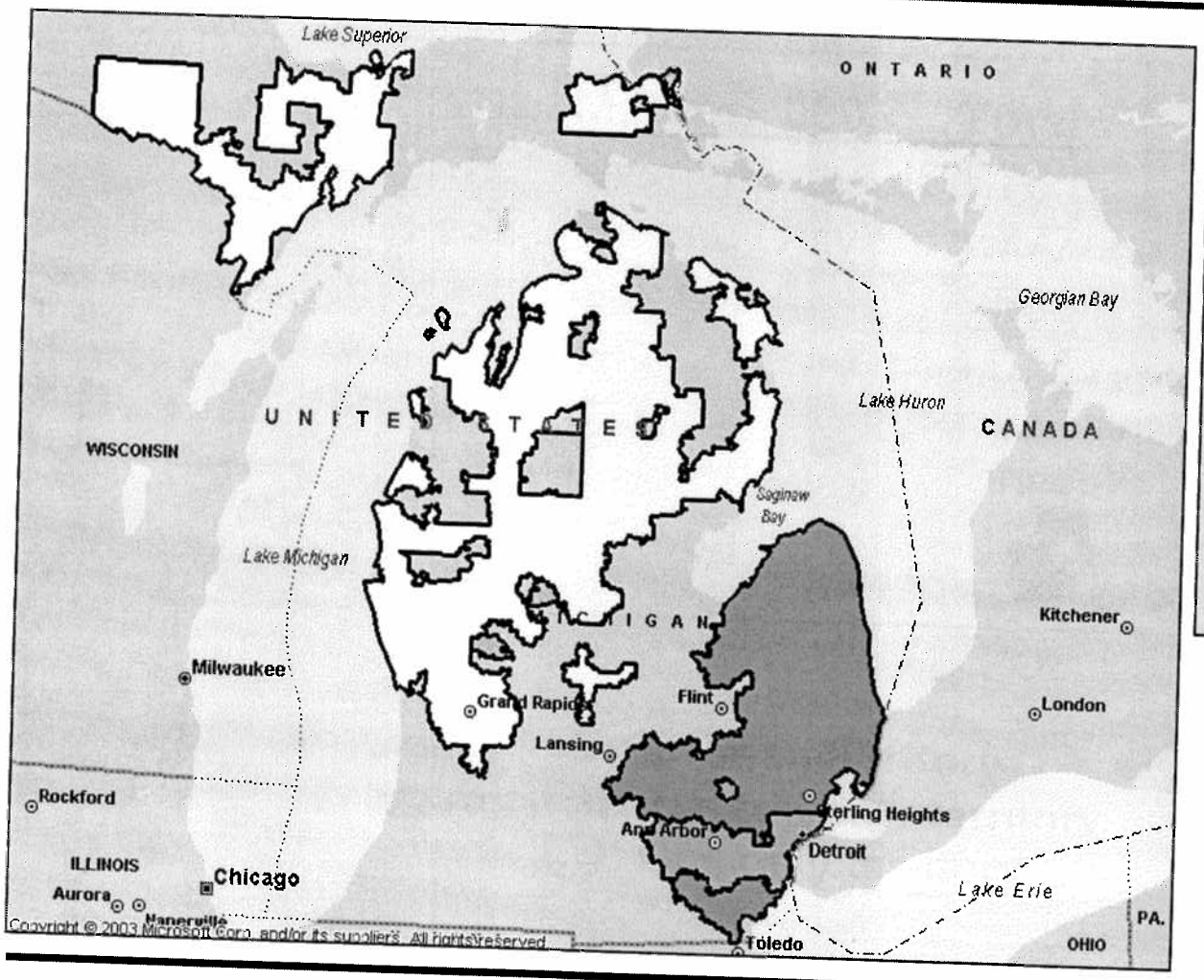

Meters, '000	Total
Overlap	1,765
Electric Only	1,777
Gas Only	533
Total	4,075
Inside	20%
Outside	80%

- Overlap territory
- Electric only territory
- Gas only territory

Increases accuracy/accessibility for meter reading

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- Eliminates manual meter reading
- Eliminates estimated reads
- Improves accuracy
- Eliminates the need to provide physical site access

Improves quality and reliability of energy delivery

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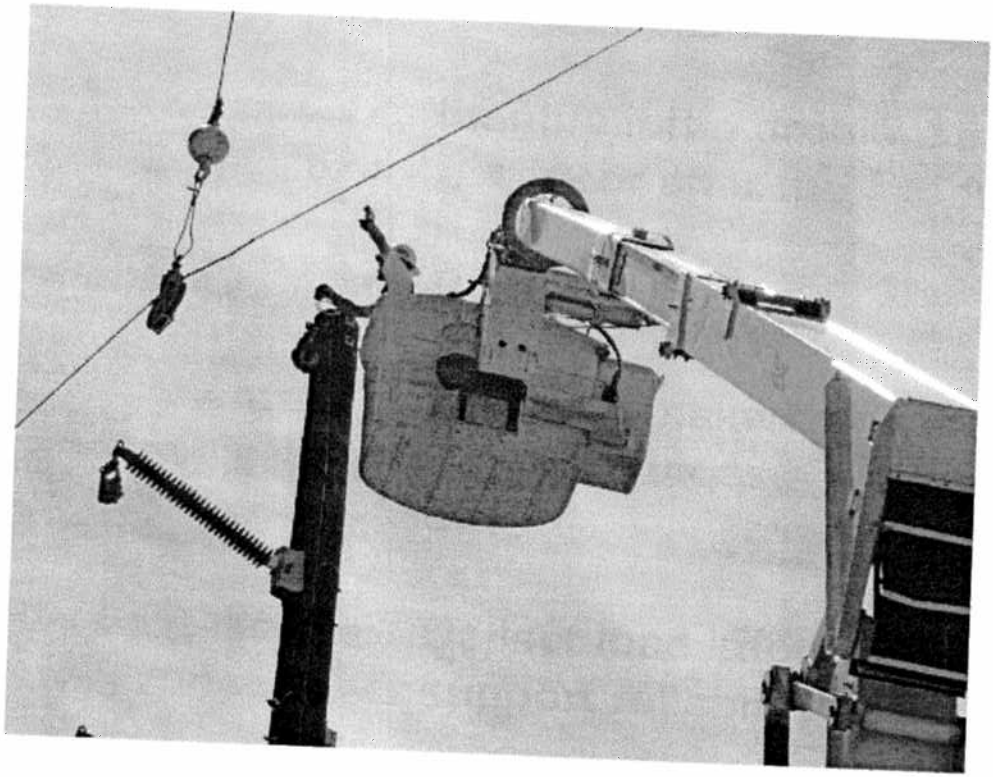

- Map, detect and verify outages
- Identify if the problem is before or after the meter
- Verify restoration
- At times, make corrections before outages actually occur
- Collect load information to support reliability planning

Supports timely, accurate, and effective customer care

DTE Energy

- **Better communication through accurate, timely data**
  - Proactive problem finding
  - First contact resolution
- **Remote disconnect/ reconnect capabilities in some areas**
- **New products and options:**
  - High bill analyzer
  - Peak pricing rates
  - Billing cycle options

Future applications

DTE Energy

We monitor our grid in near real-time

Outages are automatically identified and "self-corrected"

Customers can review their usage on their thermostats

Customers have pricing options depending on time of day

Some customers allow us to adjust their thermostats and cycle their appliance during peak-demand periods

Some customers produce their own electricity and store it for peak-day demand periods; or

Some customers use it to charge their electric vehicles