



Global Energy & Utilities Industry

CleanTech and Utilities:
The perspective of a **CleanIT** company

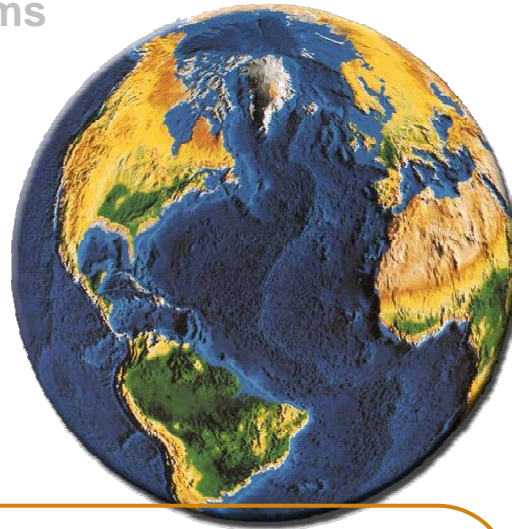
Michele Tihami
Policy & Regulatory Leader
Global Energy & Utilities
IBM

Applying innovative information technology and services to businesses, governments, people and the planet

Intelligent Transportation Systems

Measure & improve transportation usage

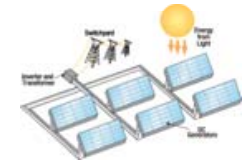
- Reduce traffic congestion
- Reduce CO2 emissions
- Increase mass transit usage
- Reduce energy usage
- Improve environment



Intelligent Utility Network

Measure & improve energy mgmt

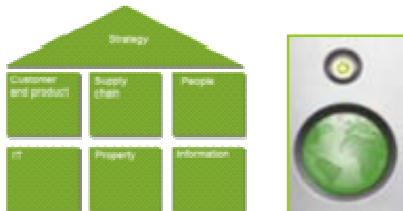
- Improve efficiency usage,
- Reduce outages
- Improved grid management
- Manage distributed energy



Carbon Management

Measure & reduce carbon emissions

- Carbon Mgmt Strategy
- Carbon Mgmt Intelligence
- Supply chain management
- Property, buildings, workplace



Energy Efficient Technologies & Services

Create & manage efficient IT

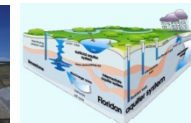
- Active energy management
- IT facilities infrastructure efficiency
- IT operations efficiency
- Monitoring and verification of efficiency goals
- Demand-side efficiency



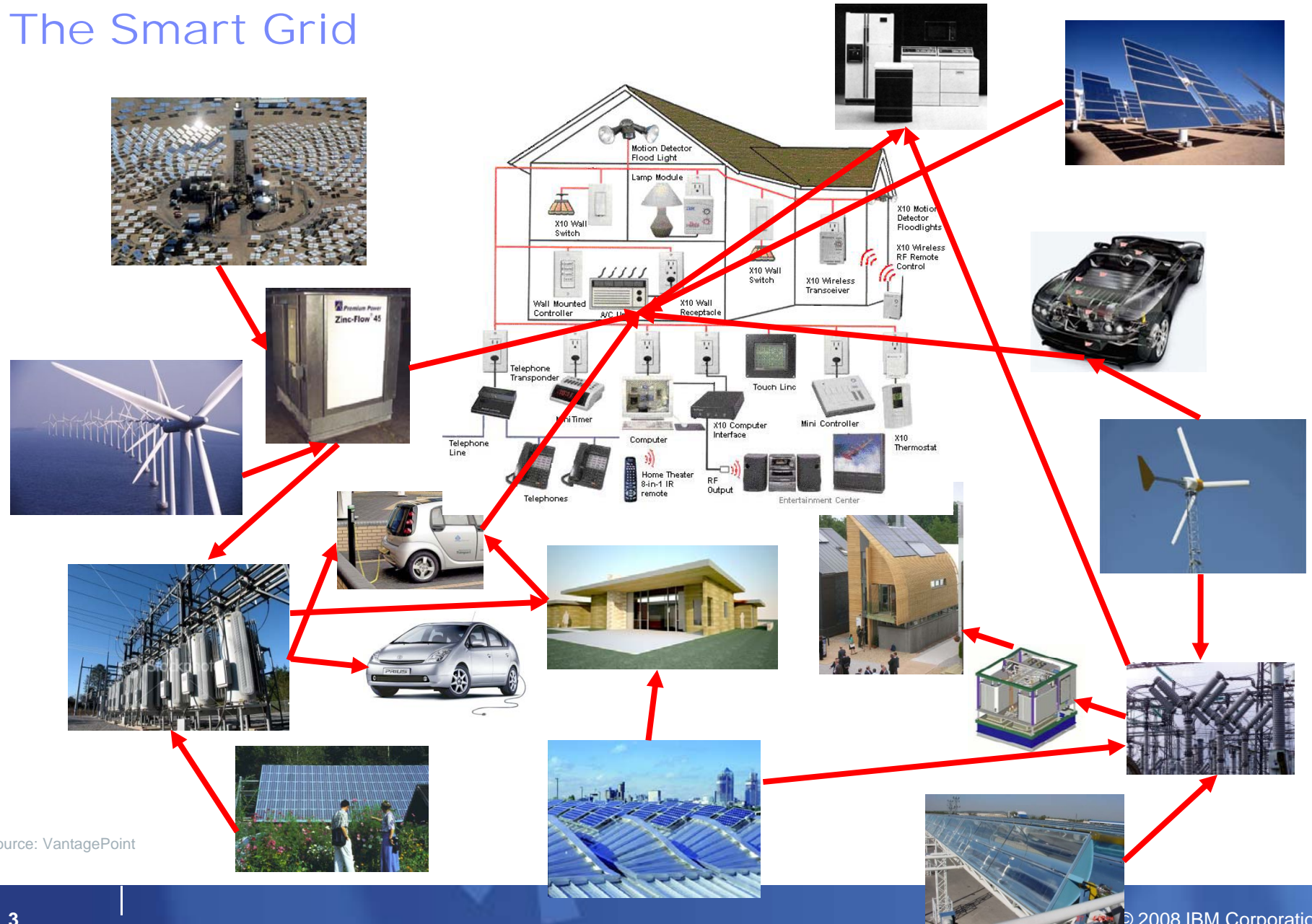
Advanced Water Management

Measure and manage water systems usage and quality with real-time knowledge

- Weather event mgmt; flood management
- Real-time monitoring and analytics for water usage and water quality



The Smart Grid



Source: VantagePoint

Pepco Holdings, Inc



Pepco Holdings, Inc. (PHI) a diversified energy company that, through its operating subsidiaries, is engaged primarily in two principal business operations: electricity and natural gas delivery (Power Delivery), and competitive energy generation, marketing and supply (Competitive Energy). PHI Service Company, a subsidiary service company of PHI, provides a variety of support services, including legal, accounting, treasury, tax, purchasing and information technology services to PHI and its operating subsidiaries. These services are provided pursuant to a service agreement among PHI, PHI Service Company, and the participating operating subsidiaries.

IUN Coalition & Solution

PHI is the second member to join the Intelligent Utility Network (IUN) Coalition, a new group of utility companies working with IBM to accelerate the adoption of 'smart grid' technologies and solutions on a global basis. This move reinforces PHI's commitment to implementing innovative technologies which can help customers manage their energy use and reduce the total cost of energy. PHI recently filed plans with the D.C., Maryland and Delaware Public Service Commissions to install "smart meters" in the first phase of an effort designed to improve reliability and enable customers to reduce the amount of energy they consume, particularly during daily peak periods.

" We are very pleased to join this coalition. We share IBM's vision that the Intelligent Utility Network will transform the way power is delivered, managed and used. By providing tools...to reduce electricity usage, we can make a measurable contribution to meeting the nation's environmental challenges and...help customers keep their electric bills affordable. Building an intelligent grid, based on open standards, is a critical foundation for achieving this vision."

*Dennis Wraase, **Chairman,**
President & CEO, PHI*

Current IUN Solution Elements

- MDMS Strategy & Future Implementation
- Blueprint Architecture (including OCCAM Study)
- PMO
- Customer Value Roadmap Development



CenterPoint Energy

CenterPoint Energy, Inc., headquartered in Houston, Texas, is a domestic energy delivery company that includes electric transmission & distribution, natural gas distribution, competitive natural gas sales and services, interstate pipelines and field services operations. The company serves more than 5 million metered customers primarily in Arkansas, Louisiana, Minnesota, Mississippi, Oklahoma, and Texas. CenterPoint Energy provides electricity transmission and distribution service for the Houston metropolitan area. Assets total over \$17 billion. With about 8,600 employees, CenterPoint Energy and its predecessor companies have been in business for more than 130 years.

"We're excited to be the founding member of this coalition. We expect that the Intelligent Grid will improve electric power line grid planning, operations, and maintenance, enabling us to deliver power more efficiently. We also expect the technology to contribute to fewer and shorter outages and higher productivity while maintaining our high level of data security. This innovative technology will provide on-demand data and information that will create a platform for exciting new products and better service for our customers."

**Tom Standish, CNP Energy Group
President, Regulated Operations**

IUN Coalition & Solution

IBM and CenterPoint Energy are engaged in a strategic effort to develop and deploy IUN solutions designed to enhance the efficiency and reliability of utility operations at CenterPoint Energy, facilitate movement by customers between electric providers, and to increase the ability of customers to manage and use energy in a more cost-effective and energy-efficient way. Projects underway include deployment of an Advanced Meter System, and implementation of components of a "self-healing grid," which will provide grid data, information and analytics to improve outage detection, outage restoration times, grid planning, and ongoing operations. This will result in improved electric service reliability, as well as better and quicker responses to outages.

Current IUN Solution Elements

- Automated Meter System
- Fault Detection
- Self-Healing Grid
- Advanced Grid Analytics
- BPL & Communications Network
- Managed Infrastructure



Sempra Energy



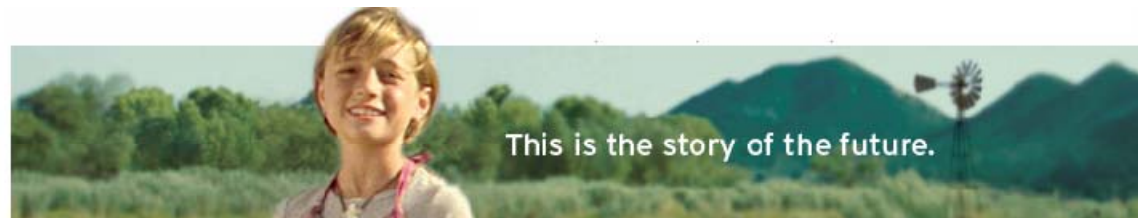
Sempra Energy is a Fortune 500 integrated energy services company based in San Diego, California. Through their five subsidiary companies, Sempra holds energy infrastructure, operates utilities, and provides related products and services. Sempra services energy needs through out Southern California. The company was recently recognized by Forbes as the number two electricity and gas “Most Admired Companies” and was named to the 2007 “BusinessWeek 50,” a list of the fifty top performing companies in the US.

Current IUN Solution Elements

- Smart Metering
- Feeder Automation
- BPL

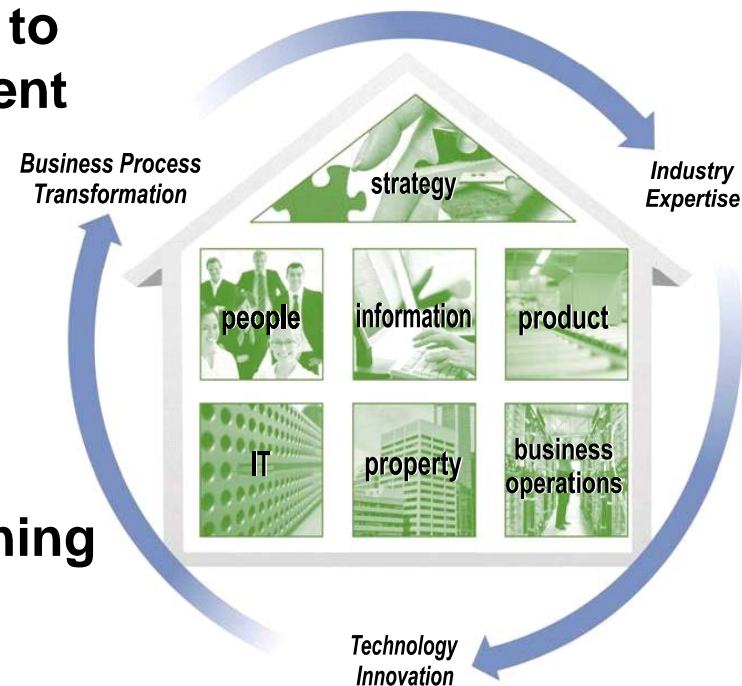
IUN Coalition & Solution

Sempra Energy is the third US member of the Intelligent Utility Network (IUN) Coalition, a group of utility companies working with IBM to accelerate the adoption of ‘smart grid’ technologies and solutions on a global basis. This move reinforces Sempra’s commitment to implementing innovative technologies which can help customers manage their energy use and reduce the total cost of energy.



What is a Green Data Center?

- **A Green Data Centers is constructed to run as economically and energy efficient as possible. Where all:**
 - **Computer**
 - **Electrical**
 - **Lighting**
 - **Heating, ventilating and air conditioning**
 - **as well as the building itself ...**
- must be rated for maximum efficiency.**



IBM is working with Utility clients to offer energy-saving solutions to end-user business customers

West Coast Utility

- **Objective:** offer energy saving solution that helps customers reduce & manage ongoing data center CRAC
- **Solution:** MMT (Mobile Measurement Technology) provides 3D mapping of data center thermals
- **Status:** pilot started with one of the largest data centers in the area
- **Deal Structure:** 3-way agreement between the Utility, IBM and the end-user customer
- **Next Steps:** determine pilot results, PUC review and offer to other end-user data center customers

East Coast Utility

- **Objective:** approach targeted market segments that have the largest data center energy usage
- **Solution:** two market segments selected to attend Utility & IBM sponsored seminar: Hospitals & Universities (other segments in the future)
- **Status:** planning to initial seminar in November with additional seminars in the future ... learn as we go
- **Deal Structure:** pending
- **Next Steps:** formalize agreement, conduct energy assessments in selected markets, formalize Go-to-Market plans and continue rolling out to additional market segments

Texas Utility

- **Objective:** offer energy saving solutions to large business customers building new green data center showcases
- **Solution:** IBM is providing lessons learned to both the utility and end-user customer
- **Status:** RFP in process
- **Deal Structure:** TBD
- **Next Steps:** TBD

Thank You!

- **For more information contact:**

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