

Energy Efficiency in Iowa

NARUC Energy Regulatory Partnership Program

The Public Services Regulatory Commission of Armenia
and The Iowa Utilities Board



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June 16, 2010

Terminology

- Energy Efficiency
- Load Management
- Capacity
- Energy
- Investor-Owned Utilities (IOUs)
- Consumer-Owned Utilities (COUs)



Why Utilities Implement Energy Efficiency?

- Economic cost benefit analysis for IOUs shows utility system benefits exceed costs.
 - IOUs/customers get back \$2 on every \$1 invested.
- Utilities are an efficient channel for support of energy efficiency.
 - Contact with customers.
 - Ability to analyze energy related economics.
- Dollars saved by energy efficiency remain in Iowa.



Stages of Development

1980-1990: Information and Experiments

- IUB required IOUs to provide energy audits to customers.
- Conservation pilot programs provided early lessons.
- Power plant construction triggered interest in increase energy conservation activities.
- State legislation authorized the IUB to establish formal, specific procedures for IOUs.
 - Goals were to spend 2% of revenues on electric energy efficiency programs and 1.5% of revenues on natural gas energy efficiency programs.
 - Programs by COUs were voluntary, with mandatory reporting of results.



Stages of Development

1991-Present: Plans and Programs

- IUB established specific rules for utility energy efficiency programs.
- IOUs plans critiqued and approved by the IUB.
- IOUs operated and reviewed their first energy efficiency plans (1995) and have filed new plans. (2003 and 2008)
- A heightened interest in energy efficiency. (2007-2009)
 - COUs required to file specific plans.
 - IOUs encouraged to set higher goals.
 - IUB required to increase oversight.
 - Office of Consumer Advocate spearheading increased input from stakeholders.



Energy Efficiency Evolution

	1980's	1990's	Early 2000's	Current
Information	Energy Audits for Homes and Small Businesses	Energy Audits – Industrial Comprehensive Studies	Energy Audits – Industrial Comprehensive Studies & Design Assistance	Energy Audits – Industrial Comprehensive Studies, Design Assistance, Ongoing Renovation Assistance, Customer Designed Projects
Incentives	Trial or "Pilot" projects with small monetary incentives to customers	Rebates – Grants to Customers	Various Rebates	Various Rebates
		Loans (Limited Success)	Loans – Targeted to Expensive Equipment	Loans from various sources – including government
		Direct Installation – Low Income	"Performance Contracts" – Vendors loan money – repaid from energy savings	"Performance Contracts" – Vendors loan money – repaid from energy savings
			Direct Installation – Low Income	Direct Installation – Low Income
Vendors		General Information to Vendors	General Information to Vendors	Vendor Standards
			Training Incentives to Vendors	

Energy Efficiency Start-up Checklist

- Find existing energy information.
- Determine if there is monthly metered energy data for individual customers.
 - Sort by types of customers.
 - Obtain averages for customer groups.
 - Look for anomalies in the data.
- Visit customers.
 - Discuss energy usage, reasons for anomalies, and energy needs.



Energy Efficiency Start-up Checklist

- Conduct more organized, documented energy audits.
 - Find people with scientific knowledge about buildings, energy usage, and commercial or industrial processes.
 - Establish a simple checklist for surveying or inventories of building characteristics.
- Establish some "pilot" projects or experimental projects.
 - Look for customers who may be anticipating changes.



Energy Efficiency Program Design

- Determine the goal or intended outcome of the program.
- Understand the specific customer group.
 - Energy consumption habits.
 - Energy or other needs.
 - Benefits of the program to the customers.
- Determine the program related costs and benefits.



Energy Efficiency Programs

IOUs energy efficiency programs:

– New Construction

- Goal – minimize "lost opportunities."
- Technical assistance to architects and developers.
- Incentives to builders and owners.

– Building Renovation

- Energy audits to identify opportunities.
- Technical assistance and incentives for customers to:
 - Insulate, install windows, replace major heating, ventilation, air conditioning equipment, install lights, appliances, or other equipment.



Energy Efficiency Programs

- Industrial Renovation:
 - Assistance and incentives for factory-wide projects;
 - Targeted incentives for motors, compressed air efficiency, lighting; and
 - One program allows large customers to bid for incentives.
- Load Management/Demand Response:
 - Incentives for interrupting peak energy use; and
 - Credits for allowing air conditioners to be "cycled" as needed.
- Special programs:
 - Recycling old refrigerators;
 - Weatherizing low-income homes;
 - Training vendors and "trade allies"; and
 - Planting trees.



Energy Efficiency Cost Recovery

- Costs are paid by all customers through small addition to monthly bills.
- IOUs allowed to recover energy efficiency costs through an automatic rate "rider" or pass through.
- The energy efficiency cost recovery rider is reconciled (trued-up) annually to prevent over-recovery or under-recovery.



Energy Efficiency Goals

IOU's have set the following goals:

- Electric

- First year savings of 520,000 MWh in 2013. (1.4% of Retail Electric Sales.)
- Projected 2013 spending for energy efficiency programs of \$133 million. (80% spent on customer incentives.)

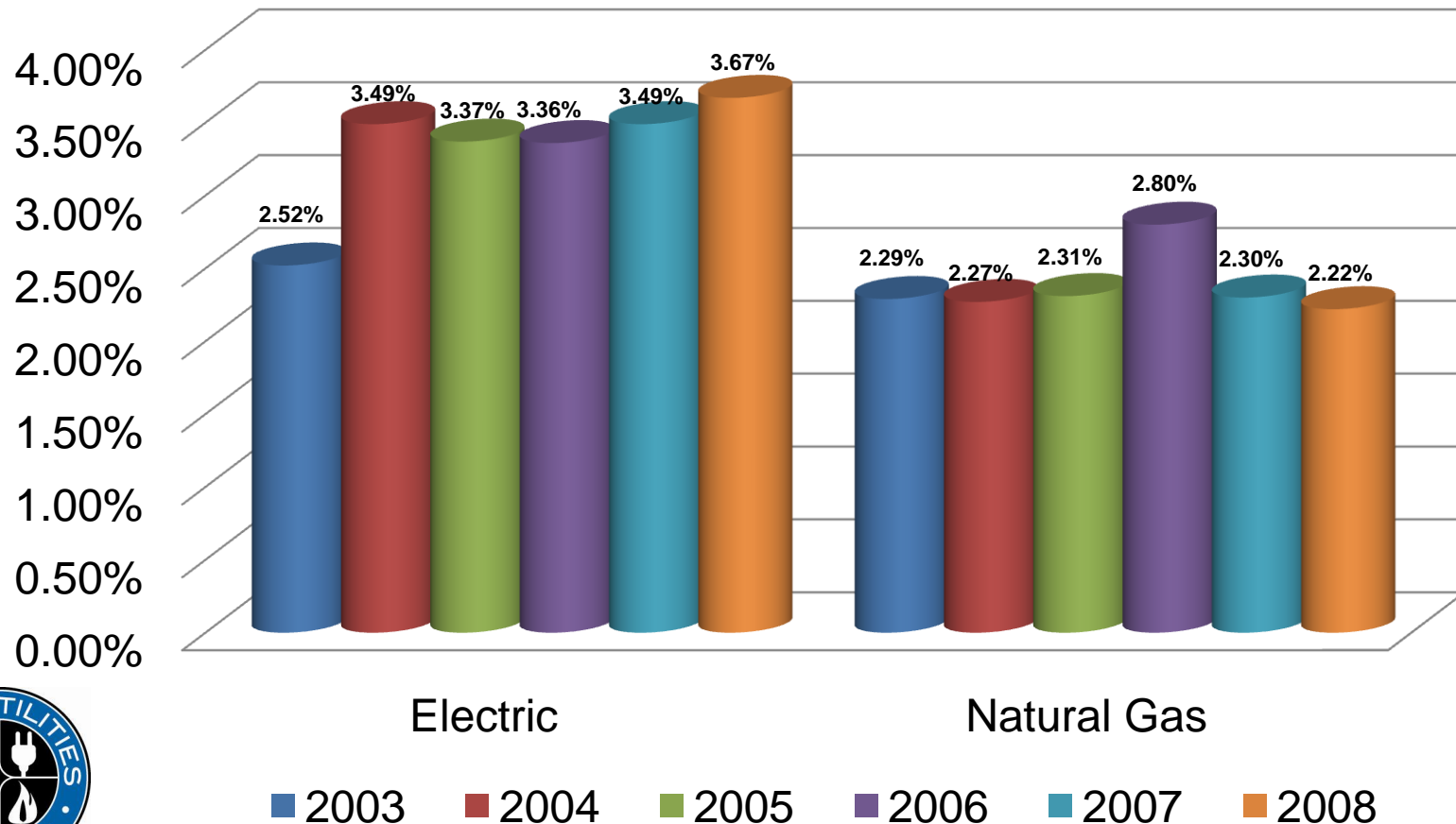
- Gas

- First year savings of 1,040,000 MCF in 2013. (1.0% of retail natural gas sales.)
- Projected 2013 spending for energy efficiency programs of \$49 million. (75% spent on customer incentives.)



Energy Efficiency Results

Iowa Investor-Owned Utilities Spending on Energy Efficiency and Load Management (As a Percentage of Utilities' Retail Sales Revenue)



Energy Efficiency Results - *Electric*

Iowa Investor-Owned Utilities
 Megawatt Hours Saved in a Year
 As a Result of Energy Efficiency Measures Initiated in That Year
 (Incremental Savings)

	2003	2004	2005	2006	2007	2008
Residential	27,760	33,424	62,771	63,992	64,224,	64,867
Energy Efficiency	27,727	33,398	60,072	65,532	63,272	64,619
Load Management	33	26	2,669	-1,540	952	248
Non-Residential	134,521	164,636	161,992	209,976	219,703	227,335
Energy Efficiency	133,791	164,636	157,681	209,433	218,625	227,335
Load Management	730	0	4,311	533	1,078	0
Total	162,281	198,059	224,763	273,968	283,972	292,201

Note: Rows and Columns may not sum because of independent rounding.
 Source: Utilities' reports submitted to the Iowa Utilities Board



Energy Efficiency Results - *Natural Gas*

Iowa Investor-Owned Utilities
Thousand Cubic Feet of Natural Gas Saved in a Year
As a Result of Energy Efficiency Measures Initiated in That Year
(Incremental Savings)

	2003	2004	2005	2006	2007	2008
Residential	473,365	529,792	661,301	692,112	592,431	594,847
Non-Residential	146,836	131,092	210,841	175,719	213,587	191,818
Total	620,201	660,884	872,142	867,861	806,018	786,665

Note: Rows and Columns may not sum because of independent rounding.

Source: Utilities' reports submitted to the Iowa Utilities Board



Lessons Learned

- Utility programs should be based on a good economic principle; cost-effectiveness based on minimizing system costs.
- Customers should be given some equity in availability or access to energy efficiency, by offering programs for many types of customers, and through programs for low-income customers.
- Utilities should be encouraged to talk with and understand customers' use of energy, and should engage major customers or customer associations in helping develop programs.
- Recovery of costs should be quick and linked to energy use.
- Utilities should be given specific, feasible goals for several years in advance, and should be required to report on progress.



Questions?



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