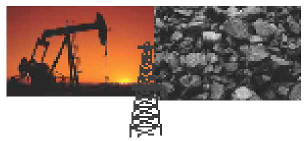
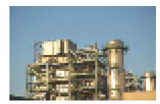
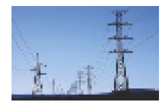
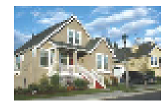
Pennsylvania Public Utility Commission

ARRA Technical Conference
November 19, 2009
Peter Terranova
Vice President, UGI Utilities, Inc.

Three times more energy reaches the customer with natural gas.

Electricity — 32% Efficient

	Extraction, Processing & Transportation	Conversion[1]	Distribution	Delivered To Customer	Total CO_2
Energy	100 MMBtu Source Energy	95	34	32	
CO_2 emissions from typical household use* (tons)	1.4	8.7	0	0	10.1

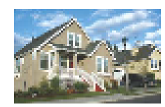





1. Based on 2007 actual generation mix of all energy sources

Natural Gas — 92% Efficient

	Extraction, Processing & Transportation	Conversion	Distribution	Delivered To Customer	Total CO_2
Energy	100 MMBtu Source Energy	Not Applicable	93	92	
CO_2 emissions from typical household use* (tons)	0.5	Not Applicable	0.1	5.8	6.4





* Energy consumed in space and water heating, clothes drying and cooking.

Energy Efficiency Gas vs Electric Full-Cycle Energy Use (MMBtu/Year)

	Natural Gas	Electricity	Oil/1	Propane
Heating	74.3	31.5	74.3	74.3
Water Heating	25.4	16.6	29.1	25.4
Drying	3.8	3.3	3.3	3.8
Cooking	3.3	1.8	1.8	3.3
Site Use	**107**	**53.2**	**108.5**	**107**
Losses	*14*	*114*	*28*	*18*
Total	**121**	**167**	**137**	**125**

/1: Assume electric cooking/drying
Source: AGA

CO2 Emissions For New Homes-Full Fuel Cycle (Metric Tons/year)

Natural Gas	**6.4**
Electricity	**10.1**
Oil	**9**
Propane	**7.6**

Gas vs Electric Water Heating Example

	Installed Cost Premium vs Electric	Gas Annual Operating Cost savings	Payback on Incremental Investment	**CO2 Avoided**
Gas Water Heater	$900	$200	4.5 years	1.6 Tons/year

Energy Efficiency-Gas vs Gas Heating

	1st cost premium	Efficiency	Energy Savings (annual)	Payback
20 year old furnace	N/A	**70%**	N/A	N/A
Standard new furnace-DOE Minimum	N/A	**80%**	**$150**	N/A
HE furnace	**$800**	**92%**	**$ 180**	**4.5 years**

Consumer Choices

- Consumers make decisions in a world where uncertainty, unclear transaction costs, and conflicting information prevail
- There is a tendency toward inertia; decisions require time and effort
- NRRI Study:
  - *"Consumers tend to overvalue current cost and undervalue future savings"*

Programs/Rebates Will Prompt Better Choices

- Full Fuel Cycle analysis shows gas end-use advantages - *first cost premium*
- High Efficiency gas advantages over standard efficiency - *first cost premium*
- Consumers education to raise awareness of financial and societal consequences of action or inaction
- Consumers “nudged” to make optimal decisions-financial incentives work

NRRI* Study

- Grant rebates for electric to gas substitutions where gas is better
- Incentives to home builders to install gas
- Recognize and address impact on electric utilities when customers convert to gas

*National Regulatory Research Institute

ARRA*

- States should align utility financial incentives with helping customers reduce usage
- Timely cost recovery and earnings opportunities for measurable/verifiable energy savings

*American Recovery and Reinvestment Act

DOE and EPA Action Plan for Energy Efficiency

- Strong commitment to long term energy efficiency as a resource
- Sufficient, timely, stable program funding
- Align utility incentives and delivery of cost effective energy efficiency
- Modify ratemaking practices to promote energy efficiency

Guiding Principles

- Consumers should be educated on opportunities, costs, savings, environmental benefits
- Encourage conversions from electric to gas where it is cost effective
- Encourage high efficiency gas
- Integrated resource planning by utilities under state sponsorship
- Rate mechanisms that encourage utilities to pay customers to use less of their product

Integrated Resource Planning

- NRRI Study
- ➢ The standard IRP process is utility centric-risks ignoring switching as an option
- ➢ Utilities have profit maximizing stake which is counter to encouraging customer to use less or switch
- ➢ As competitors gas and electric utilities unable to cooperate to formulate joint plan
- ➢ Look to experience of other states-Missouri, Arkansas, Maryland, Texas, Florida

Questions?

Significant Opportunity In our Market

- UGI market share in our service area is < 50%-*Conversion potential*
- UGI Gas water heating market share among customers is ~ 75%-*additional burner tips*
- Drying and cooking market share are ~ 15% and 20% respectively-*additional burner tips*
- Primary use today for non-customers are oil and electricity
- Additional burner tips in customer homes mainly against electricity

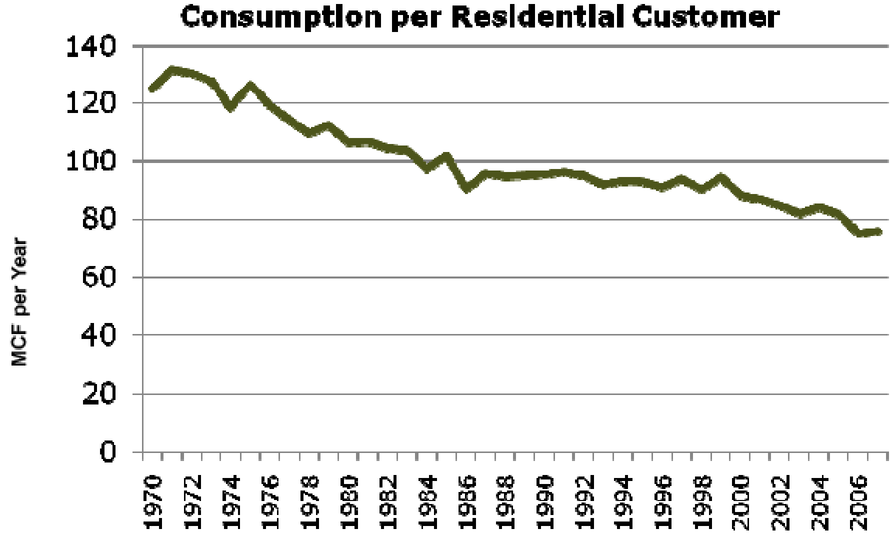
Natural Gas Use Per Customer

Declining Use per
Natural Gas Residential Customer Since 1970

N

14
12
10
8
6
4
2

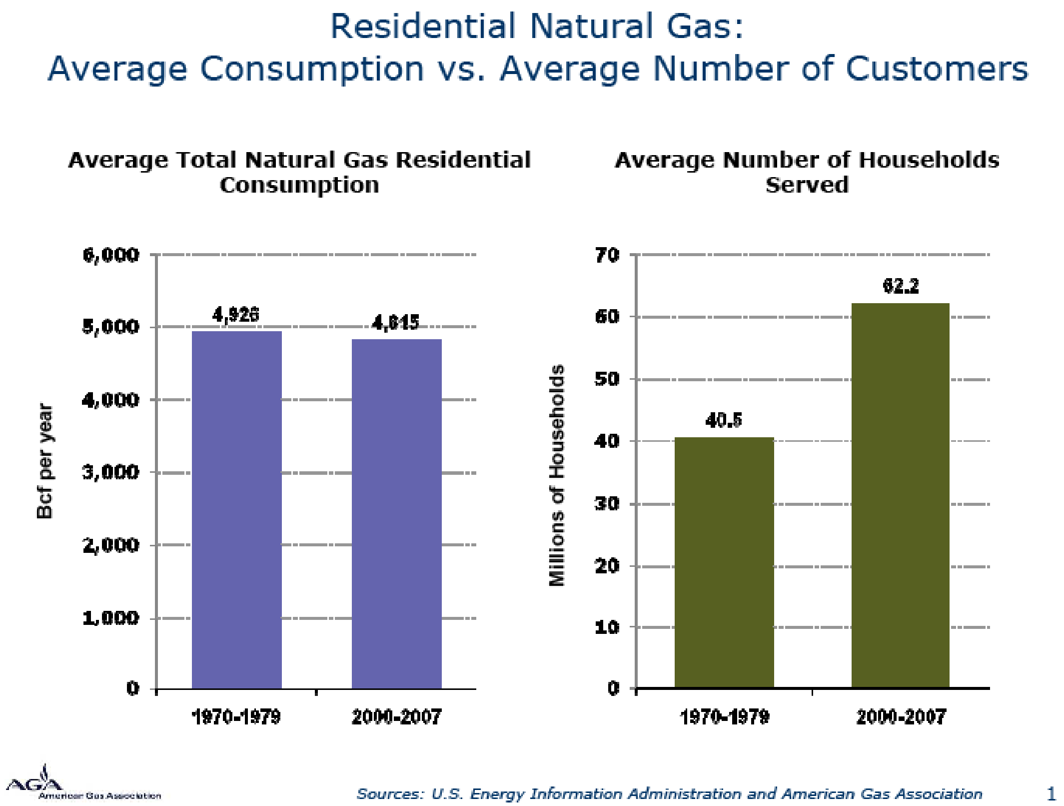
MCF per Year



Sources: U.S. Energy Information Administration and American Gas Association
Note: Data is "weather normalized" or adjusted to reduce the impact of abnormally warm or cold weather.

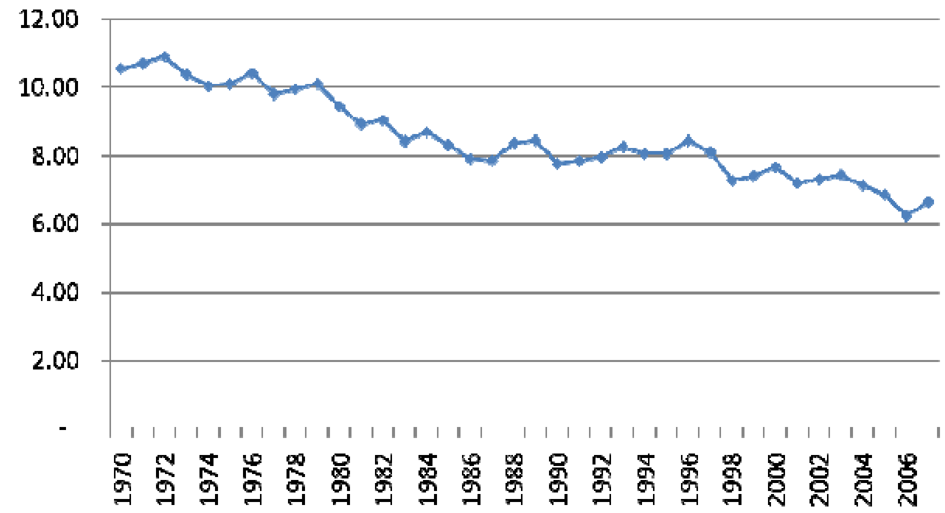
0 0

Customers/Total Consumption



Environmental Impact

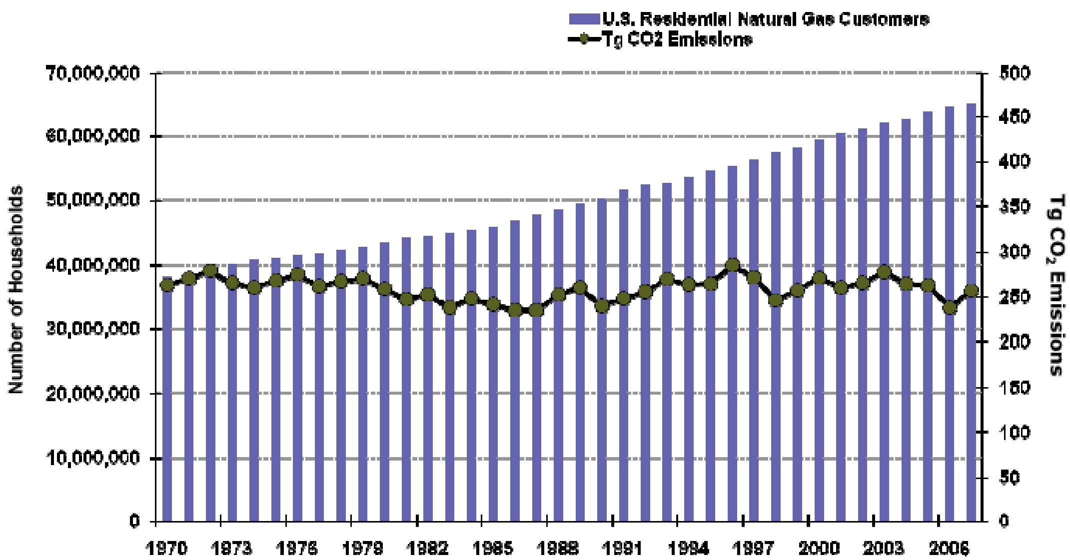
Tons of CO2 Emissions* Per Residential and Commercial Natural Gas Customer



*From consumption of natural gas only
Source: Calculated from Energy Information Administration data

Environmental

U.S. Natural Gas Customers Lead in Reducing Greenhouse Gas Emissions



AGA American Gas Association

Sources: EIA, Gas Facts, EPA (Inventory of US Greenhouse Gas Emissions & Sinks 1990-2006).

Rate Design Methods that Eliminate a Utility's Disincentive to Promote Energy Efficiency (Source: AGA)

Rate Design By State

- Approved RDM
- Approved RDM / Flat Monthly Fee
- Flat Monthly Fee
- Flat Monthly Fee / Rate Stabilization
- Rate Stabilization