American Gas Association

October 11, 2011

To: expartecommunciation@hq.doe.gov (sent via email)

Re: Memorandum Summarizing Ex Parte Communication

On October 11, 2011, representatives of the American Gas Association met with staff of the U.S. Department of Energy to discuss issues raised by the Department's direct final rule and notice of proposed rulemaking prescribing energy conservation standards for residential furnaces, residential central air conditioners and heat pumps (*Energy Conservation Program: Energy Conservation Standards for Residential Furnaces and Residential Central Air Conditioners and Heat Pumps*, Direct Final Rule, 76 Fed. Reg. 37,408 (June 27, 2011); *Energy Conservation Program: Energy Conservation Standards for Residential Furnaces and Residential Central Air Conditioners and Heat Pumps*, Notice of Proposed Rulemaking, 76 Fed. Reg. 37,549 (June 27, 2011). AGA raised several concerns with regard to the technical analysis underlying the rule, and urged the Department to withdraw the direct final rule to take a closer look at the analysis.

The following persons attended the meeting:
Representing the Department of Energy
- Daniel Cohen
- John Cymbalsky
- Roland Risser
- Eric Stas
- Jennifer Tiedeman

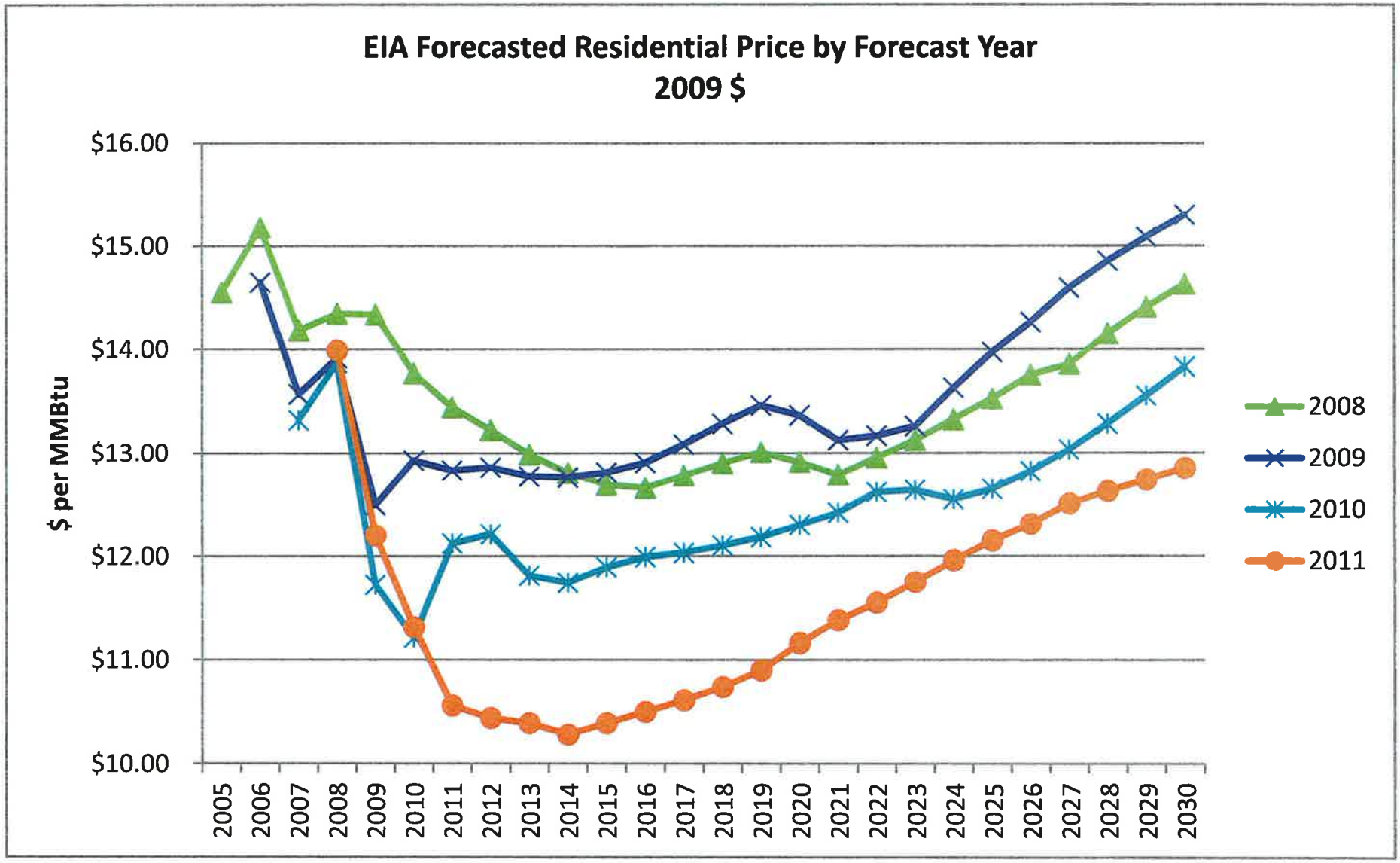
Representing the American Gas Association
- James A. Ranfone
- Andrew K. Soto

Documents reviewed and discussed at the meeting are attached.

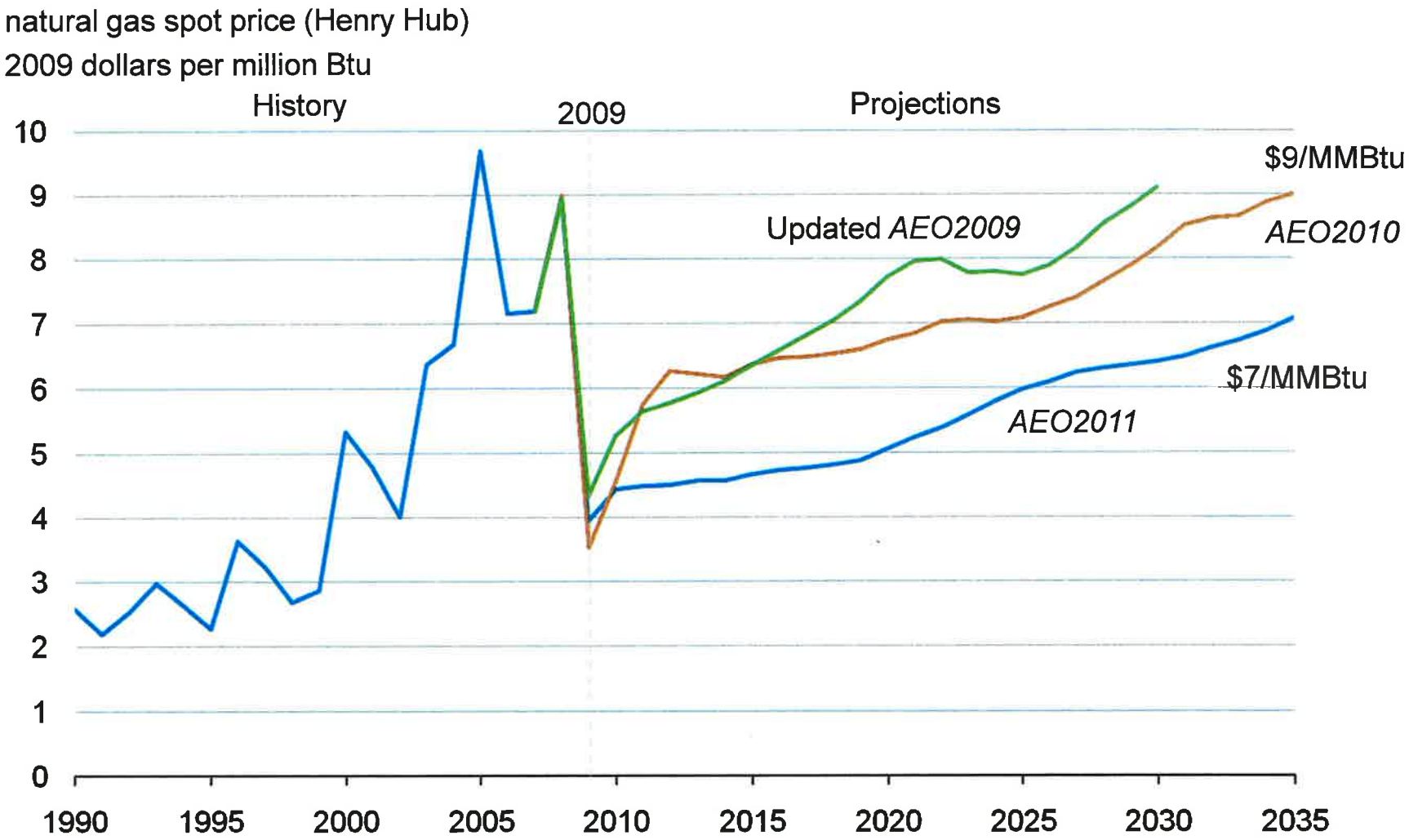
Respectfully submitted,

/s/ Andrew K. Soto

Andrew K. Soto
Senior Managing Counsel, Regulatory Affairs
American Gas Association


EIA Forecasted Residential Price by Forecast Year
2009 $
$ per MMBtu
$16.00
$15.00
$14.00
$13.00
$12.00
$11.00
$10.00
2005
2006
2007
2008
2009
2010
2011
2012
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022
2023
2024
2025
2026
2027
2028
2029
2030
2008
2009
2010
2011

Natural gas price projections are significantly lower than past years due to an expanded shale gas resource base



Sources: EIA, Annual Energy Outlook 2011; EIA, Annual Energy Outlook 2010; and EIA, An Updated Annual Energy Outlook 2009 Reference Case

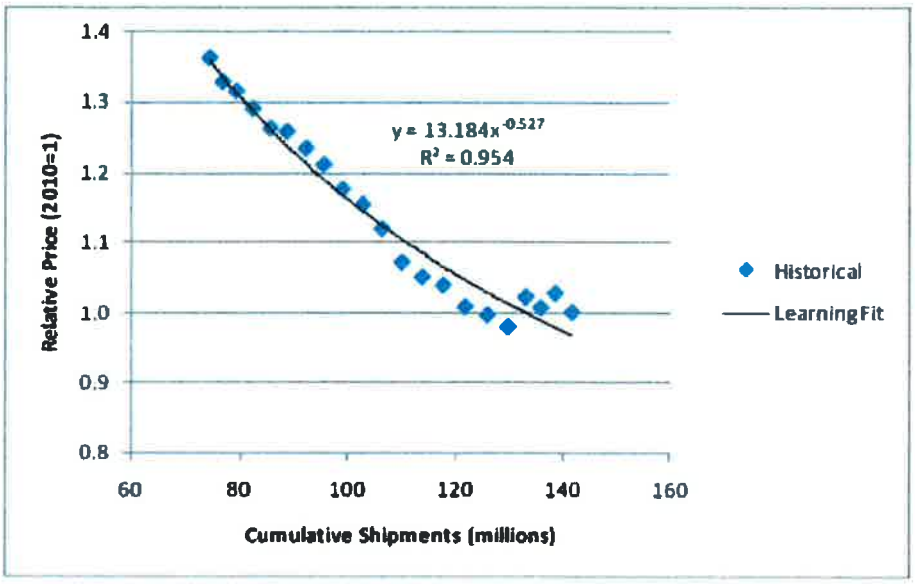


Figure 62: DOE Projection of Furnace Cost as a Function of Cumulative Historic Shipments
Source: DOE Direct Final Rule, Technical Support Document Appendix 8-J6

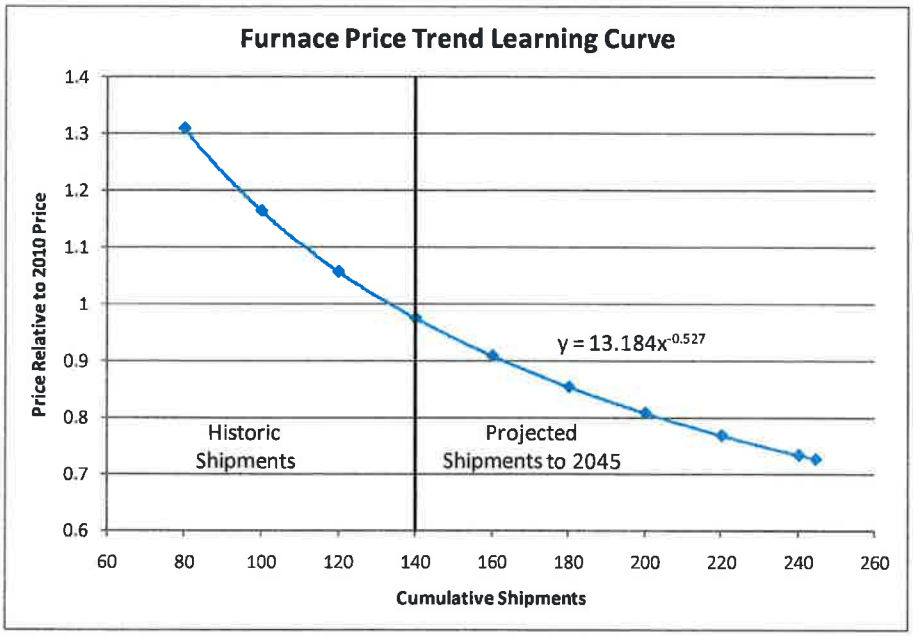


Figure 63: Extension of DOE Learning Rate to Projected Furnace Prices through 2045

Multi-Year Program Plan -

Building Regulatory Programs -

U.S. Department of Energy -

Energy Efficiency and Renewable Energy -

Building Technologies Program -

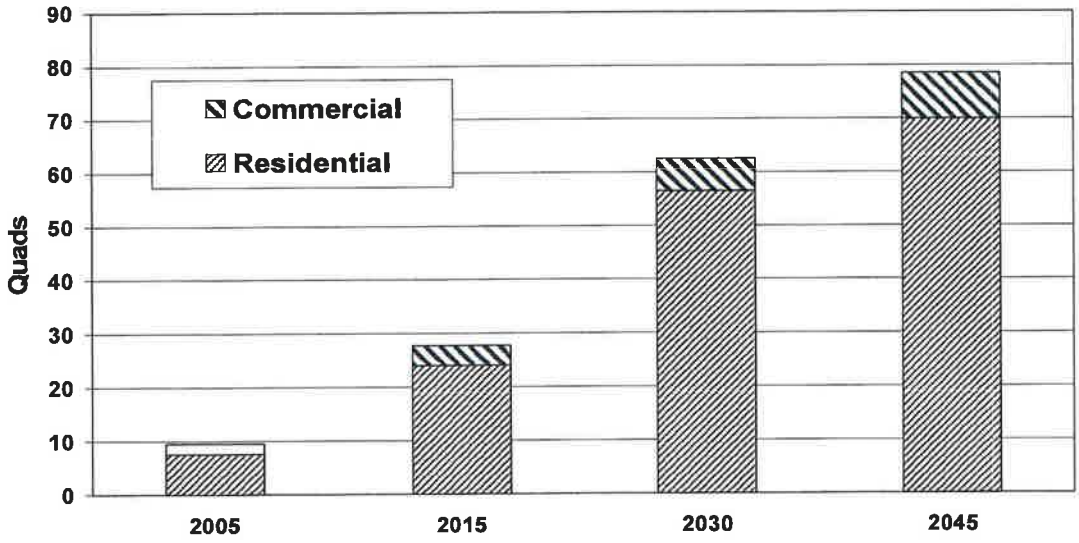
October 2010

[This plan will be updated based on actual appropriations, future budget requests and other program developments; the next significant revision is expected to be completed by spring 2011]

Product	Life Expectancy
Furnace, Electric	14 years
Furnace, Warm Air, Gas	16 years
Furnace, Warm Air, Oil	18 years
Transformer	**32 years**

The estimated cumulative net present value of consumer benefit amounted to $64 billion at the end of 2005; standards are projected to save $241 billion by 2030, growing to $269 billion by 2045, while the cumulative cost of DOE's program to establish and implement these standards over the past 20 years is in the range of $200-250 million. Annual carbon savings reach 38 million tons by 2020 and the cumulative savings by 2045 is estimated at 1,200 million tons.[11] Figure 4-6 shows estimated energy savings through 2045.

Figure 4-6 Cumulative Primary Energy Savings for Residential and Commercial Products



Since President Obama took office in January 2009, DOE has finalized seven energy conservation standards which may save up to 10 quads of primary energy by 2030. In addition, DOE codified the energy conservation standards prescribed by EISA 2007 which may save up to 15.29 quads by 2030. The seven standards developed by DOE may save consumers up to $103 billion on their utility bills by 2030, while the standards prescribed by EISA 2007 may save consumers up to $159 billion by 2030.

[11] http://efficiency.lbl.gov/drupal_files/ees/Realized%20and%20Projected%20Impacts%202008%20938510.pdf

Table 12: Summary Results for 90% Condensing Furnace – Integrated Scenario Analysis

	North Composite		North Retrofit		North New Construction	
	LCC Savings	Payback Period Median/Avg	LCC Savings	Payback Period Median/Avg	LCC Savings	Payback Period Median/Avg
AEO 2010 (DOE Baseline)	$155	10.1 / 12.8	$90	12.9 / 15.9	$343	2.5 / 4.3
AEO 2011 Ref Case 13% Fixed Gas Costs	-$4	16.3 / 20.5	-$64	20.4 / 25.3	$172	4.1 / 7.1
AEO 2011 High Shale 13% Fixed Gas Costs	-$18	18.0 / 22.8	-$78	22.7 / 28.1	$157	4.3 / 7.9
AEO 2011 Ref Case Citygate Gas Price	-$39	21.7 / 28.7	-$98	27.0 / 35.4	$135	5.6 / 9.9
AEO 2011 High Shale Citygate Gas Price	-$48	23.9 / 31.3	-$107	29.7 / 38.8	$125	5.9 / 10.5

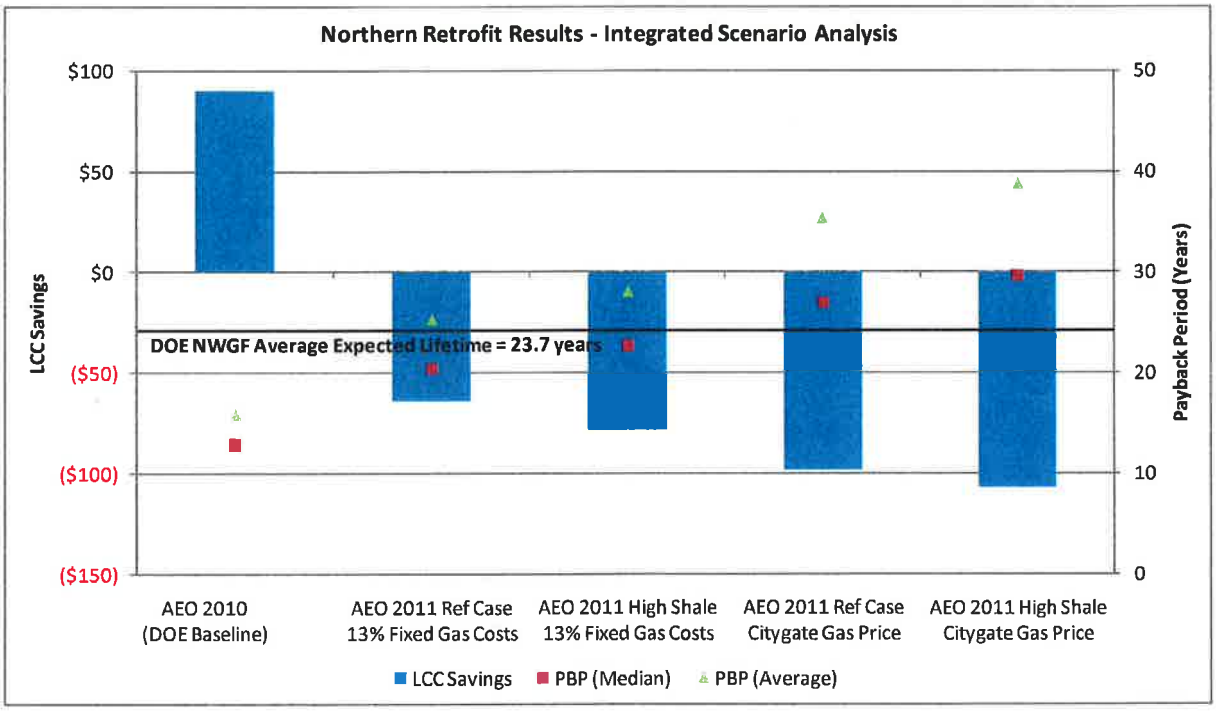


Figure 77: North Region Retrofit LCC and PBP Results for Integrated Scenarios

NEW CONSTRUCTION COST FOR VARIOUS HVAC SYSTEMS
EXHIBIT B - SMALL- TO MEDIUM-SIZE HOME - 1,500 to 2,200 SQUARE FEET
(Costs of HVAC equipment does not include labor or installation; all other categories include material and labor.)

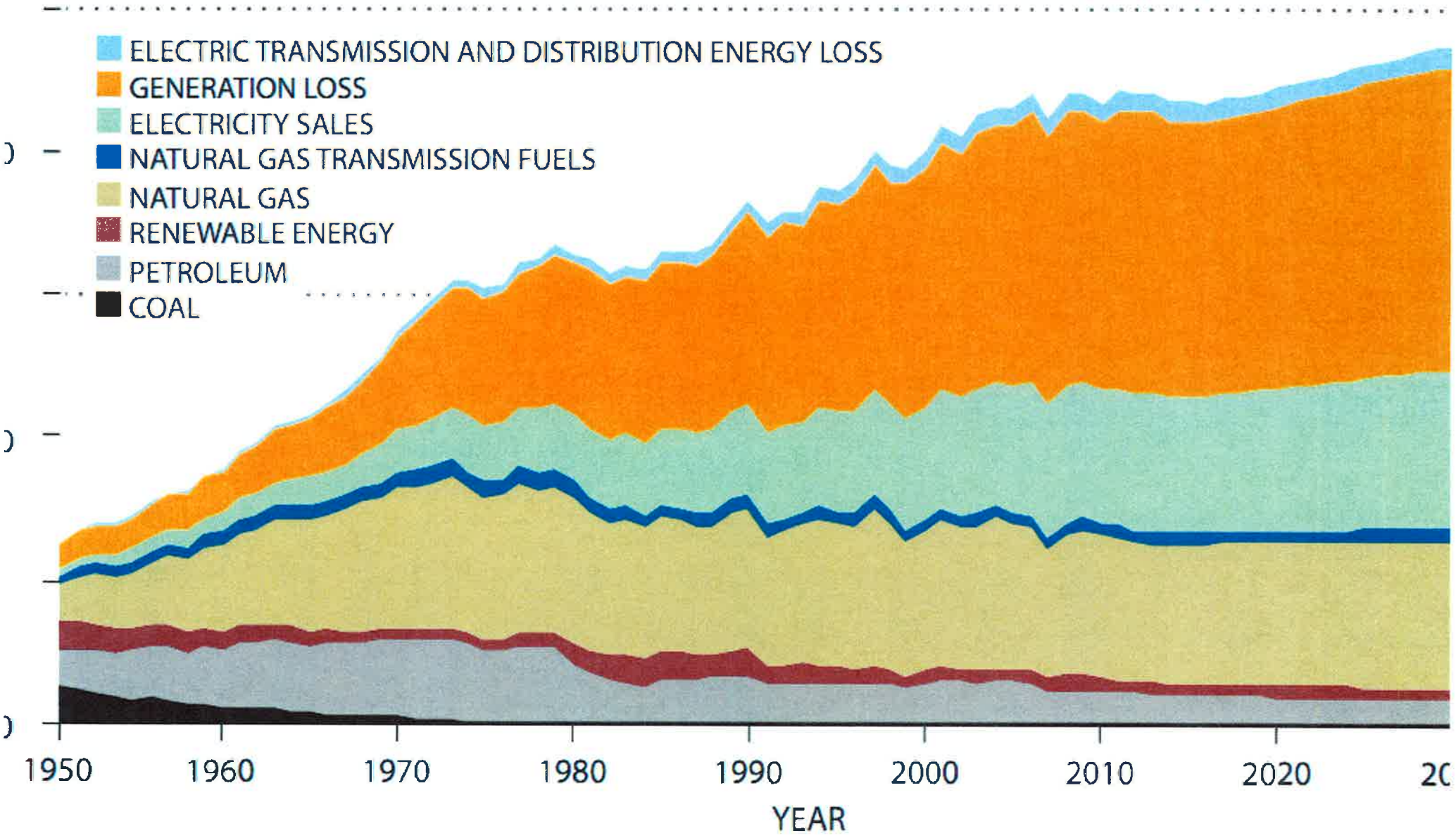
Description	Air Handler	Furnace	Evaporator Coil	Outdoor Condenser	Thermostat	Vent[4]	Gas Line[4]	Ductwork[4]	Electrical Wiring[4]	Base Installation	Total	Incremental Cost
GAS FURNACE AND ELECTRIC AIR CONDITIONER												
System 1 - 80% Gas Furnace and 13-Seer A/C												
80%-Efficiency Gas Furnace, 70,000 BTU, 3.0-Ton Evaporator Coil, 3.0 Ton, 13 Seer, Single-Stage Compressor, 1,200-CFM Multi-Speed Blower, Digital Thermostat, "B" Vent Flue Piping	-	$550	$620	$885	$46	$430 [1]	$1,040	$1,480	$185	$1,500	**$6,736** Present Standard	Base
System 2 - 90% Gas Furnace and 14-Seer A/C												
90%-Efficiency Gas Furnace, Single-Stage Burner, 70,000 BTU, 3.0 Ton, 14 Seer, Single-Stage Compressor, 3.0-Ton Evaporator Coil, 1,200-CFM Multi-Speed Blower, Programmable Thermostat, PVC Flue Piping	-	$1,010	$650	$1,240	$77	$270 [2]	$1,040	$1,480	$185	$1,500	**$7,452** Future DOE Standard	$716
System 3 - 95% Gas Furnace and 18-Seer A/C												
95%-Efficiency Gas Furnace, 2-Stage Burner, 70,000 BTU, 3.0 Ton, 18 Seer, 2-Stage A/C, 3.0-Ton Evaporator Coil, 1,200-CFM Variable-Speed Blower, 2-Stage Programmable Thermostat, PVC Flue Piping	-	$1,940	$930	$3,565	$98	$270 [2]	$1,040	$1,480	$185	$1,500	**$11,008**	$4,272
ELECTRIC FURNACE AND ELECTRIC AIR CONDITIONER												
System 4 - 20-KW Electric Furnace and 13-Seer A/C												
3.0 Ton, 13-Seer A/C, Single-Stage Compressor, 1,200 CFM, Multi-Speed Air Handler, 3.0-Ton Evaporator Coil, 20-KW Heat Package, Digital Thermostat	$950	-	Built In	$885	$46	-	-	$1,480	$490	$1,500	**$5,351** Present Standard	($1,385)
System 5 - 20-KW Electric Furnace and 14-Seer A/C												
3.0 Ton, 14-Seer A/C, Single-Stage Compressor, 1,200 CFM, Multiple-Speed Air Handler, 3.0-Ton Evaporator Coil, 20-KW Heat Package, Programmable Thermostat	$980		Built In	$1,240	$46	-	-	$1,480	$490	$1,500	**$5,736** Future DOE Standard	($1,000)

Note: Red numbers in parentheses indicate savings to the builder.

Description	Air Handler	Furnace	Evaporator Coil	Outdoor Condenser	Thermostat	Vent[4]	Gas Line[4]	Ductwork[4]	Electrical Wiring[4]	Base Installation	Total	Incremental Cost
AIR-SOURCE HEAT PUMP WITH AUXILIARY ELECTRIC HEAT												
System 6 - 3.0-Ton, 7.7-HSPF Heat Pump												
3.0 Ton, 7.7-HSPF Heat Pump, Single-Stage Compressor, 20-KW Heat Package, 1,200 CFM, Multi-Speed Air Handler, 3.0-Ton Evaporator Coil, Digital Thermostat	$950	-	Built In	$1,550	$77	-	-	$1,480	$490	$1,500	**$6,047** (**$689**) **Present Standard**	
System 7 - 3.0-Ton, 8.3-HSPF Heat Pump												
3.0 Ton, 8.3-HSPF Heat Pump, Single-Stage Compressor, 20-KW Heat Package, 1,200 CFM, Multiple-Speed Air Handler, 3.0-Ton Evaporator	$980		Built In	$2,170	$98	-	-	$1,480	$490	$1,500	**$6,718** (**$18**) **Future DOE Standard**	
System 8 - 3.0-Ton, 18-Seer Heat Pump												
3.0 Ton, 13-Seer Heat Pump, 2-Stage Compressor, 20-KW Heat Package, 1,200 CFM, Variable-Speed Air Handler, 3.0-Ton Evaporator	$2,075	-	Built In	$4,495	$98	-	-	$1,480	$490	$1,500	**$10,138**	$3,402
DUAL FUEL - HEAT PUMP WITH GAS AUXILIARY HEAT												
System 9 - Dual-Fuel, 80% Gas Furnace and 18-Seer Heat Pump												
80%-Efficiency Gas Furnace, 1-Stage Burner, 70,000 BTU, 3.0 Ton, 18 Seer, 2-Stage Compressor, 3.0-Ton Evaporator Coil, 1,200 CFM, Multi-Speed Blower, 2-Stage Programmable Thermostat, "B" Vent Flue Piping	-	$550	$930	$4,495	$246	$430 [1]	$1,040	$1,480	$185	$1,500	**$10,856**	$4,120
System 10 - Dual-Fuel, 95% Gas Furnace and 18-Seer Heat Pump												
95%-Efficiency Gas Furnace, 2-Stage Burner, 70,000 BTU, 3.0 Ton, 18 Seer, 2-Stage Compressor, 3.0-Ton Evaporator Coil, 1,200 CFM, Variable-Speed Blower, 2-Stage Programmable Thermostat, PVC Flue Venting	-	$1,940	$930	$4,495	$246	$270 [2]	$1,040	$1,480	$185	$1,500	**$12,086**	$5,350

Note: Red numbers in parentheses indicate savings to the builder.

Figure 3-19. U.S. Residential Energy Consumption by Fuel



ıewable energy includes wood, and petroleum includes liquefied gases such as propane.
ıergy Information Administration.