

Kansas City Power & Light Company
Case No ER-2012-0174

Energy Efficiency and Environmental Impacts

Energy Efficiency of Energy Delivered to the Home¹

	Extraction	Processing	Transportation ²	Conversion	Distribution	Cumulative Efficiency
Natural Gas	97.00%	96.90%	99.00%	-	98.80%	91.90%
Oil	96.30%	93.80%	98.80%	-	99.30%	88.60%
Propane	95.90%	95.30%	98.60%	--	99.20%	89.30%
Electricity:						
Coal-Based	98.00%	98.60%	99.00%	32.70%	93.80%	29.30%
Oil-Based	96.30%	93.80%	98.80%	31.70%	93.80%	26.50%
Natural Gas-Based	97.00%	96.90%	99.00%	42.10%	93.80%	36.70%
Nuclear-Based	99.00%	96.20%	99.90%	32.70%	93.80%	29.20%
Other ³ -Based	--	--	--	56.00%	93.80%	49.70%
Electricity Weighted Average ⁴	-	-	-	35.80%	-	31.90%

Source: *Source Energy and Emission Factors for Building Energy Consumption*, Prepared by the Gas Technology Institute for the Codes & Standards Research Consortium, August 2009.

--" indicates not applicable or no efficiency loss.

¹ Efficiency of energy delivered to the home refers to the energy used or lost, from the point of extraction to the residence, not including the end-use device.

² Transportation of natural gas from processing plant to local distribution system; transportation of fossil fuel to electricity generating plants.

³ Includes renewable energy

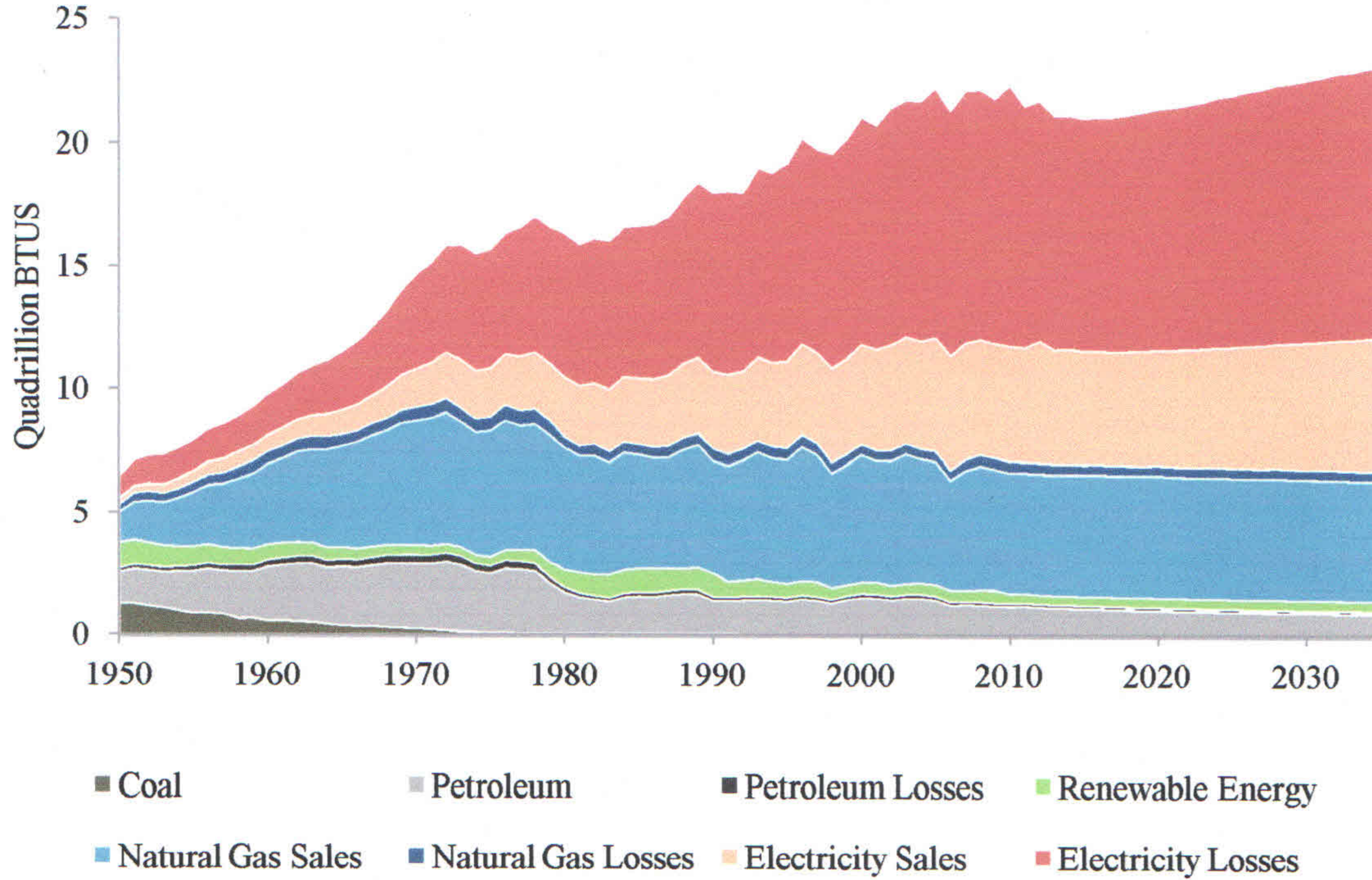
⁴ Current national weighted average mix of all power generation sources.

Source for table: American Gas Association, "A Comparison of Energy Use, Operating Costs, and Carbon Dioxide Emissions of Home Appliances," October 20, 2009, pages 6.

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Residential Energy Consumption



Full-Fuel-Cycle Carbon Dioxide Equivalent Emissions For New Homes¹
(Metric Tons of CO₂e² per Average Household Energy Use)

Natural Gas	6.4
Electricity ³	10.1
Oil	9.0
Propane	7.6

¹ Space heating, water heating, cooking, and clothes drying only

² Includes impact of unburned methane gas

³ Based on actual generating mix in 2007

Source for figure: American Gas Association, "Squeezing Every BTU: Natural Gas Direct Used Opportunities and Challenges," January 2012, Figure 4, page 18. Source for table: American Gas Association, "A Comparison of Energy Use, Operating Costs, and Carbon Dioxide Emissions of Home Appliances," October 20, 2009, page 11.

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**Residential Average Bill Impacts:¹
Comparison of KCP&L-Kansas To KCP&L-Missouri**

Line	Description (a)	General Use (b)	Space Heat (Single Meter) (c)
1	Percentage Change Due to KCP&L-Kansas 2010 Rate Case		
2		Winter	28.2%
3		Annual	18.4%
4	Percentage Change Due to KCP&L-Missouri Recommended Current Rate Change with Revenue Shift ²		
5	Eliminate Space Heat		
6		Winter	16.5%
7		Annual	6.1%
8	Freeze Space Heat		
9		Winter	12.5%
10		Annual	4.0%

¹ Bill calculations based on average usage for each rate schedule in each season. These usage levels are calculated from Schedule PMN-3, pages 26 and 28, Docket No. 10-KCPE-415-RTS in Kansas, and from KCP&L's Response to Data Request MGE-4 in this case in Missouri. The annual bill consists of eight winter billing months and four summer billing months.

² The bill increases on lines 6-10 will be larger if the Commission approves a Residential base revenue increase in this case. For example, with the assumed revenue increase illustrated in Schedule FJC-9, the bill impacts would be as follows:

	General Use	Space Heat
Eliminate Space Heat		
	Winter	21.9%
	Annual	11.2%
Freeze Space Heat		
	Winter	17.8%
	Annual	9.1%