Residential, Commercial Conversion Costs

Table 16 shows three sets of cost estimates for residential conversion to gas. The estimates vary considerably, depending on the extent of the conversion. At the low end, FNG (2005) gives a conversion cost of $1,000–$1,500 to replace an oil-fired gun with a gas-fired gun. At the high end, Laabs (2012) provided cost estimates for a complete replacement, reaching upwards of $12,000–$20,000 for a boiler replacement, chimney upgrade (or replacement) and other hydronic (or forced air) connections.

Table 16. Cost Estimates for Residential Conversion to Natural Gas

Source	Notes	Cost Estimate ($)
Fuhs (2010)	Space heater with flush mount exhaust, on-demand hot water heater, and 250 gallon buried tanks—to be refilled about once per month, depending on season	3,000
Fairbanks Natural Gas (2005)	Replacement of gun, residential	1,000–1,500
Laabs (2012)	Furnace replacement, mobile home	6,000–8,000
	Chimney replacement (if needed), mobile home	500–700
	Furnace replacement, residential	8,000–15,000
	Chimney replacement (if needed), residential	2,500–5,000
	Boiler replacement or conversion from oil to gas, residential	12,000–20,000
	Burner conversion with boiler brushed out, residential	3,500–6,500

Source: Northern Economics, Inc. from sources noted.

The cost for converting commercial systems is specific to the structure that is being converted and sources could not provide a reliable number of commercial structures. For modeling purposes, the average per square foot cost of converting a residential structure was applied to the average size of commercial buildings as determined from the Assessor's data base.

Natural Gas Sales in High and Medium Density Areas

Total natural gas sales (market demand) for residential, commercial, and industrial consumers in the piped distribution area in 2021 is estimated at approximately 10.8 Bcf (See Table 6). Conversion rates for residential structures transitioning from other fuels to natural gas in the high density zone are expected to occur over five years at the following rates:

- 10 percent
- 25 percent
- 25 percent
- 25 percent
- 12 percent

If the delivered price of natural gas plus conversion costs is less than or equal to 90 percent of the fuel oil price 97 percent of the residential structures are anticipated to switch to gas and 100 percent of commercial users. Similar percentages apply to conversions from wood heat if the gas price plus conversions costs is less than or equal to 110 percent of the wood cost.

Source: Fairbanks North Star Borough Gas Distribution Study, 2012