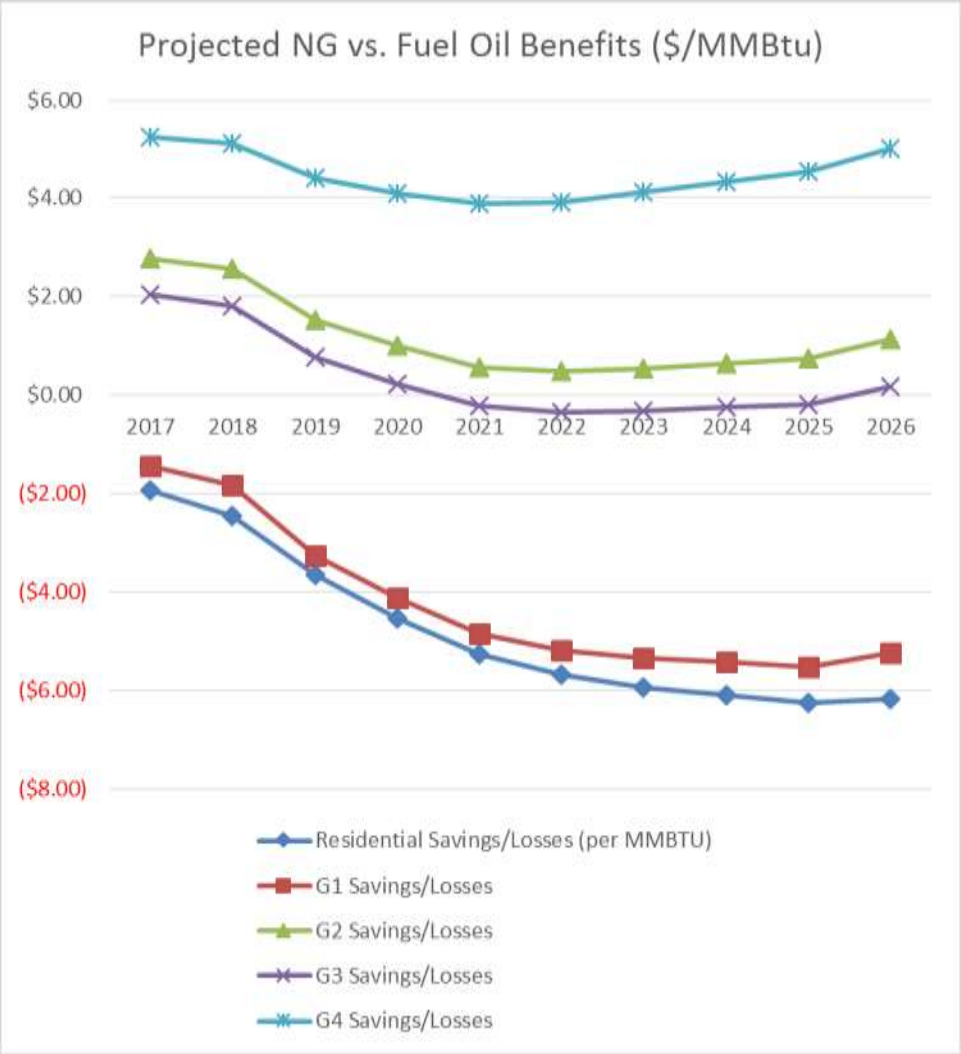
Notes:

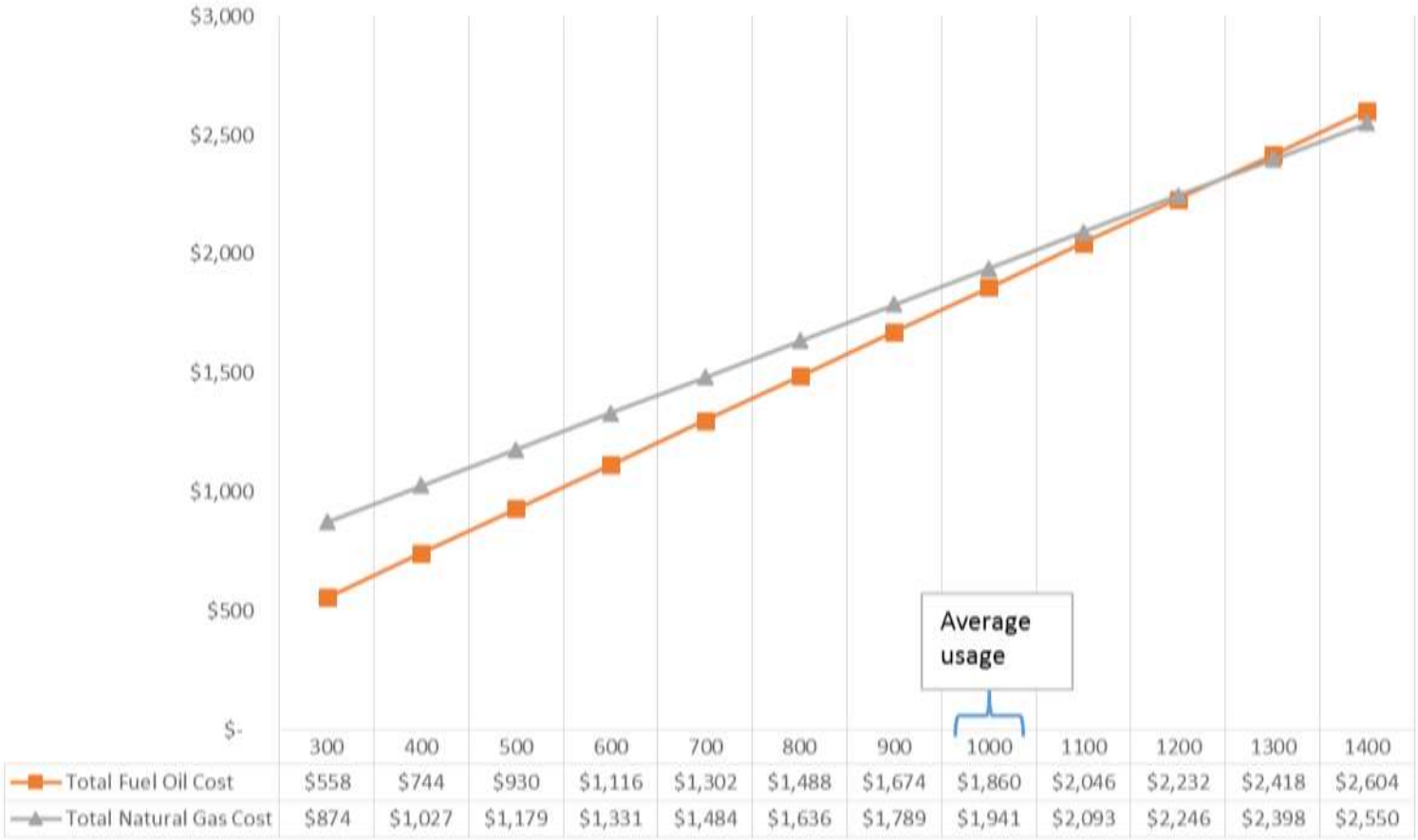
1) EIA fuel price data is used to predict future year prices (same data that was used in Docket 7970 by VGS and DPS).
2) The graph shows the delta between fuel oil prices and natural gas prices by year by rate VGS rate class.
3) VGS February 2016 rates were used for natural gas and the fuel oil price reported in the March 2016 DPS Fuel Price Report.
4) $/MMBTU calculations assumed:
    a. 80% efficiency for both fuel oil and gas burners, which is what VGS uses in their fuel price comparisons.
    b. An average rate class fuel usage as shown in the below.
    c. $/MMBTU calculations do not take into account future rate increases to pay for the pipeline nor do they include any costs required for conversion to NG.

Residential: 615 gallons of oil (or 85 MCF)
G1 (Sm. Bus. Heating): 1085 gallons of oil (or 150 MCF)
G2 (Sm. Bus. Indust.): 1440 gallons of oil (or 199 MCF)
G3 (Lg. Bus. Heating): 11,187 gallons of oil (or 1546 MCF)
G4 (Lg. Bus. Indust.): 18,546 gallons of oil (or 2563 MCF)



Residential Customers

(VGS Target population ~2500 of which ~2000+ use fuel oil)



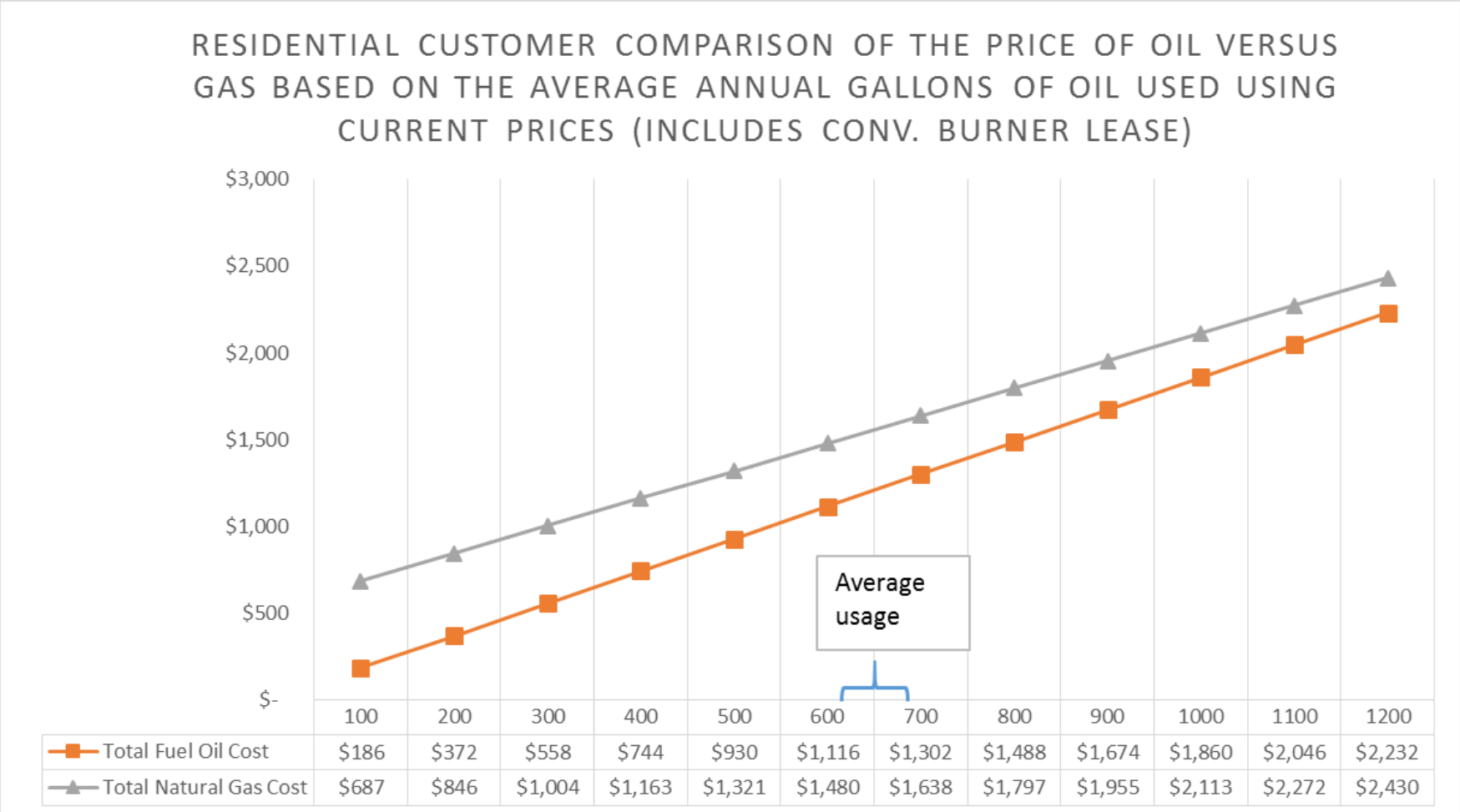
	300	400	500	600	700	800	900	1000	1100	1200	1300	1400
Total Fuel Oil Cost	$558	$744	$930	$1,116	$1,302	$1,488	$1,674	$1,860	$2,046	$2,232	$2,418	$2,604
Total Natural Gas Cost	$874	$1,027	$1,179	$1,331	$1,484	$1,636	$1,789	$1,941	$2,093	$2,246	$2,398	$2,550

Notes:

1) Uses VGS Residential Rates as of 2/1/2016
2) Uses VT DPT Fuel Report fuel oil residential price published for the first week of March (actual dealer rates may be lower).
3) Does not include any costs for conversion (see page 9).
4) Does not include any VGS rate adjustments to pay for the pipeline extension to Middlebury.

Residential Customers (w/ Conv. Burner Lease)

(VGS Target population ~2500 of which ~2000+ use fuel oil)

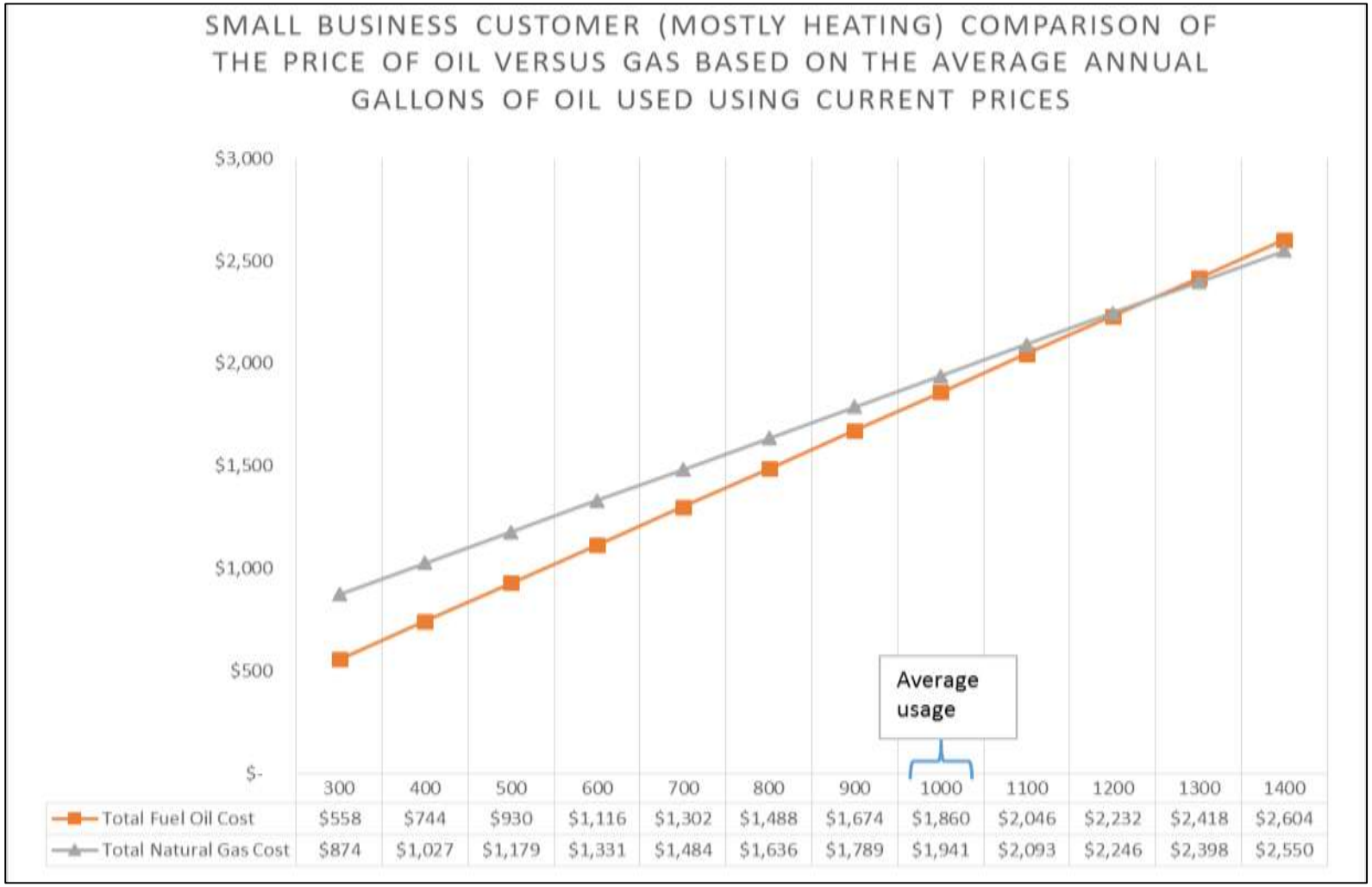


	100	200	300	400	500	600	700	800	900	1000	1100	1200
Total Fuel Oil Cost	$186	$372	$558	$744	$930	$1,116	$1,302	$1,488	$1,674	$1,860	$2,046	$2,232
Total Natural Gas Cost	$687	$846	$1,004	$1,163	$1,321	$1,480	$1,638	$1,797	$1,955	$2,113	$2,272	$2,430

Notes:

5) Uses VGS Residential Rates as of 2/1/2016.
6) Uses VT DPT Fuel Report fuel oil residential price published for the first week of March (actual dealer rates may be lower).
7) Includes a $23/month lease for conversion boiler, but does not include any incremental conversion costs (see page 9).
8) Does not include any VGS rate adjustments to pay for the pipeline extension to Middlebury.

Small Business Customers (G1)
Mostly heating and use less than 4,300 gallons of fuel oil/year
(Target population ~340 of which ~280+ use fuel oil)

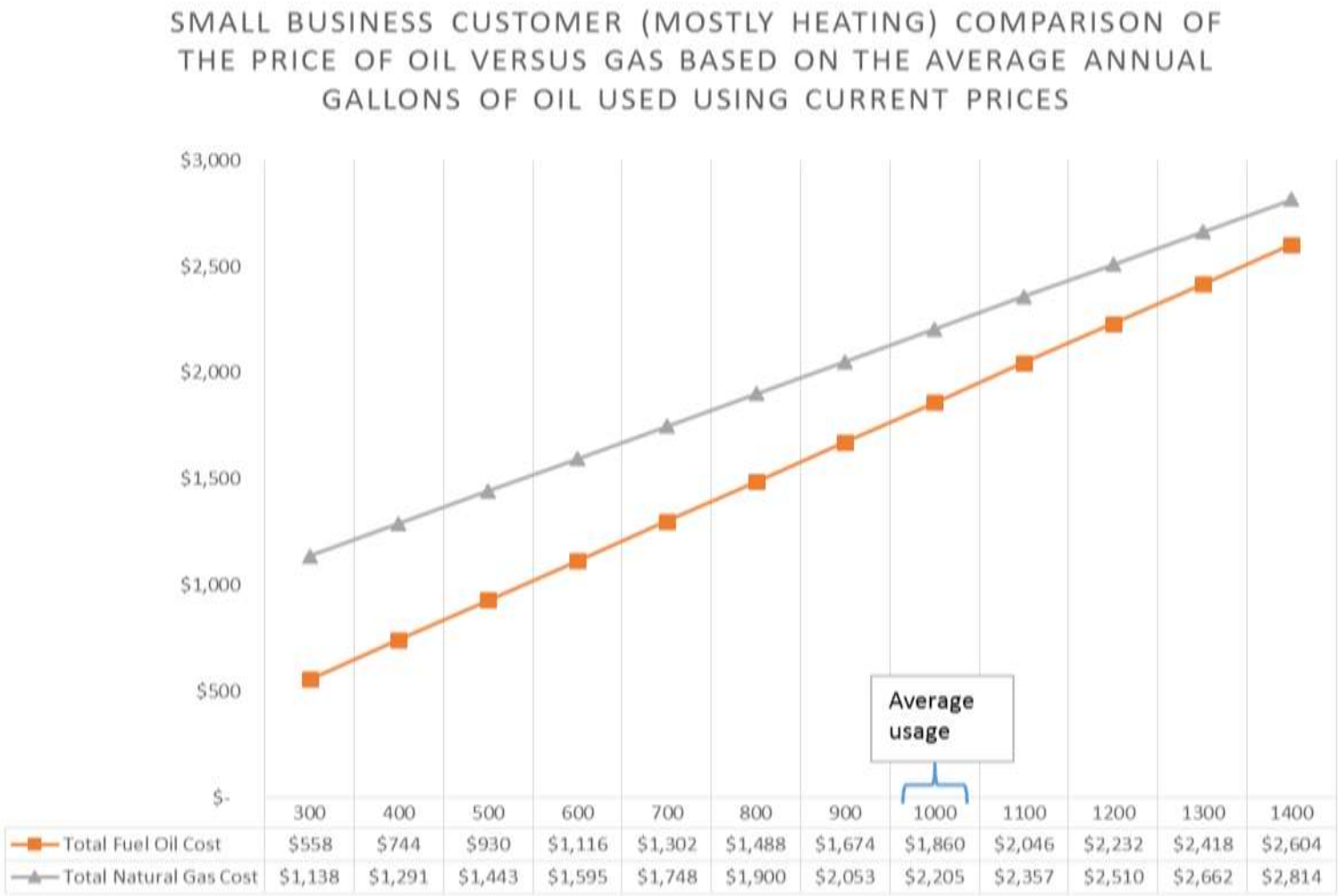


	300	400	500	600	700	800	900	1000	1100	1200	1300	1400
Total Fuel Oil Cost	$558	$744	$930	$1,116	$1,302	$1,488	$1,674	$1,860	$2,046	$2,232	$2,418	$2,604
Total Natural Gas Cost	$874	$1,027	$1,179	$1,331	$1,484	$1,636	$1,789	$1,941	$2,093	$2,246	$2,398	$2,550

Notes:

1) Uses VGS Residential Rates as of 2/1/2016
2) Uses VT DPT Fuel Report fuel oil residential price published for the first week of March (actual dealer rates may be lower).
3) Does not include any costs for conversion (see page 9).
4) Does not include any VGS rate adjustments to pay for the pipeline extension to Middlebury

Small Business Customers (G1) (w/ Conv. Burner Lease)
Mostly heating and use less than 4,300 gallons of fuel oil/year
(Target population ~340 of which ~280+ use fuel oil)

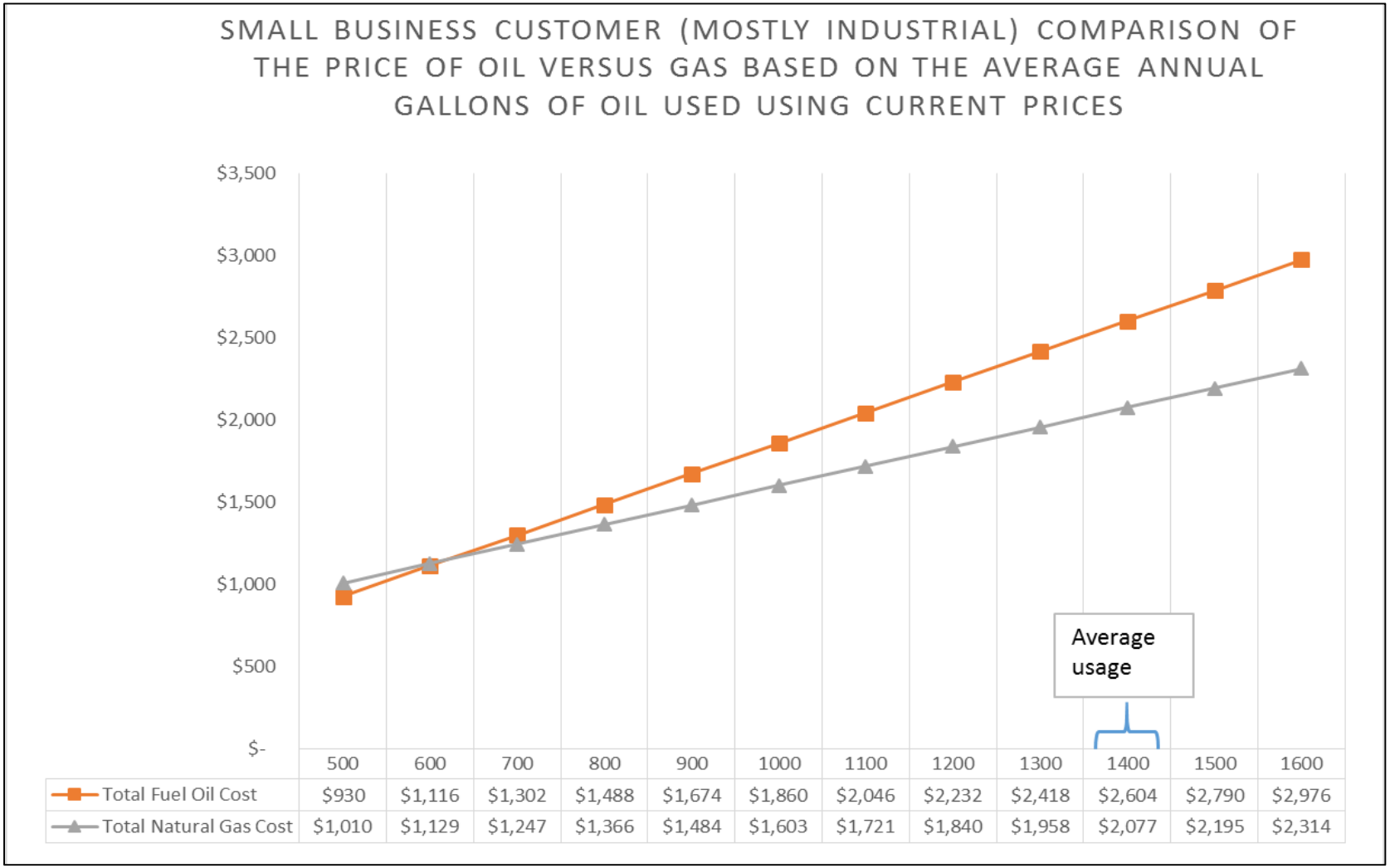


	300	400	500	600	700	800	900	1000	1100	1200	1300	1400
Total Fuel Oil Cost	$558	$744	$930	$1,116	$1,302	$1,488	$1,674	$1,860	$2,046	$2,232	$2,418	$2,604
Total Natural Gas Cost	$1,138	$1,291	$1,443	$1,595	$1,748	$1,900	$2,053	$2,205	$2,357	$2,510	$2,662	$2,814

Notes:

9) Uses VGS Residential Rates as of 2/1/2016.
10) Uses VT DPT Fuel Report fuel oil residential price published for the first week of March (actual dealer rates may be lower).
11) Includes a $22/month lease for conversion boiler, but does not include any incremental conversion costs (see page 9).
12) Does not include any VGS rate adjustments to pay for the pipeline extension to Middlebury.

Small Commercial Customers (G2)
Mostly heating who use less than 4,300 gallons of fuel oil/year
(Target population ~70 of which ~60 use fuel oil)

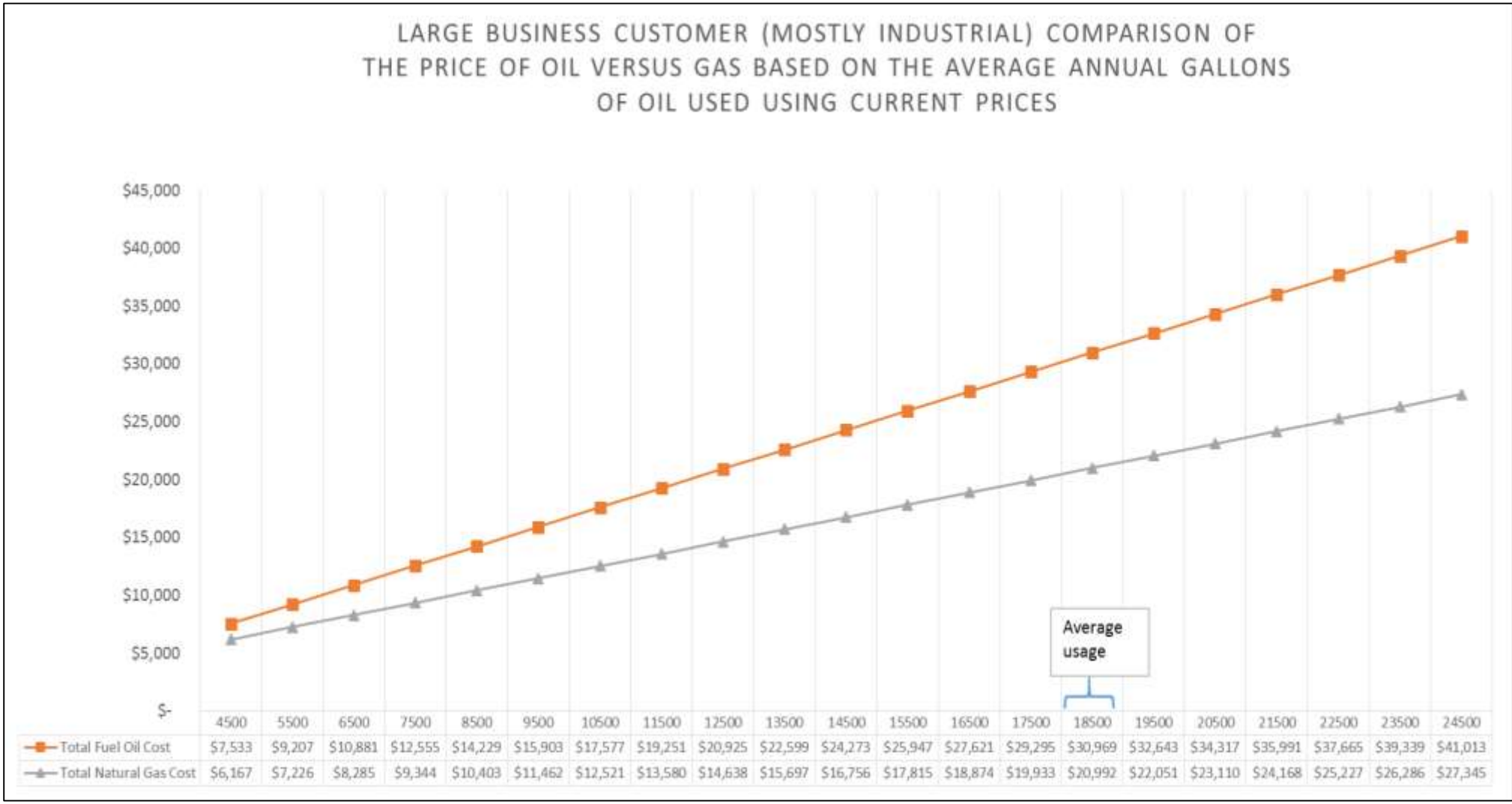


	500	600	700	800	900	1000	1100	1200	1300	1400	1500	1600
Total Fuel Oil Cost	$930	$1,116	$1,302	$1,488	$1,674	$1,860	$2,046	$2,232	$2,418	$2,604	$2,790	$2,976
Total Natural Gas Cost	$1,010	$1,129	$1,247	$1,366	$1,484	$1,603	$1,721	$1,840	$1,958	$2,077	$2,195	$2,314

Notes:

1) Uses VGS Residential Rates as of 2/1/2016
2) Uses VT DPT Fuel Report fuel oil residential price published for the first week of March (actual dealer rates may be lower).
3) Does not include any costs for conversion (see page 9).
4) Does not include any VGS rate adjustments to pay for the pipeline extension to Middlebury.

Large Commercial Customers (G3)
Mostly heating and use more 4,300 gallons of fuel oil/year
(Target population ~48)

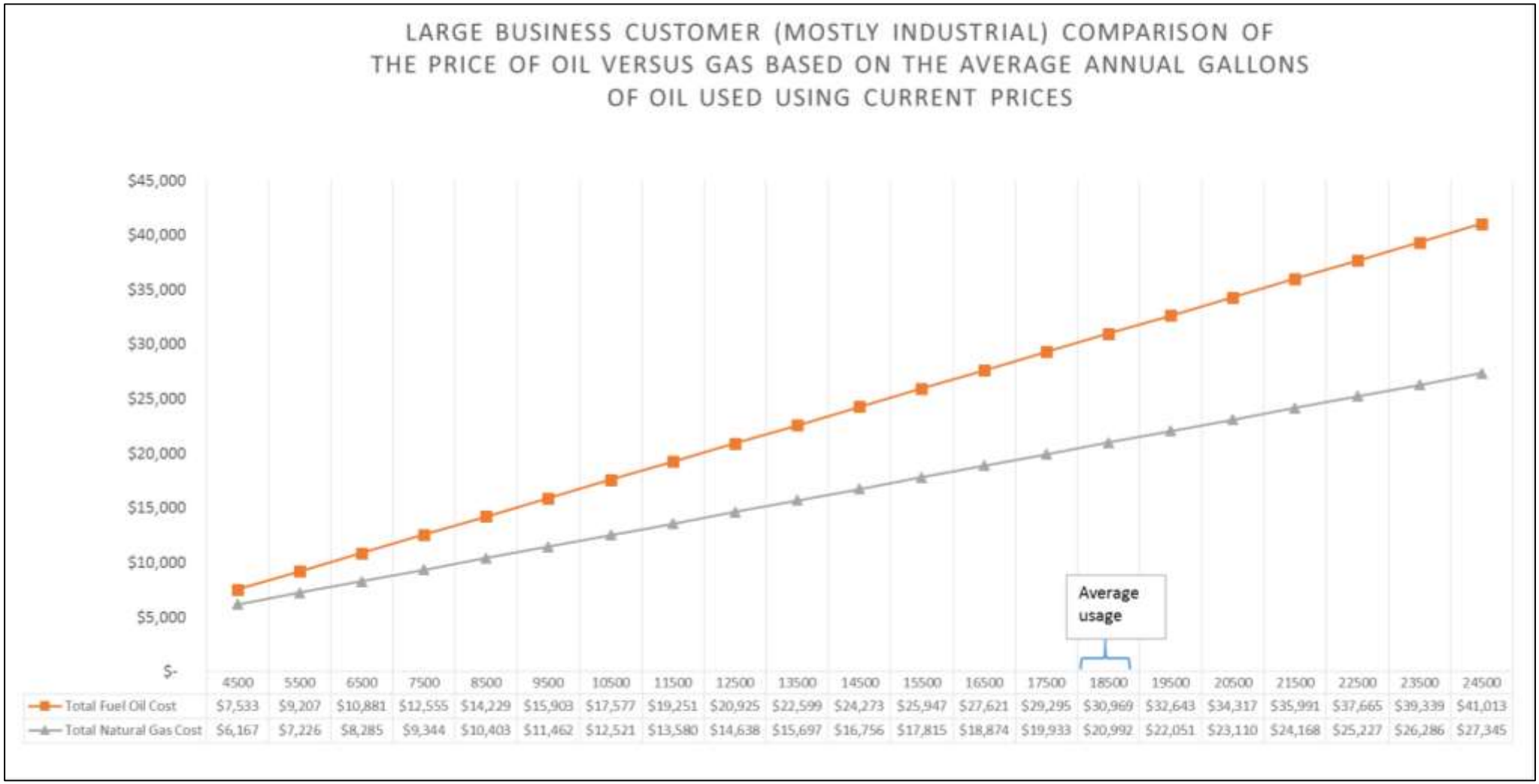


	4500	5500	6500	7500	8500	9500	10500	11500	12500	13500	14500	15500	16500	17500	18500	19500	20500	21500	22500	23500	24500
Total Fuel Oil Cost	$7,533	$9,207	$10,881	$12,555	$14,229	$15,903	$17,577	$19,251	$20,925	$22,599	$24,273	$25,947	$27,621	$29,295	$30,969	$32,643	$34,317	$35,991	$37,665	$39,339	$41,013
Total Natural Gas Cost	$6,167	$7,226	$8,285	$9,344	$10,403	$11,462	$12,521	$13,580	$14,638	$15,697	$16,756	$17,815	$18,874	$19,933	$20,992	$22,051	$23,110	$24,168	$25,227	$26,286	$27,345

Notes:

1) Uses VGS Residential Rates as of 2/1/2016
2) Applies a 10% discount to the VT DPT Fuel Report fuel oil residential price published for the first week of March (actual rates may be lower).
3) Does not include any costs for conversion.
4) Does not include any VGS rate adjustments to pay for the pipeline extension to Middlebury.

Large Commercial Customers (G4)
Year round usage of more 4,300 gallons of fuel oil/year
(Target population ~24)



	4500	5500	6500	7500	8500	9500	10500	11500	12500	13500	14500	15500	16500	17500	18500	19500	20500	21500	22500	23500	24500
Total Fuel Oil Cost	$7,533	$9,207	$10,881	$12,555	$14,229	$15,903	$17,577	$19,251	$20,925	$22,599	$24,273	$25,947	$27,621	$29,295	$30,969	$32,643	$34,317	$35,991	$37,665	$39,339	$41,013
Total Natural Gas Cost	$6,167	$7,226	$8,285	$9,344	$10,403	$11,462	$12,521	$13,580	$14,638	$15,697	$16,756	$17,815	$18,874	$19,933	$20,992	$22,051	$23,110	$24,168	$25,227	$26,286	$27,345

Notes:

1) Uses VGS Residential Rates as of 2/1/2016
2) Applies a 10% discount to the VT DPT Fuel Report fuel oil residential price published for the first week of March (actual rates may be lower).
3) Does not include any costs for conversion.
4) Does not include any VGS rate adjustments to pay for the pipeline extension to Middlebury.

Summary of Conversion Costs for Residential and Small Business Customers

1) All customers:
    a. VGS only covers first 100 feet of trenching and piping from the street, if further than 100 feet from street, customer is responsible for the difference.
    b. Customer is responsible for removing their oil tank. By state law, any oil tank out of service for 1 year must be removed. This can be verified calling contact the State of Vermont Waste Management & Prevention Division at 828-1138. The cost varies from $450 to $2900+ depending on whether it is an above ground or buried tank.

2) Lease customers:
    a. Residential customers pay $23/month and business customers pay $22/month to lease a conversion boiler according to the VGS website. This assumes that their existing oil burner is in good condition and new enough that it can be fitted with a conversion boiler. It should be noted that customers do not receive any increase in efficiency with this option.
    b. This covers the interior hook up including 40 feet of black pipe. If a customer needs a chimney liner or any other "extra" items, these are not covered and extra trenching if required. It is critical for customers to understand what is included.

3) Non-lease customers:
    a. According to VGS, approximately 70% of customers just purchase a conversion burner. According to VGS, the average equipment cost and installations is approximately $2000. It should be noted that customers do not receive any increase in efficiency with this option.
    b. Average efficiency boilers and furnaces range from $1300 (for furnace) to $3500 for new boiler, including labor, black pipe, venting, etc, the conversion cost ranges from $2300 to $6500 plus oil tank removal and extra trenching if required.
    c. High efficiency boilers and furnaces (e.g., 92 to 95%) range from $1800 (for furnace) to $5500 for a new boiler, including labor, black pipe, venting, etc, the conversion cost ranges from $2800 to $9500 plus oil tank removal and extra trenching if required.

Note: The price for purchasing and installing average and high efficiency gas furnaces and/or boilers was provided by Terry Bolduc, who is a certified Service Technician with 25 years of experience in Addison County.