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HEATING FUELS IN U.S. HOUSING

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I. Overview

This report examines the shares of heating fuels in U.S. housing. Using the U.S. Department of Commerce as a source, we show new housing data for 1974-1983 and total housing inventory data for 1974-1981. We have also compiled information on retail prices of heating fuels in selected cities for a similar period. Throughout the text, tables provide summary data and Appendix Tables 1 and 2 provide year-by-year detail on new home data. Figures I-IV, on pages 9 and 10, also depict Summary data.

The data show that electricity has regularly accounted for about half of total heating installations in new single-family homes throughout the 10-year period under study. (See Table I.) Gas' share has been about 40% while oil's share rose slightly to a peak of 11% in 1976 and then dropped steadily to a 2-3% share in the early 1980's. Meanwhile the category "other" fuels has shown steady increases from a 1% share in 1974 to 6-8% in 1982-83. Growth in wood fuel use was the principal factor in that increase.

A prime reason for the continuing dominant position of electric heating systems in new homes has been the fact that the largest share of new U.S. homes are regularly built in the South where heating requirements are relatively low. (See Table II.) Hence the negative aspect of the higher fuel cost of electric heating relative to oil or gas is compensated in this region by the lower capital cost of electric heating equipment. The growing use of heat pumps in warm climates for both heating and cooling purposes is another reason that about two-thirds of all new homes in the South are electrically heated. Electric heating

TABLE I

SHARES OF HEATING FUELS IN SINGLE FAMILY HOMES COMPLETED, BY REGION, 1974-1983

		Units Completed (000)	Gas (%)	Electricity (%)	Oil (%)	Other (%)
U.S.	1974	940	41	49	9	1
	1978	1,369	37	52	8	3
	1983	921	44	49	2	6
North East	1974	132	29	39	32	0
	1978	141	16	34	43	8
	1983	106	38	36	17	8
North Central	1974	220	51	36	12	1
	1978	300	50	36	11	4
	1983	140	66	25	0	9
South	1974	397	27	67	4	1
	1978	571	27	69	3	2
	1983	475	35	62	0	3
West	1974	191	66	33	0	0
	1978	357	52	45	0	3
	1983	200	53	40	0	8

Bureau of Census regions:
North East: ME, NH, VT, MA, RI, CT, NY, NJ, PA
North Central: OH, IN, IL, MI, WI, MN, IA, MO, ND, SD, NE, KS
South: DE, MD, DC, VA, WV, NC, SC, GA, FL, KY, TN, AL, MS, AR, LA, OK, TX
West: MT, ID, WY, CO, NM, AZ, UT, NV, WA, OR, CA, AK, HI

Source: U.S. Department of Commerce, Bureau of the Census.

TABLE II

REGIONAL SHARES OF NEW HOMES, 1974, 1978, 1983

	Units Completed	North East	North Central	South	West
Single Family	(000)	(%)	(%)	(%)	(%)
1974	940	14	23	42	20
1978	1,369	10	22	42	26
1983	921	12	15	52	22
Multi-family					
1974	788	13	20	46	22
1978	498	8	23	36	32
1983	464	7	13	58	23
Total Housing					
1974	1,728	13	22	44	21
1978	1,867	10	22	40	28
1983	1,385	10	14	54	22
Memo Item: % Increase, 1982-83					
Single Family	46	34	52	40	65
Multi-family	24	(22)	16	35	28
Total Housing	38	15	39	38	50

See Table I for list of states in each region.

Source: U.S. Department of Commerce, Bureau of the Census.

is also important outside the South, accounting last year for 36% and 25%, respectively, of all new homes in the country's colder regions, the North East and the North Central. However, it is noteworthy that in all regions other than the North East electricity's share of the new home market has been declining since 1978.

Gas heat, which lost market share in all regions in the 1976-78 period because of gas curtailments reflecting a temporary shortage of supplies, has increased its share significantly since then in all regions but the West. The increase was particularly pronounced in the North East: from 16% in 1978 to 38% in 1983.

Oil heat is now of significance in new homes only in the North East but even there its share has declined steadily throughout the period: from about 50% in the mid-1970's to 17-18% in 1982-83.

In new multi-family housing units, which equalled about half the 921,000 single-family homes completed in 1983, the domination of electric heat was even more pronounced (70%). (See Table III.) Most of the balance went to gas. Oil's share has been about 2% and in 1983 amounted to only 1% nationally. The particularly low share is due principally to a drop in the North East's oil share from 20% in 1982 to 6% in 1983; the North East's 1983 result may be an aberration.

The share of fuels in the U.S. housing inventory, which stood at 82.6 million units in 1981, differs of course greatly from that in newly built homes, since the former is heavily weighted by the heating patterns of the past. (See Table IV.)

TABLE III

SHARES OF HEATING FUELS IN MULTI-FAMILY HOMES COMPLETED, BY REGION, 1974-1983

		Units Completed (000)	Gas (%)	Electricity (%)	Oil (%)	Other (%)
U.S.	1974	788	35	60	4	1
	1978	498	26	68	5	1
	1983	464	28	70	1	1
North East	1974	99	28	44	22	6
	1978	41	22	32	44	0
	1983	32	59	31	6	0
North Central	1974	157	59	39	1	1
	1978	117	38	60	2	0
	1983	59	63	36	0	2
South	1974	359	21	77	2	0
	1978	181	9	89	2	1
	1983	269	12	88	0	0
West	1974	173	47	53	0	0
	1978	160	38	59	0	3
	1983	105	42	55	0	3

See Table I for list of states in each region.

Source: U.S. Department of Commerce, Bureau of the Census.

TABLE IV

SHARES OF HEATING FUELS
IN THE HOUSING INVENTORY, 1974, 1978, 1981

	Units	Gas	Elec.	Oil	Other
	(000)	(%)	(%)	(%)	(%)
U.S.					
1974	70,346	62	12	24	2
1978	76,570	61	16	21	2
1981	82,586	61	19	18	3
North East					
1974	16,277	37	4	57	2
1978	16,944	38	6	55	2
1981	17,840	42	7	48	3
North Central					
1974	18,983	77	5	17	1
1978	20,159	77	8	14	1
1981	21,558	77	10	11	2
South					
1974	22,315	60	21	16	3
1978	24,895	57	26	13	3
1981	27,248	55	30	11	4
West					
1974	12,769	75	16	7	1
1978	14,571	72	21	5	2
1981	15,940	70	24	4	3

See Table I for list of states in each region.
Source: U.S. Department of Commerce, Bureau of the Census.

The difference between the fuel pattern of the housing inventory and that of the newly built units is an indication of the direction in which the U.S. residential heating market is moving. According to the Census data, gas remained the principal U.S. home heating fuel from 1974 to 1981, accounting steadily for slightly more than 60% of all occupied dwelling units. Electricity's share increased rapidly throughout the period but in 1981 its share of 19% was hardly larger than oil's 18%. (By comparison, in the new homes market in the same year oil's share was 2% and electricity's 50%).

In 1974, oil's share in the housing inventory had been 24%. The decline to 18% reflects an actual net loss by oil of 2.3 million housing units between 1974 and 1981 through abandonment, demolition and fuel conversion, with the last accounting probably for the bulk of the loss. By contrast, all other fuels showed an increase in the number of units supplied. Despite this loss, oil still heated nearly 15 million residential dwelling units in 1981, including almost half of all units in the North East. New inventory data, however, will continue to show lower oil heat shares because of the heating fuel pattern in the housing units built since then. Loss through conversions, on the other hand, has slowed considerably.

The period under examination is one of substantial price rises for both oil and gas. Heating oil prices rose more rapidly, peaked generally in 1982 and have since declined. Gas prices, on the other hand, either peaked a year later or have continued upward, depending on the city. In cities for which both heating oil and gas prices are available, the price of oil

had a widening differential above gas in the 1979 to 1982 period. Since then the gap has declined or, in some cases, disappeared.

The most recent (July 1984) U.S. city average residential price was 2.4% higher for heating oil, unchanged for gas and up by 7.3% for electricity, all relative to a year ago. The sharper increase in electricity prices than in those of the fossil fuels is a new phenomenon, reflecting the significance of stable or declining raw material costs for retail prices of fossil fuels and the significance of rising capital and construction costs for electric power rates. For the next several years these divergent trends are likely to continue.

Fig. I

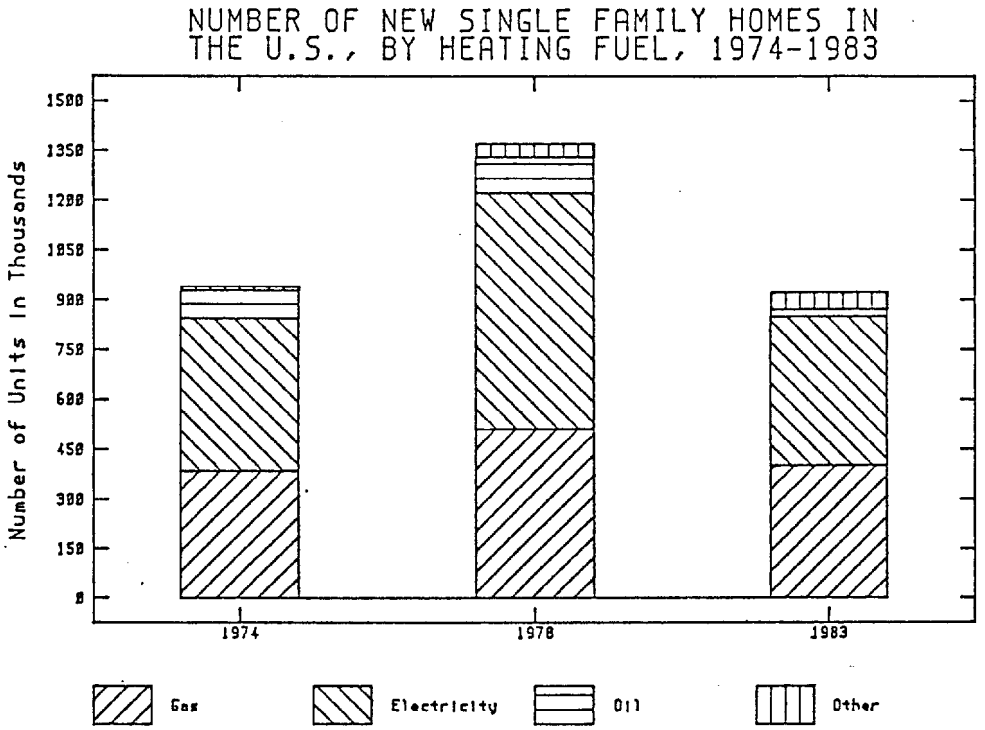

NUMBER OF NEW SINGLE FAMILY HOMES IN THE U.S., BY HEATING FUEL, 1974-1983
Number of Units In Thousands
1500
1350
1200
1050
900
750
600
450
300
150
0
1974
1978
1983
Gas
Electricity
Oil
Other

Fig. II

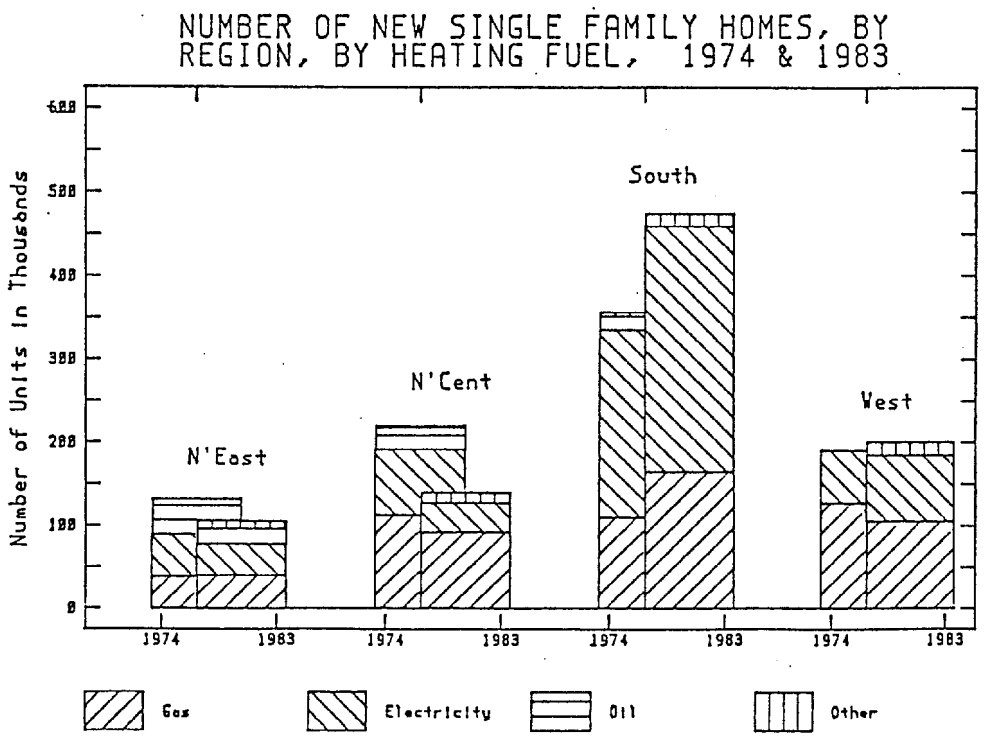

NUMBER OF NEW SINGLE FAMILY HOMES, BY REGION, BY HEATING FUEL, 1974 & 1983
Number of Units In Thousands
500
400
300
200
100
0
South
N'Cent
West
N'East
1974
1983
Gas
Electricity
Oil
Other

Fig. III

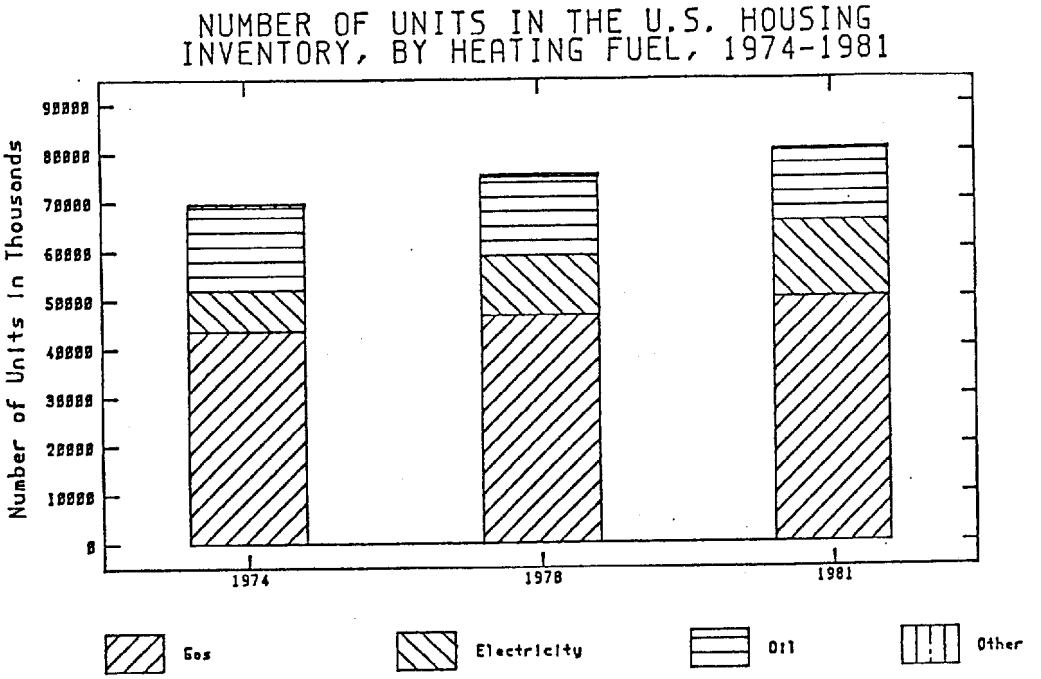
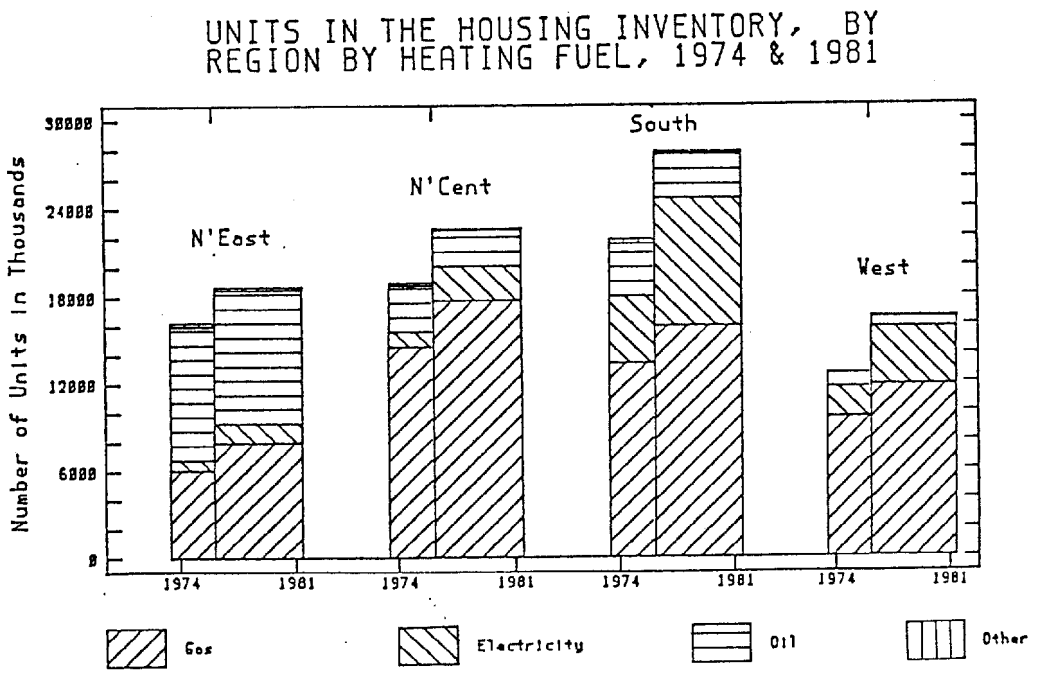


Fig. IV



II. Regional Analysis of New Home Data

A. North East

Gas has shown the fastest growth of all heating fuels in the North East region and is now the most common source of heating fuel for new single-family homes (38 percent), with electricity accounting for nearly as many homes (36 percent). After having been the heating fuel in half of the single family homes completed in the North East in 1977, oil use has fallen off dramatically and now accounts for the heating fuel in only 17 percent of all new single family homes. The North East is still, however, the dominant user of oil for heating new homes, accounting for over 80 percent of new oil-heated homes in the U.S. in 1983. "Other" fuels, though growing in importance as a source of heat in new homes over the period as a whole, lost ground in 1983, falling to 8 percent of new single family homes from 13 percent in 1982.

Gas is back to heating over half of the new multi-family homes in the North East as it was in 1981 after having fallen to 37 percent in 1982. Unlike the trend for single family homes, electricity fell off in 1983 from 41 to 31 percent of new multi-family units. Oil fell sharply from a 20 percent share in 1982 to only 6 percent in 1983.

B. North Central

The use of gas as a heating fuel increased significantly in the North Central region in 1983, accounting for 66 percent of new single family homes. The North Central region is the only one where electricity has shown a significant decline in share

of new home heating, dropping from 40 percent of new single family homes in 1977 to 25 percent in 1983. The number of electrically-heated homes completed in this region increased in 1983, however, because of the large addition to the housing stock over the previous year.

Oil is no longer a factor as a heat source in this region, while "other" fuels showed the same trend as the North East, dropping from a 14 percent share in 1982 to 9 percent in 1983.

C. South

Electricity accounts for almost two-thirds of new single-family home heating in the South, although its share has been declining slightly since 1978. The South's rapid growth has underpinned electricity's dominance of new home heating. About 2/3 of all new electrically heated homes are constructed in the South. Meanwhile, the share of new homes heated with gas has been growing slightly, now accounting for over one-third of new heating systems.

Electricity is also by far the dominant source of heating fuel for new multi-family housing in the South with an 88 percent share, having grown from 76 percent in 1976. Gas accounts for the remaining source of heat for new multi-family units.

D. West

Gas has lost some of its share of new house heating in the West while electricity has gained. In fact, the West is the only region showing a higher electric heat share in 1983 than in 1974. Although gas continues to heat slightly over half of the new

single family homes, electricity now heats 40 percent of new homes compared with only a one-third share in 1974. In recent years, however, electricity's share has been pared away by "other" fuels. For multi-family structures electricity has been the heating source in over half of the new completions since 1974, while gas heats most of the rest.

E. Owner v. Speculator-built

In 1983, about 65 percent of single-family homes completed were built by speculators for resale, while the remaining were either owner-built or contractor-built on behalf of the owner. The heating fuel choice of speculator versus owner/contractor-built homes shows different patterns, as does the choice for homes built inside versus outside SMSA's*. (See Table V.)

Of all the new homes built for resale, gas and electric shared almost equally as sources of heating fuel. Looking at just those resale homes completed outside of SMSA's, however, we see that installation of electric heat was much more popular than for those built inside of SMSA's. This is due largely to the greater accessibility to existing gas main lines in metropolitan areas. Some 88 percent of all speculator-built homes in 1983 were inside SMSA's.

Owner/contractor-built homes, in which the homeowner makes the decision as to which heating system to install, are dominated

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*Standard Metropolitan Statistical Areas, as defined by the U.S. Office of Management and Budget. In general, SMSA's include a large population center and its surrounding interdependent communities.

TABLE V

SHARES OF HEATING FUEL IN SINGLE FAMILY HOMES COMPLETED, BY CATEGORY OF BUILDER AND LOCATION, 1983

	No.	Share of U.S. Total	Gas	Elec.	Oil	Other
Houses Built for Sale	(000)	(%)	(%)	(%)	(%)	(%)
Inside SMSA's	532	59	52	45	2	1
Outside SMSA's	71	8	39	59	1	1
Subtotal	603	67	50	47	2	1
Houses Contracted for or Built by the Owner Occupant						
Inside SMSA's	124	14	37	48	5	8
Outside SMSA's	171	19	26	51	1	22
Subtotal	295	33	31	50	3	17
Total U.S.						
Inside SMSA's	656	73	49	47	3	2
Outside SMSA's	242	27	29	54	1	16
Total	898	100	43	48	2	6

Source: U.S. Department of Commerce, Bureau of the Census.

by electricity as the favored fuel source, accounting for half of these homes. The fact that the capital cost of installing electric heating systems is relatively low has probably been a large determining factor in the popularity of electric heat installation. Electric heating rates in virtually all regions of the country have been higher than prices for other fuels, however, and given ready availability of gas, may account for the slight decline in the installation rate of electric heating systems in new owner/contractor built homes. Gas heat accounts for about one-third of the systems in these homes, up slightly from recent years.

"Other" fuels, primarily wood, have become an increasingly popular choice among owner-built homes especially outside of SMSA's, where 22 percent of the homes were installed with systems fired by other than the three primary heating fuels. Only 8 percent of owner-built homes inside SMSA's were fired by other fuels, although this share has been increasing in recent years.

Oil heat shows its largest share in the owner-built homes inside SMSA's, but here too reflects diminishing importance as a heat source. Its use is limited primarily to the North East region and is about equally popular in speculator and owner-built homes.

III. Housing Inventory

According to Department of Commerce data, the number of occupied, heated housing units rose by 17 percent between 1974 and 1981 to 82.6 million, with the West showing the greatest

regional growth, 25 percent. (Refer back to Table IV, p. 6). The slowest growth was in the North East, where the housing inventory increased by just under 10 percent. The heating fuel data for the existing housing inventory reflect the trends in the completion data. Gas has remained the predominant heating fuel over the period, heating 61 percent of the housing stock in 1981. Electricity grew to be the second most common heating source for all units, having steadily grown from a 12 percent share in 1974 to 19 percent in 1981. The growth reflects electricity's large share in new homes over the past decade. Oil, in turn, has been falling steadily from heating about one-fourth of the housing stock in 1974 to 18 percent in 1981.

Almost half of the units in the North East are still heated by oil, but oil heat has shown a steady decline since 1974. Gas is likely to become the predominant heating fuel in the near future in this region, having reached 42 percent of all homes in 1981. Gas continues to maintain a strong share of the home heating market in the North Central region (77 percent) while electricity use is advancing and oil use declining there. Although gas heats over half of the existing homes in the South, electricity is quickly becoming predominant, having grown from a 21 percent share of existing house heating sources in 1974 to 30 percent in 1981. As in the other regions of the country, gas is the predominant heating fuel in the housing stock in the West, with electricity supplying almost one-fourth of the homes there in 1981.

By looking at net additions to the housing inventory between 1974 and 1981 by fuel and region we can see where the shifts in fuel choice occurred over this period. (See Table VI.) The largest share of the 12,240 net housing additions in this period was electrically-heated (58 percent). Electricity also showed the greatest level of increase of all fuels as it increased by about 80 percent in all regions except the North Central where it increased only 12 percent. Once again, the South's growth can be seen to have been an important factor for electric heat's national market penetration. Nearly 75% of the net additions to the inventory in the South went to electric heat. Gas showed the largest increase in the North East region where it increased 23 percent between 1974 and 1981.

The trend towards fewer oil-heated homes over this period was widespread as there was actually a net reduction of 2.3 million homes in this category. The largest decrease occurred in the West (31 percent fewer homes) while the smallest decrease was in the North East (6 percent fewer) where the share of oil-heated homes is the greatest. The North East had still been increasing the number of oil-heated homes in 1975-1978 while the number of oil-heated homes started declining much earlier in all the other regions.

In the North East, more than 480,000 new oil-heated housing units were added to the inventory between 1974-1981. The net loss of almost 600,000 units thus implies that about 1 million oil-heated homes were demolished, abandoned, or converted to another fuel in the North East. While demolitions are likely to affect the oil-heated inventory more strongly than other fuels,

TABLE VI

NET ADDITIONS TO THE HOUSING INVENTORY BETWEEN 1974 AND 1981

	U.S.	North East	North Central	South	West
Units (000)					
Gas	6,627	1,396	2,136	1,609	1,487
Electric	7,074	572	1,170	3,641	1,691
Oil	(2,333)	(573)	(820)	(663)	(278)
Other	871	167	89	344	271
Total	12,240	1,563	2,575	4,933	3,171
Shares (%)					
Gas	54.1	89.3	83.0	32.6	46.9
Electric	57.8	36.6	45.4	73.8	53.3
Oil	(19.1)	(39.1)	(31.8)	(13.4)	(8.8)
Other	7.1	10.7	3.5	7.0	8.5
Total	100.0	100.0	100.0	100.0	100.0
Region as Share of U.S. (Total)	100.0	12.8	21.0	40.3	25.9

See Table I for list of states in each region.

Source: U.S. Department of Commerce, Bureau of the Census

since older homes are more likely to be oil-heated, conversions from oil to gas are nonetheless the major factor in the decline. According to the American Gas Association, for instance, about 750,000 homes in the North East were converted to gas heat from 1974 to 1981.

To get the full measure of the reduction in oil demand in the North East the actual drop in the number of oil heated homes must be combined with the decline in oil consumption per household: In the early 1970's, the average residential customer in the North East used 1,500-1,600 gallons of heating oil during the heating season. By the early 1980's, the annual consumption has fallen to 900-1,000 gallons. Demand for distillate oil in the North East's residential sector fell by 45% to 300 thousand bbls/day between 1974 and 1983 and demand for distillate fuel oil for all uses fell by 37% to 630 thousand barrels/day. In the U.S. as a whole, by contrast, residential use of distillate fell at a rate similar to the North East's, and stood at 470 thousand bbls/day in 1983, while distillate fuel for all uses fell by less than 10%, to 2.7 million barrels/day in 1983. The difference is explained by the increasing share of diesel fuel in the nationwide figures, in contrast to the continuing dependence of the North East distillate market on the residential heating sector.

"Other" fuels increased at a significant rate in all areas. Most of this can be attributed to the dramatic rise in wood used for heat. For the U.S. as a whole, the number of wood-heated homes almost tripled. In some areas this increase was much more

dramatic; for example wood-heated homes in the North East region increased nearly 7 and-one-half times between 1974 and 1981.

IV. Prices

Residential prices for oil and gas were examined for 18 selected U.S. cities from American Gas Association and Bureau of Labor Statistics data for the middle of the heating season beginning in 1975/76 and ending 1983/84. (See Tables VII and VIII.) Prices for both fuels rose dramatically during this period. Oil prices peaked in most cities in the January 1982 observation, while gas prices continued to rise in 1982. Some gas prices rose in 1983 as well.

Between January 1975 and the January 1982 peak, oil prices in all cities more than tripled. Gas prices rose even farther but reached their peak a year later than oil.

Gas prices, however, remain lower than oil prices in almost all of the cities. Preliminary data for 1984 indicate this oil and gas price relationship continuing with the exception of New York, where gas prices are slightly higher. The spread between the two fuels has shown an inconsistent pattern (see Graph), primarily because oil prices are subject to market forces without a buffer of regulatory intervention. Thus a change in the resource cost of heating oil in either direction affects heating oil prices directly and immediately. Gas prices, on the other hand, are the result of ratemaking procedures which are institutionalized and thus relatively isolated from near-term market or cost changes. Furthermore, it was not until after the passage of the Natural Gas Policy Act at the end of 1978 that

TABLE VII

PRICES OF FUELS IN SELECTED CITIES, JANUARY, 1975, 1979, 1983

($/MMBtu)

	1975	1979	1983
GAS (for Residential Heating)			
North East			
Boston	2.29	3.40	7.78
New York	2.02	3.83	7.74
North Central			
Chicago	1.41	2.90	5.26
St. Louis	1.28	2.72	5.79
Minneapolis	1.23	2.59	5.68
South			
Atlanta	1.17	2.26	4.40
Houston	1.41	3.15	5.96
Washington, D.C.	2.02	3.00	8.16
West			
Denver	.78	1.75	2.80
Los Angeles	1.41	2.33	4.68
Seattle	1.98	3.08	6.84
OIL (No. 2)			
Northeast			
Boston	2.89	3.98	8.86
New York	2.88	4.18	8.97
North Central			
Chicago	2.45	3.92	8.57
St. Louis	2.70	N/A	8.16
Minneapolis	2.57	3.71	8.48
South			
Washington, D.C.	2.75	4.04	8.90
West			
Seattle	2.94	3.88	9.34

Sources: For Gas: American Gas Association.
For Oil: Bureau of Labor Statistics.

TABLE VIII

INDEX OF THE PRICE OF FUELS
IN SELECTED CITIES, JANUARY, 1976-1984

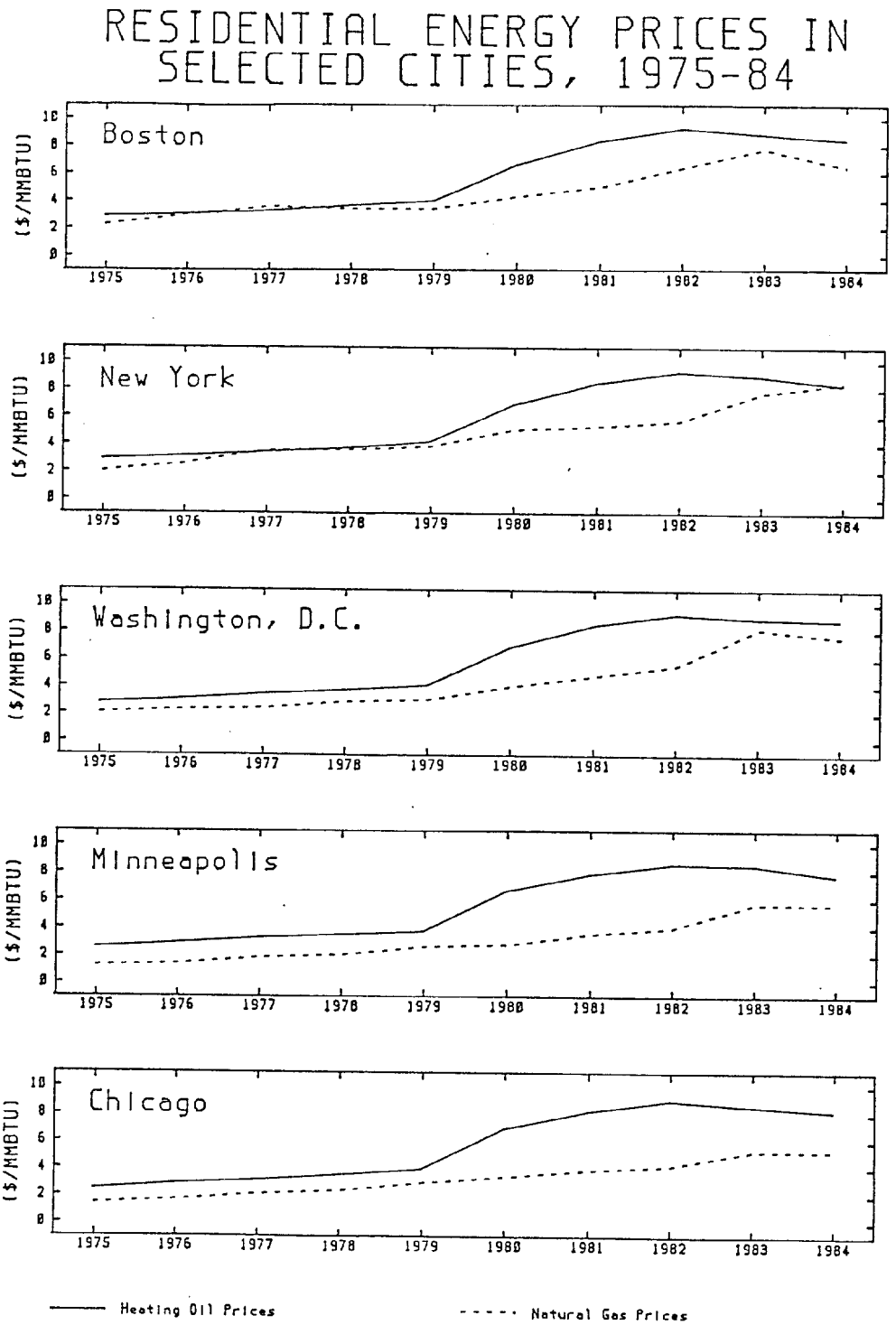
1975 = 100

Indexes

	1976	1977	1978	1979	1980	1981	1982	1983	1984
GAS (for Residential Heating)									
North East									
Boston	131	155	149	148	189	220	280	340	282
New York	128	176	177	177	190	250	283	383	421
North Central									
Chicago	118	148	165	206	238	273	296	373	N/A
St. Louis	123	132	188	213	N/A	269	368	452	446
Minneapolis	111	147	161	211	223	286	323	462	459
South									
Atlanta	108	N/A	162	193	209	326	334	376	487
Houston	150	196	219	223	252	279	312	423	426
Washington, D.C.	112	119	140	149	197	234	272	404	374
West									
Denver	128	118	192	224	260	347	524	359	617
Los Angeles	113	118	123	165	198	257	240	332	386
Seattle	114	136	168	156	243	260	310	345	N/A
OIL (No. 2)									
North East									
Boston	106	112	126	138	230	289	321	307	292
New York	109	119	129	145	239	294	323	311	290
North Central									
Chicago	117	128	143	160	282	334	366	350	335
St. Louis	109	119	129	N/A	N/A	301	312	302	284
Minneapolis	112	126	135	144	258	305	333	330	300
South									
Washington, D.C.	110	124	135	147	248	307	335	324	319
West									
Seattle	110	116	124	132	241	278	318	318	286

Source: See Table VII

Fig. V


RESIDENTIAL ENERGY PRICES IN SELECTED CITIES, 1975-84
Boston
New York
Washington, D.C.
Minneapolis
Chicago
($/MMBTU)
0
2
4
6
8
10
1975
1976
1977
1978
1979
1980
1981
1982
1983
1984
Heating Oil Prices
Natural Gas Prices

wellhead prices of gas delivered to interstate markets began to move up.

Electricity prices are not available on a strictly comparable basis. Any series, however, will show higher prices paid for electricity than for other heating fuels in all regions but the Pacific Northwest where hydropower keeps electric rates low. In Table IX we show electricity prices for all-electric homes in January 1980 and 1983. The prices range from $6.87/MMBtu in Seattle to $39.07/MMBtu in New York. These prices, like the oil and gas prices discussed earlier, are "as-delivered," not "as-burned" or used. Oil and gas prices would have to be adjusted for burner efficiency, while electric resistance heating is for practical purposes 100% efficient to the homeowner.

Prices increased substantially between 1980 and 1983 for most cities covered in this study. In fact, electricity prices rose generally faster than oil and gas prices over this particular period. Taking a longer trend, however, we see that electricity prices have risen more slowly. For instance nationwide annual data on the three fuels show a 320% increase in the average annual residential price of gas from 1974 to 1983, a 205% increase in retail heating oil prices and a 130% increase in residential electricity prices. However, slackened markets will continue to deter oil price increases, as noted earlier. Gas price increases, to the extent that they have been due to increases in wellhead prices, are also moderating. Electricity prices, on the other hand, can be expected to continue to rise.

The need to recover investment and the higher cost of capital will continue to be reflected in utility rates.

TABLE IX

PRICES FOR RESIDENTIAL ELECTRICITY, 2500 KWH PER MONTH, JANUARY 1983 AND 1980

($/MMBtu)

	1983	1980
Northeast		
Boston	21.19	14.63
New York	39.07	26.32
North Central		
Chicago	14.13	10.03
St. Louis	11.17	11.15
Minneapolis	15.33	9.89
South		
Atlanta	14.55	10.11
Houston	18.41	11.04
Washington, DC	15.38	10.20
West		
Denver	19.26	10.92
Los Angeles	19.43	17.81
Seattle	6.87	3.72

Source: U.S. Department of Energy, Energy Information Administration. Comparable data not available in earlier years.

APPENDIX TABLE 1

SHARES OF HEATING FUELS IN SINGLE FAMILY HOMES COMPLETED, BY REGION, 1974-1983

		Units Completed (000)	Gas (%)	Electricity (%)	Oil (%)	Other (%)
U.S.	1974	940	41	49	9	1
	1975	875	40	49	9	2
	1976	1,034	39	48	11	2
	1977	1,258	38	50	10	2
	1978	1,369	37	52	8	3
	1979	1,301	39	51	7	3
	1980	957	41	50	3	5
	1981	819	41	50	2	7
	1982	632	40	50	3	8
	1983	921	44	49	2	6
North East	1974	132	29	39	32	0
	1975	114	24	32	41	3
	1976	121	15	31	51	3
	1977	135	16	31	50	4
	1978	141	16	34	43	8
	1979	135	24	35	36	5
	1980	100	35	36	17	11
	1981	87	34	39	13	14
	1982	79	35	34	18	13
	1983	106	38	36	17	8
North Central	1974	220	51	36	12	1
	1975	218	49	38	9	4
	1976	271	48	40	10	2
	1977	300	46	40	10	4
	1978	300	50	36	11	4
	1979	294	55	33	7	5
	1980	170	59	27	4	9
	1981	140	62	26	0	9
	1982	92	58	26	3	14
	1983	140	66	25	0	9
South	1974	397	27	67	4	1
	1975	362	29	66	4	1
	1976	410	29	63	5	2
	1977	512	27	67	4	2
	1978	571	27	69	3	2
	1979	535	27	68	3	2
	1980	455	30	67	1	2
	1981	408	31	64	0	4
	1982	340	33	63	0	4
	1983	475	35	62	0	3

SHARES OF HEATING FUELS IN SINGLE FAMILY HOMES COMPLETED, BY REGION, 1974-1983 (cont'd.)

		Units Completed (000)	Gas (%)	Electricity (%)	Oil (%)	Other (%)
West	1974	191	66	33	0	0
	1975	182	59	39	0	2
	1976	232	60	39	0	0
	1977	311	57	42	0	1
	1978	357	52	45	0	3
	1979	337	50	46	0	4
	1980	233	52	42	0	6
	1981	183	51	40	0	8
	1982	121	49	41	0	10
	1983	200	53	40	0	8

See Table I for list of states in each region.

Source: U.S. Department of Commerce, Bureau of the Census.

APPENDIX TABLE 2

SHARES OF HEATING FUELS IN MULTI-FAMILY HOMES COMPLETED, BY REGION, 1974-1983

		Units Completed (000)	Gas (%)	Electricity (%)	Oil (%)	Other (%)
U.S.	1974	788	35	60	4	1
	1975	442	33	59	7	2
	1976	343	33	59	7	1
	1977	399	29	65	5	1
	1978	498	26	68	5	1
	1979	570	26	68	5	1
	1980	545	30	66	2	1
	1981	447	32	66	2	1
	1982	374	28	68	2	2
	1983	464	28	70	1	1
North East	1974	99	28	44	22	6
	1975	72	24	35	33	8
	1976	50	22	42	22	4
	1977	41	22	49	24	5
	1978	41	22	32	44	0
	1979	53	21	40	40	0
	1980	46	35	43	22	0
	1981	40	58	28	13	0
	1982	41	37	41	20	2
	1983	32	59	31	6	0
North Central	1974	157	59	39	1	1
	1975	96	50	49	0	1
	1976	84	46	52	1	0
	1977	99	39	55	6	0
	1978	117	38	60	2	0
	1979	121	41	57	2	1
	1980	104	44	55	0	1
	1981	78	54	46	0	0
	1982	51	63	33	0	4
	1983	59	63	36	0	2
South	1974	359	21	77	2	0
	1975	170	18	78	3	0
	1976	103	18	76	6	1
	1977	125	13	85	2	0
	1978	181	9	89	2	1
	1979	227	10	88	2	1
	1980	242	15	84	1	0
	1981	218	15	84	0	0
	1982	199	11	88	0	1
	1983	269	12	88	0	0

SHARES OF HEATING FUELS IN MULTI-FAMILY HOMES COMPLETED, BY REGION, 1974-1983 (cont'd.)

		Units Completed (000)	Gas (%)	Electricity (%)	Oil (%)	Other (%)
West	1974	173	47	53	0	0
	1975	105	46	53	0	0
	1976	106	42	57	0	0
	1977	133	38	61	0	1
	1978	160	38	59	0	3
	1979	169	40	57	0	2
	1980	153	44	53	0	3
	1981	111	40	57	0	4
	1982	82	41	55	0	4
	1983	105	42	55	0	3

See Table I for list of states in each region.

Source: U.S. Department of Commerce, Bureau of the Census.