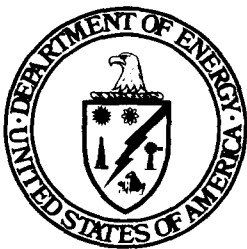


Residential Energy Consumption Survey: Characteristics of the Housing Stock and Households

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February 1980

U.S. Department of Energy
Energy Information Administration
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Residential Energy Consumption Survey: Characteristics of the Housing Stock and Households

February 1980

U.S. Department of Energy
Energy Information Administration
Assistant Administrator for Program Development
Office of the Consumption Data System
Washington, D.C. 20461



PREFACE

This is the fifth report of the Office of the Consumption Data System, Office of Program Development, Energy Information Administration, presenting final data from the National Interim Energy Consumption Survey (NIECS). The report contains data on general structural features of the housing unit, major appliances used by the household, heating equipment, and fuels used for space heating, water heating, cooking, and demographic information about the households. These tables are from the data file that contains imputations for missing data and includes data from mailed questionnaires. This report supersedes the preliminary report except for users who may be interested in the extent of missing data that is presented in the preliminary report.

Included in the report is a summary of the findings, a description of how the survey was conducted, a copy of the questionnaire, generalized sampling errors, and a glossary of terms.

The following EIA staff members have contributed to this project: Kenneth Vagts--Director, Office of the Consumption Data System; Lynda Carlson--manager for the residential sector; Wendel Thompson--NIECS survey manager; Lynn P. Handler--author; Leigh Carleton--table design and generation; Mike Maloney--systems design and data processing; Tom Woteki and Stuart J. Cohen--statistics; Julie Withers--editing; Diane Good and Cheryl Kozak--secretarial and clerical work. The survey fieldwork was conducted by Response Analysis Corporation under the direction of Reuben Cohen and Dawn Day. Statistical design support was provided by Joseph Steinberg of Survey Design, Inc.

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1. CHARACTERISTICS OF THE HOUSING STOCK AND
HOUSEHOLDS: FINAL REPORT

General Housing Characteristics

This report consists of four sets of tables describing the households and the housing units which were selected for the National Interim Energy Consumption Survey (NIECS). The first set (Tables 1A through 4B) presents statistics concerned with general structural features of the housing unit including: type, size, age, and value of the structure. Tables 5A through 6B show household inventories of major appliances. Displayed here are statistics on the number, type, and features of appliances used by the households. The third set (Tables 7A through 14B) deals with household heating equipment and the distribution of fuels used for space heating, water heating, and cooking. Tables 15A and 15B give some general demographic information on the NIECS households.

Each table is presented in two ways. The "A" series tables are given in weighted counts of housing units rounded to the nearest thousand. Series "B" tables are given in weighted column percentages. Column percentages can only be used in making relative comparisons. Table 1B shows that 47 percent of the units in the Northeast were built in 1939 or earlier as compared to 42 percent in the North Central region. However, Table 1A shows that there are over 500,000 more units in the North Central region which were built before 1940. To make absolute comparisons, therefore, it is necessary to use the "A" series of tables.

The sample base used for the report is 4,081. This figure includes all occupied residential housing units sampled in the NIECS during the winter of 1978-1979. A series of weights was applied to the sample units to allow estimates to be made of the entire population. After weighting, the estimated population was equal to 76.6 million housing units. The 100 percent figure given in the upper left hand corner in the "B" series tables represents this weighted number. The results given in the preliminary version of this report¹ are slightly different from those presented here. The sample base has been increased by 239 households because data were obtained from a final follow-up effort using mail questionnaires. In addition, data items which were missing in the preliminary report have been imputed (see the section on "How the Survey Was Conducted") and information from a survey of rental agents was used to improve reports of fuel used in apartment buildings.

¹Characteristics of the Housing Stock and Households: Preliminary Findings From the National Interim Energy Consumption Survey, DOE/EIA-0199/P.

Characteristics of the Housing Stock

The first set of tables presents general structural characteristics of the housing stock for the surveyed housing units. The majority of the units were owner-occupied, detached single family houses.

Type of Structure	Own		Rent	
	(thousand housing units)	(percent of total)	(thousand housing units)	(percent of total)
Single Family				
Detached	42,074	55	5,711	7
Other	8,933	12	18,685	24

A third of the housing units were built before 1940. A sizable minority of respondents 35 percent (+2.4)² were unable to estimate the size, in square feet, of their homes. Two-thirds (+2.8) of those who were able to estimate the size of their homes believed that their homes were smaller than 1,500 square feet.

Size in Square Feet	National Total		Reporting ³	
	(thousand housing units)	(percent of total)	(thousand housing units)	percent of total
Less than 1,500	33,312	43	33,312	67
1,500 or More	16,371	21	16,371	33
Not Reported	26,924	35		

Most housing units had only one floor (71 percent +2.2) and the median number of rooms per unit was five.

Number of Floors			Number of Rooms		
	(thousand housing units)	(percent of total)		(thousand housing units)	(percent of total)
1	54,706	71	1-3	10,042	13
2	17,602	23	4	17,010	22
Other	4,301	6	5	17,772	23
			6	14,840	19
			7 or More	16,945	22

Over 40 percent (+2.4) had no air conditioning and in those units with air conditioning, window units were more prevalent than central systems.

²Sampling errors are given for a 95 percent confidence level. For a discussion of sampling errors (and a table for their computation, see pages 56-58.

³"Housing Units Reporting" excludes the categories of "Not Reported."

Air Conditioning

	(thousand housing units)	(percent of total)
Central System	17,636	23
Window Units	25,135	33
None	33,837	44

Comparisons on similar items were made between the NIECS data and findings reported in the 1976 Annual Housing Survey (AHS). The NIECS data showed a small but significant increase in the number of housing units having air conditioning. Other comparisons between similar items including ownership, the year the house was built, and the number of rooms, showed that no significant changes had taken place in the two years between the surveys.

Most of the households paid for all of the energy-related utilities used by the housing unit.

<u>Utilities Paid</u>	(thousand housing units)	(percent of total)
All	65,969	86
Some	6,799	9
None	3,285	4
Other	556	1

Nearly three-fourths of the respondents (72 percent + 2.6) who were owners valued their homes at less than \$60,000.

<u>Value of Residence</u>	<u>National Total</u>		<u>Owners</u>	
	(thousand housing units)	(percent of total)	(thousand housing units)	(percent of total)
Less than \$20,000	7,347	10	7,347	14
\$20,000 - \$39,000	15,788	21	15,788	31
\$40,000 - \$59,000	13,625	18	13,625	27
\$60,000 - \$79,000	6,845	9	6,845	13
\$80,000 - \$99,000	3,335	4	3,335	7
\$100,000 or more	4,068	5	4,068	8
Not Applicable	25,601	33		

Of the renters, 35 percent (+4) paid less than \$150 monthly for rent, and 55 percent (+4.2) paid between \$150-\$299.

<u>Monthly Rent</u>	<u>National Total</u>		<u>Renters</u>	
	(thousand housing units)	(percent of total)	(thousand housing units)	(percent of total)
\$150 or Less	8,582	11	8,582	35
\$150 - \$299	13,309	17	13,309	55
\$300 or More	2,505	3	2,505	10
Not Applicable	52,212	68		

Characteristics of the Appliance Stock

The second set of tables (5 and 6) gives the type, number, and features of the major appliances used by the households. Virtually all of the housing units had at least one refrigerator and one oven. Nearly three-fourths had a washing machine and over half had a clothes dryer. Freezers and dishwashers were found in slightly more than a third of the housing units.

Major Appliances

Refrigerator	100%
Oven	98%
Washing Machine	74%
Clothes Dryer	59%
Separate Food Freezer	35%
Dishwasher	35%
Microwave Oven	8%

A comparison of Census figures from 1974⁴ with NIECS findings revealed that ownership (or use in the home) of all the major appliances surveyed increased slightly from 1974 to 1978.

However, with the exception of dishwashers, which were found in 35 percent (+2.4) of the the housing units in 1978 as compared to 28.4 percent in 1974, the differences were not significant. Microwave ovens, which were found in 8 percent (+1.3) of the NIECS households, were not included in the Census Bureau surveys.

The first part of Tables 5A and 5B shows the percentage distribution of housing units having at least one of each of seven major appliances; only one refrigerator, for example, per household was counted. The second section gives an inventory; that is, all the appliances in the housing unit were included. Although 10 percent (+1.4) of the housing units had seven or more appliances, this does not mean that these units had one each of the seven appliances listed. Some households had more than one oven or refrigerator and each was counted separately for the inventory.

Tables 6A and 6B give more detailed information on the types, numbers, and features of major household appliances. By far, the most popular refrigerator features were temperature control 97 percent (+0.8), separate freezer door 76 percent (+2.2), and full frost free 53 percent (+2.4). Households that used microwave ovens had conventional gas or electric ovens as well. Self-cleaning or continuous cleaning ovens were found in only a small portion of the housing units.

⁴"Selected Data from the 1973 and 1974 Surveys of Purchases and Ownership", pp. 22-30.

Heating Equipment and Fuels

The third set of tables shows the types of heating equipment and fuels used in the residential sector. Tables 7A and 7B give a breakdown of primary and secondary heating equipment by primary heating fuel. In the majority of the surveyed housing units 55 percent (+2.4), natural gas was used to fuel the main heating equipment. Fuel oil or kerosene, at 22 percent (+2.2), and electricity at 16 percent (+1.8), followed by natural gas.

Primary Heating Fuel

	(thousand housing units)	(percent of total)
Natural Gas	41,845	55
Fuel Oil	16,919	22
Electricity	12,071	16
LPG	3,124	4
Wood	1,885	2
Other, none	764	1

Of those housing units having secondary heating equipment, nearly half 47 percent (+4.2) used wood for fuel.

Forced air systems were the most prevalent type of primary heating equipment 52 percent (+2.4). Hot water systems were used in 18 percent (+2.0) of the homes. Various kinds of equipment used to heat individual rooms constituted the primary source of heat for 22 percent (+2.2) of the housing units.

Primary Heating Equipment

	(thousand housing units)	(percent of total)
Warm Air	39,548	52
Hot Water	13,487	18
Individual Room	17,108	22
Other, None	6,465	8

Tables 8A and 8B show the distribution of fuels used for space heating, water heating, and cooking. Nearly all of the surveyed households used either electricity or natural gas for cooking and water heating. Electricity was used for water heating by 33 percent (+2.4) and for cooking by 52 percent (+2.4) of the households. Natural gas was used for water heating by 55 percent (+2.4) and for cooking by 40 percent (+2.4). Approximately a third of the households 32 percent (+2.4) used natural gas for space heating, water heating, and cooking.

Tables 9A through 14B show primary heating equipment and primary heating fuel by: census region (and rural/urban), weather zones, type of housing structure, year house built, type and presence of air conditioning and family income.

Tables 15A and 15B present selected demographic data on the NIECS households. The typical NIECS household was composed of a married couple 67 percent (+2.4) with one of them being a full-time wage earner. The median and modal number of household members was two. Among unmarried respondents, twice as many households were headed by women 22 percent (+2.2). Poor households were more concentrated among blacks, the elderly, households headed by females, and those with grade school educations.

2. CHARACTERISTICS OF THE HOUSING STOCK
By CENSUS REGION--TABLES

**TABLE 1A
CHARACTERISTICS OF THE HOUSING STOCK BY CENSUS REGIONS
(THOUSAND HOUSING UNITS)**

	TOTAL HOUSING UNITS	CENSUS REGION											
		NORTH EAST			NORTH CENTRAL			SOUTH			WEST		
		TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
TOTAL HOUSING UNITS.....	76,608	17,363	14,391	2,972	20,614	14,908	5,707	24,603	16,067	8,536	14,028	11,458	2,570
OWN/RENT													
OWN.....	51,007	10,242	7,736	2,505	15,433	10,534	4,899	17,237	9,758	7,478	8,095	6,003	2,093
RENT.....	24,396	6,908	6,493	415	4,801	4,274	527	6,979	6,136	842	5,708	5,285	423
RENT FREE.....	1,205	213	162	51	380	99	281	388	173	215	224	170	54
UTILITIES PAID BY HOUSEHOLD													
ALL.....	65,969	12,507	9,692	2,815	18,850	13,271	5,579	22,414	13,939	8,475	12,198	9,668	2,531
SOME.....	6,799	3,491	3,470	20	1,320	1,263	57	802	774	28	1,186	1,186	-
NONE.....	3,285	1,182	1,064	118	319	270	49	1,249	1,232	17	535	521	13
OTHER.....	556	184	166	18	125	103	22	138	122	16	109	83	27
TYPE OF HOUSING STRUCTURE													
SINGLE FAMILY DETACHED.....	48,547	7,915	5,453	2,462	15,493	10,796	4,697	16,940	10,199	6,741	8,199	6,167	2,032
SINGLE FAMILY ATTACHED.....	3,128	1,614	1,614	-	578	495	84	497	300	198	439	416	23
BUILDING WITH 2-4 UNITS.....	10,749	4,240	4,020	220	2,795	2,587	207	2,006	1,956	49	1,709	1,675	35
BUILDING WITH 5 OR MORE UNITS...	9,151	3,112	3,082	31	793	776	18	2,284	2,284	-	2,961	2,921	40
MOBILE HOME.....	4,805	352	154	199	890	189	702	2,843	1,294	1,548	720	278	441
OTHER.....	228	130	69	61	65	65	-	33	33	-	-	-	-
YEAR HOUSE BUILT													
1939 OR EARLIER.....	25,159	8,118	7,118	1,000	8,682	6,116	2,566	4,467	2,934	1,533	3,891	3,109	782
1940 TO 1949.....	7,548	1,862	1,474	388	1,707	1,346	360	2,646	1,681	965	1,333	1,151	182
1950 TO 1959.....	13,761	2,791	2,432	359	3,679	3,001	679	4,968	3,600	1,368	2,323	2,029	294
1960 TO 1964.....	7,926	1,138	839	299	1,562	1,285	276	3,370	2,287	1,084	1,856	1,710	146
1965 TO 1969.....	8,201	1,254	842	412	1,792	1,413	379	3,297	2,391	906	1,858	1,641	218
1970 TO 1974.....	8,768	1,099	773	326	1,935	917	1,019	3,927	2,310	1,617	1,807	1,338	469
1975 OR LATER.....	5,245	1,100	912	188	1,257	829	428	1,928	863	1,064	959	479	480
ESTIMATED SIZE OF RESIDENCE (IN SQ. FT.)													
LESS THAN 500.....	4,234	1,235	1,029	206	894	894	-	998	775	223	1,108	1,048	60
500 TO 999.....	14,413	2,791	2,139	652	3,953	2,807	1,145	4,939	3,115	1,825	2,729	1,817	912
1,000 TO 1,499.....	14,665	2,582	1,890	692	4,438	3,050	1,388	4,349	2,536	1,813	3,295	2,474	821
1,500 TO 1,999.....	8,449	1,194	851	342	2,343	1,674	669	3,192	1,823	1,369	1,720	1,476	244
2,000 TO 2,999.....	5,712	931	631	299	1,925	1,354	571	1,633	951	682	1,223	936	287
3,000 OR MORE.....	2,210	466	393	72	783	594	189	548	291	257	414	340	74
NOT REPORTED.....	26,924	8,165	7,457	708	6,278	4,534	1,745	8,943	6,576	2,367	3,538	3,366	172

SEE FOOTNOTES AT END OF TABLE.

**TABLE 1A
CHARACTERISTICS OF THE HOUSING STOCK BY CENSUS REGIONS-CONTINUED
(THOUSAND HOUSING UNITS)**

	TOTAL HOUSING UNITS	CENSUS REGION											
		NORTH EAST			NORTH CENTRAL			SOUTH			WEST		
		TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
NUMBER OF FLOORS													
ONE FLOOR.....	54,706	9,456	7,770	1,687	12,807	9,042	3,766	21,348	13,581	7,767	11,094	9,155	1,940
ONE AND ONE-HALF.....	2,274	444	323	120	880	643	237	503	386	118	447	289	158
TWO.....	15,328	5,722	4,675	1,047	5,466	4,001	1,465	1,925	1,376	550	2,214	1,775	439
TWO AND ONE-HALF.....	517	260	246	14	181	119	62	62	62	-	13	-	13
THREE OR MORE.....	3,784	1,481	1,376	105	1,279	1,103	177	764	662	102	259	239	21
NUMBER OF ROOMS													
ONE TO THREE.....	10,042	2,724	2,421	303	1,500	1,134	366	3,294	2,608	686	2,523	2,047	476
FOUR.....	17,010	3,958	3,548	410	3,648	2,468	1,180	5,695	3,817	1,878	3,709	2,892	817
FIVE.....	17,772	3,052	2,424	628	5,191	3,756	1,435	6,486	3,833	2,653	3,043	2,611	433
SIX.....	14,840	3,274	2,694	579	4,761	3,430	1,331	4,821	2,944	1,878	1,984	1,625	359
SEVEN.....	9,029	2,216	1,697	520	2,874	2,114	760	2,460	1,626	834	1,479	1,207	272
EIGHT OR MORE.....	7,916	2,139	1,606	533	2,640	2,005	635	1,847	1,240	607	1,290	1,075	215
NUMBER OF WINDOWS PER ROOM													
ONE OR LESS.....	26,370	5,483	4,967	517	6,325	4,708	1,617	8,173	6,074	2,099	6,389	5,608	781
TWO.....	33,180	8,389	6,705	1,684	8,771	6,033	2,738	11,233	6,774	4,459	4,787	3,761	1,026
THREE.....	11,329	2,440	1,962	478	3,501	2,684	817	3,521	2,254	1,267	1,867	1,387	480
FOUR OR MORE.....	5,729	1,051	757	294	2,017	1,482	534	1,676	966	710	986	702	284
AIR CONDITIONING													
CENTRAL AIR CONDITIONING ONLY.....	17,401	1,545	1,464	81	5,010	3,789	1,221	8,947	6,649	2,298	1,899	1,778	121
INDIVIDUAL ROOM UNITS ONLY.....	25,135	6,321	5,203	1,119	7,200	5,602	1,598	9,265	6,265	3,000	2,348	2,076	272
CENTRAL A/C AND ROOM UNITS.....	235	19	-	19	92	92	-	124	110	14	-	-	-
NO AIR CONDITIONING.....	33,837	9,477	7,724	1,753	8,312	5,424	2,888	6,267	3,043	3,224	9,781	7,603	2,178
NUMBER OF ROOMS AIR CONDITIONED													
ALL.....	22,877	1,781	1,526	255	6,349	4,972	1,377	12,652	9,182	3,470	2,095	1,929	166
SOME.....	19,894	6,105	5,141	964	5,953	4,511	1,442	5,684	3,842	1,842	2,152	1,925	227
NONE.....	33,837	9,477	7,724	1,753	8,312	5,424	2,888	6,267	3,043	3,224	9,781	7,603	2,178

SEE FOOTNOTES AT END OF TABLE.

TABLE 1A
CHARACTERISTICS OF THE HOUSING STOCK BY CENSUS REGIONS-CONTINUED
(THOUSAND HOUSING UNITS)

	TOTAL HOUSING UNITS	CENSUS REGION											
		NORTH EAST			NORTH CENTRAL			SOUTH			WEST		
		TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
VALUE OF RESIDENCE (OWNERS ONLY)													
LESS THAN \$20,000.....	7,347	848	691	158	2,033	901	1,132	4,009	1,804	2,205	457	227	230
\$20,000 TO \$39,000.....	15,788	3,041	2,239	802	4,888	3,753	1,135	6,449	4,115	2,334	1,410	938	472
\$40,000 TO \$59,000.....	13,625	4,113	3,164	949	3,961	3,006	954	3,950	2,255	1,695	1,601	1,142	459
\$60,000 TO \$79,000.....	6,845	1,338	963	375	2,214	1,502	712	1,574	841	733	1,719	1,180	539
\$80,000 TO \$99,000.....	3,335	539	430	109	877	496	381	588	398	190	1,330	1,148	182
\$100,000 OR MORE.....	4,068	362	249	113	1,460	875	585	666	344	322	1,579	1,368	211
NOT APPLICABLE.....	25,601	7,121	6,655	466	5,181	4,374	807	7,366	6,309	1,057	5,933	5,455	477
MONTHLY RENT													
LESS THAN \$149.....	8,582	1,422	1,233	189	2,363	1,983	380	3,369	2,800	569	1,428	1,210	218
\$150 TO \$299.....	13,309	4,553	4,373	180	1,994	1,847	147	3,158	2,912	246	3,605	3,441	164
\$300 OR MORE.....	2,505	933	888	45	445	445	-	452	424	27	675	634	41
NOT APPLICABLE.....	52,212	10,455	7,897	2,558	15,813	10,633	5,180	17,624	9,931	7,693	8,320	6,173	2,147

NOTE: DATA MAY NOT SUM TO TOTALS DUE TO ROUNDING. A DASH "-" REPRESENTS OR ROUNDS TO ZERO.
SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 18
CHARACTERISTICS OF THE HOUSING STOCK BY CENSUS REGIONS
(PERCENTAGE OF HOUSING UNITS)

	TOTAL HOUSING UNITS	CENSUS REGION											
		NORTH EAST			NORTH CENTRAL			SOUTH			WEST		
		TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
TOTAL HOUSING UNITS.....	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
OWN/RENT													
OWN.....	67	59	54	84	75	71	86	70	61	88	58	52	81
RENT.....	32	40	45	14	23	29	9	28	38	10	41	46	16
RENT FREE.....	2	1	1	2	2	1	5	2	1	3	2	1	2
UTILITIES PAID BY HOUSEHOLD													
ALL.....	86	72	67	95	91	89	98	91	87	99	87	84	98
SOME.....	9	20	24	1	6	8	1	3	5	-	8	10	-
NONE.....	4	7	7	4	2	2	1	5	8	-	4	5	1
OTHER.....	1	1	1	1	1	1	-	1	1	-	1	1	1
TYPE OF HOUSING STRUCTURE													
SINGLE FAMILY DETACHED.....	63	46	38	83	75	72	82	69	63	79	58	54	79
SINGLE FAMILY ATTACHED.....	4	9	11	-	3	3	1	2	2	2	3	4	1
BUILDING WITH 2-4 UNITS.....	14	24	28	7	14	17	4	8	12	1	12	15	1
BUILDING WITH 5 OR MORE UNITS....	12	18	21	1	4	5	-	9	14	-	21	25	2
MOBILE HOME.....	6	2	1	7	4	1	12	12	8	18	5	2	17
OTHER.....	-	1	-	2	-	-	-	-	-	-	-	-	-
YEAR HOUSE BUILT													
1939 OR EARLIER.....	33	47	49	34	42	41	45	18	18	18	28	27	30
1940 TO 1949.....	10	11	10	13	8	9	6	11	10	11	10	10	7
1950 TO 1959.....	18	16	17	12	18	20	12	20	22	16	17	18	11
1960 TO 1964.....	10	7	6	10	8	9	5	14	14	13	13	15	6
1965 TO 1969.....	11	7	6	14	9	9	7	13	15	11	13	14	8
1970 TO 1974.....	11	6	5	11	9	6	18	16	14	19	13	12	18
1975 OR LATER.....	7	6	6	6	6	6	8	8	5	12	7	4	19
ESTIMATED SIZE OF RESIDENCE (IN SQ. FT.)													
LESS THAN 500.....	6	7	7	7	4	6	-	4	5	3	8	9	2
500 TO 999.....	19	16	15	22	19	19	20	20	19	21	19	16	35
1,000 TO 1,499.....	19	15	13	23	22	20	24	18	16	21	23	22	32
1,500 TO 1,999.....	11	7	6	12	11	11	12	13	11	16	12	13	10
2,000 TO 2,999.....	7	5	4	10	9	9	10	7	6	8	9	8	11
3,000 OR MORE.....	3	3	3	2	4	4	3	2	2	3	3	3	3
NOT REPORTED.....	35	47	52	24	30	30	31	36	41	28	25	29	7

SEE FOOTNOTES AT END OF TABLE.

TABLE 1B
CHARACTERISTICS OF THE HOUSING STOCK BY CENSUS REGIONS-CONTINUED
(PERCENTAGE OF HOUSING UNITS)

	TOTAL HOUSING UNITS	CENSUS REGION											
		NORTH EAST			NORTH CENTRAL			SOUTH			WEST		
		TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
NUMBER OF FLOORS													
ONE FLOOR.....	71	54	54	57	62	61	66	87	85	91	79	80	75
ONE AND ONE-HALF.....	3	3	2	4	4	4	4	2	2	1	3	3	6
TWO.....	20	33	32	35	27	27	26	8	9	6	16	15	17
TWO AND ONE-HALF.....	1	1	2	-	1	1	1	-	-	-	-	-	1
THREE OR MORE.....	5	9	10	4	6	7	3	3	4	1	2	2	1
NUMBER OF ROOMS													
ONE TO THREE.....	13	16	17	10	7	8	6	13	16	8	18	18	19
FOUR.....	22	23	25	14	18	17	21	23	24	22	26	25	32
FIVE.....	23	18	17	21	25	25	25	26	24	31	22	23	17
SIX.....	19	19	19	19	23	23	23	20	18	22	14	14	14
SEVEN.....	12	13	12	17	14	14	13	10	10	10	11	11	11
EIGHT OR MORE.....	10	12	11	18	13	13	11	8	8	7	9	9	8
NUMBER OF WINDOWS PER ROOM													
ONE OR LESS.....	34	32	35	17	31	32	28	33	38	25	46	49	30
TWO.....	43	48	47	57	43	40	48	46	42	52	34	33	40
THREE.....	15	14	14	16	17	18	14	14	14	15	13	12	19
FOUR OR MORE.....	7	6	5	10	10	10	9	7	6	8	7	6	11
AIR CONDITIONING													
CENTRAL AIR CONDITIONING ONLY.....	23	9	10	3	24	25	21	36	41	27	14	16	5
INDIVIDUAL ROOM UNITS ONLY.....	33	36	36	38	35	38	28	38	39	35	17	18	11
CENTRAL A/C AND ROOM UNITS.....	-	-	-	1	-	1	-	1	1	-	-	-	-
NO AIR CONDITIONING.....	44	55	54	59	40	36	51	25	19	38	70	66	85
NUMBER OF ROOMS AIR CONDITIONED													
ALL.....	30	10	11	9	31	33	24	51	57	41	15	17	6
SOME.....	26	35	36	32	29	30	25	23	24	22	15	17	9
NONE.....	44	55	54	59	40	36	51	25	19	38	70	66	85

SEE FOOTNOTES AT END OF TABLE.

**TABLE 1B
CHARACTERISTICS OF THE HOUSING STOCK BY CENSUS REGIONS-CONTINUED
(PERCENTAGE OF HOUSING UNITS)**

	TOTAL HOUSING UNITS	CENSUS REGION											
		NORTH EAST			NORTH CENTRAL			SOUTH			WEST		
		TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
VALUE OF RESIDENCE (OWNERS ONLY)													
LESS THAN \$20,000.....	10	5	5	5	10	6	20	16	11	26	3	2	9
\$20,000 TO \$39,000.....	21	18	16	27	24	25	20	26	26	27	10	8	18
\$40,000 TO \$59,000.....	18	24	22	32	19	20	17	16	14	20	11	10	18
\$60,000 TO \$79,000.....	9	8	7	13	11	10	12	6	5	9	12	10	21
\$80,000 TO \$99,000.....	4	3	3	4	4	3	7	2	2	2	9	10	7
\$100,000 OR MORE.....	5	2	2	4	7	6	10	3	2	4	11	12	8
NOT APPLICABLE.....	33	41	46	16	25	29	14	30	39	12	42	48	19
MONTHLY RENT													
LESS THAN \$149.....	11	8	9	6	11	13	7	14	17	7	10	11	8
\$150 TO \$299.....	17	26	30	6	10	12	3	13	18	3	26	30	6
\$300 OR MORE.....	3	5	6	2	2	3	-	2	3	-	5	6	2
NOT APPLICABLE.....	68	60	55	86	77	71	91	72	62	90	59	54	84

NOTE: DATA MAY NOT SUM TO TOTALS DUE TO ROUNDING. A DASH "-" REPRESENTS OR ROUNDS TO ZERO.
SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 2A
CHARACTERISTICS OF THE HOUSING STOCK BY TYPE OF HOUSING STRUCTURE
(THOUSAND HOUSING UNITS)

	TOTAL HOUSING UNITS	SINGLE FAMILY DETACHED	SINGLE FAMILY ATTACHED	BUILDING WITH 2-4 UNITS	BUILDING WITH 5 OR MORE UNITS	MOBILE HOME	OTHER
TOTAL HOUSING UNITS	76,608	48,547	3,128	10,749	9,151	4,805	228
OWN/RENT							
OWN.....	51,007	42,074	2,233	2,337	591	3,773	-
RENT.....	24,396	5,711	878	8,268	8,361	949	228
RENT FREE.....	1,205	762	17	144	199	82	-
UTILITIES PAID BY HOUSEHOLD							
ALL.....	65,969	48,027	2,745	7,246	3,238	4,539	174
SOME.....	6,799	187	344	2,566	3,589	92	20
NONE.....	3,285	193	-	783	2,119	156	35
OTHER.....	556	140	39	155	205	17	-
YEAR HOUSE BUILT							
1939 OR EARLIER.....	25,159	15,667	1,008	5,381	2,961	48	94
1940 TO 1949.....	7,548	6,281	307	683	159	37	81
1950 TO 1959.....	13,761	10,941	449	595	1,281	495	-
1960 TO 1964.....	7,926	5,431	179	460	1,396	445	14
1965 TO 1969.....	8,201	3,835	391	1,384	1,708	844	40
1970 TO 1974.....	8,768	3,658	719	1,067	1,270	2,055	-
1975 OR LATER.....	5,245	2,734	76	1,179	376	880	-
ESTIMATED SIZE OF RESIDENCE (IN SQ. FT.)							
LESS THAN 500.....	4,234	794	149	1,201	1,588	426	77
500 TO 999.....	14,413	6,617	480	2,741	1,515	2,982	77
1,000 TO 1,499.....	14,665	10,953	478	1,818	856	645	15
1,500 TO 1,999.....	8,449	7,220	354	462	280	119	14
2,000 TO 2,999.....	5,712	5,276	200	113	91	32	-
3,000 OR MORE.....	2,210	2,000	28	146	36	-	-
NOT REPORTED.....	26,924	15,787	1,440	4,268	4,784	600	44
NUMBER OF FLOORS							
ONE FLOOR.....	54,706	31,869	1,097	9,322	8,470	4,744	204
ONE AND ONE-HALF.....	2,274	2,065	-	192	-	17	-
TWO.....	15,328	11,412	1,562	1,997	289	44	25
TWO AND ONE-HALF.....	517	378	78	29	32	-	-
THREE OR MORE.....	3,784	2,824	391	210	359	-	-

SEE FOOTNOTES AT END OF TABLE.

TABLE 2A
CHARACTERISTICS OF THE HOUSING STOCK BY TYPE OF HOUSING STRUCTURE-CONTINUED
(THOUSAND HOUSING UNITS)

	TOTAL HOUSING UNITS	SINGLE FAMILY DETACHED	SINGLE FAMILY ATTACHED	BUILDING WITH 2-4 UNITS	BUILDING WITH 5 OR MORE UNITS	MOBILE HOME	OTHER
NUMBER OF ROOMS							
ONE TO THREE.....	10,042	2,036	51	2,374	4,490	941	150
FOUR.....	17,010	6,732	575	4,053	3,273	2,326	50
FIVE.....	17,772	12,696	671	2,374	1,032	970	29
SIX.....	14,840	11,850	1,030	1,280	275	406	-
SEVEN.....	9,029	7,990	467	377	81	114	-
EIGHT OR MORE.....	7,916	7,243	335	291	-	47	-
NUMBER OF WINDOWS PER ROOM							
ONE OR LESS.....	26,370	13,370	1,599	5,029	5,736	603	33
TWO.....	33,180	22,826	1,246	4,104	2,704	2,163	137
THREE.....	11,329	8,124	249	1,261	467	1,213	14
FOUR OR MORE.....	5,729	4,227	35	355	244	825	44
AIR CONDITIONING							
CENTRAL AIR CONDITIONING ONLY....	17,401	10,932	1,043	1,902	2,388	1,135	-
INDIVIDUAL ROOM UNITS ONLY.....	25,135	16,378	758	3,231	2,861	1,765	133
CENTRAL A/C AND ROOM UNITS.....	235	235	-	-	-	-	-
NO AIR CONDITIONING.....	33,837	21,002	1,318	5,616	3,901	1,905	95
NUMBER OF ROOMS AIR CONDITIONED							
ALL.....	22,877	14,307	1,003	2,587	3,130	1,812	39
SOME.....	19,894	13,239	808	2,546	2,119	1,088	95
NONE.....	33,837	21,002	1,318	5,616	3,901	1,905	95
VALUE OF RESIDENCE (OWNERS ONLY)							
LESS THAN \$20,000.....	7,347	4,069	266	225	40	2,748	-
\$20,000 TO \$39,000.....	15,788	13,654	740	508	107	740	-
\$40,000 TO \$59,000.....	13,625	11,290	847	1,118	241	128	-
\$60,000 TO \$79,000.....	6,845	6,429	155	139	19	103	-
\$80,000 TO \$99,000.....	3,335	3,016	89	123	86	21	-
\$100,000 OR MORE.....	4,068	3,615	96	224	98	34	-
NOT APPLICABLE.....	25,601	6,473	895	8,412	8,560	1,031	228
MONTHLY RENT							
LESS THAN \$149.....	8,582	3,028	193	2,760	2,006	510	85
\$150 TO \$299.....	13,309	2,113	522	4,795	5,211	440	128
\$300 OR MORE.....	2,505	570	63	713	1,144	-	15
NOT APPLICABLE.....	52,212	42,836	2,250	2,481	790	3,855	-

NOTE: DATA MAY NOT SUM TO TOTALS DUE TO ROUNDING. A DASH "-" REPRESENTS OR ROUNDS TO ZERO.
 SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
 OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 2B
CHARACTERISTICS OF THE HOUSING STOCK BY TYPE OF HOUSING STRUCTURE
(PERCENTAGE OF HOUSING UNITS)

	TOTAL HOUSING UNITS	SINGLE FAMILY DETACHED	SINGLE FAMILY ATTACHED	BUILDING WITH 2-4 UNITS	BUILDING WITH 5 OR MORE UNITS	MOBILE HOME	OTHER
TOTAL HOUSING UNITS.....	100%	100%	100%	100%	100%	100%	100%
OWN/RENT							
OWN.....	67	87	71	22	6	79	-
RENT.....	32	12	28	77	91	20	100
RENT FREE.....	2	2	1	1	2	2	-
UTILITIES PAID BY HOUSEHOLD							
ALL.....	86	99	88	67	35	94	76
SOME.....	9	-	11	24	39	2	9
NONE.....	4	-	-	7	23	3	15
OTHER.....	1	-	1	1	2	-	-
YEAR HOUSE BUILT							
1939 OR EARLIER.....	33	32	32	50	32	1	41
1940 TO 1949.....	10	13	10	6	2	1	35
1950 TO 1959.....	18	23	14	6	14	10	-
1960 TO 1964.....	10	11	6	4	15	9	6
1965 TO 1969.....	11	8	12	13	19	18	17
1970 TO 1974.....	11	8	23	10	14	43	-
1975 OR LATER.....	7	6	2	11	4	18	-
ESTIMATED SIZE OF RESIDENCE (IN SQ. FT.)							
LESS THAN 500.....	6	2	5	11	17	9	34
500 TO 999.....	19	14	15	25	17	62	34
1,000 TO 1,499.....	19	22	15	17	9	13	7
1,500 TO 1,999.....	11	15	11	4	3	2	6
2,000 TO 2,999.....	7	11	6	1	1	1	-
3,000 OR MORE.....	3	4	1	1	-	-	-
NOT REPORTED.....	35	33	46	40	52	12	19
NUMBER OF FLOORS							
ONE FLOOR.....	71	66	35	77	93	99	89
ONE AND ONE-HALF.....	3	4	-	2	-	-	-
TWO.....	20	24	50	19	3	1	11
TWO AND ONE-HALF.....	1	1	3	-	-	-	-
THREE OR MORE.....	5	6	13	2	4	-	-

SEE FOOTNOTES AT END OF TABLE.

TABLE 2B
CHARACTERISTICS OF THE HOUSING STOCK BY TYPE OF HOUSING STRUCTURE-CONTINUED
(PERCENTAGE OF HOUSING UNITS)

	TOTAL HOUSING UNITS	SINGLE FAMILY DETACHED	SINGLE FAMILY ATTACHED	BUILDING WITH 2-4 UNITS	BUILDING WITH 5 OR MORE UNITS	MOBILE HOME	OTHER
NUMBER OF ROOMS							
ONE TO THREE.....	13	4	2	22	49	20	66
FOUR.....	22	14	18	38	36	48	22
FIVE.....	23	26	21	22	11	20	13
SIX.....	19	24	33	12	3	8	-
SEVEN.....	12	16	15	4	1	2	-
EIGHT OR MORE.....	10	15	11	3	-	1	-
NUMBER OF WINDOWS PER ROOM							
ONE OR LESS.....	34	28	51	47	63	13	14
TWO.....	43	47	40	38	30	45	60
THREE.....	15	17	8	12	5	25	6
FOUR OR MORE.....	7	9	1	3	3	17	19
AIR CONDITIONING							
CENTRAL AIR CONDITIONING ONLY.....	23	23	33	18	26	24	-
INDIVIDUAL ROOM UNITS ONLY.....	33	34	25	30	31	37	58
CENTRAL A/C AND ROOM UNITS.....	-	-	-	-	-	-	-
NO AIR CONDITIONING.....	44	43	42	52	43	40	42
NUMBER OF ROOMS AIR CONDITIONED							
ALL.....	30	29	32	24	34	38	17
SOME.....	26	27	26	24	23	23	41
NONE.....	44	43	42	52	43	40	42
VALUE OF RESIDENCE (OWNERS ONLY)							
LESS THAN \$20,000.....	10	8	9	2	-	57	-
\$20,000 TO \$39,000.....	21	28	25	5	1	15	-
\$40,000 TO \$59,000.....	18	23	27	10	3	3	-
\$60,000 TO \$79,000.....	9	13	5	1	-	2	-
\$80,000 TO \$99,000.....	4	6	3	1	1	-	-
\$100,000 OR MORE.....	5	7	3	2	1	1	-
NOT APPLICABLE.....	33	13	29	78	94	21	100
MONTHLY RENT							
LESS THAN \$149.....	11	6	6	26	22	11	37
\$150 TO \$299.....	17	4	20	45	57	9	56
\$300 OR MORE.....	3	1	2	7	13	-	7
NOT APPLICABLE.....	68	88	72	23	9	80	-

NOTE: DATA MAY NOT SUM TO TOTALS DUE TO ROUNDING. A DASH "-" REPRESENTS OR ROUNDS TO ZERO.
SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 3A
CHARACTERISTICS OF THE HOUSING STOCK BY TYPE OF HOUSING STRUCTURE AND OWNERSHIP
(THOUSAND HOUSING UNITS)

	TOTAL HOUSING UNITS	SINGLE FAMILY DETACHED		SINGLE FAMILY ATTACHED		BUILDING WITH 2-4 UNITS		BUILDING WITH 5 OR MORE UNITS		MOBILE HOME		OTHER
		OWN	RENT	OWN	RENT	OWN	RENT	OWN	RENT	OWN	RENT	
TOTAL HOUSING UNITS.....	76,608	42,074	5,711	2,233	878	2,337	8,268	591	8,361	3,773	949	1,433
UTILITIES PAID BY HOUSEHOLD												
ALL.....	65,969	41,972	5,406	2,233	512	2,269	4,865	416	2,779	3,654	803	1,060
SOME.....	6,799	46	115	-	344	27	2,523	104	3,441	32	60	107
NONE.....	3,285	17	176	-	-	-	766	-	2,097	70	86	73
OTHER.....	556	39	14	-	22	41	114	71	44	17	-	193
YEAR HOUSE BUILT												
1939 OR EARLIER.....	25,159	12,570	2,598	787	221	1,499	3,737	116	2,800	48	-	782
1940 TO 1949.....	7,548	5,168	999	248	59	63	620	-	159	37	-	195
1950 TO 1959.....	13,761	9,760	1,077	360	90	88	507	36	1,225	436	41	142
1960 TO 1964.....	7,926	4,951	480	179	-	13	448	156	1,241	321	125	14
1965 TO 1969.....	8,201	3,568	251	250	124	75	1,309	25	1,604	540	304	152
1970 TO 1974.....	8,768	3,462	179	354	365	260	807	209	1,007	1,623	396	106
1975 OR LATER.....	5,245	2,594	127	56	20	339	839	51	325	768	83	41
ESTIMATED SIZE OF RESIDENCE (IN SQ. FT.)												
LESS THAN 500.....	4,234	444	333	136	13	74	1,096	25	1,520	261	147	187
500 TO 999.....	14,413	5,252	1,200	286	194	430	2,259	99	1,392	2,306	612	381
1,000 TO 1,499.....	14,665	10,033	718	383	95	880	939	143	659	573	72	171
1,500 TO 1,999.....	8,449	6,782	438	279	75	117	315	100	180	119	-	44
2,000 TO 2,999.....	5,712	5,018	166	183	-	97	14	27	64	32	-	109
3,000 OR MORE.....	2,210	1,953	47	14	14	23	123	-	36	-	-	-
NOT REPORTED.....	26,924	12,592	2,809	953	487	714	3,522	197	4,509	482	118	541
NUMBER OF FLOORS												
ONE FLOOR.....	54,706	26,843	4,438	913	167	1,563	6,573	336	7,956	3,712	949	1,154
ONE AND ONE-HALF.....	2,274	1,842	183	-	-	143	49	-	-	17	-	40
TWO.....	15,328	10,304	989	850	711	530	1,407	237	52	44	-	203
TWO AND ONE-HALF.....	517	379	-	78	-	-	29	-	32	-	-	-
THREE OR MORE.....	3,784	2,708	102	391	-	-	210	18	321	-	-	35
NUMBER OF ROOMS												
ONE TO THREE.....	10,042	1,199	717	15	36	69	2,258	40	4,384	796	109	420
FOUR.....	17,010	4,829	1,714	188	387	837	3,200	276	2,923	1,659	639	359
FIVE.....	17,772	10,980	1,548	478	193	776	1,561	211	763	794	158	310
SIX.....	14,840	10,909	877	834	195	358	909	40	234	364	43	77
SEVEN.....	9,029	7,318	535	430	19	159	219	23	58	114	-	154
EIGHT OR MORE.....	7,916	6,839	320	288	48	139	122	-	-	47	-	114

SEE FOOTNOTES AT END OF TABLE.

TABLE 3A
CHARACTERISTICS OF THE HOUSING STOCK BY TYPE OF HOUSING STRUCTURE AND OWNERSHIP-CONTINUED
(THOUSAND HOUSING UNITS)

	TOTAL HOUSING UNITS	SINGLE FAMILY DETACHED		SINGLE FAMILY ATTACHED		BUILDING WITH 2-4 UNITS		BUILDING WITH 5 OR MORE UNITS		MOBILE HOME		OTHER
		OWN	RENT	OWN	RENT	OWN	RENT	OWN	RENT	OWN	RENT	
NUMBER OF WINDOWS PER ROOM												
ONE OR LESS.....	26,370	11,673	1,506	1,003	578	1,001	4,028	378	5,279	524	79	313
TWO.....	33,180	19,615	2,887	1,004	242	924	3,035	160	2,423	1,574	525	791
THREE.....	11,329	6,978	992	212	37	225	1,036	35	432	1,056	157	169
FOUR OR MORE.....	5,729	3,802	326	14	21	186	169	17	227	619	188	161
AIR CONDITIONING												
CENTRAL AIR CONDITIONING ONLY...	17,401	10,408	441	722	305	230	1,672	75	2,278	995	139	135
INDIVIDUAL ROOM UNITS ONLY.....	25,135	14,272	1,856	705	62	833	2,351	266	2,497	1,190	522	581
CENTRAL A/C AND ROOM UNITS.....	235	235	-	-	-	-	-	-	-	-	-	-
NO AIR CONDITIONING.....	33,837	17,158	3,414	806	511	1,273	4,245	250	3,586	1,588	288	718
NUMBER OF ROOMS AIR CONDITIONED												
ALL.....	22,877	13,156	1,001	681	305	324	2,263	75	3,020	1,413	381	258
SOME.....	19,894	11,760	1,296	746	62	739	1,760	266	1,755	772	280	457
NONE.....	33,837	17,158	3,414	806	511	1,273	4,245	250	3,586	1,588	288	718
VALUE OF RESIDENCE (OWNERS ONLY)												
LESS THAN \$20,000.....	7,347	4,069	-	266	-	225	-	40	-	2,748	-	-
\$20,000 TO \$39,000.....	15,788	13,654	-	780	-	508	-	107	-	740	-	-
\$40,000 TO \$59,000.....	13,625	11,290	-	847	-	1,118	-	241	-	128	-	-
\$60,000 TO \$79,000.....	6,845	6,429	-	155	-	139	-	19	-	103	-	-
\$80,000 TO \$99,000.....	3,335	3,016	-	89	-	123	-	86	-	21	-	-
\$100,000 OR MORE.....	4,068	3,615	-	96	-	224	-	98	-	34	-	-
NOT APPLICABLE.....	25,601	-	5,711	-	878	-	8,268	-	8,361	-	949	1,433
MONTHLY RENT												
LESS THAN \$149.....	8,582	-	3,028	-	193	-	2,760	-	2,006	-	510	85
\$150 TO \$299.....	13,309	-	2,113	-	622	-	4,795	-	5,211	-	440	128
\$300 OR MORE.....	2,505	-	570	-	63	-	713	-	1,144	-	-	15
NOT APPLICABLE.....	52,212	42,074	-	2,233	-	2,337	-	591	-	3,773	-	1,205

NOTE: DATA MAY NOT SUM TO TOTALS DUE TO ROUNDING. A DASH "-" REPRESENTS OR ROUNDS TO ZERO.
SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 3B
CHARACTERISTICS OF THE HOUSING STOCK BY TYPE OF HOUSING STRUCTURE AND OWNERSHIP
(PERCENTAGE OF HOUSING UNITS)

	TOTAL HOUSING UNITS	SINGLE FAMILY DETACHED		SINGLE FAMILY ATTACHED		BUILDING WITH 2-4 UNITS		BUILDING WITH 5 OR MORE UNITS		MOBILE HOME		OTHER
		OWN	RENT	OWN	RENT	OWN	RENT	OWN	RENT	OWN	RENT	
TOTAL HOUSING UNITS.....	100X	100X	100X	100X	100X	100X	100X	100X	100X	100X	100X	100X
UTILITIES PAID BY HOUSEHOLD												
ALL.....	86	100	95	100	58	97	59	70	33	97	85	74
SOME.....	9	-	2	-	39	1	31	18	41	1	6	7
NONE.....	4	-	3	-	-	-	9	-	25	2	9	5
OTHER.....	1	-	-	-	2	2	1	12	1	-	-	13
YEAR HOUSE BUILT												
1939 OR EARLIER.....	33	30	45	35	25	64	45	20	33	1	-	55
1940 TO 1949.....	10	12	17	11	7	3	8	-	2	1	-	14
1950 TO 1959.....	18	23	19	16	10	4	6	6	15	12	4	10
1960 TO 1964.....	10	12	8	8	-	1	5	26	15	8	13	1
1965 TO 1969.....	11	8	4	11	14	3	16	4	19	14	32	11
1970 TO 1974.....	11	8	3	16	42	11	10	35	12	43	42	7
1975 OR LATER.....	7	6	2	3	2	15	10	9	4	20	9	3
ESTIMATED SIZE OF RESIDENCE (IN SQ. FT.)												
LESS THAN 500.....	6	1	6	6	2	3	13	4	18	7	16	13
500 TO 999.....	19	12	21	13	22	18	27	17	17	61	64	27
1,000 TO 1,499.....	19	24	13	17	11	38	11	24	8	15	8	12
1,500 TO 1,999.....	11	16	8	12	9	5	4	17	2	3	-	3
2,000 TO 2,999.....	7	12	3	8	-	4	-	5	1	1	-	8
3,000 OR MORE.....	3	5	1	1	2	1	1	-	-	-	-	-
NOT REPORTED.....	35	30	49	43	55	31	43	33	54	13	12	38
NUMBER OF FLOORS												
ONE FLOOR.....	71	64	78	41	19	71	80	57	95	98	100	81
ONE AND ONE-HALF.....	3	4	3	-	-	6	1	-	-	-	-	3
TWO.....	20	24	17	38	81	23	17	40	1	1	-	14
TWO AND ONE-HALF.....	1	1	-	4	-	-	-	-	-	-	-	-
THREE OR MORE.....	5	6	2	18	-	-	3	3	4	-	-	2
NUMBER OF ROOMS												
ONE TO THREE.....	13	3	13	1	4	3	27	7	52	21	12	29
FOUR.....	22	11	30	8	44	36	39	47	35	44	67	25
FIVE.....	23	26	27	21	22	33	19	36	9	21	17	22
SIX.....	19	26	15	37	22	15	11	7	3	10	4	5
SEVEN.....	12	17	9	19	2	7	3	4	1	3	-	11
EIGHT OR MORE.....	10	16	6	13	5	6	1	-	-	1	-	8

SEE FOOTNOTES AT END OF TABLE.

**TABLE 3B
CHARACTERISTICS OF THE HOUSING STOCK BY TYPE OF HOUSING STRUCTURE AND OWNERSHIP-CONTINUED
(PERCENTAGE OF HOUSING UNITS)**

	TOTAL HOUSING UNITS	SINGLE FAMILY DETACHED		SINGLE FAMILY ATTACHED		BUILDING WITH 2-4 UNITS		BUILDING WITH 5 OR MORE UNITS		MOBILE HOME		OTHER
		OWN	RENT	OWN	RENT	OWN	RENT	OWN	RENT	OWN	RENT	
NUMBER OF WINDOWS PER ROOM												
ONE OR LESS.....	34	28	26	45	66	43	49	64	63	14	8	22
TWO.....	43	47	51	45	28	40	37	27	29	42	55	55
THREE.....	15	17	17	10	4	10	13	6	5	28	17	12
FOUR OR MORE.....	7	9	6	1	2	8	2	3	3	16	20	11
AIR CONDITIONING												
CENTRAL AIR CONDITIONING ONLY....	23	25	8	32	35	10	20	13	27	26	15	9
INDIVIDUAL ROOM UNITS ONLY.....	33	34	32	32	7	36	28	45	30	32	55	41
CENTRAL A/C AND ROOM UNITS.....	-	1	-	-	-	-	-	-	-	-	-	-
NO AIR CONDITIONING.....	44	41	60	36	58	54	51	42	43	42	30	50
NUMBER OF ROOMS AIR CONDITIONED												
ALL.....	30	31	18	31	35	14	27	13	36	37	40	18
SOME.....	26	28	23	33	7	32	21	45	21	20	29	32
NONE.....	44	41	60	36	58	54	51	42	43	42	30	50
VALUE OF RESIDENCE (OWNERS ONLY)												
LESS THAN \$20,000.....	10	10	-	12	-	10	-	7	-	73	-	-
\$20,000 TO \$39,000.....	21	32	-	35	-	22	-	18	-	20	-	-
\$40,000 TO \$59,000.....	18	27	-	38	-	48	-	41	-	3	-	-
\$60,000 TO \$79,000.....	9	15	-	7	-	6	-	3	-	3	-	-
\$80,000 TO \$99,000.....	4	7	-	4	-	5	-	15	-	1	-	-
\$100,000 OR MORE.....	5	9	-	4	-	10	-	17	-	1	-	-
NOT APPLICABLE.....	33	-	100	-	100	-	100	-	100	-	100	100
MONTHLY RENT												
LESS THAN \$149.....	11	-	53	-	22	-	33	-	24	-	54	6
\$150 TO \$299.....	17	-	37	-	71	-	58	-	62	-	46	9
\$300 OR MORE.....	3	-	10	-	7	-	9	-	14	-	-	1
NOT APPLICABLE.....	68	100	-	100	-	100	-	100	-	100	-	84

NOTE: DATA MAY NOT SUM TO TOTALS DUE TO ROUNDING. A DASH "-" REPRESENTS OR ROUNDS TO ZERO.
SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 4A
CHARACTERISTICS OF THE HOUSING STOCK BY 1977 FAMILY INCOME
(THOUSAND HOUSEHOLDS)

	TOTAL HOUSEHOLDS	1977 FAMILY INCOME						TOTAL POOR
		LESS THAN \$5,000	\$5,000 TO \$9,999	\$10,000 TO \$14,999	\$15,000 TO \$19,999	\$20,000 TO \$24,999	\$25,000 OR MORE	
TOTAL.....	76,608	11,030	14,623	14,604	11,635	9,808	14,908	9,665
OWN/RENT								
OWN.....	51,007	4,872	8,677	8,646	8,540	7,513	12,759	4,609
RENT.....	24,396	5,858	5,648	5,571	2,981	2,268	2,060	4,814
RENT FREE.....	1,205	290	298	387	114	27	88	242
UTILITIES PAID BY HOUSEHOLD								
ALL.....	65,969	8,223	12,243	12,116	10,329	8,888	14,170	7,692
SOME.....	6,799	1,550	1,552	1,606	956	659	477	1,254
NONE.....	3,285	1,098	663	782	325	191	225	633
OTHER.....	556	159	166	100	25	70	36	86
TYPE OF HOUSING STRUCTURE								
SINGLE FAMILY DETACHED.....	48,547	5,275	8,040	8,566	7,836	7,171	11,659	4,969
SINGLE FAMILY ATTACHED.....	3,128	426	500	585	512	413	693	372
BUILDING WITH 2-4 UNITS.....	10,749	2,431	2,201	2,444	1,413	1,106	1,154	2,030
BUILDING WITH 5 OR MORE UNITS.....	9,151	1,924	2,266	2,031	1,144	745	1,040	1,252
MOBILE HOME.....	4,805	795	1,580	978	717	373	362	981
OTHER.....	228	179	36	-	13	-	-	61
YEAR HOUSE BUILT								
1939 OR EARLIER.....	25,159	5,487	6,238	4,512	3,670	2,401	2,850	4,883
1940 TO 1949.....	7,548	1,180	1,309	1,618	1,134	1,173	1,135	879
1950 TO 1959.....	13,761	1,409	2,255	2,604	2,248	1,848	3,397	1,174
1960 TO 1964.....	7,926	854	1,155	1,470	1,181	1,155	2,112	596
1965 TO 1969.....	8,201	1,188	1,370	1,585	983	1,261	1,815	933
1970 TO 1974.....	8,768	610	1,490	2,000	1,558	1,291	1,818	789
1975 OR LATER.....	5,245	303	806	815	861	678	1,782	412
ESTIMATED SIZE OF RESIDENCE (IN SQ. FT.)								
LESS THAN 500.....	4,234	1,556	799	970	354	298	248	1,246
500 TO 999.....	14,413	2,801	3,962	2,850	2,329	1,090	1,380	2,548
1,000 TO 1,499.....	14,665	1,272	2,543	2,760	2,665	2,278	3,146	1,208
1,500 TO 1,999.....	8,449	377	698	1,383	1,473	1,838	2,681	266
2,000 TO 2,999.....	5,712	80	345	665	725	1,034	2,862	158
3,000 OR MORE.....	2,210	33	195	329	204	233	1,216	33
NOT REPORTED.....	26,924	4,900	6,080	5,647	3,885	3,036	3,376	4,205

SEE FOOTNOTES AT END OF TABLE.

TABLE 4A
CHARACTERISTICS OF THE HOUSING STOCK BY 1977 FAMILY INCOME-CONTINUED
(THOUSAND HOUSEHOLDS)

	TOTAL HOUSEHOLDS	1977 FAMILY INCOME						TOTAL POOR
		LESS THAN \$5,000	\$5,000 TO \$9,999	\$10,000 TO \$14,999	\$15,000 TO \$19,999	\$20,000 TO \$24,999	\$25,000 OR MORE	
NUMBER OF FLOORS								
ONE FLOOR.....	54,706	9,163	11,921	11,314	8,112	6,511	7,684	7,916
ONE AND ONE-HALF.....	2,274	133	452	343	330	395	621	190
TWO.....	15,328	1,549	1,884	2,366	2,523	2,133	4,874	1,451
TWO AND ONE-HALF.....	517	51	27	74	78	104	183	51
THREE OR MORE.....	3,784	134	340	508	593	664	1,546	158
NUMBER OF ROOMS								
ONE TO THREE.....	10,042	3,342	2,448	1,936	1,112	765	439	2,270
FOUR.....	17,010	3,185	4,388	3,974	2,391	1,563	1,508	2,564
FIVE.....	17,772	2,180	4,042	3,839	3,044	2,040	2,628	2,341
SIX.....	14,840	1,478	2,219	2,739	2,576	2,588	3,239	1,555
SEVEN.....	9,029	566	1,030	1,349	1,354	1,693	3,038	640
EIGHT OR MORE.....	7,916	280	496	767	1,159	1,158	4,056	295
NUMBER OF WINDOWS PER ROOM								
ONE OR LESS.....	26,370	3,722	4,739	5,030	4,086	3,352	5,440	3,545
TWO.....	33,180	4,939	6,513	6,560	5,297	4,017	5,854	4,357
THREE.....	11,329	1,644	2,152	2,006	1,579	1,800	2,148	1,215
FOUR OR MORE.....	5,729	725	1,219	1,007	674	638	1,466	548
AIR CONDITIONING								
CENTRAL AIR CONDITIONING ONLY...	17,401	792	2,240	3,340	2,701	2,869	5,459	795
INDIVIDUAL ROOM UNITS ONLY.....	25,135	3,041	5,148	4,841	4,165	3,539	4,402	2,601
CENTRAL A/C AND ROOM UNITS.....	235	15	48	38	29	38	67	15
NO AIR CONDITIONING.....	33,837	7,182	7,188	6,386	4,740	3,361	4,981	6,254
NUMBER OF ROOMS AIR CONDITIONED								
ALL.....	22,877	1,877	3,518	4,426	3,674	3,587	5,796	1,557
SOME.....	19,894	1,971	3,918	3,792	3,221	2,861	4,131	1,854
NONE.....	33,837	7,182	7,188	6,386	4,740	3,361	4,981	6,254

SEE FOOTNOTES AT END OF TABLE.

TABLE 4A
CHARACTERISTICS OF THE HOUSING STOCK BY 1977 FAMILY INCOME-CONTINUED
(THOUSAND HOUSEHOLDS)

	TOTAL HOUSEHOLDS	1977 FAMILY INCOME						TOTAL POOR
		LESS THAN \$5,000	\$5,000 TO \$9,999	\$10,000 TO \$14,999	\$15,000 TO \$19,999	\$20,000 TO \$24,999	\$25,000 OR MORE	
VALUE OF RESIDENCE (OWNERS ONLY)								
LESS THAN \$20,000.....	7,347	1,903	2,517	1,420	971	340	196	1,977
\$20,000 TO \$39,000.....	15,788	1,875	3,574	3,602	3,076	2,251	1,410	1,770
\$40,000 TO \$59,000.....	13,625	745	1,619	2,013	2,546	2,967	3,734	661
\$60,000 TO \$79,000.....	6,845	240	695	820	1,185	984	2,921	154
\$80,000 TO \$99,000.....	3,335	77	123	412	369	577	1,777	31
\$100,000 OR MORE.....	4,068	33	150	379	392	392	2,721	16
NOT APPLICABLE.....	25,601	6,158	5,946	5,958	3,095	2,295	2,148	5,055
MONTHLY RENT								
LESS THAN \$149.....	8,582	3,680	2,316	1,543	456	391	196	2,962
\$150 TO \$299.....	13,309	1,961	2,991	3,746	2,155	1,339	1,118	1,621
\$300 OR MORE.....	2,505	227	340	282	371	538	747	231
NOT APPLICABLE.....	52,212	5,163	8,976	9,033	8,654	7,540	12,848	4,851

NOTE: DATA MAY NOT SUM TO TOTALS DUE TO ROUNDING. A DASH "-" REPRESENTS OR ROUNDS TO ZERO.
SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 4B
CHARACTERISTICS OF THE HOUSING STOCK BY 1977 FAMILY INCOME
(PERCENTAGE OF HOUSEHOLDS)

	TOTAL HOUSEHOLDS	1977 FAMILY INCOME						TOTAL POOR
		LESS THAN \$5,000	\$5,000 TO \$9,999	\$10,000 TO \$14,999	\$15,000 TO \$19,999	\$20,000 TO \$24,999	\$25,000 OR MORE	
TOTAL.....	100%	100%	100%	100%	100%	100%	100%	100%
OWN/RENT								
OWN.....	67	44	59	59	73	77	86	48
RENT.....	32	53	39	38	26	23	14	50
RENT FREE.....	2	3	2	3	1	-	1	3
UTILITIES PAID BY HOUSEHOLD								
ALL.....	86	75	84	83	89	91	95	90
SOME.....	9	14	11	11	8	7	3	13
NONE.....	4	10	5	5	3	2	2	7
OTHER.....	1	1	1	1	-	1	-	1
TYPE OF HOUSING STRUCTURE								
SINGLE FAMILY DETACHED.....	63	48	55	59	67	73	78	51
SINGLE FAMILY ATTACHED.....	4	4	3	4	4	4	5	4
BUILDING WITH 2-4 UNITS.....	14	22	15	17	12	11	8	21
BUILDING WITH 5 OR MORE UNITS...	12	17	15	14	10	8	7	13
MOBILE HOME.....	6	7	11	7	6	4	2	10
OTHER.....	-	2	-	-	-	-	-	1
YEAR HOUSE BUILT								
1939 OR EARLIER.....	33	50	43	31	32	24	19	51
1940 TO 1949.....	10	11	9	11	10	12	8	9
1950 TO 1959.....	18	13	15	18	19	19	23	12
1960 TO 1964.....	10	8	8	10	10	12	14	6
1965 TO 1969.....	11	11	9	11	8	13	12	10
1970 TO 1974.....	11	6	10	14	13	13	12	8
1975 OR LATER.....	7	3	6	6	7	7	12	4
ESTIMATED SIZE OF RESIDENCE (IN SQ. FT.)								
LESS THAN 500.....	6	14	5	7	3	3	2	13
500 TO 999.....	19	25	27	20	20	11	9	26
1,000 TO 1,499.....	19	12	17	19	23	23	21	12
1,500 TO 1,999.....	11	3	5	9	13	19	18	3
2,000 TO 2,999.....	7	1	2	5	6	11	19	2
3,000 OR MORE.....	3	-	1	2	2	2	8	-
NOT REPORTED.....	35	44	42	39	33	31	23	44

SEE FOOTNOTES AT END OF TABLE.

TABLE 4B
CHARACTERISTICS OF THE HOUSING STOCK BY 1977 FAMILY INCOME-CONTINUED
(PERCENTAGE OF HOUSEHOLDS)

	TOTAL HOUSEHOLDS	1977 FAMILY INCOME						TOTAL POOR
		LESS THAN \$5,000	\$5,000 TO \$9,999	\$10,000 TO \$14,999	\$15,000 TO \$19,999	\$20,000 TO \$24,999	\$25,000 OR MORE	
NUMBER OF FLOORS								
ONE FLOOR.....	71	83	82	77	70	66	52	81
ONE AND ONE-HALF.....	3	1	3	2	3	4	4	2
TWO.....	20	14	13	16	22	22	33	15
TWO AND ONE-HALF.....	1	-	-	1	1	1	1	1
THREE OR MORE.....	5	1	2	3	5	7	10	2
NUMBER OF ROOMS								
ONE TO THREE.....	13	30	17	13	10	8	3	23
FOUR.....	22	29	30	27	21	16	10	27
FIVE.....	23	20	28	26	26	21	18	24
SIX.....	19	13	15	19	22	26	22	16
SEVEN.....	12	5	7	9	12	17	20	7
EIGHT OR MORE.....	10	3	3	5	10	12	27	3
NUMBER OF WINDOWS PER ROOM								
ONE OR LESS.....	34	34	32	34	35	34	36	37
TWO.....	43	45	45	45	45	41	39	45
THREE.....	15	15	15	14	14	18	14	13
FOUR OR MORE.....	7	7	8	7	6	7	10	6
AIR CONDITIONING								
CENTRAL AIR CONDITIONING ONLY....	23	7	15	23	23	29	37	8
INDIVIDUAL ROOM UNITS ONLY.....	33	28	35	33	36	36	30	27
CENTRAL A/C AND ROOM UNITS.....	-	-	-	-	-	-	-	-
NO AIR CONDITIONING.....	44	65	49	44	41	34	33	65
NUMBER OF ROOMS AIR CONDITIONED								
ALL.....	30	17	24	30	32	37	39	16
SOME.....	26	18	27	26	28	29	28	19
NONE.....	44	65	49	44	41	34	33	65

SEE FOOTNOTES AT END OF TABLE.

TABLE 4B
CHARACTERISTICS OF THE HOUSING STOCK BY 1977 FAMILY INCOME-CONTINUED
(PERCENTAGE OF HOUSEHOLDS)

	TOTAL HOUSEHOLDS	1977 FAMILY INCOME						TOTAL POOR
		LESS THAN \$5,000	\$5,000 TO \$9,999	\$10,000 TO \$14,999	\$15,000 TO \$19,999	\$20,000 TO \$24,999	\$25,000 OR MORE	
VALUE OF RESIDENCE (OWNERS ONLY)								
LESS THAN \$20,000.....	10	17	17	10	8	3	1	20
\$20,000 TO \$39,000.....	21	17	24	25	26	23	9	18
\$40,000 TO \$59,000.....	18	7	11	14	22	30	25	7
\$60,000 TO \$79,000.....	9	2	5	6	10	10	20	2
\$80,000 TO \$99,000.....	4	1	1	3	3	6	12	-
\$100,000 OR MORE.....	5	-	1	3	3	4	19	-
NOT APPLICABLE.....	33	56	41	41	27	23	14	52
MONTHLY RENT								
LESS THAN \$149.....	11	33	16	11	4	4	1	31
\$150 TO \$299.....	17	18	20	26	19	14	7	17
\$300 OR MORE.....	3	2	2	2	3	5	5	2
NOT APPLICABLE.....	68	47	51	62	74	77	86	50

NOTE: DATA MAY NOT SUM TO TOTALS DUE TO ROUNDING. A DASH "--" REPRESENTS OR ROUNDS TO ZERO.
SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

**TABLE 5A
HOUSEHOLD APPLIANCE INVENTORY BY 1977 FAMILY INCOME
(THOUSAND HOUSEHOLDS)**

	TOTAL HOUSEHOLDS	1977 FAMILY INCOME						TOTAL POOR
		LESS THAN \$5,000	\$5,000 TO \$9,999	\$10,000 TO \$14,999	\$15,000 TO \$19,999	\$20,000 TO \$24,999	\$25,000 OR MORE	
TOTAL HOUSEHOLDS.....	76,608	11,030	14,623	14,604	11,635	9,808	14,908	9,665
MAJOR APPLIANCES								
REFRIGERATOR.....	76,364	10,899	14,547	14,585	11,618	9,808	14,908	9,570
OVEN.....	74,862	10,366	14,248	14,304	11,500	9,680	14,765	9,071
WASHING MACHINE.....	56,864	5,908	9,891	10,228	9,525	8,160	13,153	5,784
CLOTHES DRYER.....	45,457	2,769	6,442	8,070	8,229	7,469	12,478	2,743
SEPARATE FOOD FREEZER.....	27,006	2,555	4,280	4,726	4,836	3,670	6,938	2,583
DISHWASHER.....	26,454	815	2,218	4,358	4,173	4,411	10,479	763
MICROWAVE OVEN.....	5,970	253	323	906	1,083	790	2,614	209
NUMBER OF MAJOR APPLIANCES								
ONE/NONE.....	775	445	93	172	37	28	-	359
TWO.....	13,430	3,898	3,636	2,686	1,307	1,036	868	2,924
THREE.....	11,381	2,701	3,111	2,441	1,275	791	1,061	2,471
FOUR.....	14,492	2,243	3,233	3,066	2,445	2,179	1,326	2,085
FIVE.....	17,252	1,315	2,859	3,367	3,545	2,527	3,640	1,270
SIX.....	11,493	313	1,400	1,915	1,713	1,995	4,157	442
SEVEN OR MORE.....	7,785	115	291	956	1,314	1,252	3,856	115

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SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 5B
HOUSEHOLD APPLIANCE INVENTORY BY 1977 FAMILY INCOME
(PERCENTAGE OF HOUSEHOLDS)

	TOTAL HOUSEHOLDS	1977 FAMILY INCOME						TOTAL POOR
		LESS THAN \$5,000	\$5,000 TO \$9,999	\$10,000 TO \$14,999	\$15,000 TO \$19,999	\$20,000 TO \$24,999	\$25,000 OR MORE	
TOTAL HOUSEHOLDS.....	100%	100%	100%	100%	100%	100%	100%	100%
MAJOR APPLIANCES								
REFRIGERATOR.....	100	99	99	100	100	100	100	99
OVEN.....	78	94	97	98	99	99	99	94
WASHING MACHINE.....	74	54	68	70	72	83	88	50
CLOTHES DRYER.....	59	25	44	55	71	76	84	28
SEPARATE FOOD FREEZER.....	35	23	29	32	42	37	47	27
DISHWASHER.....	35	7	15	30	35	45	70	8
MICROWAVE OVEN.....	8	2	2	6	7	8	18	2
NUMBER OF MAJOR APPLIANCES								
ONE/NONE.....	1	4	1	1	-	-	-	4
TWO.....	18	35	25	18	11	11	6	30
THREE.....	15	24	21	17	11	8	7	25
FOUR.....	19	20	22	21	21	22	9	22
FIVE.....	23	12	20	23	30	26	24	13
SIX.....	15	3	10	13	15	20	28	5
SEVEN OR MORE.....	10	1	2	7	11	13	26	1

NOTE: DATA MAY NOT SUM TO TOTALS DUE TO ROUNDING. A DASH "-" REPRESENTS OR ROUNDS TO ZERO.
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SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

**TABLE 6A
HOUSEHOLD APPLIANCES BY 1977 FAMILY INCOME
(THOUSAND HOUSEHOLDS)**

	TOTAL HOUSEHOLDS	1977 FAMILY INCOME						TOTAL POOR
		LESS THAN \$5,000	\$5,000 TO \$9,999	\$10,000 TO \$14,999	\$15,000 TO \$19,999	\$20,000 TO \$24,999	\$25,000 OR MORE	
TOTAL HOUSEHOLDS.....	76,608	11,030	14,623	14,604	11,635	9,808	14,908	9,665
REFRIGERATOR								
ONE.....	66,013	10,242	13,272	12,912	10,029	8,255	11,304	8,939
TWO OR MORE.....	10,351	657	1,275	1,673	1,589	1,553	3,604	632
REFRIGERATOR FEATURES								
TEMPERATURE CONTROL.....	74,229	9,939	14,048	14,224	11,405	9,780	14,834	8,847
SEPARATE FREEZER DOOR.....	58,428	6,071	9,836	11,205	9,593	8,169	13,555	5,620
AUTOMATIC ICE MAKER.....	11,345	468	1,299	1,976	1,874	1,866	3,861	420
EXTRA INSULATION.....	10,334	783	1,823	1,919	1,841	1,523	2,445	906
ENERGY SAVER SWITCH.....	9,812	410	1,020	1,912	1,777	1,352	3,340	520
ICE WATER MAKER.....	1,878	113	303	232	229	143	858	94
TYPE OF DEFROST								
FULL FROST FREE.....	40,509	2,985	5,690	7,942	7,158	6,090	10,645	2,482
AUTOMATIC DEFROST.....	6,008	1,150	1,309	1,139	712	637	1,061	713
MANUAL DEFROST.....	29,847	6,764	7,548	5,504	3,749	3,080	3,202	6,175
SEPARATE FOOD FREEZER.....	27,006	2,555	4,280	4,726	4,836	3,670	6,938	2,583
ELECTRIC OVEN								
ONE.....	34,860	3,303	5,913	6,780	5,950	4,593	8,316	2,610
TWO OR MORE.....	5,117	187	532	793	751	807	2,048	207
ELECTRIC OVEN AND MICROWAVE.....	4,411	137	213	587	808	572	2,094	93
GAS OVEN								
ONE.....	34,576	6,834	7,825	6,600	4,888	4,280	4,149	6,209
TWO OR MORE.....	1,368	79	207	289	135	211	447	81
GAS OVEN AND MICROWAVE.....	1,491	72	110	319	291	219	480	72

SEE FOOTNOTES AT END OF TABLE.

TABLE 6A
HOUSEHOLD APPLIANCES BY 1977 FAMILY INCOME-CONTINUED
(THOUSAND HOUSEHOLDS)

	TOTAL HOUSEHOLDS	1977 FAMILY INCOME						TOTAL POOR
		LESS THAN \$5,000	\$5,000 TO \$9,999	\$10,000 TO \$14,999	\$15,000 TO \$19,999	\$20,000 TO \$24,999	\$25,000 OR MORE	
OVEN FEATURES								
ELECTRIC OVEN								
SELF CLEANING.....	9,026	376	785	1,366	1,542	1,467	3,491	218
CONTINUOUS CLEANING.....	3,385	30	256	598	596	404	1,501	30
GAS OVEN								
SELF CLEANING.....	2,594	392	459	605	438	295	415	493
CONTINUOUS CLEANING.....	2,424	117	320	581	397	406	604	136
MICROWAVE OVEN.....	5,970	253	323	906	1,083	790	2,614	209
RANGE OR COUNTER TOP BURNERS								
ELECTRIC BURNERS ONLY.....	38,992	3,526	6,318	7,431	6,479	5,157	10,081	2,788
GAS BURNERS ONLY.....	35,160	6,958	7,903	6,812	4,809	4,252	4,426	6,373
BOTH.....	1,714	150	334	234	296	325	375	148
COOKING FUEL USED MOST								
ELECTRICITY.....	39,979	3,693	6,467	7,606	6,630	5,292	10,290	2,975
NATURAL GAS.....	31,204	5,983	6,770	5,946	4,270	3,988	4,227	5,349
LIQUID PETROLEUM GAS (LPG).....	4,928	1,069	1,334	938	698	513	376	1,095
OTHER.....	33	33	-	-	-	-	-	33
NOT APPLICABLE.....	464	251	52	114	17	16	14	212
WASHING MACHINE								
AUTOMATIC.....	54,049	5,127	8,755	9,702	9,364	8,073	13,028	5,013
WRINGER.....	3,422	798	1,358	632	299	180	156	824
CLOTHES DRYER								
ELECTRIC.....	34,523	2,245	4,953	6,226	6,288	5,559	9,252	2,126
GAS.....	11,030	524	1,489	1,880	1,959	1,925	3,253	617
DISHWASHER.....	26,454	815	2,218	4,358	4,173	4,411	10,479	763

NOTE: DATA MAY NOT SUM TO TOTALS DUE TO ROUNDING. A DASH "-" REPRESENTS OR ROUNDS TO ZERO.
 SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
 OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 6B
HOUSEHOLD APPLIANCES BY 1977 FAMILY INCOME
(PERCENTAGE OF HOUSEHOLDS)

	TOTAL HOUSEHOLDS	1977 FAMILY INCOME						TOTAL POOR
		LESS THAN \$5,000	\$5,000 TO \$7,999	\$10,000 TO \$14,999	\$15,000 TO \$19,999	\$20,000 TO \$24,999	\$25,000 OR MORE	
TOTAL HOUSEHOLDS.....	100%	100%	100%	100%	100%	100%	100%	100%
REFRIGERATOR								
ONE.....	86	93	91	88	86	84	76	92
TWO OR MORE.....	14	6	9	11	14	16	24	7
REFRIGERATOR FEATURES								
TEMPERATURE CONTROL.....	97	90	96	97	98	100	100	92
SEPARATE FREEZER DOOR.....	76	55	67	77	82	83	91	58
AUTOMATIC ICE MAKER.....	19	4	9	14	16	19	26	4
EXTRA INSULATION.....	13	7	12	13	16	16	16	9
ENERGY SAVER SWITCH.....	13	4	7	13	15	14	22	5
ICE WATER MAKER.....	2	1	2	2	2	1	6	1
TYPE OF DEFROST								
FULL FROST FREE.....	63	27	39	54	62	62	71	26
AUTOMATIC DEFROST.....	2	10	9	8	6	6	7	9
MANUAL DEFROST.....	39	61	52	38	32	31	21	64
SEPARATE FOOD FREEZER.....	35	23	29	32	42	37	47	27
ELECTRIC OVEN								
ONE.....	46	30	40	46	51	47	56	27
TWO OR MORE.....	7	2	4	5	6	8	14	2
ELECTRIC OVEN AND MICROWAVE.....	6	1	1	4	7	6	14	1
GAS OVEN								
ONE.....	45	62	54	45	42	44	28	64
TWO OR MORE.....	2	1	1	2	1	2	3	1
GAS OVEN AND MICROWAVE.....	2	1	1	2	2	2	3	1

SEE FOOTNOTES AT END OF TABLE.

TABLE 6B
HOUSEHOLD APPLIANCES BY 1977 FAMILY INCOME-CONTINUED
(PERCENTAGE OF HOUSEHOLDS)

	TOTAL HOUSEHOLDS	1977 FAMILY INCOME						TOTAL POOR
		LESS THAN \$5,000	\$5,000 TO \$9,999	\$10,000 TO \$14,999	\$15,000 TO \$19,999	\$20,000 TO \$24,999	\$25,000 OR MORE	
OVEN FEATURES								
ELECTRIC OVEN								
SELF CLEANING.....	12	3	5	9	13	15	23	2
CONTINUOUS CLEANING.....	4	-	2	4	5	4	10	-
GAS OVEN								
SELF CLEANING.....	3	4	3	4	4	3	3	5
CONTINUOUS CLEANING.....	3	1	2	4	3	4	4	1
MICROWAVE OVEN.....	8	2	2	6	9	8	18	2
RANGE OR COUNTER TOP BURNERS								
ELECTRIC BURNERS ONLY.....								
	91	32	43	51	56	53	68	29
GAS BURNERS ONLY.....								
	46	63	54	47	41	43	30	66
BOTH.....	2	1	2	2	3	3	3	2
COOKING FUEL USED MOST								
ELECTRICITY.....								
	52	33	44	52	57	54	69	31
NATURAL GAS.....								
	41	54	46	41	37	41	28	55
LIQUID PETROLEUM GAS (LPG).....								
	6	10	9	6	6	5	3	11
OTHER.....								
	-	-	-	-	-	-	-	-
NOT APPLICABLE.....								
	1	2	-	1	-	-	-	2
WASHING MACHINE								
AUTOMATIC.....								
	71	46	60	66	80	82	87	52
WRINGER.....								
	4	7	9	4	3	2	1	9
CLOTHES DRYER								
ELECTRIC.....								
	45	20	34	43	54	57	62	22
GAS.....								
	14	5	10	13	17	20	22	6
DISHWASHER.....	35	7	15	30	36	45	70	8

NOTE: DATA MAY NOT SUM TO TOTALS DUE TO ROUNDING. A DASH "-" REPRESENTS OR ROUNDS TO ZERO.
 SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
 OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

**TABLE 7A
PRIMARY HEATING EQUIPMENT AND FUEL FOR SECONDARY HEATING EQUIPMENT BY TYPE OF PRIMARY HEATING FUEL
(THOUSAND HOUSING UNITS)**

	TOTAL HOUSING UNITS	TYPE OF PRIMARY HEATING FUEL						
		NATURAL GAS	FUEL OIL, KEROSENE	ELECTRICITY	LPG	WOOD	OTHER	NOT APPLICABLE
TOTAL HOUSING UNITS.....	76,608	41,845	16,919	12,071	3,124	1,885	405	359
PRIMARY HEATING EQUIPMENT								
WARM AIR FURNACE WITH DUCTS.....	38,394	24,557	7,695	4,453	1,469	54	165	-
ELECTRIC HEAT PUMP.....	1,154	-	-	1,154	-	-	-	-
STEAM OR HOT WATER SYSTEM.....	12,365	5,482	6,723	69	73	-	18	-
HOT WATER PIPES (RADIANT HEAT).....	1,122	573	475	59	15	-	-	-
FLOOR, WALL, OR PIPELESS FURNACE.....	5,999	4,739	556	129	520	36	19	-
BUILT IN ELECTRIC UNITS.....	5,608	53	18	5,537	-	-	-	-
ROOM HEATERS WITH FLUE.....	4,736	3,242	1,226	-	252	15	-	-
ROOM HEATERS WITHOUT FLUE.....	2,736	2,226	86	14	409	-	-	-
FIREPLACE, OR STOVE.....	2,242	142	56	42	19	1,781	202	-
PORTABLE SPACE HEATERS.....	1,786	761	84	574	367	-	-	-
OTHER.....	107	69	-	39	-	-	-	-
NONE.....	359	-	-	-	-	-	-	359
FUEL FOR SECONDARY HEATING EQUIPMENT								
WOOD.....	10,754	4,446	2,476	2,819	546	49	18	-
ELECTRICITY.....	6,356	3,263	1,344	898	383	433	35	-
NATURAL GAS.....	3,914	3,143	288	322	-	161	-	-
LIQUID PETROLEUM GAS (LPG).....	805	-	144	104	189	335	33	-
FUEL OIL, KEROSENE.....	414	22	166	125	-	102	-	-
OTHER.....	489	202	216	53	-	-	19	-
NOT APPLICABLE.....	53,976	30,769	11,897	7,750	2,005	805	300	359

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SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 7B
PRIMARY HEATING EQUIPMENT AND FUEL FOR SECONDARY HEATING EQUIPMENT BY TYPE OF PRIMARY HEATING FUEL
(PERCENTAGE OF HOUSING UNITS)

	TOTAL HOUSING UNITS	TYPE OF PRIMARY HEATING FUEL						
		NATURAL GAS	FUEL OIL, KEROSENE	ELECTRICITY	LPG	WOOD	OTHER	NOT APPLICABLE
TOTAL HOUSING UNITS.....	100%	100%	100%	100%	100%	100%	100%	100%
PRIMARY HEATING EQUIPMENT								
WARM AIR FURNACE WITH DUCTS.....	50	59	45	37	47	3	41	-
ELECTRIC HEAT PUMP.....	2	-	-	10	-	-	-	-
STEAM OR HOT WATER SYSTEM.....	16	13	40	1	2	-	4	-
HOT WATER PIPES (RADIANT HEAT).....	1	1	3	-	-	-	-	-
FLOOR, WALL, OR PIPELESS FURNACE.....	8	11	3	1	17	2	5	-
BUILT IN ELECTRIC UNITS.....	7	-	-	46	-	-	-	-
ROOM HEATERS WITH FLUE.....	6	8	7	-	9	1	-	-
ROOM HEATERS WITHOUT FLUE.....	4	5	1	-	13	-	-	-
FIREPLACE, OR STOVE.....	3	-	-	-	1	94	50	-
PORTABLE SPACE HEATERS.....	2	2	-	5	12	-	-	-
OTHER.....	-	-	-	-	-	-	-	-
NONE.....	-	-	-	-	-	-	-	100
FUEL FOR SECONDARY HEATING EQUIPMENT								
WOOD.....	14	11	17	23	17	3	4	-
ELECTRICITY.....	8	8	8	7	12	23	9	-
NATURAL GAS.....	5	8	2	3	-	9	-	-
LIQUID PETROLEUM GAS (LPG).....	1	-	1	1	6	18	8	-
FUEL OIL, KEROSENE.....	1	-	1	1	-	5	-	-
OTHER.....	1	-	1	-	-	-	5	-
NOT APPLICABLE.....	70	74	70	64	64	43	74	100

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SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
 OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 8A
WATER HEATING FUEL AND COOKING FUEL BY TYPE OF PRIMARY HEATING FUEL
(THOUSAND HOUSING UNITS)

	TOTAL HOUSING UNITS	TYPE OF PRIMARY HEATING FUEL						
		NATURAL GAS	FUEL OIL, KEROSENE	ELECTRICITY	LPG	WOOD	OTHER	NOT APPLICABLE
TOTAL HOUSING UNITS.....	76,608	41,845	16,919	12,071	3,124	1,885	405	359
WATER HEATING FUEL								
NATURAL GAS.....	42,123	38,421	2,220	1,163	-	112	39	169
ELECTRICITY.....	25,048	3,276	7,924	10,797	1,547	1,093	335	77
FUEL OIL, KEROSENE.....	5,768	-	5,768	-	-	-	-	-
LIQUID PETROLEUM GAS (LPG).....	3,102	19	930	111	1,559	406	-	77
WOOD.....	259	-	52	-	-	191	15	-
NONE.....	308	129	25	-	18	84	16	36
WATER HEATING FUEL: NATURAL GAS								
BY MOST USED COOKING FUEL								
NATURAL GAS.....	26,370	24,467	1,425	212	-	77	39	150
ELECTRICITY.....	15,515	13,766	764	951	-	34	-	-
LIQUID PETROLEUM GAS (LPG).....	31	-	31	-	-	-	-	-
WATER HEATING FUEL: ELECTRICITY								
BY MOST USED COOKING FUEL								
NATURAL GAS.....	1,368	1,180	60	94	-	33	-	-
ELECTRICITY.....	21,384	2,066	6,910	10,468	712	939	270	19
LIQUID PETROLEUM GAS (LPG).....	2,106	-	919	150	813	121	65	38
WATER HEATING FUEL: FUEL OIL, KEROSENE								
BY MOST USED COOKING FUEL								
NATURAL GAS.....	3,300	-	3,300	-	-	-	-	-
ELECTRICITY.....	2,024	-	2,024	-	-	-	-	-
LIQUID PETROLEUM GAS (LPG).....	365	-	365	-	-	-	-	-
WATER HEATING FUEL: LPG								
BY MOST USED COOKING FUEL								
NATURAL GAS.....	-	-	-	-	-	-	-	-
ELECTRICITY.....	794	19	238	-	438	80	-	19
LIQUID PETROLEUM GAS (LPG).....	2,308	-	693	111	1,122	325	-	58
OTHER/NONE/NOT APPLICABLE.....	1,042	347	189	85	39	275	31	75

NOTE: DATA MAY NOT SUM TO TOTALS DUE TO ROUNDING. A DASH "-" REPRESENTS OR ROUNDS TO ZERO.
 SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
 OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 88
WATER HEATING FUEL AND COOKING FUEL BY TYPE OF PRIMARY HEATING FUEL
(PERCENTAGE OF HOUSING UNITS)

	TOTAL HOUSING UNITS	TYPE OF PRIMARY HEATING FUEL						
		NATURAL GAS	FUEL OIL, KEROSENE	ELECTRICITY	LPG	WOOD	OTHER	NOT APPLICABLE
TOTAL HOUSING UNITS.....	100%	100%	100%	100%	100%	100%	100%	100%
WATER HEATING FUEL								
NATURAL GAS.....	55	92	13	10	-	6	10	47
ELECTRICITY.....	33	8	47	89	50	58	83	21
FUEL OIL, KEROSENE.....	8	-	34	-	-	-	-	-
LIQUID PETROLEUM GAS (LPG).....	4	-	5	1	50	22	-	21
WOOD.....	-	-	-	-	-	10	4	-
NONE.....	-	-	-	-	1	4	4	10
WATER HEATING FUEL: NATURAL GAS								
BY MOST USED COOKING FUEL								
NATURAL GAS.....	34	58	8	2	-	4	10	42
ELECTRICITY.....	20	33	5	8	-	2	-	-
LIQUID PETROLEUM GAS (LPG).....	-	-	-	-	-	-	-	-
WATER HEATING FUEL: ELECTRICITY								
BY MOST USED COOKING FUEL								
NATURAL GAS.....	2	3	-	1	-	2	-	-
ELECTRICITY.....	28	5	41	97	23	50	67	5
LIQUID PETROLEUM GAS (LPG).....	3	-	5	1	26	6	15	11
WATER HEATING FUEL: FUEL OIL, KEROSENE								
BY MOST USED COOKING FUEL								
NATURAL GAS.....	4	-	20	-	-	-	-	-
ELECTRICITY.....	3	-	12	-	-	-	-	-
LIQUID PETROLEUM GAS (LPG).....	-	-	2	-	-	-	-	-
WATER HEATING FUEL: LPG								
BY MOST USED COOKING FUEL								
NATURAL GAS.....	-	-	-	-	-	-	-	-
ELECTRICITY.....	1	-	1	-	14	4	-	5
LIQUID PETROLEUM GAS (LPG).....	3	-	4	1	36	17	-	16
OTHER/NONE/NOT APPLICABLE.....	1	1	1	1	1	15	8	21

NOTE: DATA MAY NOT SUM TO TOTALS DUE TO ROUNDING. A DASH "-" REPRESENTS OR ROUNDS TO ZERO. SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM, OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

**TABLE 9A
PRIMARY HEATING EQUIPMENT AND PRIMARY HEATING FUEL BY CENSUS REGIONS
(THOUSAND HOUSING UNITS)**

	TOTAL HOUSING UNITS	CENSUS REGION											
		NORTH EAST			NORTH CENTRAL			SOUTH			WEST		
		TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
TOTAL HOUSING UNITS.....	76,608	17,363	14,391	2,972	20,614	14,908	5,707	24,603	16,067	8,536	14,028	11,458	2,570
PRIMARY HEATING EQUIPMENT													
WARM AIR FURNACE WITH DUCTS.....	38,394	6,482	5,306	1,176	14,498	10,801	3,697	10,809	7,730	3,079	6,606	5,489	1,117
ELECTRIC HEAT PUMP.....	1,154	103	60	43	139	39	100	834	434	400	78	23	55
STEAM OR HOT WATER SYSTEM.....	12,365	8,432	7,073	1,359	2,582	2,317	265	686	533	153	665	619	46
HOT WATER PIPES (RADIANT HEAT)...	1,122	600	537	63	205	205	-	264	150	114	53	53	-
FLOOR, WALL, OR PIPELESS FURNACE	5,999	211	166	45	707	386	322	2,554	1,849	705	2,527	2,441	86
BUILT IN ELECTRIC UNITS.....	5,608	1,255	1,006	249	593	192	400	1,926	1,283	643	1,835	976	859
ROOM HEATERS WITH FLUE.....	4,735	124	108	16	1,267	765	502	1,959	1,326	634	1,386	1,336	50
ROOM HEATERS WITHOUT FLUE.....	2,736	58	58	-	85	57	29	2,335	1,492	843	258	239	19
FIREPLACE, OR STOVE.....	2,242	38	16	22	311	79	231	1,524	160	1,364	369	31	339
PORTABLE SPACE HEATERS.....	1,785	27	27	-	210	49	161	1,466	881	585	83	83	-
OTHER.....	107	34	34	-	18	18	-	55	55	-	-	-	-
NONE.....	359	-	-	-	-	-	-	190	173	17	169	169	-
PRIMARY HEATING FUEL													
NATURAL GAS.....	41,845	6,962	6,222	740	15,298	12,896	2,402	10,018	8,015	2,003	9,567	9,493	74
FUEL OIL, KEROSENE.....	16,919	8,829	6,962	1,866	3,117	1,474	1,643	4,187	2,521	1,666	787	373	414
ELECTRICITY.....	12,071	1,435	1,113	322	1,095	423	672	6,720	4,778	1,942	2,822	1,230	1,591
LIQUID PETROLEUM GAS (LPG).....	3,124	85	63	22	782	64	719	1,996	461	1,535	260	114	147
WOOD.....	1,885	22	-	22	240	18	222	1,233	15	1,218	391	46	345
OTHER.....	405	31	31	-	82	33	49	259	104	155	33	33	-
NOT APPLICABLE.....	359	-	-	-	-	-	-	190	173	17	169	169	-

NOTE: DATA MAY NOT SUM TO TOTALS DUE TO ROUNDING. A DASH "-" REPRESENTS OR ROUNDS TO ZERO.
SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

**TABLE 9B
PRIMARY HEATING EQUIPMENT AND PRIMARY HEATING FUEL BY CENSUS REGIONS
(PERCENTAGE OF HOUSING UNITS)**

	TOTAL HOUSING UNITS	CENSUS REGION											
		NORTH EAST			NORTH CENTRAL			SOUTH			WEST		
		TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
TOTAL HOUSING UNITS.....	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
PRIMARY HEATING EQUIPMENT													
WARM AIR FURNACE WITH DUCTS.....	50	37	37	40	70	72	65	44	48	36	47	48	43
ELECTRIC HEAT PUMP.....	2	1	-	1	1	-	2	3	3	5	1	-	2
STEAM OR HOT WATER SYSTEM.....	16	49	49	45	13	16	5	3	3	2	5	5	2
HOT WATER PIPES (RADIANT HEAT)...	1	3	4	2	1	1	-	1	1	1	-	-	-
FLOOR, WALL, OR PIPELESS FURNACE BUILT IN ELECTRIC UNITS.....	7	7	7	3	3	1	7	8	8	8	13	9	33
ROOM HEATERS WITH FLUE.....	6	1	1	1	6	5	9	9	8	7	10	12	2
ROOM HEATERS WITHOUT FLUE.....	4	-	-	-	-	-	1	9	9	10	2	2	1
FIREPLACE, OR STOVE.....	3	-	-	1	2	1	4	6	1	16	3	-	13
PORTABLE SPACE HEATERS.....	2	-	-	-	1	-	3	6	5	7	1	1	-
OTHER.....	-	-	-	-	-	-	-	-	-	-	-	-	-
NONE.....	-	-	-	-	-	-	-	1	1	-	1	1	-
PRIMARY HEATING FUEL													
NATURAL GAS.....	55	40	43	25	74	87	42	41	50	23	68	83	3
FUEL OIL, KEROSENE.....	22	51	48	63	15	10	29	17	16	20	6	3	16
ELECTRICITY.....	16	8	9	11	5	3	12	27	30	23	20	11	62
LIQUID PETROLEUM GAS (LPG).....	4	-	-	1	4	-	13	8	3	18	2	1	6
WOOD.....	2	-	-	1	1	-	4	5	-	14	3	-	13
OTHER.....	1	-	-	-	-	-	1	1	1	2	-	-	-
NOT APPLICABLE.....	-	-	-	-	-	-	-	1	1	-	1	1	-

NOTE: DATA MAY NOT SUM TO TOTALS DUE TO ROUNDING. A DASH "-" REPRESENTS OR ROUNDS TO ZERO. SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM, OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

**TABLE 10A
PRIMARY HEATING EQUIPMENT AND PRIMARY HEATING FUEL BY DEGREE DAYS
(THOUSAND HOUSING UNITS)**

	TOTAL HOUSING UNITS	HEATING AND COOLING DEGREE DAYS				
		<2000 CDD AND >7000 HDD	<2000 CDD AND 5500-7000 HDD	<2000 CDD AND 4000-5499 HDD	<2000 CDD AND <4000 HDD	>2000 CDD AND <4000 HDD
TOTAL HOUSING UNITS.....	76,608	6,267	21,606	20,319	16,814	11,602
PRIMARY HEATING EQUIPMENT						
WARM AIR FURNACE WITH DUCTS.....	38,394	3,120	13,058	9,774	7,005	5,437
ELECTRIC HEAT PUMP.....	1,154	58	163	143	509	281
STEAM OR HOT WATER SYSTEM.....	12,365	1,402	5,009	5,644	277	33
HOT WATER PIPES (RADIANT HEAT)..	1,122	-	305	548	247	22
FLOOR, WALL, OR PIPELESS FURNACE	5,999	188	914	759	3,019	1,119
BUILT IN ELECTRIC UNITS.....	5,608	1,057	1,240	1,457	1,409	446
ROOM HEATERS WITH FLUE.....	4,736	353	622	994	1,683	1,084
ROOM HEATERS WITHOUT FLUE.....	2,736	40	18	140	843	1,695
FIREPLACE, OR STOVE.....	2,242	22	240	635	970	376
PORTABLE SPACE HEATERS.....	1,786	27	21	189	668	881
OTHER.....	107	-	16	36	16	39
NONE.....	359	-	-	-	169	190
PRIMARY HEATING FUEL						
NATURAL GAS.....	41,845	2,982	14,311	9,327	9,330	5,895
FUEL OIL, KEROSENE.....	16,919	1,930	4,563	7,517	1,827	1,082
ELECTRICITY.....	12,071	1,140	2,032	2,293	3,481	3,124
LIQUID PETROLEUM GAS (LPG).....	3,124	176	321	569	1,035	1,023
WOOD.....	1,885	22	192	562	823	286
OTHER.....	405	18	187	52	148	-
NOT APPLICABLE.....	359	-	-	-	169	190

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SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 10B
PRIMARY HEATING EQUIPMENT AND PRIMARY HEATING FUEL BY DEGREE DAYS
(PERCENTAGE OF HOUSING UNITS)

	TOTAL HOUSING UNITS	HEATING AND COOLING DEGREE DAYS				
		<2000 CDD AND >7000 HDD	<2000 CDD AND 5500-7000 HDD	<2000 CDD AND 4000-5499 HDD	<2000 CDD AND <4000 HDD	>2000 CDD AND <4000 HDD
TOTAL HOUSING UNITS.....	100%	100%	100%	100%	100%	100%
PRIMARY HEATING EQUIPMENT						
WARM AIR FURNACE WITH DUCTS.....	50	50	60	48	42	47
ELECTRIC HEAT PUMP.....	2	1	1	1	3	2
STEAM OR HOT WATER SYSTEM.....	15	22	23	28	2	-
HOT WATER PIPES (RADIANT HEAT)...	1	-	1	3	1	-
FLOOR, WALL, OR PIPELESS FURNACE BUILT IN ELECTRIC UNITS.....	8	3	4	4	18	10
ROOM HEATERS WITH FLUE.....	7	17	6	7	8	4
ROOM HEATERS WITHOUT FLUE.....	6	6	3	5	10	9
FIREPLACE, OR STOVE.....	4	1	-	1	5	15
PORTABLE SPACE HEATERS.....	3	-	1	3	6	3
OTHER.....	2	-	-	1	4	8
NONE.....	-	-	-	-	-	-
	-	-	-	-	1	2
PRIMARY HEATING FUEL						
NATURAL GAS.....	55	48	66	46	55	51
FUEL OIL, KEROSENE.....	22	31	21	37	11	9
ELECTRICITY.....	15	18	9	11	21	27
LIQUID PETROLEUM GAS (LPG).....	4	3	1	3	6	9
WOOD.....	2	-	1	3	5	2
OTHER.....	1	-	1	-	1	-
NOT APPLICABLE.....	-	-	-	-	1	2

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SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM, OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

**TABLE 11A
PRIMARY HEATING EQUIPMENT AND PRIMARY HEATING FUEL BY TYPE OF HOUSING STRUCTURE
(THOUSAND HOUSING UNITS)**

	TOTAL HOUSING UNITS	SINGLE FAMILY DETACHED					SINGLE FAMILY ATTACHED	BUILDING WITH 2-4 UNITS	BUILDING WITH 5 OR MORE UNITS	MOBILE HOME	OTHER
		TOTAL	1-4 ROOMS	5 ROOMS	6 ROOMS	7 OR MORE ROOMS					
TOTAL HOUSING UNITS.....	76,608	48,547	8,768	12,696	11,850	15,233	3,128	10,749	9,151	4,805	228
PRIMARY HEATING EQUIPMENT											
WARM AIR FURNACE WITH DUCTS.....	38,394	25,246	3,148	6,691	6,262	9,146	1,845	4,964	2,897	3,329	113
ELECTRIC HEAT PUMP.....	1,154	923	116	181	143	484	83	28	69	50	-
STEAM OR HOT WATER SYSTEM.....	12,365	5,956	382	1,065	1,708	2,900	602	2,659	3,112	37	-
HOT WATER PIPES (RADIANT HEAT)...	1,122	604	118	212	130	143	15	39	444	-	20
FLOOR, WALL, OR PIPELESS FURNACE BUILT IN ELECTRIC UNITS.....	5,999	4,207	1,150	1,320	1,108	619	111	568	625	487	-
ROOM HEATERS WITH FLUE.....	5,608	3,016	790	671	705	850	283	895	1,191	209	14
ROOM HEATERS WITHOUT FLUE.....	4,736	3,031	1,164	926	583	358	68	915	490	168	62
FIREPLACE, OR STOVE.....	2,736	2,071	778	602	441	250	85	384	52	144	-
PORTABLE SPACE HEATERS.....	2,242	1,893	640	524	385	343	17	65	16	232	19
OTHER.....	1,786	1,414	399	471	368	176	-	180	42	149	-
NONE.....	107	51	18	33	-	-	-	18	39	-	-
	359	134	53	-	17	63	19	34	173	-	-
PRIMARY HEATING FUEL											
NATURAL GAS.....	41,845	26,942	4,555	6,991	6,787	8,608	2,244	6,742	4,427	1,295	195
FUEL OIL, KEROSENE.....	16,919	11,138	1,781	2,797	2,656	3,903	353	2,129	2,027	1,272	-
ELECTRICITY.....	12,071	6,424	1,287	1,701	1,432	2,005	435	1,586	2,503	1,110	14
LIQUID PETROLEUM GAS (LPG).....	3,124	1,895	421	659	489	326	41	242	22	924	-
WOOD.....	1,885	1,680	568	445	374	293	17	-	-	188	-
OTHER.....	405	334	103	102	95	35	19	16	-	16	19
NOT APPLICABLE.....	359	134	53	-	17	63	19	34	173	-	-

NOTE: DATA MAY NOT SUM TO TOTALS DUE TO ROUNDING. A DASH "-" REPRESENTS OR ROUNDS TO ZERO. SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM, OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

**TABLE 11B
PRIMARY HEATING EQUIPMENT AND PRIMARY HEATING FUEL BY TYPE OF HOUSING STRUCTURE
(PERCENTAGE OF HOUSING UNITS)**

	TOTAL HOUSING UNITS	SINGLE FAMILY DETACHED					SINGLE FAMILY ATTACHED	BUILDING WITH 2-4 UNITS	BUILDING WITH 5 OR MORE UNITS	MOBILE HOME	OTHER
		TOTAL	1-4 ROOMS	5 ROOMS	6 ROOMS	7 OR MORE ROOMS					
TOTAL HOUSING UNITS.....	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
PRIMARY HEATING EQUIPMENT											
WARM AIR FURNACE WITH DUCTS.....	50	52	36	53	53	60	59	46	32	69	49
ELECTRIC HEAT PUMP.....	2	2	1	1	1	3	3	-	1	1	-
STEAM OR HOT WATER SYSTEM.....	16	12	4	8	14	18	19	25	34	1	-
HOT WATER PIPES (RADIANT HEAT).. FLOOR, WALL, OR PIPELESS FURNACE	1	1	1	2	1	1	-	-	5	-	9
BUILT IN ELECTRIC UNITS.....	8	9	13	10	9	4	4	5	7	10	-
ROOM HEATERS WITH FLUE.....	7	5	9	5	6	6	9	8	13	4	6
ROOM HEATERS WITHOUT FLUE.....	6	6	13	7	5	2	2	9	5	4	27
FIREPLACE, OR STOVE.....	4	4	9	5	4	2	3	4	1	3	-
PORTABLE SPACE HEATERS.....	3	4	7	4	3	2	1	1	-	5	9
OTHER.....	2	3	5	4	3	1	-	2	-	3	-
NONE.....	-	-	-	-	-	-	-	-	-	-	-
	-	-	1	-	-	-	1	-	2	-	-
PRIMARY HEATING FUEL											
NATURAL GAS.....	50	55	52	55	57	57	72	63	48	27	85
FUEL OIL, KEROSENE.....	22	23	20	22	22	26	11	20	22	26	-
ELECTRICITY.....	16	13	15	13	12	13	14	15	27	23	6
LIQUID PETROLEUM GAS (LPG).....	4	4	5	5	4	2	1	2	-	19	-
WOOD.....	2	3	6	4	3	2	1	-	-	4	-
OTHER.....	1	1	1	1	1	-	1	-	-	-	9
NOT APPLICABLE.....	-	-	1	-	-	-	1	-	2	-	-

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SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

**TABLE 12A
PRIMARY HEATING EQUIPMENT AND PRIMARY HEATING FUEL BY YEAR HOUSE BUILT
(THOUSAND HOUSING UNITS)**

	TOTAL HOUSING UNITS	YEAR HOUSE BUILT						
		1975 OR LATER	1970 TO 1974	1965 TO 1969	1960 TO 1964	1950 TO 1959	1940 TO 1949	1939 OR EARLIER
TOTAL HOUSING UNITS.....	76,608	5,245	8,768	8,201	7,926	13,761	7,548	25,159
PRIMARY HEATING EQUIPMENT								
WARM AIR FURNACE WITH DUCTS.....	38,394	3,343	5,897	4,799	4,119	7,727	3,512	8,998
ELECTRIC HEAT PUMP.....	1,154	478	209	124	163	115	27	37
STEAM OR HOT WATER SYSTEM.....	12,365	54	229	934	1,157	1,602	1,275	7,116
HOT WATER PIPES (RADIANT HEAT)...	1,122	97	58	127	101	191	14	533
FLOOR, WALL, OR PIPELESS FURNACE	5,999	98	585	394	597	1,161	1,109	2,056
BUILT IN ELECTRIC UNITS.....	5,608	920	1,213	1,018	788	537	239	892
ROOM HEATERS WITH FLUE.....	4,736	35	141	255	345	1,018	596	2,345
ROOM HEATERS WITHOUT FLUE.....	2,736	-	172	213	229	519	289	1,314
FIREPLACE, OR STOVE.....	2,242	204	172	152	258	261	240	954
PORTABLE SPACE HEATERS.....	1,786	15	93	187	168	387	227	708
OTHER.....	107	-	-	-	-	55	-	52
NONE.....	359	-	-	-	-	187	19	153
PRIMARY HEATING FUEL								
NATURAL GAS.....	41,845	2,074	3,716	4,420	4,493	7,951	4,873	14,318
FUEL OIL, KEROSENE.....	16,919	430	1,124	946	1,226	3,636	1,868	7,690
ELECTRICITY.....	12,071	2,357	3,044	2,204	1,587	1,336	408	1,135
LIQUID PETROLEUM GAS (LPG).....	3,124	194	712	493	390	374	120	841
WOOD.....	1,885	171	172	139	183	228	205	788
OTHER.....	405	19	-	-	47	50	55	234
NOT APPLICABLE.....	359	-	-	-	-	187	19	153

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SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 12B
PRIMARY HEATING EQUIPMENT AND PRIMARY HEATING FUEL BY YEAR HOUSE BUILT
(PERCENTAGE OF HOUSING UNITS)

	TOTAL HOUSING UNITS	YEAR HOUSE BUILT						
		1975 OR LATER	1970 TO 1974	1965 TO 1969	1960 TO 1964	1950 TO 1959	1940 TO 1949	1939 OR EARLIER
TOTAL HOUSING UNITS.....	100%	100%	100%	100%	100%	100%	100%	100%
PRIMARY HEATING EQUIPMENT								
WARM AIR FURNACE WITH DUCTS.....	50	64	67	59	52	56	47	36
ELECTRIC HEAT PUMP.....	2	9	2	2	2	1	-	-
STEAM OR HOT WATER SYSTEM.....	16	1	3	11	15	12	17	28
HOT WATER PIPES (RADIANT HEAT)...	1	2	1	2	1	1	-	2
FLOOR, WALL, OR PIPELESS FURNACE BUILT IN ELECTRIC UNITS.....	8	2	7	5	8	8	15	8
ROOM HEATERS WITH FLUE.....	7	18	14	12	10	4	3	4
ROOM HEATERS WITHOUT FLUE.....	6	1	2	3	4	7	8	9
FIREPLACE, OR STOVE.....	4	-	2	3	3	4	4	5
PORTABLE SPACE HEATERS.....	3	4	2	2	3	2	3	4
OTHER.....	2	-	1	2	2	3	3	3
NONE.....	-	-	-	-	-	-	-	-
	-	-	-	-	-	1	-	1
PRIMARY HEATING FUEL								
NATURAL GAS.....	55	40	42	54	57	58	65	57
FUEL OIL, KEROSENE.....	22	8	13	12	15	26	25	31
ELECTRICITY.....	16	45	35	27	20	10	5	5
LIQUID PETROLEUM GAS (LPG).....	4	4	8	6	5	3	2	3
WOOD.....	2	3	2	2	2	2	3	3
OTHER.....	1	-	-	-	1	-	1	1
NOT APPLICABLE.....	-	-	-	-	-	1	-	1

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SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

**TABLE 13A
PRIMARY HEATING EQUIPMENT AND PRIMARY HEATING FUEL BY TYPE OF AIR CONDITIONING
(THOUSAND HOUSING UNITS)**

	TOTAL HOUSING UNITS	NUMBER OF ROOMS WITH AIR CONDITIONING			CENTRAL AIR CONDITIONING ONLY	INDIVIDUAL ROOM UNITS ONLY	CENTRAL A/C AND ROOM UNITS
		NONE	SOME	ALL			
TOTAL HOUSING UNITS.....	76,608	33,837	19,894	22,877	17,401	25,135	235
PRIMARY HEATING EQUIPMENT							
WARM AIR FURNACE WITH DUCTS.....	38,394	14,476	7,753	16,166	14,664	9,084	170
ELECTRIC HEAT PUMP.....	1,154	62	40	1,051	1,013	45	33
STEAM OR HOT WATER SYSTEM.....	12,365	5,569	5,395	1,401	392	6,389	15
HOT WATER PIPES (RADIANT HEAT)...	1,122	563	324	235	151	407	-
FLOOR, WALL, OR PIPELESS FURNACE BUILT IN ELECTRIC UNITS.....	5,999	3,125	1,713	1,161	260	2,597	17
ROOM HEATERS WITH FLUE.....	5,608	3,122	1,399	1,087	649	1,837	-
ROOM HEATERS WITHOUT FLUE.....	4,736	2,734	1,224	778	13	1,989	-
FIREPLACE, OR STOVE.....	2,736	1,498	902	336	56	1,182	-
PORTABLE SPACE HEATERS.....	2,242	1,504	412	327	163	575	-
OTHER.....	1,786	807	682	297	-	979	-
NONE.....	107	18	51	39	39	51	-
	359	359	-	-	-	-	-
PRIMARY HEATING FUEL							
NATURAL GAS.....	41,845	18,054	10,804	12,986	9,788	13,835	168
FUEL OIL, KEROSENE.....	16,919	8,191	5,786	2,942	1,833	6,878	17
ELECTRICITY.....	12,071	4,441	2,075	5,554	4,975	2,604	50
LIQUID PETROLEUM GAS (LPG).....	3,124	1,169	873	1,082	626	1,330	-
WOOD.....	1,885	1,289	301	296	180	417	-
OTHER.....	405	334	54	18	-	71	-
NOT APPLICABLE.....	359	359	-	-	-	-	-

NOTE: DATA MAY NOT SUM TO TOTALS DUE TO ROUNDING. A DASH "-" REPRESENTS OR ROUNDS TO ZERO. SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM, OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 13B
PRIMARY HEATING EQUIPMENT AND PRIMARY HEATING FUEL BY TYPE OF AIR CONDITIONING
(PERCENTAGE OF HOUSING UNITS)

	TOTAL HOUSING UNITS	NUMBER OF ROOMS WITH AIR CONDITIONING			CENTRAL AIR CONDITIONING	INDIVIDUAL ROOM UNITS ONLY
		NONE	SOME	ALL		
TOTAL HOUSING UNITS.....	100%	100%	100%	100%	100%	100%
PRIMARY HEATING EQUIPMENT						
WARM AIR FURNACE WITH DUCTS.....	50	43	39	71	84	36
ELECTRIC HEAT PUMP.....	2	-	-	5	6	-
STEAM OR HOT WATER SYSTEM.....	16	16	27	6	2	25
HOT WATER PIPES (RADIANT HEAT)...	1	2	2	1	1	2
FLOOR, WALL, OR PIPELESS FURNACE	8	9	9	5	2	10
BUILT IN ELECTRIC UNITS.....	7	2	7	5	4	7
ROOM HEATERS WITH FLUE.....	6	8	6	3	-	8
ROOM HEATERS WITHOUT FLUE.....	4	4	5	1	-	5
FIREPLACE, OR STOVE.....	3	4	2	1	1	2
PORTABLE SPACE HEATERS.....	2	2	3	1	-	4
OTHER.....	-	-	-	-	-	-
NONE.....	-	1	-	-	-	-
PRIMARY HEATING FUEL						
NATURAL GAS.....	55	53	54	57	56	55
FUEL OIL, KEROSENE.....	22	24	29	13	10	27
ELECTRICITY.....	16	13	10	24	28	10
LIQUID PETROLEUM GAS (LPG).....	4	3	4	5	4	5
WOOD.....	2	4	2	1	1	2
OTHER.....	1	1	-	-	-	-
NOT APPLICABLE.....	-	1	-	-	-	-

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SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 14A
TYPE OF PRIMARY HEATING EQUIPMENT AND PRIMARY HEATING FUEL BY 1977 FAMILY INCOME
(THOUSAND HOUSEHOLDS)

	TOTAL HOUSEHOLDS	1977 FAMILY INCOME						TOTAL POOR
		LESS THAN \$5,000	\$5,000 TO \$9,999	\$10,000 TO \$14,999	\$15,000 TO \$19,999	\$20,000 TO \$24,999	\$25,000 OR MORE	
TOTAL.....	76,608	11,030	14,623	14,604	11,635	9,808	14,908	9,665
PRIMARY HEATING EQUIPMENT								
WARM AIR FURNACE WITH DUCTS.....	38,394	3,543	6,946	7,306	5,652	5,865	9,082	3,237
ELECTRIC HEAT PUMP.....	1,154	-	35	189	357	172	402	-
STEAM OR HOT WATER SYSTEM.....	12,365	1,965	2,260	1,860	2,004	1,779	2,498	1,597
HOT WATER PIPES (RADIANT HEAT)..	1,122	170	211	223	216	94	208	162
FLOOR, WALL, OR PIPELESS FURNACE	5,999	882	1,491	1,296	896	627	808	671
BUILT IN ELECTRIC UNITS.....	5,608	720	906	1,134	852	684	1,312	692
ROOM HEATERS WITH FLUE.....	4,736	1,583	980	1,180	659	169	165	1,220
ROOM HEATERS WITHOUT FLUE.....	2,736	983	848	445	249	116	95	1,018
FIREPLACE, OR STOVE.....	2,242	537	450	407	471	143	233	533
PORTABLE SPACE HEATERS.....	1,786	411	428	477	223	158	89	364
OTHER.....	107	18	16	18	39	-	.16	-
NONE.....	359	219	53	70	17	-	-	171
PRIMARY HEATING FUEL								
NATURAL GAS.....	41,845	6,421	8,004	7,757	5,776	5,493	8,394	5,322
FUEL OIL, KEROSENE.....	16,919	2,182	3,369	3,004	2,804	2,178	3,382	1,909
ELECTRICITY.....	12,071	1,162	1,771	2,738	2,090	1,611	2,698	1,094
LIQUID PETROLEUM GAS (LPG).....	3,124	476	931	655	486	366	210	571
WOOD.....	1,885	389	424	292	412	144	224	438
OTHER.....	405	181	71	88	50	15	-	160
NOT APPLICABLE.....	359	219	53	70	17	-	-	171

NOTE: DATA MAY NOT SUM TO TOTALS DUE TO ROUNDING. A DASH "--" REPRESENTS OR ROUNDS TO ZERO.
 SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

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 OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 14B
TYPE OF PRIMARY HEATING EQUIPMENT AND PRIMARY HEATING FUEL BY 1977 FAMILY INCOME
(PERCENTAGE OF HOUSEHOLDS)

	TOTAL HOUSEHOLDS	1977 FAMILY INCOME						TOTAL POOR
		LESS THAN \$5,000	\$5,000 TO \$9,999	\$10,000 TO \$14,999	\$15,000 TO \$19,999	\$20,000 TO \$24,999	\$25,000 OR MORE	
TOTAL.....	100%	100%	100%	100%	100%	100%	100%	100%
PRIMARY HEATING EQUIPMENT								
WARM AIR FURNACE WITH DUCTS.....	50	32	47	50	49	60	61	33
ELECTRIC HEAT PUMP.....	2	-	-	1	3	2	3	-
STEAM OR HOT WATER SYSTEM.....	16	18	15	13	17	18	17	17
HOT WATER PIPES (RADIANT HEAT)..	1	2	1	2	2	1	1	2
FLOOR, WALL, OR PIPELESS FURNACE	8	8	10	9	8	6	5	7
BUILT IN ELECTRIC UNITS.....	7	7	6	8	7	7	9	7
ROOM HEATERS WITH FLUE.....	6	14	7	8	6	2	1	13
ROOM HEATERS WITHOUT FLUE.....	4	9	6	3	2	1	1	11
FIREPLACE, OR STOVE.....	3	5	3	3	4	1	2	5
PORTABLE SPACE HEATERS.....	2	4	3	3	2	2	1	4
OTHER.....	-	-	-	-	-	-	-	-
NONE.....	-	2	-	-	-	-	-	2
PRIMARY HEATING FUEL								
NATURAL GAS.....	55	58	55	53	50	56	56	55
FUEL OIL, KEROSENE.....	22	20	23	21	24	22	23	20
ELECTRICITY.....	16	11	12	19	18	16	18	11
LIQUID PETROLEUM GAS (LPG).....	4	4	6	4	4	4	1	6
WOOD.....	2	4	3	2	4	1	2	5
OTHER.....	1	2	-	1	-	-	-	2
NOT APPLICABLE.....	-	2	-	-	-	-	-	2

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 SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

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TABLE 15A
SOCIOECONOMIC CHARACTERISTICS OF THE HOUSEHOLDS BY SELECTED DEMOGRAPHIC CHARACTERISTICS
(THOUSAND HOUSEHOLDS)

	TOTAL HOUSEHOLDS	AGE OF HEAD			RACE		EDUCATION OF HEAD (IN YEARS)			MARITAL STATUS OF HEAD		
		35 OR LESS	36 TO 59	60 AND OVER	WHITE, OTHER	BLACK	8 OR LESS	9 TO 12	13 AND OVER	MARRIED	NOT MARRIED	
											FEMALE HEAD	MALE HEAD
TOTAL HOUSEHOLDS.....	76,608	25,466	30,013	21,129	69,124	7,484	12,627	35,660	28,321	51,422	17,055	8,131
1977 FAMILY INCOME												
LESS THAN \$5,000.....	11,030	2,487	2,233	5,310	9,298	1,733	4,791	4,266	1,972	2,814	6,482	1,734
\$5,000 TO \$9,999.....	14,623	4,682	3,642	6,299	12,591	2,032	3,667	7,585	3,371	8,548	4,467	1,608
\$10,000 TO \$14,999.....	14,604	5,902	4,858	3,844	12,956	1,648	2,046	7,443	5,115	9,787	3,307	1,510
\$15,000 TO \$19,999.....	11,635	5,020	4,990	1,625	10,416	1,219	1,010	6,491	4,135	9,235	1,226	1,174
\$20,000 TO \$24,999.....	9,808	3,419	5,099	1,290	9,331	477	632	4,719	4,457	8,263	782	762
\$25,000 OR MORE.....	14,908	3,956	9,192	1,760	14,532	376	481	5,156	9,271	12,776	790	1,342
TOTAL POOR.....	9,665	2,812	2,720	4,133	7,668	1,997	4,167	4,089	1,409	4,167	4,354	1,145
NUMBER OF HOUSEHOLD MEMBERS												
ONE.....	14,390	3,815	2,952	7,623	13,111	1,279	3,447	5,582	5,361	195	9,121	5,074
TWO.....	25,725	7,580	7,829	10,315	23,934	1,791	4,660	11,530	9,535	20,113	3,522	2,090
THREE.....	13,439	5,496	5,789	2,154	11,902	1,537	1,599	6,362	5,478	10,661	2,253	524
FOUR.....	12,472	5,562	6,288	623	11,229	1,243	1,186	6,513	4,773	10,981	1,199	291
FIVE OR MORE.....	10,583	3,013	7,156	414	8,949	1,634	1,735	5,673	3,175	9,473	959	151
NUMBER OF FULL-TIME WAGE EARNERS												
NONE.....	20,582	2,647	3,155	14,780	18,416	2,166	7,303	8,291	4,988	9,115	8,686	2,781
ONE.....	33,886	14,045	15,153	4,688	30,688	3,198	3,220	16,253	14,413	23,358	6,429	4,099
TWO.....	19,037	8,233	9,460	1,345	17,203	1,835	1,628	9,272	8,137	16,496	1,494	1,048
THREE.....	2,513	430	1,843	240	2,228	285	422	1,513	578	1,987	344	182
FOUR OR MORE.....	590	111	403	76	590	-	54	331	205	466	102	21
FULL-TIME (FT) EMPLOYMENT												
HEAD MARRIED												
HEAD OR SPOUSE EMPLOYED FT.....	26,132	9,060	13,772	3,300	24,165	1,967	2,847	13,307	9,978	26,132	-	-
BOTH EMPLOYED FT.....	15,313	6,686	7,842	785	13,865	1,448	1,101	7,592	6,621	15,313	-	-
NEITHER EMPLOYED FT.....	9,977	644	1,668	7,666	9,112	865	3,784	4,099	2,095	9,977	-	-
HEAD NOT MARRIED												
HEAD EMPLOYED FT.....	11,980	6,317	4,593	1,070	10,436	1,544	602	5,210	6,168	-	6,999	4,981
HEAD NOT EMPLOYED FT.....	13,206	2,759	2,139	8,309	11,546	1,660	4,294	5,453	3,459	-	10,056	3,150

NOTE: DATA MAY NOT SUM TO TOTALS DUE TO ROUNDING. A DASH "-" REPRESENTS OR ROUNDS TO ZERO.
 SEE GLOSSARY FOR DEFINITIONS OF TERMS USED IN THIS TABLE.

SOURCE: THE 1978 NATIONAL INTERIM ENERGY CONSUMPTION SURVEY, OFFICE OF THE CONSUMPTION DATA SYSTEM,
 OFFICE OF PROGRAM DEVELOPMENT, ENERGY INFORMATION ADMINISTRATION.

TABLE 15B
SOCIOECONOMIC CHARACTERISTICS OF THE HOUSEHOLDS BY SELECTED DEMOGRAPHIC CHARACTERISTICS
(PERCENTAGE OF HOUSEHOLDS)

	TOTAL HOUSEHOLDS	AGE OF HEAD			RACE		EDUCATION OF HEAD (IN YEARS)			MARITAL STATUS OF HEAD		
		35 OR LESS	36 TO 59	60 AND OVER	WHITE, OTHER	BLACK	8 OR LESS	9 TO 12	13 AND OVER	MARRIED	NOT MARRIED	
											FEMALE HEAD	MALE HEAD
TOTAL HOUSEHOLDS.....	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%	100%
1977 FAMILY INCOME												
LESS THAN \$5,000.....	14	10	7	30	13	23	38	12	7	5	38	21
\$5,000 TO \$9,999.....	19	18	12	30	18	27	29	21	12	17	26	20
\$10,000 TO \$14,999.....	19	23	16	18	19	22	16	21	18	19	19	19
\$15,000 TO \$19,999.....	15	20	17	8	15	16	8	18	15	18	7	14
\$20,000 TO \$24,999.....	13	13	17	6	13	6	5	13	16	16	5	9
\$25,000 OR MORE.....	19	16	31	8	21	5	4	14	33	25	5	17
TOTAL POOR.....	13	11	9	20	11	27	33	11	5	8	26	14
NUMBER OF HOUSEHOLD MEMBERS												
ONE.....	19	15	10	36	19	17	27	16	19	-	53	62
TWO.....	34	30	26	49	35	24	37	32	34	39	21	26
THREE.....	18	22	19	10	17	21	13	18	19	21	13	6
FOUR.....	16	22	21	3	16	17	9	18	17	21	7	4
FIVE OR MORE.....	14	12	24	2	13	22	14	16	11	18	6	2
NUMBER OF FULL-TIME WAGE EARNERS												
NONE.....	27	10	11	70	27	29	58	23	18	18	51	34
ONE.....	44	55	50	22	44	43	25	46	51	45	38	50
TWO.....	25	32	32	6	25	25	13	26	29	32	9	13
THREE.....	3	2	6	1	3	4	3	4	2	4	2	2
FOUR OR MORE.....	1	-	1	-	1	-	-	1	1	1	1	-
FULL-TIME (FT) EMPLOYMENT												
HEAD MARRIED												
HEAD OR SPOUSE EMPLOYED FT.....	34	36	46	16	35	26	23	37	35	51	-	-
BOTH EMPLOYED FT.....	20	26	26	4	20	19	9	21	23	30	-	-
NEITHER EMPLOYED FT.....	13	3	6	36	13	12	30	11	7	19	-	-
HEAD NOT MARRIED												
HEAD EMPLOYED FT.....	16	25	15	5	15	21	5	15	22	-	41	61
HEAD NOT EMPLOYED FT.....	17	11	7	39	17	22	34	15	12	-	59	39

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3. USE OF THE GENERALIZED VARIANCE TABLES

The following tables allow the user to estimate the standard error of estimates calculated on the National Interim Energy Consumption Survey (NIECS) data.

Standard Error of Estimated Percentages. (To be used with the "B" series of tables.) The estimated standard error or reliability of a percentage depends upon both the percentage and the base upon which the percent was calculated.

In order to use Table A:

- Determine how many households in the sample belong to the base that are to be considered for the characteristic. (This will be illustrated in the second example.) The appropriate row in the table is now available.
- Using the table of estimates, determine what percentage was estimated for this characteristic. The appropriate entry in the table is now located.
- Since these tables are based on one standard deviation, a 95 percent confidence interval (two standard deviations) would equal twice the value in the table.

Table A. Standard Error of Percentages Table

(68 Chances out of 100)

Base of Percentage (thousands)	Estimated Percentage						
	1 or 99	2 or 98	5 or 95	10 or 90	15 or 85	25 or 75	50
1,000	2.1	3.0	4.6	6.3	7.5	9.2	10.6
5,000	.9	1.3	2.1	2.8	3.4	4.1	4.7
10,000	.7	.9	1.5	2.0	2.4	2.9	3.3
25,000	.4	.6	.9	1.3	1.5	1.8	2.1
50,000	.3	.4	.7	.9	1.1	1.3	1.5
76,600	.2	.3	.5	.7	.9	1.1	1.2

Two examples follow:

- Suppose that of the 76.6 million houses, 18 percent were built between 1950 and 1959. Using the Standard Error of Percentages Table (see Table A), the 76.6 row and 25 percent column yield a table value of 1.2 (which is an overestimate since percent is less than 25)¹ This means that 95 percent confidence interval is 15.8 to 20.2 ($18 \pm 2.0(1.1)$).
- Now, suppose that an estimate of the percent of houses built in the South between 1950 and 1959 is desired. The base is all households in the South, (24.6 million) and the estimated percentage is 20 percent. The proper entry in the table is 1.8 which belongs in the 25.0 million row and the 25 percent column. Our 95 percent confidence interval now is 16.4 to 23.6 ($20 \pm 2.0(1.8)$).

¹To obtain a more precise estimate of sampling error, interpolation of table values can be employed. The following method would be used to interpolate a value for 18 percent on a base of 76.6 million which would be between .9 and 1.1.

$$\frac{(18-15)}{(25-15)} (1.1 - .9) + .9 = 1.0$$

Standard Error of Estimated Counts. Linear interpolation should be used for counts not specifically shown in Table B. An example follows:

- If the estimated count is 48 million, then the estimate of the standard error can be computed by linear interpolation as follows:

$$\frac{(48-45)}{(50-45)} (.90-.92) + .92 = .91$$

Table B. Standard Error of Estimated Counts

(68 Chances Out of 100)

Size of Estimate (in millions)	Standard Error (in millions)
1	.20
5	.46
10	.63
15	.73
20	.83
25	.88
30	.92
35	.94
40	.94
45	.92
50	.90
55	.85
60	.77
65	.67
70	.52
75	.24
76.6	.20

Standard Errors of Ratio. For ratios of the form (100) (x/y) where x is not a subclass of y, an approximation to the standard error of the ratio is given by:

$$100 \frac{x}{y} \sqrt{\frac{\sigma_x^2}{x} + \frac{\sigma_y^2}{y}}$$

- x = the numerator of the ratio
- y = the denominator of the ratio
- σ_x = the standard error of the numerator
- σ_y = the standard error of the denominator

Standard Errors of Differences. The standard error of a difference between estimates is approximately equal to the square root of the sum of the squares of the standard errors considered separately.

4. APPENDIXES

APPENDIX A. NATIONAL INTERIM ENERGY
CONSUMPTION SURVEY:
HOW THE SURVEY WAS CONDUCTED

Introduction

The National Interim Energy Consumption Survey (NIECS)¹ was designed by the Energy Information Administration (EIA) to provide information related to energy consumption by the residential sector.² This survey, along with analogous studies for the commercial and industrial sectors, will enable the analysis of comprehensive consumption patterns for the United States.

Information on energy use in the residential sector was collected at the household level. A representative national sample of households was selected in the 48 contiguous states plus the District of Columbia. The data on actual energy consumption was obtained from fuel records maintained by the household's fuel suppliers. An inventory of motor vehicles used by the household was also included in the survey.

Data Collection

Response Analysis Corporation (RAC), of Princeton, New Jersey, conducted the interviews. A total of 4,849 housing units were drawn in the original sample. Of these, 342 were ineligible for this survey because they were either vacant or seasonal units (the occupants did not live in them for more than half of the year). Of the 4,507 eligible units, interviews were obtained from 3,842 households, yielding an initial response rate of 85.2 percent. Subsequently, mail questionnaires (see Appendix C) were sent to the 665 households that were not interviewed. Completed mail questionnaires were received from 239 of the households. This additional effort increased the response rate by 5.3 percent.

Initial household contacts were begun in October 1978. The 44-minute interview covered: structural features related to energy, such as size, insulation, and openings; the heating and cooling systems and the fuels used in these systems; energy conservation efforts; information on household appliances and vehicles; and demographic data on household members. At the conclusion of the interview, respondents were asked to sign waivers authorizing Response Analysis Corporation (RAC) to obtain their records of fuel consumption from their fuel supplier.

¹Not to be confused with NEIC--the National Energy Information Center which is EIA's public information office.

²Form Number EIA-84; OMB 38S-78028

Most of the 327 interviewers employed by RAC had had previous survey experience. Training for NIECS was done by mail, using a 59-page instruction booklet. The booklet included specific procedures for conducting this survey and provided guidelines on how to handle various interpretations of questions. A practice interview and a quiz on the instructions were also parts of the training. An interviewer conducted about 12 interviews on the average. The most interviews conducted by a single interviewer was 47, while several interviewers completed as few as one. Twenty percent of the interviews were verified to insure that interviews were conducted in person.

Sample Design

The NIECS sample is a representative area probability sample consisting of 103 primary sampling units (PSU's). These PSU's were selected from approximately 1,140 PSU's that collectively form a mutually exclusive and exhaustive division of the contiguous United States. Each PSU is a well-defined geographic unit, usually consisting of one or more counties. Based on the 1970 Census, PSU sizes range from a population of 50,000 to approximately 3,300,000. Region, metropolitan status, and size classification were the primary considerations in the selection of the sampled PSU's.

Within each PSU, secondary sampling units (SSU's) were defined. Based upon 1970 Census counts, 400 SSU's were selected from the 103 PSU's. Each of these SSU's contained approximately 2,500 persons and consisted of one or more blocks in urban areas and one or more enumeration districts in the nonurban areas. An additional 56 SSU's were selected independently. These 56 SSU's comprised probability selection of areas that had undergone substantial new construction since 1970. Independent sources (Reuben H. Donnelley address lists and county data) were used to update the population for these SSU's. This effort to locate areas of new construction was undertaken to control the variation in cluster size.

Within each SSU, subdivisions were made. Census block statistics and rough field counts were used to break up each SSU into segments. Interviewers listed all housing units in the segment, completing this phase of the survey in the summer of 1978. The segments were formed so that they ultimately contained about 25 households. Finally, a sample of 10 or 11 households was selected to be visited. Thus, within each SSU 10 or 11 households were sampled, within each PSU an average of 40 to 45 households were sampled, and nationally, about 4,500 units were sampled.

Survey Estimates

Weights were calculated for each sample household to: 1) compensate for differences in probabilities of selection, 2) adjust for differences in interview completion rate in individual sampling locations, and 3) expand data for sample households to estimates for the total universe (all households in the contiguous 48 states plus the District of Columbia).

In order to increase the precision of our estimates, a technique called ratio estimation was employed. Ratio estimation uses known distributions of the population. These adjustments took place in two stages for the NIECS. The first stage factor was a ratio of the total number of households in each region by fuel type to an estimate of the number of households in each category. Only the PSU's in our sample and their appropriate weights were used. The figures used in both the numerator and denominator were based on the 1970 Census. The implementation of this factor reduced the amount of variance due to the sampling of PSU's. The second stage factor adjusted data from the survey to independently derived current estimates of the number of households for specified groups. The ratio adjustment was calculated for each region by type of community. The second stage factor reduced both the between PSU variance, as in the first stage, and the within PSU variance.

Estimation for Nonresponse

When data was unattainable from a nonresponding household, the weights from the households in the final cluster were increased to make-up for the nonresponding household.

Item nonresponse required a customized procedure for each data element. The data elements were divided into two categories: those with minimum nonresponse (about one percent), and those with more substantial nonresponse. The basic procedure attributed the most common response (modal value) to the first class of variables. In the second group where nonresponse was significant, a "hot deck" procedure was implemented. There were variations to this procedure depending on the importance of the data element, the interrelationship of data elements, and the consistency of data. Some elements such as amount of attic insulation were not imputed at all and a "don't know" response was accepted. Square footage and transportation data were not imputed.

Evaluation of Nonresponse

Basic information on all 4,507 households was obtained from the listing procedure. It was, therefore, possible to compare the responding households to the nonresponding households.

Table C gives a percentage breakdown of respondents and non-respondents by structure type and SMSA classification.

Table C. Percentage Breakdown of Respondents and Nonrespondents

	Respondents	Non-Respondents
Single-Family Detached	66	57
Structures Having 5 or More units	11	16
Other	23	27
Large SMSA	39	54
Small SMSA	27	23
Outside SMSA	34	23

Response rates in large urban areas (where apartment buildings with five or more units are more common) were somewhat lower than in other geographic locations.

Our nonrespondents were classified into eight sub-categories including "not-at-home," "refused," "illness," "language barrier," "interview of wrong household," "security building," "moved after initial contact," and "other." Of the 426 non-respondents, 21 percent were not at home, 75 percent refused, and 4 percent were in the remaining categories.

Table D. Distribution of Structure Type

	<u>Nonrespondents</u>		<u>Respondents</u>
	Not-at-home	Refusals	
Single-Family Detached	43	62	66
Structures Having 5 or More Units	23	14	11
Other	34	24	23
Large SMSA	58	53	39

Table D shows that the distribution of structure type for refusals was more similar to the respondents than the not-at-home households. On the other hand, the geographic distribution indicated a somewhat different trend. Refusals and not-at-home households were distributed more like each other than to responding households.

Additional Survey Components

One purpose of the NIECS was to test the procedures and methodology for RECS. Three studies, in addition to the basic NIECS survey, are also being conducted. These studies will be used to determine what additions and modifications should be made for RECS.

When renters did not pay directly for their fuel costs, an interviewer contacted the apartment manager by telephone to ask what space and water heating fuels were used in the apartment building. These data have been incorporated into the NIECS data set, resulting in more accurate information about rental housing units.

A transportation panel consisting of a subset of the NIECS sample began in June 1979. Participating households are asked to keep a log of their fuel purchases and odometer readings for a two-month period. The panel consists of 500 to 1,000 households reporting each month. Separate tabulations of these data are planned.

Fifty NIECS households were selected to be part of an energy assessment study. Trained technicians analyzed the energy-related components of a house. Exact square footage, temperature distribution in various parts of the house, presence of insulation, and features of major appliances (including heating and cooling equipment) were surveyed. Detailed evaluations of this pretest are being developed.

Data From Non-household Sources (Fuel Suppliers)

Respondents in 95 percent of the interviewed households signed waivers to permit fuel suppliers to give Response Analysis Corporation the monthly record of their past year's fuel purchases. The data contained both the amount sold and the price of the fuel. The suppliers were contacted between March and May 1979 and were asked to supply fuel billing information for the previous 12-month period.

In order to attain the highest response rate possible, the following procedures were used:

- Letters were sent to each company after RAC located the person who would act on the request for fuel bills. Follow up telephone calls were made to insure the receipt of the letter and to help with any problems that may have arisen. Response Analysis Corporation also personally visited several companies to offer assistance.

Minimizing Nonresponse

The Office of Federal Statistical Policy and Standards (OFSPS) encouraged an analysis of the effect of nonsampling error in the NIECS. An intensive effort to minimize non-response was the outcome of several meetings and memoranda dealing with the nonsampling error issue. Many of the following procedures were used to test the feasibility of a multi-wave, multicontact approach and may or may not be used in the larger Residential Energy Consumption Surveys (RECS). Most households received two letters in October 1978, prior to the interview. An EIA letter stressed the importance of the survey and a RAC letter announced the upcoming arrival of the interviewer.

To elicit rapport and cooperation, a \$2 incentive was given to the respondent before the interview. Over 99 percent of the respondents accepted the incentive. Interviewers made up to eight call-backs at different times of the day and week. They also queried neighbors as to the most opportune time to contact the respondent.

A second wave was conducted in December 1978 to contact households that were not available during the first wave and to convince the first-wave refusals to reconsider. A new set of letters preceded the second-wave interview. For the second wave, a different interviewer was assigned who endeavored to complete the interview by making up to five contacts.

A third wave followed in January 1979. This was an effort to reach nonrespondents in 14 sample locations that had low interview completion rates.

In a final attempt to complete an interview, an abbreviated version of the questionnaire, adapted for self-administration, was mailed to nonrespondents in February 1979. The \$2 incentive was included in the mailing.

In an attempt to evaluate the effects of a multi-wave, multicontact approach the following was noted:

- Eighty-seven percent of all responding households cooperated on the first wave, 12 percent on the second wave, and 1 percent were picked up at the third wave.
- Household and family characteristics such as income, age of head of household, education, and geographical location had little relation to the wave in which the respondent completed the interview.
- Thirty-seven percent of all responding households required only one contact.

- Some fuel oil and liquid petroleum gas (LPG) suppliers provided the fuel purchase information over the telephone. The telephone was adequate for these types of suppliers because each company supplied data for only a few customers and the fuel records were not as detailed as records for electricity and natural gas sales. About 600 of the approximately 800 fuel suppliers contacted in this survey were fuel oil or LPG distributors.

One unique aspect of this survey was the opportunity to obtain electricity and natural gas data for households that did not complete the interview or did not sign the waiver. Utilities would not supply individual household data without a waiver, but did supply aggregate data for groups of non-respondents. This information provides the ability to analyze the potential bias introduced by nonresponse and to improve the accuracy of consumption estimates in the residential sector.

Weather Data

The first type of temperature data used was the 45-year annual average heating degree days (HDD) and cooling degree days (CDD) for the National Oceanic and Atmospheric Administration (NOAA) weather division in which the household was located (see Appendix B).

These data will aid in analyzing the effects of weather on personal decisions to make changes in basic housing structure or equipment. The second type of data used were HDD and CDD totals for each billing period. These data will allow more complete analysis of fuel consumption.

Weather conditions will be calculated for the appropriate billing period. For example, one household may be billed on the 1st of every month, while another may be billed on the 5th. Obviously, there will be different 30-day averages of HDD and CDD for each billing period.

Editing Completed Questionnaires

Interviewers mailed the completed questionnaires to Princeton, New Jersey, where they were reviewed for completeness and correct identifying information. This manual edit was segmented and each part was worked on separately.

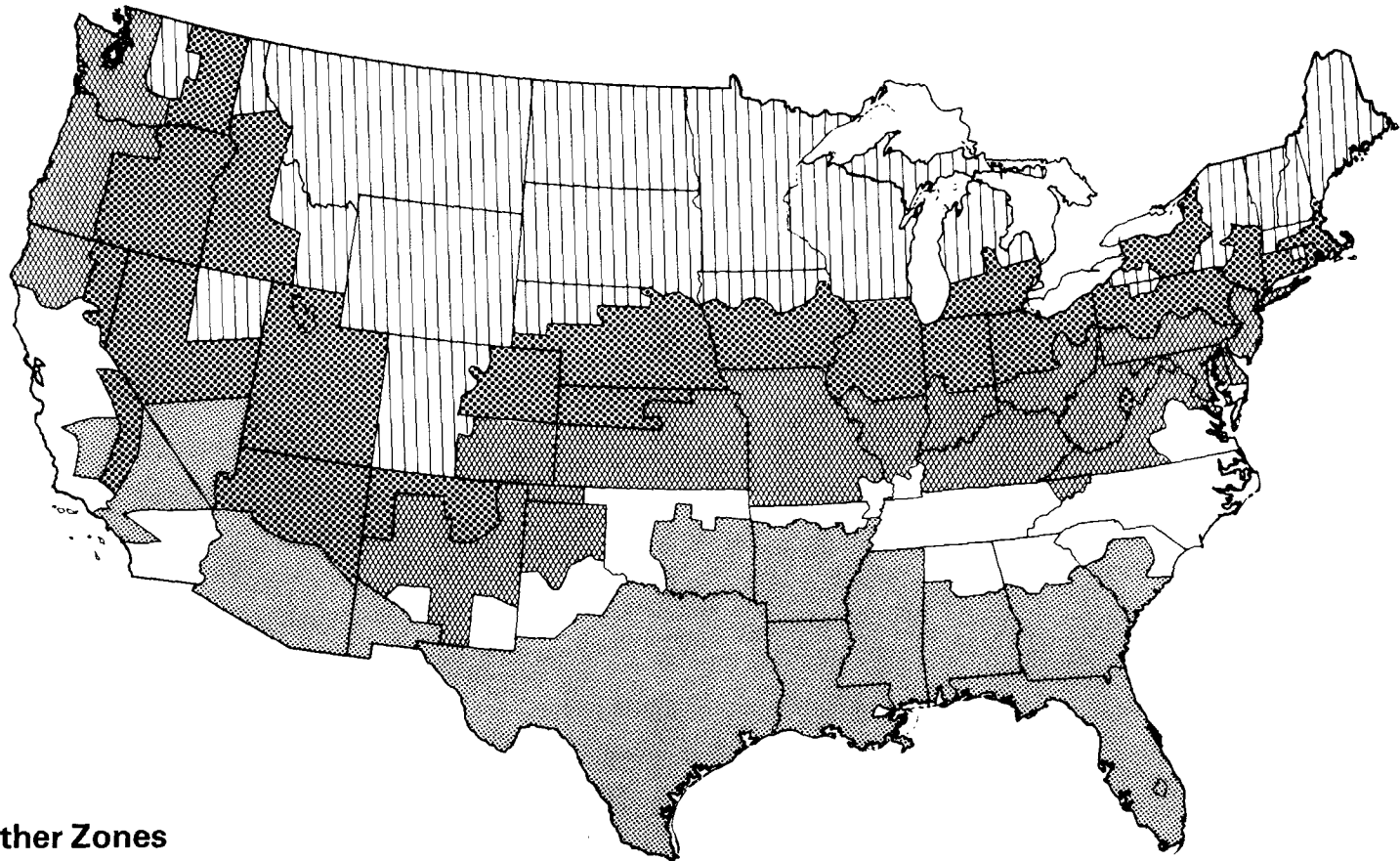
A machine edit checked for reasonable values, proper skip patterns, and logical consistencies.

Telephone calls were made to individual households to clarify ambiguities in the data. Additional editing resolved discrepancies among the household interview, the rental agent survey, and the information from fuel suppliers. For example, information on the fuel used in apartment buildings was taken from the rental agent survey to correct the data from the household. In other cases, a fuel supplier reported supplying kerosene to a household not fuel oil as was reported by the household. The data, therefore, do not always represent the respondents' reports, exclusively.

All key punching was verified.

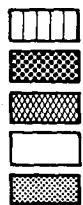
Appendix B: Weather Zone Map

United States Weather Zone Map of Heating Degree Days (HDD) and Cooling Degree Days (CDD)



70

Weather Zones



Zone 1 is less than 2,000 CDD and greater than 7,000 HDD.

Zone 2 is less than 2,000 CDD and 5,500 - 7,000 HDD.

Zone 3 is less than 2,000 CDD and 4,000 - 5,499 HDD.

Zone 4 is less than 2,000 CDD and greater than 4,000 HDD.

Zone 5 is greater than 2,000 CDD and less than 4,000 HDD.

Appendix C: Household Questionnaire

1979 - 80
RESIDENTIAL ENERGY CONSUMPTION SURVEY

106-107:01

LOCATION # _____	HOUSING UNIT # _____	TIME INTERVIEW STARTED: _____
111-115	116-117	

1. In what year did your family move into this house (apartment)?

- 01 BEFORE 1940 121-
- 02 1940-1949 122
- 03 1950-1959
- 04 1960-1964
- 05 1965-1969
- 06 1970-1974
- 07 1975
- 08 1976
- 09 1977
- 10 1978
- 11 1979
- 12 1980

IF "1978," "1979," OR "1980," ASK:

2. In which month did you move in?
(SPECIFY MONTH AND ENTER LAST TWO DIGITS OF YEAR.)

MONTH:

YEAR:

123-
124

3. In what year was this house (building) built? Just your estimate.

- 01 BEFORE 1940
- 02 1940-1949
- 03 1950-1959
- 04 1960-1964 125-
- 05 1965-1969 126
- 06 1970-1974
- 07 1975
- 08 1976
- 09 1977
- 10 1978
- 11 1979
- 12 1980

4. Altogether (counting all areas that are used as year-round living space), how many rooms do you have in your living quarters? Do not count bathrooms, unheated porches, foyers, or hallways.

NUMBER OF ROOMS:

127-
128

5. Think about the largest room in your house that is part of your year-round living space -- what is your estimate of the length and width of that room in feet?

INTERVIEWER: PUT RESPONDENT'S ESTIMATE IN BOXES IN RECTANGULAR OR L-SHAPED SKETCH AT RIGHT, AS APPROPRIATE. IF RESPONDENT IS UNABLE TO MAKE ESTIMATE, PUT IN YOUR OWN BEST ESTIMATE.

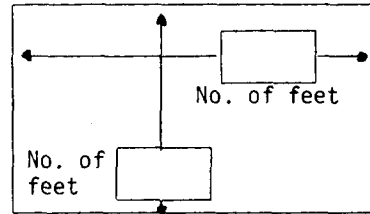
NOTE BELOW WHETHER LARGEST ROOM IS RECTANGULAR OR L-SHAPED, AND HOW ESTIMATE WAS MADE.

- 129 1 LARGEST ROOM IS RECTANGULAR: ENTER DIMENSIONS IN SKETCH #1
- 2 LARGEST ROOM IS L-SHAPED: ENTER DIMENSIONS IN SKETCH #2

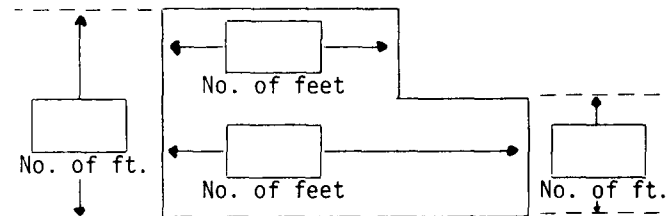
SOURCE OF ESTIMATE

- 130 1 ESTIMATE MADE BY RESPONDENT
- 2 ESTIMATE MADE BY INTERVIEWER
- 3 RESPONDENT/INTERVIEWER MEASURED

SKETCH #1



SKETCH #2



131-
142

HAND RESPONDENT EXHIBIT 6

6. What is the main fuel used for heating your home?

- 01 GAS FROM UNDERGROUND PIPES SERVING THE NEIGHBORHOOD
- 02 GAS, LPG (BOTTLED OR TANK GAS)
- 03 FUEL OIL
- 04 KEROSENE OR COAL OIL 143-144
- 05 ELECTRICITY
- 06 COAL OR COKE
- 07 WOOD
- 08 SOLAR COLLECTORS
- 21 OTHER (SPECIFY): _____
- 00 NO FUEL USED -- SKIP TO Q. 11

7. In addition to your main fuel, do you use any other fuel to heat your home?

- 1 YES
- 0 NO 145

IF "YES," ASK:

8. What is the additional fuel?

- 01 GAS FROM UNDERGROUND PIPES SERVING THE NEIGHBORHOOD
- 02 GAS, LPG (BOTTLED OR TANK GAS)
- 03 FUEL OIL
- 04 KEROSENE OR COAL OIL 146-147
- 05 ELECTRICITY
- 06 COAL OR COKE
- 07 WOOD
- 08 SOLAR COLLECTORS
- 21 OTHER (SPECIFY): _____

9. Last winter, was the main fuel used to heat this house (apartment) the same as it is now?

- 1 YES
 0 NO 148
 9 DID NOT LIVE IN THIS HOUSE
 (APARTMENT) LAST WINTER

IF "NO," ASK:

10. What was the main fuel used to heat this house (apartment) last winter?

- 01 GAS FROM UNDERGROUND PIPES
 SERVING THE NEIGHBORHOOD
 02 GAS, LPG (BOTTLED OR TANK)
 03 FUEL OIL
 04 KEROSENE OR COAL OIL 149-
 05 ELECTRICITY 150
 06 COAL OR COKE
 07 WOOD
 08 SOLAR COLLECTORS
 21 OTHER (SPECIFY): _____

 00 NO FUEL USED

11. Which fuel is used most for heating water?

- 01 GAS FROM UNDERGROUND PIPES
 SERVING THE NEIGHBORHOOD
 02 GAS, LPG (BOTTLED OR TANK)
 03 FUEL OIL
 04 KEROSENE OR COAL OIL 151-
 05 ELECTRICITY 152
 06 COAL OR COKE
 07 WOOD
 08 SOLAR COLLECTORS
 21 OTHER (SPECIFY): _____

 00 NO FUEL USED

TAKE BACK EXHIBIT 6

12. Do you have air-conditioning, either a central system or individual window or wall units? (MARK ALL THAT APPLY.)

- YES, CENTRAL SYSTEM 153
 YES, INDIVIDUAL (WINDOW/WALL) UNITS 154
 NO -- SKIP TO Q. 15

IF "YES," ASK:

13. How many rooms in your house (apartment) are air-conditioned?

- NUMBER OF ROOMS: 155-
 95 ENTIRE HOUSE OR APARTMENT 156

IF "CENTRAL SYSTEM" ON Q. 12, ASK:

14. Does the central air-conditioning system use gas or electricity?

- 1 GAS
 2 ELECTRICITY 157
 6 DON'T KNOW

IF LIVING QUARTERS ARE IN A BUILDING WITH 5 OR MORE HOUSING UNITS, SKIP TO Q. 19.

HAND RESPONDENT EXHIBIT 15

15. Please look at this list and tell me which items, if any, have been added or installed in your home since January 1, 1978.

MARK "YES," "NO," OR "IN PROCESS" FOR EACH ITEM. COUNT AS "IN PROCESS" ANY WORK STARTED BUT NOT YET COMPLETED. DO NOT COUNT ANY CHANGES MADE BEFORE THIS HOUSEHOLD MOVED IN.

<p>a. Storm Windows and/or Doors with Insulating Glass (Double Glazed)</p> <p>1 <input type="checkbox"/> YES 0 <input type="checkbox"/> NO 2 <input type="checkbox"/> IN PROCESS</p> <p style="text-align: right;">158</p>	<p>MONTH: _____</p> <p>YEAR: 19 _____</p> <p><input type="checkbox"/> IN PROCESS</p> <p style="text-align: right;">159-162</p>	<p>1 <input type="checkbox"/> LABOR AND MATERIALS</p> <p>2 <input type="checkbox"/> MATERIALS ONLY</p> <p>5 <input type="checkbox"/> OTHER (SPECIFY): _____</p> <p style="text-align: right;">163</p>	<p>APPROXIMATE COST:</p> <p>\$ _____ .00</p> <p><input type="checkbox"/> DON'T KNOW</p> <p style="text-align: right;">164-166</p>
<p>b. Roof or Attic Insulation</p> <p>1 <input type="checkbox"/> YES 0 <input type="checkbox"/> NO 2 <input type="checkbox"/> IN PROCESS</p> <p style="text-align: right;">167</p>	<p>MONTH: _____</p> <p>YEAR: 19 _____</p> <p><input type="checkbox"/> IN PROCESS</p> <p style="text-align: right;">168-171</p>	<p>1 <input type="checkbox"/> LABOR AND MATERIALS</p> <p>2 <input type="checkbox"/> MATERIALS ONLY</p> <p>5 <input type="checkbox"/> OTHER (SPECIFY): _____</p> <p style="text-align: right;">172</p>	<p>APPROXIMATE COST:</p> <p>\$ _____ .00</p> <p><input type="checkbox"/> DON'T KNOW</p> <p style="text-align: right;">173-175</p>
<p>c. Insulation in Outside Walls</p> <p>1 <input type="checkbox"/> YES 0 <input type="checkbox"/> NO 2 <input type="checkbox"/> IN PROCESS</p> <p style="text-align: right;">211</p>	<p>MONTH: _____</p> <p>YEAR: 19 _____</p> <p><input type="checkbox"/> IN PROCESS</p> <p style="text-align: right;">212-215</p>	<p>1 <input type="checkbox"/> LABOR AND MATERIALS</p> <p>2 <input type="checkbox"/> MATERIALS ONLY</p> <p>5 <input type="checkbox"/> OTHER (SPECIFY): _____</p> <p style="text-align: right;">216</p>	<p>APPROXIMATE COST:</p> <p>\$ _____ .00</p> <p><input type="checkbox"/> DON'T KNOW</p> <p style="text-align: right;">217-219</p>

206-207: 02

FOR EACH "YES" OR "IN PROCESS" ANSWER, ASK:

16. In what month and year was the work completed? ↑

17. (Did you pay/Are you paying) for labor and materials, or only for materials? ↑

18. Just approximately, what (did/will) the job cost? ↑

TAKE BACK EXHIBIT 15

Now let's talk about transportation ...

HAND RESPONDENT EXHIBIT 19/21

19. Do you or other members of your household own or have the regular use of any cars, trucks, vans, motorcycles, mopeds, or similar vehicles?

1 YES 220
 0 NO -- SKIP TO Q. 28 --
 TAKE BACK EXHIBIT 19/21

20. How many do you have?

NUMBER OF 221-
 VEHICLES: 222

306-307:
 03

21. Which type(s) do you have? (IF HOUSEHOLD HAS MORE THAN FOUR VEHICLES, MARK ANSWERS FOR THE FOUR VEHICLES USED MOST.)

VEHICLE NUMBER				
	1	2	3	4
	223-224	246-247	311-312	334-335
STATION WAGON	01 <input type="checkbox"/>	01 <input type="checkbox"/>	01 <input type="checkbox"/>	01 <input type="checkbox"/>
AUTOMOBILE	02 <input type="checkbox"/>	02 <input type="checkbox"/>	02 <input type="checkbox"/>	02 <input type="checkbox"/>
JEEP OR SIMILAR VEHICLE	03 <input type="checkbox"/>	03 <input type="checkbox"/>	03 <input type="checkbox"/>	03 <input type="checkbox"/>
PASSENGER VAN OR MINIBUS	04 <input type="checkbox"/>	04 <input type="checkbox"/>	04 <input type="checkbox"/>	04 <input type="checkbox"/>
CARGO VAN	05 <input type="checkbox"/>	05 <input type="checkbox"/>	05 <input type="checkbox"/>	05 <input type="checkbox"/>
PICKUP TRUCK	06 <input type="checkbox"/>	06 <input type="checkbox"/>	06 <input type="checkbox"/>	06 <input type="checkbox"/>
OTHER TRUCK	07 <input type="checkbox"/>	07 <input type="checkbox"/>	07 <input type="checkbox"/>	07 <input type="checkbox"/>
MOTOR HOME	08 <input type="checkbox"/>	08 <input type="checkbox"/>	08 <input type="checkbox"/>	08 <input type="checkbox"/>
MOTORCYCLE	09 <input type="checkbox"/>	09 <input type="checkbox"/>	09 <input type="checkbox"/>	09 <input type="checkbox"/>
MOPED/MOTORIZED BICYCLE	10 <input type="checkbox"/>	10 <input type="checkbox"/>	10 <input type="checkbox"/>	10 <input type="checkbox"/>
OTHER (SPECIFY):	21 <input type="checkbox"/>	21 <input type="checkbox"/>	21 <input type="checkbox"/>	21 <input type="checkbox"/>
	225-226	248-249	313-314	336-337
MAKE				
	227-228	250-251	315-316	338-339
MODEL YEAR	19 _____	19 _____	19 _____	19 _____
	229-230	252-253	317-318	340-341
MODEL NAME				

22. Please tell me the make and model year (of each one). (ENTER LAST TWO DIGITS OF MODEL YEAR.)

23. What is the model name (of each one)?

TAKE BACK EXHIBIT 19/21

ALL HOUSEHOLDS WITH ONE OR MORE VEHICLES ON Q. 20

ASK Q's. 24-27 FIRST ABOUT FIRST VEHICLE, THEN SECOND, THIRD, AND FOURTH

These next questions are about your (first/second/third/fourth) vehicle.

24. Did you get this vehicle within the past 12 months or did you have it before that?
- WITHIN PAST 12 MONTHS
- HAD IT MORE THAN 12 MONTHS -- SKIP TO Q. 27

IF "WITHIN PAST 12 MONTHS," ASK:

25. In what month and year did you get it? MONTH YEAR
26. How many miles has it been driven since you have had it? MILES DON'T KNOW

IF "HAD IT MORE THAN 12 MONTHS" ON Q. 24, ASK:

27. How many miles was it driven during the past 12 months, just approximately? MILES DON'T KNOW

VEHICLE NUMBER			
1	2	3	4
231	254	319	342
1 <input type="checkbox"/>	1 <input type="checkbox"/>	1 <input type="checkbox"/>	1 <input type="checkbox"/>
2 <input type="checkbox"/>	2 <input type="checkbox"/>	2 <input type="checkbox"/>	2 <input type="checkbox"/>
232-235	255-258	320-323	343-346
<hr/>			
19	19	19	19
236-240	259-263	324-328	347-351
<hr/>			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
<hr/>			
241-245	264-268	329-333	352-356
<hr/>			
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

ASK EVERYONE

HAND RESPONDENT EXHIBIT 28/30

28. Did you or other members of your household own or have the regular use of any vehicles a year ago -- or anytime in the past 12 months -- that you don't have now (that you traded or sold or disposed of in some other way) -- such as cars, trucks, vans, motorcycles, mopeds, or similar vehicles?

- 1 YES
- 0 NO -- SKIP TO Q. 35 -- 357
TAKE BACK EXHIBIT 28/30

IF "YES," ASK:

29. How many vehicles did you or other members of your household have in the past 12 months that you don't have now?

- 1 ONE
- 2 TWO 358
- 3 THREE OR MORE

406-407:04

30. Which type(s) did you have? (IF HOUSEHOLD HAD MORE THAN TWO VEHICLES, MARK ANSWERS FOR THE TWO USED MOST.)

		VEHICLE NUMBER	
		1	2
		359-360	411-412
STATION WAGON	01 <input type="checkbox"/>	01 <input type="checkbox"/>	
AUTOMOBILE	02 <input type="checkbox"/>	02 <input type="checkbox"/>	
JEEP OR SIMILAR VEHICLE	03 <input type="checkbox"/>	03 <input type="checkbox"/>	
PASSENGER VAN OR MINIBUS	04 <input type="checkbox"/>	04 <input type="checkbox"/>	
CARGO VAN	05 <input type="checkbox"/>	05 <input type="checkbox"/>	
PICKUP TRUCK	06 <input type="checkbox"/>	06 <input type="checkbox"/>	
OTHER TRUCK	07 <input type="checkbox"/>	07 <input type="checkbox"/>	
MOTOR HOME	08 <input type="checkbox"/>	08 <input type="checkbox"/>	
MOTORCYCLE	09 <input type="checkbox"/>	09 <input type="checkbox"/>	
MOPED/MOTORIZED BICYCLE	10 <input type="checkbox"/>	10 <input type="checkbox"/>	
OTHER (SPECIFY):	21 <input type="checkbox"/>	21 <input type="checkbox"/>	
		361-362	413-414
		363-364	415-416
MAKE			
MODEL YEAR	19 ____	19 ____	
		365-366	417-418
MODEL NAME			

31. Please tell me the make and model year (of each one). (ENTER LAST TWO DIGITS OF MODEL YEAR.)

32. What was the model name?

TAKE BACK EXHIBIT 28/30

IF "YES" ON Q. 28 (CONTINUED):

ASK Q's. 33-34 FIRST ABOUT FIRST VEHICLE, THEN SECOND.

33. In what month and year did you dispose of it?

34. Just approximately, how many miles was it driven between this time a year ago and the time you disposed of it?

		VEHICLE NUMBER	
		1	2
		367-370	419-422
MONTH			
YEAR		19__	19__
		371-375	423-427
MILES			
DON'T KNOW		[]	[]

ASK EVERYONE

35. Now I have some questions about the people who live here. Please tell me who they are, just in relation to you (if they are related to you), and their ages on their last birthday. Please begin with yourself.

INTERVIEWER:

LIST EVERYONE, INCLUDING CHILDREN AND INFANTS, WHO IS NOW LIVING HERE.

INCLUDE PERSONS WHO ARE UNRELATED IF THEY SHARE THIS HOUSING UNIT.

PERSONS WHO ARE NORMALLY MEMBERS OF THE HOUSEHOLD, BUT WHO ARE NOW LIVING AWAY FROM HOME (E.G., COLLEGE STUDENTS OR MEMBERS OF THE ARMED FORCES) SHOULD NOT BE LISTED.

RELATIONSHIP TO RESPONDENT	SEX		AGE	Q. 36-EMPLOYMENT (AGE 14+)			
	FEMALE	MALE		FULL TIME	PART TIME	NOT EMPLOYED	
RESPONDENT	1 <input type="checkbox"/>	2 <input type="checkbox"/>		1 <input type="checkbox"/>	2 <input type="checkbox"/>	0 <input type="checkbox"/>	431-436
	1 <input type="checkbox"/>	2 <input type="checkbox"/>		1 <input type="checkbox"/>	2 <input type="checkbox"/>	0 <input type="checkbox"/>	441-446
	1 <input type="checkbox"/>	2 <input type="checkbox"/>		1 <input type="checkbox"/>	2 <input type="checkbox"/>	0 <input type="checkbox"/>	451-456
	1 <input type="checkbox"/>	2 <input type="checkbox"/>		1 <input type="checkbox"/>	2 <input type="checkbox"/>	0 <input type="checkbox"/>	461-466
	1 <input type="checkbox"/>	2 <input type="checkbox"/>		1 <input type="checkbox"/>	2 <input type="checkbox"/>	0 <input type="checkbox"/>	471-476
	1 <input type="checkbox"/>	2 <input type="checkbox"/>		1 <input type="checkbox"/>	2 <input type="checkbox"/>	0 <input type="checkbox"/>	506-507:05 511-516
	1 <input type="checkbox"/>	2 <input type="checkbox"/>		1 <input type="checkbox"/>	2 <input type="checkbox"/>	0 <input type="checkbox"/>	521-526
	1 <input type="checkbox"/>	2 <input type="checkbox"/>		1 <input type="checkbox"/>	2 <input type="checkbox"/>	0 <input type="checkbox"/>	531-536
	1 <input type="checkbox"/>	2 <input type="checkbox"/>		1 <input type="checkbox"/>	2 <input type="checkbox"/>	0 <input type="checkbox"/>	541-546
	1 <input type="checkbox"/>	2 <input type="checkbox"/>		1 <input type="checkbox"/>	2 <input type="checkbox"/>	0 <input type="checkbox"/>	551-556
	1 <input type="checkbox"/>	2 <input type="checkbox"/>		1 <input type="checkbox"/>	2 <input type="checkbox"/>	0 <input type="checkbox"/>	561-566
	1 <input type="checkbox"/>	2 <input type="checkbox"/>		1 <input type="checkbox"/>	2 <input type="checkbox"/>	0 <input type="checkbox"/>	571-576

FOR EACH PERSON 14 YEARS OLD OR OLDER, ASK:

36. Is he/she employed full time (30 hours or more per week), part time, or not employed? _____

577-578

INTERVIEWER: MARK ANSWERS; ASK IF NECESSARY.

RESPONDENT'S MARITAL STATUS

37. Are you now married, widowed, divorced, separated, or have you never been married?

- 1 NOW MARRIED
- 2 WIDOWED
- 3 DIVORCED OR SEPARATED
- 4 NEVER MARRIED

579

RESPONDENT'S RACE

38. What is your race?

- 1 WHITE
- 2 BLACK OR NEGRO
- 5 OTHER (SPECIFY): _____

580

39. How many members of your household can drive a car?

NUMBER OF DRIVERS:

611-612

00 NONE

I have just a few questions for background statistical purposes.

40. What is the highest grade (or year) you attended in school?

00 NEVER ATTENDED SCHOOL

01 FIRST 07 SEVENTH

02 SECOND 08 EIGHTH

03 THIRD 09 NINTH

613-614

04 FOURTH 10 TENTH

05 FIFTH 11 ELEVENTH

06 SIXTH 12 TWELFTH

COLLEGE (ACADEMIC YEARS)

13 C1 16 C4

14 C2 17 C5

15 C3 18 C6 OR MORE

41. Did you finish that grade (or year)?

1 YES

0 NO

615

HAND RESPONDENT EXHIBIT 47

47. We may have covered some of these points before, but just to be sure, please look at this exhibit and tell me whether these fuels are used here in your household.
(BE SURE TO MARK EITHER "USED" OR "NOT USED" FOR EACH ITEM.)

	USED	NOT USED	PAID BY HOUSEHOLD	INCLUDED IN RENT	OTHER (SPECIFY)	
<u>ELECTRICITY</u>						
a. FOR LIGHTING AND OTHER APPLIANCES	1 <input type="checkbox"/>	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	5 <input type="checkbox"/>	623-624
b. FOR COOKING	1 <input type="checkbox"/>	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	5 <input type="checkbox"/>	625-626
c. FOR HOT WATER	1 <input type="checkbox"/>	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	5 <input type="checkbox"/>	627-628
d. FOR HEATING YOUR HOME	1 <input type="checkbox"/>	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	5 <input type="checkbox"/>	629-630
e. FOR AIR-CONDITIONING (CENTRAL OR WINDOW/WALL UNITS)	1 <input type="checkbox"/>	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	5 <input type="checkbox"/>	631-632
<u>GAS FROM UNDERGROUND PIPES SERVING YOUR NEIGHBORHOOD</u>						
f. FOR COOKING	1 <input type="checkbox"/>	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	5 <input type="checkbox"/>	633-634
g. FOR OTHER APPLIANCES (INCLUDE OUTSIDE GAS LIGHT HERE)	1 <input type="checkbox"/>	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	5 <input type="checkbox"/>	635-636
h. FOR HOT WATER	1 <input type="checkbox"/>	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	5 <input type="checkbox"/>	637-638
i. FOR HEATING YOUR HOME	1 <input type="checkbox"/>	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	5 <input type="checkbox"/>	639-640
j. FOR CENTRAL AIR-CONDITIONING	1 <input type="checkbox"/>	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	5 <input type="checkbox"/>	641-642
<u>GAS, LPG (BOTTLED OR TANK GAS)</u>						
k. FOR COOKING	1 <input type="checkbox"/>	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	5 <input type="checkbox"/>	643-644
l. FOR OTHER APPLIANCES	1 <input type="checkbox"/>	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	5 <input type="checkbox"/>	645-646
m. FOR HOT WATER	1 <input type="checkbox"/>	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	5 <input type="checkbox"/>	647-648
n. FOR HEATING YOUR HOME	1 <input type="checkbox"/>	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	5 <input type="checkbox"/>	649-650
o. FOR CENTRAL AIR-CONDITIONING	1 <input type="checkbox"/>	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	5 <input type="checkbox"/>	651-652
<u>FUEL OIL OR KEROSENE</u>						
p. FOR HOT WATER	1 <input type="checkbox"/>	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	5 <input type="checkbox"/>	653-654
q. FOR HEATING YOUR HOME	1 <input type="checkbox"/>	0 <input type="checkbox"/>	1 <input type="checkbox"/>	2 <input type="checkbox"/>	5 <input type="checkbox"/>	655-656

FOR EACH USE OF EACH FUEL, ASK:

48. Is that paid for by your household, included in your rent, or do you get it some other way? _____

TAKE BACK EXHIBIT 47

IF RESPONDENT IS MARRIED, ASK:

42. What is the highest grade (or year) that your (husband/wife) attended in school?

- 00 NEVER ATTENDED SCHOOL
 01 FIRST 07 SEVENTH
 02 SECOND 08 EIGHTH
 03 THIRD 09 NINTH
 04 FOURTH 10 TENTH
 05 FIFTH 11 ELEVENTH
 06 SIXTH 12 TWELFTH

616-
617

COLLEGE (ACADEMIC YEARS)

- 13 C1 16 C4
 14 C2 17 C5
 15 C3 18 C6 OR MORE

43. Did (he/she) finish that grade (or year)?

- 1 YES
 0 NO

618

HAND RESPONDENT EXHIBIT 44

44. Now let's look at this list of income groups. Please tell me which group letter best describes the total combined income in 1978 of all members of your family living here, from all sources -- wages, dividends, social security, and so forth -- before taxes and deductions.

CIRCLE LETTER FOR INCOME GROUP

- | | |
|----------------------------|--|
| 01 - A UNDER \$3,000 | 09 - I \$25,000 - \$29,999 |
| 02 - B \$3,000 - \$4,999 | 10 - J \$30,000 - \$34,999 |
| 03 - C \$5,000 - \$7,999 | 11 - K \$35,000 - \$39,999 |
| 04 - D \$8,000 - \$9,999 | 12 - L \$40,000 - \$44,999 |
| 05 - E \$10,000 - \$11,999 | 13 - M \$45,000 - \$49,999 |
| 06 - F \$12,000 - \$14,999 | 14 - N \$50,000 OR OVER |
| 07 - G \$15,000 - \$19,999 | 96 <input type="checkbox"/> DON'T KNOW |
| 08 - H \$20,000 - \$24,999 | 97 <input type="checkbox"/> REFUSED |

619-
620

TAKE BACK EXHIBIT 44

45. Do you or members of your household own your home here or do you rent?

- 1 OWN (BUYING)
 2 RENT
 3 OCCUPIED WITHOUT PAYMENT OF RENT

621

IF "OWN (BUYING)," ASK:

46. Is this house (apartment) part of a condominium or cooperative?

- 1 YES, CONDOMINIUM
 2 YES, COOPERATIVE
 0 NO

622

ASK QUESTIONS ON THIS PAGE IF HOUSEHOLD USES AND PAYS FOR FUEL OIL OR KEROSENE (SEE Q's. 47/48, PARTS p AND q).
 IF HOUSEHOLD DOES NOT USE AND PAY FOR FUEL OIL OR KEROSENE, SKIP TO Q. 58.

49. How many tanks do you have for fuel oil or kerosene? 657
- 1 ONE
 2 TWO
 3 THREE OR MORE

ASK QUESTIONS 50 - 52 FOR EACH FUEL TANK (IF MORE THAN TWO TANKS ASK ABOUT TWO LARGEST TANKS.)

	TANK #1	TANK #2
50. What is the capacity of the tank (each tank) in total gallons?	<input style="width: 80px; height: 20px;" type="text"/> <input type="checkbox"/> 275 GALLONS <input type="checkbox"/> 550 GALLONS 658-661 <input type="checkbox"/> 1000 GALLONS <input type="checkbox"/> OTHER - SPECIFY: _____	<input style="width: 80px; height: 20px;" type="text"/> <input type="checkbox"/> 275 GALLONS <input type="checkbox"/> 550 GALLONS 667-670 <input type="checkbox"/> 1000 GALLONS <input type="checkbox"/> OTHER - SPECIFY: _____
51. Did you have this same tank in January 1979, or is it a replacement (or has it been added since January 1979)?	1 <input type="checkbox"/> SAME TANK 2 <input type="checkbox"/> REPLACEMENT 662 3 <input type="checkbox"/> ADDITIONAL TANK <input style="width: 80px; height: 20px;" type="text"/>	1 <input type="checkbox"/> SAME TANK 2 <input type="checkbox"/> REPLACEMENT 671 3 <input type="checkbox"/> ADDITIONAL TANK <input style="width: 80px; height: 20px;" type="text"/>
IF REPLACEMENT TANK, ASK: 52. What was the capacity of the tank that was replaced?	<input style="width: 80px; height: 20px;" type="text"/> <input type="checkbox"/> 275 GALLONS <input type="checkbox"/> 550 GALLONS 663-666 <input type="checkbox"/> 1000 GALLONS <input type="checkbox"/> OTHER - SPECIFY: _____	<input style="width: 80px; height: 20px;" type="text"/> <input type="checkbox"/> 275 GALLONS <input type="checkbox"/> 550 GALLONS 672-675 <input type="checkbox"/> 1000 GALLONS <input type="checkbox"/> OTHER - SPECIFY: _____

HAND RESPONDENT EXHIBIT 53

706-707:07

53. About how much fuel oil/kerosene does your household use in a year -- which of these groups would it be? 711
- 1 LESS THAN 100 GALLONS PER YEAR
 2 100-499 GALLONS PER YEAR
 3 500 OR MORE GALLONS PER YEAR

TAKE BACK EXHIBIT 53

54. About how many times a year does your household purchase fuel oil/kerosene? 712-713
- NUMBER OF DELIVERIES:
 LIVED HERE LESS THAN 1 YEAR

55. Did you buy fuel oil for this house (apartment) in the past 12 months from one company, or from more than one company? 714
- 1 ONE COMPANY
 2 MORE THAN ONE COMPANY

IF "MORE THAN ONE," ASK:

56. How many different companies? 715
- 2 TWO
 3 THREE
 4 FOUR OR MORE

57. About what did your household pay per gallon on your last delivery/purchase of fuel oil/kerosene? 716-718
- PRICE PER GALLON:
 DON'T KNOW

IF HOUSEHOLD PAYS FOR ELECTRICITY AND/OR GAS AND/OR FUEL OIL OR KEROSENE IN Q. 48, ASK:

58. In addition to the types of fuel you use, we are interested in the quantities used, and in the amount that people pay for electricity, gas, fuel oil, and kerosene in different parts of the United States.

I have a form that would authorize the companies that supply your household to provide that information to Response Analysis Corporation.

Since this study is being done nationwide, it will give a good picture of the differences in fuel cost and use all over the country. The information is needed to help establish important national energy policies.

INTERVIEWER: REMOVE PERFORATED FORM AND HAND TO RESPONDENT. EITHER YOU OR RESPONDENT SHOULD FILL IN THE NAMES OF COMPANIES. IF MORE THAN ONE LPG OR FUEL OIL OR KEROSENE COMPANY HAS BEEN USED SINCE JANUARY 1, 1979, FILL IN ADDITIONAL COMPANY NAMES ON OTHER SIDE OF FORM. PLEASE PRINT.

1 AUTHORIZATION FORM COMPLETED

0 AUTHORIZATION FORM NOT COMPLETED -- INTERVIEWER, EXPLAIN BELOW:

719

CONTINUE ON PAGE 17 TO COMPLETE INTERVIEW.

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U.S. DEPARTMENT OF ENERGY SURVEY

**Authorization Form for
Residential Energy Consumption Survey**

I hereby give permission to the company (companies) below to provide information to Response Analysis Corporation for confidential use in connection with their survey for the U.S. Department of Energy.

This authorization covers use of fuels (electricity, natural gas or LPG, fuel oil or kerosene) by my household from January 1, 1979 through December 31, 1980, including:

- 1) the total amount of fuels used by my household.
- 2) the total price charged for fuels used by my household.

Companies are authorized to provide this information by monthly periods or by delivery date, whichever applies.

A photocopy of this authorization may be accepted with the same authority as the original.

Signature: _____

Date: _____

PLEASE PRINT →

YOUR NAME		
ADDRESS		APT. NO.
CITY OR POST OFFICE	STATE	ZIP CODE
TELEPHONE		
AREA CODE: _____	NUMBER: _____	

**PLEASE COMPLETE ONE BLOCK BELOW FOR EACH FUEL USED BY YOUR HOUSEHOLD
(IF MORE THAN ONE SUPPLIER OF A PARTICULAR FUEL USE THE OTHER SIDE OF THIS SHEET)**

ELECTRICITY →

PRINT FULL NAME OF ELECTRIC COMPANY	
LOCATION OF COMPANY (IF KNOWN) – CITY AND STATE	
TELEPHONE	
AREA CODE: _____	NUMBER: _____

GAS →

from underground pipes
or LPG (bottled or tank gas)

PRINT FULL NAME OF GAS COMPANY	
LOCATION OF COMPANY (IF KNOWN) – CITY AND STATE	
TELEPHONE	
AREA CODE: _____	NUMBER: _____

FUEL OIL →

or KEROSENE

PRINT FULL NAME OF OIL COMPANY	
LOCATION OF COMPANY (IF KNOWN) – CITY AND STATE	
TELEPHONE	
AREA CODE: _____	NUMBER: _____

Remove Form Carefully At Perforation

GAS
LPG (bottled
or tank gas)

SECOND GAS COMPANY

<i>PRINT FULL NAME OF GAS COMPANY</i>
<i>LOCATION OF COMPANY (IF KNOWN) - CITY AND STATE</i>
<i>TELEPHONE</i> AREA CODE: _____ NUMBER: _____

THIRD GAS COMPANY

<i>PRINT FULL NAME OF GAS COMPANY</i>
<i>LOCATION OF COMPANY (IF KNOWN) - CITY AND STATE</i>
<i>TELEPHONE</i> AREA CODE: _____ NUMBER: _____

FUEL OIL
or KEROSENE

SECOND FUEL OIL/KEROSENE COMPANY

<i>PRINT FULL NAME OF OIL COMPANY</i>
<i>LOCATION OF COMPANY (IF KNOWN) - CITY AND STATE</i>
<i>TELEPHONE</i> AREA CODE: _____ NUMBER: _____

THIRD FUEL OIL/KEROSENE COMPANY

<i>PRINT FULL NAME OF OIL COMPANY</i>
<i>LOCATION OF COMPANY (IF KNOWN) - CITY AND STATE</i>
<i>TELEPHONE</i> AREA CODE: _____ NUMBER: _____

INTERVIEWER: MARK APPROPRIATE ANSWER AT RIGHT

1 HOUSEHOLD PAYS FOR ALL FUELS USED IN Q. 48 -- SKIP TO Q. 60

2 HOUSEHOLD HAS ONE OR MORE FUELS "INCLUDED IN RENT" OR PAID IN "OTHER" WAYS IN Q. 48 -- ASK Q. 59

59. We may be getting some additional information about fuels used in this building (house). May I have the name of the person or company to whom you pay rent?

NAME: _____

TELEPHONE NUMBER: (AREA CODE: _____) _____

STREET ADDRESS: _____

CITY OR TOWN/STATE/ZIP CODE: _____

720

ASK EVERYONE

60. The research staff at Response Analysis may wish to contact you over the next year to obtain additional information about fuels used by your household. As far as you know now, do you expect to be living in this house (apartment) for the next 12 months?

- 1 YES
- 0 NO
- 6 DON'T KNOW

721

IF "NO" OR "DON'T KNOW," ASK:

61. Would you please give me the name, address, and telephone number of two friends or relatives who will know where you can be reached if you happen to move?

INTERVIEWER: ASSURE RESPONDENT THAT NAMES AND ADDRESSES OF FRIENDS OR RELATIVES WILL NOT BE USED UNLESS WE WANT TO CONTACT HOUSEHOLD AFTER IT HAS MOVED TO ANOTHER ADDRESS.

NAME: _____

STREET: _____

CITY OR STATE: _____

PHONE: (AREA CODE: _____) _____

RELATIONSHIP TO RESPONDENT: _____

722

NAME: _____

STREET: _____

CITY OR STATE: _____

PHONE: (AREA CODE: _____) _____

RELATIONSHIP TO RESPONDENT: _____

INTERVIEWER: MARK APPROPRIATE ANSWER AT RIGHT

1 RESPONDENT'S NAME, TELEPHONE NUMBER, AND MAILING ADDRESS ARE RECORDED ON AUTHORIZATION FORM -- SKIP TO INSTRUCTION BELOW FOR Q. 63.

2 RESPONDENT'S NAME (OR TELEPHONE NUMBER OR MAILING ADDRESS) ARE DIFFERENT FROM BILLING INFORMATION ON AUTHORIZATION FORM (PAGE 15) -- ASK Q. 62.

3 AUTHORIZATION FORM (PAGE 15) NOT COMPLETED -- ASK Q. 62.

62. For interview verification purposes, may I have your name, phone number, and mailing address please?

RESPONDENT'S NAME: _____

TELEPHONE NUMBER: (AREA CODE: _____) _____

MAILING ADDRESS: _____

POST OFFICE: _____ ZIP CODE: _____

723

INTERVIEWER: MARK APPROPRIATE ANSWER AT RIGHT

1 ONE OR MORE VEHICLES LISTED IN Q. 20 -- ASK Q. 63

0 NO VEHICLES LISTED IN Q. 20 -- PUT ENTRIES IN AT BOTTOM OF PAGE TO COMPLETE INTERVIEW

63. Earlier you mentioned that your household has _____ vehicle(s). Could we look at the odometer on (this/these) vehicle(s) now to see how many miles the vehicle has been driven?

VEHICLE NUMBER				
	1	2	3	4
VEHICLE MAKE (FROM Q. 22)				
ODOMETER READING	725-730	731-736	737-742	743-748
VEHICLE NOT AT HOME (MARK BOX)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

724

Thank you very much for your help.

TIME INTERVIEW COMPLETED: _____ LENGTH OF INTERVIEW: _____ MINUTES

749-750

INTERVIEWER'S SIGNATURE: _____ DATE: _____

751-754

HOUSING UNIT RECORD SHEET

Location # _____ Housing Unit # _____
Address (or description) _____
Post Office (city or town) _____
State _____ Zip code _____

INTRODUCTION

Hello, I'm _____ from Response Analysis, a survey organization in Princeton, New Jersey. We are working on a national survey for the U.S. Department of Energy. May I speak to the head of the household?

CONTINUE WITH HEAD OF HOUSEHOLD, OR ONE OF HOUSEHOLD HEADS, OR SPOUSE

We would like to ask some questions about your home, about heating and air-conditioning, appliances, and related topics.

HAND PRIVACY ACT NOTICE TO RESPONDENT: This notice explains that information about your household is protected by the Privacy Act of 1974 and will remain confidential.

HAND PACKET OF TWO DOLLAR COINS TO RESPONDENT: As Response Analysis mentioned in the letter to your household, these coins are a token of appreciation for your participation in the survey.

CONTINUE WITH INTERVIEW

1 INTERVIEWER OBSERVATION OF TYPE OF LIVING QUARTERS	
01 <input type="checkbox"/> MOBILE HOME OR TRAILER	
02 <input type="checkbox"/> ONE-FAMILY HOUSE →	<input type="checkbox"/> DETACHED <input type="checkbox"/> ATTACHED ON ONE SIDE (SEMI-DETACHED) <input type="checkbox"/> ATTACHED ON TWO SIDES
03 <input type="checkbox"/> HOUSE OR BUILDING WITH 2 - 4 HOUSING UNITS →	<input type="checkbox"/> DETACHED <input type="checkbox"/> ATTACHED ON ONE SIDE (SEMI-DETACHED) <input type="checkbox"/> ATTACHED ON TWO SIDES
04 <input type="checkbox"/> BUILDING WITH 5 OR MORE UNITS →	NUMBER OF UNITS: _____ NUMBER OF FLOORS (STORIES): _____
21 <input type="checkbox"/> OTHER -- DESCRIBE IN DETAIL ANY STRUCTURE THAT DOES NOT FIT ONE OF THE ABOVE.	

COMPLETE RECORD OF CONTACTS AND ADDITIONAL INFORMATION
ON BACK OF THIS RECORD SHEET.

② TYPE OF OCCUPANCY OF HOUSING UNIT

- 1 YEAR-ROUND UNIT
- 2 SEASONAL UNIT
- 3 MIGRATORY UNIT

MARK ANSWER WHETHER HOUSING UNIT IS OCCUPIED OR VACANT -- SEE P. 10 OF INSTRUCTION BOOKLET FOR INTERVIEWERS.

③ RECORD OF VISITS TO HOUSING UNIT

Visit number	Time of day (include AM or PM)	Date	Day of week	Result or comments

④ USE THIS SPACE FOR ADDITIONAL NOTES OR COMMENTS ABOUT VISITS TO THIS HOUSEHOLD. DESCRIBE FULLY IF REFUSAL OR OTHER NONINTERVIEW.

⑤ GIFT TO HOUSEHOLD

MARK TO SHOW WHETHER TWO DOLLAR COIN PACKET WAS ACCEPTED

- 1 TWO DOLLAR COIN PACKET ACCEPTED BY HOUSEHOLD
- 0 NOT ACCEPTED

⑥ NAME AND PHONE NUMBER OF HEAD OF HOUSEHOLD (OR ONE OF HOUSEHOLD HEADS)

Name

Phone number

Area code ()

⑦ INTERVIEWER'S NAME AND I.D. NUMBER

Interviewer

I.D. number

Appendix D: Glossary

Air Conditioning is cooling air by a refrigeration unit. It does not include fans, blowers, or evaporative cooling systems which are not connected to a refrigeration unit.

Air conditioning units which are not currently in working condition or not used, but are in place in the housing unit, are included.

Billing Period refers to the time between meter readings. It does not refer to the time the bill was sent or when the payment was to have been received. In some cases, the billing period is the same as the billing cycle which corresponds closely (within several days) to meter reading dates. For fuel oil and LPG, the billing period is the number of days between fuel deliveries.

Building with 5 or More Housing Units contains living quarters for 5 or more separate households or families.

Built-in Electric Units. Individual resistance electric heating units are permanently installed in the floors, walls, ceilings, or baseboards, and are part of the electrical installation of the building. Electric heating devices that are plugged into an electric socket or outlet are not considered built-in.

Caulking around windows or doors whether in a heated part of the house or an unheated part, such as an attic or basement. Caulking can be done from the inside or outside of the house. Caulking done by the previous owner or caulking done to the respondent's previous home is not included.

Central Warm Air Furnace with Ducts to Individual Rooms. A central furnace provides warm forced air through ducts leading to various rooms. Electric heat pumps are not included in this category.

Condominium Ownership. A condominium is a type of ownership that enables a person to own an apartment or house in a project of similar units. The owner has his or her own deed and, very likely, has a mortgage on the unit. The owner also holds common or joint ownership in all common areas such as hallways, entrances, and elevators.

Condominium ownership may cover single-family houses, row houses, townhouses, as well as apartments.

Conservation Efforts are undertaken by respondents or respondent's family in the housing unit the family occupies. Efforts undertaken by a landlord are not included. Changes made before the respondent moved in are not included.

Continuous Cleaning Oven has a system that automatically dissolves any buildup as it occurs.

Cooling Degree Days are the number of degrees the daily average temperature is above 65 degrees Fahrenheit. Normally cooling is not required in a building when the outdoor average daily temperature is below 65 degrees. Cooling degree days are determined by subtracting the base of 65 from the daily average temperature. For example, a day with an average temperature of 85 degrees has 20 cooling degree days ($85-65=20$), while one with an average temperature of 65 degrees or lower has none.

Doors that go outside or to an unheated area, such as an unheated porch, garage, attic, or basement, are included. Doors to a heated hallway in an apartment building or permanently sealed doors are not included. Double doors are counted as one door.

Education--Highest Grade Attended includes attendance at graded public, private, or parochial schools, colleges, universities, or professional schools, whether day or night school. Only schooling which advances a person toward an elementary or high school diploma, or a college, university, or professional school degree is included. Other schooling is included only if the credits obtained are acceptable in the regular school system.

Persons who have attended "post graduate" high school courses after completing high school, but have not attended college, are considered to be "Twelfth" grade graduates.

Persons who have attended more than four years of college, or who have attended professional schools (law, medicine, or dentistry, for example) are considered to have a college education plus graduate or professional schooling after completion of four years of college.

The equivalent grade of the regular American school system is assumed for a person who obtained his formal education through other systems.

For persons who skip or repeat grades, the highest grade attended is accepted.

Electric Heat Pump (Reverse Cycle System). A heat pump is a year-round heating heating-air-conditioning system in which refrigeration equipment supplies both heating and cooling through ducts leading to individual rooms. It generally consists of a compressor, both indoor and outdoor coils, and a thermostat. Heat pumps using any fuel other than electricity are excluded.

Electricity refers to electric power supplied by a central utility to a residence via underground or above ground power lines. It does not refer to electricity generated onsite for the exclusive use of the residence. In this case, the fuel used for the generator will be indicated.

Eligibility for Tax Credit. A household was eligible if the house was substantially completed prior to April 20, 1977, and the items were installed on or after April 20, 1977.

Estimated Bill is calculated by the fuel supplier when the meter is not read. The estimate may be based on one or more of the following factors: past usage of the household, usage of similar households, weather data.

Family Income includes wages, salaries, tips, commissions, social security, pensions, interest, dividends, rent, public assistance, unemployment insurance benefits, and the like. Income is calculated before taxes and deductions. Income is obtained for all members of the family who lived in the household in 1977, regardless of whether they were living there at the time of the interview. Income of nonfamily members of the household is not included.

Fireplaces or Heating Stoves that burn wood or coal are included.

Floor, Wall, or Pipeless Furnace. A floor furnace is located below the floor and delivers heated air to the room immediately above or, if under a partition, to the room on each side.

A wall furnace is installed in a partition or in an outside wall and delivers heated air to the rooms on one or both sides of the wall.

A pipeless furnace is installed in a basement and delivers heated air through a large register in the floor of the room or hallway immediately above.

Fuels refers to primary delivered fuel at the residential site. It may be converted at the site to some other energy form.

Fuel Oil is any grade fuel oil which might be burned by the dwelling for space heating or water heating purposes.

Head of Household. If the respondent was married and living with his or her spouse, the male was considered to be the head of the household. Otherwise, the respondent was the head of the household.

Heating Degree Days are the number of degrees of daily average temperature is below 65 degrees Fahrenheit. Normally, heating is not required in a building when the outdoor average daily temperature is above 65 degrees. Heating degree days are determined by subtracting the average daily temperature below 65 degrees from the base 65. For example, a day with an average temperature of 50 degrees has 15 heating degree days ($65-50=15$), while one with an average temperature of 65 or higher has none.

Home-Owner/Renter. Own means the owner or co-owner is a household member of the unit, even if the unit is mortgaged or not fully paid for. Own/rent refers to the structure itself, not the land on which it is located.

Hot Water Pipes Running Through a Slab Floor. A central radiant system supplies hot water to pipes inlaid in concrete.

House or Building with two, three, or four Housing Units is divided into living quarters for two, three, or four families or households. This category also includes houses originally intended for occupancy by one family or for some other use, but have since been converted to a separate dwelling for two to four families. Typical arrangements in these types of living quarters are separate apartments, downstairs and upstairs, or one apartment on each of three or four floors.

Household includes all persons who occupy a housing unit. By definition, the count of households is the same as the count of occupied housing units.

Household Appliances. The following appliances are included if they are used in the home: refrigerator, cooking appliances (small electric appliances, oven, range, or grill), washing machine, dishwasher, freezer, dryer, outdoor gas-light. Air-conditioning units are included whether or not they are used or are in working order.

Housing Unit is a structure or part of a structure where a household (family or individual) lives or could live. It has a separate entrance from the outside or from a common hall or lobby, or it has cooking facilities for the exclusive use of the occupants. Housing units do not include group quarters such as prisons, hospitals, dormitories, nursing homes, fraternity houses or convents. Hotel rooms, motel, mobile homes, or trailers are considered housing units if occupied.

Insulation. Insulation is any material which, when placed between the interior of the dwelling and the outdoor environment, reduces the rate of heat (cold) loss to the environment.

Blankets or Batts--Rolls or Pieces are nailed or stapled between the roof rafters.

Foam is initially a liquid that solidifies after being sprayed on a surface or poured into a cavity to be insulated.

Loose Fill or Blown Material is loose insulation which is poured between the attic floor joists (beams) or blown into open spaces.

Plastic Foam Boards are rigid boards (such as styrofoam), that can be cut to size and either edged, nailed, or glued in place.

Insulation Added, Equipment Added does not include additions that were in the process of being completed but were not completed at the time of the survey.

Kerosene is a distilled product of oil or coal with the generic name kerosene and used for space heating, water heating, cooking or lighting.

LPG or Liquid Petroleum Gas is any fuel gas supplied to a residence in liquid form. It is usually delivered by tank truck and stored near the residence in a tank or cylinder until used. Propane and butane are liquified petroleum gases.

Metropolitan refers to locations within Standard Metropolitan Statistical Areas as defined in the 1970 Census.

Migratory Housing Unit is intended for occupancy by migratory workers employed in farm work during the crop season.

Mobile Home or Trailer is a structure which has all the facilities of a dwelling unit, but is built on a movable chassis. It may be placed on a permanent or temporary foundation and contain one or more rooms. Even if additional rooms are added to the structure, it is still considered a mobile home.

Monthly Rent is rent paid for the sample unit only. If the rent actually paid by the household includes rent for a business unit or for living quarters occupied by others, that part of the total rent which the respondent estimates to be for his/her own unit only is reported.

The rent paid or scheduled to be paid to the landlord or rental agent is reported, without deduction for any payments received from lodgers or roomers, or for the cost of any furniture, utilities, or service provided by the landlord. Any part of the rent that may be paid by friends or relatives living elsewhere, a church, government agency, or similar organization is not deducted.

Natural Gas is utility gas supplied by pipeline to individual housing units by a central utility company. It does not refer to privately owned gas wells operated by the household.

Number of Floors includes floors for all areas used as year round living space. Unfinished areas used for workrooms, utility rooms, or laundry rooms are not included. Finished attics or basements are included. If the attic or basement is partially finished and the finished part is used as living space on a year-round basis, the area is counted as one-half floor. The basement level of an apartment building is not counted. Any level of a house that is more than one-half the length and width of the house is one floor. Any level that is less, is one-half floor.

Number of Rooms. Whole rooms are rooms such as living rooms, dining rooms, bedrooms, kitchens, lodger's rooms, finished basements, or attic rooms, recreation rooms, and permanently enclosed sun porches which are used year-round. Rooms used for offices by a person living in the unit are included.

Bathrooms, halls, foyers, or vestibules, balconies, closets, alcoves, pantries, strip or pullman kitchens, laundry or furnace rooms, unfinished attics or basements, open porches and unfinished space used for storage are not included.

A partially divided room, such as a dinette next to a kitchen or living room, is a separate room only if there is a partition from floor to ceiling, but not if the partition consists solely of shelves or cabinets. If a room is used by occupants of more than one unit, the room is included with the unit from which it is most easily reached.

Rooms are counted as year-round living space if they are completely enclosed for the outside with permanently installed walls, windows, and roof and can be heated.

Occupied Housing Unit is occupied if someone was living in it as their usual or permanent place of residence at the time of the first field contact.

Plastic Coverings are placed over the doors or windows on either the outside or inside of the house. Plastic coverings installed by previous occupants of the housing unit or installed in the respondent's previous home are not included.

Poor. The following definition of poor was used based on family income and the number of persons in the household.

<u>Household Size</u>	<u>Income Range</u>
1	less than \$ 3,000
2	less than \$ 4,999
3	less than \$ 4,999
4	less than \$ 7,999
5	less than \$ 7,999
6	less than \$ 9,999
7	less than \$11,999

Portable Room or Space Heaters can be picked up and moved. Included are electric heaters that get current through a cord plugged into an electrical wall outlet.

Property Value for Owned Property consists of the entire building in which the owner lives, the land on which it stands, and any additional buildings such as garages on the same plot of land. The value of the land is included whether or not the land is on the same plot owned or owned jointly.

Race. The interviewer determined the race of the respondent by observation only.

Refrigerator. A "temperature control" is usually a dial with a range such as 1 to 10 which designates the temperature range one can select inside the refrigerator.

Automatic Defrost--defrosts automatically after frost builds up (catch pan must be emptied).

Automatic Ice-Maker is a device in the freezer section of the refrigerator which is connected to the household water supply. It has a valve which regulates the amount of water taken in to be made into ice cubes.

Automatic Ice-Water Dispenser is connected to the household water supply. It has a valve which regulates the amount of water taken in for a constant supply of cold water.

Energy Saver Switch (anti-sweat) is a control which raises the temperature inside the refrigerator. It saves energy when the humidity is high and water is condensing on the inside walls of the refrigerator.

Extra Insulation in Walls or Doors is featured in some new refrigerators. The extra insulation retains the cold air and makes the refrigerator more energy efficient.

Full Frost-Freefrost does not build up.

Manual Defrost--freezer section or ice cube section must be defrosted periodically.

Room Heaters with Flue or Vent. Circulating heaters, convectors, radiant gas heaters, other nonportable room heaters that burn gas, oil, kerosene, or other liquid fuel, and are connected to a flue, vent, or chimney to remove smoke and fumes.

Room Heaters without Flue. Nonportable room heaters that burn gas, oil, or kerosene which are not connected to a flue, vent, or chimney.

Room(s) Closed Off During Winter includes households that completely close off one more more rooms for a week or longer. A room is closed off if the door to the room is closed and the heat in that room is turned down, regardless of whether any heat from surrounding rooms can be felt.

Rural refers to nonurban areas.

Seasonal Housing Unit is intended for occupancy only at certain seasons of the year. Seasonal units include those intended for recreational use, for example, beach cottages and hunting cabins that have not been converted to year-round use.

Self-Cleaning Oven has a cleaning cycle that can be turned on when desired.

Single Family Housing Unit provides living space for one household or family. The structure may be detached, attached on one side (semi-detached), or attached on two sides. Attached houses are considered single family houses as long as the house itself is not divided into more than one housing unit and has an independent, outside entrance.

Solar Collectors refer to active, thermal, concentrating collectors using either air or liquid as the working fluid. They do not refer to passive collection of solar thermal energy.

Square Feet refers to the living space in the housing unit. If the respondent does not know the square footage of living space, the respondent is asked for his/her best guess. If the respondent is unable to answer, an answer is obtained, when possible, from any knowledgeable household member present at the time of the interview.

Living space includes living rooms, dining rooms, bedrooms, kitchens, lodger's rooms, finished basement and attic rooms, recreation rooms, permanently enclosed sun porches which are used year-round, bathrooms, hallways, and closets located in

the living quarters. The living space does not include hallways connecting one housing unit to another or unfinished areas used for work rooms, or laundries. Rooms used by occupants of more than one unit are included in the square footage of the unit from which the room(s) is most easily reached.

Steam or Hot Water System with Radiators or Convector. A central heating system supplying steam or hot water to conventional radiators, baseboard radiators, heating pipes embedded in the walls or ceilings, or heating coils or equipment which are part of a combined heating-ventilating or heating-air-conditioning system.

Storm Doors are made of double glass or insulating glass such as thermopane. Glass or plexiglass placed over a sliding glass door on either the exterior or interior is counted as a storm door. A plastic sheet covering the door is not a storm door.

Storm Windows are windows added to the exterior of existing windows. Windows made of double glass or insulating glass, such as thermopane, are storm windows. Glass or plexiglass placed over windows on either the exterior or interior side are included. Plastic sheets covering windows are not included.

Urban includes housing in places of 2,500 inhabitants or more as defined in the 1970 Census.

Vacant Housing Unit is vacant if it was not occupied at the time of the first field contact. An occupied seasonal or migratory housing unit is classified as vacant at the time of the first field contact when all persons had a usual place of residence elsewhere.

Vehicles are automobiles, station wagons, passenger vans, cargo vans, motor homes, pickup trucks, other trucks, jeeps or similar vehicles, motorcycles, mopeds, and motorized bicycles.

Any motorized vehicle which is owned (being bought) by one or more members of the household is included. Company cars, trucks, taxicabs, and other motorized vehicles which are not owned by household members, but are regularly available to household members for their personal use and are ordinarily kept at home are included.

Vehicles of all members of the household, including lodgers or other nonrelatives living in the house (apartment) are included. Cars rented or leased for one month or more are included.

Not included are motorized vehicles used solely for business purposes, such as police cars or other government-owned vehicles. Dismanteled or dilapidated vehicles in an early stage or being junked, or immobile vehicles used only as a source of power for some piece of machinery are not included. Vehicles used primarily for competition or display purposes such as racing cars, stock cars, or antique cars not used as passenger automobiles are not included.

Vehicle Types. Passenger vans or minibuses which are equipped for carrying passengers and have a seating capacity of from 5 to 15 passengers.

Pickup trucks include cars with an open load area (for example, a Ford El Rancho).

A jeep or similar vehicle has 4-wheel drive and is capable of off-road operation.

The miscellaneous category contains vehicles that do not fit into any of the designated categories.

Weatherstripping around outside doors or windows.

Windows to the Outside. All windows to the outside found in year-round living space are included. Windows in the basement, attic, garage, or porch are included if those areas are heated. Each windows that opens separately is counted as one window. Windows fixed in place are included. Windows in doors are not included.

Year-Round Housing Unit is occupied or intended for occupancy at any time during the year. Mobile homes or trailers are considered year-round units if they also satisfy this condition.

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