Residential Energy Consumption Surveys

2001 Consumption and Expenditures Tables

Water-Heating Expenditures Tables

(20 pages, 87 kb)

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These data are from the 2001 Residential Energy Consumption Survey (RECS) which provides information on the use of energy in residential housing units in the United States. The RECS is a national statistical survey that collects energy-related data for occupied primary housing units. RECS was first conducted in 1978; the twelfth and most recent survey was conducted in 2001. In the 2001 RECS, data were collected from a sample of 4,822 households in housing units statistically selected to represent the 107.0 million housing units in the United States. The RECS data are available for the four Census regions, the nine Census divisions, and for the four most populous States--California, Florida, New York, and Texas.

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World Wide Web:

http://www.eia.doe.gov/emeu/consumption

Table CE4-1e.Water-Heating Energy Expenditures in U.S. Householdsby Climate Zone, 2001

				Climate Zone ¹			
			Fewer than 2,0	000 CDD and		2,000 CDD or More	
	Total	More than 7,000 HDD	5,500 to 7,000 HDD	4,000 to 5,499 HDD	Fewer than 4,000 HDD	and Fewer than 4,000 HDD	RSE
RSE Column Factor:	0.4	1.6	1.0	1.1	1.2	1.0	Row Factors
	I		М	illion Household	S		
Total U.S. Households No Water Heating Water Heating Not Using a Major Fuel ² Using a Major Fuel ² For Main Water Heating	107.0 Q 106.9 0.2 106.7 106.5	9.2 Q 9.2 Q 9.2 9.2 9.2	28.6 Q 28.6 Q 28.6 28.6 28.6	24.0 Q 24.0 Q 24.0 24.0 24.0	21.0 Q 20.9 Q 20.9 20.9 20.8	24.1 Q 24.0 Q 24.0 23.9	8.1 NF 8.1 90.3 8.1 8.1
Number of Households with Water Heating, Major Fuels Used: Electricity Natural Gas Fuel Oil LPG	4.7	4.1 3.8 0.8 0.6	7.4 19.2 1.5 0.8	8.6 12.4 2.4 0.6	8.6 12.2 Q 0.5	13.0 10.6 Q 0.5	10.3 8.9 20.0
		0.0	0.8	Billion Dollars ^a	0.5	0.5	27.6
Water-Heating Expenditures, Major							
Fuels Used: Electricity Natural Gas Fuel Oil LPG Total ³	11.31 1.14 0.69	0.84 0.58 0.24 0.14 1.79	1.45 3.59 0.38 0.19 5.62	1.67 2.47 0.51 0.13 4.79	1.70 2.58 Q 0.11 4.39	2.81 2.08 Q 0.12 5.02	11.2 9.7 21.5 26.6 7.0
			Doll	lars per Househo	ld ^a		
Average Water-Heating Expenditures per Household Using a Major Fuel ² For Main Water Heating		196 196	196 196	200 200	210 211	209 210	2.6 2.6
				illion Households			
Number of Households, Where the Main Water-Heating Fuel Is:	40.0			0.5		10.0	
Electricity Natural Gas Fuel Oil LPG Does Not Heat Water	4.6	4.0 3.7 0.8 0.6 Q	7.3 19.1 1.4 0.8 Q	8.5 12.4 2.4 0.6 Q	8.1 12.2 Q 0.5 Q	12.8 10.6 Q 0.4 Q	10.4 8.9 20.6 27.7 NF
			Doll	lars per Househo	ld ^a		
Water-Heating Expenditures per Household, ⁴ Where the Main Water-Heating Fuel Is:							
Electricity Natural Gas Fuel Oil LPG	194 243	209 153 289 239	198 187 266 242	195 199 213 207	210 211 Q 219	219 196 Q 261	3.3 3.7 5.5 9.6

Table CE4-1e. Water-Heating Energy Expenditures in U.S. Households by Climate Zone, 2001 (Continued)

				Climate Zone ¹			
				2,000 CDD			
RSE Column Factor:	Total	More than 7,000 HDD	5,500 to 7,000 HDD	4,000 to 5,499 HDD	Fewer than 4,000 HDD	or More and Fewer than 4,000 HDD	RSE
	0.4	1.6	1.0	1.1	1.2	1.0	Row Factors
		N	umber of Househo	old Members (NH	M) per Household	5	
Number of Household Members per Household, Where the Main Water-Heating Fuel Is:							
Electricity	2.4	2.6	2.3	2.5	2.5	2.4	3.1
Natural Gas	2.7	2.4	2.6	2.5	3.0	2.7	3.1
Fuel Oil	2.4	2.4	2.5	2.4	Q	Q	6.0
LPG	2.6	2.6	2.6	2.3	2.2	3.3	9.3
			Water-Heatin	ng Intensity ^{5,a} (D	ollars÷NHM)		
-							
Water-Heating Intensity, Where the Main Water-Heating Fuel Is:							
Electricity	85	81	86	80	84	91	3.2
Natural Gas	73	63	73	79	70	72	3.7
Fuel Oil	101	119	109	90	Q	Q	7.2
LPG	91	92	94	90	99	79	12.5

¹ One of five climatically distinct areas, determined according to the 30-year average (1961-1990) of the annual heating and cooling degree-days. For this report, the heating or cooling degree-days are a measure of how cold or how hot a location is over a period of one year, relative to a base temperature of 65 degrees Fahrenheit. A household is assigned to a climate zone according to the 30-year average annual degree-days for an appropriate nearby weather station.

² The major fuels are electricity, natural gas, fuel oil, kerosene, and liquefied petroleum gas (LPG).

³ Includes a small amount of kerosene use for water heating.
 ⁴ Includes only the water-heating expenditures of the water-heating fuel. Not included are: 1) the expenditures of the main water-heating fuel for uses other than

water heating; 2) the expenditures of the main water-heating fuel where it is the secondary, and not the main, water-heating fuel, and; 3) the expenditures of other fuels that are used as secondary water-heating fuels.

Averages are for those households using each of the main water-heating fuels.

^a The row factor in this section is underestimated because it contains no error for estimating the end-use.

NF = No applicable RSE row factor.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals. · See "Glossary" for definition of terms used in this report.

Table CE4-2e.Water-Heating Energy Expenditures in U.S. Households
by Year of Construction, 2001

				Year of Cor	nstruction			
	Total	1990 to 2001 ¹	1980 to 1989	1970 to 1979	1960 to 1969	1990 to 1999	1949 or Before	
RSE Column Factor:	0.5	1.4	1.2	1.0	1.2	1.2	0.9	RSE Row Factors
				Million Hous	eholds			
Fotal U.S. Households	107.0	15.5	18.2	18.8	13.8	14.2	26.6	4.3
No Water Heating		Q	Q	Q	Q	Q	Q	NF
Water Heating		15.5	18.2	18.7	13.8	14.2	26.5	4.3
Not Using a Major Fuel ²		Q	Q	Q	Q	Q	Q	83.2
Using a Major Fuel ²		15.4	18.2	18.7	13.7	14.2	26.4	4.3
For Main Water Heating	106.5	15.4	18.2	18.7	13.6	14.1	26.4	4.3
Number of Households with Water Heating, Major Fuels Used:								
Electricity	41.6	6.5	9.8	9.8	4.2	4.4	6.9	6.6
Natural Gas		8.3	7.7	7.8	8.7	8.8	16.9	6.4
Fuel Oil		0.2	0.3	0.5	0.7	0.9	2.1	19.6
LPG	3.0	0.5	0.4	0.7	0.2	0.3	0.8	23.2
				Billion Dol	lars ^a			
Nater-Heating Expenditures, Major Fuels Jsed:								
Electricity		1.38	2.01	1.98	0.83	0.86	1.40	7.6
Natural Gas		1.90	1.62	1.40	1.56	1.70	3.12	7.3
Fuel Oil		0.06	0.13	0.14	0.16	0.20	0.45	20.0
LPG		0.12	0.10	0.16	0.04	0.07	0.20	24.7
Total ³	21.61	3.47	3.86	3.68	2.59	2.84	5.18	4.4
			Do	ollars per Hou	usehold ^{5,a}			
Average Water-Heating Expenditures per Household								
Using a Major Fuel ²		225	212	196	189	200	196	2.3
For Main Water Heating	203	225	212	196	190	201	196	2.3
				Million Hous	eholds			
Number of Households, Where the Main								
Vater-Heating Fuel Is: Electricity	40.8	6.4	9.8	9.8	4.1	4.1	6.7	6.8
Natural Gas		8.3	9.8 7.7	7.8	8.6	8.8	16.9	6.4
Fuel Oil		0.2	0.3	0.5	0.7	0.9	2.0	20.2
LPG		0.5	0.4	0.7	0.2	0.3	0.8	23.2
Does Not Heat Water	Q	Q	Q	Q	Q	Q	Q	NF
			Do	ollars per Hou	usehold ^{5,a}			
Vater-Heating Expenditures per lousehold, ⁴ Where the Main								
Vater-Heating Fuel Is:	208	215	206	202	207	212	210	
Nater-Heating Fuel Is: Electricity		215 229	206 210	202 179	204 181	212 193	210 184	3.4
Nater-Heating Fuel Is:		215 229 302	206 210 402	202 179 296	204 181 217	212 193 213	210 184 223	3.4

Table CE4-2e. Water-Heating Energy Expenditures in U.S. Households by Year of Construction, 2001 (Continued)

	Total			Year of Co	onstruction					
		1990 to 2001 ¹	1980 to 1989	1970 to 1979	1960 to 1969	1990 to 1999	1949 or Before			
RSE Column Factor:		1.4	1.2	1.0	1.2	1.2	0.9	RSE Row Factors		
	Number of Household Members (NHM) per Household ⁵									
Number of Household Members per Household, Where the Main Water-Heating Fuel Is:										
Electricity	2.4	2.7	2.4	2.3	2.4	2.4	2.5	3.2		
Natural Gas	2.7	3.1	2.6	2.7	2.5	2.6	2.6	2.9		
Fuel Oil	2.4 2.6	2.9 3.1	3.2 2.5	2.8 2.4	2.4 2.0	2.1 2.6	2.3 2.5	7.1		
	2.0	5.1	-	ting Intensity	-	-	2.5			
-					(,				
Water-Heating Intensity, Where the Main Water-Heating Fuel Is:										
Electricity	85	80	85	87	87	90	86	2.7		
Natural Gas	73	73	82	67	73	73	72	3.6		
Fuel Oil	101	105	127	105	91	104	96	11.1		
	91	78	90	90	93	108	94	13.8		

¹ New construction for 2001 includes only those housing units built and occupied between January and the April-August period when the household interviews were conducted.

² The major fuels are electricity, natural gas, fuel oil, kerosene, and liquefied petroleum gas (LPG).

³ Includes a small amount of kerosene use for water heating.

⁴ Includes only the water-heating expenditures of the water-heating fuel. Not included are: 1) the expenditures of the main water-heating fuel for uses other than water heating; 2) the expenditures of the main water-heating fuel where it is the secondary, and not the main, water-heating fuel, and; 3) the expenditures of other fuels that are used as secondary water-heating fuels.

⁵ Averages are for those households using each of the main water-heating fuels.
 ^a The row factor in this section is underestimated because it contains no error for estimating the end-use.

NF = No applicable RSE row factor.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Table CE4-3e.Water-Heating Energy Expenditures in U.S. Households
by Household Income, 2001

			0004 11					
		Less	\$10,000 to	hold Income \$30,000 to	\$50,000 or	Below Poverty	Eli- gible for Fed- eral Assist-	
	Total	\$10,000	\$29,999	\$49,999	More	Line	ance ¹	
RSE Column Factor:	0.6	1.6	1.0	0.9	0.8	1.5	1.0	RSE Row Factors
				Million H	ouseholds			
Total U.S. Households	107.0	11.0	30.6	27.1	38.3	15.0	33.8	3.3
No Water Heating	Q	Q	Q	Q	Q	Q	Q	NF
Water Heating	106.9	11.0	30.5	27.1	38.3	14.9	33.7	3.3
Not Using a Major Fuel ²	0.2	Q	Q	Q	Q	Q	Q	71.3
Using a Major Fuel ²	106.7	11.0	30.5	27.0	38.2	14.9	33.7	3.3
For Main Water Heating	106.5	11.0	30.4	27.0	38.1	14.9	33.7	3.3
Number of Households with Water Heating, Major Fuels Used:								
Electricity	41.6	4.7	13.4	10.8	12.7	6.4	14.3	6.0
Natural Gas		5.6	15.5	14.1	23.0	7.9	17.7	5.2
Fuel Oil	4.7	0.4	1.1	1.3	2.0	0.4	1.1	15.5
LPG	3.0	0.3	0.9	1.0	0.8	0.4	0.9	19.4
				Billion	Dollars ^a			
Water-Heating Expenditures, Major Fuels Used:								
Electricity	8.47	0.69	2.38	2.27	3.13	1.13	2.69	6.2
Natural Gas	11.31	0.83	2.61	2.27	5.16	1.13	3.04	6.0
Fuel Oil		0.08	0.21	0.29	0.55	0.09	0.26	17.0
LPG	0.69	0.02	0.21	0.25	0.20	0.06	0.20	21.2
Total ³	21.61	1.63	5.41	5.52	9.05	2.54	6.20	3.5
			I	Dollars per	Household	5,a		
Average Water-Heating Expenditures per Household								
Using a Major Fuel ²	203	149	177	204	237	170	184	1.9
For Main Water Heating		149	178	205	238	170	184	1.9
				Million H	ouseholds			
Number of Households, Where the Main Water-Heating Fuel Is:								
Electricity	40.8	4.7	13.1	10.6	12.4	6.2	14.0	6.0
Natural Gas	58.0	5.6	15.4	14.1	23.0	7.8	17.6	5.2
Fuel Oil	4.6	0.4	1.0	1.3	1.9	0.4	1.1	15.9
LPG Does Not Heat Water	2.9	0.3	0.9	1.0	0.8	0.4	0.9	19.5 NF
Does Not Heat Water	Q	Q	Q	Q	Q	Q	Q	INF
			I	Dollars per	Household	5,a		
Water-Heating Expenditures per Household, ⁴ Where the Main								
Water-Heating Fuel Is:				~ ~ ~				
Electricity	208	149	182	213	253	182	191	2.7
Natural Gas	194	146	169 195	192 228	224 283	160 212	172 250	2.9 6.9
	040							
Fuel Oil	243 233	222 89	233	259	250	140	220	9.3

Table CE4-3e. Water-Heating Energy Expenditures in U.S. Households by Household Income, 2001 (Continued)

	Total		2001 House	hold Income			Eli- gible for Fed- eral Assist- ance ¹	
			\$10,000 to \$29,999 1.0	\$30,000 to \$49,999 0.9	\$50,000 or More 0.8	Below Poverty Line 1.5		
RSE Column Factor:								RSE Row Factors
	Number of Household Members (NHM) per Household ⁵							
Number of Household Members per Household, Where the Main Water-Heating Fuel Is:								
Electricity	2.4	1.7	2.2	2.5	2.9	2.4	2.5	3.0
Natural Gas	2.7	2.0	2.4	2.7	3.0	2.8	2.8	2.6
Fuel Oil	2.4	2.1	1.7	2.5	2.8	2.3	2.5	7.2
LPG	2.6	1.3	2.5	2.8	2.9	2.5	2.7	10.7
			Water-He	ating Inten	sity ^{5,a} (Do	llars÷NHM)		
Water-Heating Intensity, Where the Main Water-Heating Fuel Is:								
Electricity	85	85	82	87	87	77	78	2.7
Natural Gas	73	73	72	70	75	58	61	3.3
Fuel Oil	101	105	113	91	102	93	101	10.2
LPG	91	69	95	92	88	55	82	11.8

¹ Below 150 percent of poverty line or 60 percent of median State income.

² The major fuels are electricity, natural gas, fuel oil, kerosene, and liquefied petroleum gas (LPG).

³ Includes a small amount of kerosene use for water heating.

⁴ Includes only the water-heating expenditures of the water-heating fuel. Not included are: 1) the expenditures of the main water-heating fuel for uses other than water heating; 2) the expenditures of the main water-heating fuel where it is the secondary, and not the main, water-heating fuel, and; 3) the expenditures of other fuels that are used as secondary water-heating fuels.

⁵ Averages are for those households using each of the main water-heating fuels.
^a The row factor in this section is underestimated because it contains no error for estimating the end-use.

NF = No applicable RSE row factor.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Table CE4-4e.Water-Heating Energy Expenditures in U.S. Households
by Type of Housing Unit, 2001

			Type of Ho	ousing Unit		
			Apartments in	Buildings With		
	Total	Single-Family	Two to Four Units	Five or More Units	Mobile Homes	
RSE Column Factor:	0.5	0.5	1.6	1.3	1.8	RSE Row Factors
			Million House	nolds		
Total U.S. Households	107.0	73.7	9.5	17.0	6.8	4.4
No Water Heating	Q	Q	Q	Q	Q	NF
Water Heating	106.9	73.6	9.5	17.0	6.8	4.4
Not Using a Major Fuel ¹ Using a Major Fuel ¹	0.2 106.7	Q 73.5	Q 9.5	Q 16.9	Q 6.8	81.2
For Main Water Heating	106.5	73.3	9.5 9.5	16.8	6.8	4.4
Number of Households with Water						
Heating, Major Fuels Used: Electricity	41.6	25.9	3.4	7.4	4.9	7.5
Natural Gas	58.2	42.8	5.7	8.2	4.9	6.7
Fuel Oil	4.7	3.0	0.4	1.3	Q	19.5
LPG	3.0	2.5	Q	Q	0.4	22.2
			Billion Dolla	rs ^a		
Water-Heating Expenditures, Major Fuels Used:						
Electricity	8.47	5.68	0.57	1.11	1.11	8.5
Natural Gas	11.31	9.11	0.89	1.05	0.26	8.2
Fuel Oil	1.14	0.88	0.10	0.16	Q	20.7
LPG	0.69	0.61	Q	Q	0.07	22.2
Total ²	21.61	16.27	1.57	2.33	1.44	4.6
			Dollars per House	ehold ^{4,a}		
Average Water-Heating Expenditures per						
Household						
Using a Major Fuel ¹ For Main Water Heating	203 203	221 222	165 165	138 138	212 212	2.4
For Main Water Heating	203	222	COL	130	212	2.4
-			Million House	nolds		
Number of Households, Where the Main						
Water-Heating Fuel Is:						
Electricity	40.8	25.2	3.4	7.4	4.9	7.6
Natural Gas	58.0	42.7	5.7	8.1	1.5	6.7
Fuel Oil	4.6 2.9	2.9 2.5	0.4 Q	1.3 Q	Q 0.3	20.1 22.5
Does Not Heat Water	Q	Q	Q	Q	Q.0.0	NF
-			Dollars per House	ehold ^{4,a}		
Water Heating Expanditures are						
Water-Heating Expenditures per Household, ³ Where the Main Water-Heating Fuel Is:						
Electricity	208	225	171	151	227	3.2
Natural Gas	194	213	157	129	168	3.7
Fuel Oil	243	293 245	237 Q	127 Q	Q 179	6.0
LPG	233					7.9

Table CE4-4e. Water-Heating Energy Expenditures in U.S. Households by Type of Housing Unit, 2001 (Continued)

			Type of Ho	ousing Unit		
			Apartments in	Buildings With		
	Total	Single-Family	Two to Four Units	Five or More Units	Mobile Homes	
RSE Column Factor:	0.5	0.5	1.6	1.3	1.8	RSE Row Factors
L		Number of H	ousehold Members	(NHM) per Househo	bld ⁴	
Number of Household Members per Household, Where the Main Water-Heating Fuel Is:						
Electricity	2.4	2.6	2.2	1.9	2.7	3.1
Natural Gas	2.7	2.8	2.4	2.1	2.4	3.1
Fuel Oil	2.4	2.6	1.7	2.1	Q	7.3
LPG	2.6	2.7	Q	Q	2.2	8.5
-		Water	-Heating Intensity ^{4,a}	(Dollars÷NHM)		-
Water-Heating Intensity, Where the Main Water-Heating Fuel Is:						
Electricity	85	87	78	81	85	2.9
Natural Gas	73	75	66	61	70	4.4
Fuel Oil	101	111	143	59	Q	9.6
LPG	91	92	Q	Q	81	9.4

¹ The major fuels are electricity, natural gas, fuel oil, kerosene, and liquefied petroleum gas (LPG).

 ² Includes a small amount of kerosene use for water heating.
 ³ Includes only the water-heating expenditures of the water-heating fuel. Not included are: 1) the expenditures of the main water-heating fuel for uses other than water heating; 2) the expenditures of the main water-heating fuel where it is the secondary, and not the main, water-heating fuel, and; 3) the expenditures of other fuels that are used as secondary water-heating fuels.

⁴ Averages are for those households using each of the main water-heating fuels.
 ^a The row factor in this section is underestimated because it contains no error for estimating the end-use.

NF = No applicable RSE row factor.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Table CE4-7e.Water-Heating Energy Expenditures in U.S. Households
by Four Most Populated States, 2001

			Four Most Pop	ulated States		
	Total U.S.	New York	California	Texas	Florida	
RSE Column Factor:	0.5	1.9	1.0	1.6	0.7	RSE Row Factors
			Million Househo	olds		
otal U.S. Households	107.0	7.1	12.3	7.7	6.3	NE
No Water Heating	Q	Q	Q	Q	Q	NF
Water Heating	106.9	7.1	12.3	7.6	6.3	NE
Not Using a Major Fuel ¹	0.2	Q	Q	Q	Q	88.8
Using a Major Fuel ¹	106.7	7.0	12.2	7.6	6.3	NE
For Main Water Heating	106.5	7.0	12.1	7.6	6.3	1.1
umber of Households with Water						
eating, Major Fuels Used:						
Electricity	41.6	0.9	2.3	3.0	5.2	7.9
Natural Gas	58.2	4.4	10.0	4.6	1.2	5.4
Fuel Oil	4.7	1.7	Q	Q	Q	13.9
.PG	3.0	Q	0.4	Q	Q	29.8
-			Billion Dollars	Sa		
/ater-Heating Expenditures, Major Fuels						
sed:						
Electricity	8.47	0.23	0.36	0.65	1.12	11.5
Vatural Gas	11.31	0.91	1.87	0.83	0.26	7.3
Fuel Oil	1.14	0.34	Q	Q	Q	13.2
_PG	0.69	Q	0.09	Q	Q	28.1
۲otal ²	21.61	1.51	2.32	1.49	1.39	3.5
_			Dollars per House	h old ^{3,a}		
verage Water-Heating Expenditures per						
ousehold						
Jsing a Major Fuel ¹	203	214	190	196	220	3.4
For Main Water Heating	203	214	190	196	220	3.5
-	200	214				0.0
-			Million Househo	olds		
umber of Households, Where the Main						
/ater-Heating Fuel Is:	40.0	0.0	1.0	2.0	E 1	0.4
Electricity	40.8	0.9	1.8	3.0	5.1	8.4
Natural Gas	58.0	4.4	9.9	4.5	1.2	5.5
Fuel Oil	4.6	1.6	Q	Q	Q	14.6
_PG	2.9	Q	0.4	Q	Q	29.8
	Q	Q	Q	Q	Q	NF
			Dollars per House	hold ^{3,a}		
oes Not Heat Water - /ater-Heating Expenditures per ousehold, ³ Where the Main			Dollars per House	hold ^{3,a}		
bes Not Heat Water ater-Heating Expenditures per busehold, ³ Where the Main ater-Heating Fuel Is:			·			
oes Not Heat Water /ater-Heating Expenditures per ousehold, ³ Where the Main /ater-Heating Fuel Is: Electricity	208	261	202	214	220	
oes Not Heat Water /ater-Heating Expenditures per ousehold, ³ Where the Main /ater-Heating Fuel Is: Electricity Natural Gas	194	205	202 187	214 182	222	5.7
Vater-Heating Expenditures per lousehold, ³ Where the Main Vater-Heating Fuel Is: Electricity Natural Gas Fuel Oil			202	214		

Table CE4-7e. Water-Heating Energy Expenditures in U.S. Households by Four Most Populated States, 2001 (Continued)

		Four Most Populated States						
	Total U.S.	New York	California	Texas	Florida			
RSE Column Factor:	0.5	1.9	1.0	1.6	0.7	RSE Row Factors		
	Number of Household Members (NHM) per Household ³							
Number of Household Members per Household, Where the Main Water-Heating Fuel Is:								
Electricity	2.4	2.8	2.5	2.3	2.5	4.5		
Natural Gas		2.5	3.1	3.0	2.7	2.7		
Fuel Oil LPG	2.4 2.6	2.3 Q	Q 2.4	Q Q	Q Q	5.6 11.7		
-		Water-	Heating Intensity ^{3,a}	(Dollars÷NHM)				
Water-Heating Intensity, Where the Main Water-Heating Fuel Is:								
Electricity	85	93	83	95	89	4.0		
Natural Gas	73	82	61	62	81	5.2		
Fuel Oil	101	88	Q	Q	Q	8.2		
LPG	91	Q	91	Q	Q	17.2		

¹ The major fuels are electricity, natural gas, fuel oil, kerosene, and liquefied petroleum gas (LPG).

² Includes a small amount of kerosene use for water heating.

³ Includes only the water-heating fuel for uses other than ³ water heating; 2) the expenditures of the main water-heating fuel where it is the secondary, and not the main, water-heating fuel, and; 3) the expenditures of other fuels that are used as secondary water-heating fuels.

Averages are for those households using each of the main water-heating fuels.

^a The row factor in this section is underestimated because it contains no error for estimating the end-use.

NE = RSE row factor not estimated because RSE's for all statistics in this row are between 0.0 and 1.0 percent.

NF = No applicable RSE row factor.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled. Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Table CE4-8e.Water-Heating Energy Expenditures in U.S. Households
by Urban/Rural Location, 2001

			Urban/Rura	Location ¹		
	Total	City	Town	Suburbs	Rural	
RSE Column Factor:	0.6	1.0	1.4	1.1	1.2	RSE Row Factors
			Million Househ	olds		
otal U.S. Households	107.0	49.9	18.0	21.2	17.9	4.2
No Water Heating	Q	Q	Q	Q	Q	NF
Nater Heating	106.9	49.8	18.0	21.2	17.9	4.2
Not Using a Major Fuel ²	0.2	Q	Q	Q	Q	72.8
Using a Major Fuel ²	106.7	49.7	18.0	21.2	17.8	4.2
For Main Water Heating	106.5	49.5	18.0	21.1	17.8	4.2
lumber of Households with Water leating, Major Fuels Used:						
Electricity	41.6	15.8	7.0	7.1	11.6	6.6
Natural Gas	58.2	32.6	9.4	13.0	3.1	5.9
Fuel Oil	4.7	1.6	1.1	1.0	1.0	16.2
_PG	3.0	0.3	0.5	Q	2.1	21.2
			Billion Dollar	Sa		
/ater-Heating Expenditures, Major Fuels						
lsed:						
Electricity	8.47	2.84	1.35	1.51	2.77	7.7
Natural Gas	11.31	5.98	1.88	2.86	0.59	6.7
Fuel Oil	1.14	0.28	0.29	0.25	0.31	15.5
_PG	0.69	0.06	0.10	Q	0.50	22.3
Total ³	21.61	9.17	3.62	4.65	4.17	4.1
			Dollars per House	hold ^{5,a}		
verage Water-Heating Expenditures per						
lousehold						
Using a Major Fuel ²	203	185	201	219	235	1.9
For Main Water Heating	203	185	201	220	235	1.9
-			Million Househ	olde		
			WIIIION HOUSEN			
ater-Heating Fuel Is:						
dater-Heating Fuel Is:	40.8	15.3	6.9	7.0	11.6	
later-Heating Fuel Is: Electricity Natural Gas	58.0	32.5	6.9 9.4	7.0 13.0	3.1	5.9
ater-Heating Fuel Is: Electricity Natural Gas Fuel Oil	58.0 4.6	32.5 1.5	6.9 9.4 1.1	7.0 13.0 1.0	3.1 1.0	5.9 16.5
later-Heating Fuel Is: Electricity Natural Gas 	58.0	32.5 1.5 0.2	6.9 9.4 1.1 0.5	7.0 13.0 1.0 Q	3.1	5.9 16.5
/ater-Heating Fuel Is: Electricity Natural Gas Fuel Oil LPG	58.0 4.6	32.5 1.5	6.9 9.4 1.1	7.0 13.0 1.0	3.1 1.0	5.9 16.5
Vater-Heating Fuel Is: Electricity Natural Gas Fuel Oil LPG	58.0 4.6 2.9	32.5 1.5 0.2 Q	6.9 9.4 1.1 0.5	7.0 13.0 1.0 Q Q	3.1 1.0 2.1	6.6 5.9 16.5 20.9 NF
Vater-Heating Fuel Is: Electricity Natural Gas Fuel Oil PG oes Not Heat Water Vater-Heating Expenditures per ousehold, ⁴ Where the Main	58.0 4.6 2.9	32.5 1.5 0.2 Q	6.9 9.4 1.1 0.5 Q	7.0 13.0 1.0 Q Q	3.1 1.0 2.1	5.9 16.5 20.9
later-Heating Fuel Is: Electricity Vatural Gas Fuel Oil PG boos Not Heat Water later-Heating Expenditures per ousehold, ⁴ Where the Main later-Heating Fuel Is:	58.0 4.6 2.9 Q	32.5 1.5 0.2 Q	6.9 9.4 1.1 0.5 Q Dollars per House	7.0 13.0 1.0 Q Q hold ^{5,a}	3.1 1.0 2.1 Q	5.9 16.5 20.9 NF
later-Heating Fuel Is: Electricity Natural Gas Lel Oil PG oes Not Heat Water later-Heating Expenditures per ousehold, ⁴ Where the Main later-Heating Fuel Is: Electricity	58.0 4.6 2.9 Q	32.5 1.5 0.2 Q	6.9 9.4 1.1 0.5 Q Dollars per House 195	7.0 13.0 1.0 Q Q hold ^{5,a}	3.1 1.0 2.1 Q 239	5.9 16.5 20.9 NF
Vater-Heating Fuel Is: Electricity Natural Gas Fuel Oil LPG oes Not Heat Water Vater-Heating Expenditures per ousehold, ⁴ Where the Main Vater-Heating Fuel Is: Electricity Natural Gas	58.0 4.6 2.9 Q 208 194	32.5 1.5 0.2 Q 185 183	6.9 9.4 1.1 0.5 Q Dollars per House 195 198	7.0 13.0 1.0 Q bold ⁵ .a	3.1 1.0 2.1 Q 239 189	5.9 16.5 20.9 NF 2.8 2.8 2.9
Jumber of Households, Where the Main Vater-Heating Fuel Is: Electricity Natural Gas Fuel Oil LPG ioes Not Heat Water Vater-Heating Expenditures per Jourden Note Juster-Heating Expenditures per Juster-Heating Fuel Is: Electricity Natural Gas Fuel Oil LPG Later-Heating Fuel Is: Electricity Natural Gas Fuel Oil LPG	58.0 4.6 2.9 Q	32.5 1.5 0.2 Q	6.9 9.4 1.1 0.5 Q Dollars per House 195	7.0 13.0 1.0 Q Q hold ^{5,a}	3.1 1.0 2.1 Q 239	5.9 16.5 20.9 NF

Table CE4-8e. Water-Heating Energy Expenditures in U.S. Households by Urban/Rural Location, 2001 (Continued)

		Urban/Rural Location ¹				
	Total	City	Town	Suburbs	Rural	
RSE Column Factor:	0.6	1.0	1.4	1.1	1.2	RSE Row Factors
		Number of Ho	usehold Members	(NHM) per Househo	old⁵	
Number of Household Members per Household, Where the Main Water-Heating Fuel Is:						
Electricity	2.4	2.3	2.3	2.4	2.7	2.6
Natural Gas		2.6	2.7	2.8	2.4	2.7
Fuel Oil LPG	2.4 2.6	2.1 2.5	2.5 2.1	2.5 Q	2.8 2.6	5.7 9.5
-		Water-I	Heating Intensity ⁵	^a (Dollars÷NHM)		
Water-Heating Intensity, Where the Main						
Water-Heating Fuel Is: Electricity Natural Gas	85 73	80 69	84 74	89 79	90 79	2.6 3.5
Fuel Oil	101	85	109	103	108	7.8
LPG	91	94	90	Q	92	11.5

¹ Based on the household respondent's description rather than the Federal Government definition.

² The major fuels are electricity, natural gas, fuel oil, kerosene, and liquefied petroleum gas (LPG).

³ Includes a small amount of kerosene use for water heating.

⁴ Includes only the water-heating expenditures of the water-heating fuel. Not included are: 1) the expenditures of the main water-heating fuel for uses other than water heating; 2) the expenditures of the main water-heating fuel where it is the secondary, and not the main, water-heating fuel, and; 3) the expenditures of other fuels that are used as secondary water-heating fuels.

⁵ Averages are for those households using each of the main water-heating fuels.

^a The row factor in this section is underestimated because it contains no error for estimating the end-use.

NF = No applicable RSE row factor.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Table CE4-9e.Water-Heating Energy Expenditures in U.S. Households
by Northeast Census Region, 2001

Total Total Middle Atlantic New England RSE Column Factor: 0.5 1.0 1.2 1.6 Million Households Million Households Total U.S. Households Million Households Marce Heating 106.7 20.2 14.8 5.4 Number of Households with Water Heating, Major Fuels Used: Electricity 3 Pollars per Household ^{4,0} Mater Heating Expenditures, Major Fuels Used: Electricity 2 Dollars per Household ^{4,0} Mater Heating Expenditures per Household ^{4,1} Mater Heating Expenditures per Household ^{4,0}		on	ortheast Census Regio	No				
U.S. Total Middle Atlantic New England RSE Column Factor: 0.5 1.0 1.2 1.6 Million Households Total U.S. Households 0.5 1.0 1.2 1.6 Million Households No Water Heating 0 0 0 0 0 Not Using a Major Fuel ¹ 0.67 20.2 14.8 5.4 Not Using a Major Fuel ¹ 106.5 20.2 14.8 5.4 Youre Heating 106.5 20.2 14.8 5.4 Number of Households with Water Heating, Major Fuel Sued: Fuel Sued: Fuel Sued: Fuel Cols Fuel Cols		Census Division						
Notion Notice Million Households Total U.S. Households 107.0 20.3 14.8 5.4 No Water Heating Q Q Q Q Q Water Heating 106.9 20.2 14.8 5.4 No Using a Major Fuel ¹ 106.5 20.2 14.8 5.4 For Main Water Heating 106.5 20.2 14.8 5.4 Number of Households with Water Heating, Major Fuels Used: Electricity 106.5 20.2 14.8 5.4 Puel Ol 41.6 4.7 3.3 1.5 1.5 Natural Gas 1.3 0.77 0.36 1.9 0.2 UPG 3.0 0.3 Q 0.2 0.2 Billion Dollars ^a US 0.69 0.11 Q 0.06 Vater-Heating Expenditures, Major Fuels Used: Electricity 2.161 4.55 3.18 1.36 UPG 2.161 4.55 3.18 1.36 2.55 2.51 2.53		New England	Middle Atlantic	Total				
Total U.S. Households 107.0 20.3 14.8 5.4 No Water Heating Q <td< th=""><th>RSE Row Factors</th><th>1.6</th><th>1.2</th><th>1.0</th><th>0.5</th><th>RSE Column Factor:</th></td<>	RSE Row Factors	1.6	1.2	1.0	0.5	RSE Column Factor:		
No. Water Heating Q	<u></u>		n Households	Millio				
Water Heating 106.9 20.2 14.8 5.4 Not Using a Major Fuel ¹ 0.2 Q <	100.0	5.4	14.8	20.3	107.0	Total U.S. Households		
Not Using a Major Fuel ¹ 0.2 Q Q Q Using a Major Fuel ¹ 106.5 20.2 14.8 5.4 Number of Households with Water Heating, Major Fuel Subsed: 41.6 4.7 3.3 1.5 Electricity 41.6 4.7 3.3 1.5 Natural Gas 58.2 10.8 8.9 1.9 LPG 3.0 0.3 Q 0.2 Billion Dollars ^a Water Heating Expenditures, Major Fuels Used: Electricity 8.47 1.13 0.77 0.36 Natural Gas 11.31 2.23 1.79 0.43 Fuel Oil 11.4 1.08 0.57 0.51 LPG 0.69 0.11 Q 0.06 Otal ² 21.61 4.55 3.18 1.36 Dollars per Household ⁴ .a Mater Heating Expenditures per Household Using a Major Fuel ¹ 203 225 215 253 Mater Heating Fuel 1s: </td <td>Q</td> <td>Q</td> <td>Q</td> <td>Q</td> <td>Q</td> <td>No Water Heating</td>	Q	Q	Q	Q	Q	No Water Heating		
Using a Major Fuel1 106.7 20.2 14.8 5.4 For Main Water Heating 106.5 20.2 14.8 5.4 Number of Households, Wiher Heating, Major 58.2 10.8 8.9 1.9 Fuel Susci: 41.6 4.7 3.3 1.5 Natural Gas 1.9 Fuel Oil 4.7 4.4 2.6 1.9 0.2 0.2 Billion Dollars ^a Water-Heating Expenditures, Major Fuels Used: Electricity 8.47 1.13 0.77 0.36 Natural Gas 11.31 2.23 1.79 0.43 Fuel Oil 0.49 0.11 Q 0.06 Total2 21.61 4.55 3.18 1.36 Multion Households. Number of Households, Where the Main Water Heating Expenditures per Households Household 203 225 215 253 Million Households Multiple fuel Is: 203 225	100.0							
For Main Water Heating 106.5 20.2 14.8 5.4 Number of Households with Water Heating, Major Fuel Subsci: 41.6 4.7 3.3 1.5 Natural Gas 58.2 10.8 8.9 1.9 Fuel Oli 58.2 10.8 8.9 1.9 LPG 3.0 0.3 Q 0.2 Billion Dollars ^a Water-Heating Expenditures, Major Fuels Used: Electricity 8.47 1.13 0.77 0.36 Natural Gas 11.31 2.23 1.79 0.43 Fuel Oli 0.69 0.11 Q 0.06 Total ² 21.61 4.55 3.18 1.36 Dollars per Household ^{4.a} Million Households. Number of Households, Where the Main Water Heating Fuel 1s: 203 225 215 253 For Main Water Heating Fuel 1s: 203 225 215 253 Million Households, Where the Main 4.6 4.4	81.0							
Number of Households with Water Heating, Major Fuel Used: 41.6 4.7 3.3 1.5 Electricity 58.2 10.8 8.9 1.9 Fuel Ol 4.7 4.4 2.6 1.9 LPG 3.0 0.3 Q 0.2 Billion Dollars ^a Water-Heating Expenditures, Major Fuels Used: Electricity 8.47 1.13 0.77 0.36 Natural Gas 11.31 2.23 1.79 0.43 Fuel Ol 0.69 0.11 Q 0.06 Total ² 21.61 4.55 3.18 1.36 Dollars per Household ^{4.a} Million Households. Verage Water-Heating Expenditures per Household 203 225 215 253 For Main Water Heating 203 226 215 253 Vester-Heating Fuel Is: 40.8 4.7 3.2 1.4 Number of Households, Where the Main 4.6 4.4 2.5 1.8 LPG <td>100.0</td> <td></td> <td></td> <td></td> <td></td> <td></td>	100.0							
Fuels Used: 41.6 4.7 3.3 1.5 Electricity 4.7 4.4 2.6 1.9 Fuel OI 4.7 4.4 2.6 1.9 LPG 3.0 0.3 Q 0.2 Billion Dollars ^a Water-Heating Expenditures, Major Fuels Used: Electricity 8.47 1.13 0.77 0.36 Natural Gas 11.31 2.23 1.79 0.43 Fuel OI 1.14 1.08 0.57 0.51 Natural Gas 11.31 2.23 1.79 0.43 Fuel OI 0.69 0.11 Q 0.06 Total ² 21.61 4.55 3.18 1.36 Dollars per Household ^{4,a} Mumber of Households, Where the Main Water-Heating Fuel Is: 203 225 215 253 Million Households Number of Households, Where the Main 4.6 4.7 3.2 1.4 Natural Gas 58.0 10.8 8.9 1.9 Fuel OII	100.0	5.4	14.0	20.2	100.5	For Main Water Heating		
Natural Čas 58.2 10.8 8.9 1.9 Fuel Oil 4.7 4.4 2.6 1.9 3.0 0.3 Q 0.2 Billion Dollars ^a Billion Dollars ^a Water-Heating Expenditures, Major Fuels Used: 8.47 1.13 0.77 0.36 Natural Gas 11.31 2.23 1.79 0.43 Fuel Oil 1.14 1.08 0.57 0.51 LPG 0.69 0.11 Q 0.06 Total ² 21.61 4.55 3.18 1.36 Mater-Heating Expenditures per Household Using a Major Fuel ¹ 203 225 215 253 For Main Water Heating 203 226 215 253 Million Households Number of Households, Where the Main Water-Heating Fuel Is: 40.8 4.7 3.2 1.4 Electricity 40.8 4.7 3.2 1.4 Natural Gas 58.0 10.8 <t< td=""><td></td><td></td><td></td><td></td><td></td><td>Fuels Used:</td></t<>						Fuels Used:		
Fuel Oil 4.7 4.4 2.6 1.9 LPG 3.0 0.3 Q 0.2 Billion Dollars ^a Billion Dollars ^a Water-Heating Expenditures, Major Fuels Used: Electricity 8.47 1.13 0.77 0.36 Natural Gas 11.31 2.23 1.79 0.43 LPG 0.69 0.11 Q 0.06 Total ² 21.61 4.55 3.18 1.36 Dollars per Household ^{4.a} Musehold Using a Major Fuel ¹ 203 225 215 253 Million Households. Number of Households, Where the Main 40.8 4.7 3.2 1.4 Number of Households, Where the Main Water-Heating Fuel Is: Electricity 40.8 4.7 3.2 1.4 Natural Gas 58.0 10.8 8.9 1.9 LPG <th co<="" td=""><td>10.0</td><td></td><td></td><td></td><td></td><td></td></th>	<td>10.0</td> <td></td> <td></td> <td></td> <td></td> <td></td>	10.0						
LPG 3.0 0.3 Q 0.2 Billion Dollars ^a Water-Heating Expenditures, Major Fuels Used: Electricity 8.47 1.13 0.77 0.36 Natural Gas 11.31 2.23 1.79 0.43 Fuel Oll 1.14 1.08 0.57 0.51 LPG 0.69 0.11 Q 0.06 Total ² 21.61 4.55 3.18 1.36 Dollars per Household ^{4,a} Million Household ^{4,a} Million Households, where the Main Water -Heating Fuel ¹ 203 225 215 253 Million Households Number of Households, Where the Main Water -Heating Fuel ¹ 203 225 215 253 Dollars per Households Million Households Doles Not Heat Water 40.8 4.7 3.2 1.4 LPG 0.3 Q 0.2 <t< td=""><td>8.7</td><td></td><td></td><td></td><td></td><td></td></t<>	8.7							
Water-Heating Expenditures, Major Fuels Used: 8.47 1.13 0.77 0.36 Natural Gas 11.31 2.23 1.79 0.43 LPG 0.69 0.11 Q 0.06 Total ² 21.61 4.55 3.18 1.36 Dollars per Household ^{4.a} Muter Heating Expenditures per Households. Muter Heating Fuel ¹ 203 225 215 253 For Main Water Heating Fuel ¹ 203 226 215 253 Muter Heating Fuel Is: 40.8 4.7 3.2 1.4 Electricity 40.8 4.7 3.2 1.4 Number of Households, Where the Main Water Heating Fuel Oil 4.6 4.4 2.5 1.8 <td <="" colspan="2" td=""><td>24.9</td><td></td><td></td><td></td><td></td><td></td></td>	<td>24.9</td> <td></td> <td></td> <td></td> <td></td> <td></td>		24.9					
Electricity 8.47 1.13 0.77 0.36 Natural Gas 11.31 2.23 1.79 0.43 Fuel Oil 1.14 1.08 0.57 0.51 LPG 0.69 0.11 Q 0.06 Total ² 21.61 4.55 3.18 1.36 Dollars per Household ^{4,a} Million Household ^{4,a} Million Households. View Provide the Main Water-Heating Fuel1 203 225 215 253 Million Households Million Households Number of Households, Where the Main Water-Heating Fuel Is: 203 225 215 253 Electricity 40.8 4.7 3.2 1.4 Natural Gas 58.0 10.8 8.9 1.9 Fuel Oil 4.6 4.4 2.5 1.8 LPG 2.9 0.3 Q 0.2 Does Not Heat Water			ion Dollars ^a					
Electricity 8.47 1.13 0.77 0.36 Natural Gas 11.31 2.23 1.79 0.43 Fuel Oil 1.14 1.08 0.57 0.51 LPG 0.69 0.11 Q 0.06 Total ² 21.61 4.55 3.18 1.36 Dollars per Household ^{4,a} Million Household ^{4,a} Million Households. Viewei Mater Heating 203 225 215 253 Million Households. Number of Households, Where the Main Water-Heating Fuel 1s: Electricity 40.8 4.7 3.2 1.4 Number of Households, Where the Main Water-Heating Fuel Is: 2 Electricity 40.8 4.7 3.2 1.4 Natural Gas 58.0 10.8 8.9 1.9 Fuel Oil 2.9 0.3 Q <						-		
Natural Ĝas 11.31 2.23 1.79 0.43 Fuel Oll 1.14 1.08 0.57 0.51 LPG 0.69 0.11 Q 0.06 Total ² 21.61 4.55 3.18 1.36 Dollars per Household ^{4,a} Average Water-Heating Expenditures per Household Using a Major Fuel ¹ 203 225 215 253 For Main Water Heating 203 226 215 253 Million Households Number of Households, Where the Main Water-Heating Fuel Is: Electricity 40.8 4.7 3.2 1.4 Natural Gas 58.0 10.8 8.9 1.9 Fuel Oil 4.6 4.4 2.5 1.8 LPG 2.9 0.3 Q 0.2 Does Not Heat Water Q Q Q Q Q Q Q Q Q Q						Water-Heating Expenditures, Major Fuels Used:		
Fuel Oil 1.14 1.08 0.57 0.51 LPG 0.69 0.11 Q 0.06 Total ² 21.61 4.55 3.18 1.36 Dollars per Household ^{4.a} Average Water-Heating Expenditures per Household ^{4.a} Musehold Using a Major Fuel ¹ 203 225 215 253 For Main Water Heating 203 226 215 253 Million Households Number of Households, Where the Main Water-Heating Fuel Is: 40.8 4.7 3.2 1.4 Natural Gas 58.0 10.8 8.9 1.9 Fuel Oil 4.6 4.4 2.5 1.8 LPG 2.9 0.3 Q 0.2 Does Not Heat Water Q Q Q Q Q Dollars per Household ^{4.a}	11.1							
LPG 0.69 0.11 Q 0.06 Total ² 21.61 4.55 3.18 1.36 Dollars per Household ^{4,a} Dollars per Household ^{4,a} Average Water-Heating Expenditures per Household Using a Major Fuel ¹ 203 225 215 253 For Main Water Heating 203 226 215 253 Mumber of Households, Where the Main Water-Heating Fuel Is: 40.8 4.7 3.2 1.4 Number of Households, Where the Main Water-Heating Gas 40.8 4.7 3.2 1.4 Natural Gas 58.0 10.8 8.9 1.9 Fuel Oil 4.6 4.4 2.5 1.8 LPG 2.9 0.3 Q 0.2 Que Q Q Q Q Q Dollars per Household ^{4,a} Dollars per Household ^{4,a} Dollars per Household ^{4,a}	10.5							
Total ² 21.61 4.55 3.18 1.36 Dollars per Household ^{4,a} Average Water-Heating Expenditures per Household Household 203 225 215 253 For Main Water Heating 203 226 215 253 Million Households Number of Households, Where the Main Water-Heating Fuel Is: Electricity 40.8 4.7 3.2 1.4 Natural Gas 58.0 10.8 8.9 1.9 Fuel Oil 4.6 4.4 2.5 1.8 LPG 2.9 0.3 Q Q Q Q Q Q Q Q Dollars per Household ^{4,a}	14.6							
Average Water-Heating Expenditures per Household Using a Major Fuel ¹	20.5 2.5							
Average Water-Heating Expenditures per Household 203 225 215 253 For Main Water Heating 203 226 215 253 Multion Households, Where the Main Million Households Million Households Water-Heating Fuel Is: 40.8 4.7 3.2 1.4 Electricity 40.8 4.7 3.2 1.4 Natural Gas 58.0 10.8 8.9 1.9 Fuel Oil 4.6 4.4 2.5 1.8 LPG 2.9 0.3 Q 0.2 Q Q Q Q Q Dollars per Household ^{4,a} Dollars per Household ^{4,a}	2.0	1.00			21.01			
Household Using a Major Fuel ¹ 203 225 215 253 For Main Water Heating 203 226 215 253 Number of Households, Where the Main Million Households Water-Heating Fuel Is: 40.8 4.7 3.2 1.4 Electricity 46. 4.4 2.5 1.8 LPG 2.9 0.3 Q 0.2 Does Not Heat Water Q Q Q Q			per nousenoid ^{+,a}	Donars		-		
For Main Water Heating 203 226 215 253 Million Households Million Households Number of Households, Where the Main Water-Heating Fuel Is: Electricity 40.8 4.7 3.2 1.4 Natural Gas 58.0 10.8 8.9 1.9 Fuel Oil 4.6 4.4 2.5 1.8 LPG 2.9 0.3 Q 0.2 Does Not Heat Water Q Q Q Q								
Mumber of Households, Where the Main Million Households Water-Heating Fuel Is: 40.8 4.7 3.2 1.4 Electricity 40.8 4.7 3.2 1.4 Natural Gas 58.0 10.8 8.9 1.9 Fuel Oil 4.6 4.4 2.5 1.8 LPG 2.9 0.3 Q 0.2 Does Not Heat Water Q Q Q Q Dollars per Household ⁴ .a	2.5							
Number of Households, Where the Main Water-Heating Fuel Is: Electricity Natural Gas 58.0 10.8 8.9 1.9 Fuel Oil 4.6 4.7 2.9 0.3 Q Q Dollars per Household ^{4,a}	2.5	253		-	203	For Main Water Heating		
Water-Heating Fuel Is: 40.8 4.7 3.2 1.4 Electricity 40.8 4.7 3.2 1.4 Natural Gas 58.0 10.8 8.9 1.9 Fuel Oil 4.6 4.4 2.5 1.8 LPG 2.9 0.3 Q 0.2 Does Not Heat Water Q Q Q Q			n Households	Millio		-		
Natural Gas 58.0 10.8 8.9 1.9 Fuel Oil 4.6 4.4 2.5 1.8 LPG 2.9 0.3 Q 0.2 Does Not Heat Water Q Q Q Q								
Fuel Oil 4.6 4.4 2.5 1.8 LPG 2.9 0.3 Q 0.2 Does Not Heat Water Q Q Q Q	9.9							
LPG 2.9 0.3 Q 0.2 Does Not Heat Water Q Q Q Q Q Dollars per Household ^{4,a}	8.7							
Does Not Heat WaterQQQQQQQ Dollars per Household ^{4,a}	13.7							
	Q							
Water Heating Expanditures for Household 3			per Household ^{4,a}	Dollars		_		
						Water-Heating Expenditures per Household, ³		
Where the Main Water-Heating Fuel Is:		050	000	040	209	5		
Electricity 208 242 238 250 Natural Gas 194 207 203 227	3.2							
Fuel Oil 243 244 223 273	4.8							
LPG 233 324 Q 363	12.0							

Table CE4-9e. Water-Heating Energy Expenditures in U.S. Households by Northeast Census Region, 2001 (Continued)

		I	Northeast Census Region		
	Total U.S.		Census		
			Middle Atlantic	New England	RSE Row Factors
RSE Column Factor:	0.5		1.2	1.6	
	Num	ber of Household	d Members (NHM) pe	r Household ⁴	
Number of Household Members per Household, Where the Main Water-Heating Fuel Is:	Num	ber of Household	l Members (NHM) pe	r Household ⁴	
Number of Household Members per Household, Where the Main Water-Heating Fuel Is: Electricity		ber of Household	Members (NHM) per 2.6	r Household ⁴	3.7
Where the Main Water-Heating Fuel Is:	. 2.4				3.7
Where the Main Water-Heating Fuel Is: Electricity	2.4	2.5	2.6	2.3	-
Where the Main Water-Heating Fuel Is: Electricity Natural Gas	. 2.4 . 2.7 . 2.4	2.5 2.4	2.6 2.4	2.3 2.4	2.9
Where the Main Water-Heating Fuel Is: Electricity Natural Gas Fuel Oil	. 2.4 . 2.7 . 2.4	2.5 2.4 2.4 2.6	2.6 2.4 2.4	2.3 2.4 2.4 2.5	2.9 4.6
Where the Main Water-Heating Fuel Is: Electricity Natural Gas Fuel Oil LPG Water-Heating Intensity, Where the Main	. 2.4 . 2.7 . 2.4	2.5 2.4 2.4 2.6	2.6 2.4 2.4 Q	2.3 2.4 2.4 2.5	2.9 4.6
Where the Main Water-Heating Fuel Is: Electricity Natural Gas Fuel Oil LPG Water-Heating Intensity, Where the Main Water-Heating Fuel Is:	. 2.4 . 2.7 . 2.4 . 2.6	2.5 2.4 2.4 2.6 Water-Heating	2.6 2.4 2.4 Q Intensity ^{4,a} (Dollars-	2.3 2.4 2.4 2.5 :NHM)	2.9 4.6 10.2
Where the Main Water-Heating Fuel Is: Electricity Natural Gas Fuel Oil LPG	. 2.4 . 2.7 . 2.4 . 2.6	2.5 2.4 2.4 2.6 Water-Heating 96	2.6 2.4 2.4 Q Intensity ^{4,a} (Dollars-	2.3 2.4 2.4 2.5 :NHM)	2.9 4.6 10.2
Where the Main Water-Heating Fuel Is: Electricity Natural Gas Fuel Oil LPG Water-Heating Intensity, Where the Main Water-Heating Fuel Is:	. 2.4 . 2.7 . 2.4 . 2.6	2.5 2.4 2.4 2.6 Water-Heating	2.6 2.4 2.4 Q Intensity ^{4,a} (Dollars-	2.3 2.4 2.4 2.5 :NHM)	2.9 4.6 10.2

¹ The major fuels are electricity, natural gas, fuel oil, kerosene, and liquefied petroleum gas (LPG).

² Includes a small amount of kerosene use for water heating.

3 Includes only the water-heating expenditures of the water-heating fuel. Not included are: 1) the expenditures of the main water-heating fuel for uses other than water heating; 2) the expenditures of the main water-heating fuel where it is the secondary, and not the main, water-heating fuel, and; 3) the expenditures of other fuels that are used as secondary water-heating fuels.

Averages are for those households using each of the main water-heating fuels.

^a The row factor in this section is underestimated because it contains no error for estimating the end-use.

NE = RSE row factor not estimated because RSE's for all statistics in this row are between 0.0 and 1.0 percent.

NF = No applicable RSE row factor.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled. Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Table CE4-10e.Water-Heating Energy Expenditures in U.S. Households
by Midwest Census Region, 2001

	_						
			Midwest Census Regio	on			
			Census Division				
	Total U.S.	Total	East North Central	West North Central	RSE		
RSE Column Factor:	0.6	1.0	1.3	1.4	Row Factors		
			Million Households				
Total U.S. Households	107.0	24.5	17.1	7.4	NE		
No Water Heating	Q	24.5 Q	Q	Q 7.4	NE		
Water Heating	106.9	24.5	17.1	7.4	NE		
Not Using a Major Fuel ¹	0.2	Q	Q	Q	73.1		
Using a Major Fuel ¹	106.7	24.5	17.1	7.4	NE		
For Main Water Heating	106.5	24.5	17.1	7.4	NE		
Number of Households with Water Heating, Major Fuels Used:							
Electricity	41.6	6.4	4.2	2.2	6.8		
Natural Gas Fuel Oil	58.2 4.7	17.0 Q	12.5 Q	4.5 Q	4.0 19.6		
LPG	3.0	1.3	0.5	0.7	23.0		
	Billion Dollars ^a						
-							
Water-Heating Expenditures, Major Fuels Used:							
Electricity	8.47	1.24	0.77	0.47	7.7		
Natural Gas	11.31	2.98	2.14	0.84	5.2		
Fuel Oil	1.14	Q	Q	Q	22.2		
LPG Total ²	0.69 21.61	0.27 4.50	0.11 3.02	0.16 1.47	24.8		
1 Otal ²	21.01	4.50	3.02	1.47	2.5		
_		Do	ollars per Household ^{4,a}				
Average Water-Heating Expenditures per Household							
Using a Major Fuel ¹	203	184	177	199	2.5		
For Main Water Heating	203	184	177	199	2.5		
_			Million Households				
Number of Households, Where the Main Water-Heating Fuel Is:							
Electricity	40.8	6.3	4.2	2.2	6.8		
Natural Gas	58.0	16.9	12.4	4.5	3.9		
Fuel Oil	4.6	Q	Q	Q	20.4		
LPG	2.9	1.3	0.5	0.7	23.0		
Does Not Heat Water	Q	Q	Q	Q	NF		
-		Do	ollars per Household ^{4,a}				
Water-Heating Expenditures per Household, ³							
Where the Main Water-Heating Fuel Is: Electricity	208	196	186	214	3.8		
Natural Gas	194	175	171	188	3.0		
Fuel Oil	243	Q	Q	Q	7.7		
LPG	233	218	213	222	5.6		
—							

Table CE4-10e. Water-Heating Energy Expenditures in U.S. Households by Midwest Census Region, 2001 (Continued)

		Midwest Census Region				
	Total U.S.		Census Division			
		Total	East North Central	West North Central	RSE Row Factors	
RSE Column Factor:	0.6	1.0	1.3	1.4		
I	Ν	lumber of House	hold Members (NHM) pe	r Household ⁴		
Number of Household Members per Household, Where the Main Water-Heating Fuel Is:						
Electricity	2.4	2.4	2.3	2.5	3.3	
Natural Gas	2.7	2.6	2.6	2.4	3.3	
Fuel Oil	2.4	Q	Q	Q	6.8	
LPG	2.6	2.6	2.7	2.5	5.9	
	2.6		2.7 ting Intensity ^{4,a} (Dollars			
LPG	2.6					
LPG	2.6					
LPG	2.6					
LPG Water-Heating Intensity, Where the Main Water-Heating Fuel Is:		Water-Heat	ting Intensity ^{4,a} (Dollars	÷NHM)	5.9	
LPG Water-Heating Intensity, Where the Main Water-Heating Fuel Is: Electricity	85	Water-Heat	ting Intensity ^{4,a} (Dollars	•NHM) 85	3.7	

¹ The major fuels are electricity, natural gas, fuel oil, kerosene, and liquefied petroleum gas (LPG).

² Includes a small amount of kerosene use for water heating.

³ Includes only the water-heating expenditures of the water-heating fuel. Not included are: 1) the expenditures of the main water-heating fuel for uses other than water heating; 2) the expenditures of the main water-heating fuel where it is the secondary, and not the main, water-heating fuel, and; 3) the expenditures of other fuels that are used as secondary water-heating fuels.

⁴ Averages are for those households using each of the main water-heating fuels.

^a The row factor in this section is underestimated because it contains no error for estimating the end-use.

NE = RSE row factor not estimated because RSE's for all statistics in this row are between 0.0 and 1.0 percent.

NF = No applicable RSE row factor.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.

Table CE4-11e.Water-Heating Energy Expenditures in U.S. Households
by South Census Region, 2001

			Sou	th Census Region			
	Total U.S.			Census Division			
		Total	South Atlantic	East South Central	West South Central		
RSE Column Factor:	0.4	0.9	1.0	1.9	1.4	RSE Row Factors	
		1	Million	Households			
Total U.S. Households	107.0	38.9	20.3	6.8	11.8	NE	
No Water Heating	Q	Q	Q	Q	Q	NF	
Water Heating	106.9	38.9	20.3	6.8	11.8	NE	
Not Using a Major Fuel ¹		Q	Q	Q	Q	91.5	
Using a Major Fuel ¹ For Main Water Heating	106.7 106.5	38.9 38.8	20.3 20.2	6.8 6.8	11.8 11.7	NE NE	
Number of Households with Water	100.0	00.0	20.2	0.0	11.7		
Heating, Major Fuels Used:							
Electricity	41.6	22.6	13.5	4.4	4.7	6.6	
Natural Gas	58.2	15.5	6.3	2.2	7.0	8.4	
Fuel Oil	4.7	Q	Q	Q	Q	24.5	
LPG	3.0	0.7	0.3	0.2	Q	30.4	
	Billion Dollars ^a						
Water-Heating Expenditures, Major Fuels							
Used:							
Electricity	8.47	4.76	2.91	0.87	0.97	7.8	
Natural Gas	11.31	3.38	1.57	0.43	1.39	8.9	
Fuel Oil	1.14	Q	Q	Q	Q	27.7	
LPG Total ²	0.69	0.15 8.34	0.08 4.61	0.02 1.32	Q 2.41	27.8	
10tai-	21.61	0.34	4.01	1.32	2.41	2.0	
			Dollars pe	er Household ^{4,a}			
Average Water-Heating Expenditures per							
Household							
Using a Major Fuel ¹	203	215	227	194	204	2.8	
For Main Water Heating	203	215	228	194	205	2.8	
			Million	Households			
Number of Households, Where the Main							
Water-Heating Fuel Is:							
Electricity	40.8	22.4	13.4	4.4	4.6	6.6	
Natural Gas	58.0	15.4	6.3	2.2	6.9	8.4	
Fuel Oil	4.6	Q	Q	Q	Q	25.5	
Does Not Heat Water	2.9 Q	0.6 Q	Q Q	0.2 Q	Q Q	27.3 NF	
	4	×.			<u>v</u>		
			Dollars pe	er Household ^{4,a}			
Water-Heating Expenditures per Household ³ Where the Main						1	
Household, ³ Where the Main							
	208	212	217	197	211	3.1	
Household, ³ Where the Main Water-Heating Fuel Is:	208 194	212 218	217 248	197 193	211 199	3.1 5.4	
Household, ³ Where the Main Water-Heating Fuel Is: Electricity							

Table CE4-11e. Water-Heating Energy Expenditures in U.S. Households by South Census Region, 2001 (Continued)

		South Census Region						
				Census Division				
	Total U.S. 0.4	U.S. Total		East South Central	West South Central	-		
- RSE Column Factor:						RSE Row Factors		
	Number of Household Members (NHM) per Household ⁴							
Number of Household Members per Household, Where the Main Water-Heating Fuel Is:								
Electricity	2.4	2.5	2.5	2.5	2.2	2.9		
Natural Gas	2.7	2.7	2.6	2.2	2.8	2.9		
Fuel Oil	2.4	Q	Q	Q	Q	8.6		
LPG	2.6	2.5	Q	1.4	Q	11.7		
			Water-Heating Inte	ensity ^{4,a} (Dollars÷NHN	1)			
Water-Heating Intensity, Where the Main Water-Heating Fuel Is:								
Electricity	85	86	86	78	94	2.7		
Natural Gas	73	82	95	87	71	5.3		
Fuel Oil	101	Q	Q	Q	Q	11.9		
LPG	91	92	Q	93	Q	10.3		

¹ The major fuels are electricity, natural gas, fuel oil, kerosene, and liquefied petroleum gas (LPG).

 ² Includes a small amount of kerosene use for water heating.
 ³ Includes only the water-heating expenditures of the water-heating fuel. Not included are: 1) the expenditures of the main water-heating fuel for uses other than water heating; 2) the expenditures of the main water-heating fuel where it is the secondary, and not the main, water-heating fuel, and; 3) the expenditures of other fuels that are used as secondary water-heating fuels.

^a Averages are for those households using each of the main water-heating fuels.
 ^a The row factor in this section is underestimated because it contains no error for estimating the end-use.

NE = RSE row factor not estimated because RSE's for all statistics in this row are between 0.0 and 1.0 percent.

NF = No applicable RSE row factor.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled. Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals.

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Table CE4-12e.Water-Heating Energy Expenditures in U.S. Households
by West Census Region, 2001

		West Census Region						
			Division					
Total U.S.	Total	Mountain	Pacific					
0.5	1.0	1.7	1.1	RSE Row Factors				
	N	lillion Households						
107.0 Q 106.9 0.2 106.7 106.5	23.3 Q 23.3 Q 23.2 23.2 23.0	6.7 Q 6.7 Q 6.7 6.7	16.6 Q 16.6 Q 16.5 16.3	NE NF 76.6 NE NE				
41.6 58.2 4.7 3.0	7.9 15.0 Q 0.7	2.3 4.1 Q 0.2	5.5 10.9 Q 0.5	5.0 2.7 20.5 26.2				
Billion Dollars ^a								
8.47 11.31 1.14 0.69 21.61	1.35 2.72 Q 0.15 4.23	0.43 0.71 Q 0.05 1.19	0.92 2.01 Q 0.11 3.04	6.6 4.4 23.2 25.3 2.9				
	Doll	ars per Household ^{4,a}						
203 203	183 183	177 177	185 186	2.8 2.8				
	Ν	Nillion Households						
40.8 58.0 4.6 2.9 0	7.3 14.9 Q 0.7	2.3 4.1 Q 0.2	5.0 10.8 Q 0.5	4.9 2.8 21.4 26.2 NF				
~~~~~			4					
208 194 243 233	184 181 Q 218	183 172 Q 202	184 185 Q 226	3.9 3.8 8.0 8.8				
	U.S. 0.5 107.0 Q 106.9 0.2 106.7 106.5 41.6 58.2 4.7 3.0 8.47 11.31 1.14 0.69 21.61 203 203 203 203 203 203 203	U.S.         Total           0.5         1.0           107.0         23.3         Q           Q         Q         Q           106.9         23.3         Q           0.2         Q         Q           106.7         23.2         106.5           106.5         23.0         1           41.6         7.9         58.2         15.0           4.7         Q         3.0         0.7           8.47         1.35         2.72           1.1.31         2.72         1.14         Q           0.69         0.15         21.61         4.23           Doll           203         183           203         183         203           203         183         203         183           203         183         2.9         0.7           Q         Q         Q         Doll           208         184         181           208         184         181           208         184         181           208         184         181           208         184         181	Census I           Total         Mountain           0.5         1.0         1.7           Million Households         Million Households           107.0         23.3         6.7           Q         Q         Q         Q           106.9         23.3         6.7           106.9         23.3         6.7           0.5         2.3         6.7           106.5         23.0         6.7           41.6         7.9         2.3           58.2         15.0         4.1           4.7         Q         Q           3.0         0.7         0.2           Billion Dollars ^a 8.47         1.35         0.43           11.31         2.72         0.71           1.14         Q         Q         Q           0.69         0.15         0.05           21.61         4.23         1.19           Dollars per Household ^{4.a} 40.8         7.3         2.3           58.0         14.9         4.1           4.6         Q         Q         Q           2.9         Q.7	Image: Consumplement of the section of the se				

### Table CE4-12e. Water-Heating Energy Expenditures in U.S. Households by West Census Region, 2001 (Continued)

	Total U.S. 0.5		Census	Division	
		Total	Mountain 1.7	Pacific	
RSE Column Factor:		1.0			RSE Row Factors
	٢	lumber of Househo	old Members (NHM) pe	r Household ⁴	
Number of Household Members per Household, Where the Main Water-Heating Fuel Is:					
Electricity	2.4	2.4	2.4	2.4	3.7
Natural Gas	2.7	3.0	2.9	3.0	2.3
Fuel Oil	2.4	Q	Q	Q	7.2
LPG	2.6	2.6	3.0	2.4	10.8
		Water-Heatin	g Intensity ^{4,a} (Dollars-	NHM)	
Water-Heating Intensity, Where the Main					
Water-Heating Fuel Is:					
Electricity	85	77	75	78	3.5
	73	61	60	62	3.9
Natural Gas					
Natural Ġas Fuel Oil LPG	101	Q	Q	Q	10.0

¹ The major fuels are electricity, natural gas, fuel oil, kerosene, and liquefied petroleum gas (LPG).

² Includes a small amount of kerosene use for water heating.

³ Includes only the water-heating expenditures of the water-heating fuel. Not included are: 1) the expenditures of the main water-heating fuel for uses other than water heating; 2) the expenditures of the main water-heating fuel where it is the secondary, and not the main, water-heating fuel, and; 3) the expenditures of other fuels that are used as secondary water-heating fuels.

⁴ Averages are for those households using each of the main water-heating fuels.

^a The row factor in this section is underestimated because it contains no error for estimating the end-use.

NE = RSE row factor not estimated because RSE's for all statistics in this row are between 0.0 and 1.0 percent.

NF = No applicable RSE row factor.

Q = Data withheld either because the Relative Standard Error (RSE) was greater than 50 percent or fewer than 10 households were sampled.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding column and row factors. • Because of rounding, data may not sum to totals. • See "Glossary" for definition of terms used in this report.