

**Table 3.48. Electricity and Natural Gas Consumption by Energy Conservation Features, 1992**

Building Characteristics	Electricity			Natural Gas			RSE Row Factor
	Total (billion kWh)	per Building (thousand kWh)	per Square Foot (kWh)	Total (billion cubic feet)	per Building (thousand cubic feet)	per Square Foot (cubic feet)	
RSE Column Factor:	0.9	1.0	0.6	1.4	1.3	1.2	
<b>All Buildings</b> .....	765	166	11.5	2,113	795	47.0	5.09
<b>Energy Conservation Features (more than one may apply)</b>							
Any Conservation Features .....	755	177	11.9	2,069	817	46.8	5.07
Building Shell .....	735	178	12.0	2,032	827	47.3	5.14
HVAC .....	656	252	13.1	1,753	1,058	48.4	5.35
Lighting .....	418	355	14.2	976	1,254	46.1	6.40
Other .....	72	275	12.2	202	1,158	42.9	8.81
<b>Building Shell Conservation Features (more than one may apply)</b>							
Roof or Ceiling							
Insulation .....	626	190	12.5	1,693	855	47.9	5.33
Wall Insulation .....	442	193	13.4	1,105	828	49.6	6.36
Storm or Multiple Glazing .....	379	228	12.8	1,102	1,060	51.3	6.86
Tinted or Reflective Glass or Shading Film .....	379	358	15.0	918	1,321	50.6	8.65
Exterior or Interior Shading or Awnings .....	466	253	13.7	1,176	965	47.3	6.87
Windows that Open .....	270	131	9.5	1,087	918	53.3	6.72
<b>HVAC Conservation Features (more than one may apply)</b>							
VAV System .....	239	959	17.1	461	2,406	44.9	9.21
Economizer Cycle .....	300	725	16.4	604	2,176	43.6	6.79
HVAC Maintenance .....	645	258	13.1	1,726	1,079	48.6	5.44
<b>Lighting Conservation Features (more than one may apply)</b>							
Specular Reflectors .....	224	391	14.7	535	1,485	47.3	9.57
Natural Lighting Control							
Sensors .....	48	645	15.6	107	2,336	43.8	17.57
Occupancy Sensors .....	62	1,049	17.1	112	2,715	40.0	11.56
Time Clock .....	183	542	15.2	319	1,346	36.4	10.08
Manual Dimmer Switches .....	190	459	15.4	506	1,664	50.3	10.28
Other .....	37	471	14.2	85	1,632	45.3	12.54
<b>Energy Management Practices (more than one may apply)</b>							
Energy Management and Control System .....	241	1,020	16.8	483	2,696	46.5	10.14
Demand-Side Management <sup>1</sup>							
Participation .....	166	527	14.7	513	2,609	59.1	10.23
Energy Audit .....	207	398	14.1	534	1,584	49.0	8.73
Building Energy Manager .....	38	772	16.5	112	3,606	66.8	23.91
<b>Energy Management and Control System (more than one may apply)</b>							
Present in Building .....	241	1,020	16.8	483	2,696	46.5	10.14
Controls Heating .....	217	977	16.2	401	2,350	41.0	8.89
Controls Cooling .....	219	1,114	17.6	427	2,850	47.6	10.86
Controls Hot Water Heating .....	53	1,552	13.7	168	7,900	67.3	19.83
Controls Lighting .....	83	1,516	16.0	140	3,771	40.4	21.53
Controls Other Equipment .....	16	1,286	18.0	24	2,489	30.4	23.08
Not Present in Building .....	524	120	10.0	1,630	658	47.1	5.58

See footnotes at end of table.

**Table 3.48. Electricity and Natural Gas Consumption by Energy Conservation Features, 1992 (Continued)**

Building Characteristics	Electricity			Natural Gas			RSE Row Factor
	Total (billion kWh)	per Building (thousand kWh)	per Square Foot (kWh)	Total (billion cubic feet)	per Building (thousand cubic feet)	per Square Foot (cubic feet)	
	RSE Column Factor:	0.9	1.0	0.6	1.4	1.3	
<b>Demand-Side Management<sup>1</sup> Programs (more than one may apply)</b>							
Any DSM Programs .....	166	527	14.7	513	2,609	59.1	10.23
Building Shell Program .....	16	434	14.5	29	1,217	32.5	19.81
HVAC Program .....	96	627	15.1	262	2,830	53.3	12.13
Lighting Program .....	126	555	14.4	367	2,534	53.5	10.41
Other DSM Programs .....	106	961	17.1	317	4,590	61.8	13.82
<b>Off-Hour Equipment Reduction (more than one may apply)</b>							
Heating .....	459	135	9.9	1,360	637	40.1	5.34
Cooling .....	447	156	10.5	1,251	670	39.4	5.58
Hot Water .....	101	175	10.1	319	915	44.4	9.16
Lighting .....	551	135	10.1	1,542	644	40.6	5.41
Other .....	90	164	11.2	218	671	40.8	12.97

<sup>1</sup> These Demand-Side Management (DSM) data, which include utility-sponsored programs, in-house programs, and third-party sponsored programs, were reported by the building respondent on the Building Questionnaire (Form EIA-871A). The electric utility-sponsored DSM data reported by the electricity suppliers (Form EIA-871E-1b) are presented in the "At a Glance" section and Table 3.49 of this section. See Appendix B, "Nonsampling and Sampling Errors," for a discussion of the differences between the energy supplier-reported data and building respondent-reported data.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Statistics for the "energy end uses" represent consumption in buildings that have end use, not consumption for a particular fuel for a particular end use. • VAV = Variable Air Volume. • Because of rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1992 Commercial Buildings Energy Consumption Survey.

**Table 3.49. Participation in Electric Utility-Sponsored DSM Programs as Reported by Building Respondent and Electric Utility Respondent, 1992**

Building Characteristics	Participation in Electric Utility-Sponsored DSM Programs												RSE Row Factor
	According to Building Respondent						According to Utility Respondent						
	Number of Buildings (thousand)	Floor-space (million square feet)	Major Fuel Consumption (trillion Btu)	Major Fuel Expenditures (million dollars)	Electricity Consumption (billion kWh)	Electricity Expenditures (million dollars)	Number of Buildings (thousand)	Floor-space (million square feet)	Major Fuel Consumption (trillion Btu)	Major Fuel Expenditures (million dollars)	Electricity Consumption (billion kWh)	Electricity Expenditures (million dollars)	
	1.1	1.2	1.3	1.1	1.1	1.1	0.9	0.8	1.0	0.9	0.8	0.8	
<b>All Buildings Offered</b>													
<b>A DSM Program</b> .....	205	6,572	743	9,294	93	7,287	1,596	26,898	2,324	30,597	311	24,140	8.25
<b>Building Floorspace (square feet)</b>													
1,001 to 10,000 .....	116	562	78	1,190	11	949	1,180	4,864	454	6,738	56	5,265	13.28
10,001 to 100,000 .....	76	2,299	267	2,995	25	2,184	368	10,332	971	11,978	116	9,070	11.08
Over 100,000 .....	13	3,711	398	5,109	56	4,154	48	11,701	900	11,881	139	9,805	11.76
<b>Principal Building Activity</b>													
Education .....	29	1,292	119	1,284	11	879	113	3,459	279	3,197	27	2,292	16.96
Mercantile and Service .....	33	1,126	96	1,659	15	1,437	462	5,635	406	5,910	57	4,775	20.90
Office .....	42	1,664	155	2,590	29	2,239	248	5,634	577	8,719	97	7,312	11.75
Public Assembly .....	13	360	42	510	5	377	116	1,407	109	1,387	14	1,063	24.65
Warehouse and Storage .....	17	382	Q	419	3	259	212	3,834	188	2,299	25	1,815	24.90
All Others .....	71	1,747	280	2,833	30	2,096	446	6,929	764	9,084	92	6,883	12.32
<b>Year Constructed</b>													
1945 or Before .....	47	1,080	121	1,328	10	860	416	5,879	371	4,813	37	3,456	16.00
1946 to 1959 .....	34	838	84	884	10	684	291	4,087	366	4,130	39	2,960	17.57
1960 to 1969 .....	37	1,733	189	2,553	25	2,048	272	5,530	533	6,845	71	5,374	16.46
1970 to 1979 .....	46	1,701	214	2,744	29	2,215	306	5,402	510	7,005	77	5,750	14.51
1980 to 1989 .....	36	969	119	1,458	15	1,185	275	5,147	486	6,860	77	5,770	15.33
1990 to 1992 .....	Q	252	17	328	3	294	35	854	58	943	11	831	22.75
<b>Census Region and Division</b>													
Northeast .....	77	2,721	294	4,200	34	3,232	426	7,771	625	9,302	71	7,049	12.96
New England .....	33	749	91	1,292	10	950	75	1,688	155	2,178	17	1,626	26.16
Middle Atlantic .....	44	1,972	202	2,908	25	2,283	350	6,084	470	7,124	54	5,423	17.42
Midwest .....	57	1,765	203	1,852	20	1,361	378	6,311	576	5,720	67	4,237	18.01
East North Central .....	43	1,215	139	1,292	12	915	258	3,833	363	3,588	38	2,584	21.24
West North Central .....	14	550	64	560	8	445	120	2,478	213	2,131	29	1,653	33.81
South .....	23	789	128	1,419	19	1,155	477	6,633	588	6,970	85	5,551	21.08
South Atlantic .....	22	756	124	1,369	18	1,111	312	4,762	427	5,177	64	4,141	23.28
East South Central .....	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	11	599	49.29
West South Central .....	Q	Q	Q	Q	Q	Q	111	987	Q	Q	Q	Q	57.53
West .....	47	1,297	119	1,823	19	1,539	315	6,182	535	8,605	88	7,304	17.32
Mountain .....	Q	228	Q	180	Q	155	36	871	116	1,614	20	1,329	39.09
Pacific .....	41	1,070	102	1,643	16	1,384	279	5,311	419	6,992	69	5,976	18.49
<b>Climate Zone: 45-Year Average</b>													
Fewer than 2,000 CDD and --													
More than 7,000 HDD .....	50	1,309	118	1,142	12	857	215	3,464	287	2,787	32	1,979	23.73
5,500-7,000 HDD .....	70	2,150	260	2,917	25	2,106	456	7,872	698	8,387	79	6,273	14.85
4,000-5,499 HDD .....	33	1,551	203	2,903	30	2,371	379	7,304	636	8,568	87	6,692	18.09
Fewer than 4,000 HDD .....	41	1,267	137	1,908	19	1,561	401	6,648	536	8,298	85	7,006	20.32
More than 2,000 CDD and --													
Fewer than 4,000 HDD .....	10	295	25	423	6	392	144	1,608	168	2,556	28	2,191	27.31

See footnotes at end of table.

**Table 3.49. Participation in Electric Utility-Sponsored DSM Programs as Reported by Building Respondent and Electric Utility Respondent, 1992 (Continued)**

Building Characteristics	Participation in Electric Utility-Sponsored DSM Programs											RSE Row Factor	
	According to Building Respondent						According to Utility Respondent						
	Number of Buildings (thousand)	Floor-space (million square feet)	Major Fuel Consumption (trillion Btu)	Major Fuel Expenditures (million dollars)	Electricity Consumption (billion kWh)	Electricity Expenditures (million dollars)	Number of Buildings (thousand)	Floor-space (million square feet)	Major Fuel Consumption (trillion Btu)	Major Fuel Expenditures (million dollars)	Electricity Consumption (billion kWh)		Electricity Expenditures (million dollars)
	1.1	1.2	1.3	1.1	1.1	1.1	0.9	0.8	1.0	0.9	0.8		0.8
<b>Energy Sources (more than one may apply)</b>													
Electricity .....	205	6,572	743	9,294	93	7,287	1,596	26,898	2,324	30,597	311	24,140	8.09
Natural Gas .....	132	4,945	568	7,013	67	5,471	913	19,688	1,842	22,872	227	17,559	10.23
Fuel Oil .....	35	2,223	318	3,800	37	2,901	284	6,927	730	8,709	93	6,740	15.60
District Heat .....	18	1,049	188	1,986	17	1,241	41	2,285	382	4,389	41	2,892	21.13
District Chilled Water .....	6	407	67	725	9	510	13	876	154	1,796	19	1,298	31.33
Propane .....	13	242	20	408	4	373	159	1,534	107	1,738	17	1,455	25.49
Any Other .....	Q	Q	Q	Q	Q	Q	63	680	30	454	4	355	33.07
<b>Energy End Uses (more than one may apply)</b>													
Heated Buildings .....	202	6,500	738	9,198	91	7,193	1,458	25,506	2,280	29,668	301	23,264	8.18
Buildings with A/C .....	175	6,120	708	8,887	90	7,038	1,170	23,265	2,151	28,398	295	22,615	8.34
Buildings with Water Heating .....	188	6,334	733	9,105	91	7,126	1,235	24,509	2,256	29,403	301	23,140	8.33
Buildings with Cooking .....	59	3,805	475	6,018	62	4,867	288	10,383	1,124	14,446	152	11,539	10.43
Buildings with Manufacturing .....	10	389	86	747	6	458	44	1,489	162	1,721	17	1,225	23.73
<b>Workers (main shift)</b>													
Less than 10 .....	106	1,088	95	1,060	9	766	1,138	8,073	491	6,741	58	5,131	15.46
10 to 99 .....	85	2,265	244	2,937	27	2,170	414	10,423	937	11,890	115	9,101	11.55
100 or More .....	14	3,219	404	5,297	57	4,351	44	8,402	896	11,966	138	9,909	11.47
<b>Weekly Operating Hours</b>													
48 or Fewer .....	68	1,357	103	1,256	11	916	702	7,672	480	6,190	58	4,691	14.05
49 to 84 .....	81	2,436	245	3,282	32	2,655	597	11,351	825	11,803	116	9,555	10.86
85 to 168 .....	56	2,779	395	4,757	50	3,716	297	7,875	1,019	12,604	138	9,894	12.90
<b>Space-Heating Energy Sources (more than one may apply)</b>													
Electricity .....	61	2,530	293	4,169	44	3,526	463	10,152	857	12,436	139	10,591	11.94
Natural Gas .....	119	4,039	448	5,394	52	4,237	833	17,008	1,509	18,193	181	13,931	11.68
Fuel Oil .....	27	1,203	207	1,923	17	1,301	255	4,314	456	4,911	46	3,550	17.99
District Heat .....	16	991	149	1,764	15	1,148	40	2,232	347	4,218	40	2,846	19.22
Propane .....	Q	Q	Q	Q	Q	Q	112	703	28	664	7	640	28.91
Wood .....	Q	Q	Q	Q	Q	Q	41	247	9	154	1	124	33.35
Any Other .....	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	Q	NF
<b>Energy Conservation Features (more than one may apply)</b>													
Any Conservation Features .....	204	6,564	743	9,289	93	7,284	1,486	26,120	2,297	30,208	309	23,848	8.29
Building Shell .....	200	6,515	739	9,216	92	7,235	1,442	24,986	2,250	29,462	300	23,219	8.36
HVAC .....	168	6,134	707	8,851	89	6,997	948	21,057	2,045	26,803	279	21,252	8.40
Lighting .....	106	5,002	559	7,333	74	5,863	481	13,790	1,360	18,253	195	14,762	9.20
Other .....	27	1,037	125	1,536	13	1,102	113	2,597	251	3,145	32	2,410	14.91

See footnotes at end of table.

**Table 3.49. Participation in Electric Utility-Sponsored DSM Programs as Reported by Building Respondent and Electric Utility Respondent, 1992 (Continued)**

Building Characteristics	Participation in Electric Utility-Sponsored DSM Programs												RSE Row Factor
	According to Building Respondent						According to Utility Respondent						
	Number of Buildings (thousand)	Floor-space (million square feet)	Major Fuel Consumption (trillion Btu)	Major Fuel Expenditures (million dollars)	Electricity Consumption (billion kWh)	Electricity Expenditures (million dollars)	Number of Buildings (thousand)	Floor-space (million square feet)	Major Fuel Consumption (trillion Btu)	Major Fuel Expenditures (million dollars)	Electricity Consumption (billion kWh)	Electricity Expenditures (million dollars)	
	1.1	1.2	1.3	1.1	1.1	1.1	0.9	0.8	1.0	0.9	0.8	0.8	
RSE Column Factor:													
<b>Building Shell Conservation Features (more than one may apply)</b>													
Roof or Ceiling													
Insulation .....	175	5,671	653	8,239	84	6,529	1,138	20,300	1,915	24,917	263	19,832	8.80
Wall Insulation .....	128	3,628	436	5,393	55	4,235	802	13,513	1,279	16,796	179	13,445	9.76
Storm or Multiple Glazing .....	118	3,879	464	5,339	56	4,124	667	13,201	1,255	15,474	164	12,043	9.68
Tinted or Reflective Glass or Shading Film .....	60	3,419	444	5,608	59	4,518	338	10,142	1,097	14,441	158	11,749	11.68
Exterior or Interior Shading or Awnings .....	103	3,951	455	5,699	62	4,514	601	13,859	1,391	17,934	192	14,243	9.49
Windows that Open .....	91	3,418	391	4,447	41	3,337	790	12,465	1,129	13,174	118	9,529	11.56
<b>HVAC Conservation Features (more than one may apply)</b>													
VAV System .....	20	2,451	307	4,043	44	3,393	109	5,956	684	9,012	106	7,556	13.17
Economizer Cycle .....	50	3,404	391	5,177	56	4,255	167	8,368	894	11,945	141	9,984	11.05
HVAC Maintenance .....	165	6,022	699	8,773	89	6,937	921	20,728	2,021	26,531	276	21,044	8.54
<b>Lighting Conservation Features (more than one may apply)</b>													
Specular Reflectors .....	55	2,967	342	4,712	48	3,846	228	7,277	769	10,075	113	8,182	13.01
Natural Lighting Control													
Sensors .....	6	804	80	1,110	10	895	28	1,269	151	1,980	21	1,555	26.31
Occupancy Sensors .....	7	814	105	1,356	16	1,071	28	1,896	207	3,029	31	2,464	17.13
Time Clock .....	36	2,279	204	3,295	33	2,882	131	5,293	475	7,573	83	6,572	14.74
Manual Dimmer Switches .....	36	2,807	319	4,305	46	3,530	179	6,421	694	8,585	94	6,762	13.80
Other .....	19	878	94	1,186	12	925	50	1,742	173	2,249	22	1,743	17.63
<b>Energy Management and Control System (more than one may apply)</b>													
Present in Building .....	31	2,898	383	4,418	49	3,458	105	6,764	753	9,540	110	7,759	12.28
Controls Heating .....	30	2,656	350	4,070	43	3,176	102	6,392	707	8,895	101	7,188	12.60
Controls Cooling .....	24	2,317	302	3,671	41	2,949	80	5,525	626	8,143	97	6,736	12.98
Controls Hot Water													
Heating .....	7	872	111	1,232	14	985	15	1,861	179	2,216	24	1,817	22.83
Controls Lighting .....	10	1,128	93	1,463	16	1,287	25	2,031	178	2,746	32	2,417	21.76
Controls Other Equipment .....	1	226	23	342	4	299	6	496	50	828	9	732	34.99
Not Present in Building .....	173	3,674	361	4,877	44	3,829	1,490	20,134	1,571	21,057	202	16,381	9.75

NF = No applicable RSE row factor.

Q = Data withheld because the Relative Standard Error (RSE) was greater than 50 percent, or data were reported for fewer than 20 buildings.

Notes: • To obtain the RSE percentage for any table cell, multiply the corresponding RSE column and RSE row factors. • See Glossary for explanation of abbreviations and definitions of terms used in this report. • Site electricity is the amount of electricity delivered to commercial buildings. Primary electricity, which is not included in the "Total of Major Fuels" category, is site electricity plus the conversion losses in the electric generation process at the utility plant. • Statistics for the "energy end uses" represent consumption in buildings that have end use, not consumption for a particular fuel for a particular end use. • A/C = Air Conditioning. • HVAC = Heating, Ventilation, and Air Conditioning. • VAV = Variable Air Volume. • Because of rounding, data may not sum to totals.

Source: Energy Information Administration, Office of Energy Markets and End Use, Forms EIA-871A through F of the 1992 Commercial Buildings Energy Consumption Survey.