

U.S. Electric Utility Demand-Side Management 1999

Energy Information Administration
Office of Coal, Nuclear, Electric and Alternate Fuels
U.S. Department of Energy
Washington, DC 20585

Electric Utility Demand-Side Management 1999 Executive Summary

Background

Demand-side management (DSM) programs consist of the planning, implementing, and monitoring activities of electric utilities that are designed to encourage consumers to modify their level and pattern of electricity usage. In the past, the primary objective of most DSM programs was to provide cost-effective energy and capacity resources to help defer the need for new sources of power, including generating facilities, power purchases, and transmission and distribution capacity additions. However, due to changes occurring within the industry, electric utilities are also using DSM to enhance customer service. DSM refers only to energy and load-shape modifying activities undertaken in response to utility-administered programs. It does not refer to energy and load-shape changes arising from the normal operation of the marketplace or from government-mandated energy-efficiency standards.

Current Status

In 1999, 848 electric utilities report having demand-side management (DSM) programs. Of these, 459 are classified as large, and 389 are classified as small utilities. This is a decrease of 124 utilities from 1998.⁽¹⁾ DSM costs were almost unchanged at 1.4 billion dollars in both 1998 and 1999.

Energy Savings for the 459 large electric utilities increased to 50.6 billion kilowatthours, 1.4 billion kilowatthours more than in 1998. These energy savings represent 1.5 percent of annual electric sales of 3,312 billion kilowatthours⁽²⁾ to ultimate consumers in 1999.

Actual peak load reductions for large utilities decreased in 1999 to 26,455 megawatts. Potential peak load reductions of 43,570 megawatts were an increase of 2,140 over 1998.

In 1999, incremental energy savings for large utilities were 3.1 billion kilowatthours, incremental actual peak load reductions were 2,263 megawatts.

Endnotes

1. Large utilities are those reporting sales to ultimate consumers or sales for resale greater than or equal to 150,000 megawatt-hours. Small utilities with sales to ultimate consumers and sales for resale of less than 150,000 megawatt-hours are only required to report incremental energy savings and peak load reduction, and total utility and total DSM costs for the reporting year.

2. Includes unregulated retail sales by energy service providers of 76 billion kilowatt-hours.

Specific information on demand-side management may be directed to:

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Table 1.U.S. Electric Utility Demand-Side Management Program Energy Savings, Actual and Potential Peak Load Reductions, and Cost, 1995 Through 1999

Item	1995	1996	1997	1998	1999
Energy Savings (million kilowatthours)	57,421	61,842	56,406	49,167	50,563
Actual Peak Load Reductions (megawatts)	29,561	29,893	25,284	27,231	26,455
Potential Peak Load Reductions (megawatts)	47,029	48,344	41,237	41,430	43,570
Cost (thousand dollars)	2,421,261	1,902,197	1,636,020	1,420,920	1,423,644

Notes: Data are final. Data for 1998 and 1999 are provided for electric utilities with sales to ultimate consumers or sales for resale greater than or equal to 150,000 megawatthours (prior years 120,000 megawatthours). Totals may not equal sum of components because of independent rounding.

Source: Energy Information Administration, Form EIA-861, "Annual Electric Utility Report."

Table 2. U.S. Electric Utility Demand-Side Management Program Energy Savings by Class of Ownership, 1995 Through 1999 (Million Kilowatthours)

Class of Ownership	1995	1996	1997	1998	1999
Investor Owned	48,060	50,382	44,576	43,273	43,704
Publicly Owned	3,218	4,486	4,298	4,130	4,540
Cooperative	230	523	622	51	578
Federal	5,911	6,452	6,910	1,713	1,742
U.S. Total	57,421	61,842	56,406	49,167	50,563

Notes: Data are final. Data for 1998 and 1999 are provided for electric utilities with sales to ultimate consumers or sales for resale greater than or equal to 150,000 megawatthours (prior years 120,000 megawatthours). Totals may not equal sum of components because of independent rounding.

Source: Energy Information Administration, Form EIA-861, "Annual Electric Utility Report."

Table 3. U.S. Electric Utility Demand-Side Management Program Energy Savings by Program Category, 1998 and 1999 (Million Kilowatthours)

Program Category	1998	1999
Energy Efficiency	48,775	49,691
Load Management	392	872
U.S. Total	49,167	50,563

Notes: Data are final. Data are provided for electric utilities with sales to ultimate consumers or sales for resale greater than or equal to 150,000 megawatthours. Totals may not equal sum of components because of independent rounding. Source: Energy Information Administration, Form EIA-861, "Annual Electric Utility Report."

Table 4. U.S. Electric Utility Demand-Side Management Program Energy Savings by Sector, 1998 and 1999 (Million Kilowatthours)

Sector	1998	1999
Residential	16,564	16,263
Commercial	25,125	23,375
Industrial	6,647	8,156
Other	831	2,770
U.S. Total	49,167	50,563

Notes: Data are final. Data are provided for electric utilities with sales to ultimate consumers or sales for resale greater than or equal to 150,000 megawatthours. Totals may not equal sum of components because of independent rounding. Source: Energy Information Administration, Form EIA-861, "Annual Electric Utility Report."

Table 5. U.S. Electric Utility Incremental Energy Savings by Class of Ownership, 1998 and 1999 (Million Kilowatthours)

Class of Ownership	Large Utilities ¹		Small Utilities ²		Total	
	1998	1999	1998	1999	1998	1999
Investor-Owned	3,005	2,668	1	1	3,006	2,669
Publicly Owned	269	304	11	5	280	308
Cooperative	59	86	6	4	65	91
Federal	28	36	0	0	28	36
U.S. Total	3,361	3,094	18	9	3,379	3,103

¹ Refers to electric utilities with sales to ultimate consumers or sales for resale greater than or equal to 150,000 megawatthours.

² Refers to electric utilities with sales to ultimate consumers and sales for resale less than 150,000 megawatthours.

Notes: Data are final. Totals may not equal sum of components because of independent rounding.

Source: Energy Information Administration, Form EIA-861, "Annual Electric Utility Report."

Table 6. U.S. Electric Utility Incremental Energy Savings by Program Category, 1998 and 1999 (Million Kilowatthours)

Program Category	Large Utilities ¹	Small Utilities ²	Total
	1998		
Energy Efficiency	3,324	11	3,335
Load Management	37	7	44
U.S. Total	3,361	18	3,379
Program Category	Large Utilities ¹	Small Utilities ²	Total
	1999		
Energy Efficiency	3,027	8	3,035
Load Management	67	2	69
U.S. Total	3,094	9	3,103
¹ Refers to electric utilities with sales to ultimate consumers or sales for resale greater than or equal to 150,000 megawatthours. ² Refers to electric utilities with sales to ultimate consumers and sales for resale less than 150,000 megawatthours. Notes: Data are final. Totals may not equal sum of components because of independent rounding. Source: Energy Information Administration, Form EIA-861, "Annual Electric Utility Report."			

Table 7. U.S. Electric Utility Incremental Energy Savings by Sector, 1998 and 1999 (Million Kilowatthours)

Sector	Large Utilities ¹		Small Utilities ²		Total	
	1998	1999	1998	1999	1998	1999
Residential	909	990	8	4	917	994
Commercial	1,703	1,502	6	3	1,709	1,505
Industrial	645	475	3	1	648	476
Other	104	127	1	1	105	128
U.S. Total	3,361	3,094	18	9	3,379	3,103

¹ Refers to electric utilities with sales to ultimate consumers or sales for resale greater than or equal to 150,000 megawatthours.

² Refers to electric utilities with sales to ultimate consumers and sales for resale less than 150,000 megawatthours.

Notes: Data are final. Totals may not equal sum of components because of independent rounding.

Source: Energy Information Administration, Form EIA-861, "Annual Electric Utility Report."

Table 8. U.S. Electric Utility Actual and Potential Peak Load Reductions by Class of Ownership, 1995 Through 1999 (Megawatts)

Class of Ownership	Actual Peak Load Reductions ¹				
	1995	1996	1997	1998	1999
Investor-Owned	22,035	22,080	18,557	19,456	18,943
Publicly Owned	2,569	2,736	1,989	2,819	2,466
Cooperative	2,634	2,738	2,380	2,636	2,706
Federal	2,323	2,338	2,358	2,320	2,340
U.S. Total	29,561	29,893	25,284	27,231	26,455
Class of Ownership	Potential Peak Load Reductions ²				
	1995	1996	1997	1998	1999
Investor-Owned	34,163	35,068	29,531	28,345	31,710
Publicly Owned	3,252	3,608	2,658	3,542	3,170
Cooperative	5,049	5,231	4,591	5,123	4,250
Federal	4,565	4,438	4,458	4,420	4,440
U.S. Total	47,029	48,344	41,237	41,430	43,570

¹ Represents the sum of the actual peak load reductions attributable to energy efficiency and load management.

² Represents the sum of the potential peak load reductions attributable to load management, including the actual peak load reduction achieved by energy efficiency programs.

Notes: Data are final. Data for 1998 and 1999 are provided for electric utilities with sales to ultimate consumers or sales for resale greater than or equal to 150,000 megawatthours (prior years 120,000 megawatthours). Totals may not equal sum of components because of independent rounding.

Source: Energy Information Administration, Form EIA-861, "Annual Electric Utility Report."

Table 9. U.S. Electric Utility Actual and Potential Peak Load Reductions by Demand-Side Management Program Category, 1998 and 1999 (Megawatts)

Program Category	Actual Reductions	Potential Reductions
		1998
Energy Efficiency	13,591	13,591
Load Management	13,640	27,840
U.S. Total	27,231	41,430
Program Category	Actual Reductions	Potential Reductions
		1999
Energy Efficiency	13,452	13,452
Load Management	13,003	30,118
U.S. Total	26,455	43,570

Notes: Data are final. Data are provided for electric utilities with sales to ultimate consumers or sales for resale greater than or equal to 150,000 megawatthours. Totals may not equal sum of components because of independent rounding.
Source: Energy Information Administration, Form EIA-861, "Annual Electric Utility Report."

Table 10. U.S. Electric Utility Actual and Potential Peak Load Reductions by Sector, 1998 and 1999 (Megawatts)

Sector	1998		1999	
	Actual	Potential	Actual	Potential
Residential	9,327	13,022	9,976	12,812
Commercial	9,482	12,210	7,777	8,868
Industrial	7,927	15,512	6,360	17,237
Other	495	686	2,342	4,653
U.S. Total	27,231	41,430	26,455	43,570

Notes: Data are final. Data are provided for electric utilities with sales to ultimate consumers or sales for resale greater than or equal to 150,000 megawatthours. Totals may not equal sum of components because of independent rounding.

Source: Energy Information Administration, Form EIA-861, "Annual Electric Utility Report."

Table 11. U.S. Electric Utility Incremental Actual Peak Load Reductions by Class of Ownership, 1998 and 1999 (Megawatts)

Class of Ownership	Large Utilities ¹		Small Utilities ²		Total	
	1998	1999	1998	1999	1998	1999
Investor-Owned	2,178	1,817	*	*	2,178	1,817
Publicly Owned	222	166	102	48	324	214
Cooperative	197	254	34	29	231	283
Federal	20	25	0	0	20	25
U.S. Total	2,617	2,261	136	77	2,753	2,338

¹Refers to electric utilities with sales to ultimate consumers or sales for resale greater than or equal to 150,000 megawatthours.

²Refers to electric utilities with sales to ultimate consumers and sales for resale less than 150,000 megawatthours.

* Value less than 0.5.

Notes:Data are final. Totals may not equal sum of components because of independent rounding.

Source: Energy Information Administration, Form EIA-861, "Annual Electric Utility Report."

Table 12. U.S. Electric Utility Incremental Actual Peak Load Reductions by Program Category, 1998 and 1999 (Megawatts)

Program Category	Large Utilities ¹	Small Utilities ²	Total
	1998		
Energy Efficiency	796	12	808
Load Management	1,821	124	1,945
U.S. Total	2,617	136	2,753
Program Category	Large Utilities ¹	Small Utilities ²	Total
	1999		
Energy Efficiency	695	22	717
Load Management	1,568	54	1,622
U.S. Total	2,262	76	2,338

¹Refers to electric utilities with sales to ultimate consumers or sales for resale greater than or equal to 150,000 megawatthours.

² Refers to electric utilities with sales to ultimate consumers and sales for resale less than 150,000 megawatthours.

Notes: Data are final. Totals may not equal sum of components because of independent rounding.

Source: Energy Information Administration, Form EIA-861, "Annual Electric Utility Report."

Table 13. U.S. Electric Utility Incremental Actual Peak Load Reductions by Sector, 1998 and 1999 (Megawatts)

Sector	Large Utilities ¹		Small Utilities ²		Total	
	1998	1999	1998	1999	1998	1999
Residential	599	605	35	27	634	632
Commercial	1176	684	34	22	1,210	706
Industrial	799	929	56	7	855	936
Other	43	45	10	19	53	64
U.S. Total	2,617	2,262	136	76	2,753	2,338

¹Refers to electric utilities with sales to ultimate consumers or sales for resale greater than or equal to 150,000 megawatthours.

²Refers to electric utilities with sales to ultimate consumers and sales for resale less than 150,000 megawatthours.

Notes: Data are final. Totals may not equal sum of components because of independent rounding.

Source: Energy Information Administration, Form EIA-861, "Annual Electric Utility Report."

Table 14. U.S. Electric Utility Demand-Side Management Program Costs by Class of Ownership, 1995 through 1999 (Thousand Dollars)

Class of Ownership	1995	1996	1997	1998	1999
Investor-Owned	1,951,874	1,548,510	1,321,194	1,208,940	1,183,440
Publicly Owned	185,294	159,849	167,553	117,306	165,063
Cooperative	93,073	92,258	87,889	84,849	64,196
Federal	191,020	101,580	59,384	9,825	10,945
U.S. Total	2,421,261	1,902,197	1,636,020	1,420,920	1,423,644

Notes: Data are final. Data for 1998 and 1999 are provided for electric utilities with sales to ultimate consumers or sales for resale greater than or equal to 150,000 megawatthours (prior years 120,000 megawatthours). Totals may not equal sum of components because of independent rounding.

Source: Energy Information Administration, Form EIA-861, "Annual Electric Utility Report."