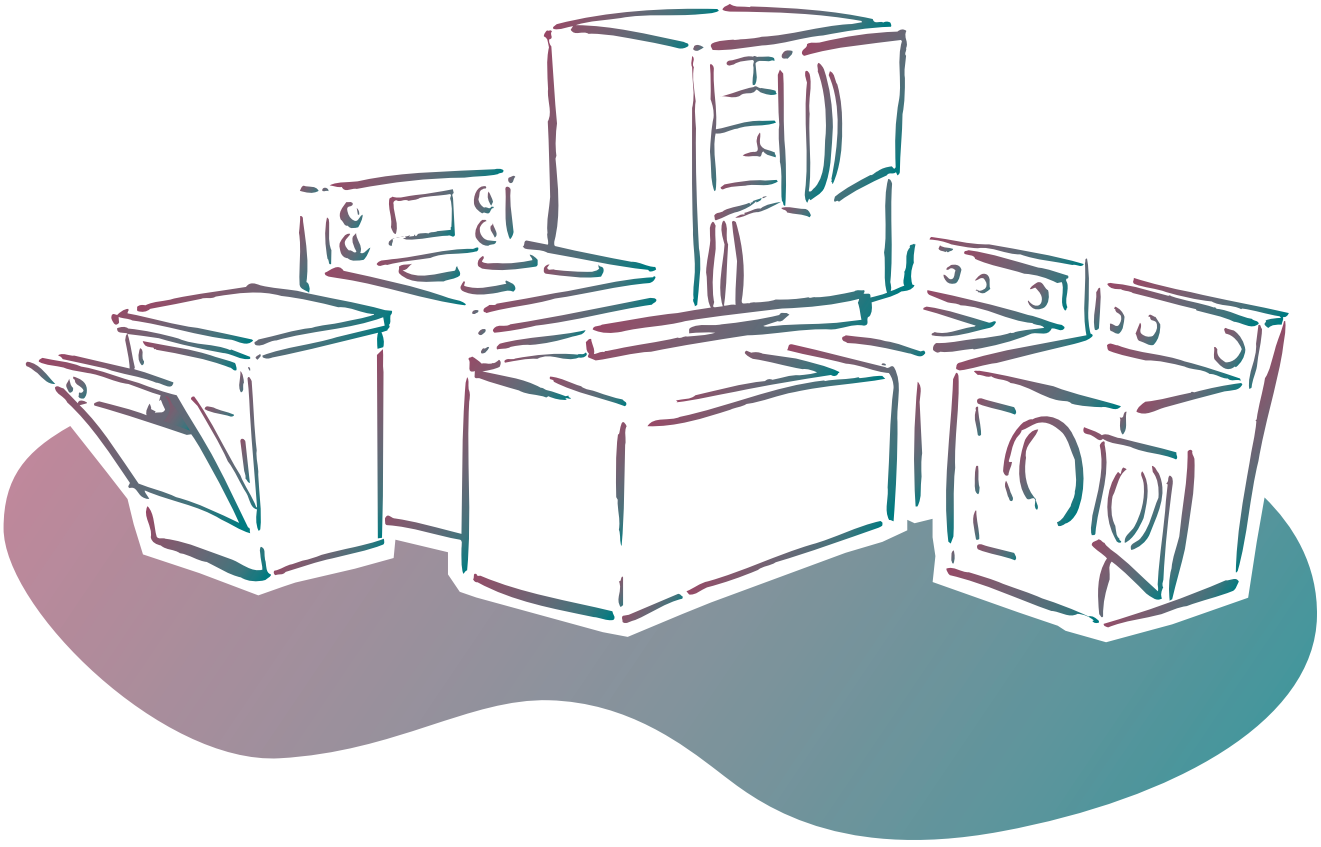
OEE

Office of Energy Efficiency
National Energy Use Database

Energy Consumption of Major Household Appliances Marketed in Canada — Trends for 1990–1997

April 2000



Natural Resources Canada
Office of Energy Efficiency

Ressources naturelles Canada
Office de l'efficacité énergétique

Canada

To obtain additional copies of this publication, please write to:

Energy Publications
c/o Canada Communication Group
Ottawa, ON K1A 0S9
Fax: (819) 994-1498

Cat. No. M92-176/1999
ISBN 0-662-64615-0

Energy Consumption of Major Household Appliances Shipped in Canada

Trends for 1990 - 1997

April 2000

Foreword

This report details the results of an analysis of the estimated shipment-weighted average unit energy consumption, in kilowatt hours per year, of five major household appliances – refrigerators, ranges, dishwashers, clothes washers and clothes dryers – shipped in Canada between 1990 and 1997. It also provides data on the annual distribution of shipments by unit energy consumption range for the five types of appliances during the same period. *Data were also collected on freezers, but due to the lack of sufficient coverage of the freezer market and out of respect for the confidentiality agreement with data contributors, freezer information will not be included.*

In an ongoing effort to improve the monitoring of Canadian energy use trends, Natural Resources Canada's Office of Energy Efficiency (OEE) proposed a data collection arrangement with members of the Canadian Appliance Manufacturers Association (CAMA) as part of the National Energy Use Database (NEUD) initiative.

Under this arrangement, key CAMA members agreed to provide their annual Canadian appliance shipment data by model for the six major household appliances. These manufacturers represent a large part of the Canadian market for the six appliance groups. The energy consumption data are adjusted in accordance with the size and capacity of the appliances. Using this data, the models were matched to their associated unit energy consumption ratings found in the EnerGuide Appliance Directory Database. The annual shipment-weighted unit energy consumption rating was then calculated for each appliance category.

This is the first such report published in Canada. The OEE plans to publish similar reports at regular intervals. To further improve the quality and representation of new appliance energy efficiency data in Canada, the OEE is exploring options to improve the coverage of the Canadian market through continual discussions with CAMA and other manufacturers.

This report was prepared with the collaboration of Victor Tremblay of STATPLUS. The data were collected through the consulting firm Chrispen-Roberts. Mark Pearson, André Bourbeau, Pascal Tanguay, Linda Yuen and Glenda Taylor of the OEE all contributed to the report.

The OEE would like to thank the participating manufacturers and CAMA for their cooperation in this project.

For further information on this report, or other reports listed in Appendix B, please contact:

Demand Policy and Analysis Division
Office of Energy Efficiency
Natural Resources Canada
580 Booth Street, 18th Floor
Ottawa ON K1A 0E4
Tel: (613) 995-2503
Fax: (613) 947-4120

To obtain this report or other reports listed in Appendix B, please visit our new web site at http://oee.nrcan.gc.ca/dpa in April 2000, or by contacting:

Energy Publications
c/o Canada Communication Group
Ottawa, ON
K1A 0S9
Fax: (819) 994-1498
Tel: 1-800-387-2000 (toll-free)
In National Capital Region: (613) 995-2943

When ordering, please cite the catalogue number and the complete title.

Highlights

Between 1990 and 1997 the energy efficiency of all major household appliances placed on the market, excluding ranges, improved dramatically.

- The energy use of popular refrigerators (of volumes between 16.5 cu. ft. and 18.4 cu. ft.) decreased by 38 percent.

- The average annual energy use of three other major appliance categories also decreased noticeably: clothes dryers by 20 percent, clothes washers by 23 percent and dishwashers by 37 percent.

These reduced levels of energy consumption are all the more remarkable because they have occurred over such a short period of time.

The significant research and development carried out by the appliance manufacturers, plus the minimum performance requirements contained in the *Energy Efficiency Regulations* and the EnerGuide Program for equipment, authorized under the 1992 *Energy Efficiency Act*, are largely responsible for bringing about these improvements.

Contents

1. INTRODUCTION

This report outlines the changes in the energy use and distribution of major household appliances, based on the actual distribution of the various types of appliances marketed in Canada between 1990 and 1997, using data collected through the cooperation of the Canadian Appliance Manufacturers Association (CAMA).

This trend analysis is associated with the implementation of the *Energy Efficiency Regulations* authorized under the 1992 *Energy Efficiency Act*. The regulations ensure that new appliances imported into Canada, or manufactured in Canada and shipped from one province to another, comply with federal minimum energy efficiency standards.

It must also be noted that the quantity and profile of new appliances accurately reflect Canadian purchases. Most retailers rely on a distribution strategy that responds quickly to consumer demand. In fact, retailers keep inventory as low as possible ("just in time" inventory). For this reason, we believe that the shipment data given in this report closely reflect consumer purchasing behaviour.

Each chapter in this report covers a specific type of appliance: refrigerators (Chapter 2), clothes dryers (Chapter 3), clothes washers (Chapter 4), dishwashers (Chapter 5) and ranges (Chapter 6). Given the diversity of types and sizes of refrigerators, the chapter dealing with refrigerators is more detailed.

Specific definitions of the various types of appliances are given in Appendix A.

2. Refrigerators

2.1 Distribution by Type

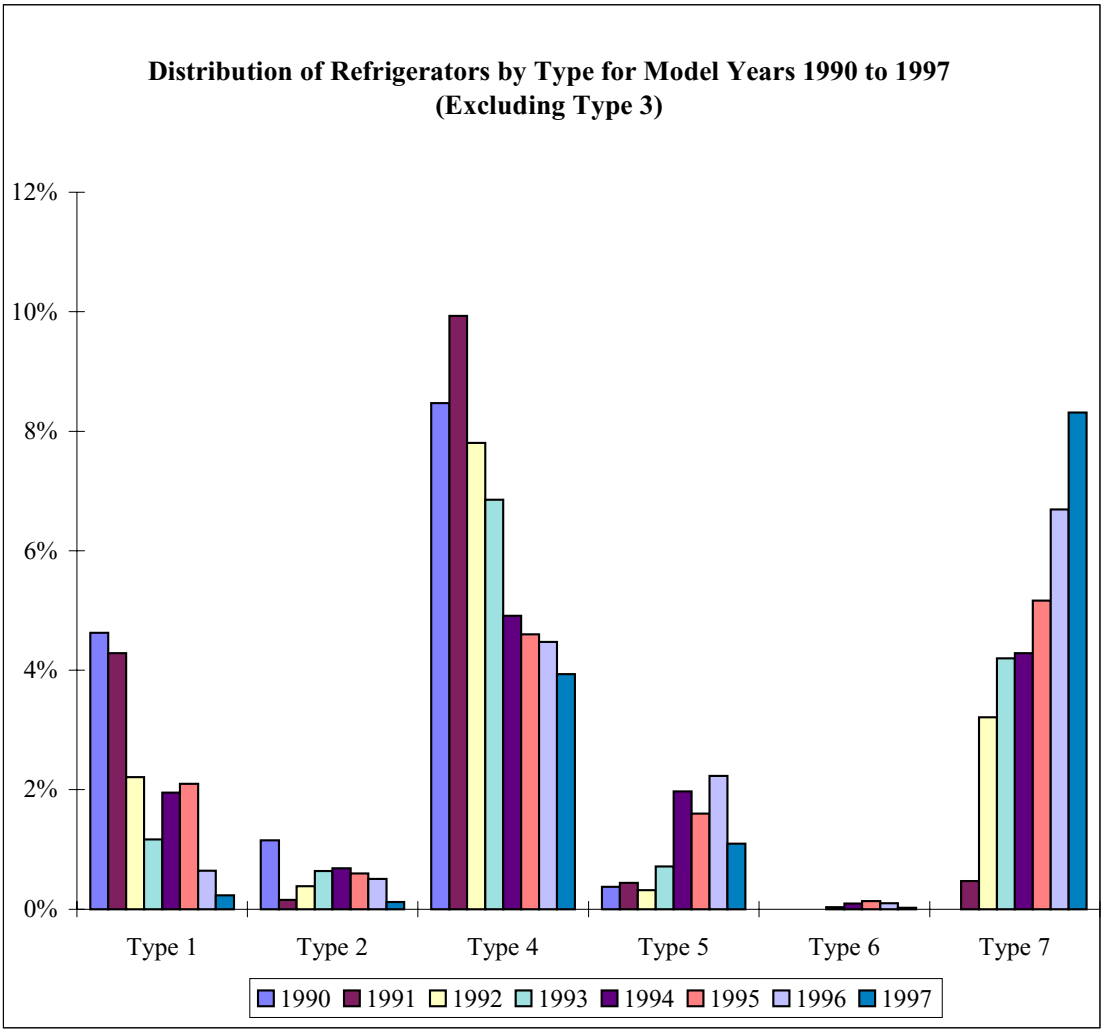
Between 1990 and 1997, the most popular type of refrigerator available on the Canadian market was Type 3, defined as refrigerator-freezers with automatic defrost, with top-mounted freezers, without through-the-door ice service and all refrigerators without freezers but with automatic defrost. This type of refrigerator consistently accounts for about 86 percent of all refrigerators on the market (see Figure 2.1).

In the same time period, the market share of side-by-side automatic defrost refrigerator-freezers without through-the-door ice service (Type 4) fell from almost 10 percent in 1991 to 3.9 percent in 1997. The market share of refrigerators and refrigerator-freezers with manual defrost (Type 1) fell from 4.6 percent in 1990 to 0.2 percent in 1997.

Refrigerator-freezers with automatic defrost, side-mounted freezer and with through-the-door ice service (Type 7) increased their market share from nearly 0 percent in 1990 to 8.3 percent in 1997.

Figure 2.1
Distribution of Refrigerators by Type for Model Years 1990 to 1997

Model Year	Type 1 (%)	Type 2 (%)	Type 3 (%)	Type 4 (%)	Type 5 (%)	Type 6 (%)	Type 7 (%)
1990	4.6	1.2	85.4	8.5	0.4	0.0	0.0
1991	4.3	0.2	84.7	9.9	0.4	0.0	0.5
1992	2.2	0.4	86.1	7.8	0.3	0.0	3.2
1993	1.2	0.6	86.4	6.9	0.7	0.0	4.2
1994	1.9	0.7	86.1	4.9	2.0	0.1	4.3
1995	2.1	0.6	85.8	4.6	1.6	0.1	5.2
1996	0.6	0.5	85.4	4.5	2.2	0.1	6.7
1997	0.2	0.1	86.3	3.9	1.1	0.0	8.3



2.2 Distribution by Volume

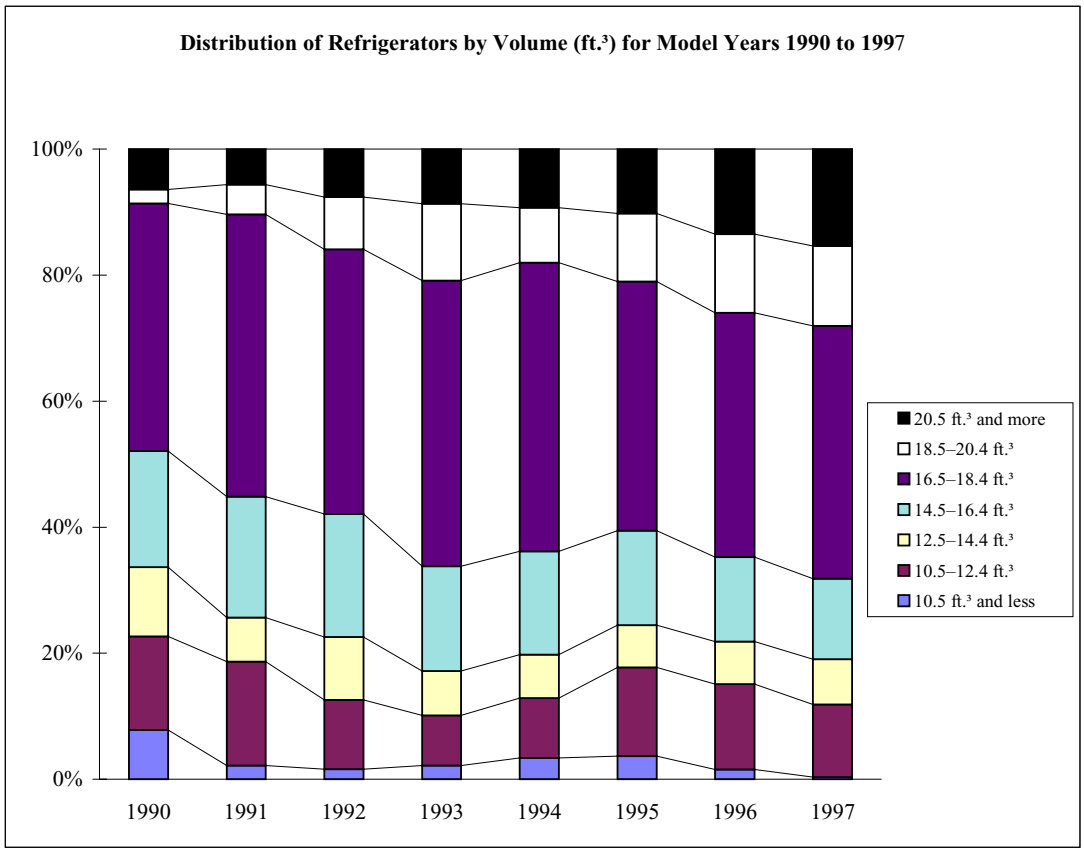
Refrigerators with a volume between 16.5 cu. ft. and 18.4 cu. ft. are the most common on the market. Between 1990 and 1997, four in 10 refrigerators sold were within this size range.

During the same period, the market share of large-volume refrigerators increased. Refrigerators with a volume of 18.5 cu. ft. or larger more than tripled their market share, increasing from 8.6 percent in 1990 to 28.1 percent in 1997.

In comparison, refrigerators smaller than 10.5 cu. ft., with a market share of 0.3 percent, had all but disappeared from the market in 1997.

Figure 2.2
Distribution of Refrigerators by Volume (ft.³) for Model Years 1990 to 1997

	Volume (ft.³)						
Model Year	Less than 10.5 (%)	10.5 to 12.4 (%)	12.5 to 14.4 (%)	14.5 to 16.4 (%)	16.5 to 18.4 (%)	18.5 to 20.4 (%)	20.5 or more (%)
1990	7.8	14.9	11.0	18.4	39.3	2.2	6.4
1991	2.2	16.5	7.0	19.2	44.8	4.7	5.6
1992	1.6	10.9	10.0	19.6	42.0	8.3	7.6
1993	2.2	8.0	7.1	16.6	45.3	12.2	8.7
1994	3.4	9.5	6.9	16.5	45.8	8.7	9.3
1995	3.7	14.1	6.7	15.0	39.5	10.8	10.2
1996	1.6	13.6	6.8	13.4	38.7	12.5	13.5
1997	0.3	11.5	7.2	12.7	40.1	12.7	15.4



2.3 Average Annual Energy Consumption by Volume

The energy efficiency improvement in refrigerators between 1990 and 1997 resulted in a remarkable decrease in energy consumption in the large-volume category. In fact, the larger the refrigerator, the greater the decrease in energy use between 1990 and 1997.

Refrigerators with a volume of 22.5 cu. ft. to 26.4 cu. ft. consumed more than 1400 kWh annually in 1990. In 1997 they used about 900 kWh. The level of energy use of smaller refrigerators remained very much unchanged during the same period (see Figure 2.3.1).

An analysis of the annual energy use trend by cubic foot shows that a 20 cu. ft. refrigerator uses about 20 kWh less per cubic foot in 1997 than in 1990. The differences are typically 25 kWh per cubic foot for 25 cu. ft. refrigerators and 16 kWh per cubic foot for 12 cu. ft. refrigerators (see Figure 2.3.2).

Figure 2.3.1
Average Annual Energy Consumption of Refrigerators (kWh)
by Volume (ft.³) for Model Years 1990 to 1997

	Volume (ft.³)														
Model Year	Less than 2.5	2.5 to 4.4	4.5 to 6.4	6.5 to 8.4	8.5 to 10.4	10.5 to 12.4	12.5 to 14.4	14.5 to 16.4	16.5 to 18.4	18.5 to 20.4	20.5 to 22.4	22.5 to 24.5	24.5 to 26.4	26.5 to 28.4	28.5 to 30.4
1990			367		716	740	850	955	1 067	1 133	1 041	1 478	1 416		
1991			366		658	727	877	915	1 018	978	950	1 481	1 371		
1992			367	465	478	697	750	924	940	998	1 047	1 269	1 400	1 486	
1993			367	465	440	593	600	700	731	799	848	939	1 004	1 228	1 110
1994	308	336	365	465	407	563	547	627	665	720	805	906	856	1 206	1 105
1995	308	336	364	465	383	559	540	626	662	715	775	872	829	1 123	977
1996	308	336	364	465	377	559	570	631	646	680	731	894	885	1 051	1 070
1997			338	465	377	562	568	632	666	698	736	925	898	923	1 093

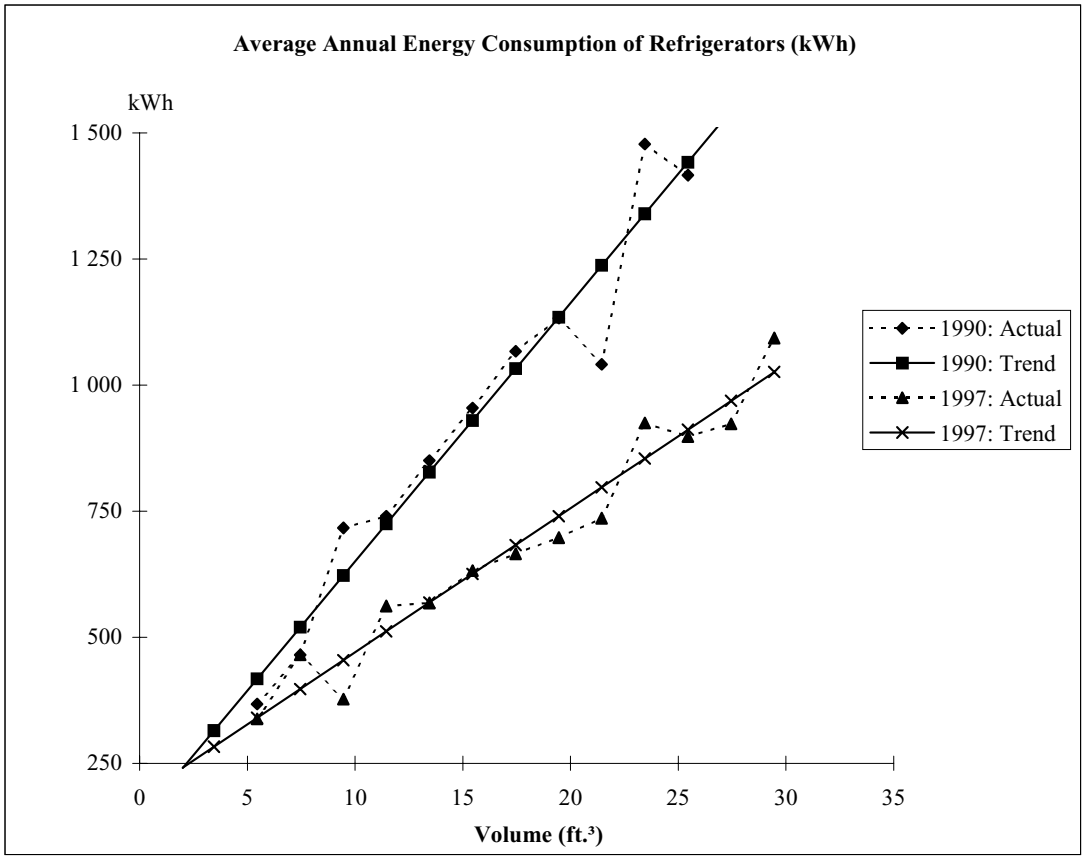
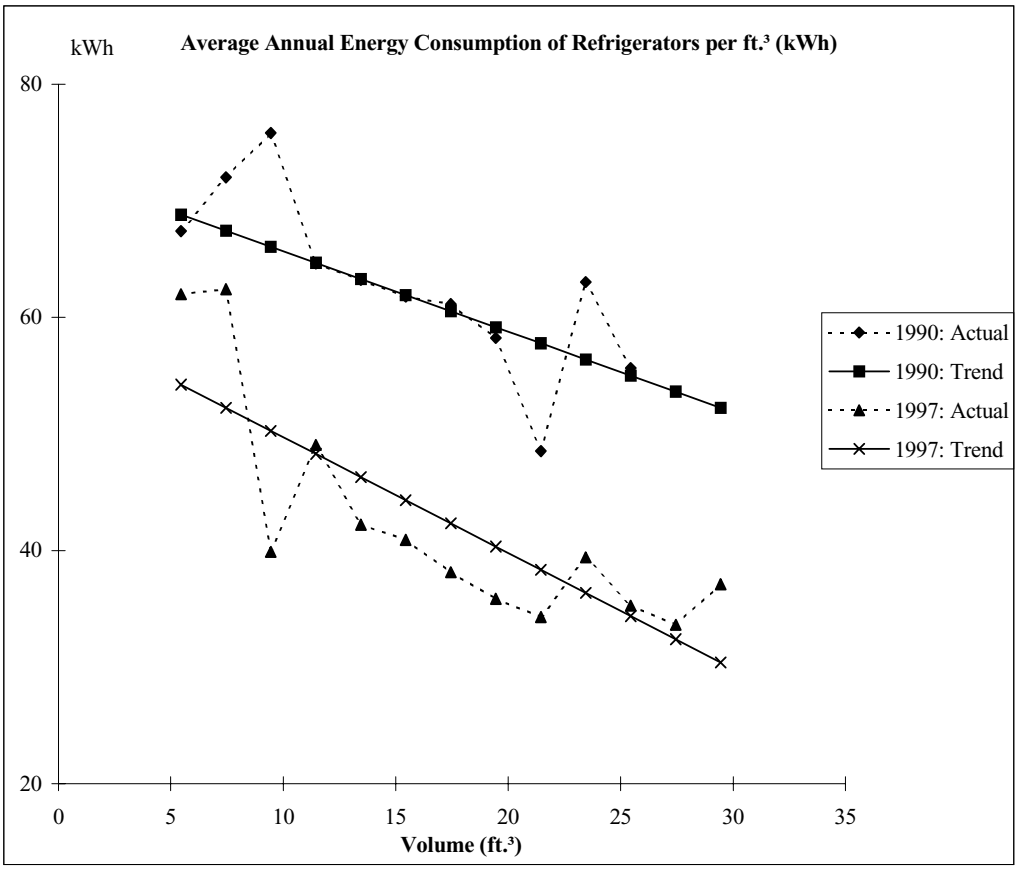


Figure 2.3.2
Average Annual Energy Consumption of Refrigerators per ft.³ (kWh)
by Volume for Model Years 1990 to 1997

	Volume (ft.³)												
Model Year	4.5 to 6.4	6.5 to 8.4	8.5 to 10.4	10.5 to 12.4	12.5 to 14.4	14.5 to 16.4	16.5 to 18.4	18.5 to 20.4	20.5 to 22.4	22.5 to 24.5	24.5 to 26.4	26.5 to 28.4	28.5 to 30.4
1990	67		76	65	63	62	61	58	49	63	56		
1991	67		70	64	65	59	58	50	44	63	54		
1992	67	62	51	61	56	60	54	51	49	54	55	54	
1993	67	62	47	52	45	45	42	41	40	40	39	45	38
1994	67	62	43	49	41	41	38	37	38	39	34	44	38
1995	67	62	41	49	40	41	38	37	36	37	33	41	33
1996	67	62	40	49	42	41	37	35	34	38	35	38	36
1997	62	62	40	49	42	41	38	36	34	39	35	34	37



2.4 Distribution of Refrigerators by Average Annual Energy Consumption per Cubic Foot

The improvement in the energy efficiency of refrigerators may also be seen in terms of energy use per cubic foot.

For example, in 1990, only 1.5 percent of refrigerators used less than 40 kWh per cubic foot; in 1997, this percentage reached 66.4 percent (see Figure 2.4.1).

Almost all 1997 model year refrigerators (99.2 percent) used less than 50 kWh per cubic foot. The corresponding ratio for 1990 was only 5.4 percent (see Figure 2.4.2).

Figure 2.4.1
Distribution of Refrigerators by Average Annual Consumption per ft.³

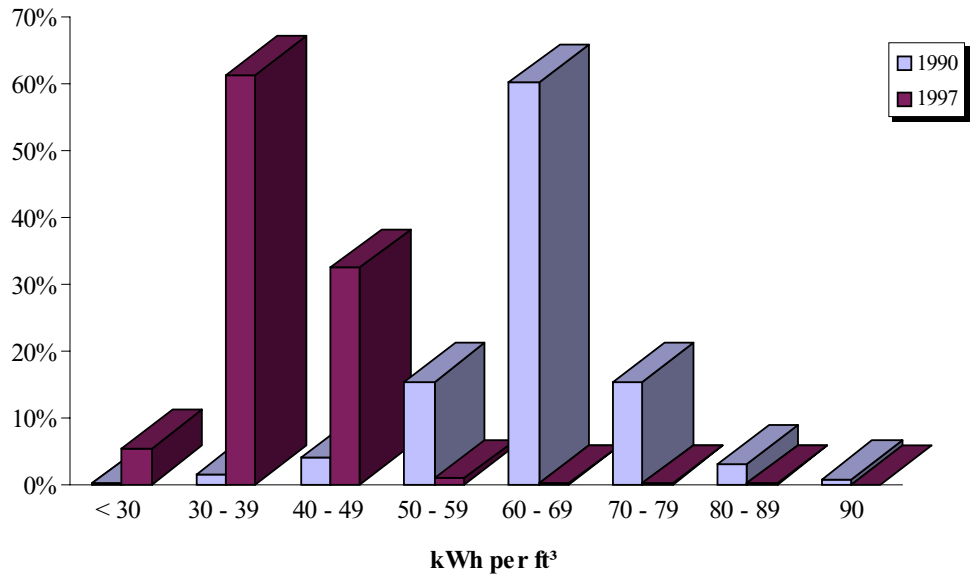
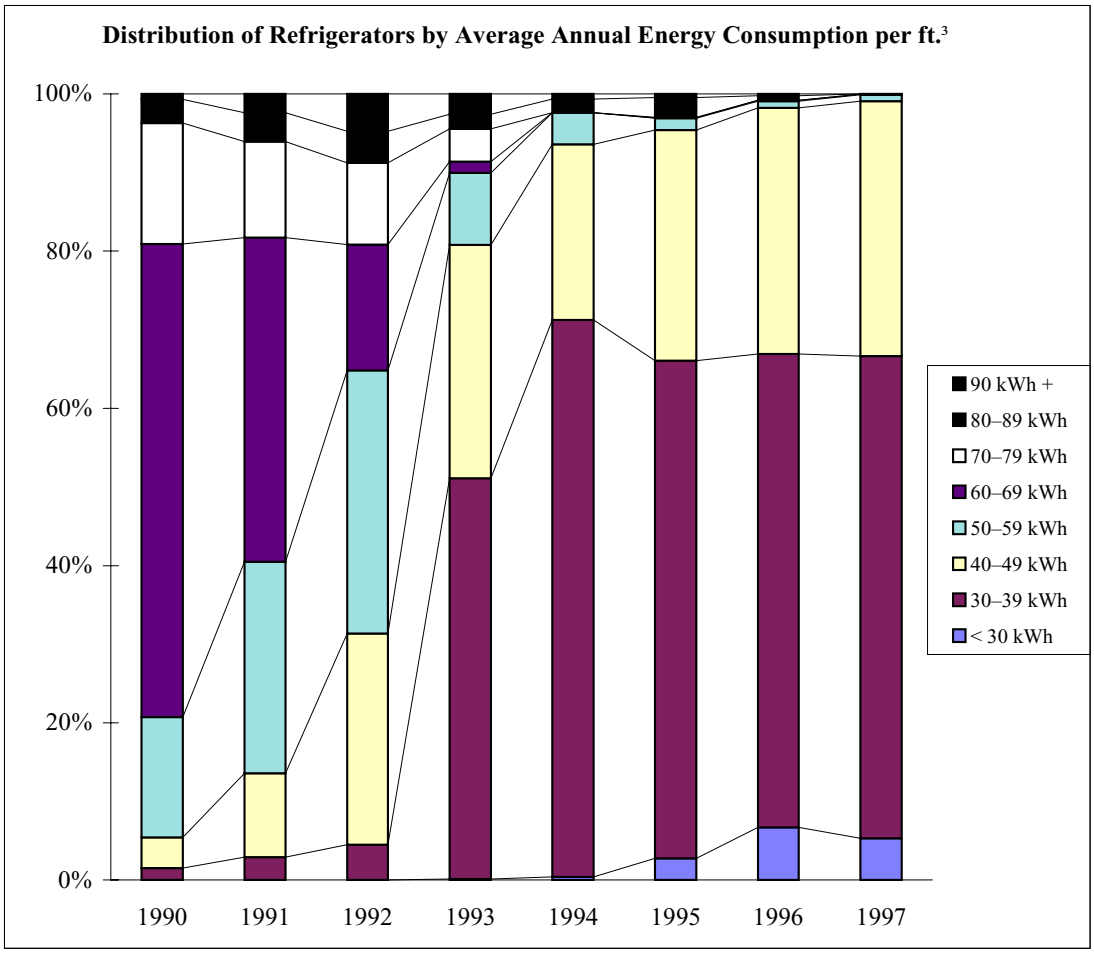


Figure 2.4.2
Distribution of Refrigerators by Average Annual Energy Consumption per ft.³
for Model Years 1990 to 1997

Model Year	Annual Energy Consumption per ft.³							
	< 30 kWh (%)	30–39 kWh (%)	40–49 kWh (%)	50–59 kWh (%)	60–69 kWh (%)	70–79 kWh (%)	80–89 kWh (%)	90 kWh + (%)
1990	0.0	1.5	3.9	15.3	60.2	15.4	3.0	0.7
1991	0.0	2.9	10.7	26.9	41.3	12.2	3.6	2.4
1992	0.0	4.5	26.9	33.5	16.0	10.4	4.0	4.8
1993	0.1	51.0	29.7	9.1	1.4	4.2	1.9	2.6
1994	0.4	70.8	22.4	4.0	0.0	0.0	1.7	0.6
1995	2.8	63.3	29.3	1.6	0.0	0.1	2.5	0.5
1996	6.7	60.2	31.3	0.9	0.1	0.0	0.6	0.2
1997	5.3	61.3	32.4	0.8	0.1	0.0	0.0	0.0



2.5 Distribution of Type 3 Refrigerators by Volume

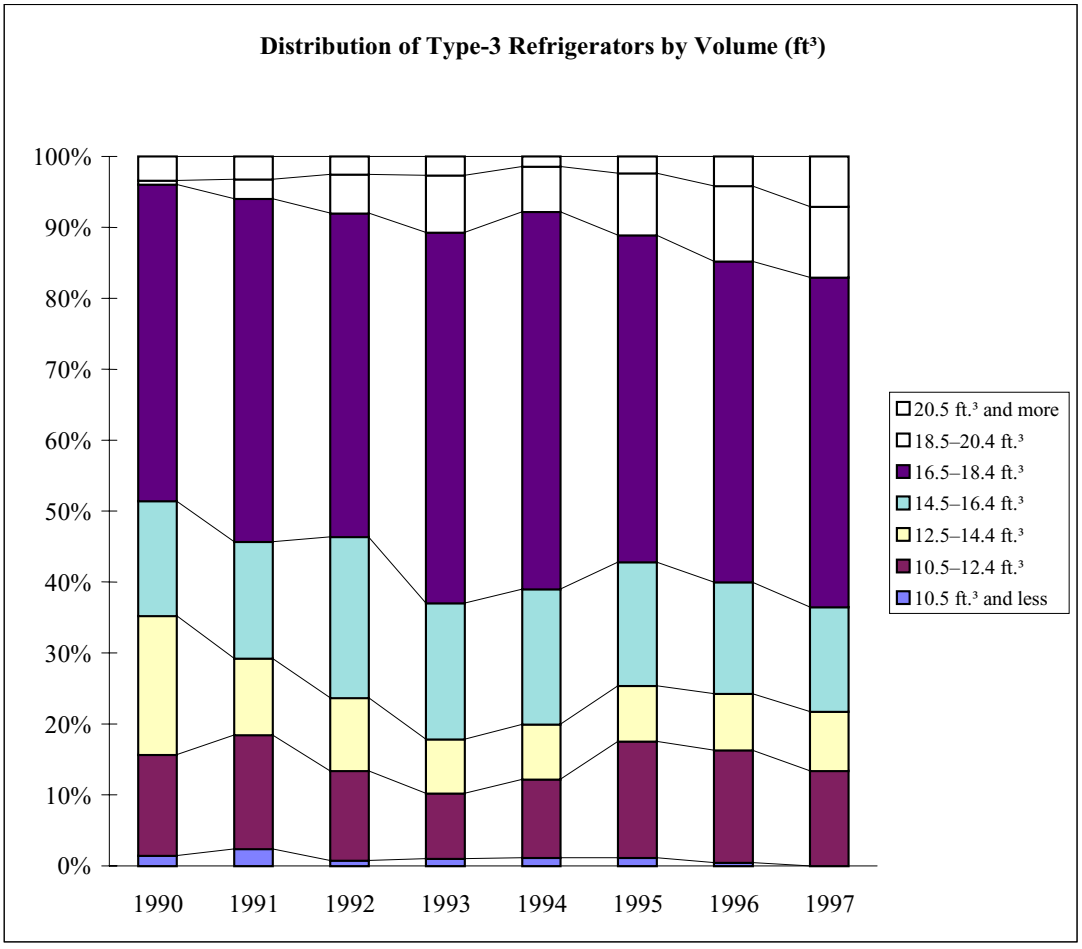
About half of the Type 3 refrigerators on the market have a volume between 16.5 cu. ft. and 18.4 cu. ft. Between 1990 and 1997, this figure varied between 44.6 percent and 53.2 percent (see Figure 2.5).

During this period, the market share of Type 3 refrigerators larger than 18.4 cu. ft. grew from 3.9 percent to 17.1 percent.

Type 3 refrigerators rarely have volumes less than 10.5 cu. ft.

Figure 2.5
Distribution of Type 3 Refrigerators by Volume (ft.³) for Model Years 1990 to 1997

Model Year	Volume (ft.³) Less than 10.5 (%)	10.5 to 12.4 (%)	12.5 to 14.4 (%)	14.5 to 16.4 (%)	16.5 to 18.4 (%)	18.5 to 20.4 (%)	20.5 or more (%)
1990	1.5	14.2	19.6	16.2	44.6	0.5	3.4
1991	2.4	16.1	10.8	16.5	48.3	2.8	3.2
1992	0.8	12.6	10.3	22.7	45.6	5.4	2.6
1993	1.0	9.2	7.6	19.2	52.2	8.1	2.7
1994	1.2	11.0	7.8	19.0	53.2	6.4	1.4
1995	1.1	16.4	7.8	17.5	46.1	8.7	2.4
1996	0.5	15.9	7.9	15.7	45.2	10.6	4.2
1997	0.0	13.4	8.4	14.8	46.4	10.0	7.1



2.6 Average Annual Energy Consumption of Type 3 Refrigerators by Volume

Whatever their volume, Type 3 refrigerators in 1997 consistently had an average annual energy use lower than that observed in 1990.

However, the difference in energy use between these two generations of refrigerators increased with their volume. In comparing energy-use trends, we observed that 20 cu. ft. Type 3 refrigerators used about 330 kWh less per year in 1997 than in 1990. For refrigerators between 10.5 cu. ft. and 12.4 cu. ft., the spread was only 200 kWh (see Figure 2.6.1).

In terms of annual energy use per cubic foot, a Type 3 refrigerator between 18.5 cu. ft. and 22.4 cu. ft. used about 15 kWh less per cubic foot in 1997 than the equivalent refrigerator in 1990. This difference is approximately 20 kWh per cubic foot for refrigerators between 10.5 cu. ft. and 14.4 cu. ft. (see Figure 2.6.2).

Figure 2.6.1
Average Annual Energy Consumption of Type 3 Refrigerators (kWh)
by Volume (ft.³) for Model Years 1990 to 1997

	Volume (ft.³)										
Model Year	4.5 to 6.4	6.5 to 8.4	8.5 to 10.4	10.5 to 12.4	12.5 to 14.4	14.5 to 16.4	16.5 to 18.4	18.5 to 20.4	20.5 to 22.4	22.5 to 24.5	24.5 to 26.4
1990	370		864	756	861	955	1 044	936	932		1 104
1991	370		864	733	916	915	999	845	857		1 104
1992	370		864	699	745	924	929	822	915		1 257
1993	370		864	593	599	700	730	714	813		982
1994	370		864	563	545	628	665	688	786		795
1995	370		864	559	540	626	662	677	708	777	866
1996	370			559	570	631	646	634	645	783	824
1997	370			562	567	632	666	635	690	671	798

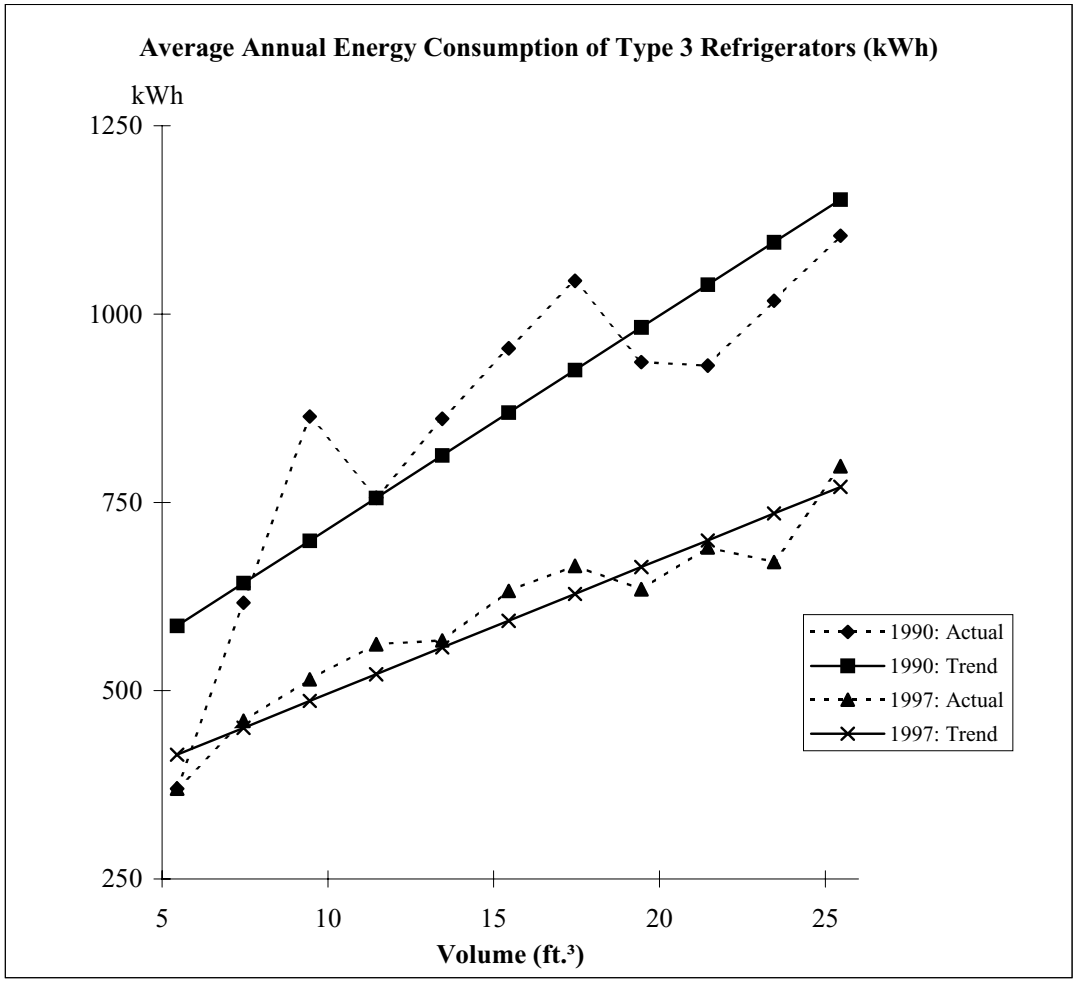
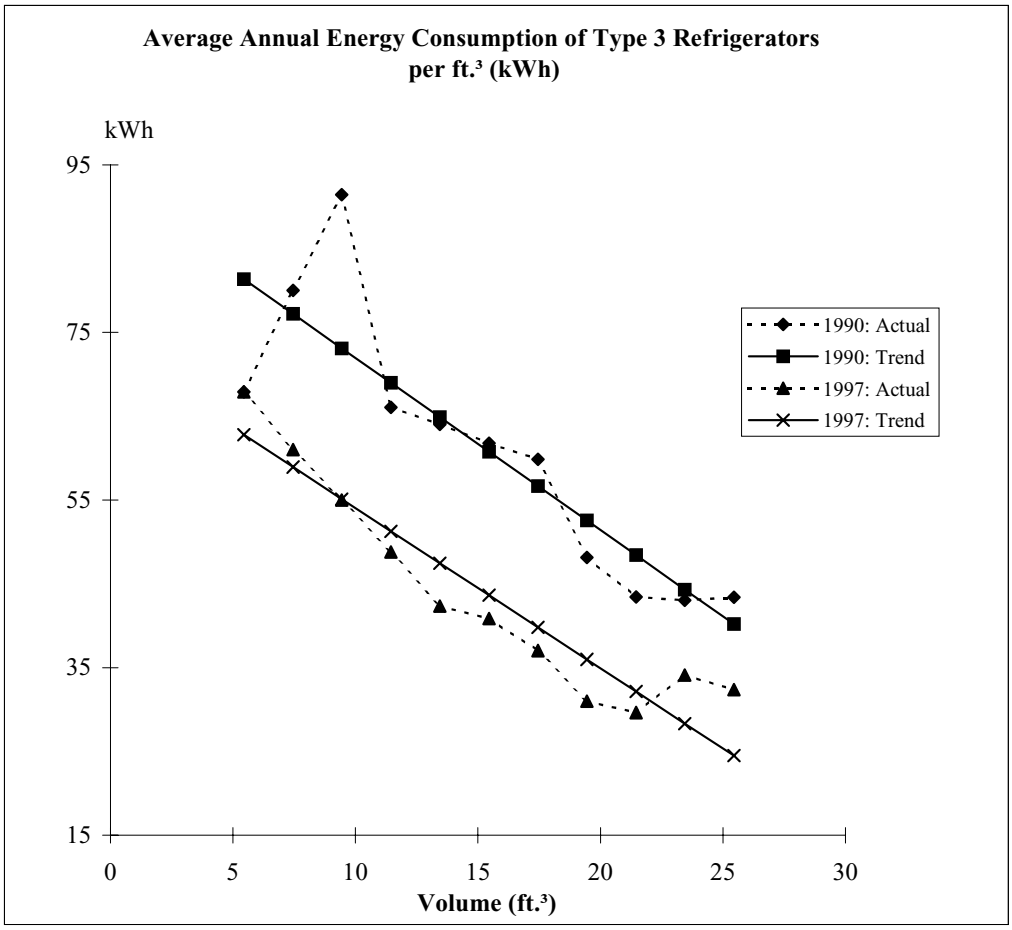


Figure 2.6.2
Average Annual Energy Consumption of Type 3 Refrigerators per ft.³ (kWh)
by Volume for Model Years 1990 to 1997

	Volume (ft.³)										
Model Year	4.5 to 6.4	6.5 to 8.4	8.5 to 10.4	10.5 to 12.4	12.5 to 14.4	14.5 to 16.4	16.5 to 18.4	18.5 to 20.4	20.5 to 22.4	22.5 to 24.5	24.5 to 26.4
1990	68		91	66	64	62	60	48	43		43
1991	68		91	64	68	59	57	43	40		43
1992	68		91	61	55	60	53	42	43		49
1993	68		91	52	45	45	42	37	38		39
1994	68		91	49	40	41	38	35	37		31
1995	68		91	49	40	41	38	35	33	33	34
1996	68			49	42	41	37	33	30	33	32
1997	68			49	42	41	38	33	32	29	31



3. Clothes Dryers

3.1 Distribution by Average Annual Energy Consumption

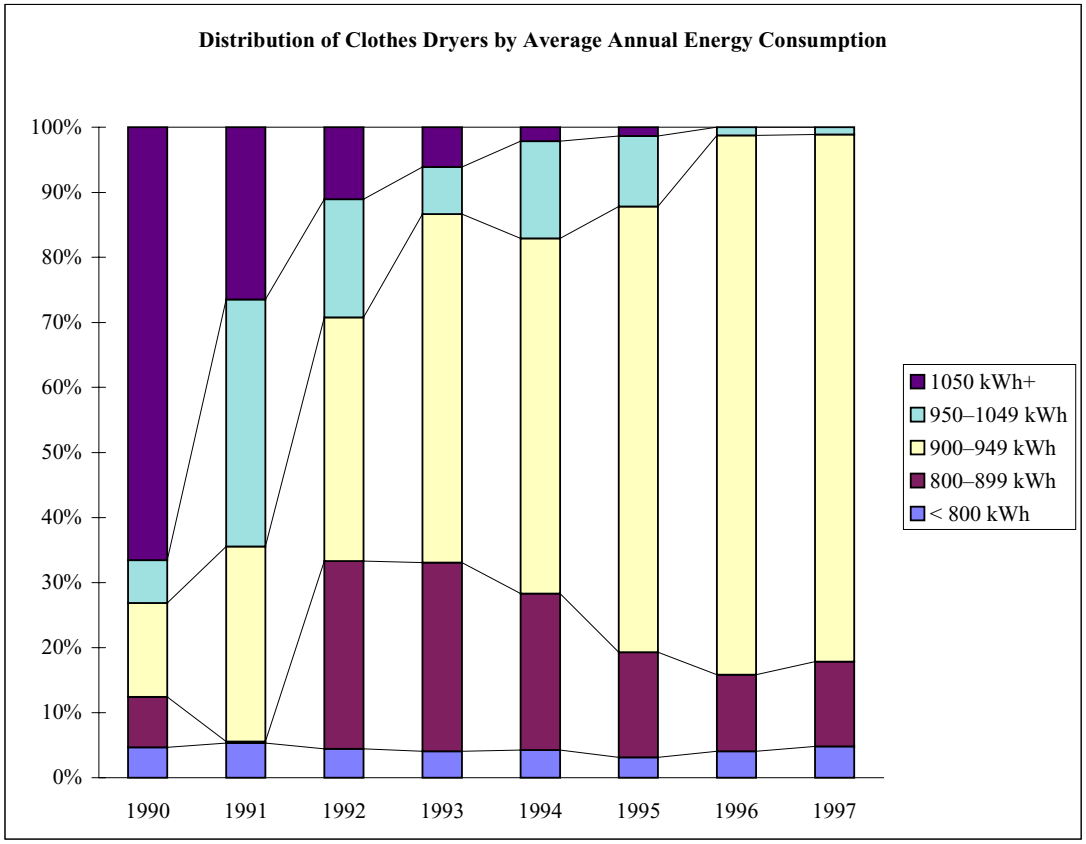
The energy efficiency of clothes dryers has increased significantly in recent years.

In 1997, almost all clothes dryers (98.9 percent) used less than 950 kWh annually. The corresponding proportion in 1990 was only 26.9 percent.

In 1997, 81.0 percent of clothes dryers used, on average, between 900 kWh and 949 kWh per year.

Figure 3.1
Distribution of Clothes Dryers by Average Annual Energy Consumption (kWh)
for Model Years 1990 to 1997

Model Year	Annual energy consumption (kWh)					Annual energy consumption (kWh)
	Less than 800 (%)	800 to 899 (%)	900 to 949 (%)	950 to 1 049 (%)	1050 and over (%)	
1990	4.7	7.8	14.4	6.6	66.5	1 103
1991	5.3	0.2	30.0	38.0	26.5	1 109
1992	4.4	28.9	37.5	18.2	11.0	983
1993	4.1	29.0	53.6	7.2	6.1	929
1994	4.3	24.1	54.6	14.9	2.2	911
1995	3.1	16.2	68.5	10.8	1.4	910
1996	4.1	11.8	82.9	1.3	0.0	888
1997	4.8	13.0	81.0	1.1	0.0	888



4. Clothes Washers

4.1 Distribution by Average Annual Energy Consumption

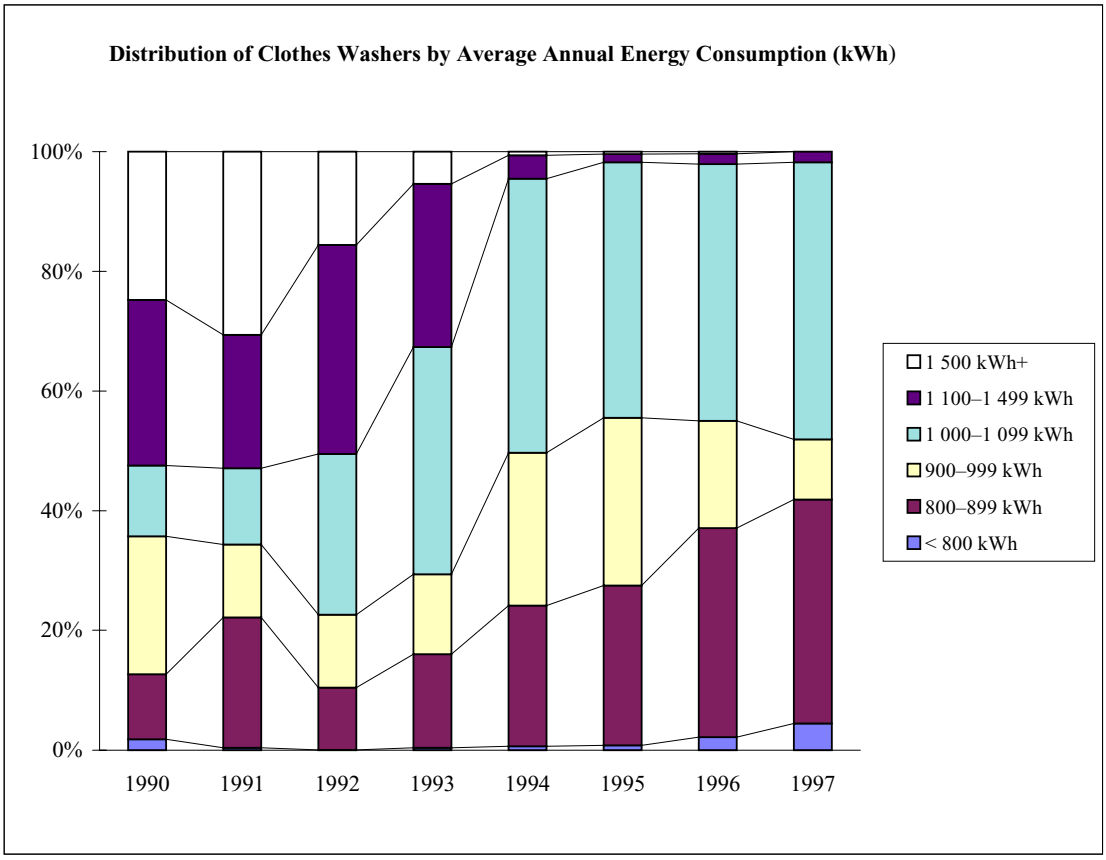
The energy efficiency of clothes washers has also improved significantly.

In 1990, approximately 50 percent of all clothes washers used less than 1 100 kWh annually. In 1997, 98.2 percent used less than this amount.

The average annual energy use for all clothes washers on the market in 1990 was 1 218 kWh. This average dropped by more than 23 percent in 1997, as average annual energy consumption decreased to 931 kWh.

Figure 4.1
Distribution of Clothes Washers by Average Annual Energy Consumption (kWh)
for Model Years 1990 to 1997

Model Year	Annual Energy Consumption (kWh)						Annual energy consumption (kWh)
	Less than 800 (%)	800 to 899 (%)	900 to 999 (%)	1 000 to 1 099 (%)	1 100 to 1 499 (%)	1 500 and over (%)	
1990	1.8	10.9	23.0	11.9	27.7	24.8	1 218
1991	0.4	21.8	12.2	12.8	22.3	30.6	1 197
1992	0.1	10.4	12.2	26.8	34.9	15.6	1 175
1993	0.4	15.6	13.4	38.0	27.2	5.4	1 094
1994	0.6	23.6	25.5	45.8	3.9	0.6	989
1995	0.8	26.7	28.0	42.7	1.4	0.4	966
1996	2.2	34.9	17.9	42.9	1.7	0.3	949
1997	4.5	37.4	10.0	46.3	1.8	0.0	931



5. Dishwashers

5.1 Distribution by Average Annual Energy Consumption

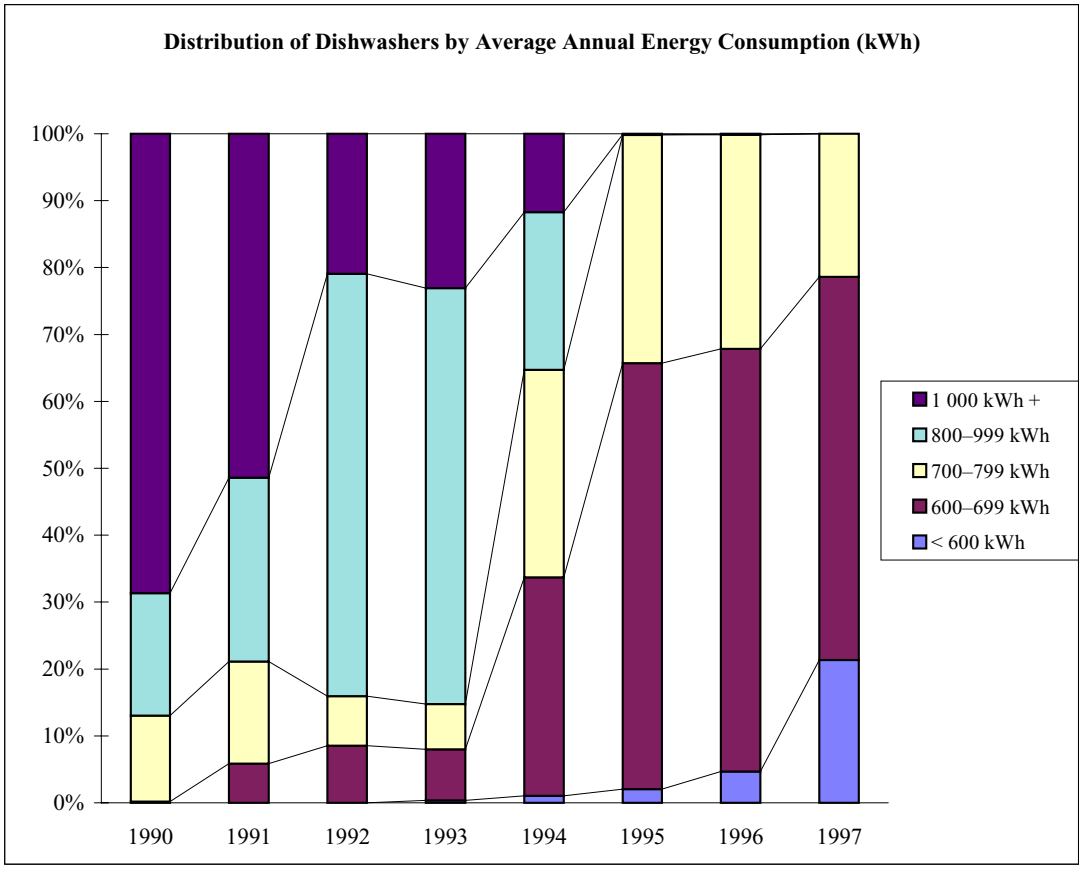
In 1997 almost all dishwashers on the market consumed less than 800 kWh of energy annually. Prior to 1994, only between 13 percent and 21 percent of dishwashers could boast this level of energy performance.

In 1990, more than two thirds of dishwashers (68.7 percent) used 1 000 kWh of energy or more per year, and almost none used less than 700 kWh. In 1997, three out of four (78.6 percent) used less than 700 kWh per year.

Average energy use of all dishwashers on the market has dropped by 37 percent from 1 026 kWh in 1990 to 650 kWh in 1997.

Figure 5.1
Distribution of Dishwashers by Average Annual Energy Consumption (kWh)
for Model Years 1990 to 1997

Model Year	Annual Energy Consumption (kWh)					Annual energy consumption (kWh)
	Less than 600 (%)	600 to 699 (%)	700 to 799 (%)	800 to 999 (%)	1 000 and over (%)	
1990	0.0	0.2	12.9	18.3	68.7	1 026
1991	0.0	5.8	15.3	27.5	51.4	959
1992	0.0	8.5	7.4	63.1	20.9	908
1993	0.4	7.6	6.8	62.2	23.1	914
1994	1.0	32.7	31.0	23.5	11.7	777
1995	2.1	63.6	34.1	0.1	0.1	671
1996	4.6	63.2	32.0	0.0	0.1	669
1997	21.3	57.3	21.4	0.0	0.0	650



6. Ranges

6.1 Distribution by Average Annual Energy Consumption

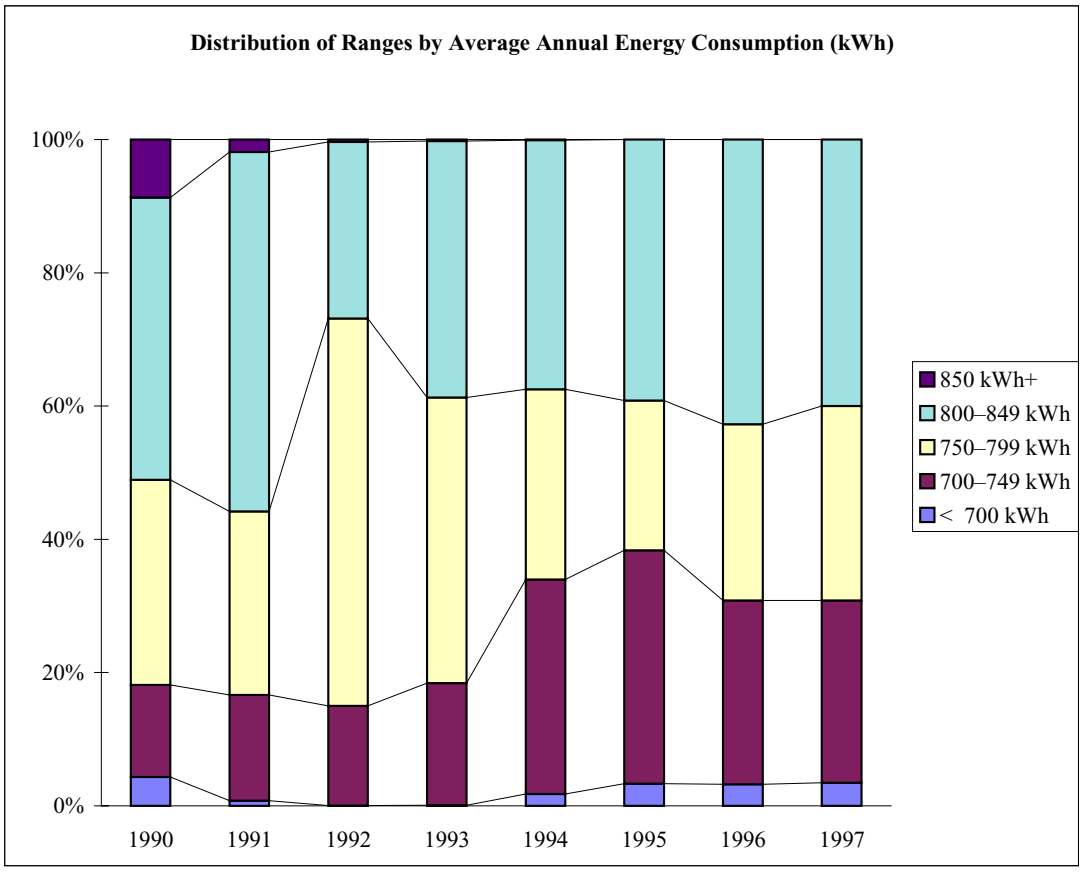
There has been no observable improvement in the energy efficiency of ranges between 1990 and 1997. The average energy use of ranges during this period was between 770 kWh and 780 kWh.

Since 1993 approximately two out of five ranges used between 800 kWh and 849 kWh per year.

Ranges with an average energy use greater than 850 kWh represented 8.7 percent of shipment volume in 1990, however, since 1995 they have virtually disappeared from the market.

Figure 6.1
Distribution of Ranges by Average Annual Energy Consumption (kWh)
for Model Years 1990 to 1997

Model year	Annual Energy Consumption (kWh)					Annual energy consumption (kWh)
	Less than 700 (%)	700 to 749 (%)	750 to 799 (%)	800 to 849 (%)	850 and over (%)	
1990	4.3	13.8	30.8	42.4	8.7	772
1991	0.8	15.9	27.6	54.0	1.8	778
1992	0.0	15.0	58.1	26.5	0.3	779
1993	0.1	18.4	42.8	38.5	0.2	782
1994	1.7	32.2	28.5	37.4	0.1	774
1995	3.3	35.0	22.5	39.2	0.0	771
1996	3.2	27.6	26.4	42.7	0.0	774
1997	3.4	27.4	29.2	40.0	0.0	773



Appendix A

Definition of Appliance Types

Refrigerators

Type 1:
Refrigerators and refrigerator-freezers with manual defrost.

Type 2:
Refrigerator-freezers with partial automatic defrost.

Type 3:
Refrigerator-freezers with automatic defrost, with top-mounted freezer, without through-the-door ice service, and all refrigerators without freezers but with automatic defrost.

Type 4:
Refrigerator-freezers with automatic defrost, with side-mounted freezer, without through-the-door ice service.

Type 5:
Refrigerator-freezers with automatic defrost, with bottom-mounted freezer, without through-the-door ice service.

Type 6:
Refrigerator-freezers with automatic defrost, with top-mounted freezer, with through-the-door ice service.

Type 7:
Refrigerator-freezers with automatic defrost, with side-mounted freezer, with through-the-door ice service.

Dishwashers

All dishwashers included in the study have a “Heat On/Heat” Off option.

The energy rating in kWh is based on 322 “normal cycle” operations per year and includes the energy required to heat the water.

Clothes Washers

The energy rating in kWh is based on 416 “normal cycle” operations per year and includes the energy required to heat the water.

Clothes Dryers

The energy rating in kWh is based on 416 operations per year.

Appendix B

List of Reports Published Under the National Energy Use Database (NEUD) Initiative

Office of Energy Efficiency

List of Reports
National Energy Use Database Initiative (NEUD)

These reports will be available on our new Web site at: http://oee.nrcan.gc.ca/dpa/ in April 2000.

- *1993 Survey of Household Energy Use – National Results;* Catalogue No. M92-85/1994E; ISBN 0-662-22793-X.
- *1993 Survey of Household Energy Use – Provincial Results*; Catalogue No. M92-96/1995; ISBN 0-662-61978-1.
- *Survey of Canadian New Household Equipment Purchases, 1994 & 1995 – Statistical Report*; Catalogue No. M92-133/1997; ISBN 0-662-62902-7.
- *The Household Equipment of Canadians – Features of the 1993 Stock & the 1994 & 1995 Purchases – Analysis Report;* Catalogue No. M92-131/1997; ISBN 0-662-62806 -3.
- *Survey of Houses Built in Canada in 1994 – Statistical Report;* Catalogue No. M92-136/1994; ISBN 0-662-62970-1.
- *Trends in Energy Characteristics of Homes in Canada – Analysis Report;* Catalogue No. M92-85/1-1997; ISBN 0-662-63165-X .
- *The 1994 Home Energy Retrofit Survey – Statistical Report*; Catalogue No. M92-135/1994; ISBN 0-662-62969-8.
- *The 1995 Home Energy Retrofit Survey – Statistical Report*; Catalogue No. M92-135/1995; ISBN 0-662-64000-4.
- *Energy Consumption of Major Household Appliances Shipped in Canada – Trends from 1990 to 1997*; Catalogue No. M92-176/1999; ISBN 0-662-64615-0.
- *National Private Vehicle Use Survey - October-December 1994, Statistical Report; Technical Paper prepared for the NEUD, Office of Energy Efficiency.*
- *Commercial Building Energy Use Survey – Pilot Study, Summary; Techincal Paper prepared for the NEUD, Office of Energy Efficiency.*
- *Total Energy Consumption of Homes Built in 1994; An Estimation Procedure; Technical Paper prepared for the NEUD, Office of Energy Efficiency.*

To obtain a copy of any of these reports, contact:

Energy Publications
c/o Canada Communication Group
Ottawa, Ontario K1A 0S9
Canada
Fax: (819) 994-1498
Toll-Free Telephone: 1-800-387-2000
In the National Capital Region: (613) 995-2943

When ordering, please use the catalogue number and ISBN associated with each title.

OEE

Office of Energy Efficiency
Office de l'efficacité énergétique

Leading Canadians to Energy Efficiency at Home, at Work and on the Road

The Office of Energy Efficiency of Natural Resources Canada is a dynamic organization with a mandate to renew, strengthen and expand Canada's commitment to energy efficiency in order to help address the challenges of climate change.