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**Philippines:  
Defining an Energy Strategy for the Household Sector**

*Results of a Joint Study by ESMAP and the  
Philippines Office of Energy Affairs*

**Volume II: Summary Tables from the Household Energy  
Consumption Survey**

**September 1992**

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## PHILIPPINE HOUSEHOLD ENERGY CONSUMPTION SURVEY

1. This annex provides an overview of current residential energy consumption patterns in the Philippines based on the 1989 Philippine Household Energy Consumption Survey (HECS). The survey forms, manuals, and a full set of summary tables are presented in Appendix 1. The HECS survey was commissioned as a joint undertaking of the National Statistics Office (NSO) and the Office of Energy Affairs (OEA). Data gathered through this survey serve as the basis for much of the analysis presented in this report.

### Sample Frame

2. The HECS sample included 5082 households, roughly half urban and half rural, comprising one panel of the NSO Integrated Survey of Households sample frame. As such, the HECS sample frame adopted NSO's two-stage cluster sampling design that treats urban and rural areas of each province as principal domains, draws barangays within each domain in the first stage, and households within each selected barangay in the second stage. On average, each urban household in the sample represents about 1600 actual urban households while each rural household surveyed represents approximately 2400 rural households. NSO provided exact weights (raising factors) for each sample barangay to reflect 1989 demographics as projected from 1980 census figures. The study team revised these weights in light of the more accurate distribution of urban and rural households contained in preliminary figures from the 1990 census that were made available during the main mission. All summary tables and data used in the analysis have been weighted to reflect the number and distribution of households in 1990 and have been discounted to 1989 by 2% to allow for growth in household formation.

### Survey Instrument and Survey Execution

3. The HECS questionnaire was designed in two parts. The main section, enumerated to the household head or other family member chiefly responsible for fuel purchasing and use, collected information on choice of fuel, source of fuel, mode of acquisition, stove and appliance ownership, and fuel consumption for different end uses. A supplementary survey form was filled out at the barangay level to determine access, availability, and prices of fuels in the market. The field survey team was composed of NSO field personnel, namely: Regional and Provincial Census Officers, Statisticians who supervised survey teams, and Census Field Workers who were principally responsible for collecting data from the respondent households.

4. The enumerators were instructed to validate reported household consumption by referring to electricity bills, directly measuring the weight of woodfuels the household reported using daily, and verifying the size and nameplate wattages of major appliances. Separate manuals of instructions were developed for enumerators and data processing staff to guide field data collection and data entry of completed questionnaires. The survey questionnaire and these manuals are included in Appendix 1.

## Data Validation

5. To ensure that the data set was suitable for statistical analysis, it was first subjected to a number of data validation procedures that were designed to identify inconsistencies, keypunching errors, miscoded entries, and otherwise unreasonable responses. This was followed by a set of screens through which households that had missing, incomplete or inconsistent data for key variables were eliminated from the analysis. A household was omitted from the analysis if they: 1) said they used a fuel but reported no quantity figures; 2) did not cook; 3) did not light; or 4) did not report income.

6. Out of the 5082 households in the original sample, 610 households (about 12% of the sample) were excluded from the analysis as a result of this cleaning procedure. Raising factors were revised to compensate for households excluded from the original sample. The distribution of the 4472 sample households used in the analysis along with the 11 million households they represent are shown in Table A1.1. Appendix 1 contains a detailed regional breakdown of the original sample, the cleaned sample, and the raising factors used to weight the cleaned sample to represent the 1989 national distribution of households.

## Modification of HECS Demand Estimates to Fit Known Supply Figures

7. After the data was cleaned and weighted to represent the 1989 household distribution, national fuel consumption estimates were compared to known supply figures as a check on consistency of the HECS results. In addition, per capita woodfuel use by households that use fuelwood or charcoal as a primary cooking fuel were checked for consistency by comparing HECS estimates with similar estimates from other asian countries with moist tropical climates.

### *Electrification Rates and Total Residential Electricity Sales*

8. As of 1987, 5.29 million households nationwide were connected to electricity mains. An estimated breakdown of rural and urban electrified households is shown in Table A3.1. According to OEA's Medium Term Energy Plan, MERALCO planned to connect an additional 155,000 households in 1988 and 1989 and NEA cooperatives had targeted 175,000 new household connections, thereby bringing estimated total 1989 connections to 5.63 million. HECS data indicate that 6.5 million households were formally electrified in 1989, roughly 870,000 or 15% more than were projected. This indicates that within the average sample barangay, the HECS sample may have selected a higher share of electrified households than actual barangay electrification rates. Moreover, HECS results show that about 10% of urban households and 5% of rural households actually use electricity without a direct grid connection, purchasing electricity instead from neighbors. Another possible explanation for the apparent oversampling of electrified households is that a substantial share of HECS households that reported direct connections may actually be informally connected. Since urban dwellings tend to be clustered in more dense configurations than rural households, urban households may have more opportunity for informal connections. Under this interpretation, the apparent dramatic rise in formally electrified urban households between 1987 and 1989 (Table A3.1) could be seen as an illusion.

9. If electrified households were not oversampled, the HECS estimate of total residential electricity use should be consistent with residential sector electricity sales data for 1989. A sectoral breakdown of 1989 electricity sales is shown in Table A3.2. Total residential sales of 6,845 GWh are estimated from all HECS households that use electricity, regardless of connection status. Sectoral breakdowns were not available for REA co-ops and private utilities. Sectoral sales for co-ops and private utilities in Table A3.2 follow from the observation that they serve mainly households. As such, it appears that the HECS estimate of total residential electricity use is broadly consistent with residential electricity sales data. The disagreement between official electrification rates and those derived from the HECS sample may largely be due to informal connections.

#### *Petroleum Products Supply and Per Capita Woodfuels Use*

10. Kerosene is mainly a household fuel used for cooking and lighting. It is commonly resold to consumers by peddlers and sara-sari shops in second-hand bottles and cans. After enumerators asked households how often these purchases were made and in what kinds of bottles, the local units were converted into volumetric equivalents that were recorded and entered into the data set. On the basis of this data, the HECS estimate of total kerosene use in households for 1989 was well above national kerosene supply figures. This overestimate was attributed to measurement error arising from the non-standard units in which most kerosene is sold. Consequently, the HECS estimate of kerosene use in each household was reduced by a uniform factor of 0.69 to bring estimates of total demand in line with total supply.

11. LPG is used mainly as a cooking fuel in the residential and commercial sectors. Since HECS estimates of LPG use in each household were derived from reported purchases of LPG which is sold in well-defined units, measurement error is far less than in the case of kerosene. Consequently, HECS estimates of LPG use in each household were not adjusted. Total residential LPG use according to HECS results were below national sales figures for 1989, the remainder being consumed in the commercial sector and industrial sectors.

12. The HECS survey reported unusually low levels of per capita biofuel consumption by households relying on fuelwood as their primary cooking fuel. A summary of detailed studies of biofuel use by rural households in other Asian countries with moist tropical climates shows average annual biofuel use of 0.3 - 0.9 m<sup>3</sup> of wood equivalent in agricultural regions, 0.9 - 1.35 m<sup>3</sup> of wood equivalent in zones with shifting agriculture, and 1.25 - 1.8 m<sup>3</sup> of wood equivalent in mountain regions.<sup>1</sup> HECS data showed that rural households cooking with fuelwood in the Philippines consumed, on average, only 0.35 m<sup>3</sup> of wood equivalent per capita in 1989. An attempt was made to validate these low reported usage rates during a follow-up mission in March/April 1991. Spot surveys and measurements of daily fuelwood use were administered to rural households in four regions. Daily fuelwood usage rates in these households were roughly double those reported by HECS and were well within the ranges reported above for rural households in agricultural and shifting agricultural zones. Again, the chief causes for this discrepancy were probably measurement error and difficulties converting weekly usage volumes into kg equivalents. Enumerators asked households to estimate their weekly fuelwood consumption when estimates of daily use or estimates of amounts purchased and collected may have yielded more accurate figures. After reviewing regional HECS

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<sup>1</sup> ESMAP, 1988, Household Energy Handbook, Table 2, page 8.

estimates of per capita biofuels usage in urban and rural households, estimates of biofuels use in each household were increased by the factors shown in Table A1.1 to bring per capita usage rates more in line with spot survey results.

**Table A1.1. Fuel Use Adjustment Factors for Philippines Household Energy Consumption Survey**

	<i>Electricity</i>	<i>LPG</i>	<i>Kerosene</i>	<i>Charcoal (I)</i>	<i>Fuelwood</i>	<i>Crop Residues</i>
Urban	1	1	0.69	2.5	1.8	1.4
Rural	1	1	0.69	2.0	2.0	1.8

(1) Charcoal use by rural households was doubled, except in regions I, III, and VII. Charcoal adjustment factors for rural households in these regions were 1.3 (I), 2.4 (III), and 6.4 (VII).

13. Household fuel use data from the cleaned HECS data set were adjusted by the factors presented in Table A1.1. Resulting estimates are consistent with aggregate supply data for 1989 and with per capita woodfuels usage rates as determined by follow-up field studies. These revised HECS results form the basis of all usage figures in this report. An overview of some of the more important results is presented in the tables below. A full set of summary tables, including breakdowns by region and income groups are presented in the Appendix 1.

### Summary of Survey Results: HECS, 1989 (revised)

**Table A1.2. HECS Sample and 1989 Demographics**

	<i>Original Sample Households</i>	<i>Revised Sample Households</i>	<i>Estimated Total Households</i>	<i>Household Income (Pesos/mo)</i>	<i>Household Size</i>	<i>Estimated Population ('000s)</i>	<i>Population Percent</i>
NCR	776	682	1,538,660	5,451	5.42	8,340	13.8%
Other Urban	1,730	1,588	2,797,974	5,796	5.48	15,333	25.3%
Rural	2,576	2,202	6,846,776	3,200	5.39	36,904	60.9%
Philippines	5,081	4,472	11,183,410	4,159	5.42	60,577	100.0%

Note: Total households and population estimates are from 1990 Census (preliminary) discounted by 2%.

**Table A1.3. Percent of Households Using Each Fuel**

	<i>Electricity</i>	<i>LPG</i>	<i>Kerosene</i>	<i>Charcoal</i>	<i>Fuelwood</i>	<i>Crop Residues</i>
NCR	98.5	59.4	36.7	23.4	7.5	1.3
Other Urban	83.3	32.8	68.0	42.8	54.0	26.1
All Urban	88.7	42.2	56.9	35.9	37.5	17.5
Rural	49.5	9.0	85.7	29.6	85.9	64.7
Philippines	64.7	21.9	74.5	32.1	67.1	46.4

**Table A1.4. Total Annual Residential Fuel Consumption**

	<i>Electricity</i> (GWh)	<i>LPG</i> (‘000 Tons)	<i>Kerosene</i> (‘000 m3)	<i>Charcoal</i> (‘000 Tons)	<i>Fuelwood</i> (‘000 Tons)	<i>Crop Residues</i> (‘000 Tons)
NCR	2,867.36	133.42	83.11	120.93	131.61	18.70
Other Urban	2,185.21	109.78	131.87	716.33	3,126.82	414.05
All Urban	5,052.57	243.20	214.98	837.26	3,258.43	432.75
Rural	1,792.53	77.93	281.20	727.67	15,058.47	2,137.70
Philippines	6,845.10	321.13	496.19	1,564.93	18,316.90	2,570.45

**Table A1.5. Percent of Households Using Each Fuel as a Primary Cooking Fuel**

	<i>Electricity</i>	<i>LPG</i>	<i>Kerosene</i>	<i>Charcoal</i>	<i>Fuelwood</i>	<i>Crop Residues</i>
NCR	7.9	55.4	29.3	3.8	3.5	0.1
Other Urban	2.4	29.0	14.2	10.4	40.4	3.5
All Urban	4.4	38.4	19.6	8.1	27.3	2.3
Rural	1.0	7.4	3.8	4.0	77.9	6.0
Philippines	2.3	19.4	9.9	5.6	58.3	4.6

**Table A1.6. Share of Utilized Cooking Energy Provided by Each Fuel (percent)**

	<i>Electricity</i>	<i>LPG</i>	<i>Kerosene</i>	<i>Charcoal</i>	<i>Fuelwood</i>	<i>Crop Residues</i>	<i>Total</i>
<i>Energy Content</i>	3.6 MJ/kWh	45.2 MJ/kg	34.1 MJ/l	30 MJ/kg	16 MJ/kg	14.5 MJ/kg	
<i>Stove Efficiency</i>	70%	55%	40%	20%	15%	15%	
NCR	7.8	52.6	27.2	7.9	4.2	0.3	100%
Other Urban	1.9	24.7	12.0	13.8	42.3	5.4	100%
All Urban	4.0	34.6	17.4	11.7	28.8	3.6	100%
Rural	0.7	5.8	2.9	5.1	75.8	9.6	100%
Philippines	2.0	17.0	8.5	7.7	57.6	7.3	100%

**Table A1.7. Average Purchase Prices for Households Purchasing Each Fuel**

	<i>NCR</i>	<i>Other Urban</i>	<i>All Urban</i>	<i>Rural</i>	<i>Philippines</i>
<b>Electricity (Pesos/kWh)</b>					
Median	1.20	1.70	1.36	1.91	1.65
Mean	1.24	1.65	1.49	1.85	1.66
Standard Deviation	0.38	0.56	0.54	0.57	0.58
<b>LPG (Pesos/kg)</b>					
Median	6.82	7.45	7.00	7.73	7.09
Mean	6.87	7.62	7.24	7.66	7.35
Standard Deviation	0.54	0.92	0.84	1.05	0.92
<b>Kerosene (Pesos/liter)</b>					
Median	5.00	5.00	5.00	5.00	5.00
Mean	5.49	5.68	5.64	6.00	5.89
Standard Deviation	1.80	1.90	1.88	2.07	2.02
<b>Charcoal (Pesos/kg)</b>					
Median	3.75	3.50	3.60	3.33	3.50
Mean	4.24	4.14	4.16	4.31	4.23
Standard Deviation	2.53	2.78	2.72	3.08	2.88
<b>Fuelwood (Pesos/kg)</b>					
Median	4.20	1.30	1.33	1.00	1.20
Mean	4.33	2.13	2.23	1.56	1.85
Standard Deviation	2.61	2.01	2.09	1.46	1.80

Note: Of HECS sample households using fuelwood, only 65% in urban areas outside of the National Capital Region and 20% in rural areas purchased their fuelwood.

**Table A1.6. Total Annual Residential Fuels Use by Source ('000 Tons)**

	<i>NCR</i>	<i>Other Urban</i>	<i>Rural</i>	<i>Total</i>
<b>Charcoal</b>				
Home-Produced	2	30	317	349
Purchased	119	686	410	1,216
All Sources	121	716	728	1,565
<b>Fuelwood</b>				
Collected	65	1,463	12,788	14,316
Purchased	66	1,663	2,271	4,001
All Sources	132	3,127	15,058	18,317
<b>Crop Residues</b>				
Collected	15	317	1,999	2,330
Purchased	4	97	139	240
All Sources	19	414	2,138	2,570

**Table A1.9. Electrification Rates  
and Percent of Households Using Kerosene or Charcoal by Major End-Use**

	<i>NCR</i>	<i>Other Urban</i>	<i>Rural</i>	<i>Philippines</i>
<b>Electricity Source:</b>				
Distribution Co./Utility	83.9	76.0	45.1	58.2
All sources	98.5	83.3	49.5	64.7
Electric Ironing	78.5	45.7	19.4	34.1
<b>Use Kerosene for:</b>				
Cooking	34.1	20.3	6.6	13.8
Lighting	5.4	51.2	81.2	63.3
Fire Starting	2.6	20.7	32.6	25.5
<b>Use Charcoal for:</b>				
Cooking	23.1	27.9	10.5	16.6
Ironing	0.6	22.7	23.1	19.9

**Table A1.10. Residential Electricity Consumption by End-Use  
(percent of total residential consumption in each area)**

	<i>NCR</i>	<i>Other Urban</i>	<i>Rural</i>	<i>Philippines</i>
Lighting	19.8	28.0	42.5	28.4
Refrigeration	27.4	29.0	23.8	27.0
Ironing	14.8	12.4	9.0	12.5
Fan	12.8	8.9	4.8	9.5
Television	7.3	7.6	6.3	7.1
Cooking	7.0	4.6	3.9	5.5
Air-conditioning	7.3	2.2	0.5	3.9
Water pumping	0.2	1.8	0.7	0.8
Washing machine	0.1	0.1	0.1	0.1
Other	3.2	5.4	8.4	5.2
All uses	100.0	100.0	100.0	100.0
<b>GWh/year</b>	<b>2,867</b>	<b>2,185</b>	<b>1,793</b>	<b>6,845</b>
<b>kWh/Household/mo (1)</b>	<b>158</b>	<b>78</b>	<b>44</b>	<b>79</b>

Note: (1) Mean monthly electricity consumption for households using electricity.



**Table A1.11. Residential Kerosene and Charcoal Consumption by Major End-Use  
(percent of total residential consumption in each area)**

	<i>NCR</i>	<i>Other Urban</i>	<i>Rural</i>	<i>Philippines</i>
<b>Kerosene</b>				
Cooking	93.4	46.4	11.4	34.5
Lighting	3.2	35.6	68.7	48.9
Fire starting	0.4	13.7	18.4	14.2
Other	3.0	4.2	1.4	2.4
All uses	100.0	100.0	100.0	100.0
<b>Charcoal</b>				
Cooking	93.5	79.8	70.9	76.7
Ironing	1.1	16.9	26.4	20.1
Other	5.4	3.3	2.7	3.2
All uses	100.0	100.0	100.0	100.0

**Table A1.12. Annual Residential Fuel Consumption by Region, Urban and Rural Areas**

	<i>Electricity</i> (GWh)	<i>LPG</i> (‘000 Tons)	<i>Kerosene</i> (‘000 m <sup>3</sup> )	<i>Charcoal</i> (‘000 Tons)	<i>Fuelwood</i> (‘000 Tons)	<i>Crop Residues</i> (‘000 Tons)
<b>Urban</b>						
NCR	2,867.36	133.42	83.11	120.93	131.61	18.70
I	59.36	4.07	7.26	18.76	308.61	22.27
II	42.92	3.75	1.07	8.02	114.02	18.16
III	496.94	34.88	15.67	88.37	203.84	24.65
IV	692.26	29.50	31.42	189.17	389.88	33.66
V	76.11	4.92	4.55	67.30	271.84	14.29
VI	142.70	7.04	13.39	165.41	385.98	137.87
VII	128.52	5.90	11.61	52.68	330.03	23.89
VIII	54.02	3.47	8.91	24.69	216.51	68.98
IX	45.31	1.13	4.64	12.04	127.01	13.88
X	116.79	1.98	10.46	17.79	221.05	36.14
XI	260.36	6.64	18.30	57.23	365.49	34.96
XII	49.65	1.32	3.04	12.04	142.33	19.92
CAR	20.27	5.18	1.55	2.82	50.34	2.34
All	5,052.57	243.20	214.98	837.26	3,258.43	432.75
<b>Rural</b>						
I	125.07	7.88	14.14	41.75	1,467.86	58.59
II	148.17	9.42	10.98	15.69	992.04	38.07
III	270.12	17.98	27.31	83.19	1,178.59	128.41
IV	318.11	16.69	35.01	276.85	2,073.03	130.29
V	75.44	3.06	25.92	76.96	1,122.29	121.74
VI	78.61	1.16	32.14	83.80	1,830.05	483.62
VII	83.11	1.02	16.64	32.97	1,221.45	41.25
VIII	34.06	0.77	23.31	25.46	868.26	199.14
IX	86.40	5.48	25.09	48.05	692.26	233.30
X	189.85	3.39	20.29	9.41	1,335.67	157.68
XI	175.82	1.03	23.86	12.61	1,050.08	317.89
XII	222.08	4.04	21.30	9.42	808.99	154.83
CAR	25.68	6.02	5.23	11.53	417.90	72.87
All	1,792.53	77.94	281.20	727.67	15,058.47	2,137.70
<b>Philippines</b>	<b>6,845.10</b>	<b>321.13</b>	<b>496.19</b>	<b>1,564.93</b>	<b>18,316.90</b>	<b>2,570.45</b>

## PHILIPPINES RESIDENTIAL FUEL USE PROJECTIONS

Table A2.1. The Philippines: 1989 - 2000 Demographic Projections

Area	HH Size <sup>(1)</sup>	1989 <sup>(2)</sup>	1995	2000
<b>Urban</b>				
NCR	P	8,339,537	9,614,832	10,615,551
	5.42 HH	1,538,660	1,773,954	1,958,589
	G		2.4%	2.0%
Non-NCR	P	15,332,898	19,401,007	23,832,130
	5.48 HH	2,797,974	3,540,330	4,348,929
	G		4.0%	4.2%
All Urban	P	23,672,435	29,015,839	34,447,681
	5.46 HH	4,336,634	5,314,284	6,307,518
	G		3.4%	3.5%
<b>Rural</b>				
	P	36,904,123	39,877,834	42,328,621
	5.39 HH	6,846,776	7,398,485	7,853,176
	G		1.3%	1.2%
<b>Philippines</b>				
	P	60,576,557	68,893,672	76,776,302
	5.42 HH	11,183,410	12,712,769	14,160,694
	G		2.2%	2.2%

Notes: (1) P = population; H/h = Households; G = growth rate.

(2) 1989 estimates are revised HECS figures.

Assumptions: Projections assume constant mean household size 1989-2000.  
Urban growth rates extend current urbanization rates through 2000.

Source: Mission estimates.

**Table A2.2. The Philippines: Electrification and Fuel Penetration Projections  
(% of Households)**

	1989	1995	2000
<b>NCR</b>			
<b>Electrification:</b>			
Electric Utility	83.9%	87.4%	90.4%
All Electricity Sources	98.5%	98.5%	98.5%
Kerosene Lighting	5.4%	5.1%	4.9%
Charcoal Ironing	0.6%	0.6%	0.6%
<b>Cooking Fuel:</b>			
Electricity	21.3%	22.2%	23.0%
LPG	59.3%	64.4%	69.1%
Kerosene	34.1%	31.4%	29.0%
Charcoal	23.1%	21.3%	19.6%
Fuelwood	7.5%	6.9%	6.4%
Crop Residues	0.3%	0.5%	0.4%
<b>Other Urban</b>			
<b>Electrification:</b>			
Electric Utility	76.0%	79.0%	81.0%
All Electricity Sources	83.3%	85.8%	87.5%
Kerosene Lighting	51.2%	48.3%	46.3%
Charcoal Ironing	22.7%	21.3%	20.3%
<b>Cooking Fuel:</b>			
Electricity	7.4%	7.7%	7.9%
LPG	32.8%	42.2%	52.0%
Kerosene	20.3%	18.6%	16.8%
Charcoal	28.0%	25.7%	23.2%
Fuelwood	54.0%	49.5%	44.7%
Crop Residues	9.8%	9.0%	8.1%
<b>Rural</b>			
<b>Electrification:</b>			
Electric Utility	45.1%	51.5%	53.3%
All Electricity Sources	49.5%	55.9%	57.6%
Kerosene Lighting	81.2%	69.8%	66.3%
Charcoal Ironing	23.1%	19.9%	18.9%
<b>Cooking Fuel:</b>			
Electricity	2.4%	2.7%	2.8%
LPG	8.9%	12.6%	16.7%
Kerosene	6.6%	6.4%	6.2%
Charcoal	10.5%	10.2%	9.8%
Fuelwood	85.9%	79.9%	80.5%
Crop Residues	22.4%	21.7%	21.0%

**Table A2.3. The Philippines: Residential Fuel Consumption Projections**

	1989 Thousands	1995 Thousands	2000 Thousands	% Increase 1989 - 2000
<b>NCR</b>				
Electricity (MWh)	2,867.36	3,655.71	4,416.31	54
LPG (Tons)	133.42	167.17	197.81	48
Kerosene (m3)	83.11	88.54	90.61	9
Charcoal (Tons)	120.93	129.04	132.18	9
Fuelwood (Tons)	131.61	139.77	142.43	8
Crop Residues (Tons)	18.70	19.86	20.24	8
<b>Other urban</b>				
Electricity (MWh)	2,185.21	2,977.80	3,875.03	77
LPG (Tons)	109.78	178.64	270.63	147
Kerosene (m3)	131.87	156.90	181.55	38
Charcoal (Tons)	716.33	836.58	941.67	31
Fuelwood (Tons)	3,126.82	3,625.86	4,028.16	29
Crop Residues (Tons)	414.05	480.13	533.40	29
<b>All urban</b>				
Elect (MWh)	5,052.57	6,633.50	8,291.33	63
LPG (Tons)	243.20	345.81	468.45	93
Kerosene (m3)	214.98	245.44	272.16	26
Char (Tons)	837.26	965.62	1,073.85	28
Wood (Tons)	3,258.43	3,765.62	4,170.59	28
Crop R (Tons)	432.75	499.99	553.64	28
<b>Rural</b>				
Electricity (MWh)	1,792.53	2,265.60	2,532.70	41
LPG (Tons)	77.93	118.87	168.17	116
Kerosene (m3)	281.20	271.94	277.90	-1
Charcoal (Tons)	727.67	741.12	757.66	4
Fuelwood (Tons)	15,058.47	15,796.22	16,190.79	8
Crop Residues (Tons)	2,137.70	2,242.43	2,298.44	3
<b>Philippines</b>				
Electricity (MWh)	6,845.10	8,899.10	10,824.03	58
LPG (Tons)	321.13	464.68	636.62	98
Kerosene (m3)	496.18	517.38	550.05	11
Charcoal (Tons)	1,564.93	1,706.74	1,831.51	47
Fuelwood (Tons)	18,316.90	19,561.84	20,361.38	11
Crop Residues (Tons)	2,570.44	2,742.41	2,852.08	11

Projections were made separately for households in each major area. Income elasticities of fuel choice were derived for each end use from HECS 1989. These elasticities were used to project fuel choice for each end use assuming annual real income growth of 1.8% for all households. The pure income effect on LPG adoption was increased to extend current adoption trends throughout the projection period. Electrification rates (including informal connections) were projected separately. The mean fuel use of households using each fuel for each end use from HECS 1989 were then applied to these projected adoption rates and household growth in each major area to obtain the total fuel use estimates reported in this table.

## RESIDENTIAL ELECTRICITY STATISTICS

Table A3.1: Electrification Estimates

	<i>Urban</i>	<i>Rural</i>	<i>Total</i>
<b>1987 Official Figures</b>			
Potential Connections ('000)	3,923	5,812	9,735
Actual Connections ('000)	2,434	2,857	5,291
Percent Electrified	62%	49%	54%
<b>1989 HECS Estimates</b>			
Households ('000)	4,336	6,847	11,183
Formally Connected ('000)	3,416	3,088	6,504
Percent Formally Electrified ('000)	79%	45%	58%
Percent Using Electricity	89%	50%	65%

Note: 1987 estimates are from OEA, 1989. Potential connections do not include all households. Urban figures are for Meralco and 15 private utilities while rural figures are for NEA coops. HECS percentages include all households and are classified urban or rural by NSO. More households use electricity than are actually formally electrified since some households obtain electricity from neighbors, nearby industrial plants, or commercial enterprises.

Table A3.2: 1989 Sectoral Electricity Sales (GWh)

	<i>Residential</i>	<i>Commercial</i>	<i>Industrial</i>	<i>Other</i>	<i>Total</i>
NPC			4,025		4,025
Meralco	3,415	3,659	3,890	117	11,081
Rural Electric Cooperatives	2,000	550	50	38	2,638
Private Utilities	1,430	225	250	19	1,924
Self-Generating Industries			983		983
<b>Total</b>	<b>6,845</b>	<b>4,434</b>	<b>9,198</b>	<b>174</b>	<b>20,651</b>
<b>Sector %</b>	<b>33.1%</b>	<b>21.5%</b>	<b>44.5%</b>	<b>0.8%</b>	<b>100%</b>

*Source:* Total sales and sectoral sales for Meralco are from OEA staff. Sectoral breakdowns for rural cooperatives and private utilities are mission estimates. It is assumed that 75% of co-op and private utility sales are to households.

Table A3.3. Characteristics of Refrigerators in the Philippines and Other Countries

	Size (ft <sup>3</sup> )	Power (Watts)	Electricity Consumption (kWh/mo) (1)		Price (Pesos)
			Technical	Manufacturer	
<b>SANYO</b>					
SR145SF, Single Door	5.0	60	22		Semi-Auto Defrost
SR703D, Single Door	6.0	75	27		Semi-Auto Defrost
SR803D, Single Door	7.0	100	36		Semi-Auto Defrost
<b>NATIONAL</b>					
NR659DJ, Double Door	6.5	105	38	76	Quick Defrost
NR759DJ, Double Door	7.5	120	43	88	7,835 Quick Defrost
NR509J, Single Door	4.9	70	25	56	6,075 Auto Defrost
NR609J, Single Door	6.0	85	31		6,625 Auto Defrost
NR709J, Single Door	7.1	120	43	66	Auto Defrost
NR-D30AHS, 4 Dr. Import	10.6	160	58	57	
<b>KELVINATOR</b>					
Two Door	7.5	156	56		8,600 Semi-Auto Defrost
One Door	7.5	97	35		6,150 Manual
Two Door	10.0	156	71		11,750 Auto Defrost
<b>WESTINGHOUSE</b>	19.0		104		34,945
<b>BRAZIL (2)</b>					
Manual Defrost	7.5 - 9.3		34		Average
Single Door	9.3-11.1		36		Average
<b>SOUTH KOREA (3)</b>					
Manual Defrost	7.4		20		
<b>BEST AVAILABLE U.S. (4)</b>					
Kenmore	11.0		30		Single dr, man. def
Kenmore	13.7		61		Semi-Auto Defrost
Frigidaire	16.0		64		Auto Defrost

- (1) Technical estimates based on technology, insulation and operating conditions in the Philippines provided by Jayant Sathaye, Lawrence Berkeley Laboratory. Manufacturer's estimates are from published materials.
- (2) Test data published by CEPEL, Rio de Janeiro reported by Howard Geller in *Electricity Conservation in Brazil: Status Report* (prepared for U.S. EPA), August, 1990.
- (3) Test data published by KEMCO for several Korean manufacturers.
- (4) ACEEE, *The Most Energy Efficient Appliances*, 1989-90 Edition.

**Table A3.4. Characteristics of Air Conditioners in the Philippines and Other Countries**

	<i>Cooling Capacity (BTU/hr)</i>	<i>Input Power (Watts)</i>	<i>Energy Efficiency Ratio</i>
<b>CARRIER</b>			
WC-120	12,000	1,530	7.8
WC-150	15,000	1,590	9.4
<b>CLINETTE</b>			
SK115	11,500	1,355	8.5
SK135	13,500	1,500	9.0
SK166	16,600	2,250	7.4
<b>ALEN ENGINEERING</b>			
AS-1SF	12,000	2,070	5.8
AS-1.5SF	18,000	2,480	7.3
AS-2SF	24,000	3,220	7.5
AS-3SF	36,000	4,930	7.3
<b>SANSIO</b>			
AWE209BK	8,000	866	9.2
AWE329BK	12,600	1,400	9.0
AWE459BK	18,000	2,045	8.8
AWE639BK	25,200	2,970	8.5
<b>CONDURA SPLIT UNITS</b>			
SWM 155	15,500	1,525	10.2
SWM 235	23,500	2,750	8.5
<b>NATIONAL</b>			
CW900FPH	9,000	1,060	8.5
CW 1200FPH	12,000	1,410	8.5
CW 1801VPH	18,000	2,250	8.0
<b>KOREA (1)</b>			
Small	4,800	530 - 550	8.7 - 9.0
Medium	6,100	620 - 640	9.9 - 9.9
Large	7,600	895	8.5
<b>BEST AVAILABLE U.S. (2)</b>			
X-small	5,900 - 6,500		9.5 - 9.8
Small	7,200 - 8,200		9.6 - 11.0
Medium	9,000 - 10,300		11.6 - 12.0
Large	11,400 - 12,500		9.5 - 10.0
X-Large	13,500 - 14,000		10.0 - 10.5
XX-Large	15,000 - 16,400		9.0 - 9.2
Ultra Large	18,000 - 19,000		9.3 - 9.5

(1) Test data published by KEMCO for several Korean manufacturers.

(2) ACEEE, *The Most Energy Efficient Appliances*, 1989 - 90 Edition.



## ESTIMATES OF WOODFUEL RESOURCES

**Table A4.1. The Philippines: 1987 Land Classification**  
Units 000 hectares

	a) By Broad Land Type Area		b) Dejure Classification Area
<b>Forest</b>	<u>7,102</u>	<b>Forest Land</b>	15,923
Pine	80		
Mossy	247		
Dipterocarp Closed	2,434		
Dipterocarp Open	4,196		
Mangrove	145		
<b>Extensive Cultivation</b>	<u>11,957</u>		
Open in Forest	30		
Grassland	1,813	<b>A &amp; D Land</b>	14,158
Mixed Grass, Brush, Plantation & other Crops	10,114	<b>Including Miscellaneous</b>	
<b>Intensive Cultivation</b>	<u>9,729</u>		
Coconut Plantation	1,133		
Mixed Coconut/Cropland	3,748		
Other Plantation	91		
Other Plantation/Cropland	365		
Cropland	4,392		
<b>Other</b>	<u>1,293</u>		
Fishponds	205		
Other Land/Lakes	542		
Unclassified	546		
<b>Total Area</b>	<u>30,081</u>		<u>30,081</u>

*Source:* World Bank (1989); Philippines Environment and National Resources Management Study.

**Table A4.2. Price Build-up for Urban Fuelwood and Charcoal**

	<i>Average Selling Price (Pesos/ton)</i>				
	<i>Metro Manila</i>	<i>Cebu City</i>	<i>Cagayan de Oro</i>	<i>Tacloban</i>	<i>Isabella</i>
<b>Fuelwood</b>					
Wood Gatherers	140	630	210	260	500
Rural Traders	650	820	630	630	650
Urban Traders	930	1,100	930	1,000	N/A
<b>Charcoal</b>					
Charcoal Makers	1,700	1,800	1,600	1,430	1,720
Rural Traders	2,700	2,900	2,600	1,640	2,100
Urban Traders	3,350	3,800	4,000	4,000	N/A

*Source:* Fuelwood Supply Studies, NCRD in conjunction with ANECs.

## PETROLEUM PRODUCT PRICES

**Table AS.1. Kerosene: Economic and Financial Price Structure (Manila, 1989)**

	<i>Economic Cost</i>		<i>Official Price Structure</i>	
	<i>US\$</i>	<i>Pesos</i>	<i>Pesos/liter</i>	
Average 1989 crude price (US\$/bbl fob)	16.64			
Kerosene price (US\$/bbl)	21.14			
Freight	0.82			
Wharfage	0.06			
BOE fee	0.10			
Ocean loss (4%)	0.88			
Documentary stamp (0.15%)	0.03			
Demurrage (5% of freight)	0.04			
Landed cost (US\$/bbl)	23.08			
			3.15	DOCT
			0.99	Ad Valorem Tax
			-0.74	OPSF Impost
Landed cost (Pesos/liter)		4.28	3.41	WPP
Transport to retailer		0.16	0.06	Hauling charge
Dealer's margin		0.25	0.23	Dealer's mark-up
1989 Retail cost (Pesos/liter)		4.69	3.70	1989 Retail Price (Sari-Sari store)
May 1990 crude price (US\$/bbl fob)		23.40		
May 1990 retail cost (Pesos/liter)		6.00	6.50	1990 Retail Price (Sari-Sari store)

**Notes:**

Kerosene price = crude price + US\$ 4.50/bbl.

Shadow exchange rate = Pesos 30/US\$.

159 Liters per barrel.

Conversion 60F to air: = 0.9832.

Table A5.2. LPG: Economic and Financial Price Structure (Manila: August, 1989)

	<i>Economic Cost</i>		<i>Official Price Structure</i>
	<i>US\$</i>	<i>Pesos</i>	<i>Pesos/kg</i>
Average 1989 crude price (US\$/bbl fob)	16.64		
LPG price (US\$/ton)	112		
Freight	45		
Ocean loss	6		
Import cost (US\$/ton cif)	163		
Handling and depot	35		
			5.60 DOCT
			1.77 Ad Valorem Tax
			-1.78 OPSF Impost
			5.59 WPP according to "Price Build-Up"
			4.99 WPP ex-Refinery
			0.09 Transport to Depot Manila
Bulk price/ton, ex-depot	198	5933.86	
Bulk price/kg, ex-depot		5.93	5.07 WPP Metro Manila
Margin for filling-plant		0.66	0.66 Transfer prices C minus WPP Manila
Dealer's margin		0.61	0.61 Retail Price IA minus WPP C
Transport to retailer		0.09	0.09 Retail Price I.B minus R.P. I.A
Retailer's margin		0.26	0.26 Ultimate R.P. minus R.P. I.B
1989 retail cost (Pesos/kg)		7.56	6.70 1989 Retail Price (Sari-Sari store)
May 1990 crude price (US\$/bbl fob)	23.40		
May 1990 retail cost (Pesos/kg)		8.92	9.87 1990 Retail Price (Sari-Sari store)

*Notes:*

Government Established Price (GEP) for LPG in thermal equivalent of Arab Light: 82.5%.

Million BTUs / barrel of Saudi Light: 5.78.

Million BTUs / ton of LPG: 47.07.

LPG tons / cubic meter: 0.51.

Shadow exchange rate Pesos/US\$: 30.

1988 distribution mark-ups adjusted for inflation: 15%.

## **PHILIPPINE HOUSEHOLD ENERGY CONSUMPTION SURVEY**

1. This document presents an overview of current residential energy consumption patterns in the Philippines based on the 1989 Philippine Household Energy Consumption Survey (HECS). It includes the survey forms, manuals for enumerators, and a full set of summary tables. The HECS survey was commissioned as a joint undertaking of the National Statistics Office (NSO) and the Office of Energy Affairs (OEA). Data analysis and major findings are briefly reviewed in this overview which is followed by HECS summary tables. Details of the sample design and enumeration procedures can be found in the NSO manuals included after the summary tables.

### **Sample Frame**

2. The HECS sample included 5082 households, roughly half urban and half rural, comprising one panel of the NSO Integrated Survey of Households sample frame. As such, the HECS sample frame adopted NSO's two-stage cluster sampling design that treats urban and rural areas of each province as principal domains, draws barangays within each domain in the first stage, and households within each selected barangay in the second stage. On average, each urban household in the sample represents about 1600 actual urban households while each rural household surveyed represents approximately 2400 rural households. NSO provided exact weights (raising factors) for each sample barangay to reflect 1989 demographics as projected from 1980 census figures. The study team revised these weights in light of the more accurate distribution of urban and rural households contained in preliminary figures from the 1990 census that were made available during the main mission. All summary tables have been weighted to reflect the number and distribution of households in 1990 and have been discounted to 1989 by 2% to allow for growth in household formation.

### **Survey Instrument and Survey Execution**

3. The HECS questionnaire was designed in two parts. The main section, enumerated to the household head or other family member chiefly responsible for fuel purchasing and use, collected information on choice of fuel, source of fuel, mode of acquisition, stove and appliance ownership, and fuel consumption for different end uses. A supplementary survey form was filled out at the barangay level to determine access, availability, and prices of fuels in the market. The field survey team was composed of NSO field personnel, namely: Regional and Provincial Census Officers, Statisticians who supervised survey teams, and Census Field Workers who were principally responsible for collecting data from the respondent households.

4. The enumerators were instructed to validate reported household consumption by referring to electricity bills, directly measuring the weight of woodfuels the household reported using daily, and verifying the size and nameplate wattages of major appliances. Separate manuals of instructions were developed for enumerators and data processing staff to guide field data collection and data entry of completed questionnaires. The survey questionnaire and these manuals are included at the end of this document.

### **Data Validation**

5. To ensure that the data set was suitable for statistical analysis, it was first subjected to a number of data validation procedures that were designed to identify inconsistencies, keypunching errors,

miscoded entries, and otherwise unreasonable responses. This was followed by a set of screens through which households that had missing, incomplete or inconsistent data for key variables were eliminated from the analysis. A household was omitted from the analysis if they: 1) said they used a fuel but reported no quantity figures; 2) did not cook; 3) did not light; or 4) did not report income.

6. Out of the 5082 households in the original sample, 610 households (about 12% of the sample) were excluded from the analysis as a result of this cleaning procedure. Raising factors were revised to compensate for households excluded from the original sample. The distribution of the 4472 sample households used in the analysis along with the 11 million households they represent are shown in Table 1. A detailed regional breakdown of the original sample, the cleaned sample, and the raising factors used to weight the cleaned sample to represent the 1989 national distribution of households are presented in the summary tables.

**Table 1: Number of Sample Households and 1989 Demographics**

	<i>Original Sample Households</i>	<i>Revised Sample Households</i>	<i>Estimated Total Households</i>	<i>Estimated Population ('000s)</i>	<i>Population Percent</i>
NCR	776	682	1,538,660	7,780	13.1%
Other Urban	1,730	1,588	2,797,974	15,255	25.6%
Rural	2,576	2,202	6,846,776	36,515	61.3%
<u>Philippines</u>	<u>5,081</u>	<u>4,472</u>	<u>11,183,410</u>	<u>59,550</u>	<u>100.0%</u>

Note: Total households and population estimates are from 1990 Census (preliminary) discounted by 2%.

### Modification of HECS Demand Estimates to Fit Known Supply Figures

7. After the data was cleaned and weighted to represent the 1989 household distribution, national fuel consumption estimates were compared to known supply figures as a check on consistency of the HECS results. In addition, per capita woodfuel use by households that use fuelwood or charcoal as a primary cooking fuel were checked for consistency by comparing HECS estimates with similar estimates from other asian countries with moist tropical climates.

### *Electrification Rates and Total Residential Electricity Sales*

8. As of 1987, 5.29 million households nationwide were connected to electricity mains. An estimated breakdown of rural and urban electrified households is shown in Table 2. According to OEA's Medium Term Energy Plan, MERALCO planned to connect an additional 155,000 households in 1988 and 1989 and NEA cooperatives had targeted 175,000 new household connections, thereby bringing estimated total 1989 connections to 5.63 million. HECS data indicate that 6.5 million households were formally electrified in 1989, roughly 870,000 or 15% more than were projected. This indicates that within the average sample barangay, the HECS sample may have selected a higher share of electrified households than actual barangay electrification rates. Moreover, HECS results show that about 10% of urban households and 5% of rural households actually use

electricity without a direct grid connection, purchasing electricity instead from neighbors. Another possible explanation for the apparent oversampling of electrified households is that a substantial share of HECS households that reported direct connections may actually be informally connected. Since urban households tend to be configured in more dense configurations than rural households, urban households may have more opportunity for informal connections. Under this interpretation, the apparent dramatic rise in formally electrified urban households between 1987 and 1989 (Table 2) could be seen as an illusion.

**Table 2: Electrification Estimates**

	<i>Urban</i>	<i>Rural</i>	<i>Total</i>
<b>1987 Official Figures</b>			
Potential Connections ('000)	3,923	5,812	9,735
Actual Connections ('000)	2,434	2,857	5,291
Percent Electrified	62%	49%	54%
<b>1989 HECS Estimates</b>			
Households ('000)	4,336	6,847	11,183
Formally Connected ('000)	3,416	3,088	6,504
Percent Formally Electrified ('000)	79%	45%	58%
Percent Using Electricity	89%	50%	65%

Note: 1987 estimates are from OEA, 1989. Potential connections do not include all households. Urban figures are for Meralco and 15 private utilities while rural figures are for NEA coops. HECS percentages include all households and are classified urban or rural by NSO. More households use electricity than are actually formally electrified since some households obtain electricity from neighbors, nearby industrial plants, or commercial enterprises.

9. If electrified households were not oversampled, the HECS estimate of total residential electricity use should be consistent with residential sector electricity sales data for 1989. A sectoral breakdown of 1989 electricity sales is shown in Table 3. Total residential sales of 6,845 GWh are estimated from all HECS households that use electricity, regardless of connection status. Sectoral breakdowns were not available for REA co-ops and private utilities. Sectoral sales for co-ops and private utilities in Table 3 follow from the observation that they serve mainly households. As such, it appears that the HECS estimate of total residential electricity use is broadly consistent with residential electricity sales data. The disagreement between official electrification rates and those derived from the HECS sample may largely be due to informal connections.

Table 3: 1989 Sectoral Electricity Sales (GWh)

	<i>Residential</i>	<i>Commercial</i>	<i>Industrial</i>	<i>Other</i>	<i>Total</i>
NPC			4,025		4,025
Meralco	3,415	3,659	3,890	117	11,081
Rural Electric Cooperatives	2,000	550	50	38	2,638
Private Utilities	1,430	225	250	19	1,924
Self-Generating Industries			983		983
<b>Total</b>	<b>6,845</b>	<b>4,434</b>	<b>9,198</b>	<b>174</b>	<b>20,651</b>
<b>Sector %</b>	<b>33.1%</b>	<b>21.5%</b>	<b>44.5%</b>	<b>0.8%</b>	<b>100%</b>

*Source:* Total sales and sectoral sales for Meralco are from OEA staff. Sectoral breakdowns for rural cooperatives and private utilities are mission estimates. It is assumed that 75% of co-op and private utility sales are to households.

#### *Petroleum Products Supply and Per Capita Woodfuels Use*

10. Kerosene is mainly a household fuel used for cooking and lighting. It is commonly resold to consumers by peddlers and sara-sari shops in second-hand bottles and cans. After enumerators asked households how often these purchases were made and in what kinds of bottles, the local units were converted into volumetric equivalents that were recorded and entered into the data set. On the basis of this data, the HECS estimate of total kerosene use in households for 1989 was well above national kerosene supply figures. This overestimate was attributed to measurement error arising from the non-standard units in which most kerosene is sold. Consequently, the HECS estimate of kerosene use in each household was reduced by a uniform factor of 0.69 to bring estimates of total demand in line with total supply.

11. LPG is used mainly as a cooking fuel in the residential and commercial sectors. Since HECS estimates of LPG use in each household were derived from reported purchases of LPG which is sold in well-defined units, measurement error is far less than in the case of kerosene. Consequently, HECS estimates of LPG use in each household were not adjusted. Total residential LPG use according to HECS results were below national sales figures for 1989, the remainder being consumed in the commercial sector and industrial sectors.

12. The HECS survey reported unusually low levels of per capita biofuel consumption by households relying on fuelwood as their primary cooking fuel. A summary of detailed studies of biofuel use by rural households in other Asian countries with moist tropical climates shows average annual biofuel use of 0.3 - 0.9 m<sup>3</sup> of wood equivalent in agricultural regions, 0.9 - 1.35 m<sup>3</sup> of wood equivalent in zones with shifting agriculture, and 1.25 - 1.8 m<sup>3</sup> of wood equivalent in mountain regions.<sup>1</sup> HECS data showed that rural households cooking with fuelwood in the Philippines consumed, on average, only 0.35 m<sup>3</sup> of wood equivalent per capita in 1989. An attempt was made to

ESMAP, 1988, Household Energy Handbook, Table 2, page 88.



validate these low reported usage rates during a follow-up mission in March/April 1991. Spot surveys and measurements of daily fuelwood use were administered to rural households in four regions. Daily fuelwood usage rates in these households were roughly double those reported by HECS and were well within the ranges reported above for rural households in agricultural and shifting agricultural zones. Again, the chief causes for this discrepancy were probably measurement error and difficulties converting weekly usage volumes into kg equivalents. Enumerators asked households to estimate their weekly fuelwood consumption when estimates of daily use or estimates of amounts purchased and collected may have yielded more accurate figures. After reviewing regional HECS estimates of per capita biofuels usage in urban and rural households, estimates of biofuels use in each household were increased by the factors shown in Table 4 to bring per capita usage rates more in line with spot survey results.

**Table 4: Fuel Use Adjustment Factors for Philippines Household Energy Consumption Survey**

	<i>Electricity</i>	<i>LPG</i>	<i>Kerosene</i>	<i>Charcoal (1)</i>	<i>Fuelwood</i>	<i>Crop Residues</i>
Urban	1	1	0.69	2.5	1.8	1.4
Rural	1	1	0.69	2.0	2.0	1.8

(1) Charcoal use by rural households was doubled, except in regions I, III, and VII. Charcoal adjustment factors for rural households in these regions were 1.3 (I), 2.4 (III), and 6.4 (VII).

13. Household fuel use data from the cleaned HECS data set were adjusted by the factors presented in Table 4. Resulting estimates are consistent with aggregate supply data for 1989 and with per capita woodfuels usage rates as determined by follow-up field studies. These modified HECS results form the basis of all summary tables presented below.

## HECS Summary Tables

## Distribution of HECS Sample Households

Region	Urban/Rural				TOTAL	
	URBAN		RURAL		Number	Percent
	Number	Percent	Number	Percent		
NATIONAL CAPITAL REGION	776	15.3%	0	.0%	776	15.3%
REGION I (ILOCOS)	90	1.8%	196	3.9%	286	5.6%
REGION II (CAGAYAN VALLEY)	63	1.2%	133	2.6%	196	3.9%
REGION III (CENTRAL LUZON)	254	5.0%	245	4.8%	499	9.8%
REGION IV (SOUTHERN LUZON)	349	6.9%	357	7.0%	706	13.9%
REGION V (BICOL)	93	1.8%	219	4.3%	312	6.1%
REGION VI (WESTERN VISAYAS)	153	3.0%	259	5.1%	412	8.1%
REGION VII (CENTRAL VISAYAS)	159	3.1%	222	4.4%	381	7.5%
REGION VIII (EASTERN VISAYAS)	87	1.7%	170	3.3%	257	5.1%
REGION IX (WESTERN MINDANAO)	57	1.1%	161	3.2%	218	4.3%
REGION X (NORTHERN MINDANAO)	112	2.2%	192	3.8%	304	6.0%
REGION XI (SOUTHERN MINDANAO)	150	3.0%	186	3.7%	336	6.6%
REGION XII (CENTRAL MINDANAO)	79	1.6%	170	3.3%	249	4.9%
CAR (CORDILLERA ADMINISTR. REGION)	84	1.7%	66	1.3%	150	3.0%
<b>TOTAL</b>	<b>2506</b>	<b>49.3%</b>	<b>2576</b>	<b>50.7%</b>	<b>5082</b>	<b>100.0%</b>

## Distribution of HECS Sample Households After Cleaning

Region	Urban/Rural				TOTAL	
	URBAN		RURAL		Number	Percent
	Number	Percent	Number	Percent		
NATIONAL CAPITAL REGION	682	15.3%	0	.0%	682	15.3%
REGION I (ILOCOS)	87	1.9%	187	4.2%	274	6.1%
REGION II (CAGAYAN VALLEY)	57	1.3%	106	2.4%	163	3.6%
REGION III (CENTRAL LUZON)	238	5.3%	223	5.0%	461	10.3%
REGION IV (SOUTHERN LUZON)	308	6.9%	294	6.6%	602	13.5%
REGION V (BICOL)	89	2.0%	190	4.2%	279	6.2%
REGION VI (WESTERN VISAYAS)	144	3.2%	213	4.8%	357	8.0%
REGION VII (CENTRAL VISAYAS)	155	3.5%	204	4.6%	359	8.0%
REGION VIII (EASTERN VISAYAS)	82	1.8%	128	2.9%	210	4.7%
REGION IX (WESTERN MINDANAO)	50	1.1%	132	3.0%	182	4.1%
REGION X (NORTHERN MINDANAO)	101	2.3%	174	3.9%	275	6.1%
REGION XI (SOUTHERN MINDANAO)	141	3.2%	150	3.4%	291	6.5%
REGION XII (CENTRAL MINDANAO)	66	1.5%	157	3.5%	223	5.0%
CAR (CORDILLERA ADMINISTR. REGION)	70	1.6%	44	1.0%	114	2.5%
<b>TOTAL</b>	<b>2270</b>	<b>50.8%</b>	<b>2202</b>	<b>49.2%</b>	<b>4472</b>	<b>100.0%</b>

HECS Sample Households Weighted by  
Original NSO Raising Factors for 1989  
(based on 1980 census projections)

Region	Urban/Rural				TOTAL	
	URBAN		RURAL		Number	Percent
	Number	Percent	Number	Percent		
NATIONAL CAPITAL REGION	1464359	13.5%	0	.0%	1464359	13.5%
REGION I (ILOCOS)	143441	1.3%	489854	4.5%	633295	5.8%
REGION II (CAGAYAN VALLEY)	6414	.6%	376675	3.5%	440790	4.1%
REGION III (CENTRAL LUZON)	441695	4.1%	614168	5.7%	1055863	9.7%
REGION IV (SOUTHERN LUZON)	553419	5.1%	895611	8.2%	1449029	13.3%
REGION V (BICOL)	158252	1.5%	592100	5.5%	750351	6.9%
REGION VI (WESTERN VISAYAS)	268257	2.5%	703961	6.5%	972219	9.0%
REGION VII (CENTRAL VISAYAS)	268714	2.5%	572600	5.3%	841314	7.7%
REGION VIII (EASTERN VISAYAS)	146843	1.4%	470378	4.3%	617221	5.7%
REGION IX (WESTERN MINDANAO)	94642	.9%	453379	4.2%	548022	5.0%
REGION X (NORTHERN MINDANAO)	159646	1.5%	458761	4.2%	618407	5.7%
REGION XI (SOUTHERN MINDANAO)	270629	2.5%	478458	4.4%	749087	6.9%
REGION XII (CENTRAL MINDANAO)	82721	.8%	419538	3.9%	502259	4.6%
CAR (CORDILLERA ADMINISTR. REGION)	51258	.5%	165842	1.5%	217100	2.0%
<b>TOTAL</b>	<b>4167991</b>	<b>38.4%</b>	<b>6691325</b>	<b>61.6%</b>	<b>10859316</b>	<b>100.0%</b>

HECS Sample Households Weighted by  
Updated NSO Raising Factors for 1989  
(based on 1990 census distribution and adjusted for eliminated cases)  
(basis for summary tables)

Region	Urban/Rural				TOTAL	
	URBAN		RURAL		Number	Percent
	Number	Percent	Number	Percent		
NATIONAL CAPITAL REGION	1538660	13.8%	0	.0%	1538660	13.8%
REGION I (ILOCOS)	146494	1.3%	500278	4.5%	646772	5.8%
REGION II (CAGAYAN VALLEY)	63590	.6%	373594	3.3%	437184	3.9%
REGION III (CENTRAL LUZON)	477119	4.3%	663424	5.9%	1140543	10.2%
REGION IV (SOUTHERN LUZON)	592368	5.3%	958644	8.6%	1551012	13.9%
REGION V (BICOL)	146079	1.3%	546555	4.9%	692634	6.2%
REGION VI (WESTERN VISAYAS)	266063	2.4%	698203	6.2%	964266	8.6%
REGION VII (CENTRAL VISAYAS)	274432	2.5%	584785	5.2%	859217	7.7%
REGION VIII (EASTERN VISAYAS)	136990	1.2%	438816	3.9%	575805	5.1%
REGION IX (WESTERN MINDANAO)	97586	.9%	467480	4.2%	565065	5.1%
REGION X (NORTHERN MINDANAO)	161476	1.4%	464018	4.1%	625494	5.6%
REGION XI (SOUTHERN MINDANAO)	292334	2.6%	516830	4.6%	809164	7.2%
REGION XII (CENTRAL MINDANAO)	92604	.8%	469664	4.2%	562269	5.1%
CAR (CORDILLERA ADMINISTR. REGION)	50839	.5%	164485	1.5%	215324	1.9%
<b>TOTAL</b>	<b>4336634</b>	<b>38.8%</b>	<b>6846776</b>	<b>61.2%</b>	<b>11183410</b>	<b>100.0%</b>

## Socio-economic Profile

Average Household Size and Income  
By Income Quintile

Income Quintile	NCR					All
	1st	2nd	3rd	4th	5th	
Household Size	4.77	5.09	5.44	5.82	6.03	5.42
Income (Pesos/mo)	1383.35	2668.74	3717.87	5271.82	14314.37	5451.23
No. of Households PERCENT	301093 19.6%	345965 22.5%	284465 18.5%	298655 19.4%	308483 20.0%	1538660 100.0%
Income Quintile	Other Urban					All
	1st	2nd	3rd	4th	5th	
Household Size	4.65	5.26	5.52	5.75	6.19	5.48
Income (Pesos/mo)	861.36	1677.81	2586.32	4012.84	19986.78	5795.63
No. of Households PERCENT	554684 19.8%	564454 20.2%	559372 20.0%	565296 20.2%	554167 19.8%	2797974 100.0%
Income Quintile	Rural					All
	1st	2nd	3rd	4th	5th	
Household Size	4.42	5.19	5.60	5.74	5.98	5.39
Income (Pesos/mo)	563.00	1115.15	1681.79	2607.70	10100.52	3199.63
No. of Households PERCENT	1343986 19.6%	1372117 20.0%	1476394 21.6%	1290865 18.9%	1363414 19.9%	6846776 100.0%
Income Quintile	Philippines					All
	1st	2nd	3rd	4th	5th	
Household Size	4.49	5.39	5.50	5.69	6.02	5.42
Income (Pesos/mo)	680.39	1335.11	2068.49	3327.89	13310.35	4158.91
No. of Households PERCENT	2280373 20.4%	2162171 19.3%	2264442 20.2%	2223327 19.9%	2253098 20.1%	11183410 100.0%

## Fuel Penetration

## Percent of Households Using Each Fuel

	Electricity	LPG	Kerosene	Charcoal	Fuelwood	Crop Residues
NCR	98.5%	59.4%	36.7%	23.4%	7.5%	1.8%
Other Urban	83.3%	32.8%	68.0%	42.8%	54.0%	26.1%
All Urban	88.7%	42.2%	56.9%	35.9%	37.5%	17.5%
Rural	49.5%	9.0%	85.7%	29.6%	85.9%	64.7%
Philippines	64.7%	21.9%	74.5%	32.1%	67.1%	46.4%

## Percent of Households Using Each Fuel for Cooking

	Electricity	LPG	Kerosene	Charcoal	Fuelwood	Crop Residues
NCR	21.3%	59.3%	34.1%	23.1%	7.5%	.4%
Other Urban	7.5%	32.8%	20.3%	27.9%	54.1%	9.1%
All Urban	12.4%	42.2%	25.2%	26.2%	37.6%	6.0%
Rural	2.4%	8.9%	6.6%	10.5%	85.9%	18.7%
Philippines	6.3%	21.8%	13.8%	16.6%	67.2%	13.8%

## Percent of Households Using Each Fuel as Primary Cooking Fuel

	Electricity	LPG	Kerosene	Charcoal	Fuelwood	Crop Residues
NCR	7.9%	55.4%	29.3%	3.8%	3.5%	.1%
Other Urban	2.4%	29.0%	14.2%	10.4%	40.4%	3.5%
All Urban	4.4%	38.4%	19.6%	8.1%	27.3%	2.3%
Rural	1.0%	7.4%	3.8%	4.0%	77.9%	6.0%
Philippines	2.3%	19.4%	9.9%	5.6%	58.3%	4.6%

Fuel Prices

Average Purchase Prices for Households Purchasing Each Fuel

	NCR	Other Urban	All Urban	Rural	Philippines
<b>Electricity (Pesos/kwh)</b>					
Median	1.20	1.70	1.36	.91	1.65
Mean	1.24	1.65	1.49	1.85	1.66
Standard Deviation	.38	.56	.54	.57	.58
<b>LPG (Pesos/kg)</b>					
Median	6.82	7.45	7.00	7.73	7.09
Mean	6.87	7.62	7.24	7.66	7.35
Standard Deviation	.54	.92	.84	1.05	.92
<b>Kerosene (Pesos/liter)</b>					
Median	5.00	5.00	5.00	5.00	5.00
Mean	5.49	5.68	5.64	6.00	5.89
Standard Deviation	1.30	1.90	1.88	2.07	2.02
<b>Charcoal (Pesos/kg)</b>					
Median	3.75	3.50	3.60	3.33	3.50
Mean	4.24	4.14	4.16	4.31	4.23
Standard Deviation	2.53	2.78	2.72	3.08	2.88
<b>Fuelwood (Pesos/kg)</b>					
Median	4.20	1.30	1.33	1.00	1.20
Mean	4.33	2.13	2.23	1.56	1.85
Standard Deviation	2.61	2.01	2.09	1.46	1.80

Note: Of HECS sample households using fuelwood, only 65% in urban areas outside of the National Capitol Region and 20% in rural areas purchased their fuelwood.

Fuel Use: All fuel use figures were modified by the factors presented below to rectify HECS demand estimates with overall supply figures and reasonable per capita usage rates.

Fuel Use Adjustment Factors for Philippines Household Energy Consumption Survey

	Electricity	LPG	Kerosene	Charcoal	Fuelwood	Crop Residues
Urban	1	1	0.69	2.5	1.8	1.4
Rural	1	1	0.69	2.0	2.0	1.8

Charcoal use by rural households was doubled, except in regions I, III, and VII.  
 Charcoal adjustment factors for rural households in these regions:  
 Region I: 1.3  
 Region III: 2.4  
 Region VII: 6.4.

Annual Total Residential Fuel Consumption

	Electricity (Gwh)	LPG (000 Tons)	Kerosene (000 m3)	Charcoal (000 Tons)	Fuelwood (000 Tons)	Crop Res. (000 Tons)
	Sum	Sum	Sum	Sum	Sum	Sum
NCR	2867.36	133.42	83.11	120.93	131.61	18.70
Other Urban	2185.21	109.78	131.87	716.33	3126.82	414.05
All Urban	5052.57	243.20	214.98	837.26	3258.43	432.75
Rural	1792.53	77.93	281.20	727.67	15058.47	2137.70
Philippines	6845.10	321.13	496.19	1564.93	18316.90	2570.45

## Annual Per Capita Residential Fuel Consumption

	Electricity (kWh/cap/yr)	LPG (kg/cap/yr)	Kerosene (lt/cap/yr)	Charcoal (kg/cap/yr)	Fuelwood (kg/cap/yr)	Crop Residues (kg/cap/yr)
	Mean	Mean	Mean	Mean	Mean	Mean
NCR	384.03	17.98	10.73	15.00	15.30	1.84
Other Urban	167.66	8.46	10.30	55.12	220.52	26.06
All Urban	244.43	11.84	10.45	40.89	147.71	17.47
Rural	52.45	2.29	9.44	23.03	466.26	64.69
Philippines	126.90	5.99	9.83	29.95	342.73	46.38

Annual Per Capita Residential Fuel Consumption  
for Fuel Users Only

	Electricity (kWh/cap/yr)	LPG (kg/cap/yr)	Kerosene (lt/cap/yr)	Charcoal (kg/cap/yr)	Fuelwood (kg/cap/yr)	Crop Residues (kg/cap/yr)
	Mean	Mean	Mean	Mean	Mean	Mean
NCR	389.99	30.29	29.20	64.15	205.18	364.17
Other Urban	201.16	25.82	15.15	128.92	408.22	250.96
All Urban	275.53	28.05	18.36	113.94	393.90	253.91
Rural	105.91	25.41	11.01	77.70	542.79	265.72
Philippines	196.06	27.39	13.19	92.43	510.54	263.93

## Monthly Residential Fuel Consumption

	Electricity (kWh/hh/mo)	LPG (kg/hh/mo)	Kerosene (lt/hh/mo)	Charcoal (kg/hh/mo)	Fuelwood (kg/hh/mo)	Crop Residues (kg/hh/mo)
	Mean	Mean	Mean	Mean	Mean	Mean
NCR	155.30	7.23	4.50	6.55	7.13	1.01
Other Urban	65.08	3.27	3.93	21.33	93.13	12.33
All Urban	97.09	4.67	4.13	16.09	62.61	8.32
Rural	21.82	.95	3.42	8.86	183.28	26.02
Philippines	51.01	2.39	3.70	11.66	136.49	19.15

Monthly Residential Fuel Consumption  
for Fuel Users Only

	Electricity (kWh/hh/mo)	LPG (kg/hh/mo)	Kerosene (lt/hh/mo)	Charcoal (kg/hh/mo)	Fuelwood (kg/hh/mo)	Crop Residues (kg/hh/mo)
	Mean	Mean	Mean	Mean	Mean	Mean
NCR	157.71	12.17	12.25	28.00	95.60	200.36
Other Urban	78.09	9.98	5.77	49.90	172.39	118.77
All Urban	109.44	11.07	7.26	44.83	166.98	120.90
Rural	44.05	10.55	3.99	29.88	213.36	106.87
Philippines	78.81	10.94	4.96	36.37	203.31	109.00



## Fuel Penetration by Income

## Percent of Households Using Each Fuel by Income

	Electricity	LPG	Kerosene	Charcoal	Fuelwood	Crop Residues
<b>NCR</b>						
1st Quintile	93.6%	36.0%	50.6%	25.8%	12.5%	.0%
2nd Quintile	99.4%	52.5%	45.3%	21.2%	7.4%	.0%
3rd Quintile	100.0%	55.9%	38.9%	23.3%	4.7%	3.6%
4th Quintile	99.3%	73.3%	30.8%	26.0%	5.8%	.6%
5th Quintile	100.0%	79.5%	17.2%	20.9%	6.7%	5.3%
<b>All</b>	<b>98.5%</b>	<b>59.4%</b>	<b>36.7%</b>	<b>23.4%</b>	<b>7.5%</b>	<b>1.8%</b>
<b>Other Urban</b>						
1st Quintile	60.4%	6.3%	82.7%	35.1%	69.7%	36.5%
2nd Quintile	77.5%	16.6%	76.0%	41.9%	61.3%	18.7%
3rd Quintile	88.7%	27.9%	64.8%	43.7%	51.6%	40.3%
4th Quintile	92.3%	51.6%	61.0%	40.5%	43.1%	17.0%
5th Quintile	97.8%	61.4%	55.6%	47.6%	44.5%	18.0%
<b>All</b>	<b>83.3%</b>	<b>32.8%</b>	<b>68.0%</b>	<b>42.8%</b>	<b>54.0%</b>	<b>26.1%</b>
<b>Rural</b>						
1st Quintile	22.3%	.5%	93.8%	21.6%	93.5%	87.2%
2nd Quintile	35.9%	2.3%	92.3%	30.1%	89.2%	83.8%
3rd Quintile	47.6%	2.6%	87.3%	32.4%	91.0%	50.2%
4th Quintile	67.1%	11.6%	83.2%	34.7%	82.7%	53.4%
5th Quintile	75.6%	28.6%	71.6%	29.3%	72.5%	49.6%
<b>All</b>	<b>49.5%</b>	<b>9.0%</b>	<b>85.7%</b>	<b>29.6%</b>	<b>85.9%</b>	<b>64.7%</b>
<b>Philippines</b>						
1st Quintile	33.6%	3.1%	88.8%	23.5%	85.0%	83.2%
2nd Quintile	46.1%	5.2%	87.6%	35.2%	82.6%	45.3%
3rd Quintile	70.8%	15.9%	77.2%	33.9%	70.6%	41.3%
4th Quintile	84.6%	31.6%	67.5%	34.9%	52.4%	37.4%
5th Quintile	88.5%	53.2%	51.9%	33.1%	45.2%	24.1%
<b>All</b>	<b>64.7%</b>	<b>21.9%</b>	<b>74.5%</b>	<b>32.1%</b>	<b>67.1%</b>	<b>46.4%</b>

## Percent of Households Using Each Fuel for Cooking by Income

	Electricity	LPG	Kerosene	Charcoal	Fuelwood	Crop Residues
<b>NCR</b>						
1st Quintile	7.4%	36.0%	46.9%	25.1%	12.5%	.0%
2nd Quintile	14.4%	52.5%	44.7%	21.2%	7.4%	.0%
3rd Quintile	22.8%	55.2%	37.5%	23.3%	4.7%	.9%
4th Quintile	25.3%	73.3%	28.7%	25.3%	5.8%	.2%
5th Quintile	37.4%	79.5%	11.8%	20.9%	6.7%	1.3%
<b>All</b>	<b>21.3%</b>	<b>59.3%</b>	<b>34.1%</b>	<b>23.1%</b>	<b>7.5%</b>	<b>.4%</b>
<b>Other Urban</b>						
1st Quintile	2.1%	6.3%	17.5%	21.1%	69.7%	10.7%
2nd Quintile	3.8%	16.6%	21.3%	27.4%	61.7%	10.5%
3rd Quintile	4.7%	27.9%	21.2%	26.4%	51.6%	12.3%
4th Quintile	9.3%	51.6%	24.1%	28.9%	43.1%	7.1%
5th Quintile	17.5%	61.4%	17.5%	35.8%	44.5%	4.8%
<b>All</b>	<b>7.5%</b>	<b>32.8%</b>	<b>20.3%</b>	<b>27.9%</b>	<b>54.1%</b>	<b>9.1%</b>
<b>Rural</b>						
1st Quintile	.0%	.5%	1.3%	6.0%	93.5%	18.6%
2nd Quintile	.6%	2.3%	3.0%	9.5%	89.2%	23.5%
3rd Quintile	.7%	2.6%	5.3%	9.4%	91.0%	19.4%
4th Quintile	3.3%	11.1%	11.8%	13.6%	82.9%	19.3%
5th Quintile	7.7%	28.6%	11.9%	13.8%	72.5%	12.7%
<b>All</b>	<b>2.4%</b>	<b>8.9%</b>	<b>6.6%</b>	<b>10.5%</b>	<b>85.9%</b>	<b>18.7%</b>
<b>Philippines</b>						
1st Quintile	.7%	3.1%	6.0%	9.4%	85.0%	18.8%
2nd Quintile	1.7%	5.2%	8.6%	14.1%	82.6%	17.3%
3rd Quintile	3.3%	15.6%	16.3%	16.1%	70.9%	14.4%
4th Quintile	7.7%	31.5%	22.8%	21.0%	52.4%	12.1%
5th Quintile	18.0%	53.2%	15.4%	22.3%	45.2%	6.3%
<b>All</b>	<b>6.3%</b>	<b>21.8%</b>	<b>13.8%</b>	<b>16.6%</b>	<b>67.2%</b>	<b>13.8%</b>

Percent of Households Using Each Fuel as Primary Cooking Fuel by Income

	Electricity	LPG	Kerosene	Charcoal	Fuelwood	Crop Residues
<b>NCR</b>						
1st Quintile	4.2%	34.4%	44.5%	10.1%	6.8%	.0%
2nd Quintile	4.5%	48.6%	40.8%	3.0%	3.1%	.0%
3rd Quintile	9.6%	51.4%	33.9%	3.5%	.9%	.8%
4th Quintile	9.2%	67.7%	17.1%	1.7%	4.2%	.0%
5th Quintile	12.7%	75.2%	8.9%	.7%	2.6%	.0%
<b>All</b>	<b>7.9%</b>	<b>55.4%</b>	<b>29.3%</b>	<b>3.8%</b>	<b>3.5%</b>	<b>.1%</b>
<b>Other Urban</b>						
1st Quintile	.0%	5.9%	11.9%	11.2%	64.4%	6.5%
2nd Quintile	.3%	14.4%	17.8%	15.9%	47.3%	4.3%
3rd Quintile	3.0%	25.6%	16.3%	10.5%	40.3%	4.2%
4th Quintile	3.7%	47.8%	14.5%	6.9%	24.9%	2.2%
5th Quintile	5.1%	51.4%	10.6%	7.6%	25.0%	.4%
<b>All</b>	<b>2.4%</b>	<b>29.0%</b>	<b>14.2%</b>	<b>10.4%</b>	<b>40.4%</b>	<b>3.5%</b>
<b>Rural</b>						
1st Quintile	.0%	.5%	.7%	2.7%	89.1%	7.0%
2nd Quintile	.4%	2.3%	1.7%	4.0%	83.3%	8.2%
3rd Quintile	.6%	2.0%	3.0%	2.7%	86.6%	5.1%
4th Quintile	1.0%	8.8%	7.1%	6.6%	72.6%	4.0%
5th Quintile	3.1%	23.7%	6.7%	4.2%	56.7%	5.4%
<b>All</b>	<b>1.0%</b>	<b>7.4%</b>	<b>3.8%</b>	<b>4.0%</b>	<b>77.9%</b>	<b>6.0%</b>
<b>Philippines</b>						
1st Quintile	.3%	3.0%	4.5%	4.5%	80.1%	7.5%
2nd Quintile	.6%	4.7%	6.8%	6.1%	76.1%	5.8%
3rd Quintile	1.4%	13.4%	12.3%	5.9%	63.0%	3.9%
4th Quintile	3.1%	28.6%	17.2%	7.7%	39.8%	3.5%
5th Quintile	6.1%	47.0%	8.7%	3.7%	32.5%	2.1%
<b>All</b>	<b>2.3%</b>	<b>19.4%</b>	<b>9.9%</b>	<b>5.6%</b>	<b>58.3%</b>	<b>4.6%</b>

## Fuel Use by Income

## Annual Total Residential Fuel Consumption by Income

	Electricity (Gwh)	LPG (000 Tons)	Kerosene (000 m3)	Charcoal (000 Tons)	Fuelwood (000 Tons)	Crop Res. (000 Tons)
	Sum	Sum	Sum	Sum	Sum	Sum
<b>NCR</b>						
1st Quintile	268.48	16.18	19.22	47.87	33.35	.00
2nd Quintile	472.48	23.80	22.16	24.32	29.36	.00
3rd Quintile	495.89	21.52	22.72	21.26	23.94	4.13
4th Quintile	616.89	31.86	13.14	15.91	14.24	1.51
5th Quintile	1013.61	40.06	5.87	11.56	30.72	13.06
<b>All</b>	<b>2867.36</b>	<b>133.42</b>	<b>83.11</b>	<b>120.93</b>	<b>131.61</b>	<b>18.70</b>
<b>Other Urban</b>						
1st Quintile	126.57	4.54	28.10	73.93	727.21	95.24
2nd Quintile	227.45	9.86	26.74	176.27	647.10	58.50
3rd Quintile	400.70	17.19	27.63	125.35	591.21	148.15
4th Quintile	596.51	34.15	25.59	113.16	517.37	57.87
5th Quintile	833.97	44.04	23.81	227.62	643.92	54.29
<b>All</b>	<b>2185.21</b>	<b>109.78</b>	<b>131.87</b>	<b>716.33</b>	<b>3126.82</b>	<b>414.05</b>
<b>Rural</b>						
1st Quintile	60.04	.43	51.36	66.79	2675.83	440.53
2nd Quintile	114.76	2.90	49.78	126.21	3212.22	541.21
3rd Quintile	383.48	5.60	62.51	179.89	3437.10	380.25
4th Quintile	378.66	16.77	56.12	173.12	3025.88	402.17
5th Quintile	855.59	52.24	61.44	181.65	2707.45	373.54
<b>All</b>	<b>1792.53</b>	<b>77.93</b>	<b>281.20</b>	<b>727.67</b>	<b>15058.47</b>	<b>2137.70</b>
<b>Philippines</b>						
1st Quintile	258.61	8.60	93.99	157.53	4316.98	768.72
2nd Quintile	388.88	13.24	87.13	324.16	4388.20	491.71
3rd Quintile	1141.90	41.58	111.76	318.90	3947.59	522.84
4th Quintile	1709.01	91.18	116.08	375.78	2929.09	505.34
5th Quintile	3346.70	166.54	87.21	388.56	2735.03	281.83
<b>All</b>	<b>6845.10</b>	<b>321.13</b>	<b>496.19</b>	<b>1564.93</b>	<b>18316.90</b>	<b>2570.45</b>

## Annual Per Capita Residential Fuel Consumption by Income

	Electricity (kWh/cap/yr)	LPG (kg/cap/yr)	Kerosene (lt/cap/yr)	Charcoal (kg/cap/yr)	Fuelwood (kg/cap/yr)	Crop Residues (kg/cap/yr)
	Mean	Mean	Mean	Mean	Mean	Mean
<b>NCR</b>						
1st Quintile	217.78	13.44	14.36	34.68	25.69	.00
2nd Quintile	307.30	15.20	13.12	13.08	18.31	.00
3rd Quintile	393.34	17.31	15.65	12.21	9.32	3.63
4th Quintile	395.79	20.21	7.27	9.30	6.34	.56
5th Quintile	612.36	24.02	3.30	6.05	15.97	5.29
All	384.03	17.98	10.73	15.00	15.30	1.84
<b>Other Urban</b>						
1st Quintile	69.86	2.71	12.96	38.98	303.23	36.52
2nd Quintile	90.34	4.53	9.58	74.56	218.83	18.66
3rd Quintile	162.56	6.92	12.21	42.09	217.07	40.30
4th Quintile	225.32	12.84	8.94	36.95	160.09	16.96
5th Quintile	290.66	15.28	7.82	83.18	204.59	18.01
All	167.66	8.46	10.30	55.12	220.52	26.06
<b>Rural</b>						
1st Quintile	16.34	.32	10.87	14.56	538.60	87.21
2nd Quintile	18.71	.46	8.57	20.58	503.69	83.83
3rd Quintile	48.92	.70	8.99	22.29	470.69	50.25
4th Quintile	66.60	2.89	8.90	30.18	445.25	53.37
5th Quintile	112.44	7.20	9.89	27.87	372.38	49.60
All	52.45	2.29	9.44	23.03	466.26	64.69
<b>Philippines</b>						
1st Quintile	36.45	1.39	10.99	19.69	485.10	83.23
2nd Quintile	42.81	1.60	8.99	31.18	414.78	45.33
3rd Quintile	107.65	4.02	10.86	30.65	345.15	41.28
4th Quintile	167.05	8.97	10.76	34.83	240.37	37.41
5th Quintile	278.85	13.89	7.52	33.65	228.10	24.06
All	126.90	5.99	9.83	29.95	342.73	46.38

**Annual Per Capita Residential Fuel Consumption by Income  
for Fuel Users Only**

	Electricity (kWh/cap/yr)	LPG (kg/cap/yr)	Kerosene (lt/cap/yr)	Charcoal (kg/cap/yr)	Fuelwood (kg/cap/yr)	Crop Residues (kg/cap/yr)
	Mean	Mean	Mean	Mean	Mean	Mean
<b>NCR</b>						
1st Quintile	232.59	37.28	28.35	134.30	205.76	.
2nd Quintile	309.26	28.92	28.94	61.58	246.50	.
3rd Quintile	393.34	30.98	40.22	52.29	196.16	472.50
4th Quintile	398.70	27.57	23.58	35.75	109.78	56.00
5th Quintile	612.36	30.19	19.16	28.95	238.26	630.00
<b>All</b>	<b>389.99</b>	<b>30.29</b>	<b>29.20</b>	<b>64.15</b>	<b>205.18</b>	<b>364.17</b>
<b>Other Urban</b>						
1st Quintile	115.68	43.12	15.68	108.03	435.09	239.60
2nd Quintile	116.56	27.37	12.61	162.52	356.94	157.60
3rd Quintile	183.33	24.78	18.86	96.35	420.38	327.21
4th Quintile	244.10	24.90	14.66	91.27	371.80	218.67
5th Quintile	297.31	24.89	14.06	174.58	459.79	378.55
<b>All</b>	<b>201.16</b>	<b>25.82</b>	<b>15.15</b>	<b>128.92</b>	<b>408.22</b>	<b>250.96</b>
<b>Rural</b>						
1st Quintile	73.29	66.92	11.58	67.24	575.86	289.80
2nd Quintile	52.18	19.86	9.28	68.44	564.73	292.25
3rd Quintile	102.74	26.93	10.29	68.76	516.96	204.19
4th Quintile	99.25	24.94	10.70	87.10	538.34	257.11
5th Quintile	148.81	25.21	13.82	95.07	513.47	284.61
<b>All</b>	<b>105.91</b>	<b>25.41</b>	<b>11.01</b>	<b>77.70</b>	<b>542.79</b>	<b>265.72</b>
<b>Philippines</b>						
1st Quintile	108.64	44.13	12.38	83.61	570.91	324.02
2nd Quintile	92.96	30.67	10.27	88.68	502.01	203.41
3rd Quintile	152.15	25.34	14.07	90.53	488.66	215.91
4th Quintile	197.56	28.37	15.93	99.87	458.32	294.65
5th Quintile	314.92	26.11	14.48	101.63	504.78	297.28
<b>All</b>	<b>196.06</b>	<b>27.39</b>	<b>13.19</b>	<b>93.43</b>	<b>510.54</b>	<b>263.93</b>

## Monthly Residential Fuel Consumption by Income

	Electricity (kWh/hh/mo)	LPG (kg/hh/mo)	Kerosene (lt/hh/mo)	Charcoal (kg/hh/mo)	Fuelwood (kg/hh/mo)	Crop Residues (kg/hh/mo)
	Mean	Mean	Mean	Mean	Mean	Mean
<b>NCR</b>						
1st Quintile	74.31	4.48	5.32	13.25	9.23	.00
2nd Quintile	113.81	5.73	5.34	5.86	7.07	.00
3rd Quintile	145.27	6.31	6.66	6.23	7.01	1.21
4th Quintile	172.13	8.89	3.67	4.44	3.97	.42
5th Quintile	273.82	10.82	1.59	3.12	8.30	3.53
<b>All</b>	<b>155.30</b>	<b>7.23</b>	<b>4.50</b>	<b>6.55</b>	<b>7.13</b>	<b>1.01</b>
<b>Other Urban</b>						
1st Quintile	19.02	.68	4.22	11.11	109.25	14.31
2nd Quintile	33.58	1.46	3.95	26.02	95.54	8.64
3rd Quintile	59.70	2.56	4.12	18.67	88.08	22.07
4th Quintile	87.93	5.03	3.77	16.68	76.27	8.53
5th Quintile	125.41	6.62	3.58	34.23	96.83	8.16
<b>All</b>	<b>65.08</b>	<b>3.27</b>	<b>3.93</b>	<b>21.33</b>	<b>93.13</b>	<b>12.33</b>
<b>Rural</b>						
1st Quintile	3.72	.03	3.18	4.14	165.91	27.32
2nd Quintile	6.97	.18	3.02	7.67	195.09	32.87
3rd Quintile	21.65	.32	3.53	10.15	194.00	21.46
4th Quintile	24.44	1.08	3.62	11.18	195.34	25.96
5th Quintile	52.29	3.19	3.76	11.10	165.48	22.83
<b>All</b>	<b>21.82</b>	<b>.95</b>	<b>3.42</b>	<b>8.86</b>	<b>183.28</b>	<b>26.02</b>
<b>Philippines</b>						
1st Quintile	9.45	.31	3.43	5.76	157.76	28.09
2nd Quintile	14.99	.51	3.36	12.49	169.13	18.95
3rd Quintile	42.02	1.53	4.11	11.74	145.27	19.24
4th Quintile	64.06	3.42	4.35	14.08	109.79	18.94
5th Quintile	123.78	6.16	3.23	14.37	101.16	10.42
<b>All</b>	<b>51.01</b>	<b>2.39</b>	<b>3.70</b>	<b>11.66</b>	<b>136.49</b>	<b>19.15</b>

**Monthly Residential Fuel Consumption by Income  
for Fuel Users Only**

	<b>Electricity (kWh/hh/mo)</b>	<b>LPG (kg/hh/mo)</b>	<b>Kerosene (lt/hh/mo)</b>	<b>Charcoal (kg/hh/mo)</b>	<b>Fuelwood (kg/hh/mo)</b>	<b>Crop Residues (kg/hh/mo)</b>
	<b>Mean</b>	<b>Mean</b>	<b>Mean</b>	<b>Mean</b>	<b>Mean</b>	<b>Mean</b>
<b>NCR</b>						
1st Quintile	79.36	12.42	10.51	51.30	73.92	.
2nd Quintile	114.53	10.91	11.78	27.57	95.20	.
3rd Quintile	145.27	11.29	17.11	26.69	147.70	157.50
4th Quintile	173.40	12.12	11.88	17.07	68.81	42.00
5th Quintile	273.82	13.60	9.20	14.93	123.80	420.00
<b>All</b>	<b>157.71</b>	<b>12.17</b>	<b>12.25</b>	<b>28.00</b>	<b>95.60</b>	<b>200.36</b>
<b>Other Urban</b>						
1st Quintile	31.49	10.85	5.11	30.78	156.76	93.87
2nd Quintile	43.32	8.79	5.19	56.73	155.83	72.93
3rd Quintile	67.32	9.16	6.36	42.75	170.57	179.18
4th Quintile	95.26	9.76	6.19	41.21	177.13	109.99
5th Quintile	128.28	10.79	6.43	71.84	217.61	171.57
<b>All</b>	<b>78.09</b>	<b>9.98</b>	<b>5.77</b>	<b>49.90</b>	<b>172.39</b>	<b>118.77</b>
<b>Rural</b>						
1st Quintile	16.70	5.58	3.39	19.13	177.39	90.77
2nd Quintile	19.44	7.52	3.27	25.49	218.73	114.59
3rd Quintile	45.46	12.11	4.04	31.32	213.08	87.21
4th Quintile	36.43	9.36	4.35	32.25	236.18	125.07
5th Quintile	69.21	11.18	5.24	37.87	228.18	131.02
<b>All</b>	<b>44.05</b>	<b>10.55</b>	<b>3.99</b>	<b>29.88</b>	<b>213.36</b>	<b>106.87</b>
<b>Philippines</b>						
1st Quintile	28.17	10.01	3.87	24.45	185.67	109.37
2nd Quintile	32.55	9.80	3.84	35.53	204.70	85.03
3rd Quintile	59.39	9.63	5.33	34.66	205.68	100.64
4th Quintile	75.75	10.81	6.44	40.38	209.33	149.17
5th Quintile	139.79	11.58	6.21	43.41	223.86	128.81
<b>All</b>	<b>78.81</b>	<b>10.94</b>	<b>4.96</b>	<b>36.37</b>	<b>203.31</b>	<b>109.00</b>



## Fuel Penetration by Region

Percent of Households Using Each Fuel  
by Region, Urban and Rural Areas

	Electricity	LPG	Kerosene	Charcoal	Fuelwood	Crop Residues
<b>URBAN</b>						
NATIONAL CAPITAL REGION	98.5%	59.4%	36.7%	23.4%	7.5%	1.8%
REGION I (ILOCOS)	73.9%	26.4%	77.1%	31.4%	83.9%	22.3%
REGION II (CAGAYAN VALLEY)	87.6%	51.2%	48.8%	34.8%	62.1%	59.9%
REGION III (CENTRAL LUZON)	93.4%	57.5%	57.8%	34.8%	29.2%	8.3%
REGION IV (SOUTHERN LUZON)	87.0%	42.8%	63.3%	37.8%	33.4%	8.5%
REGION V (BICOL)	74.3%	28.2%	73.9%	43.2%	57.7%	19.6%
REGION VI (WESTERN VISAYAS)	81.9%	22.3%	77.0%	76.8%	69.9%	87.5%
REGION VII (CENTRAL VISAYAS)	72.3%	21.3%	62.5%	53.2%	66.8%	17.0%
REGION VIII (EASTERN VISAYAS)	74.7%	15.1%	94.8%	34.0%	63.0%	82.0%
REGION IX (WESTERN MINDANAO)	71.1%	9.1%	72.6%	31.9%	54.9%	37.0%
REGION X (NORTHERN MINDANAO)	81.8%	14.3%	77.2%	28.9%	77.9%	43.2%
REGION XI (SOUTHERN MINDANAO)	84.2%	19.6%	71.9%	58.0%	69.3%	8.6%
REGION XII (CENTRAL MINDANAO)	93.9%	11.3%	67.7%	21.2%	78.2%	11.5%
CAR (CORDILLERA ADMINISTR. REGION)	89.4%	75.5%	49.9%	21.9%	34.9%	13.0%
All	88.7%	42.2%	56.9%	35.9%	37.5%	17.5%
<b>RURAL</b>						
REGION I (ILOCOS)	72.1%	14.0%	79.2%	21.6%	85.9%	25.4%
REGION II (CAGAYAN VALLEY)	72.3%	21.6%	75.6%	26.8%	92.3%	23.9%
REGION III (CENTRAL LUZON)	71.9%	20.6%	78.6%	31.2%	75.1%	47.9%
REGION IV (SOUTHERN LUZON)	51.0%	13.7%	86.5%	36.8%	81.5%	30.3%
REGION V (BICOL)	45.5%	5.2%	90.5%	29.5%	92.9%	32.7%
REGION VI (WESTERN VISAYAS)	34.0%	2.0%	96.2%	38.7%	95.8%	142.3%
REGION VII (CENTRAL VISAYAS)	35.2%	2.9%	86.3%	23.0%	96.5%	18.1%
REGION VIII (EASTERN VISAYAS)	29.9%	1.3%	97.3%	31.0%	83.3%	108.2%
REGION IX (WESTERN MINDANAO)	37.8%	6.2%	90.5%	48.2%	71.1%	109.3%
REGION X (NORTHERN MINDANAO)	54.0%	2.5%	77.6%	18.8%	90.1%	54.9%
REGION XI (SOUTHERN MINDANAO)	43.9%	1.5%	82.1%	22.8%	90.6%	133.7%
REGION XII (CENTRAL MINDANAO)	46.0%	7.2%	84.5%	18.5%	82.7%	56.7%
CAR (CORDILLERA ADMINISTR. REGION)	61.6%	30.3%	83.2%	26.3%	69.3%	77.9%
All	49.5%	9.0%	85.7%	29.6%	85.9%	64.7%
Philippines	64.7%	21.9%	74.5%	32.1%	67.1%	46.4%

Percent of Households Using Each Fuel for Cooking  
by Region, Urban and Rural Areas

	Electricity	LPG	Kerosene	Charcoal	Fuelwood	Crop Residues
<b>URBAN</b>						
NATIONAL CAPITAL REGION	21.3%	59.3%	34.1%	23.1%	7.5%	.4%
REGION I (ILOCOS)	4.9%	26.4%	2.4%	21.4%	83.9%	6.5%
REGION II (CAGAYAN VALLEY)	2.6%	51.2%	6.0%	15.9%	66.0%	10.8%
REGION III (CENTRAL LUZON)	9.8%	57.5%	25.7%	31.4%	29.2%	5.6%
REGION IV (SOUTHERN LUZON)	12.5%	42.8%	26.3%	29.9%	33.4%	3.0%
REGION V (BICOL)	3.4%	28.2%	6.7%	28.1%	57.7%	7.1%
REGION VI (WESTERN VISAYAS)	3.8%	22.3%	14.3%	52.4%	69.9%	28.2%
REGION VII (CENTRAL VISAYAS)	1.4%	21.3%	13.1%	11.1%	66.8%	9.0%
REGION VIII (EASTERN VISAYAS)	.0%	15.1%	27.8%	13.9%	63.0%	19.3%
REGION IX (WESTERN MINDANAO)	6.9%	9.1%	8.6%	17.7%	54.9%	17.3%
REGION X (NORTHERN MINDANAO)	10.7%	14.3%	29.9%	14.4%	77.9%	13.4%
REGION XI (SOUTHERN MINDANAO)	9.8%	19.6%	25.0%	41.5%	69.3%	4.5%
REGION XII (CENTRAL MINDANAO)	5.0%	11.3%	15.9%	12.4%	78.2%	4.4%
CAR (CORDILLERA ADMINISTR. REGION)	5.7%	75.5%	33.8%	19.3%	34.9%	2.3%
All	12.4%	42.2%	25.2%	26.2%	37.6%	6.0%
<b>RURAL</b>						
REGION I (ILOCOS)	1.6%	14.0%	6.3%	10.9%	85.9%	9.8%
REGION II (CAGAYAN VALLEY)	.7%	21.6%	3.1%	5.7%	92.3%	8.0%
REGION III (CENTRAL LUZON)	3.8%	20.1%	16.3%	16.1%	75.1%	11.7%
REGION IV (SOUTHERN LUZON)	5.3%	13.4%	4.2%	23.6%	81.5%	6.5%
REGION V (BICOL)	2.5%	5.2%	8.5%	13.1%	92.9%	10.1%
REGION VI (WESTERN VISAYAS)	.8%	2.0%	4.9%	15.0%	95.8%	34.0%
REGION VII (CENTRAL VISAYAS)	1.0%	2.9%	4.0%	.5%	96.9%	24.8%
REGION VIII (EASTERN VISAYAS)	.0%	1.3%	1.9%	3.9%	83.3%	36.9%
REGION IX (WESTERN MINDANAO)	1.7%	6.2%	4.2%	9.7%	71.1%	25.3%
REGION X (NORTHERN MINDANAO)	5.5%	2.5%	5.6%	4.1%	90.1%	13.3%
REGION XI (SOUTHERN MINDANAO)	2.2%	1.5%	8.8%	4.1%	90.6%	38.4%
REGION XII (CENTRAL MINDANAO)	1.2%	7.2%	5.9%	3.3%	82.7%	14.3%
CAR (CORDILLERA ADMINISTR. REGION)	2.4%	30.3%	18.2%	5.4%	69.3%	9.9%
All	2.4%	8.9%	6.6%	10.5%	85.9%	18.7%
Philippines	6.3%	21.8%	13.8%	16.6%	67.2%	13.8%

Percent of Households Using Each Fuel  
as Primary Cooking Fuel by Region, Urban and Rural Areas

	Electricity	LPG	Kerosene	Charcoal	Fuelwood	Crop Residues
<b>URBAN</b>						
NATIONAL CAPITAL REGION	7.9%	55.4%	29.3%	3.8%	3.5%	.1%
REGION I (ILOCOS)	.0%	17.4%	1.1%	6.3%	71.1%	4.1%
REGION II (CAGAYAN VALLEY)	.0%	46.1%	2.7%	2.9%	42.1%	6.3%
REGION III (CENTRAL LUZON)	2.6%	55.0%	17.9%	7.8%	14.8%	2.0%
REGION IV (SOUTHERN LUZON)	4.9%	38.5%	20.9%	15.5%	18.9%	1.2%
REGION V (BICOL)	.0%	25.9%	4.4%	15.4%	48.4%	5.9%
REGION VI (WESTERN VISAYAS)	2.2%	16.6%	4.4%	27.9%	48.3%	.6%
REGION VII (CENTRAL VISAYAS)	.0%	20.5%	10.7%	6.2%	61.1%	1.5%
REGION VIII (EASTERN VISAYAS)	.0%	12.6%	16.6%	2.5%	55.4%	12.9%
REGION IX (WESTERN MINDANAO)	4.8%	3.0%	6.9%	7.1%	53.1%	25.2%
REGION X (NORTHERN MINDANAO)	3.0%	7.8%	21.8%	1.3%	58.5%	7.6%
REGION XI (SOUTHERN MINDANAO)	3.4%	17.5%	19.2%	6.5%	52.9%	.5%
REGION XII (CENTRAL MINDANAO)	.7%	9.4%	13.7%	6.9%	67.4%	1.9%
CAR (CORDILLERA ADMINISTR. REGION)	.0%	70.2%	9.8%	.0%	20.0%	.0%
Average	4.4%	38.4%	19.6%	8.1%	27.3%	2.3%
<b>RURAL</b>						
REGION I (ILOCOS)	1.6%	10.9%	3.1%	3.1%	81.3%	.0%
REGION II (CAGAYAN VALLEY)	.0%	18.5%	1.5%	1.5%	76.6%	1.9%
REGION III (CENTRAL LUZON)	1.3%	17.6%	11.9%	5.1%	58.3%	5.8%
REGION IV (SOUTHERN LUZON)	1.6%	11.1%	1.8%	12.2%	71.5%	1.8%
REGION V (BICOL)	2.1%	2.6%	5.6%	4.9%	83.2%	1.6%
REGION VI (WESTERN VISAYAS)	.0%	.9%	1.0%	5.8%	86.3%	6.1%
REGION VII (CENTRAL VISAYAS)	.5%	1.5%	2.6%	.0%	95.5%	.0%
REGION VIII (EASTERN VISAYAS)	.0%	1.3%	.0%	3.0%	82.7%	13.0%
REGION IX (WESTERN MINDANAO)	.0%	6.2%	3.5%	2.2%	63.5%	24.7%
REGION X (NORTHERN MINDANAO)	3.0%	2.5%	3.6%	.4%	83.7%	6.7%
REGION XI (SOUTHERN MINDANAO)	1.0%	.9%	3.5%	1.0%	83.6%	9.9%
REGION XII (CENTRAL MINDANAO)	.7%	6.7%	3.7%	.0%	80.5%	8.4%
CAR (CORDILLERA ADMINISTR. REGION)	.0%	28.6%	13.3%	2.0%	56.1%	.0%
Average	1.0%	7.4%	3.8%	4.0%	77.9%	6.0%
Philippines	2.3%	19.4%	9.9%	5.6%	58.3%	4.6%

## Fuel Use by Region

Annual Total Residential Fuel Consumption  
by Region, Urban and Rural Areas

	Electricity (GWh)	LPG (000 Tons)	Kerosene (000 m3)	Charcoal (000 Tons)	Fuelwood (000 Tons)	Crop Res. (000 Tons)
	Sum	Sum	Sum	Sum	Sum	Sum
<b>URBAN</b>						
NATIONAL CAPITAL REGION	2867.36	133.42	83.11	120.93	131.61	18.70
REGION I (ILOCOS)	59.36	4.07	7.26	18.76	308.61	22.27
REGION II (CAGAYAN VALLEY)	42.91	3.74	1.07	8.02	114.02	18.16
REGION III (CENTRAL LUZON)	496.93	34.88	15.67	88.37	203.84	24.65
REGION IV (SOUTHERN LUZON)	692.27	29.50	31.42	189.17	389.88	33.66
REGION V (BICOL)	76.12	4.92	4.55	67.30	271.84	14.29
REGION VI (WESTERN VISAYAS)	142.70	7.03	13.39	165.41	385.88	137.87
REGION VII (CENTRAL VISAYAS)	128.52	5.90	11.61	52.68	330.03	23.89
REGION VIII (EASTERN VISAYAS)	54.02	3.47	8.91	24.69	216.51	68.98
REGION IX (WESTERN MINDANAO)	45.31	1.13	4.64	12.04	127.01	13.88
REGION X (NORTHERN MINDANAO)	116.79	1.99	10.46	17.79	221.05	36.13
REGION XI (SOUTHERN MINDANAO)	260.36	6.64	18.30	57.23	365.49	14.02
REGION XII (CENTRAL MINDANAO)	49.65	1.32	3.04	12.04	142.33	3.92
CAR (CORDILLERA ADMINISTR. REGION)	20.26	5.18	1.55	2.82	50.34	2.34
All	5052.57	243.20	214.98	837.26	3258.43	432.75
<b>RURAL</b>						
REGION I (ILOCOS)	125.07	7.88	14.14	41.75	1467.86	58.59
REGION II (CAGAYAN VALLEY)	148.18	9.42	10.98	15.69	992.04	38.07
REGION III (CENTRAL LUZON)	270.12	17.98	27.31	83.19	1178.59	128.41
REGION IV (SOUTHERN LUZON)	318.11	16.69	35.01	276.85	2073.03	130.29
REGION V (BICOL)	75.43	3.06	25.92	76.96	1122.29	121.74
REGION VI (WESTERN VISAYAS)	78.61	1.16	32.14	83.80	1830.05	483.62
REGION VII (CENTRAL VISAYAS)	83.12	1.02	16.64	32.97	1221.45	41.25
REGION VIII (EASTERN VISAYAS)	34.05	.77	23.31	25.46	868.26	199.14
REGION IX (WESTERN MINDANAO)	86.41	5.48	25.09	48.05	692.26	233.30
REGION X (NORTHERN MINDANAO)	189.86	3.39	20.29	9.41	1335.67	157.68
REGION XI (SOUTHERN MINDANAO)	135.83	1.03	23.86	12.61	1050.08	317.89
REGION XII (CENTRAL MINDANAO)	222.08	4.04	21.30	9.42	808.99	154.83
CAR (CORDILLERA ADMINISTR. REGION)	25.68	6.02	5.23	11.53	417.90	72.87
All	1792.53	77.93	281.20	727.67	15058.47	2137.70
Philippines	6845.10	321.13	496.19	1564.93	18316.90	2570.45

Annual Per Capita Residential Fuel Consumption  
by Region, Urban and Rural Areas

	Electricity (kWh/cap/yr)	LPG (kg/cap/yr)	Kerosene (lt/cap/yr)	Charcoal (kg/cap/yr)	Fuelwood (kg/cap/yr)	Crop Residues (kg/cap/yr)
	Mean	Mean	Mean	Mean	Mean	Mean
<b>URBAN</b>						
NATIONAL CAPITAL REGION	384.03	17.98	10.73	15.00	15.30	1.84
REGION I (ILOCOS)	81.22	5.83	9.38	25.87	434.66	22.34
REGION II (CAGAYAN VALLEY)	146.50	14.72	4.32	22.82	452.68	59.87
REGION III (CENTRAL LUZON)	236.84	15.68	7.74	46.33	86.29	8.30
REGION IV (SOUTHERN LUZON)	265.17	11.64	11.42	75.33	126.72	8.47
REGION V (BICOL)	96.66	7.08	8.22	75.39	389.45	19.55
REGION VI (WESTERN VISAYAS)	109.02	5.28	9.10	129.93	269.14	87.50
REGION VII (CENTRAL VISAYAS)	97.90	4.04	9.52	42.04	237.22	16.96
REGION VIII (EASTERN VISAYAS)	69.91	4.19	11.30	30.48	258.15	81.95
REGION IX (WESTERN MINDANAO)	113.36	2.60	18.72	20.97	342.40	36.95
REGION X (NORTHERN MINDANAO)	165.34	2.56	13.56	25.49	293.19	43.24
REGION XI (SOUTHERN MINDANAO)	155.13	4.19	13.10	39.73	215.11	8.61
REGION XII (CENTRAL MINDANAO)	108.11	3.62	7.28	29.61	289.23	11.48
CAR (CORDILLERA ADMINISTR. REGION)	100.93	22.58	8.20	8.86	175.72	13.04
All	244.43	11.84	10.45	40.89	147.71	17.47
<b>RURAL</b>						
REGION I (ILOCOS)	57.81	3.50	6.89	16.36	623.69	25.41
REGION II (CAGAYAN VALLEY)	82.09	5.28	7.30	11.11	608.52	23.91
REGION III (CENTRAL LUZON)	83.49	4.98	9.24	27.48	385.25	47.89
REGION IV (SOUTHERN LUZON)	68.77	3.51	9.32	58.90	497.81	30.34
REGION V (BICOL)	26.18	1.38	9.63	37.74	415.45	32.67
REGION VI (WESTERN VISAYAS)	25.99	.53	9.72	26.86	493.93	142.33
REGION VII (CENTRAL VISAYAS)	37.83	.40	7.23	12.17	521.23	18.11
REGION VIII (EASTERN VISAYAS)	18.61	.34	11.60	16.33	417.69	108.19
REGION IX (WESTERN MINDANAO)	31.21	2.15	13.99	20.60	330.44	109.33
REGION X (NORTHERN MINDANAO)	64.98	1.24	8.38	3.18	520.04	54.91
REGION XI (SOUTHERN MINDANAO)	55.51	.30	11.31	5.15	426.77	133.68
REGION XII (CENTRAL MINDANAO)	77.90	1.90	9.28	3.00	342.29	56.73
CAR (CORDILLERA ADMINISTR. REGION)	33.18	6.83	8.35	10.96	505.07	77.88
All	52.45	2.29	9.44	23.03	466.26	64.69
Philippines	126.90	5.99	9.83	29.95	342.73	46.38

**Annual Per Capita Residential Fuel Consumption  
by Region, Urban and Rural Areas: for Fuel Users Only**

	Electricity	LPG	Kerosene	Charcoal	Fuelwood	Crop Residues
	(kwh/cap/yr)	(kg/cap/yr)	(lt/cap/yr)	(kg/cap/yr)	(kg/cap/yr)	(kg/cap/yr)
	Mean	Mean	Mean	Mean	Mean	Mean
<b>URBAN</b>						
NATIONAL CAPITAL REGION	389.99	30.29	29.20	64.15	205.18	364.17
REGION I (ILOCOS)	109.91	22.12	12.17	82.35	518.17	292.44
REGION II (CAGAYAN VALLEY)	167.15	28.75	8.85	65.50	728.60	481.05
REGION III (CENTRAL LUZON)	253.61	27.29	13.38	133.31	295.94	178.81
REGION IV (SOUTHERN LUZON)	304.92	27.22	18.03	199.07	379.38	344.08
REGION V (BICOL)	130.15	25.06	11.13	174.46	674.40	156.92
REGION VI (WESTERN VISAYAS)	133.06	23.65	11.81	169.14	384.79	369.56
REGION VII (CENTRAL VISAYAS)	135.35	18.96	15.23	78.97	355.14	159.75
REGION VIII (EASTERN VISAYAS)	93.63	27.74	11.92	89.65	409.78	341.21
REGION IX (WESTERN MINDANAO)	159.34	28.50	25.79	65.66	624.21	129.24
REGION X (NORTHERN MINDANAO)	202.01	17.97	17.56	88.26	376.50	225.28
REGION XI (SOUTHERN MINDANAO)	184.34	21.42	18.23	68.55	310.29	144.72
REGION XII (CENTRAL MINDANAO)	115.09	32.18	10.75	139.97	370.07	117.83
CAR (CORDILLERA ADMINISTR. REGION)	112.86	29.90	16.44	40.36	504.06	108.15
<b>All</b>	<b>275.53</b>	<b>28.05</b>	<b>18.36</b>	<b>113.94</b>	<b>393.90</b>	<b>253.91</b>
<b>RURAL</b>						
REGION I (ILOCOS)	80.15	25.08	8.70	75.90	726.24	339.09
REGION II (CAGAYAN VALLEY)	113.58	24.45	9.65	41.52	659.29	78.90
REGION III (CENTRAL LUZON)	116.18	24.21	11.75	88.13	512.99	307.91
REGION IV (SOUTHERN LUZON)	134.87	25.51	10.78	160.25	610.61	256.37
REGION V (BICOL)	57.54	26.47	10.64	128.00	447.24	184.87
REGION VI (WESTERN VISAYAS)	76.50	25.94	10.11	69.32	515.51	333.84
REGION VII (CENTRAL VISAYAS)	107.56	13.98	8.37	53.01	540.20	81.04
REGION VIII (EASTERN VISAYAS)	62.13	26.08	11.92	52.65	501.57	288.36
REGION IX (WESTERN MINDANAO)	82.62	34.89	15.46	42.75	464.75	243.60
REGION X (NORTHERN MINDANAO)	20.22	48.59	10.80	16.94	577.01	445.62
REGION XI (SOUTHERN MINDANAO)	126.41	20.35	13.77	22.60	471.23	430.15
REGION XII (CENTRAL MINDANAO)	169.52	26.43	10.99	16.23	414.13	187.28
CAR (CORDILLERA ADMINISTR. REGION)	53.85	22.50	10.04	41.59	728.50	319.95
<b>All</b>	<b>105.91</b>	<b>25.41</b>	<b>11.01</b>	<b>77.70</b>	<b>542.79</b>	<b>265.72</b>
<b>Philippines</b>	<b>196.06</b>	<b>27.39</b>	<b>13.19</b>	<b>93.43</b>	<b>510.54</b>	<b>263.93</b>

Monthly Residential Fuel Consumption  
by Region, Urban and Rural Areas

	Electricity (kwh/hh/mo)	LPG (kg/hh/mo)	Kerosene (lt/hh/mo)	Charcoal (kg/hh/mo)	Fuelwood (kg/hh/mo)	Crop Residues (kg/hh/mo)
	Mean	Mean	Mean	Mean	Mean	Mean
<b>URBAN</b>						
NATIONAL CAPITAL REGION	155.30	7.23	4.50	6.55	7.13	1.01
REGION I (ILOCOS)	33.77	2.32	4.13	10.67	175.55	12.67
REGION II (CAGAYAN VALLEY)	56.24	4.91	1.40	10.51	149.42	23.80
REGION III (CENTRAL LUZON)	86.79	6.09	2.74	15.43	35.60	4.31
REGION IV (SOUTHERN LUZON)	97.39	4.15	4.42	26.61	54.85	4.74
REGION V (BICOL)	43.42	2.81	2.60	38.39	155.08	8.15
REGION VI (WESTERN VISAYAS)	44.69	2.20	4.19	51.81	120.86	43.18
REGION VII (CENTRAL VISAYAS)	39.03	1.79	3.52	16.00	100.21	7.25
REGION VIII (EASTERN VISAYAS)	32.86	2.11	5.42	15.02	131.70	41.96
REGION IX (WESTERN MINDANAO)	38.70	.96	3.96	10.29	108.46	11.85
REGION X (NORTHERN MINDANAO)	60.27	1.03	5.40	9.18	114.08	18.65
REGION XI (SOUTHERN MINDANAO)	74.22	1.89	5.22	16.31	104.19	4.00
REGION XII (CENTRAL MINDANAO)	44.68	1.19	2.73	10.84	128.08	3.52
CAR (CORDILLERA ADMINISTR. REGION)	33.21	8.50	2.55	4.63	82.52	3.83
All	97.09	4.67	4.13	16.09	62.61	8.32
<b>RURAL</b>						
REGION I (ILOCOS)	20.83	1.31	2.36	6.95	244.51	9.76
REGION II (CAGAYAN VALLEY)	33.05	2.10	2.45	3.50	221.28	8.49
REGION III (CENTRAL LUZON)	33.93	2.26	3.43	10.45	148.04	16.13
REGION IV (SOUTHERN LUZON)	27.65	1.45	3.04	24.07	180.21	11.33
REGION V (BICOL)	11.50	.47	3.95	11.73	171.12	18.56
REGION VI (WESTERN VISAYAS)	9.38	.14	3.84	10.00	218.42	57.72
REGION VII (CENTRAL VISAYAS)	11.84	.15	2.37	4.70	174.06	5.88
REGION VIII (EASTERN VISAYAS)	6.47	.15	4.43	4.83	164.89	37.82
REGION IX (WESTERN MINDANAO)	15.40	.98	4.47	8.57	123.40	41.59
REGION X (NORTHERN MINDANAO)	34.10	.61	3.64	1.69	239.87	28.32
REGION XI (SOUTHERN MINDANAO)	21.90	.17	3.85	2.03	169.31	51.26
REGION XII (CENTRAL MINDANAO)	39.40	.72	3.78	1.67	143.54	27.47
CAR (CORDILLERA ADMINISTR. REGION)	13.01	3.05	2.65	5.84	211.72	36.92
All	21.82	.95	3.42	8.86	183.28	26.02
Philippines	51.01	2.39	3.70	11.66	136.49	19.15

**Monthly Residential Fuel Consumption  
by Region, Urban and Rural Areas: for Fuel Users Only**

	Electricity (kWh/hh/mo)	LPG (kg/hh/mo)	Kerosene (lt/hh/mo)	Charcoal (kg/hh/mo)	Fuelwood (kg/hh/mo)	Crop Residues (kg/hh/mo)
	Mean	Mean	Mean	Mean	Mean	Mean
<b>URBAN</b>						
NATIONAL CAPITAL REGION	157.71	12.17	12.25	28.00	95.60	200.36
REGION I (ILOCOS)	45.70	8.78	5.36	33.96	209.28	165.80
REGION II (CAGAYAN VALLEY)	64.17	9.58	2.88	30.17	240.49	191.25
REGION III (CENTRAL LUZON)	92.94	10.60	4.73	44.41	122.11	92.82
REGION IV (SOUTHERN LUZON)	111.99	9.71	6.98	70.33	164.20	192.31
REGION V (BICOL)	58.47	9.94	3.52	88.84	268.54	65.41
REGION VI (WESTERN VISAYAS)	54.55	9.87	5.44	67.44	172.80	182.38
REGION VII (CENTRAL VISAYAS)	53.96	8.41	5.64	30.05	150.03	68.31
REGION VIII (EASTERN VISAYAS)	44.00	13.98	5.72	44.18	209.06	174.70
REGION IX (WESTERN MINDANAO)	54.39	10.53	5.46	32.20	197.73	41.46
REGION X (NORTHERN MINDANAO)	73.64	7.18	6.99	31.79	146.50	97.15
REGION XI (SOUTHERN MINDANAO)	88.19	9.67	7.26	28.15	150.28	67.15
REGION XII (CENTRAL MINDANAO)	47.56	10.53	4.03	51.22	163.88	36.17
CAR (CORDILLERA ADMINISTR. REGION)	37.14	11.25	5.11	21.10	236.70	31.75
All	107.44	11.07	7.26	44.83	166.98	120.90
<b>RURAL</b>						
REGION I (ILOCOS)	28.88	9.39	2.97	32.26	284.71	130.26
REGION II (CAGAYAN VALLEY)	45.73	9.73	3.24	13.08	239.74	28.02
REGION III (CENTRAL LUZON)	47.22	10.98	4.36	33.51	197.13	103.71
REGION IV (SOUTHERN LUZON)	54.23	10.56	3.52	65.48	221.04	95.70
REGION V (BICOL)	25.27	8.95	4.37	39.80	184.21	105.03
REGION VI (WESTERN VISAYAS)	27.61	6.82	3.99	25.81	227.96	135.39
REGION VII (CENTRAL VISAYAS)	33.68	5.09	2.75	20.47	180.39	26.30
REGION VIII (EASTERN VISAYAS)	21.59	11.15	4.55	15.58	198.00	100.80
REGION IX (WESTERN MINDANAO)	40.77	15.87	4.94	17.78	173.56	92.66
REGION X (NORTHERN MINDANAO)	63.09	23.88	4.70	8.99	266.15	229.82
REGION XI (SOUTHERN MINDANAO)	49.88	11.15	4.68	8.93	186.95	164.93
REGION XII (CENTRAL MINDANAO)	85.75	9.97	4.47	9.05	173.66	90.69
CAR (CORDILLERA ADMINISTR. REGION)	21.11	10.05	3.19	22.17	305.38	151.67
All	44.05	10.55	3.99	29.88	213.36	106.87
Philippines	78.81	10.94	4.96	36.37	203.31	109.00



## Fuel Source Tables

## Share of Households Obtaining Fuels from Each Source

	NCR	Other Urban	Rural	Philippines
<b>Electricity Source</b>				
Not used	1.5%	16.7%	50.5%	35.3%
Distribution Co. / Utility	83.9%	76.0%	45.1%	58.2%
Neighboring Household	14.0%	6.9%	3.7%	5.9%
Industry / Business	.4%	.1%	.7%	.5%
Other	.1%	.3%	.0%	.1%
<b>All Households</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Source of LPG</b>				
Not used	40.6%	67.2%	91.0%	78.1%
Pick up from major distr/dealer	19.5%	15.6%	4.8%	9.6%
Pick up from small shop selling LPG	27.4%	14.4%	3.8%	9.7%
Delivered from major distr/dealer	7.8%	1.9%	.2%	1.7%
Delivered from small shop	4.6%	.9%	.1%	.9%
Other mode of purchase	.2%	.0%	.0%	.0%
<b>All Households</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Source of Kerosene</b>				
Not used	63.3%	32.0%	14.3%	25.5%
Kerosene agent/dealer	5.9%	23.8%	25.6%	22.4%
Sari-sari store	30.2%	42.9%	58.1%	50.4%
Kerosene peddler	.4%	.4%	1.0%	.8%
Others	.2%	.9%	1.0%	.9%
<b>All Households</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Source of Charcoal</b>				
Not used	76.6%	57.2%	60.4%	67.9%
Home-Produced	.3%	3.7%	13.0%	8.9%
Purchased	23.4%	39.7%	16.8%	23.4%
<b>All Households</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Source of Fuelwood</b>				
Not used	92.5%	46.0%	14.1%	32.9%
Collected	5.0%	30.4%	75.4%	54.5%
Purchased	3.1%	30.7%	17.5%	18.8%
<b>All Households</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>
<b>Source of Agricultural Residues</b>				
Not used	99.5%	89.6%	75.7%	82.4%
Collected	.4%	8.9%	22.7%	16.2%
Purchased	.1%	2.5%	2.2%	2.0%
<b>All Households</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>	<b>100.0%</b>

## Total Annual Residential Fuel Consumption by Source

	NCR	Other Urban	Rural	Philippines
<b>Electricity (GWh/yr)</b>				
Distribution Co. / Utility	2657.81	2119.42	1654.72	6431.95
Neighboring Household	197.16	62.84	80.77	340.77
Industry / Business	7.92	.79	57.04	65.75
Other	4.47	2.15	.	6.63
<b>All Sources</b>	<b>2867.36</b>	<b>2185.21</b>	<b>1792.53</b>	<b>6845.10</b>
<b>LPG (000 Tons/yr)</b>				
Pick up from major distr/dealer	44.75	53.62	44.16	142.52
Pick up from small shop selling lpg	61.54	47.75	31.06	140.35
Delivered from major distr/dealer	16.05	5.60	2.00	23.65
Delivered from small shop	10.76	2.81	.72	14.30
Other mode of purchase	.32	.	.	.32
<b>All Sources</b>	<b>133.42</b>	<b>109.78</b>	<b>77.93</b>	<b>321.13</b>
<b>Kerosene (000 m<sup>3</sup>/yr)</b>				
Kerosene agent/dealer	14.37	68.66	125.76	208.79
Sari-sari store	65.76	58.58	148.95	273.29
Kerosene peddler	2.54	1.34	2.25	6.13
Others	.43	3.29	4.25	7.97
<b>All Sources</b>	<b>83.11</b>	<b>131.87</b>	<b>281.20</b>	<b>496.19</b>
<b>Charcoal (000 Tons/yr)</b>				
Home-Produced	1.87	29.94	317.49	349.30
Purchased	119.05	686.40	410.19	1215.64
<b>All Sources</b>	<b>120.93</b>	<b>716.33</b>	<b>727.67</b>	<b>1564.93</b>
<b>Fuelwood (000 Tons/yr)</b>				
Collected	65.27	1463.47	12787.65	14316.39
Purchased	66.34	1663.35	2270.82	4000.51
<b>All Sources</b>	<b>131.61</b>	<b>3126.82</b>	<b>15058.47</b>	<b>18316.90</b>
<b>Crop Residues (000 Tons/yr)</b>				
Collected	14.57	317.21	1998.72	2330.50
Purchased	4.13	96.84	138.97	239.94
<b>All Sources</b>	<b>18.70</b>	<b>414.05</b>	<b>2137.70</b>	<b>2570.45</b>

## End-use Tables

Percent of Households Using Each Fuel  
by End Use

	NCR	Other Urban	Rural	Philippines
LPG For Cooking	59.3%	32.8%	8.9%	21.8%
LPG For H2O Heating	.5%	.4%	.1%	.2%
LPG	59.4%	32.8%	9.0%	21.9%
Kerosene for Cooking	34.1%	20.3%	6.6%	13.8%
Kerosene for Water Heating	3.0%	3.1%	.7%	1.6%
Kerosene for Lighting	5.4%	51.2%	81.2%	63.3%
Kerosene for Refrigeration	.0%	.0%	.1%	.0%
Kerosene for Fire Starting	2.6%	20.7%	32.6%	25.5%
Kerosene	36.7%	68.0%	85.7%	74.5%
Charcoal for Cooking	23.1%	27.9%	10.5%	16.6%
Charcoal for Water Heating	2.1%	2.8%	1.2%	1.7%
Charcoal for Ironing	.6%	22.7%	23.1%	19.9%
Charcoal	23.4%	42.8%	29.6%	32.1%
Fuelwood for Cooking	7.5%	54.0%	85.9%	67.1%
Fuelwood for Water Heating	1.5%	4.6%	6.8%	5.5%
Fuelwood	7.5%	54.0%	85.9%	67.1%
Biomass Residues for Cooking	.5%	9.9%	22.4%	16.3%
Biomass For Water Heating	.2%	.5%	1.1%	.9%
Crop Residues	.5%	10.4%	24.3%	17.6%

## Total Annual Residential Fuel Consumption

	NCR	Other Urban	Rural	Philippines
LPG For Cooking (000 T/yr)	132.98	109.38	77.49	319.85
LPG For H2O Heating (000 T/yr)	.44	.40	.34	1.18
LPG For Lighting (000 T/yr)	.00	.00	.00	.00
LPG (000 T/yr)	133.42	109.78	77.93	321.13
Kerosene for Cooking (000 m <sup>3</sup> /yr)	77.63	61.16	32.19	170.98
Kerosene for Water Heating (000 m <sup>3</sup> /yr)	2.46	5.46	2.58	10.50
Kerosene for Lighting (000 m <sup>3</sup> /yr)	2.63	47.01	193.19	242.83
Kerosene for Refrigeration (000 m <sup>3</sup> /yr)	.00	.00	1.29	1.29
Kerosene for Other Uses (000 m <sup>3</sup> /yr)	.00	.01	.01	.02
Kerosene for Fire Starting (000 m <sup>3</sup> /yr)	.34	18.12	51.88	70.33
Kerosene (000 m <sup>3</sup> /yr)	83.11	131.87	281.20	496.19
Charcoal for Cooking (000 T/yr)	113.13	571.82	515.66	1200.62
Charcoal for Water Heating (000 T/yr)	6.20	23.24	18.62	48.06
Charcoal for Ironing (000 T/yr)	1.28	121.03	192.05	314.35
Charcoal for Other Uses (000 T/yr)	.32	.24	1.35	1.91
Charcoal (000 T/yr)	120.93	716.33	727.67	1564.93
Fuelwood for Cooking (000 T/yr)	115.08	3035.05	14710.21	17860.34
Fuelwood for Water Heating (000 T/yr)	16.53	91.77	348.26	456.55
Fuelwood (000 T/yr)	131.61	3126.82	15058.47	18316.90
Biomass Residues for Cooking (000 T/yr)	12.17	392.03	2062.75	2466.94
Biomass For Water Heating (000 T/yr)	6.53	18.44	39.87	64.84
Biomass For Other Purposes (000 T/yr)	.00	3.08	29.80	32.89
Crop Residues (000 T/yr)	18.70	414.05	2137.70	2570.45

## Mean Monthly Residential Fuel Consumption by End Use

	NCR	Other Urban	Rural	Philippines
LPG For Cooking (kg/mo)	7.20	3.26	.94	2.38
LPG For H2O Heating (kg/mo)	.02	.01	.00	.01
LPG For Lighting (kg/mo)	.00	.00	.00	.00
LPG (kg/HH/mo)	7.23	3.27	.95	2.39
Kerosene for Cooking (liters/mo)	4.20	1.82	.39	1.27
Kerosene for Water Heating (liters/mo)	.13	.16	.03	.08
Kerosene for Lighting (liters/mo)	.14	1.40	2.35	1.81
Kerosene for Refrigeration (liters/mo)	.00	.00	.02	.01
Kerosene for Other Uses (liters/mo)	.00	.00	.00	.00
Kerosene for Fire Starting (liters/mo)	.02	.54	.63	.52
Kerosene (lt/HH/mo)	4.50	3.93	3.42	3.70
Charcoal for Cooking (kg/mo)	6.13	17.03	6.28	8.95
Charcoal for Water Heating (kg/mo)	.34	.69	.23	.36
Charcoal for Ironing (kg/mo)	.07	3.60	2.34	2.34
Charcoal for Other Uses (kg/mo)	.02	.01	.02	.01
Charcoal (kg/HH/mo)	6.55	21.33	8.86	11.66
Fuelwood for Cooking (kg/mo)	6.23	90.39	179.04	133.09
Fuelwood for Water Heating (kg/mo)	.90	2.73	4.24	3.40
Fuelwood (kg/HH/mo)	7.13	93.13	183.28	136.49
Biomass Residues for Cooking (kg/mo)	.66	11.68	25.11	18.38
Biomass For Water Heating (kg/mo)	.35	.55	.49	.48
Biomass For Other Purposes (kg/mo)	.00	.09	.36	.25
Crop Residues (kg/HH/mo)	1.01	12.33	26.02	19.15

Mean Monthly Residential Fuel Consumption by End Use  
for Users Only

	NCR	Other Urban	Rural	Philippines
LPG For Cooking (kg/mo)	12.15	9.95	10.59	10.94
LPG For H2O Heating (kg/mo)	4.87	3.20	3.09	3.62
LPG (kg/HH/mo)	12.17	9.98	10.55	10.94
Kerosene for Cooking (liters/mo)	12.33	8.96	5.94	9.22
Kerosene for Water Heating (liters/mo)	4.44	5.25	4.33	4.79
Kerosene for Lighting (liters/mo)	2.65	2.74	2.89	2.86
Kerosene for Refrigeration (liters/mo)	.	.	20.16	20.16
Kerosene for Fire Starting (liters/mo)	.71	2.61	1.93	2.05
Kerosene (lt/HH/mo)	12.25	5.77	3.99	4.96
Charcoal for Cooking (kg/mo)	26.51	60.97	60.06	54.00
Charcoal for Water Heating (kg/mo)	15.64	24.97	18.62	20.65
Charcoal for Ironing (kg/mo)	11.16	15.91	10.10	11.76
Charcoal (kg/HH/mo)	28.00	49.90	29.88	36.37
Fuelwood for Cooking (kg/mo)	83.59	167.34	208.43	198.25
Fuelwood for Water Heating (kg/mo)	59.08	59.47	62.73	61.91
Fuelwood (kg/HH/mo)	95.60	172.39	213.36	203.31
Biomass Residues for Cooking (kg/mo)	130.40	118.33	112.04	113.08
Biomass For Water Heating (kg/mo)	210.00	101.11	42.56	56.37
Crop Residues (kg/HH/mo)	200.36	118.77	106.87	109.00

## Cooking Fuel Shares (Utilized Energy)

## Share of Cooking Energy Delivered by Each Fuel

Energy Content Stove Efficiency	Electricity 3.6 MJ/kWh 70%	LPG 45.2 MJ/kg 55%	Kerosene 34.1 MJ/l 40%	Charcoal 30 MJ/kg 20%	Fuelwood 16 MJ/kg 15%	Crop Residues 14.5 MJ/kg 15%	Total
NCR	7.8%	52.6%	27.2%	7.9%	4.2%	.3%	100%
Other Urban	1.9%	24.7%	12.0%	13.8%	42.3%	5.4%	100%
All Urban	4.0%	34.6%	17.4%	11.7%	28.8%	3.6%	100%
Rural	.7%	5.8%	2.9%	5.1%	75.8%	9.6%	100%
Philippines	2.0%	17.0%	8.5%	7.7%	57.6%	7.3%	100%

Share of Cooking Energy Delivered by Each Fuel  
by Region, Urban and Rural Areas

	Electricity	LPG	Kerosene	Charcoal	Fuelwood	Crop Residues
<b>URBAN</b>						
NATIONAL CAPITAL REGION	7.8%	52.6%	27.2%	7.9%	4.2%	.3%
REGION I (ILOCOS)	.1%	13.2%	1.1%	8.2%	72.1%	5.2%
REGION II (CAGAYAN VALLEY)	.1%	39.3%	3.3%	6.2%	44.6%	6.5%
REGION III (CENTRAL LUZON)	2.6%	47.4%	16.1%	11.9%	19.7%	2.4%
REGION IV (SOUTHERN LUZON)	3.9%	35.2%	17.0%	18.4%	23.9%	1.6%
REGION V (BICOL)	.1%	22.8%	4.6%	18.5%	47.3%	6.6%
REGION VI (WESTERN VISAYAS)	.8%	10.7%	4.9%	29.6%	46.9%	7.1%
REGION VII (CENTRAL VISAYAS)	.4%	16.4%	10.0%	8.2%	61.1%	3.9%
REGION VIII (EASTERN VISAYAS)	.0%	9.7%	15.4%	6.0%	52.6%	16.4%
REGION IX (WESTERN MINDANAO)	1.2%	5.8%	6.3%	11.1%	49.0%	26.7%
REGION X (NORTHERN MINDANAO)	2.7%	7.5%	15.5%	4.7%	56.6%	13.0%
REGION XI (SOUTHERN MINDANAO)	2.4%	12.0%	14.1%	14.6%	55.2%	1.7%
REGION XII (CENTRAL MINDANAO)	1.1%	9.5%	9.9%	6.8%	70.1%	2.5%
CAR (CORDILLERA ADMINISTR. REGION)	.7%	59.0%	8.3%	3.1%	26.6%	2.3%
All	4.0%	34.6%	17.4%	11.7%	28.8%	3.6%
<b>RURAL</b>						
REGION I (ILOCOS)	1.6%	8.9%	2.6%	5.0%	79.3%	2.6%
REGION II (CAGAYAN VALLEY)	.3%	12.5%	.8%	1.7%	81.7%	3.1%
REGION III (CENTRAL LUZON)	1.2%	13.9%	8.2%	7.3%	62.3%	7.0%
REGION IV (SOUTHERN LUZON)	1.3%	7.9%	1.8%	16.3%	69.2%	3.5%
REGION V (BICOL)	.2%	3.3%	3.1%	6.5%	82.6%	4.4%
REGION VI (WESTERN VISAYAS)	.1%	.7%	.5%	5.1%	77.7%	15.9%
REGION VII (CENTRAL VISAYAS)	.3%	1.5%	2.6%	.0%	93.2%	2.4%
REGION VIII (EASTERN VISAYAS)	.0%	1.0%	.0%	3.2%	75.3%	20.5%
REGION IX (WESTERN MINDANAO)	.3%	5.6%	2.8%	3.2%	59.0%	29.1%
REGION X (NORTHERN MINDANAO)	1.8%	1.9%	2.9%	.9%	84.7%	7.7%
REGION XI (SOUTHERN MINDANAO)	.7%	.7%	3.0%	1.4%	81.2%	13.0%
REGION XII (CENTRAL MINDANAO)	.8%	6.0%	4.0%	.3%	74.7%	14.1%
CAR (CORDILLERA ADMINISTR. REGION)	.1%	22.3%	7.5%	.5%	62.9%	6.8%
All	.7%	5.8%	2.9%	5.1%	75.8%	9.6%
Philippines	2.0%	17.0%	8.5%	7.7%	57.6%	7.3%

## Share of Cooking Energy Delivered by Each Fuel by Income

	Electricity	LPG	Kerosene	Charcoal	Fuelwood	Crop Residues	Total
<b>NCR</b>							
1st Decile	4.2%	38.1%	35.5%	12.8%	9.4%	.0%	100%
2nd Decile	2.4%	30.5%	47.0%	15.0%	5.1%	.0%	100%
3rd Decile	5.9%	39.6%	39.1%	11.3%	4.1%	.0%	100%
4th Decile	4.4%	51.7%	32.8%	4.9%	6.1%	.0%	100%
5th Decile	4.9%	47.8%	39.5%	7.3%	.5%	.0%	100%
6th Decile	12.6%	48.5%	27.8%	6.8%	3.6%	.7%	100%
7th Decile	10.1%	62.8%	18.4%	5.9%	2.8%	.0%	100%
8th Decile	8.7%	64.1%	18.1%	5.9%	2.6%	.6%	100%
9th Decile	7.8%	71.1%	11.6%	5.6%	3.9%	.0%	100%
10th Decile	16.0%	71.7%	3.1%	4.5%	3.2%	1.4%	100%
All	7.8%	52.6%	27.2%	7.9%	4.2%	.3%	100%
<b>Other Urban</b>							
1st Decile	.1%	3.2%	10.8%	12.4%	63.9%	9.6%	100%
2nd Decile	.9%	7.5%	10.2%	10.8%	62.6%	8.0%	100%
3rd Decile	1.3%	10.8%	11.8%	16.2%	51.5%	8.5%	100%
4th Decile	.1%	14.6%	15.7%	18.2%	47.7%	3.8%	100%
5th Decile	2.2%	20.3%	13.3%	12.5%	44.6%	7.1%	100%
6th Decile	2.4%	24.9%	14.9%	15.7%	35.8%	6.2%	100%
7th Decile	1.4%	36.4%	14.5%	13.3%	31.2%	3.2%	100%
8th Decile	4.1%	43.8%	11.6%	9.2%	27.6%	3.7%	100%
9th Decile	2.4%	46.5%	11.3%	12.0%	26.6%	1.2%	100%
10th Decile	3.7%	38.1%	5.7%	18.4%	31.9%	2.2%	100%
All	1.9%	24.7%	12.0%	13.8%	42.3%	5.4%	100%
<b>Rural</b>							
1st Decile	.0%	.0%	.0%	1.8%	87.8%	10.4%	100%
2nd Decile	.0%	.8%	1.4%	4.3%	80.2%	13.2%	100%
3rd Decile	.0%	1.6%	.8%	4.1%	80.5%	13.1%	100%
4th Decile	.5%	1.2%	1.2%	4.6%	79.1%	13.5%	100%
5th Decile	.2%	.8%	1.7%	6.2%	83.8%	7.4%	100%
6th Decile	.5%	2.4%	3.0%	4.0%	81.0%	9.1%	100%
7th Decile	.4%	6.2%	4.8%	4.7%	76.5%	7.4%	100%
8th Decile	.7%	7.6%	6.4%	9.3%	68.1%	8.0%	100%
9th Decile	2.0%	17.9%	5.9%	8.3%	57.6%	8.2%	100%
10th Decile	3.1%	20.5%	3.7%	4.2%	62.2%	6.3%	100%
All	.7%	5.8%	2.9%	5.1%	75.8%	9.6%	100%
<b>Philippines</b>							
1st Decile	.2%	2.1%	2.9%	4.9%	79.7%	10.3%	100%
2nd Decile	.5%	3.5%	5.6%	4.6%	72.7%	13.2%	100%
3rd Decile	.3%	3.5%	3.5%	6.8%	74.6%	11.3%	100%
4th Decile	.8%	4.3%	7.2%	8.6%	72.1%	7.0%	100%
5th Decile	.4%	9.0%	8.8%	8.5%	66.6%	6.7%	100%
6th Decile	1.6%	14.7%	12.7%	7.9%	56.5%	6.6%	100%
7th Decile	2.2%	21.3%	13.7%	10.1%	47.1%	5.6%	100%
8th Decile	3.5%	29.2%	15.6%	9.9%	36.1%	5.6%	100%
9th Decile	4.8%	40.4%	9.8%	7.5%	34.1%	3.4%	100%
10th Decile	5.6%	41.5%	5.3%	8.1%	36.2%	3.2%	100%
All	2.0%	17.0%	8.5%	7.7%	57.6%	7.3%	100%



## Electricity End-use Tables

Percent of Households Using Electricity  
by End Use

	NCR	Other Urban	Rural	All Philippines
Distribution Co./Utility	83.9%	76.0%	45.1%	58.2%
All sources	98.5%	87.3%	49.5%	64.7%
Incandescent	67.8%	65.7%	41.6%	51.2%
Fluorescent	87.2%	68.1%	35.3%	50.7%
Ordinary fridge	48.1%	25.9%	9.3%	18.8%
Frost-free fridge	5.2%	3.5%	1.2%	2.3%
Freezer	.9%	1.0%	.3%	.5%
B&W TV	55.0%	34.3%	15.0%	25.3%
Color TV	34.4%	16.3%	4.5%	11.6%
Air conditioner	2.5%	.7%	.0%	.6%
Iron	78.5%	45.7%	19.4%	34.1%
Fan	86.2%	43.1%	15.3%	32.0%
Water heating device	3.0%	1.1%	.3%	.8%
Cooking device	21.3%	7.4%	2.4%	6.3%
Water pump	.8%	3.1%	.7%	1.3%
Washer	2.7%	1.0%	.1%	.7%

**Mean Residential Electricity Consumption  
by End Use (kWh/mo/HH)**

	NCR	Other Urban	Rural	All Philippines
<b>Lighting</b>	<b>30.80</b>	<b>18.20</b>	<b>9.28</b>	<b>14.47</b>
Incandescent	11.63	9.36	6.10	7.68
Fluorescent	19.17	8.85	3.18	6.80
<b>Refrigeration</b>	<b>42.56</b>	<b>18.87</b>	<b>5.20</b>	<b>13.76</b>
Ordinary fridge	37.42	15.95	4.31	11.78
Frost-free fridge	4.25	2.22	.66	1.54
Freezer	.89	.70	.23	.44
<b>Television</b>	<b>11.33</b>	<b>4.92</b>	<b>1.37</b>	<b>3.63</b>
B&W TV	5.13	2.58	.97	1.95
Color TV	6.20	2.33	.41	1.69
<b>Air conditioner</b>	<b>11.30</b>	<b>1.44</b>	<b>.10</b>	<b>1.98</b>
<b>Iron</b>	<b>23.03</b>	<b>8.04</b>	<b>1.96</b>	<b>6.38</b>
<b>Fan</b>	<b>19.90</b>	<b>5.82</b>	<b>1.05</b>	<b>4.84</b>
<b>Cooking</b>	<b>10.94</b>	<b>3.02</b>	<b>.85</b>	<b>2.79</b>
Water heating device	.66	.26	.05	.19
Cooking device	10.29	2.76	.80	2.60
Water pump	.29	1.20	.15	.43
Washer	.20	.06	.01	.05
<b>Other</b>	<b>4.93</b>	<b>3.50</b>	<b>1.82</b>	<b>2.67</b>
<b>All uses</b>	<b>155.30</b>	<b>65.08</b>	<b>21.82</b>	<b>51.01</b>

**Mean Residential Electricity Consumption  
for Using Households Only: by End Use (kWh/mo/HH)**

	NCR	Other Urban	Rural	All Philippines
<b>Lighting</b>	<b>31.33</b>	<b>21.90</b>	<b>18.87</b>	<b>22.46</b>
<b>Incandescent</b>	<b>17.16</b>	<b>14.25</b>	<b>14.67</b>	<b>14.99</b>
<b>Fluorescent</b>	<b>21.99</b>	<b>12.99</b>	<b>8.99</b>	<b>13.41</b>
<b>Refrigeration</b>	<b>79.38</b>	<b>64.12</b>	<b>49.01</b>	<b>64.80</b>
<b>Ordinary fridge</b>	<b>77.86</b>	<b>61.69</b>	<b>46.48</b>	<b>62.79</b>
<b>Frost-free fridge</b>	<b>81.36</b>	<b>62.81</b>	<b>56.62</b>	<b>66.67</b>
<b>Freezer</b>	<b>95.69</b>	<b>72.48</b>	<b>87.55</b>	<b>82.67</b>
<b>Television</b>	<b>13.99</b>	<b>9.96</b>	<b>7.28</b>	<b>10.36</b>
<b>B&amp;W TV</b>	<b>9.32</b>	<b>7.53</b>	<b>6.47</b>	<b>7.68</b>
<b>Color TV</b>	<b>18.01</b>	<b>14.28</b>	<b>9.05</b>	<b>14.56</b>
<b>Air conditioner</b>	<b>448.10</b>	<b>197.39</b>	<b>233.04</b>	<b>355.55</b>
<b>Iron</b>	<b>29.33</b>	<b>17.59</b>	<b>10.08</b>	<b>18.69</b>
<b>Fan</b>	<b>23.08</b>	<b>13.52</b>	<b>6.87</b>	<b>15.11</b>
<b>Cooking</b>	<b>50.98</b>	<b>39.22</b>	<b>35.15</b>	<b>43.72</b>
<b>Water heating device</b>	<b>22.01</b>	<b>24.98</b>	<b>19.13</b>	<b>22.40</b>
<b>Cooking device</b>	<b>48.25</b>	<b>37.34</b>	<b>33.09</b>	<b>41.43</b>
<b>Water pump</b>	<b>35.89</b>	<b>39.28</b>	<b>21.22</b>	<b>33.12</b>
<b>Washer</b>	<b>7.45</b>	<b>6.22</b>	<b>15.92</b>	<b>7.61</b>
<b>Other</b>	<b>6.30</b>	<b>5.62</b>	<b>5.26</b>	<b>5.61</b>
<b>All uses</b>	<b>157.71</b>	<b>78.09</b>	<b>44.05</b>	<b>78.81</b>

**Total Residential Electricity Consumption  
by End Use (GWh/year)**

	NCR	Other Urban	Rural	All Philippines
<b>Lighting</b>	<b>568.76</b>	<b>611.11</b>	<b>762.66</b>	<b>1942.53</b>
<b>Incandescent</b>	<b>214.78</b>	<b>314.10</b>	<b>501.58</b>	<b>1030.46</b>
<b>Fluorescent</b>	<b>353.97</b>	<b>297.01</b>	<b>261.08</b>	<b>912.07</b>
<b>Refrigeration</b>	<b>785.89</b>	<b>633.57</b>	<b>426.92</b>	<b>1846.37</b>
<b>Ordinary fridge</b>	<b>690.95</b>	<b>535.52</b>	<b>353.98</b>	<b>1580.45</b>
<b>Frost-free fridge</b>	<b>78.46</b>	<b>74.58</b>	<b>53.92</b>	<b>206.96</b>
<b>Freezer</b>	<b>16.48</b>	<b>23.46</b>	<b>19.02</b>	<b>58.96</b>
<b>Television</b>	<b>209.24</b>	<b>165.09</b>	<b>112.97</b>	<b>487.30</b>
<b>B&amp;W TV</b>	<b>94.76</b>	<b>86.76</b>	<b>79.52</b>	<b>261.05</b>
<b>Color TV</b>	<b>114.48</b>	<b>78.33</b>	<b>33.44</b>	<b>226.25</b>
<b>Air conditioner</b>	<b>208.72</b>	<b>48.22</b>	<b>8.50</b>	<b>265.44</b>
<b>Iron</b>	<b>425.25</b>	<b>269.90</b>	<b>160.66</b>	<b>855.81</b>
<b>Fan</b>	<b>367.38</b>	<b>195.48</b>	<b>86.61</b>	<b>649.46</b>
<b>Cooking</b>	<b>202.01</b>	<b>101.54</b>	<b>70.21</b>	<b>373.76</b>
<b>Water heating device</b>	<b>12.10</b>	<b>8.81</b>	<b>4.12</b>	<b>25.03</b>
<b>Cooking device</b>	<b>189.91</b>	<b>92.72</b>	<b>66.09</b>	<b>348.72</b>
<b>Water pump</b>	<b>5.39</b>	<b>40.39</b>	<b>12.03</b>	<b>57.81</b>
<b>Washer</b>	<b>3.76</b>	<b>2.14</b>	<b>1.08</b>	<b>6.99</b>
<b>Other</b>	<b>90.97</b>	<b>117.64</b>	<b>149.69</b>	<b>358.30</b>
<b>All uses</b>	<b>2867.36</b>	<b>2185.21</b>	<b>1792.53</b>	<b>6845.10</b>

**Residential Electricity Consumption  
by End Use (Percent Share)**

	NCR	Other Urban	Rural	All Philippines
Lighting	8.3%	8.9%	11.1%	28.4%
Incandescent	3.1%	4.6%	7.3%	15.1%
Fluorescent	5.2%	4.3%	3.8%	13.3%
Refrigeration	11.5%	9.3%	6.2%	27.0%
Ordinary fridge	10.1%	7.8%	5.2%	23.1%
Frost-free fridge	1.1%	1.1%	.8%	3.0%
Freezer	.2%	.3%	.3%	.9%
Television	3.1%	2.4%	1.7%	7.1%
B&W TV	1.4%	1.3%	1.2%	3.8%
Color TV	1.7%	1.1%	.5%	3.3%
Air conditioner	3.0%	.7%	.1%	3.9%
Iron	6.2%	3.9%	2.3%	12.5%
Fan	5.4%	2.9%	1.3%	9.5%
Cooking	3.0%	1.5%	1.0%	5.5%
Water heating device	.2%	.1%	.1%	.4%
Cooking device	2.8%	1.4%	1.0%	5.1%
Water pump	.1%	.6%	.2%	.8%
Washer	.1%	.0%	.0%	.1%
Other	1.3%	1.7%	2.2%	5.2%
All uses	41.9%	31.9%	26.2%	100.0%

Electricity Penetration by Income

Percent of Households Using Electricity  
by End Use and Income

	NCR					All	Other Urban					All
	1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile		1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile	
Distribution Co./Utility	63.4%	83.0%	88.4%	89.3%	95.5%	83.9%	48.6%	67.5%	81.5%	86.8%	95.7%	76.0%
All sources	93.6%	99.4%	100.0%	99.3%	100.0%	98.5%	60.4%	77.5%	88.7%	92.3%	97.8%	83.3%
Incandescent	54.9%	66.0%	66.5%	73.3%	78.2%	67.8%	43.8%	54.1%	69.1%	76.3%	85.0%	65.7%
Fluorescent	72.4%	84.1%	92.1%	91.7%	96.2%	87.2%	41.3%	59.6%	70.2%	82.2%	87.0%	68.1%
Ordinary fridge	18.2%	40.9%	48.7%	60.7%	72.4%	48.1%	3.5%	11.6%	21.4%	39.3%	53.5%	25.9%
Frost-free fridge	.0%	.9%	3.0%	10.4%	12.2%	5.2%	.4%	.6%	1.7%	5.1%	9.9%	3.5%
Freezer	1.9%	.0%	.0%	1.0%	1.9%	.9%	.0%	.0%	1.0%	1.6%	2.2%	1.0%
B&W TV	44.8%	63.1%	62.2%	56.2%	48.3%	55.0%	14.8%	29.9%	37.0%	47.4%	42.1%	34.3%
Color TV	8.2%	20.9%	31.5%	45.3%	67.4%	34.4%	1.1%	5.1%	8.7%	25.2%	41.8%	16.3%
Air conditioner	.0%	.0%	.0%	1.0%	11.6%	2.5%	.0%	.0%	.0%	.7%	2.9%	.7%
Iron	53.4%	73.3%	83.1%	87.5%	96.0%	78.5%	13.5%	30.8%	48.4%	62.7%	73.1%	45.7%
Fan	67.4%	84.3%	93.1%	89.7%	97.0%	86.2%	13.3%	26.2%	42.8%	58.3%	74.8%	43.1%
Water heating device	.7%	1.5%	1.6%	4.4%	6.7%	3.0%	.3%	.3%	.4%	1.4%	2.9%	1.1%
Cooking device	7.4%	14.4%	22.8%	25.3%	37.4%	21.3%	2.1%	3.5%	4.7%	9.3%	17.5%	7.4%
Water pump	.0%	.0%	.0%	1.6%	2.5%	.8%	.0%	.3%	2.6%	4.3%	8.2%	3.1%
Washer	.0%	1.3%	2.5%	2.5%	7.4%	2.7%	.0%	.3%	.0%	1.1%	3.8%	1.0%

(continued)

Percent of Households Using Electricity  
by End Use and Income

	Rural					All	Philippines					All
	1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile		1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile	
Distribution Co./Utility	19.3%	32.3%	44.2%	62.0%	68.6%	45.1%	27.8%	39.7%	63.4%	77.1%	82.9%	58.2%
All sources	22.3%	35.9%	47.6%	67.1%	75.6%	49.5%	33.6%	46.1%	70.8%	84.6%	88.5%	64.7%
Incandescent	17.4%	28.7%	41.8%	55.0%	65.7%	41.6%	24.3%	35.5%	55.8%	67.1%	73.3%	51.2%
Fluorescent	13.7%	25.2%	28.8%	48.5%	61.5%	35.3%	22.4%	31.1%	50.6%	70.1%	79.0%	50.7%
Ordinary fridge	.6%	1.0%	4.0%	11.8%	29.4%	9.3%	1.3%	4.1%	12.1%	27.1%	49.0%	18.8%
Frost-free fridge	.0%	.0%	1.2%	1.7%	2.9%	1.2%	.1%	.4%	1.5%	2.1%	7.5%	2.3%
Freezer	.0%	.0%	.0%	.2%	1.1%	.3%	.0%	.3%	.1%	.6%	1.7%	.5%
B&W TV	2.1%	6.0%	11.4%	22.8%	33.1%	15.0%	5.1%	12.4%	26.8%	40.5%	41.6%	25.3%
Color TV	.2%	.4%	2.0%	5.1%	14.9%	4.5%	.6%	1.8%	4.9%	14.8%	35.6%	11.6%
Air conditioner	.0%	.0%	.0%	.0%	.2%	.0%	.0%	.0%	.0%	.0%	2.8%	.6%
Iron	2.8%	7.0%	12.0%	27.4%	48.6%	19.4%	5.6%	12.5%	32.7%	50.2%	69.3%	34.1%
Fan	2.4%	5.1%	9.6%	19.0%	41.2%	15.3%	6.3%	10.6%	28.3%	47.5%	67.1%	32.0%
Water heating device	.0%	.0%	.0%	.3%	1.1%	.3%	.1%	.1%	.4%	.6%	3.0%	.8%
Cooking device	.0%	.6%	.7%	3.3%	7.7%	2.4%	.7%	1.6%	3.3%	7.7%	18.0%	6.3%
Water pump	.0%	.0%	.2%	.6%	2.6%	.7%	.0%	.0%	.8%	.9%	4.7%	1.3%
Washer	.0%	.0%	.0%	.0%	.4%	.1%	.0%	.0%	.2%	.6%	2.6%	.7%

## Electricity Use by Income

Mean Residential Electricity Consumption  
by End Use and Income (kWh/mo/HH)

	NCR					All	Other Urban					All
	1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile		1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile	
Lighting	22.88	22.67	26.75	35.29	47.06	30.80	10.61	13.30	18.56	20.69	27.89	18.20
Incandescent	9.83	9.02	8.26	12.47	18.63	11.63	5.52	6.54	9.76	10.57	14.41	9.36
Fluorescent	13.05	13.65	18.49	22.82	28.44	19.17	5.09	6.76	8.80	10.12	13.48	8.85
Refrigeration	15.33	30.04	40.23	48.89	79.21	42.56	2.11	8.72	16.58	28.36	38.62	18.87
Ordinary fridge	13.56	29.16	37.77	40.85	66.33	37.42	1.97	8.30	14.42	23.95	31.11	15.95
Frost-free fridge	.01	.89	2.46	7.13	11.03	4.25	.13	.41	1.19	3.00	6.40	2.22
Freezer	1.75	.00	.00	.91	1.86	.89	.00	.01	.97	1.41	1.11	.70
Television	5.38	9.70	11.30	13.62	16.79	11.33	1.86	2.72	4.19	7.06	8.76	4.92
B&W TV	4.16	6.17	5.93	5.30	4.01	5.13	1.60	1.85	2.89	3.54	3.03	2.58
Color TV	1.22	3.52	5.37	8.32	12.78	6.20	.26	.86	1.30	3.52	5.73	2.33
Air conditioner	.02	.00	.00	6.69	49.89	11.30	.00	.00	.00	.56	6.68	1.44
Iron	11.16	22.52	24.82	27.06	29.64	23.03	1.20	3.02	6.96	12.43	16.60	8.04
Fan	13.49	18.96	24.67	22.72	20.06	19.90	1.46	2.50	5.19	7.95	12.05	5.82
Cooking	1.96	6.81	11.61	11.65	23.04	10.94	.73	.57	3.08	5.09	5.66	3.02
Water heating device	.02	.30	.09	1.03	1.84	.66	.02	.01	.06	.50	.74	.26
Cooking device	1.94	6.52	11.52	10.62	21.20	10.29	.71	.57	3.02	4.59	4.92	2.76
Water pump	.00	.00	.00	.81	.67	.29	.00	.08	1.38	1.66	2.90	1.20
Washer	.00	.07	.25	.09	.62	.20	.00	.00	.00	.01	.31	.06
Other	4.09	3.04	5.64	5.31	6.83	4.93	1.06	2.67	3.76	4.11	5.93	3.50
All uses	74.31	113.81	145.27	172.13	273.82	155.30	19.02	33.58	59.70	87.93	125.41	65.08

(continued)



Mean Residential Electricity Consumption  
by End Use and Income (kWh/mo/HH)

	Rural					All	Philippines					All
	1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile		1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile	
Lighting	2.69	4.94	12.89	10.41	15.18	9.28	5.61	7.23	16.48	16.90	26.00	14.47
Incandescent	1.57	2.94	10.03	6.45	9.18	6.10	2.96	4.34	10.41	8.33	12.27	7.68
Fluorescent	1.12	2.00	2.86	3.96	6.00	3.18	2.64	2.89	6.07	8.56	13.73	6.80
Refrigeration	.22	.32	2.64	5.72	17.29	5.20	.79	2.84	8.94	18.04	37.98	13.76
Ordinary fridge	.22	.32	1.67	5.01	14.55	4.31	.76	2.32	7.91	16.39	31.33	11.78
Frost-free fridge	.00	.00	.97	.63	1.65	.66	.03	.27	.93	1.22	5.23	1.54
Freezer	.00	.00	.00	.08	1.09	.23	.00	.24	.10	.43	1.42	.44
Television	.11	.40	1.08	1.75	3.56	1.37	.54	1.24	2.75	5.01	8.57	3.63
B&W TV	.10	.39	.92	1.36	2.09	.97	.43	1.02	2.02	3.15	3.10	1.95
Color TV	.02	.01	.16	.40	1.47	.41	.11	.23	.73	1.86	5.47	1.69
Air conditioner	.00	.00	.00	.00	.52	.10	.00	.00	.00	.00	9.81	1.98
Iron	.15	.36	.94	3.02	5.43	1.96	.50	1.21	5.03	9.61	15.44	6.38
Fan	.13	.21	.50	1.10	3.37	1.05	.96	1.06	3.57	7.43	11.12	4.84
Cooking	.00	.08	.11	.70	3.43	.85	.23	.32	1.23	3.57	8.54	2.79
Water heating device	.00	.00	.00	.03	.22	.05	.00	.00	.06	.13	.73	.19
Cooking device	.00	.08	.11	.66	3.21	.80	.23	.31	1.17	3.44	7.80	2.60
Water pump	.00	.00	.02	.15	.58	.15	.00	.00	.30	.45	1.39	.43
Washer	.00	.00	.00	.00	.07	.01	.00	.00	.00	.04	.21	.05
Other	.40	.64	3.45	1.59	2.88	1.82	.80	1.08	3.72	3.01	4.70	2.67
All uses	3.72	6.97	21.65	24.44	52.29	21.82	9.45	14.99	42.02	64.06	123.78	51.01

**Mean Residential Electricity Consumption  
for Using Households Only: by End Use and Income (kWh/mo/HH)**

	NCR					All	Other Urban					All
	1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile		1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile	
Lighting	24.43	22.96	26.75	35.55	47.06	31.33	17.57	17.21	20.94	22.50	28.68	21.90
Incandescent	17.92	13.68	12.41	17.00	23.81	17.16	12.60	12.08	14.12	13.87	16.95	14.25
Fluorescent	18.02	16.23	20.08	24.89	29.56	21.99	12.33	11.34	12.53	12.32	15.50	12.99
Refrigeration	76.49	71.81	77.81	68.73	93.81	79.38	53.96	71.07	69.97	63.78	61.39	64.12
Ordinary fridge	74.60	71.23	77.61	67.25	91.63	77.86	56.39	71.37	67.40	60.94	58.16	61.69
Frost-free fridge	56.39	98.38	81.04	68.50	90.72	81.36	33.01	65.65	69.49	58.64	64.89	62.81
Freezer	94.37	.	.	95.86	96.87	95.69	.	61.29	95.87	85.83	51.14	72.48
Television	10.34	12.08	13.03	15.04	17.57	13.99	11.69	7.77	9.17	9.82	11.19	9.96
B&W TV	9.29	9.78	9.53	9.44	8.31	9.32	10.79	6.19	7.82	7.46	7.19	7.53
Color TV	14.98	16.84	17.02	18.37	18.96	18.01	24.01	17.07	14.93	14.00	13.72	14.28
Air conditioner	43.37	.	.	703.18	429.52	448.10	.	.	.	78.88	226.80	197.39
Iron	20.92	30.70	29.86	30.93	30.88	29.33	8.92	9.79	14.37	19.85	22.70	17.59
Fan	20.02	22.48	26.50	25.34	20.68	23.08	10.97	9.52	12.12	13.63	16.11	13.52
Cooking	24.00	47.36	51.02	45.99	61.53	50.98	35.29	15.25	65.96	51.00	31.16	39.22
Water heating device	2.54	19.77	5.59	23.35	27.48	22.01	5.47	1.84	15.82	35.13	25.33	24.98
Cooking device	26.08	45.30	50.62	41.93	56.62	48.25	34.51	16.31	64.70	49.44	28.03	37.34
Water pump	.	.	.	50.89	26.64	35.89	.	28.09	53.86	38.59	35.47	39.28
Washer	.	5.24	9.91	3.52	8.40	7.45	.	1.21	.	.88	8.19	6.22
Other	6.87	4.27	6.75	6.17	7.42	6.30	3.46	4.98	5.56	5.55	6.90	5.62
All uses	79.36	114.53	145.27	173.40	273.82	157.71	31.49	43.32	67.32	95.26	128.28	78.09

(continued)

Mean Residential Electricity Consumption  
for Using Households Only: by End Use and Income (kWh/mo/HH)

	Rural					All	Philippines					All
	1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile		1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile	
Lighting	12.32	14.01	27.18	15.56	20.14	18.87	16.96	15.78	23.31	20.05	29.45	22.46
Incandescent	9.05	10.25	24.00	11.73	13.98	14.67	12.17	12.22	18.65	12.41	16.74	14.99
Fluorescent	8.21	7.92	9.91	8.16	9.75	8.99	11.83	9.28	11.99	12.22	17.38	13.41
Refrigeration	36.82	30.85	50.59	41.71	52.41	49.01	58.45	59.80	66.02	60.90	67.08	64.80
Ordinary fridge	36.82	30.85	41.61	42.47	49.45	46.48	60.45	56.53	65.46	60.53	63.92	62.79
Frost-free fridge	.	.	80.28	37.36	56.49	56.62	33.01	71.52	63.75	57.65	69.98	66.67
Freezer	.	.	.	34.25	98.20	87.55	.	94.37	94.42	73.53	83.30	82.67
Television	4.98	6.21	8.02	6.31	7.87	7.28	9.49	8.84	8.73	9.35	12.21	10.36
B&W TV	4.65	6.54	8.04	5.94	6.33	6.47	8.45	8.23	7.54	7.76	7.45	7.68
Color TV	8.15	1.73	7.95	7.71	9.88	9.05	18.53	12.37	14.75	12.60	15.38	14.56
Air conditioner	.	.	.	.	233.04	233.04	28.50	.	67.67	.	356.28	355.55
Iron	5.23	5.11	7.82	11.04	11.18	10.08	8.90	9.70	15.41	19.14	22.29	18.69
Fan	5.40	4.17	5.20	5.81	8.17	6.87	15.18	9.99	12.63	15.62	16.57	15.11
Cooking	.	13.36	15.65	21.09	44.50	35.15	31.46	18.69	36.55	46.62	46.55	43.72
Water heating device	.	.	.	13.09	20.47	19.13	5.47	2.56	15.59	21.75	24.46	22.40
Cooking device	.	13.36	15.65	20.09	41.64	33.09	30.92	19.72	35.45	44.98	43.31	41.43
Water pump	.	.	8.05	23.71	21.71	21.22	.	.	36.62	49.87	29.39	33.12
Washer	.	.	.	.	15.92	15.92	.	.	2.57	6.74	8.18	7.61
Other	3.42	3.25	10.89	3.36	4.51	5.26	4.39	4.01	7.57	4.58	6.05	5.61
All uses	16.70	19.44	45.46	36.43	69.21	44.05	28.17	32.55	59.39	75.75	139.79	78.81

Total Residential Electricity Consumption  
by End Use and Income (GWh/year)

	NCR					All	Other Urban					All
	1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile		1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile	
Lighting	82.66	94.10	91.32	126.47	174.21	568.76	70.62	90.06	124.60	140.38	185.45	611.11
Incandescent	35.52	37.45	28.19	44.68	68.95	214.78	36.74	44.27	65.53	71.73	95.83	314.10
Fluorescent	47.13	56.65	63.13	81.79	105.27	353.97	33.88	45.78	59.07	68.65	89.62	297.01
Refrigeration	55.38	124.73	137.32	175.22	293.24	785.89	14.03	59.03	111.26	192.41	256.84	633.57
Ordinary fridge	49.01	121.04	128.94	146.41	245.55	690.95	13.14	56.21	96.78	162.49	206.90	535.52
Frost-free fridge	.04	3.68	8.38	25.54	40.81	78.46	.89	2.77	7.96	20.38	42.58	74.58
Freezer	6.34	.00	.00	3.27	6.87	16.48	.00	.05	6.52	9.54	7.35	23.46
Television	19.45	40.26	38.58	48.81	62.14	209.24	12.35	18.42	28.14	47.92	58.26	165.09
B&W TV	15.04	25.63	20.25	18.99	14.85	94.76	10.63	12.56	19.42	24.02	20.13	86.76
Color TV	4.41	14.63	18.33	29.82	47.29	114.48	1.72	5.85	8.72	23.90	38.13	78.33
Air conditioner	.08	.00	.00	23.97	184.67	208.72	.00	.00	.00	3.83	44.39	48.22
Iron	40.32	93.47	84.73	96.99	109.73	425.25	7.99	20.46	46.69	84.35	110.40	269.90
Fan	48.76	78.72	84.21	81.44	74.24	367.38	9.71	16.91	34.82	53.93	80.11	195.48
Cooking	7.08	28.28	39.63	41.74	85.30	202.01	4.84	3.88	20.70	34.51	37.61	101.54
Water heating device	.07	1.23	.31	3.68	6.81	12.10	.11	.03	.39	3.37	4.91	8.81
Cooking device	7.01	27.05	39.32	38.05	78.48	189.91	4.73	3.84	20.30	31.15	32.70	92.72
Water pump	.00	.00	.00	2.91	2.47	5.39	.00	.57	9.27	11.23	19.32	40.39
Washer	.00	.29	.84	.31	2.31	3.76	.00	.02	.00	.06	2.05	2.14
Other	14.76	12.63	19.26	19.02	25.29	90.97	7.03	18.10	25.22	27.88	39.42	117.64
All uses	268.48	472.48	495.89	616.89	1013.61	2867.36	126.57	227.45	400.70	596.51	833.97	2185.21

(continued)

Total Residential Electricity Consumption  
by End Use and Income (GWh/year)

	Rural					All	Philippines					All
	1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile		1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile	
Lighting	43.44	81.33	228.30	161.26	248.33	762.66	153.45	187.50	447.79	450.81	702.98	1942.53
Incandescent	25.35	48.46	177.66	99.91	150.20	501.58	81.11	112.51	282.89	222.32	331.63	1030.46
Fluorescent	18.09	32.87	50.64	61.35	98.13	261.08	72.34	74.98	164.90	228.49	371.35	912.07
Refrigeration	3.52	5.19	46.75	88.62	282.83	426.92	21.65	73.59	242.98	481.29	1026.87	1846.37
Ordinary fridge	3.52	5.19	29.53	77.66	238.08	353.98	20.75	60.21	215.05	437.36	847.08	1580.45
Frost-free fridge	.00	.00	17.23	9.72	26.97	53.92	.89	7.04	25.19	32.54	141.29	206.96
Freezer	.00	.00	.00	1.24	17.78	19.02	.00	6.34	2.73	11.39	38.50	58.96
Television	1.85	6.58	19.11	27.15	58.27	112.97	14.82	32.28	74.80	133.64	231.77	487.30
B&W TV	1.57	6.45	16.26	21.01	34.24	79.52	11.85	26.41	54.99	83.96	83.83	261.05
Color TV	.29	.13	2.85	6.15	24.03	33.44	2.97	5.87	19.80	49.68	147.94	226.25
Air conditioner	.00	.00	.00	.00	8.50	8.50	.03	.00	.04	.00	265.37	265.44
Iron	2.37	5.93	16.67	46.85	88.85	160.66	13.69	31.36	136.71	256.48	417.57	855.81
Fan	2.06	3.54	8.83	17.05	55.12	86.61	26.16	27.56	96.97	198.18	300.59	649.46
Cooking	.00	1.29	1.99	10.80	56.12	70.21	6.26	8.18	33.34	95.20	230.77	373.76
Water heating device	.00	.00	.00	.51	3.61	4.12	.11	.07	1.66	3.34	19.86	25.03
Cooking device	.00	1.29	1.99	10.29	52.51	66.09	6.16	8.11	31.68	91.86	210.91	348.72
Water pump	.00	.00	.28	2.34	9.41	12.03	.00	.00	8.17	11.93	37.71	57.81
Washer	.00	.00	.00	.00	1.08	1.08	.00	.00	.13	1.08	5.77	6.99
Other	6.49	10.46	61.09	24.58	47.07	149.69	21.80	27.96	100.96	80.40	127.18	358.30
All uses	60.04	114.76	383.48	378.66	855.59	1792.53	258.61	388.88	1141.90	1709.01	3346.70	6845.10

Residential Electricity Consumption  
by End Use and Income (Percent Share)

	NCR					All	Other Urban					All
	1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile		1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile	
Lighting	1.2%	1.4%	1.3%	1.8%	2.5%	8.3%	1.0%	1.3%	1.8%	2.1%	2.7%	8.9%
Incandescent	.5%	.5%	.4%	.7%	1.0%	3.1%	.5%	.6%	1.0%	1.0%	1.4%	4.6%
Fluorescent	.7%	.8%	.9%	1.2%	1.5%	5.2%	.5%	.7%	.9%	1.0%	1.3%	4.3%
Refrigeration	.8%	1.8%	2.0%	2.6%	4.3%	11.5%	.2%	.9%	1.6%	2.8%	3.8%	9.3%
Ordinary fridge	.7%	1.8%	1.9%	2.1%	3.6%	10.1%	.2%	.8%	1.4%	2.4%	3.0%	7.8%
Frost-free fridge	.0%	.1%	.1%	.4%	.6%	1.1%	.0%	.0%	.1%	.3%	.6%	1.1%
Freezer	.1%	.0%	.0%	.0%	.1%	.2%	.0%	.0%	.1%	.1%	.1%	.3%
Television	.3%	.6%	.6%	.7%	.9%	3.1%	.2%	.3%	.4%	.7%	.9%	2.4%
B&W TV	.2%	.4%	.3%	.3%	.2%	1.4%	.2%	.2%	.3%	.4%	.3%	1.3%
Color TV	.1%	.2%	.3%	.4%	.7%	1.7%	.0%	.1%	.1%	.3%	.6%	1.1%
Air conditioner	.0%	.0%	.0%	.4%	2.7%	3.0%	.0%	.0%	.0%	.1%	.6%	.7%
Iron	.6%	1.4%	1.2%	1.4%	1.6%	6.2%	.1%	.3%	.7%	1.2%	1.6%	3.9%
Fan	.7%	1.2%	1.2%	1.2%	1.1%	5.4%	.1%	.2%	.5%	.8%	1.2%	2.9%
Cooking	.1%	.4%	.6%	.6%	1.2%	3.0%	.1%	.1%	.3%	.5%	.5%	1.5%
Water heating device	.0%	.0%	.0%	.1%	.1%	.2%	.0%	.0%	.0%	.0%	.1%	.1%
Cooking device	.1%	.4%	.6%	.6%	1.1%	2.8%	.1%	.1%	.3%	.5%	.5%	1.4%
Water pump	.0%	.0%	.0%	.0%	.0%	.1%	.0%	.0%	.1%	.2%	.3%	.6%
Washer	.0%	.0%	.0%	.0%	.0%	.1%	.0%	.0%	.0%	.0%	.0%	.0%
Other	.2%	.2%	.3%	.3%	.4%	1.3%	.1%	.3%	.4%	.4%	.6%	1.7%
All uses	3.9%	6.9%	7.2%	9.0%	14.8%	41.9%	1.8%	3.3%	5.9%	8.7%	12.2%	31.9%

(continued)

**Residential Electricity Consumption  
by End Use and Income (Percent Share)**

	Rural					All	Philippines					All
	1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile		1st Quintile	2nd Quintile	3rd Quintile	4th Quintile	5th Quintile	
Lighting	.6%	1.2%	3.3%	2.4%	3.6%	11.1%	2.2%	2.7%	6.5%	6.6%	10.3%	28.4%
Incandescent	.4%	.7%	2.6%	1.5%	2.2%	7.3%	1.2%	1.6%	4.1%	3.2%	4.8%	15.1%
Fluorescent	.3%	.5%	.7%	.9%	1.4%	3.8%	1.1%	1.1%	2.4%	3.3%	5.4%	13.3%
Refrigeration	.1%	.1%	.7%	1.3%	4.1%	6.2%	.3%	1.1%	3.5%	7.0%	15.0%	27.0%
Ordinary fridge	.1%	.1%	.4%	1.1%	3.5%	5.2%	.3%	.9%	3.1%	6.4%	12.4%	23.1%
Frost-free fridge	.0%	.0%	.3%	.1%	.4%	.8%	.0%	.1%	.4%	.5%	2.1%	3.0%
Freezer	.0%	.0%	.0%	.0%	.3%	.3%	.0%	.1%	.0%	.2%	.6%	.9%
Television	.0%	.1%	.3%	.4%	.9%	1.7%	.2%	.5%	1.1%	2.0%	3.4%	7.1%
B&W TV	.0%	.1%	.2%	.3%	.5%	1.2%	.2%	.4%	.8%	1.2%	1.2%	3.8%
Color TV	.0%	.0%	.0%	.1%	.4%	.5%	.0%	.1%	.3%	.7%	2.2%	3.3%
Air conditioner	.0%	.0%	.0%	.0%	.1%	.1%	.0%	.0%	.0%	.0%	3.9%	3.9%
Iron	.0%	.1%	.2%	.7%	1.3%	2.3%	.2%	.5%	2.0%	3.7%	6.1%	12.5%
Fan	.0%	.1%	.1%	.2%	.8%	1.3%	.4%	.4%	1.4%	2.9%	4.4%	9.5%
Cooking	.0%	.0%	.0%	.2%	.8%	1.0%	.1%	.1%	.5%	1.4%	3.4%	5.5%
Water heating device	.0%	.0%	.0%	.0%	.1%	.1%	.0%	.0%	.0%	.0%	.3%	.4%
Cooking device	.0%	.0%	.0%	.2%	.8%	1.0%	.1%	.1%	.5%	1.3%	3.1%	5.1%
Water pump	.0%	.0%	.0%	.0%	.1%	.2%	.0%	.0%	.1%	.2%	.6%	.8%
Washer	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.1%	.1%
Other	.1%	.2%	.9%	.4%	.7%	2.2%	.3%	.4%	1.5%	1.2%	1.9%	5.2%
All uses	.9%	1.7%	5.6%	5.5%	12.5%	26.2%	3.8%	5.7%	16.7%	25.0%	48.9%	100.0%

## Electricity Penetration by Region

Percent of Households Using Electricity  
by Region

	Distr Co./ Util	All sources	Incan	Fluor	Ordin fridge	Frost free fridge	Freezer	B&W TV	Color TV	A/C	Iron	Fan	Water heater	Cook device	Water pump	Wash mach
<b>URBAN</b>																
NATIONAL CAPITAL REGION	84%	98%	68%	87%	48%	5.2%	.9%	55%	34%	2.5%	79%	86%	3.0%	21%	.8%	2.7%
REGION I (ILOCOS)	70%	74%	46%	61%	21%	4.0%	.0%	38%	9.6%	.0%	27%	34%	.0%	4.9%	.0%	1.1%
REGION II (CAGAYAN VALLEY)	84%	88%	75%	75%	30%	17%	.1%	43%	19%	.0%	46%	58%	8.9%	2.6%	.0%	2.9%
REGION III (CENTRAL LUZON)	87%	93%	82%	76%	32%	2.0%	1.1%	50%	24%	.8%	67%	62%	2.0%	9.8%	3.0%	1.4%
REGION IV (SOUTHERN LUZON)	79%	87%	74%	65%	35%	3.5%	.3%	43%	22%	1.0%	62%	55%	.8%	13%	6.6%	1.8%
REGION V (BICOL)	71%	74%	59%	64%	26%	2.3%	.0%	23%	15%	.0%	38%	44%	.0%	3.4%	1.2%	.0%
REGION VI (WESTERN VISAYAS)	71%	82%	55%	75%	22%	4.1%	1.5%	32%	15%	1.4%	31%	35%	.0%	3.8%	3.7%	1.6%
REGION VII (CENTRAL VISAYAS)	63%	72%	53%	61%	9.7%	2.1%	.6%	22%	16%	.7%	16%	20%	.0%	1.4%	2.0%	1.4%
REGION VIII (EASTERN VISAYAS)	68%	75%	61%	64%	11%	3.1%	.0%	23%	2.0%	.0%	26%	35%	2.3%	.0%	1.5%	.0%
REGION IX (WESTERN MINDANAO)	71%	71%	52%	60%	20%	2.3%	.0%	18%	11%	.0%	29%	28%	1.7%	6.9%	.0%	.0%
REGION X (NORTHERN MINDANAO)	72%	82%	64%	59%	31%	3.8%	1.8%	22%	15%	.0%	42%	34%	.0%	9.7%	.8%	1.0%
REGION XI (SOUTHERN MINDANAO)	76%	84%	58%	77%	28%	6.1%	3.7%	32%	11%	1.7%	47%	39%	1.4%	9.8%	4.0%	.9%
REGION XII (CENTRAL MINDANAO)	77%	94%	65%	74%	20%	.3%	.3%	12%	9.7%	.0%	43%	34%	.3%	5.0%	.0%	.3%
CAR (CORDILLERA ADMINISTR.)	89%	89%	85%	45%	4.1%	1.6%	.0%	35%	9.5%	.0%	60%	8.8%	.0%	5.7%	.0%	.0%
All	79%	89%	66%	75%	34%	4.1%	1.0%	42%	23%	1.4%	57%	58%	1.7%	12%	2.3%	1.6%
<b>RURAL</b>																
REGION I (ILOCOS)	71%	72%	67%	44%	13%	.5%	.0%	30%	3.6%	.0%	38%	22%	.0%	1.6%	1.0%	.0%
REGION II (CAGAYAN VALLEY)	69%	72%	68%	53%	12%	.0%	.0%	14%	5.4%	.0%	21%	33%	.0%	.7%	.7%	.0%
REGION III (CENTRAL LUZON)	65%	72%	67%	45%	13%	.4%	.4%	35%	11%	.0%	38%	35%	.4%	3.8%	1.3%	.0%
REGION IV (SOUTHERN LUZON)	44%	51%	41%	33%	11%	1.2%	.0%	21%	6.9%	.0%	23%	20%	1.3%	5.3%	2.4%	.3%
REGION V (BICOL)	44%	46%	42%	34%	4.9%	.5%	.6%	6.1%	2.2%	.0%	10%	12%	.0%	2.5%	.5%	.0%
REGION VI (WESTERN VISAYAS)	31%	34%	27%	26%	4.1%	.8%	.0%	12%	3.2%	.0%	8.1%	4.9%	.0%	.8%	.4%	.0%
REGION VII (CENTRAL VISAYAS)	34%	35%	28%	35%	2.6%	1.8%	.5%	7.9%	2.9%	.0%	6.3%	9.6%	.0%	1.0%	.5%	.0%
REGION VIII (EASTERN VISAYAS)	30%	30%	16%	28%	1.9%	.7%	.0%	3.1%	.7%	.0%	8.9%	5.4%	.0%	.0%	.0%	.0%
REGION IX (WESTERN MINDANAO)	32%	38%	31%	28%	6.8%	1.4%	.0%	8.4%	2.9%	.0%	13%	7.2%	.0%	1.7%	.0%	.0%
REGION X (NORTHERN MINDANAO)	48%	54%	49%	34%	19%	.0%	1.3%	11%	7.4%	.7%	23%	8.7%	.7%	5.5%	.0%	.0%
REGION XI (SOUTHERN MINDANAO)	38%	44%	34%	35%	9.3%	5.8%	.6%	10%	.5%	.0%	17%	11%	.0%	2.2%	.0%	.6%
REGION XII (CENTRAL MINDANAO)	40%	46%	34%	38%	15%	.7%	.0%	9.4%	4.2%	.0%	17%	12%	.0%	1.2%	.0%	.0%
CAR (CORDILLERA ADMINISTR.)	45%	62%	45%	43%	10%	.0%	.0%	12%	2.4%	.0%	40%	19%	.0%	2.4%	.0%	.0%
All	45%	50%	42%	35%	9.3%	1.2%	.3%	15%	4.5%	.0%	19%	15%	.3%	2.4%	.7%	.1%
All Philippines	58%	65%	51%	51%	19%	2.3%	.5%	25%	12%	.6%	34%	32%	.8%	6.3%	1.3%	.7%



## Electricity Use by Region

Mean Residential Electricity Consumption  
by End Use and Region (kWh/mo/HH)

	Light ing	Refrig erator	Tele- vision	Air cond.	Iron	Fan	Cooking	Water pump	Washer	Other	All uses
<b>URBAN</b>											
NATIONAL CAPITAL REGION	30.80	42.56	11.33	11.30	23.03	19.90	10.94	.29	.20	4.93	155.3
REGION I (ILOCOS)	10.37	13.44	2.69	.00	2.65	2.45	.19	.00	.03	1.95	33.77
REGION II (CAGAYAN VALLEY)	14.09	22.37	2.97	.00	8.30	3.91	.62	.00	.13	3.85	56.24
REGION III (CENTRAL LUZON)	20.62	20.82	7.48	1.37	16.89	10.74	4.33	.41	.01	4.13	86.79
REGION IV (SOUTHERN LUZON)	24.08	30.21	8.04	2.85	10.40	9.52	4.77	3.60	.10	3.80	97.39
REGION V (BICOL)	14.34	15.10	2.19	.00	4.66	4.27	.17	.05	.00	2.65	43.42
REGION VI (WESTERN VISAYAS)	13.31	13.91	2.57	2.19	3.32	3.60	1.74	1.23	.01	2.80	44.69
REGION VII (CENTRAL VISAYAS)	15.50	6.57	5.42	.62	1.66	3.31	.39	.41	.21	4.93	39.03
REGION VIII (EASTERN VISAYAS)	16.19	5.97	1.48	.00	3.02	3.27	.53	.24	.00	2.16	32.86
REGION IX (WESTERN MINDANAO)	11.70	17.16	1.94	.00	2.56	1.19	2.27	.00	.00	1.87	38.70
REGION X (NORTHERN MINDANAO)	19.04	19.55	3.18	.00	7.85	3.08	3.79	.15	.24	3.40	60.27
REGION XI (SOUTHERN MINDANAO)	18.32	24.87	3.52	3.14	9.10	3.57	5.94	1.82	.02	3.93	74.22
REGION XII (CENTRAL MINDANAO)	20.61	8.65	2.26	.00	5.14	3.25	2.44	.00	.02	2.31	44.68
CAR (CORDILLERA ADMINISTR. REGION)	16.24	2.96	4.05	.00	5.37	.40	.82	.00	.00	3.36	33.21
All	22.67	27.28	7.19	4.94	13.36	10.82	5.83	.88	.11	4.01	97.09
<b>RURAL</b>											
REGION I (ILOCOS)	8.80	4.81	1.55	.00	3.14	.77	.43	.05	.00	1.28	20.83
REGION II (CAGAYAN VALLEY)	21.04	4.26	1.59	.00	1.62	1.88	.51	.06	.00	2.09	33.05
REGION III (CENTRAL LUZON)	10.80	7.21	3.78	.00	5.00	3.53	1.17	.49	.00	1.95	33.93
REGION IV (SOUTHERN LUZON)	9.93	6.59	2.56	.00	2.64	1.71	2.10	.63	.01	1.36	27.65
REGION V (BICOL)	4.88	3.63	.27	.00	.45	.84	.33	.01	.00	1.09	11.50
REGION VI (WESTERN VISAYAS)	5.03	1.68	1.05	.00	.22	.21	.18	.00	.00	1.02	9.38
REGION VII (CENTRAL VISAYAS)	5.59	2.79	.64	.00	.63	1.00	.17	.03	.00	.98	11.84
REGION VIII (EASTERN VISAYAS)	4.15	1.26	.22	.00	.37	.12	.00	.00	.00	.34	6.47
REGION IX (WESTERN MINDANAO)	7.19	3.70	.81	.00	1.92	.53	.47	.00	.00	.79	15.40
REGION X (NORTHERN MINDANAO)	14.19	9.66	1.15	1.53	2.34	.20	2.87	.00	.00	2.16	34.10
REGION XI (SOUTHERN MINDANAO)	7.10	9.40	.78	.00	2.31	.31	.42	.00	.15	1.43	21.90
REGION XII (CENTRAL MINDANAO)	18.71	7.73	.78	.00	1.95	.68	.97	.00	.00	8.58	39.40
CAR (CORDILLERA ADMINISTR. REGION)	5.73	2.62	.28	.00	2.04	.47	.12	.00	.00	1.76	13.01
All	9.28	5.20	1.37	.10	1.96	1.05	.85	.15	.01	1.82	21.82
All Philippines	14.47	13.76	3.63	1.98	6.38	4.84	2.79	.43	.05	2.67	51.01

Mean Residential Electricity Consumption  
for Using Households Only: by End Use and Region (kWh/mo/HH)

	Light ing	Refrig erator	Tele- vision	Air cond.	Iron	Fan	Cooking	Water pump	Washer	Other	All uses
<b>URBAN</b>											
NATIONAL CAPITAL REGION	31.33	79.38	13.99	448.1	29.33	23.08	50.98	35.89	7.45	6.30	157.7
REGION I (ILOCOS)	14.03	57.89	5.79	.	9.86	7.13	3.88	.	3.12	3.70	45.70
REGION II (CAGAYAN VALLEY)	16.08	46.97	4.79	.	18.09	6.79	6.98	.	4.35	5.66	64.17
REGION III (CENTRAL LUZON)	22.08	61.79	10.18	173.6	25.38	17.21	42.68	13.50	1.44	6.20	92.94
REGION IV (SOUTHERN LUZON)	27.80	77.95	12.90	280.0	16.81	17.27	38.06	54.66	5.40	5.92	112.0
REGION V (BICOL)	19.31	55.45	6.38	.	12.11	9.62	5.05	4.62	.	4.65	58.47
REGION VI (WESTERN VISAYAS)	16.25	51.34	5.64	151.4	10.55	10.29	45.84	32.82	.61	4.15	54.55
REGION VII (CENTRAL VISAYAS)	21.44	55.81	15.16	95.37	10.08	16.21	28.87	20.53	14.72	9.30	53.96
REGION VIII (EASTERN VISAYAS)	21.68	41.39	5.92	.	11.54	9.33	23.36	16.47	.	4.39	44.00
REGION IX (WESTERN MINDANAO)	16.45	77.68	6.68	.	8.80	4.22	33.19	.	.	3.32	54.39
REGION X (NORTHERN MINDANAO)	23.98	54.18	8.63	.	18.61	9.12	38.96	17.82	24.93	6.83	73.64
REGION XI (SOUTHERN MINDANAO)	21.77	70.56	8.47	187.5	19.16	9.13	60.74	45.60	1.91	5.52	88.19
REGION XII (CENTRAL MINDANAO)	21.94	41.81	10.53	.	12.00	9.71	48.54	.	6.15	3.38	47.56
CAR (CORDILLERA ADMINISTR. REGION)	18.16	52.05	9.64	.	8.91	4.53	14.34	.	.	4.04	37.14
All	25.61	71.76	11.87	361.8	23.29	18.53	46.33	38.85	6.95	5.90	109.4
<b>RURAL</b>											
REGION I (ILOCOS)	12.38	36.51	4.64	.	8.26	3.57	26.97	5.42	.	2.38	28.88
REGION II (CAGAYAN VALLEY)	29.12	36.26	8.07	.	7.75	5.73	70.21	7.83	.	3.50	45.73
REGION III (CENTRAL LUZON)	15.03	53.65	8.26	.	13.20	9.94	30.77	37.03	.	3.64	47.22
REGION IV (SOUTHERN LUZON)	20.18	53.11	9.87	.	11.66	8.76	39.57	26.84	5.29	4.53	54.23
REGION V (BICOL)	10.72	66.90	3.28	.	4.34	7.00	12.88	2.58	.	2.91	25.27
REGION VI (WESTERN VISAYAS)	14.79	34.35	6.66	.	2.79	4.26	23.59	.26	.	4.50	27.61
REGION VII (CENTRAL VISAYAS)	15.89	56.78	5.94	.	10.14	10.47	18.03	5.53	.	4.99	33.68
REGION VIII (EASTERN VISAYAS)	13.85	47.42	5.88	.	4.14	2.21	.	.	.	2.13	21.59
REGION IX (WESTERN MINDANAO)	19.02	44.84	8.47	.	14.50	7.41	27.82	.	.	2.90	40.77
REGION X (NORTHERN MINDANAO)	26.26	47.22	6.56	233.0	10.20	2.31	52.41	.	.	5.35	63.09
REGION XI (SOUTHERN MINDANAO)	16.17	62.43	7.11	.	13.79	2.89	18.66	.	25.57	4.96	49.88
REGION XII (CENTRAL MINDANAO)	40.71	48.07	6.21	.	11.24	5.63	79.87	.	.	29.68	85.75
CAR (CORDILLERA ADMINISTR. REGION)	9.30	25.64	1.95	.	5.08	2.53	4.76	.	.	3.18	21.11
All	18.87	49.01	7.28	233.0	10.08	6.87	35.15	21.22	15.92	5.26	44.05
All Philippines	22.46	64.80	10.36	355.5	18.69	15.11	43.72	33.12	7.61	5.61	78.81

Total Residential Electricity Consumption  
by End Use and Region (GWh/year)

	Light ing	Refrig erator	Tele- vision	Air cond.	Iron	Fan	Cooking	Water pump	Washer	Other	All uses
<b>URBAN</b>											
NATIONAL CAPITAL REGION	568.8	785.9	209.2	208.7	425.2	367.4	202.0	5.39	3.76	90.97	2867
REGION I (ILOCOS)	18.23	23.62	4.73	.00	4.65	4.32	.33	.00	.06	3.43	59.36
REGION II (CAGAYAN VALLEY)	10.75	17.07	2.27	.00	6.33	2.98	.47	.00	.10	2.94	42.91
REGION III (CENTRAL LUZON)	118.0	119.2	42.82	7.86	96.68	61.49	24.79	2.35	.03	23.67	496.9
REGION IV (SOUTHERN LUZON)	171.1	214.7	57.18	20.29	73.92	67.68	33.88	25.62	.69	27.02	692.3
REGION V (BICOL)	25.13	26.47	3.83	.00	8.17	7.48	.30	.09	.00	4.65	76.12
REGION VI (WESTERN VISAYAS)	42.51	44.40	8.22	7.00	10.60	11.50	5.56	3.92	.03	8.95	142.7
REGION VII (CENTRAL VISAYAS)	51.04	21.64	17.86	2.05	5.45	10.91	1.29	1.36	.68	16.24	128.5
REGION VIII (EASTERN VISAYAS)	26.62	9.81	2.43	.00	4.97	5.38	.87	.40	.00	3.55	54.02
REGION IX (WESTERN MINDANAO)	13.70	20.09	2.27	.00	3.00	1.40	2.66	.00	.00	2.19	45.31
REGION X (NORTHERN MINDANAO)	36.89	37.88	6.17	.00	15.21	5.98	7.34	.28	.47	6.59	116.8
REGION XI (SOUTHERN MINDANAO)	64.25	87.26	12.34	11.02	31.92	12.51	20.83	6.37	.06	13.80	260.4
REGION XII (CENTRAL MINDANAO)	22.90	9.61	2.51	.00	5.72	3.62	2.71	.00	.02	2.57	49.65
CAR (CORDILLERA ADMINISTR. REGION)	9.91	1.81	2.47	.00	3.28	.25	.50	.00	.00	2.05	20.26
<b>All</b>	<b>1180</b>	<b>1419</b>	<b>374.3</b>	<b>256.9</b>	<b>695.1</b>	<b>562.9</b>	<b>303.5</b>	<b>45.78</b>	<b>5.91</b>	<b>208.6</b>	<b>5053</b>
<b>RURAL</b>											
REGION I (ILOCOS)	52.83	28.88	9.33	.00	18.82	4.61	2.58	.33	.00	7.67	125.1
REGION II (CAGAYAN VALLEY)	94.35	19.10	7.14	.00	7.25	8.42	2.30	.26	.00	9.36	148.2
REGION III (CENTRAL LUZON)	85.98	57.40	30.11	.00	39.84	28.08	9.34	3.87	.00	15.50	270.1
REGION IV (SOUTHERN LUZON)	114.2	75.84	29.46	.00	30.38	19.71	24.19	7.30	.17	15.64	318.1
REGION V (BICOL)	31.99	23.83	1.77	.00	2.96	5.54	2.14	.08	.00	7.12	75.43
REGION VI (WESTERN VISAYAS)	42.12	14.07	8.76	.00	1.88	1.75	1.52	.01	.00	8.51	78.61
REGION VII (CENTRAL VISAYAS)	39.22	19.60	4.48	.00	4.45	7.03	1.22	.20	.00	6.90	83.12
REGION VIII (EASTERN VISAYAS)	21.85	6.64	1.18	.00	1.95	.63	.00	.00	.00	1.81	34.05
REGION IX (WESTERN MINDANAO)	40.31	20.74	4.56	.00	10.75	3.00	2.65	.00	.00	4.41	86.41
REGION X (NORTHERN MINDANAO)	79.02	53.79	6.39	8.50	13.03	1.12	15.96	.00	.00	12.04	189.9
REGION XI (SOUTHERN MINDANAO)	44.05	58.31	4.82	.00	14.31	1.95	2.59	.00	.91	8.88	135.8
REGION XII (CENTRAL MINDANAO)	105.4	43.54	4.42	.00	11.00	3.84	5.48	.00	.00	48.37	222.1
CAR (CORDILLERA ADMINISTR. REGION)	11.31	5.17	.54	.00	4.03	.93	.23	.00	.00	3.47	25.68
<b>All</b>	<b>762.7</b>	<b>426.9</b>	<b>113.0</b>	<b>8.50</b>	<b>160.7</b>	<b>86.61</b>	<b>70.21</b>	<b>12.03</b>	<b>1.08</b>	<b>149.7</b>	<b>1793</b>
<b>All Philippines</b>	<b>1943</b>	<b>1846</b>	<b>487.3</b>	<b>265.4</b>	<b>855.8</b>	<b>649.5</b>	<b>373.8</b>	<b>57.81</b>	<b>6.99</b>	<b>358.3</b>	<b>6845</b>

Residential Electricity Consumption  
by End Use and Region (Percent Share)

	Lighting	Refrige ration	TV	A/C	Iron	Fan	Cooking	Water pump	Washer	Other	All uses
<b>URBAN</b>											
NATIONAL CAPITAL REGION	8.3%	11.5%	3.1%	3.0%	6.2%	5.4%	3.0%	.1%	.1%	1.3%	41.9%
REGION I (ILOCOS)	.3%	.3%	.1%	.0%	.1%	.1%	.0%	.0%	.0%	.1%	.9%
REGION II (CAGAYAN VALLEY)	.2%	.2%	.0%	.0%	.1%	.0%	.0%	.0%	.0%	.0%	.6%
REGION III (CENTRAL LUZON)	1.7%	1.7%	.6%	.1%	1.4%	.9%	.4%	.0%	.0%	.3%	7.3%
REGION IV (SOUTHERN LUZON)	2.5%	3.1%	.8%	.3%	1.1%	1.0%	.5%	.4%	.0%	.4%	10.1%
REGION V (BICOL)	.4%	.4%	.1%	.0%	.1%	.1%	.0%	.0%	.0%	.1%	1.1%
REGION VI (WESTERN VISAYAS)	.6%	.6%	.1%	.1%	.2%	.2%	.1%	.1%	.0%	.1%	2.1%
REGION VII (CENTRAL VISAYAS)	.7%	.3%	.3%	.0%	.1%	.2%	.0%	.0%	.0%	.2%	1.9%
REGION VIII (EASTERN VISAYAS)	.4%	.1%	.0%	.0%	.1%	.1%	.0%	.0%	.0%	.1%	.8%
REGION IX (WESTERN MINDANAO)	.2%	.3%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.7%
REGION X (NORTHERN MINDANAO)	.5%	.6%	.1%	.0%	.2%	.1%	.1%	.0%	.0%	.1%	1.7%
REGION XI (SOUTHERN MINDANAO)	.9%	1.3%	.2%	.2%	.5%	.2%	.3%	.1%	.0%	.2%	3.8%
REGION XII (CENTRAL MINDANAO)	.3%	.1%	.0%	.0%	.1%	.1%	.0%	.0%	.0%	.0%	.7%
CAR (CORDILLERA ADMINISTR.)	.1%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.3%
All	17.2%	20.7%	5.5%	3.8%	10.2%	8.2%	4.4%	.7%	.1%	3.0%	73.8%
<b>RURAL</b>											
REGION I (ILOCOS)	.8%	.4%	.1%	.0%	.3%	.1%	.0%	.0%	.0%	.1%	1.8%
REGION II (CAGAYAN VALLEY)	1.4%	.3%	.1%	.0%	.1%	.1%	.0%	.0%	.0%	.1%	2.2%
REGION III (CENTRAL LUZON)	1.3%	.8%	.4%	.0%	.6%	.4%	.1%	.1%	.0%	.2%	3.9%
REGION IV (SOUTHERN LUZON)	1.7%	1.1%	.4%	.0%	.4%	.3%	.4%	.1%	.0%	.2%	4.6%
REGION V (BICOL)	.5%	.3%	.0%	.0%	.0%	.1%	.0%	.0%	.0%	.1%	1.1%
REGION VI (WESTERN VISAYAS)	.6%	.2%	.1%	.0%	.0%	.0%	.0%	.0%	.0%	.1%	1.1%
REGION VII (CENTRAL VISAYAS)	.6%	.3%	.1%	.0%	.1%	.1%	.0%	.0%	.0%	.1%	1.2%
REGION VIII (EASTERN VISAYAS)	.3%	.1%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.0%	.5%
REGION IX (WESTERN MINDANAO)	.6%	.3%	.1%	.0%	.2%	.0%	.0%	.0%	.0%	.1%	1.3%
REGION X (NORTHERN MINDANAO)	1.2%	.8%	.1%	.1%	.2%	.0%	.2%	.0%	.0%	.2%	2.8%
REGION XI (SOUTHERN MINDANAO)	.6%	.9%	.1%	.0%	.2%	.0%	.0%	.0%	.0%	.1%	2.0%
REGION XII (CENTRAL MINDANAO)	1.5%	.6%	.1%	.0%	.2%	.1%	.1%	.0%	.0%	.7%	3.2%
CAR (CORDILLERA ADMINISTR.)	.2%	.1%	.0%	.0%	.1%	.0%	.0%	.0%	.0%	.1%	.4%
All	11.1%	6.2%	1.7%	.1%	2.3%	1.3%	1.0%	.2%	.0%	2.2%	26.2%
All Philippines	28.4%	27.0%	7.1%	3.9%	12.5%	9.5%	5.5%	.8%	.1%	5.2%	100.0%

Raising Factors: Original Factors were provided by NSO to weight the sample according to estimated 1989 demographics based on the 1980 census; Updated Factors were estimated by the study team to reflect household distribution according to preliminary figures from the 1990 census (discounted by 2% for 1989); Revised Factors were used to weight the sample for all summary tables and are the Updated Factors revised to account for households eliminated in the cleaning passes.

Note: An entire rural barangay in Mt. Province was eliminated in the cleaning pass. Weights were increased for rural households in neighboring Ifugao to proxy for this omitted barangay.

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>Province or City</b>						
<b>MANILA</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
<b>1</b>						
Barangay						
21	1969.4	11	2069.33	11	2069.33	11
151	1969.4	9	2069.33	9	2327.99	8
181	1969.4	5	2069.33	5	2069.33	5
1171	1969.4	11	2069.33	11	2276.26	10
1401	1969.4	10	2069.33	10	2586.66	8
1861	1969.4	7	2069.33	7	2069.33	7
2511	1969.4	7	2069.33	7	2069.33	7
<b>2</b>						
Barangay						
71	1969.4	7	2069.33	7	2069.33	7
<b>3</b>						
Barangay						
121	1969.4	5	2069.33	5	2069.33	5
<b>4</b>						
Barangay						
41	1969.4	6	2069.33	6	2069.33	6
<b>5</b>						
Barangay						
451	1969.4	13	2069.33	13	2069.33	13
631	1969.4	8	2069.33	8	2364.95	7
<b>6</b>						
Barangay						
151	1969.4	10	2069.33	10	2069.33	10
1511	1969.4	11	2069.33	11	2069.33	11
1891	1969.4	9	2069.33	9	2069.33	9
2021	1969.4	13	2069.33	13	2069.33	13
<b>12</b>						
Barangay						
111	1969.4	12	2069.33	12	2069.33	12
151	1969.4	12	2069.33	12	2069.33	12
<b>14</b>						
Barangay						
431	1969.4	10	2069.33	10	2069.33	10
<b>PASIG</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
<b>3</b>						
Barangay						
31	2466.2	6	2591.33	6	2591.33	6
41	2466.2	8	2591.33	8	2591.33	8
171	2466.2	10	2591.33	10	2591.33	10
201	2466.2	6	2591.33	6	2591.33	6

(continued)

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>QUEZON CITY</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
4						
Barangay						
91	2078.5	8	2183.96	8	2183.96	8
371	2078.5	10	2183.96	10	2183.96	10
411	2078.5	8	2183.96	8	2183.96	8
481	2078.5	9	2183.96	9	2183.96	9
661	2078.5	30	2183.96	30	2183.96	30
771	2078.5	10	2183.96	10	2183.96	10
891	2078.5	8	2183.96	8	2183.96	8
911	2078.5	6	2183.96	6	2183.96	6
1021	2078.5	7	2183.96	7	2183.96	7
1081	2078.5	12	2183.96	12	2183.96	12
1121	2078.5	8	2183.96	8	2183.96	8
1191	2078.5	11	2183.96	11	2183.96	11
1331	2078.5	8	2183.96	8	2183.96	8
1351	2078.5	6	2183.96	6	2183.96	6
<b>CALOOCAN CITY</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
1						
Barangay						
21	2318.6	11	2436.25	11	2679.87	10
291	2318.6	6	2436.25	6	2436.25	6
631	2318.6	9	2436.25	9	2436.25	9
1171	2318.6	7	2436.25	7	2436.25	7
1221	2318.6	8	2436.25	8	2436.25	8
1281	2318.6	9	2436.25	9	2436.25	9
<b>MAKATI</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
2						
Barangay						
21	40.5	20	42.55	20	77.37	11
31	1761.9	11	1851.30	11	1851.30	11
41	1761.9	15	1851.30	15	1983.53	14
61	54.2	20	56.95	20	189.83	6
81	26.3	20	27.63	20	55.27	10
91	1761.9	9	1851.30	9	1851.30	9
131	47.3	20	49.70	20	90.36	11
141	1761.9	11	1851.30	11	2036.43	10
251	41.3	20	43.40	20	289.30	3
301	16.7	20	17.55	20	87.74	4
<b>PASAY</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
5						
Barangay						
231	2451.7	6	2576.10	6	3091.32	5
661	2451.7	7	2576.10	7	2576.10	7
1701	2451.7	7	2576.10	7	2576.10	7
1801	2451.7	9	2576.10	9	2576.10	9

(continued)

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>OTHER METRO MANILA</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
<b>1</b>						
Barangay						
81	2598.3	11	2730.14	11	2730.14	11
91	2598.3	11	2730.14	11	3003.15	10
<b>2</b>						
Barangay						
31	2598.3	7	2730.14	7	2730.14	7
51	2598.3	14	2730.14	14	2730.14	14
101	2598.3	10	2730.14	10	3412.67	8
161	2598.3	9	2730.14	9	3071.40	8
191	2598.3	5	2730.14	5	2730.14	5
211	2598.3	10	2730.14	10	3412.67	8
<b>3</b>						
Barangay						
51	2598.3	10	2730.14	10	3033.49	9
71	2598.3	22	2730.14	22	3003.15	20
141	2598.3	8	2730.14	8	2730.14	8
<b>4</b>						
Barangay						
31	2598.3	8	2730.14	8	3120.16	7
51	2598.3	8	2730.14	8	2730.14	8
61	2598.3	7	2730.14	7	2730.14	7
101	2598.3	9	2730.14	9	2730.14	9
191	2598.3	5	2730.14	5	2730.14	5
<b>5</b>						
Barangay						
111	2598.3	8	2730.14	8	2730.14	8
161	2598.3	10	2730.14	10	2730.14	10
<b>7</b>						
Barangay						
11	2598.3	12	2730.14	12	2730.14	12

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
Province or City						
ILOCOS NORTE						
Urban/Rural						
URBAN						
Municipality						
12						
Barangay						
551	1583.0	15	1616.69	15	1616.69	15
RURAL						
Municipality						
6						
Barangay						
11	2544.2	9	2598.34	9	2598.34	9
9						
Barangay						
41	2544.2	8	2598.34	8	2598.34	8
11						
Barangay						
181	2544.2	9	2598.34	9	2598.34	9
ILOCOS SUR						
Urban/Rural						
URBAN						
Municipality						
5						
Barangay						
41	1576.1	11	1609.64	11	1609.64	11
RURAL						
Municipality						
12						
Barangay						
271	2596.7	12	2651.96	12	2651.96	12
22						
Barangay						
121	2596.7	11	2651.96	11	2651.96	11
33						
Barangay						
31	2596.7	9	2651.96	9	2651.96	9
LA UNION						
Urban/Rural						
URBAN						
Municipality						
1						
Barangay						
301	1884.0	8	1924.09	8	1924.09	8
RURAL						
Municipality						
1						
Barangay						
441	2404.3	9	2455.46	9	2762.40	8
3						
Barangay						
411	2404.3	13	2455.46	13	2660.09	12
7						
Barangay						
281	2404.3	6	2455.46	6	2455.46	6
11						
Barangay						
221	2404.3	7	2455.46	7	2455.46	7

(continued)



HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>PANGASINAN</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
14						
Barangay						
111	1558.7	11	1591.87	11	1591.87	11
15						
Barangay						
241	1558.7	10	1591.87	10	1591.87	10
18						
Barangay						
81	1558.7	12	1591.87	12	1591.87	12
25						
Barangay						
301	1558.7	13	1591.87	13	1724.52	12
26						
Barangay						
281	1558.7	10	1591.87	10	1989.84	8
<b>RURAL</b>						
Municipality						
1						
Barangay						
41	2489.9	10	2542.89	10	2542.89	10
2						
Barangay						
31	2489.9	9	2542.89	9	2542.89	9
161	2489.9	9	2542.89	9	2860.75	8
13						
Barangay						
121	2489.9	10	2542.89	10	2542.89	10
161	2489.9	10	2542.89	10	2542.89	10
22						
Barangay						
201	2489.9	8	2542.89	8	3390.51	6
211	2489.9	8	2542.89	8	2542.89	8
311	2489.9	11	2542.89	11	2797.17	10
24						
Barangay						
331	2489.9	10	2542.89	10	2542.89	10
32						
Barangay						
661	2489.9	9	2542.89	9	3269.42	7
43						
Barangay						
11	2489.9	9	2542.89	9	2860.75	8

HECS, sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>Province or City</b>						
<b>BATANES</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
1						
Barangay						
21	59.6	14	59.11	14	63.66	13
<b>RURAL</b>						
Municipality						
6						
Barangay						
31	282.3	7	279.99	7	979.97	2
<b>CAGAYAN</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
29						
Barangay						
81	1977.5	10	1961.32	10	2179.25	9
<b>RURAL</b>						
Municipality						
19						
Barangay						
171	3347.0	8	3319.62	8	13278.49	2
20						
Barangay						
21	3347.0	9	3319.62	9	7469.15	4
21						
Barangay						
41	3347.0	8	3319.62	8	4426.16	6
28						
Barangay						
111	3347.0	9	3319.62	9	5975.32	5
29						
Barangay						
221	3347.0	8	3319.62	8	3793.85	7

(continued)

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>ISABELA</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
15						
Barangay						
61	1640.5	9	1627.08	9	1627.08	9
26						
Barangay						
131	1640.5	9	1627.08	9	1830.47	8
<b>RURAL</b>						
Municipality						
1						
Barangay						
31	2748.8	10	2726.31	10	3029.24	9
201	2748.8	9	2726.31	9	2726.31	9
291	2748.8	9	2726.31	9	2726.31	9
12						
Barangay						
21	2748.8	8	2726.31	8	2726.31	8
15						
Barangay						
281	2748.8	9	2726.31	9	2726.31	9
32						
Barangay						
211	2748.8	9	2726.31	9	3505.26	7
371	2748.8	7	2726.31	7	2726.31	7
<b>NUEVA VIZCAYA</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
7						
Barangay						
131	1647.8	6	1634.32	6	2451.48	4
<b>RURAL</b>						
Municipality						
7						
Barangay						
101	2866.4	8	2842.95	8	2842.95	8
13						
Barangay						
31	2866.4	9	2842.95	9	2842.95	9
<b>QUIRINO</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
4						
Barangay						
171	272.6	15	270.37	15	289.68	14
<b>RURAL</b>						
Municipality						
1						
Barangay						
31	2953.3	6	2929.14	6	3514.97	5

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>Province or City</b>						
<b>BATAAN</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
7						
Barangay						
91	1549.9	13	1674.20	13	1674.20	13
12						
Barangay						
91	1549.9	8	1674.20	8	1674.20	8
<b>RURAL</b>						
Municipality						
6						
Barangay						
61	2559.5	8	2764.77	8	2764.77	8
10						
Barangay						
81	2559.5	10	2764.77	10	3455.96	8
<b>BULACAN</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
1						
Barangay						
171	1769.9	9	1911.85	9	1911.85	9
10						
Barangay						
21	1769.9	8	1911.85	8	1911.85	8
121	1769.9	19	1911.85	19	2018.06	18
211	1769.9	10	1911.85	10	1911.85	10
481	1769.9	8	1911.85	8	1911.85	8
12						
Barangay						
151	1769.9	13	1911.85	13	2071.17	12
18						
Barangay						
221	1769.9	10	1911.85	10	1911.85	10
<b>RURAL</b>						
Municipality						
9						
Barangay						
151	2683.9	9	2899.15	9	3261.54	8
15						
Barangay						
181	2683.9	8	2899.15	8	2899.15	8
21						
Barangay						
201	2683.9	9	2899.15	9	2899.15	9
401	2683.9	9	2899.15	9	2899.15	9
23						
Barangay						
171	2683.9	9	2899.15	9	2899.15	9

(continued)

## HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>NUEVA ECIJA</b>						
<b>URBAN</b>						
Municipality						
11						
Barangay						
491	1723.9	9	1862.16	9	2094.93	8
26						
Barangay						
231	1723.9	10	1862.16	10	1862.16	10
301	1723.9	13	1862.16	13	2017.34	12
<b>RURAL</b>						
Municipality						
4						
Barangay						
141	2436.9	10	2632.34	10	2632.34	10
8						
Barangay						
31	2436.9	10	2632.34	10	2632.34	10
11						
Barangay						
481	2436.9	10	2632.34	10	2632.34	10
12						
Barangay						
281	2436.9	10	2632.34	10	2924.82	9
19						
Barangay						
71	2436.9	10	2632.34	10	2924.82	9
22						
Barangay						
121	2436.9	11	2632.34	11	9651.91	3
29						
Barangay						
61	2436.9	10	2632.34	10	2632.34	10
<b>PAMPANGA</b>						
<b>URBAN</b>						
Municipality						
7						
Barangay						
181	1591.0	6	1718.60	6	2062.32	5
221	1591.0	15	1718.60	15	1718.60	15
16						
Barangay						
81	1591.0	10	1718.60	10	1718.60	10
21						
Barangay						
21	1591.0	12	1718.60	12	1874.83	11
61	1591.0	10	1718.60	10	1718.60	10
<b>RURAL</b>						
Municipality						
12						
Barangay						
131	2554.1	8	2758.94	8	2758.94	8
13						
Barangay						
61	2554.1	10	2758.94	10	3065.49	9
14						
Barangay						
141	2554.1	9	2758.94	9	3103.81	8
19						
Barangay						
31	2554.1	8	2758.94	8	3153.07	7
22						
Barangay						
111	2554.1	10	2758.94	10	3065.49	9

(continued)

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>TARLAC</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
16						
Barangay						
781	1544.3	14	1668.15	14	1668.15	14
<b>RURAL</b>						
Municipality						
7						
Barangay						
141	2335.9	10	2523.24	10	2523.24	10
10						
Barangay						
211	2335.9	10	2523.24	10	2803.60	9
291	2335.9	10	2523.24	10	3154.05	8
14						
Barangay						
131	2335.9	13	2523.24	13	2982.01	11
16						
Barangay						
731	2335.9	9	2523.24	9	2523.24	9
<b>ZAMBALES</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
6						
Barangay						
11	1803.7	15	1948.36	15	2248.10	13
<b>RURAL</b>						
Municipality						
8						
Barangay						
31	2705.6	7	2922.59	7	2922.59	7
9						
Barangay						
71	2705.6	8	2922.59	8	2922.59	8
90						
Urban/Rural						
<b>URBAN</b>						
Municipality						
1						
Barangay						
71	2260.5	10	2441.79	10	3488.27	7
261	2260.5	9	2441.79	9	3139.45	7
<b>OLONGAPO CITY</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
7						
Barangay						
181	1815.3	12	1960.89	12	2614.52	9
191	1815.3	11	1960.89	11	1960.89	11

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>Province or City</b>						
<b>BATANGAS</b>						
<b>Urban/Rural</b>						
<b>URBAN</b>						
<b>Municipality</b>						
14						
Barangay						
471	1987.6	9	2127.49	9	2127.49	9
30						
Barangay						
111	1987.6	12	2127.49	12	2127.49	12
<b>RURAL</b>						
<b>Municipality</b>						
14						
Barangay						
211	2691.3	10	2880.71	10	2880.71	10
15						
Barangay						
211	2691.3	8	2880.71	8	2880.71	8
16						
Barangay						
21	2691.3	9	2880.71	9	2880.71	9
17						
Barangay						
121	2691.3	9	2880.71	9	2880.71	9
20						
Barangay						
141	2691.3	10	2880.71	10	2880.71	10
21						
Barangay						
111	2691.3	9	2880.71	9	2880.71	9
451	2691.3	9	2880.71	9	2880.71	9
30						
Barangay						
31	2691.3	8	2880.71	8	3292.24	7
191	2691.3	8	2880.71	8	2880.71	8
<b>CAVITE</b>						
<b>Urban/Rural</b>						
<b>URBAN</b>						
<b>Municipality</b>						
3						
Barangay						
91	1591.5	12	1703.51	12	1703.51	12
4						
Barangay						
101	1591.5	13	1703.51	13	1703.51	13
5						
Barangay						
331	1591.5	12	1703.51	12	1703.51	12
6						
Barangay						
31	1591.5	32	1703.51	32	1758.46	31
20						
Barangay						
11	1591.5	10	1703.51	10	1703.51	10

(continued)

## HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>RURAL</b>						
Municipality						
6						
Barangay						
51	2510.3	9	2686.97	9	3454.68	7
9						
Barangay						
171	2510.3	10	2686.97	10	2686.97	10
22						
Barangay						
141	2510.3	11	2686.97	11	2686.97	11
<b>LAGUNA</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
5						
Barangay						
111	1843.4	8	1973.14	8	2630.85	6
331	1843.4	21	1973.14	21	2301.99	18
10						
Barangay						
271	1843.4	9	1973.14	9	2536.89	7
21						
Barangay						
71	1843.4	11	1973.14	11	1973.14	11
22						
Barangay						
171	1843.4	10	1973.14	10	1973.14	10
26						
Barangay						
231	1843.4	9	1973.14	9	2219.78	8
30						
Barangay						
41	1843.4	10	1973.14	10	2466.42	8
<b>RURAL</b>						
Municipality						
7						
Barangay						
71	2174.8	14	2327.86	14	2327.86	14
24						
Barangay						
461	2174.8	9	2327.86	9	2618.85	8
761	2174.8	9	2327.86	9	2327.86	9
27						
Barangay						
81	2174.8	10	2327.86	10	2909.83	8
<b>MARINDUQUE</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
1						
Barangay						
561	331.0	14	354.30	14	620.02	8
<b>RURAL</b>						
Municipality						
6						
Barangay						
241	2390.1	14	2558.32	14	2755.11	13

(continued)



HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>OCCIDENTAL MINDORO</b>						
Urban/Rural						
URBAN						
Municipality						
6						
Barangay						
81	1059.7	7	1134.28	7	1323.33	6
RURAL						
Municipality						
8						
Barangay						
101	1875.5	8	2007.50	8	5353.33	3
9						
Barangay						
171	1875.5	16	2007.50	16	8029.99	4
<b>ORIENTAL MINDORO</b>						
Urban/Rural						
URBAN						
Municipality						
4						
Barangay						
121	1890.8	8	2023.87	8	2023.87	8
RURAL						
Municipality						
3						
Barangay						
81	2627.6	9	2812.53	9	6328.19	4
7						
Barangay						
11	2627.6	12	2812.53	12	2812.53	12
41	2627.6	5	2812.53	5	2812.53	5
8						
Barangay						
161	2627.6	8	2812.53	8	3750.04	6
<b>PALAWAN</b>						
Urban/Rural						
URBAN						
Municipality						
3						
Barangay						
151	1937.0	10	2073.33	10	2961.89	7
RURAL						
Municipality						
6						
Barangay						
81	2560.4	9	2740.60	9	2740.60	9
16						
Barangay						
181	2560.4	9	2740.60	9	3083.18	8
19						
Barangay						
71	2560.4	11	2740.60	11	5024.44	6

(continued)

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>QUEZON</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
24						
Barangay						
101	1902.6	8	2036.50	8	2036.50	8
211	1902.6	11	2036.50	11	2800.19	8
44						
Barangay						
141	1902.6	13	2036.50	13	3309.32	8
49						
Barangay						
251	1902.6	12	2036.50	12	2036.50	12
<b>RURAL</b>						
Municipality						
10						
Barangay						
181	2643.5	7	2829.55	7	19806.85	1
18						
Barangay						
101	2643.5	10	2829.55	10	3536.94	8
20						
Barangay						
301	2643.5	9	2829.55	9	3183.24	8
27						
Barangay						
21	2643.5	10	2829.55	10	4042.21	7
45						
Barangay						
231	2643.5	11	2829.55	11	3458.34	9
281	2643.5	11	2829.55	11	7781.26	4
49						
Barangay						
361	2643.5	9	2829.55	9	3183.24	8
<b>RIZAL</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
4						
Barangay						
201	1514.2	10	1620.77	10	1620.77	10
361	1514.2	17	1620.77	17	1722.07	16
7						
Barangay						
151	1514.2	11	1620.77	11	1980.94	9
8						
Barangay						
101	1514.2	15	1620.77	15	1620.77	15
11						
Barangay						
11	1514.2	13	1620.77	13	1755.83	12
<b>RURAL</b>						
Municipality						
12						
Barangay						
121	3034.5	13	3248.07	13	3248.07	13

(continued)

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>ROMBLON</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
8						
Barangay						
71	382.3	12	409.21	12	409.21	12
<b>RURAL</b>						
Municipality						
3						
Barangay						
31	2269.6	7	2429.33	7	3401.07	5
9						
Barangay						
151	2269.6	9	2429.33	9	2429.33	9
<b>AURORA</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
4						
Barangay						
21	737.8	10	789.73	10	3948.63	2
<b>RURAL</b>						
Municipality						
8						
Barangay						
121	2339.5	8	2504.15	8	3338.87	6

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>Province or City</b>						
<b>ALBAY</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
6						
Barangay						
401	1858.6	8	1715.64	8	1715.64	8
14						
Barangay						
311	1858.6	9	1715.64	9	1715.64	9
<b>RURAL</b>						
Municipality						
1						
Barangay						
251	2761.1	8	2548.72	8	2548.72	8
8						
Barangay						
531	2761.1	9	2548.72	9	2867.31	8
9						
Barangay						
121	2761.1	8	2548.72	8	3398.29	6
10						
Barangay						
191	2761.1	8	2548.72	8	2912.82	7
17						
Barangay						
21	2761.1	8	2548.72	8	2548.72	8
31	2761.1	10	2548.72	10	2548.72	10
<b>CAMARINES NORTE</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
3						
Barangay						
281	1903.7	10	1757.27	10	1757.27	10
<b>RURAL</b>						
Municipality						
6						
Barangay						
51	2558.2	10	2361.42	10	3373.46	7
8						
Barangay						
121	2558.2	9	2361.42	9	4250.56	5
<b>CAMARINES SUR</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
9						
Barangay						
141	1673.0	12	1544.31	12	1544.31	12
20						
Barangay						
91	1673.0	10	1544.31	10	1715.90	9
24						
Barangay						
31	1673.0	12	1544.31	12	1684.70	11

(continued)

HECS sample weights by Primary Sampling Unit

	Original Factors		Indated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>RURAL</b>						
Municipality						
8						
Barangay						
411	2534.9	11	2339.92	11	2859.90	9
17						
Barangay						
171	2534.9	9	2339.92	9	2339.92	9
20						
Barangay						
111	2534.9	8	2339.92	8	2339.92	8
21						
Barangay						
51	2534.9	9	2339.92	9	2632.40	8
23						
Barangay						
161	2534.9	8	2339.92	8	2674.19	7
26						
Barangay						
61	2534.9	9	2339.92	9	2339.92	9
29						
Barangay						
21	2534.9	9	2339.92	9	3008.46	7
36						
Barangay						
211	2534.9	8	2339.92	8	2674.19	7
<b>CATANDUANES</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
8						
Barangay						
271	986.8	9	910.90	9	1024.76	8
<b>RURAL</b>						
Municipality						
3						
Barangay						
111	2678.5	10	2472.47	10	3532.10	7

(continued)

## HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>MASBATE</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
18						
Barangay						
201	1866.6	11	1723.02	11	1723.02	11
<b>RURAL</b>						
Municipality						
4						
Barangay						
11	2646.2	7	2442.65	7	2442.65	7
6						
Barangay						
171	2646.2	11	2442.65	11	2442.65	11
10						
Barangay						
201	2646.2	8	2442.65	8	2442.65	8
11						
Barangay						
51	2646.2	8	2442.65	8	2442.65	8
17						
Barangay						
361	2646.2	7	2442.65	7	3419.72	5
<b>SORSOGON</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
9						
Barangay						
21	1776.9	12	1640.22	12	1789.33	11
<b>RURAL</b>						
Municipality						
9						
Barangay						
191	3237.8	7	2988.75	7	3486.87	6
11						
Barangay						
61	3237.8	8	2988.75	8	3415.71	7
14						
Barangay						
221	3237.8	5	2988.75	5	3735.94	4
16						
Barangay						
231	3237.8	7	2988.75	7	5230.31	4

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>Province or City</b>						
<b>AKLAN</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
15						
Barangay						
131	936.2	9	928.54	9	928.54	9
<b>RURAL</b>						
Municipality						
7						
Barangay						
81	2498.6	8	2478.16	8	2478.16	8
9						
Barangay						
41	2498.6	8	2478.16	8	3304.22	6
16						
Barangay						
11	2498.6	9	2478.16	9	2478.16	9
<b>ANTIQUE</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
13						
Barangay						
51	1427.2	11	1415.53	11	1730.09	9
<b>RURAL</b>						
Municipality						
12						
Barangay						
261	2659.5	7	2637.75	7	6154.74	3
17						
Barangay						
151	2659.5	7	2637.75	7	6154.74	3
191	2659.5	10	2637.75	10	3768.21	7
<b>CAPIZ</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
5						
Barangay						
131	1667.8	9	1654.16	9	2126.77	7
<b>RURAL</b>						
Municipality						
3						
Barangay						
121	2749.0	9	2726.51	9	4907.72	5
11						
Barangay						
31	2749.0	7	2726.51	7	19085.59	1
14						
Barangay						
21	2749.0	9	2726.51	9	4089.77	6
41	2749.0	9	2726.51	9	3505.52	7

(continued)

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>ILOILO</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
2						
Barangay						
541	1782.6	9	1768.02	9	1768.02	9
19						
Barangay						
251	1782.6	7	1768.02	7	1768.02	7
<b>RURAL</b>						
Municipality						
1						
Barangay						
71	2578.8	8	2557.71	8	6820.55	3
3						
Barangay						
121	2578.8	8	2557.71	8	4092.33	5
6						
Barangay						
271	2578.8	10	2557.71	10	2841.89	9
7						
Barangay						
251	2578.8	8	2557.71	8	2557.71	8
24						
Barangay						
51	2578.8	8	2557.71	8	3410.27	6
27						
Barangay						
161	2578.8	11	2557.71	11	2813.48	10
32						
Barangay						
71	2578.8	8	2557.71	8	2557.71	8
38						
Barangay						
111	2578.8	9	2557.71	9	2557.71	9
43						
Barangay						
161	2578.8	10	2557.71	10	2557.71	10
47						
Barangay						
211	2578.8	8	2557.71	8	2923.09	7
<b>NEGROS OCCIDENTAL</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
4						
Barangay						
31	2005.7	13	1989.29	13	2155.07	12
16						
Barangay						
51	2005.7	7	1989.29	7	1989.29	7
17						
Barangay						
121	2005.7	8	1989.29	8	2273.48	7
18						
Barangay						
51	2005.7	8	1989.29	8	1989.29	8
20						
Barangay						
41	2005.7	12	1989.29	12	1989.29	12

(continued)



HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>RURAL</b>						
Municipality						
2						
Barangay						
131	2923.5	6	2899.59	6	2899.59	6
211	2923.5	8	2899.59	8	2899.59	8
8						
Barangay						
141	2923.5	9	2899.59	9	3262.03	8
10						
Barangay						
141	2923.5	9	2899.59	9	2899.59	9
151	2923.5	7	2899.59	7	2899.59	7
12						
Barangay						
91	2923.5	6	2899.59	6	2899.59	6
15						
Barangay						
71	2923.5	8	2899.59	8	3313.81	7
23						
Barangay						
171	2923.5	9	2899.59	9	3262.03	8
26						
Barangay						
81	2923.5	8	2899.59	8	2899.59	8
131	2923.5	7	2899.59	7	2899.59	7
30						
Barangay						
11	2923.5	11	2899.59	11	3543.94	9
<b>ILOILO CITY</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
22						
Barangay						
1341	1942.5	7	1926.61	7	2247.71	6
1641	1942.5	11	1926.61	11	1926.61	11
1891	1942.5	8	1926.61	8	1926.61	8
<b>BACOLOD CITY</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
1						
Barangay						
291	1583.0	7	1570.05	7	1570.05	7
561	1583.0	14	1570.05	14	1690.82	13
591	1583.0	13	1570.05	13	1700.89	12

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>Province or City</b>						
<b>BONOL</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
42						
Barangay						
11	1628.2	15	1662.85	15	1662.85	15
<b>RURAL</b>						
Municipality						
3						
Barangay						
71	2515.5	8	2569.03	8	2569.03	8
4						
Barangay						
21	2515.5	9	2569.03	9	2569.03	9
5						
Barangay						
71	2515.5	10	2569.03	10	2569.03	10
16						
Barangay						
61	2515.5	11	2569.03	11	2569.03	11
33						
Barangay						
31	2515.5	11	2569.03	11	2569.03	11
39						
Barangay						
121	2515.5	9	2569.03	9	2569.03	9
<b>CEBU</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
26						
Barangay						
221	1756.3	12	1793.67	12	1793.67	12
27						
Barangay						
81	1756.3	11	1793.67	11	1793.67	11
28						
Barangay						
91	1756.3	11	1793.67	11	1973.04	10
50						
Barangay						
161	1756.3	11	1793.67	11	1793.67	11
52						
Barangay						
521	1756.3	10	1793.67	10	1793.67	10

(continued)

## HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>RURAL</b>						
Municipality						
2						
Barangay						
21	2622.7	9	2678.51	9	2678.51	9
3						
Barangay						
51	2622.7	9	2678.51	9	3013.32	8
19						
Barangay						
71	2622.7	10	2678.51	10	2678.51	10
21						
Barangay						
181	2622.7	9	2678.51	9	2678.51	9
23						
Barangay						
441	2622.7	9	2678.51	9	3013.32	8
32						
Barangay						
161	2622.7	10	2678.51	10	2976.12	9
35						
Barangay						
191	2622.7	10	2678.51	10	2976.12	9
39						
Barangay						
81	2622.7	11	2678.51	11	2678.51	11
43						
Barangay						
111	2622.7	7	2678.51	7	3124.93	6
45						
Barangay						
71	2622.7	9	2678.51	9	2678.51	9
46						
Barangay						
241	2622.7	8	2678.51	8	4285.62	5
<b>NEGROS ORIENTAL</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
10						
Barangay						
131	1667.8	9	1703.29	9	1703.29	9
21						
Barangay						
111	1667.8	11	1703.29	11	1703.29	11

(continued)

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>RURAL</b>						
<b>Municipality</b>						
<b>8</b>						
Barangay						
51	2597.3	7	2652.57	7	6189.33	3
<b>14</b>						
Barangay						
281	2597.3	10	2652.57	10	3789.39	7
<b>15</b>						
Barangay						
61	2597.3	11	2652.57	11	2652.57	11
<b>18</b>						
Barangay						
101	2597.3	9	2652.57	9	2652.57	9
<b>19</b>						
Barangay						
221	2597.3	11	2652.57	11	2917.83	10
<b>21</b>						
Barangay						
191	2597.3	9	2652.57	9	3410.45	7
<b>SIGU/JOR</b>						
Urban/Rural						
<b>URBAN</b>						
<b>Municipality</b>						
<b>3</b>						
Barangay						
51	120.9	15	123.47	15	132.29	14
<b>RURAL</b>						
<b>Municipality</b>						
<b>3</b>						
Barangay						
81	2293.7	6	2342.51	6	2342.51	6
<b>CEBU CITY</b>						
Urban/Rural						
<b>URBAN</b>						
<b>Municipality</b>						
<b>17</b>						
Barangay						
351	2083.8	7	2128.14	7	2128.14	7
461	2083.8	11	2128.14	11	2128.14	11
491	2083.8	8	2128.14	8	2432.16	7
561	2083.8	10	2128.14	10	2128.14	10
681	2083.8	8	2128.14	8	2128.14	8
831	2083.8	10	2128.14	10	2364.60	9

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>Province or City</b>						
<b>EASTERN SAMAR</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
4						
Barangay						
371	2148.7	8	2004.52	8	2004.52	8
<b>RURAL</b>						
Municipality						
4						
Barangay						
291	2578.4	11	2405.39	11	3779.90	7
23						
Barangay						
141	2578.4	9	2405.39	9	3092.64	7
<b>LEYTE</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
47						
Barangay						
471	1526.6	14	1424.17	14	1533.72	13
631	1526.6	7	1424.17	7	1424.17	7
812	1526.6	7	1424.17	7	1424.17	7
1271	1526.6	12	1424.17	12	1553.63	11
1301	1526.6	16	1424.17	16	1627.62	14
<b>RURAL</b>						
Municipality						
6						
Barangay						
211	2583.9	7	2410.52	7	2410.52	7
8						
Barangay						
181	2583.9	9	2410.52	9	2711.84	8
10						
Barangay						
141	2583.9	7	2410.52	7	16873.64	1
15						
Barangay						
411	2583.9	10	2410.52	10	2410.52	10
27						
Barangay						
41	2583.9	12	2410.52	12	4821.04	6
31						
Barangay						
241	2583.9	5	2410.52	5	3013.15	4
36						
Barangay						
101	2583.9	11	2410.52	11	5303.14	5
38						
Barangay						
601	2583.9	12	2410.52	12	3214.03	9
48						
Barangay						
361	2583.9	9	2410.52	9	2711.84	8

(continued)

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>NORTHERN SAMAR</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
5						
Barangay						
711	2243.0	10	2092.49	10	2092.49	10
<b>RURAL</b>						
Municipality						
3						
Barangay						
41	3690.8	6	3443.15	6	4131.78	5
8						
Barangay						
401	3690.8	5	3443.15	5	4303.93	4
18						
Barangay						
151	3690.8	6	3443.15	6	5164.72	4
<b>SAMAR (WESTERN)</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
5						
Barangay						
391	1450.1	8	1352.80	8	1352.80	8
<b>RURAL</b>						
Municipality						
3						
Barangay						
1541	2719.0	8	2536.56	8	2536.56	8
20						
Barangay						
281	2719.0	8	2536.56	8	2536.56	8
22						
Barangay						
51	2719.0	9	2536.56	9	3804.83	6
26						
Barangay						
31	2719.0	7	2536.56	7	2536.56	7
<b>SOUTHERN LEYTE</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
7						
Barangay						
11	2026.6	5	1890.62	5	2363.27	4
<b>RURAL</b>						
Municipality						
9						
Barangay						
201	3009.4	8	2807.47	8	7486.58	3
12						
Barangay						
231	3009.4	11	2807.47	11	2807.47	11

## HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>Province or City</b>						
<b>BASILAN</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
4						
Barangay						
91						
	906.0	10	934.18	10	934.18	10
<b>RURAL</b>						
Municipality						
2						
Barangay						
241						
	3447.7	6	3554.92	6	3554.92	6
4						
Barangay						
121						
	3447.7	5	3554.92	5	3554.92	5
<b>SULU</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
2						
Barangay						
31						
	2000.8	6	2063.02	6	4126.05	3
<b>RURAL</b>						
Municipality						
11						
Barangay						
71						
	2317.6	13	2389.68	13	3883.23	8
171						
	2317.6	4	2389.68	4	2389.68	4
12						
Barangay						
81						
	2317.6	9	2389.68	9	7169.03	3
<b>TAWI-TAWI</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
1						
Barangay						
21						
	1048.2	5	1080.80	5	1351.00	4
<b>RURAL</b>						
Municipality						
5						
Barangay						
11						
	5157.7	2	5318.10	2	5318.10	2
51						
	5157.7	5	5318.10	5	6647.63	4
<b>ZAMBOANGA DEL NORTE</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
2						
Barangay						
131						
	1813.3	12	1869.69	12	2039.67	11

(continued)

## HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>RURAL</b>						
Municipality						
1						
Barangay						
361	3014.2	9	3107.94	9	3107.94	9
3						
Barangay						
211	3014.2	7	3107.94	7	3107.94	7
4						
Barangay						
41	3014.2	7	3107.94	7	3107.94	7
10						
Barangay						
61	3014.2	7	3107.94	7	3107.94	7
22						
Barangay						
41	3014.2	4	3107.94	4	3107.94	4
<b>ZAMBOANGA DEL SUR</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
16						
Barangay						
281	1627.6	10	1678.22	10	1678.22	10
25						
Barangay						
171	1627.6	8	1678.22	8	2237.62	6
<b>RURAL</b>						
Municipality						
2						
Barangay						
111	2583.1	7	2663.43	7	2663.43	7
3						
Barangay						
271	2583.1	7	2663.43	7	2663.43	7
8						
Barangay						
161	2583.1	8	2663.43	8	2663.43	8
271	2583.1	9	2663.43	9	3424.42	7
12						
Barangay						
11	2583.1	12	2663.43	12	4565.89	7
22						
Barangay						
101	2583.1	7	2663.43	7	3728.81	5
26						
Barangay						
291	2583.1	11	2663.43	11	3255.31	9
<b>ZAMBOANGA CITY</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
32						
Barangay						
641	2880.0	6	2969.57	6	2969.57	6
<b>RURAL</b>						
Municipality						
32						
Barangay						
471	2683.7	10	2767.16	10	2767.16	10
851	2683.7	12	2767.16	12	5534.33	6



HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
Province or City						
AGUSAN DEL NORTE						
Urban/Rural						
URBAN						
Municipality						
1						
Barangay						
221	1487.9	6	1504.95	6	1504.95	6
RURAL						
Municipality						
6						
Barangay						
91	2816.3	12	2848.57	12	2848.57	12
AGUSAN DEL SUR						
Urban/Rural						
URBAN						
Municipality						
8						
Barangay						
181	1506.4	8	1523.66	8	2031.55	6
RURAL						
Municipality						
1						
Barangay						
241	1965.9	17	1988.43	17	1988.43	17
10						
Barangay						
51	1965.9	8	1988.43	8	1988.43	8
BUKIDNON						
Urban/Rural						
URBAN						
Municipality						
7						
Barangay						
101	1896.7	13	1918.44	13	2078.31	12
RURAL						
Municipality						
6						
Barangay						
121	3005.8	6	3040.25	6	3648.30	5
11						
Barangay						
61	3005.8	8	3040.25	8	3040.25	8
12						
Barangay						
141	3005.8	13	3040.25	13	4391.47	9
16						
Barangay						
111	3005.8	6	3040.25	6	3040.25	6
18						
Barangay						
161	3005.8	6	3040.25	6	3040.25	6

(continued)

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>CAMIGUIN</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
3						
Barangay						
71	257.6	11	260.55	11	409.44	7
<b>RURAL</b>						
Municipality						
2						
Barangay						
41	826.5	10	835.97	10	835.97	10
<b>MISAMIS OCCIDENTAL</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
5						
Barangay						
231	1879.4	8	1900.94	8	2534.58	6
<b>RURAL</b>						
Municipality						
2						
Barangay						
81	2654.9	8	2685.33	8	3068.94	7
5						
Barangay						
201	2654.9	10	2685.33	10	2983.69	9
16						
Barangay						
201	2654.9	8	2685.33	8	2685.33	8
<b>MISAMIS ORIENTAL</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
10						
Barangay						
111	1311.7	14	1326.73	14	1326.73	14
<b>RURAL</b>						
Municipality						
2						
Barangay						
101	2143.1	11	2167.66	11	2167.66	11
17						
Barangay						
191	2143.1	20	2167.66	20	2408.51	18
19						
Barangay						
151	2143.1	7	2167.66	7	3793.40	4

(continued)

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>SURIGAO DEL NORTE</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
24						
Barangay						
481						
	1309.6	16	1324.61	16	1412.92	15
<b>RURAL</b>						
Municipality						
10						
Barangay						
291						
	2419.6	8	2447.33	8	3915.73	5
24						
Barangay						
411						
	2419.6	17	2447.33	17	2447.33	17
<b>BUTUAN CITY</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
2						
Barangay						
81						
	1678.5	9	1697.74	9	1909.95	8
<b>RURAL</b>						
Municipality						
2						
Barangay						
681						
	2757.9	8	2789.51	8	3188.01	7
<b>CAGAYAN DE ORO CITY</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
5						
Barangay						
81						
	1545.1	16	1562.81	16	1562.81	16
611						
	1545.1	11	1562.81	11	1562.81	11
<b>RURAL</b>						
Municipality						
5						
Barangay						
521						
	1923.1	9	1945.14	9	2500.89	7

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>Province or City</b>						
<b>DAVAO DEL NORTE</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
14						
Barangay						
141	1744.2	10	1884.08	10	1884.08	10
19						
Barangay						
161	1744.2	14	1884.08	14	2198.10	14
<b>RURAL</b>						
Municipality						
3						
Barangay						
11	2249.8	10	2430.23	10	2430.23	10
4						
Barangay						
31	2249.8	10	2430.23	10	2430.23	10
12						
Barangay						
91	2249.8	13	2430.23	13	2430.23	13
19						
Barangay						
91	2249.8	8	2430.23	8	2430.23	8
141	2249.8	12	2430.23	12	2916.28	10
<b>DAVAO DEL SUR</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
3						
Barangay						
371	1302.7	18	1407.18	18	1489.95	17
<b>RURAL</b>						
Municipality						
4						
Barangay						
221	2626.9	11	2837.58	11	3121.34	10
8						
Barangay						
141	2626.9	8	2837.58	8	2837.58	8
9						
Barangay						
331	2626.9	9	2837.58	9	2837.58	9
14						
Barangay						
61	2626.9	7	2837.58	7	2837.58	7

(continued)

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>DAVAO ORIENTAL</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
10						
Barangay						
121	1824.1	9	1970.39	9	2216.69	8
<b>RURAL</b>						
Municipality						
8						
Barangay						
151	2925.3	11	3159.91	11	4965.57	7
9						
Barangay						
221	2925.3	8	3159.91	8	3159.91	8
<b>SOUTH COTABATO</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
3						
Barangay						
71	1885.2	9	2036.39	9	2036.39	9
111	1885.2	15	2036.39	15	2776.90	11
17						
Barangay						
131	1885.2	10	2036.39	10	2262.66	9
<b>RURAL</b>						
Municipality						
2						
Barangay						
41	2612.7	10	2822.24	10	4703.73	6
4						
Barangay						
131	2612.7	7	2822.24	7	4938.92	4
11						
Barangay						
61	2612.7	8	2822.24	8	2822.24	8
13						
Barangay						
31	2612.7	8	2822.24	8	3225.42	7
15						
Barangay						
111	2612.7	8	2822.24	8	11288.95	2
<b>SURIGAO DEL SUR</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
19						
Barangay						
21	1783.8	16	1926.86	16	1926.86	16
<b>RURAL</b>						
Municipality						
3						
Barangay						
201	2493.3	11	2693.26	11	2962.59	10
13						
Barangay						
31	2493.3	11	2693.26	11	4232.27	7

(continued)

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>DAVAO CITY</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
2						
Barangay						
261	1964.6	12	2122.16	12	2122.16	12
751	1964.6	9	2122.16	9	2122.16	9
871	1964.6	11	2122.16	11	2122.16	11
1411	1964.6	8	2122.16	8	2122.16	8
1651	1964.6	9	2122.16	9	2122.16	9
<b>RURAL</b>						
Municipality						
2						
Barangay						
131	3107.7	8	3356.94	8	13427.75	2
1051	3107.7	8	3356.94	8	6713.88	4

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>Province or City</b>						
<b>LANAO DEL NORTE</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
22						
Barangay						
191	1275.7	8	1428.12	8	1428.12	8
<b>RURAL</b>						
Municipality						
5						
Barangay						
141	3027.7	9	3389.45	9	3389.45	9
8						
Barangay						
291	3027.7	9	3389.45	9	3389.45	9
<b>LANAO DEL SUR</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
17						
Barangay						
81	1502.9	7	1682.47	7	1682.47	7
<b>RURAL</b>						
Municipality						
5						
Barangay						
351	2207.0	14	2470.69	14	2470.69	14
11						
Barangay						
771	2207.0	4	2470.69	4	2470.69	4
16						
Barangay						
71	2207.0	15	2470.69	15	2647.17	14
<b>MAGUINDANAO</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
4						
Barangay						
11	1472.9	15	1648.88	15	1766.66	14
<b>RURAL</b>						
Municipality						
1						
Barangay						
111	2051.6	7	2296.73	7	2296.73	7
4						
Barangay						
21	2051.6	11	2296.73	11	2296.73	11
7						
Barangay						
21	2051.6	16	2296.73	16	2296.73	16
12						
Barangay						
501	2051.6	11	2296.73	11	2296.73	11

(continued)

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>NORTH COTABATO</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
4						
Barangay						
321	1361.5	13	1524.17	13	1651.19	12
<b>RURAL</b>						
Municipality						
4						
Barangay						
131	2716.7	11	3041.29	11	3345.42	10
8						
Barangay						
251	2716.7	10	3041.29	10	4344.70	7
10						
Barangay						
161	2716.7	11	3041.29	11	3345.42	10
13						
Barangay						
221	2716.7	9	3041.29	9	3041.29	9
<b>SULTAN KUDARAT</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
2						
Barangay						
231	1037.5	16	1161.46	16	3716.67	5
<b>RURAL</b>						
Municipality						
1						
Barangay						
111	2744.7	9	3072.64	9	6913.43	4
8						
Barangay						
71	2744.7	11	3072.64	11	3072.64	11
<b>ILIGAN CITY</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
4						
Barangay						
161	280.1	20	313.57	20	313.57	20
<b>RURAL</b>						
Municipality						
4						
Barangay						
261	2585.2	13	2894.08	13	3420.28	11



HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
Province or City						
ABRA						
Urban/Rural						
URBAN						
Municipality						
1						
Barangay						
281	838.6	8	831.74	8	831.74	8
RURAL						
Municipality						
21						
Barangay						
71	2627.1	11	2605.61	11	3184.63	9
BENGUET						
Urban/Rural						
URBAN						
Municipality						
2						
Barangay						
1161	879.5	41	872.31	41	993.46	36
RURAL						
Municipality						
6						
Barangay						
41	2564.0	11	2543.03	11	3996.18	7
14						
Barangay						
61	2564.0	9	2543.03	9	2860.90	8
IFUGAO						
Urban/Rural						
URBAN						
Municipality						
1						
Barangay						
161	295.9	9	293.48	9	440.22	6
RURAL						
Municipality						
7						
Barangay						
171	2105.6	12	2088.38	12	5962.23	8

(continued)

HECS sample weights by Primary Sampling Unit

	Original Factors		Updated Factors		Revised Factors	
	Mean	Valid N	Mean	Valid N	Mean	Valid N
<b>KALINGA-APAYAO</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
7						
Barangay						
71	399.7	12	396.43	12	528.57	9
<b>RURAL</b>						
Municipality						
6						
Barangay						
31	2890.2	4	2866.56	4	2866.56	4
9						
Barangay						
121	2890.2	9	2866.56	9	3224.88	8
<b>MOUNTAIN PROVINCE</b>						
Urban/Rural						
<b>URBAN</b>						
Municipality						
4						
Barangay						
161	73.6	14	73.00	14	92.91	11
<b>RURAL</b>						
Municipality						
2						
Barangay						
211	2282.4	10	2263.73	10	.	0