



ENERGY STATISTICS

2000 - 2008

GHANA

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FOREWARD

This is the second publication of Energy Statistics by the Energy Commission. It provides data on Ghana's energy situation from 2000 to 2008.

This publication has been prepared with data provided by the Volta River Authority (VRA), National Petroleum Authority (NPA), Tema Oil Refinery (TOR), Public Utility Regulatory Commission (PURC), Electricity Company of Ghana (ECG), Northern Electricity Department (NED) and the Ghana Statistical Service (GSS). The cooperation and assistance of all these organizations are gratefully acknowledged.

It is hoped that the statistics contained in this publication will prove useful to a wide range of users including planners, policy makers, researchers and students.

We would appreciate very much any feedback by way of comments and suggestions from readers.

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Symbols & Abbreviations

ATK	Aviation Turbine Kerosene
BST	Bulk Supply Tariff
Bcf / scf	Billion Cubic Feet / standard cubic feet
Cal	Calories
DSC	Distribution Service Charge
ECG	Electricity Company of Ghana
GDP	Gross Domestic Product
GNPC	Ghana National Petroleum Corporation
GWh	Gigawatt-hour
g / kg	Gramme / kilogramme
in / in ² / in ³	Inch / inch squared / inch cubed
kJ / MJ / GJ	Kilojoule / Megajoule / Gigajoule
W / KW / MW / GW	Watt / Kilowatt / Megawatt / Gigawatt
KWh	Kilowatt-hour
toe/ktoe	Tonnes of oil Equivalent/Kilotonnes of Oil Equivalent
LCO	Light Crude Oil
LPG	Liquefied Petroleum Gas
m / m ² / m ³	metre / metre squared / metre cubed.
Min	Minimum
Max	Maximum
MGh¢	Million Ghana cedis
MMBO or mmbo	Million barrels of oil
MBTU or mBTU	Thousand British Thermal Unit
MMBTU or mmBTU	Million British Thermal Unit
MSCF or mscf	Thousand Standard Cubic Feet
MMSCF or mmscf	Million Standard Cubic Feet
MWh	Megawatt-hour
NED (VRA-NED)	Northern Electricity Department
NG	Natural Gas
NPA	National Petroleum Authority
RFO	Residual Fuel Oil
TAPCO	Takoradi Power Company Ltd

TICO	Takoradi International Company
TOE	Tonnes of Oil Equivalent
TOR	Tema Oil Refinery
TSC	Transmission Service Charge
VALCO	Volta Aluminium Company
VRA	Volta River Authority

Energy Conversion Factors

Crude Oil	1 Tonne	1.02 TOE
Gasoline:	1 Tonne	1.05 TOE
Kerosene:	1 Tonne	1.03 TOE
Jet Fuel:	1 Tonne	1.03 TOE
Diesel /Gas Oil:	1 Tonne	1.02 TOE
Residual Fuel Oil:	1 Tonne	0.97 TOE
LPG:	1 Tonne	1.08 TOE
Firewood*	1 Tonne	0.30 -0.36 TOE
Charcoal	1 Tonne	0.68 -0.74 TOE

Glossary

Conversion factors	Factors used to convert quantities from original physical units into a common accounting unit for the purpose of aggregating different energy sources. The tonne of oil equivalent (toe) has been adopted as the accounting Unit.
Energy Intensity	Energy intensity defined as the total energy consumed (toe) per unit of GDP (in constant 1993 prices)
Energy unit	Unit for energy
Final Energy Consumption	It is the energy consumed by the final user.
Installed Capacity	The nameplate capacity of a generator
Primary energy	Energy commodities that are either extracted or captured directly from natural resources such as crude oil, woodfuel etc.
Primary energy supply	The sum of all imported and locally available primary energy within a particular year
Secondary energy	Energy from all sources that result from transformation of primary sources. E.g Charcoal from woodfuel and gasoline from crude oil.
Secondary energy supply	The sum of all imported and locally available energy from secondary sources within a particular year

Section One
Selected Energy indicators

Table 1.1: Selected Energy Indicators, 2000-2008

Detail	Unit	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total Primary Energy Supply	<i>ktoe</i>	7,819.1	8,077.8	8,519.7	8,576.6	9,070.6	9,090.9	8,830.3	9,015.4	9,148.1
Total Secondary Energy Supply (net)	"	8,986.6	9,483.8	9,838.1	10,066.0	10,339.2	10,211.9	10,713.8	10,840.8	10,713.7
Electricity Generated (net)	GWh	7,695.0	8,019.0	7,830.0	6,236.0	6,252.0	6,964.0	8,305.0	7,167.0	8,059.8
Annual increase	%		4.2	-2.4	-20.4	0.3	11.4	19.3	-13.7	12.5
Production of Petroleum Product (net)	<i>kilotonnes</i>	1,499.9	1,639.6	1,660.4	1,669.7	1,796.7	1,581.2	1,924.2	2,091.5	1,848.2
Annual increase	%		9.3	1.3	0.6	7.6	-12.0	21.7	8.7	-11.6
Total Electricity Consumed	<i>GWh</i>	6,081.9	6,553.1	6,198.1	4,583.7	4,626.6	5,275.0	6,540.3	5,593.7	6,162.2
Annual increase	%		7.7	-5.4	-26.0	0.9	14.0	24.0	-14.5	10.2
Total Petroleum Product Consumed	<i>kilotonnes</i>	1,476.0	1,477.3	1,569.7	1,514.6	1,731.1	1,749.9	1,804.6	1,879.1	1,829.6
Annual increase	%		0.1	6.3	-3.5	14.3	1.1	3.1	4.1	-2.6
Total Energy Consumed	<i>ktoe</i>	7,034.3	9,440.5	9,831.2	9,874.3	10,279.8	10,385.6	10,608.4	10,638.2	10,715.2
Annual increase	%		34.2	4.1	0.4	4.1	1.0	2.1	0.3	0.7
GDP (Constant 1993 prices)	<i>MGh¢</i>	514.2	535.7	560.1	589.5	622.4	658.9	701.2	741.2	795.1
Population	<i>thousand</i>	18,912.0	19,370.0	19,830.0	20,310.0	20,800.0	21,130.0	21,810.0	22,340.0	22,600.0
Per capita consumption of net electricity generated	<i>kWh/capita</i>	406.9	414.0	394.9	307.0	300.6	329.6	380.8	320.8	356.6
Per capita consumption of electricity	<i>kWh/capita</i>	321.6	338.3	312.6	225.7	222.4	249.6	299.9	250.4	272.7
Per capita consumption of Petroleum Products	<i>tonnes/capita</i>	79.3	84.6	83.7	82.2	86.4	74.8	88.2	93.6	81.8
Per capital final energy consumption	<i>toe/capita</i>	0.37	0.49	0.50	0.49	0.49	0.49	0.49	0.48	0.47
Grid Emission Factor	<i>tCO₂/MWh</i>	-	-	-	-				0.575	0.563

Section Two
Primary Energy Supply

Table 2.1: Primary Energy Supply (Physical Unit, Kilotonnes & GWh)

Energy Source	2000	2001	2002	2003	2004	2005	2006	2007	2008
Imported									
Crude Oil for Refinery	1,131.8	1,262.9	1,179.4	1,406.2	1,813.5	1,645.5	962.2	1242.5	1396.7
Crude Oil for Electricity	153.1	275.9	601.6	527.6	163.4	322.0	750.6	811.2	579.1
Total	1,284.9	1,538.8	1,781.0	1,933.8	1,976.9	1,967.5	1,712.8	2,053.8	1,975.8
Local									
Hydro(GWh)	6,610	6,608	5,036	3,885	5,281	5,629	5,619	3,727	6,195
Woodfuel*	18,000.0	18,000.0	19,000.0	19,000.0	20,000.0	20,000.0	20,000.0	20,000.0	20,000.0

*Woodfuel data after 2005 was purely by projection

Table 2.2: Primary Energy Supply (Energy Unit,ktoe)

Energy Source	2000	2001	2002	2003	2004	2005	2006	2007	2008
Imported									
Crude Oil for Refinery	1,154.5	1,288.1	1,203.0	1,434.3	1,849.7	1,678.4	981.4	1,267.4	1,424.6
Crude Oil for Electricity	156.2	281.4	613.7	538.2	166.7	328.4	765.6	827.5	590.7
Subtotal (Imported)	1,310.6	1,569.6	1,816.6	1,972.5	2,016.4	2,006.9	1,747.0	2,094.9	2,015.3
Local									
Hydro	568.5	568.3	433.1	334.1	454.2	484.1	483.2	320.5	532.8
Woodfuel*	5,940.0	5,940.0	6,270.0	6,270.0	6,600.0	6,600.0	6,600.0	6,600.0	6,600.0
Subtotal (Local)	6,508.5	6,508.3	6,703.1	6,604.1	7,054.2	7,084.1	7,083.2	6,920.5	7,132.8
Total(imported+Local)	7,819.1	8,077.8	8,519.7	8,576.6	9,070.6	9,090.9	8,830.3	9,015.4	9,148.1

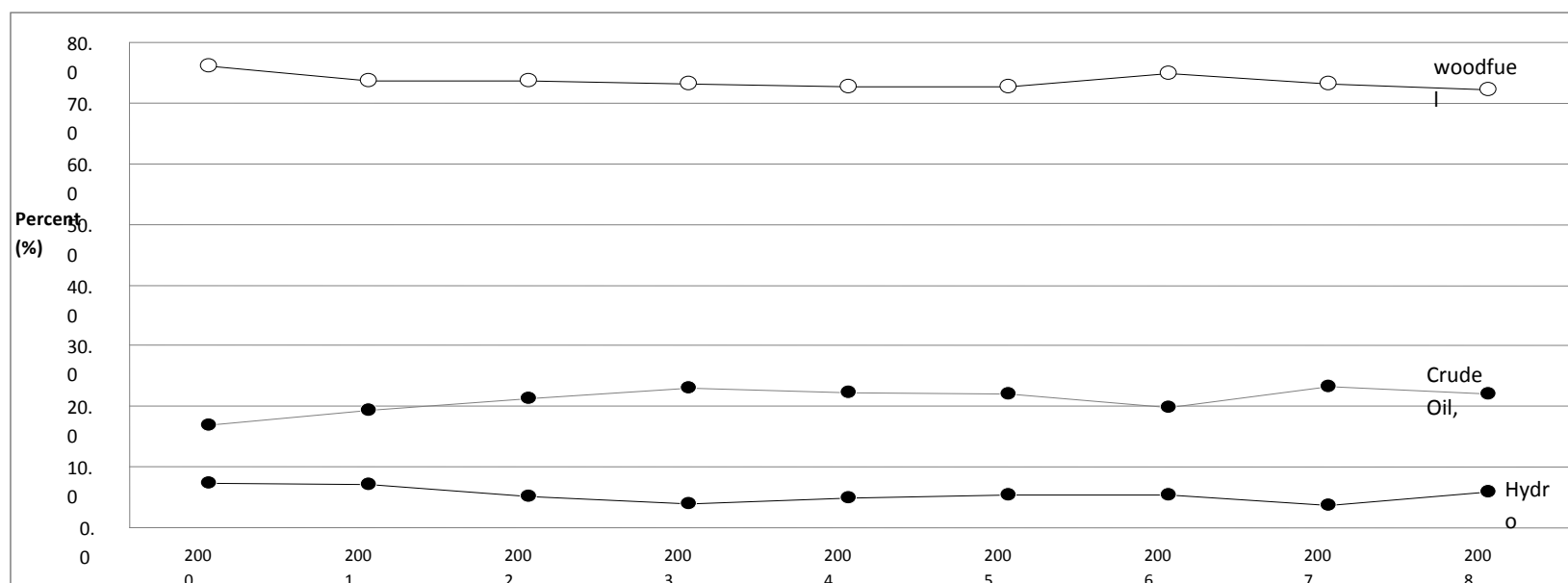
*Woodfuel data after 2005 was purely by projection

Table 2.3: Share of Primary Energy Supply (%)

Energy Source	2000	2001	2002	2003	2004	2005	2006	2007	2008
Imported									
Crude Oil for Refinery	14.8	15.9	14.1	16.7	20.4	18.5	11.1	14.1	15.6
Crude Oil for Electricity	2.0	3.5	7.2	6.3	1.8	3.6	8.7	9.2	6.5
Subtotal (Imported)	16.8	19.4	21.3	23.0	22.2	22.1	19.8	23.2	22.0
Local									
Hydro	7.3	7.0	5.1	3.9	5.0	5.3	5.5	3.6	5.8
Woodfuel*	76.0	73.5	73.6	73.1	72.8	72.6	74.7	73.2	72.1
Subtotal (Local)	83.2	80.6	78.7	77.0	77.8	77.9	80.2	76.8	78.0
Total(imported+Local)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*Woodfuel data after 2005 was purely by projection

Figure 2.1: Trend in Primary Energy Supply



Section Three
Secondary Energy Supply

3.1 Secondary Energy Supply (Imported)

Table 3.1.1: Secondary Energy Supply (Imported) (Physical Unit, Kilotonnes & GWh)

Energy Source	2000	2001	2002	2003	2004	2005	2006	2007	2008
LPG	35.4	35.6	32.0	16.7	11.0	7.1	67.8	47.2	67.8
Gasoline	387.0	389.4	370.8	232.1	255.4	167.5	360.5	274.9	254.5
Kerosene	30.4	21.5	48.8	34.6	0.0	0.0	99.9	66.7	136.4
Gas Oil	363.2	354.3	298.0	285.7	313.1	403.7	780.0	806.9	579.0
RFO	0.3	147.0	77.0	0.0	0.0	0.0	0.0	0.0	0.0
Total	816.3	947.8	826.6	569.0	579.5	578.3	1,308.1	1,195.7	1,037.7
Electricity(GWh)	864	462	1146	940	878	815	629	435	275

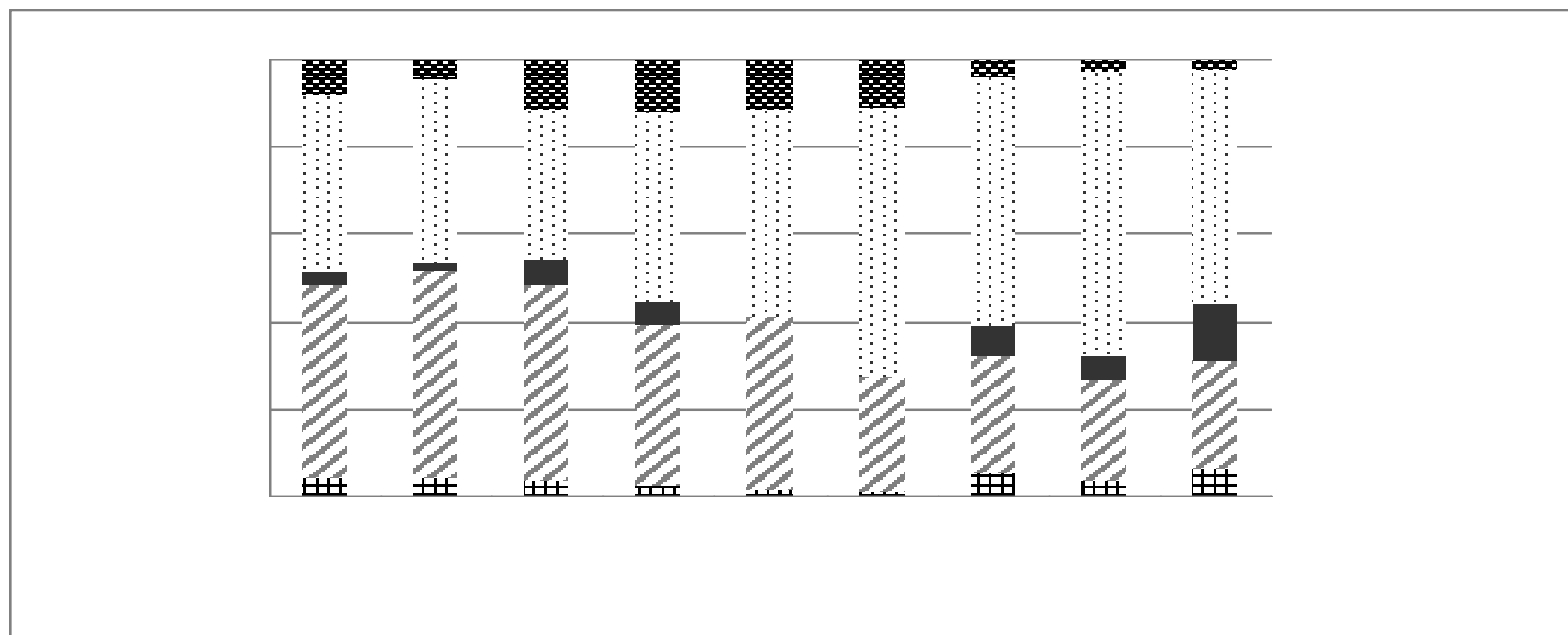
Table 3.1.2: Secondary Energy Supply (Imported), (Energy Unit, ktoe)

Energy Source	2000	2001	2002	2003	2004	2005	2006	2007	2008
LPG	38.3	38.4	34.5	18.0	11.9	7.6	73.2	51.0	73.2
Gasoline	406.3	408.9	389.4	243.7	268.1	175.9	378.5	288.6	267.2
Kerosene	31.4	22.2	50.2	35.6	0.0	0.0	102.9	68.7	140.5
Gas Oil	370.5	361.4	304.0	291.5	319.4	411.8	795.6	823.1	590.5
RFO	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal (Petroleum)	846.7	831.0	778.2	588.7	599.4	595.3	1,350.2	1,231.4	1,071.5
Electricity	74.3	39.7	98.6	80.8	75.5	70.1	54.1	37.4	23.6
Total	921.0	870.7	876.8	669.6	674.9	665.4	1,404.3	1,268.8	1,095.1

Table 3.1.3: Share in Secondary Energy Supply (Imported)

Energy Source	2000	2001	2002	2003	2004	2005	2006	2007	2008
					%				
LPG	4.2	4.4	3.9	2.7	1.8	1.1	5.2	4.0	6.7
Gasoline	44.1	47.0	44.4	36.4	39.7	26.4	27.0	22.7	24.4
Kerosene	3.4	2.5	5.7	5.3	0.0	0.0	7.3	5.4	12.8
Gas Oil	40.2	41.5	34.7	43.5	47.3	61.9	56.7	64.9	53.9
RFO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Subtotal (Petroleum)	91.9	95.4	88.8	87.9	88.8	89.5	96.1	97.1	97.8
Electricity	8.1	4.6	11.2	12.1	11.2	10.5	3.9	2.9	2.2
Total	100	100	100	100	100	100	100	100	100

Fig 3.1.1: Trend in Secondary Energy (Imported)



3.2 Secondary Energy Supply (Local Production)

Table 3.2.1: Secondary Energy Supply (Local Production), (Physical Unit, kilotonnes & GWh)

	Unit	2000	2001	2002	2003	2004	2005	2006	2007	2008
LPG	<i>kilotonnes</i>	9.7	7.0	24.4	52.6	65.5	78.3	35.8	67.3	54.6
Gasoline	"	238.6	286.3	346.2	433.8	553.1	567.1	294.4	493.0	391.2
Kerosene	"	51.8	98.1	61.1	109.6	111.1	87.7	65.1	122.0	168.6
ATK	"	108.3	64.0	81.6	85.6	106.9	111.0	46.2	65.8	21.3
Gas Oil	"	358.1	353.5	446.5	506.6	568.4	406.3	294.2	398.2	360.5
RFO	"	261.9	261.1	195.7	163.5	199.1	206.4	155.5	48.7	225.4
Total	"	1,028.4	1,069.9	1,155.4	1,351.8	1,604.0	1,456.8	891.3	1,194.9	1,221.5
Firewood*	"	7,100.0	8,000.0	8,300.0	8,600.0	8,700.0	8,800.0	8,900.0	9,000.0	9,100.0
Charcoal*	"	6,250.0	6,500.0	6,750.0	7,000.0	7,150.0	7,150.0	7,160.0	7,180.0	7,200.0
Electricity	<i>GWh</i>	7,223.0	7,859.0	7,296.0	5,900.0	6,039.0	6,788.0	8,429.0	6,978.0	8,323.0

*Firewood & Charcoal data after 2005 are purely projections

Table 3.2.2: Secondary Energy Supply (Local Production), (Energy Unit, ktoe)

Energy Source	2000	2001	2002	2003	2004	2005	2006	2007	2008
LPG	10.4	7.5	26.3	56.8	70.8	84.6	38.7	72.7	58.9
Gasoline	250.6	300.6	363.5	455.5	580.7	595.4	309.1	517.6	410.8
Kerosene	53.3	101.0	62.9	112.9	114.4	90.4	67.1	125.6	173.6
ATK	111.5	65.9	84.0	88.2	110.1	114.3	47.6	67.7	21.9
Gas Oil	365.3	360.5	455.5	516.7	579.7	414.4	300.0	406.2	367.7
RFO	254.1	253.2	189.8	158.6	193.1	200.2	150.9	47.2	218.7
Subtotal (Petroleum)	1,045.2	1,088.8	1,182.0	1,388.7	1,648.9	1,499.3	913.4	1,237.1	1,251.6
Firewood*	2,343.0	2,640.0	2,739.0	2,838.0	2,871.0	2,904.0	2,937.0	2,970.0	3,003.0
Charcoal*	4,437.5	4,615.0	4,792.5	4,970.0	5,076.5	5,076.5	5,083.6	5,097.8	5,112.0
Electricity	621.2	675.9	627.5	507.4	519.4	583.8	724.9	600.1	715.8
Subtotal (Non-petroleum)	7,401.7	7,930.9	8,159.0	8,315.4	8,466.9	8,564.3	8,745.5	8,667.9	8,830.8
Total(Local)	8,446.9	9,019.7	9,341.0	9,704.1	10,115.7	10,063.6	9,658.9	9,905.0	10,082.4

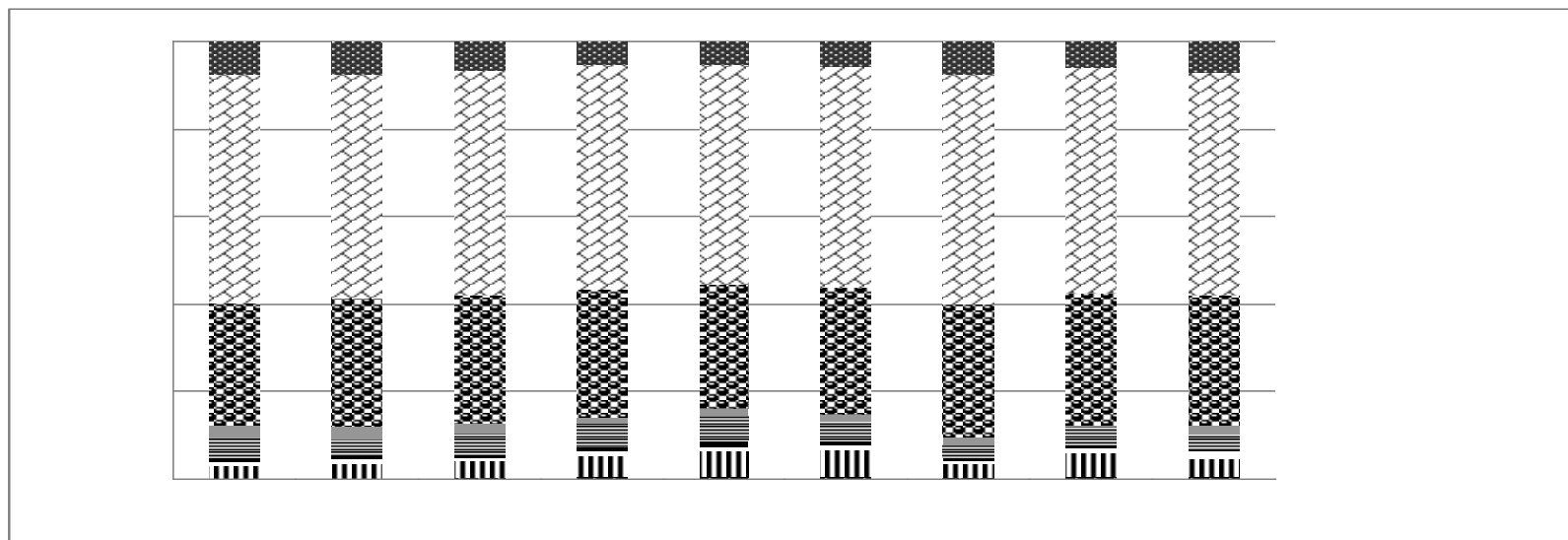
*Firewood & Charcoal data after 2005 are purely projections

Table 3.2.3: Secondary Energy Supply (Local Production), (%)

Energy Source	2000	2001	2002	2003	2004	2005	2006	2007	2008
LPG	0.1	0.1	0.3	0.6	0.7	0.8	0.4	0.7	0.6
Gasoline	3.0	3.3	3.9	4.7	5.7	5.9	3.2	5.2	4.1
Kerosene	0.6	1.1	0.7	1.2	1.1	0.9	0.7	1.3	1.7
ATK	1.3	0.7	0.9	0.9	1.1	1.1	0.5	0.7	0.2
Gas Oil	4.3	4.0	4.9	5.3	5.7	4.1	3.1	4.1	3.6
RFO	3.0	2.8	2.0	1.6	1.9	2.0	1.6	0.5	2.2
Subtotal (Petroleum)	12.4	12.1	12.7	14.3	16.3	14.9	9.5	12.5	12.4
Firewood*	27.7	29.3	29.3	29.2	28.4	28.9	30.4	30.0	29.8
Charcoal*	52.5	51.2	51.3	51.2	50.2	50.4	52.6	51.5	50.7
Electricity	7.4	7.5	6.7	5.2	5.1	5.8	7.5	6.1	7.1
Subtotal (Non-petroleum)	87.6	87.9	87.3	85.7	83.7	85.1	90.5	87.5	87.6
Total(Local)	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

*Firewood & Charcoal data after 2005 are purely projections

Fig. 3.2.1: Trend in Local Production of Secondary Energy Supply



3.3 Export of Energy Products

Table 3.3.1: Export of Energy Products (Physical Unit)

Energy Source	Unit	2000	2001	2002	2003	2004	2005	2006	2007	2008
LPG	<i>kilotonnes</i>	6.2	1.2	4.5	11.2	6.0	12.5	10.4	9.6	5.0
Gas Oil		0.6	1.0	1.9	12.0	42.4	37.7	66.1	52.7	88.4
RFO		190.7	215.7	151.7	89.4	168.9	162.8	45.9	26.2	148.4
Heavy Gasoline		97.1	126.7	129.2	103.0	146.5	161.9	99.8	133.7	73.0
GBS		50.2	33.5	34.3	33.7	18.7	37.1	39.1	44.3	57.1
ATK		0.0	0.0	0.0	0.8	0.0	0.1	0.4	2.5	0.3
Premium Gasoline		0.0	0.0	0.0	1.1	4.4	41.9	13.5	30.1	38.8
Total (Petroleum)		344.8	378.0	321.6	251.1	386.8	453.9	275.2	299.1	411.0
Charcoal		3.0	2.8	3.5	0.5	4.6	0.6	2.9	3.6	2.9
Electricity (GWh)	<i>GWh</i>	392	302	612	604	665	639	754	246	538

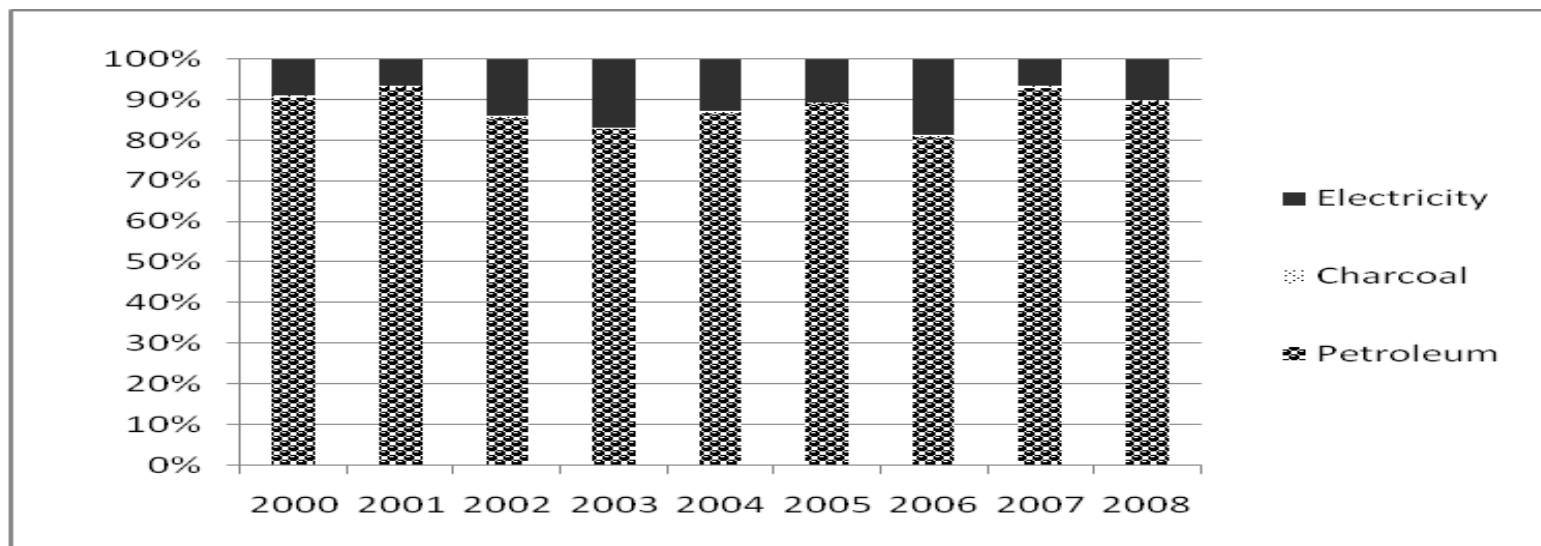
Table 3.3.2: Export of Energy Products (Energy Unit) (ktoe)

Energy Source	2000	2001	2002	2003	2004	2005	2006	2007	2008
LPG	6.7	1.3	4.8	12.1	6.5	13.5	11.3	10.4	5.4
Gas Oil	0.6	1.0	1.9	12.2	43.2	38.4	67.4	53.7	90.2
RFO	185.0	209.2	147.1	86.7	163.8	157.9	44.5	25.4	144.0
Heavy Gasoline	101.9	133.1	135.7	108.1	153.8	170.0	104.8	140.4	76.7
GBS	51.2	34.2	35.0	34.4	19.1	37.8	39.8	45.2	58.2
ATK	0.0	0.0	0.0	0.9	0.0	0.1	0.4	2.6	0.3
Premium Gasoline	0.0	0.0	0.0	1.1	4.6	44.0	14.2	31.6	40.7
Total (Petroleum)	345.5	378.7	324.6	255.5	391.0	461.7	282.5	309.3	415.4
Charcoal	2.1	2.0	2.5	0.3	3.3	0.4	2.1	2.6	2.1
Electricity	33.7	26.0	52.6	51.9	57.2	55.0	64.8	21.2	46.3
Total	381.3	406.6	379.7	307.7	451.4	517.1	349.4	333.0	463.8

Table 3.3.3: Share of Export of Energy Products (%)

Energy Source	2000	2001	2002	2003	2004	2005	2006	2007	2008
LPG	1.8	0.3	1.3	3.9	1.4	2.6	3.2	3.1	1.2
Gas Oil	0.2	0.2	0.5	4.0	9.6	7.4	19.3	16.1	19.4
RFO	48.5	51.4	38.8	28.2	36.3	30.5	12.7	7.6	31.0
Heavy Gasoline	26.7	32.7	35.7	35.1	34.1	32.9	30.0	42.2	16.5
GBS	13.4	8.4	9.2	11.2	4.2	7.3	11.4	13.6	12.6
ATK	0.0	0.0	0.0	0.3	0.0	0.0	0.1	0.8	0.1
Premium Gasoline	0.0	0.0	0.0	0.4	1.0	8.5	4.1	9.5	8.8
Total(Petroleum)	90.6	93.1	85.5	83.0	86.6	89.3	80.8	92.9	89.6
Charcoal	0.6	0.5	0.6	0.1	0.7	0.1	0.6	0.8	0.5
Electricity	8.8	6.4	13.9	16.9	12.7	10.6	18.6	6.4	10.0
Total	100	100	100	100	100	100	100	100	100

Fig 3.3.1: Trend in Export of Energy Product



3.4 Plant Capacity and Generation

Table 3.4.1: Plant Capacity (2008)

Type	Plant Capacity (2008)	
	Installed	Percentage (%)
Hydro		
Akosombo	1,020	50.7
Kpong	160	8.0
Total	1,180	58.7
Thermal		
TAPCO	330	16.4
TICO	220	10.9
Mines Diesel Reserve Plant	80	4.0
Emergency Diesel Reserve Plant	126	6.3
Tema Diesel Reserve Plant	25	1.2
Tema Diesel Plant	30	1.5
Kumasi Reserve Plant	20	1.0
Total	831	41.3
Total (Hydro+Thermal)	2,011	100

Table 3.4.2: Installed Capacity Generation

Year	Installed Capacity (MW)	Electricity Generated (GWh)			Percentage (%)		
		Hydro	Thermal	Total	Hydro	Thermal	Total
2000	1,652	6,610	613	7,223	91.5	8.5	100
2001	1,551	6,608	1,251	7,859	84.1	15.9	100
2002	1,574	5,036	2,260	7,296	69.0	31.0	100
2003	1,582	3,885	2,015	5,900	65.8	34.2	100
2004	1,730	5,281	758	6,039	87.4	12.6	100
2005	1,730	5,629	1,159	6,788	82.9	17.1	100
2006	1,730	5,619	2,810	8,429	66.7	33.3	100
2007	1,935	3,727	3,251	6,978	53.4	46.6	100
2008	1,981	6,196	2,128	8,324	74.4	25.6	100

Figure 3.4.2: Trend in Shares of Plant Generation

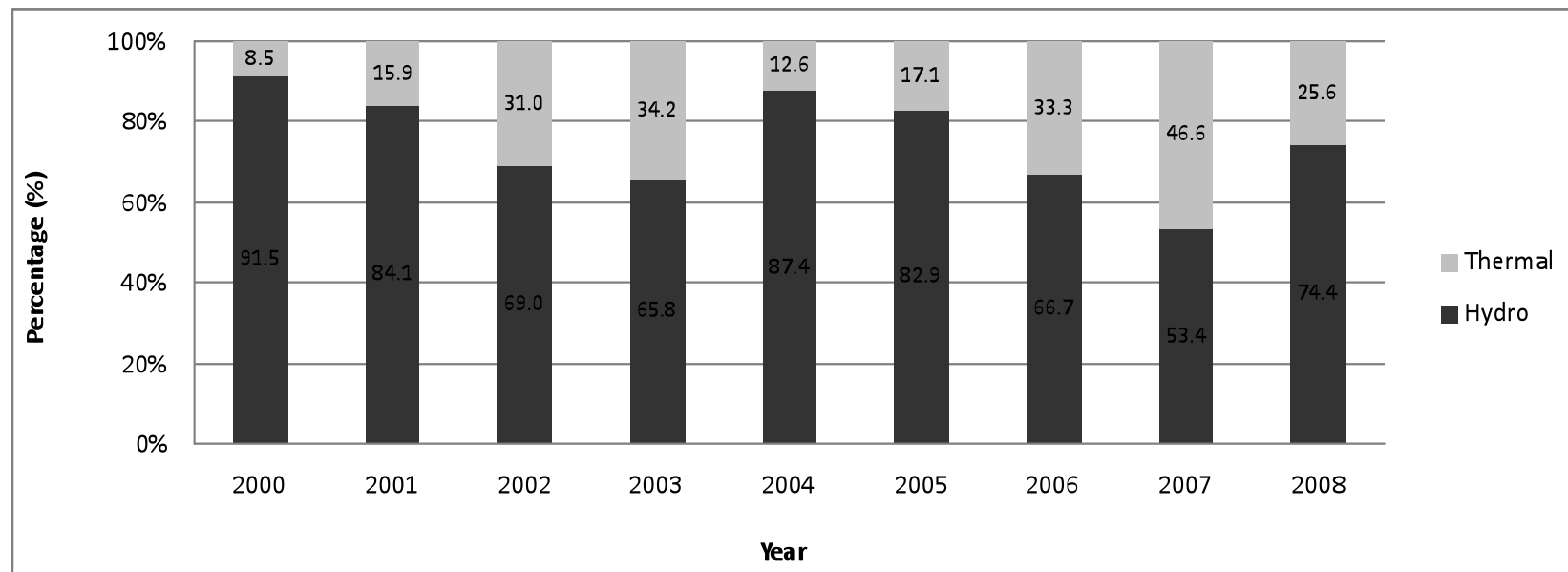


Table 3.4.3: Electricity Generated by Plant (GWh)

Plant	2000	2001	2002	2003	2004	2005	2006	2007	2008
	GWh								
Akosombo	5,557	5,524	4,178	3,210	4,404	4,718	4,690	3,104	5,254
Kpong	1,052	1,085	858	675	876	911	929	623	941
Tema Diesel Plant	0	0	23	19	0	0	0	0	0
Tapco	345	740	874	1,328	536	831	1,416	1,521	874
Tico	268	510	1,363	668	222	328	1,395	1,417	1,063
Tema Diesel Reserve Plant	0	0	0	0	0	0	0	162	85
Tema Diesel Emergency Reserve Plant	0	0	0	0	0	0	0	80	45
Kumasi Diesel Reserve Plant	0	0	0	0	0	0	0	33	16
Tema Mines Diesel Reserve Plant	0	0	0	0	0	0	0	38	46
Total	7,223	7,859	7,296	5,900	6,039	6,788	8,429	6,978	8,323

Table 3.4.4: Electricity Generated by Plant (%)

Plant	2000	2001	2002	2003	2004	2005	2006	2007	2008
	Percentage (%)								
Akosombo	76.9	70.3	57.3	54.4	72.9	69.5	55.6	44.5	63.1
Kpong	14.6	13.8	11.8	11.4	14.5	13.4	11.0	8.9	11.3
Tema Diesel	0.0	0.0	0.3	0.3	0.0	0.0	0.0	0.0	0.0
Tapco	4.8	9.4	12.0	22.5	8.9	12.2	16.8	21.8	10.5
Tico	3.7	6.5	18.7	11.3	3.7	4.8	16.5	20.3	12.8
Tema Diesel Reserve Plant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	2.3	1.0
Tema Diesel Emergency Reserve.	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.1	0.5
Kumasi Diesel Reserve Plant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.2
Tema Diesel Mines Reserve Plant	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.5	0.5
Total	100	100	100	100	100	100	100	100	100

Table 3.4.5: Average Monthly Water Level (feet) in the Akosombo Dam 2003-2008

Month	2003			2004			2005		
	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
January	243.19	242.38	243.83	253.51	252.87	254.15	253.18	252.23	254.05
February	241.32	239.00	242.20	252.04	251.20	252.82	251.40	250.35	252.15
March	239.59	239.04	240.60	250.34	249.48	251.15	249.51	248.63	250.30
April	238.30	237.84	238.88	248.75	248.06	249.44	247.68	247.00	248.40
May	238.29	236.52	273.65	247.42	246.89	248.03	246.18	245.28	246.97
June	236.62	236.42	237.10	246.31	245.56	246.87	244.74	244.40	245.22
July	237.62	237.18	238.43	245.39	245.28	245.58	244.25	244.00	244.80
August	239.66	238.50	241.20	246.95	245.66	248.80	245.62	244.88	246.28
September	245.64	241.33	250.00	251.85	248.95	254.75	248.18	246.38	250.12
October	253.81	250.40	255.70	256.31	254.95	256.73	252.16	250.22	253.40
November	255.88	255.57	256.04	256.34	255.83	256.75	252.84	251.97	253.42
December	254.84	254.25	255.52	254.94	254.10	255.79	250.98	250.03	251.90

Month	2006			2007			2008		
	Mean	Min	Max	Mean	Min	Max	Mean	Min	Max
January	248.93	247.92	249.97	242.61	241.47	243.68	253.89	253.05	254.68
February	246.97	246.03	247.86	240.40	239.35	241.40	252.20	251.30	253.00
March	244.86	243.75	245.96	238.24	237.32	239.27	250.18	249.16	251.21
April	242.51	241.49	243.67	236.76	236.30	237.27	248.23	247.43	249.11
May	240.50	239.73	241.44	236.05	235.86	236.27	246.64	245.95	247.34
June	239.06	238.49	239.68	235.71	235.48	235.84	245.48	245.00	245.95
July	237.75	236.99	238.45	235.15	234.96	235.46	245.38	244.95	246.55
August	236.87	236.75	236.96	237.03	235.36	239.85	249.41	246.65	253.10
September	238.59	236.73	241.10	244.72	240.25	252.80	257.84	253.40	261.60
October	243.88	241.50	246.00	255.04	253.10	256.05	264.73	261.85	266.35
November	246.09	245.49	246.42	256.18	255.71	256.50	265.82	265.09	266.35
December	244.78	243.82	245.61	255.41	254.70	255.67	264.29	263.53	265.03

Fig 3.4.4: Trend in water Level in the Akosombo dam (ft), 2003 - 2008

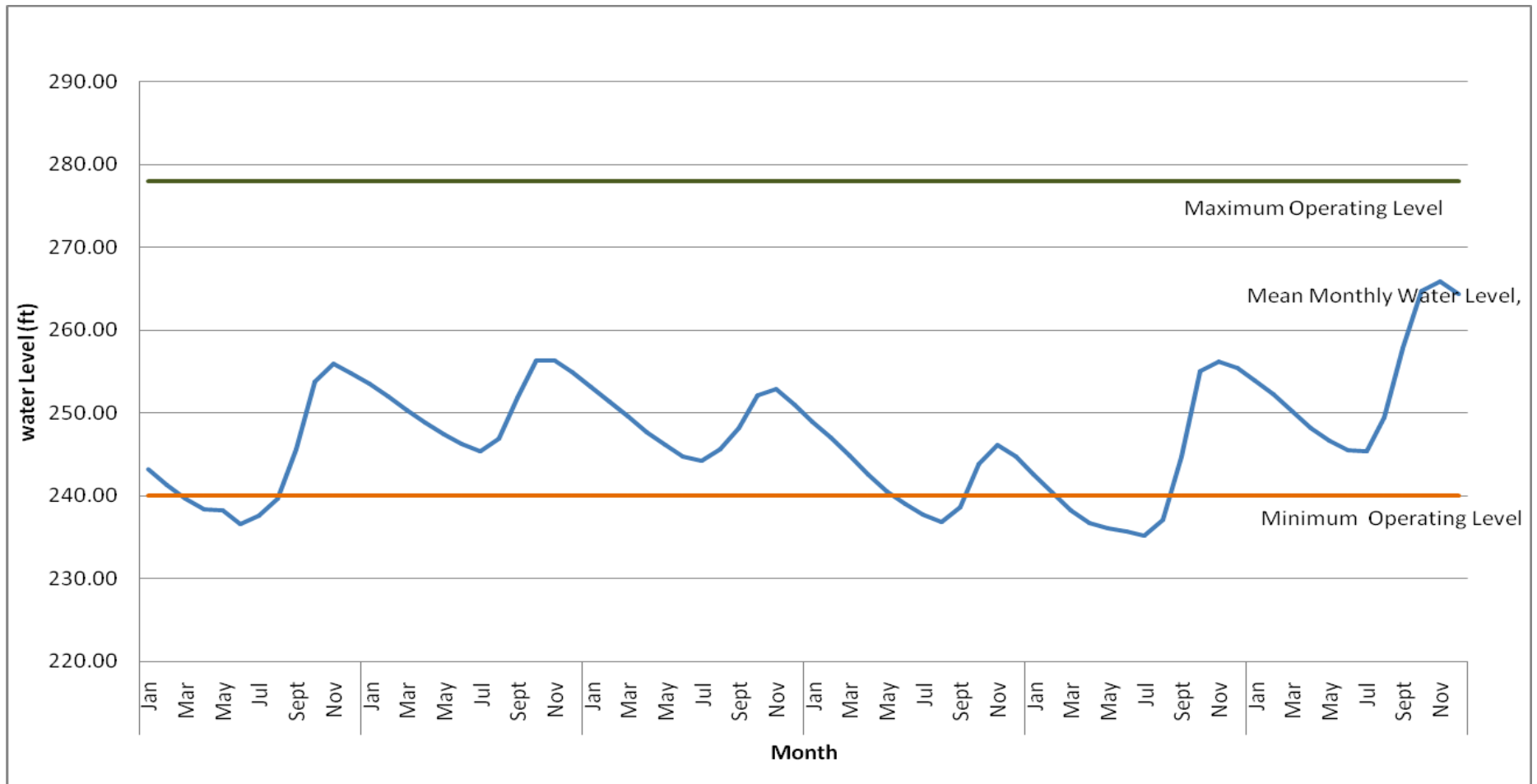


Table 3.4.7: Fuel Input for Electricity Generation (cubic metres)

Type of Fuel	2000	2001	2002	2003	2004	2005	2006	2007	2008
Light Crude Oil	186,134	358,388	700,517	601,872	222,356	327,793	835,514	900,074	608,593
Distillate Fuel Oil	7,001	17,219	2,211	1,336	1,127	925	935	6,672	1,433

Figure 3.4.5: Fuel Input for Electricity Generation

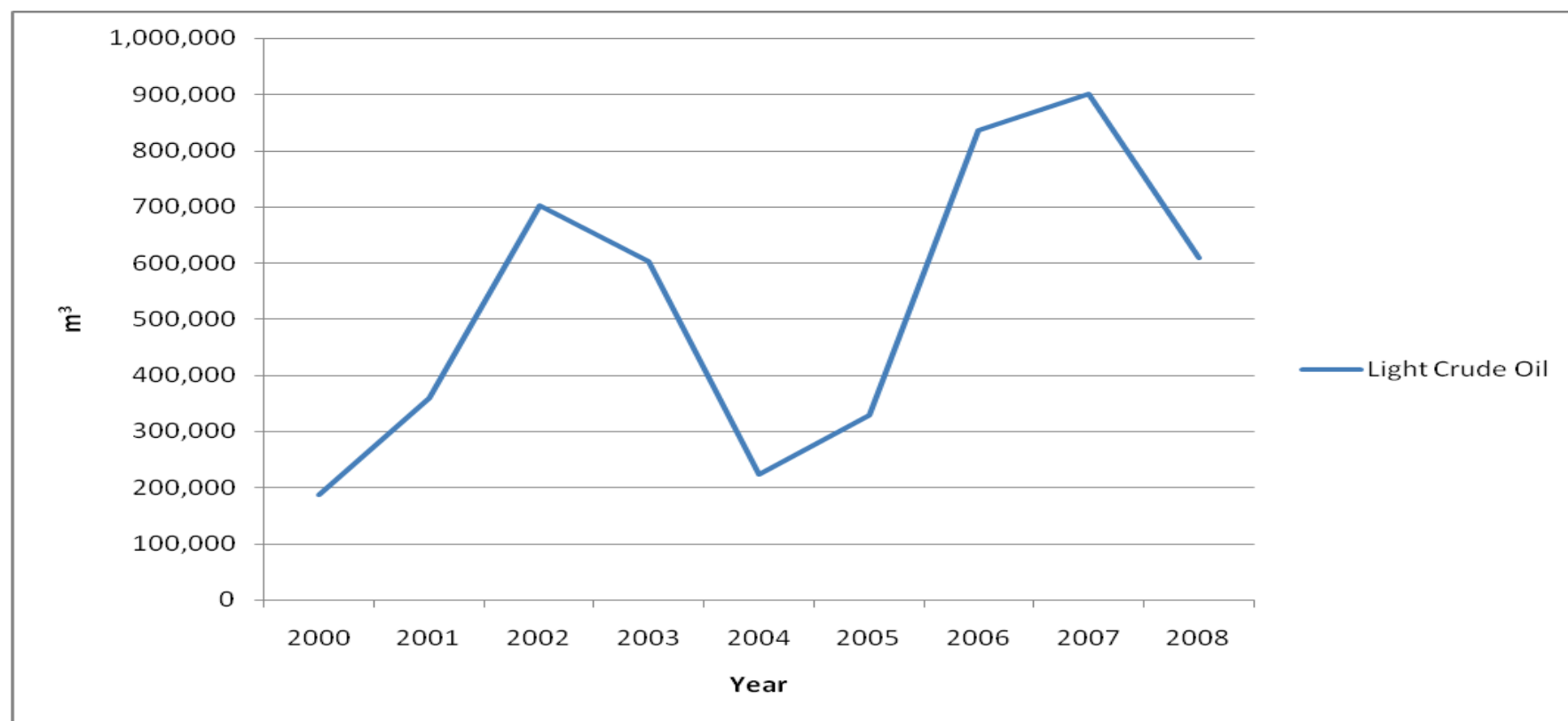
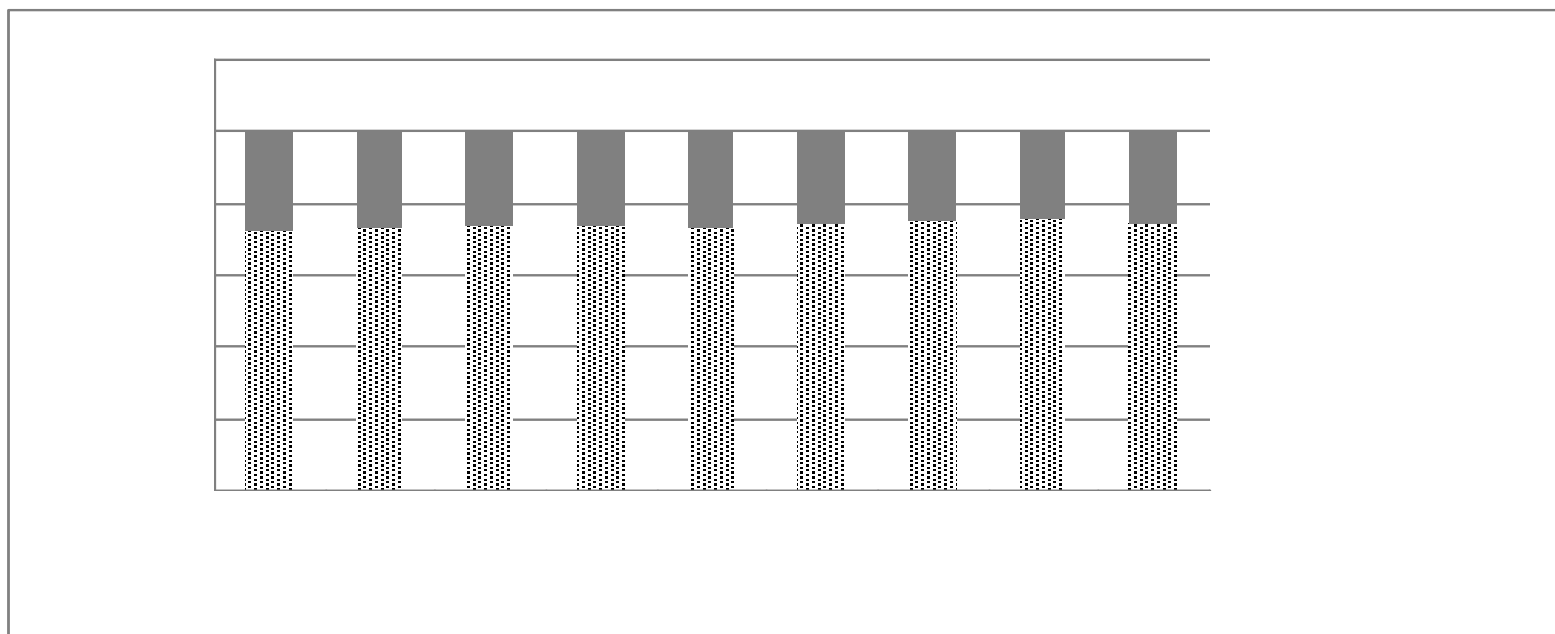


Table 3.4.8: Electricity Supplied and Sales to ECG and NED (GWh)

Details	2000	2001	2002	2003	2004	2005	2006	2007	2008
Total Supplied (ECG & NED)	4,320	4,530	4,709	4,920	5,298	5,546	5,759	5,643	6,328
Total sales (ECG & NED)	3,142	3,330	3,465	3,626	3,865	4,127	4334	4,271	4,727
Total Losses*	1,178	1,200	1,244	1,294	1,433	1,419	1,425	1,372	1,601
<i>Total Losses (%)</i>	<i>27.3</i>	<i>26.5</i>	<i>26.4</i>	<i>26.3</i>	<i>27.0</i>	<i>25.6</i>	<i>24.7</i>	<i>24.3</i>	<i>25.3</i>

*Commercial and Technical Losses

Figure 3.4.6: Electricity Sales and Losses (ECG & NED)



3.5 Electricity Sales

Table 3.5.1: ECG Customer and Sales Profile

Group	2000	2001	2002	2003	2004	2005	2006	2007	2008
	Number of Consumers								
Residential/Non Residential	816,557	893,080	968,847	1,092,641	1,224,931	1,320,665	1,412,977	1,538,057	1,722,400
Industrial	768	800	827	853	879	930	987	1,024	1,136
Total	817,325	893,880	969,674	1,093,494	1,225,810	1,321,595	1,413,964	1,539,081	1,723,536
	Unit Sold (GWh)								
Residential/Non Residential	1,807	1,946	2,016	2,074	2,190	2,308.21	2,588.33	2,554.43	2834
Industrial	1,104	1,133	1,185	1,268	1,351	1,404	1,390	1,351	1,501
Total	2,911	3,079	3,201	3,342	3,541	3,712	3,978	3,905	4,335
<i>Losses</i>	<i>1,079</i>	<i>1,095</i>	<i>1,126</i>	<i>1,153</i>	<i>1,276</i>	<i>1,283</i>	<i>1,275</i>	<i>1,240</i>	<i>1,464</i>
	Average Number of Units per Consumer (kWh)								
Residential/Non Residential	2,213	2,179	2,081	1,898	1,788	1,748	1,832	1,661	1,645
Industrial	1,437,500	1,416,250	1,432,890	1,486,518	1,536,974	1,509,677	1,408,308	1,319,336	1,321,303

Table 3.5.2: NED Customer and Sales Profile

Group	2000	2001	2002	2003	2004	2005	2006	2007	2008
Number of Consumers									
Residential	97,147	108,817	118,049	129,395	141,573	170,543	192,665	206,665	231,175
Non Residential	18,099	20,122	21,606	23,049	32,550	32,181	37,433	41,601	47,266
Industrial	27	28	27	27	23	34	28	31	31
Total	115,273	128,967	139,682	152,471	174,146	202,758	230,126	248,297	278,472
Unit Sold (GWh)									
Residential	150	166	172	181	142	171	215	215	218
Non Residential	48	54	58	60	70	103	90	101	115
Industrial	33	30	35	43	53	50	51	50	59
Total	231	250	265	284	265	324	356	366	392
<i>Losses</i>	<i>29.9</i>	<i>29.6</i>	<i>30.7</i>	<i>33.2</i>	<i>32.8</i>	<i>27.21</i>	<i>29.6</i>	<i>26.5</i>	<i>26.5</i>
Average Number of Units per Consumer (kWh)									
Residential	1,544	1,525	1,457	1,399	1,003	1,003	1,116	1,040	943
Non Residential	2,652	2,684	2,684	2,603	2,151	3,201	2,404	2,428	2,433
Industrial	1,222,222	1,071,429	1,296,296	1,592,593	2,304,348	1,470,588	1,823,214	1,610,968	1,906,452

Section Four

Final Energy Consumption

4.1 Final Electricity Consumption

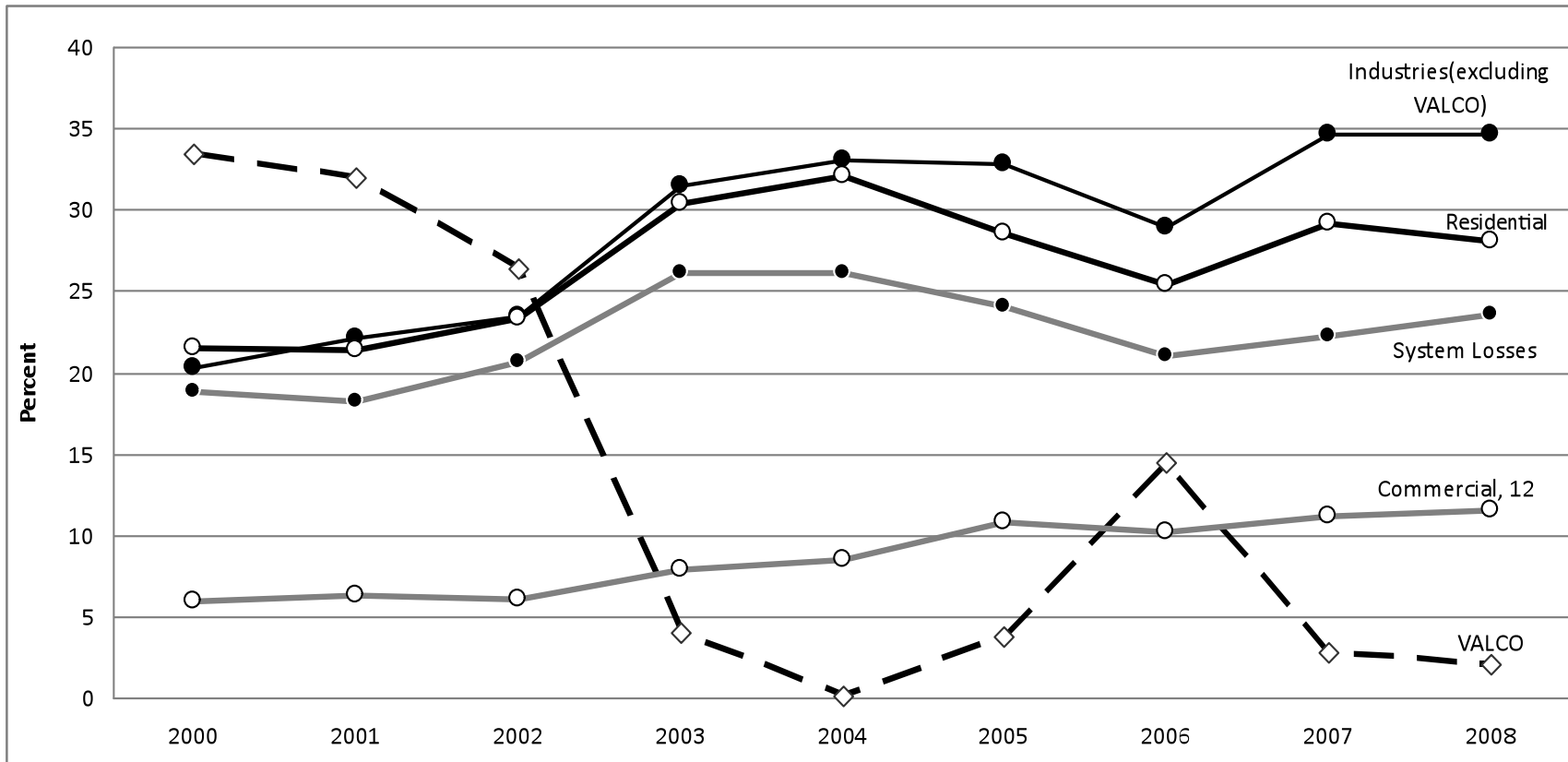
Table 4.1.1: Final Electricity Consumption by Sector, (Physical Unit, GWh)

Sector		2000	2001	2002	2003	2004	2005	2006	2007	2008
Industries	VALCO	2,505	2,565	2,063	250	10	259	1,199	205	171
	Excluding VALCO	1,522	1,772	1,836	1,955	2,075	2,282	2,394	2,492	2,795
	Total	4,027	4,337	3,899	2,205	2,085	2,541	3,593	2,697	2,966
Non-residential		445	503	477	493	530	748	842	802	927
Residential		1,610	1,713	1,822	1,886	2,012	1,986	2,105	2,095	2,269
Total (with VALCO)		6,082	6,553	6,198	4,584	4,627	5,275	6,540	5,594	6,162
Total (excluding VALCO)		3,577	3,988	4,135	4,334	4,617	5,016	5,341	5,389	5,991
Distribution Losses		1,178	1,200	1,244	1,294	1,433	1,419	1,425	1,370	1,601
Transmission Losses		229	259	368	333	205	249	318	230	303
Total System Losses		1,407	1,459	1,612	1,627	1,638	1,668	1,743	1,600	1,904
Total (Consumption + System Losses)		7,489	8,012	7,810	6,211	6,265	6,943	8,283	7,194	8,066

Table 4.1.2: Share of Final Electricity Consumption by Sector (%)

Sector		2000	2001	2002	2003	2004	2005	2006	2007	2008
Industries	VALCO	33	32	26	4	0	4	14	3	2
	Excluding VALCO	20	22	24	31	33	33	29	35	35
Non-residential		6	6	6	8	8	11	10	11	11
Residential		21	21	23	30	32	29	25	29	28
<i>Total System Losses</i>		<i>19</i>	<i>18</i>	<i>21</i>	<i>26</i>	<i>26</i>	<i>24</i>	<i>21</i>	<i>22</i>	<i>24</i>
Total (Consumption + System Losses)		100	100	100	100	100	100	100	100	100

Figure 4.1.1: Trend in Electricity Consumption by Sector



4.2 Final Petroleum Consumption

Table 4.2.1: Final Petroleum Consumption, (Physical Unit, Kilotonnes)

Energy Type	2000	2001	2002	2003	2004	2005	2006	2007	2008
LPG	45.0	42.5	50.0	56.7	65.7	70.5	88.0	93.3	117.6
Gasoline	513.1	523.6	557.9	469.5	563.2	526.2	500.9	547.4	548.1
Kerosene	67.6	70.5	74.8	68.8	73.2	74.3	76.5	63.2	34.5
Premix	30.6	27.0	26.8	28.9	27.5	31.4	33.7	42.1	52.1
ATK	96.9	76.4	90.5	89.8	107.4	119.3	114.7	122.5	119.0
Gas Oil	665.8	685.4	717.8	755.3	848.9	880.4	934.0	956.2	907.4
RFO	57.1	52.0	51.9	45.7	45.2	47.8	56.8	54.5	50.9
Total	1,476.0	1,477.3	1,569.7	1,514.6	1,731.1	1,749.9	1,804.6	1,879.1	1,829.6

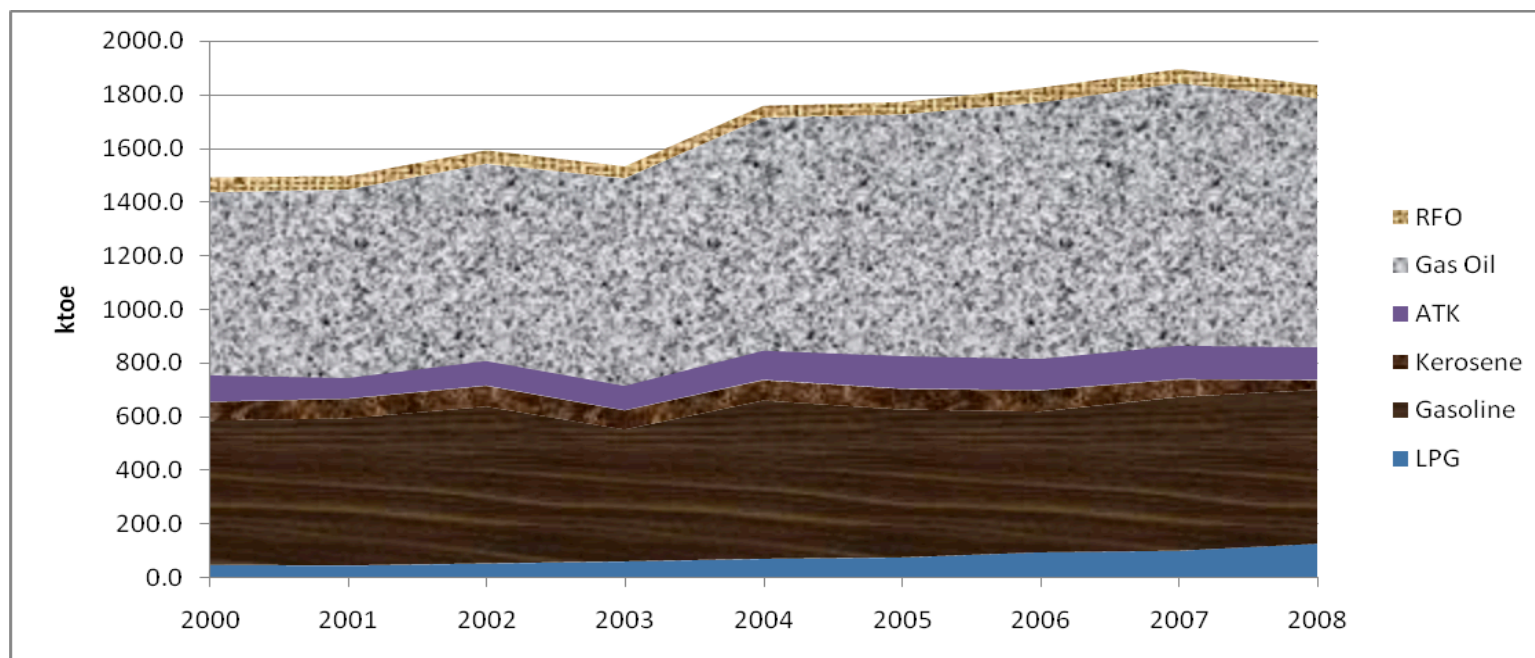
Table 4.2.2: Final Petroleum Consumption, (Energy Unit, ktoe)

Energy Type	2000	2001	2002	2003	2004	2005	2006	2007	2008
LPG	48.6	45.9	54.0	61.2	70.9	76.1	95.0	100.7	127.0
Gasoline	538.7	549.8	585.8	493.0	591.4	552.5	526.0	574.7	575.6
Kerosene	69.6	72.6	77.1	70.8	75.4	76.6	78.8	65.1	35.5
ATK	99.8	78.7	93.2	92.5	110.6	122.9	118.1	126.2	122.5
Gas Oil	679.1	699.1	732.2	770.4	865.9	898.0	952.7	975.3	925.5
RFO	55.3	50.4	50.3	44.3	43.9	46.4	55.1	52.8	49.3
Total	1,491.2	1,496.5	1592.5	1,532.2	1,758.0	1,772.5	1,825.7	1,894.9	1,835.5

Table 4.2.3: Share of Final Petroleum Consumption (%)

Energy Type	2000	2001	2002	2003	2004	2005	2006	2007	2008
LPG	3.0	2.9	3.2	3.7	3.8	4.0	4.9	5.0	6.4
Gasoline	34.8	35.4	35.5	31.0	32.5	30.1	27.8	29.1	30.0
Kerosene	4.6	4.8	4.8	4.5	4.2	4.2	4.2	3.4	1.9
Premix	2.1	1.8	1.7	1.9	1.6	1.8	1.9	2.2	2.8
ATK	6.6	5.2	5.8	5.9	6.2	6.8	6.4	6.5	6.5
Gas Oil	45.1	46.4	45.7	49.9	49.0	50.3	51.8	50.9	49.6
RFO	3.9	3.5	3.3	3.0	2.6	2.7	3.1	2.9	2.8
Total	100	100	100	100	100	100	100	100	100

Fig 4.2.1: Trend in Final Petroleum Consumption



4.3 Final Woodfuel Consumption

Table 4.3.1: Final Woodfuel Consumption, (Physical Unit, Kilotonnes)

Energy Type	2000	2001	2002	2003	2004	2005	2006	2007	2008
Firewood*	7,100.0	8,000.0	8,300.0	8,600.0	8,700.0	8,800.0	8,900.0	9,000.0	9,100.0
Charcoal*	3,600.0	6,500.0	6,800.0	7,000.0	7,200.0	7,200.0	7,230.0	7,260.0	7,300.0
Total(Woodfuel)	10,700.0	14,500.0	15,100.0	15,600.0	15,900.0	16,000.0	16,130.0	16,260.0	16,400.0

*Firewood & Charcoal data after 2005 are purely projections

4.4 Total Energy Consumption

Table 4.4.1: Total Energy Consumption (Physical Unit)

Energy Type	Unit	2000	2001	2002	2003	2004	2005	2006	2007	2008
Petroleum	Kilotonnes	1,476.0	1,477.3	1,569.7	1,514.6	1,731.1	1,749.9	1,804.6	1,879.1	1,829.6
Woodfuel	"	10,700.0	14,500.0	15,100.0	15,600.0	15,900.0	16,000.0	16,130.0	16,260.0	16,400.0
Electricity	GWh	7,488.9	8,012.1	7,810.1	6,210.7	6,264.6	6,943.0	8,283.3	7,193.7	8,066.2

Table 4.4.2: Total Energy Consumption (Energy Unit, ktoe)

Energy Type	2000	2001	2002	2003	2004	2005	2006	2007	2008
Petroleum	1,491.2	1,496.5	1,592.5	1,532.2	1,758.0	1,772.5	1,825.7	1,894.9	1,835.5
Woodfuel	4,899.0	7,255.0	7,567.0	7,808.0	7,983.0	8,016.0	8,070.3	8,124.6	8,186.0
Electricity	644.0	689.0	671.7	534.1	538.8	597.1	712.4	618.7	693.7
Total	7,034.3	9,440.5	9,831.2	9,874.3	10,279.8	10,385.6	10,608.4	10,638.2	10,715.2

Table 4.4.3: Share of Total Energy Consumption (%)

Energy Type	2000	2001	2002	2003	2004	2005	2006	2007	2008
Petroleum	21.2	15.9	16.2	15.5	17.1	17.1	17.2	17.8	17.1
Woodfuel	69.6	76.8	77.0	79.1	77.7	77.2	76.1	76.4	76.4
Electricity	9.2	7.3	6.8	5.4	5.2	5.7	6.7	5.8	6.5
Total	100	100	100	100	100	100	100	100	100

Section Five

Energy Prices

5.1 Crude Oil and Petroleum Prices

Table 5.1.1: Annual Average Crude Oil Prices (US\$/barrel)

	Unit	2000	2001	2002	2003	2004	2005	2006	2007	2008
Crude Oil Price	US\$/barrel	28.36	24.54	24.98	28.78	37.99	55.66	67.03	74.68	101.8
Annual Increase	%	59.52	-13.47	1.79	15.21	32.00	46.51	20.43	11.41	36.31

Source: British Petroleum

Figure 5.1.1: Trend in Crude Oil Prices

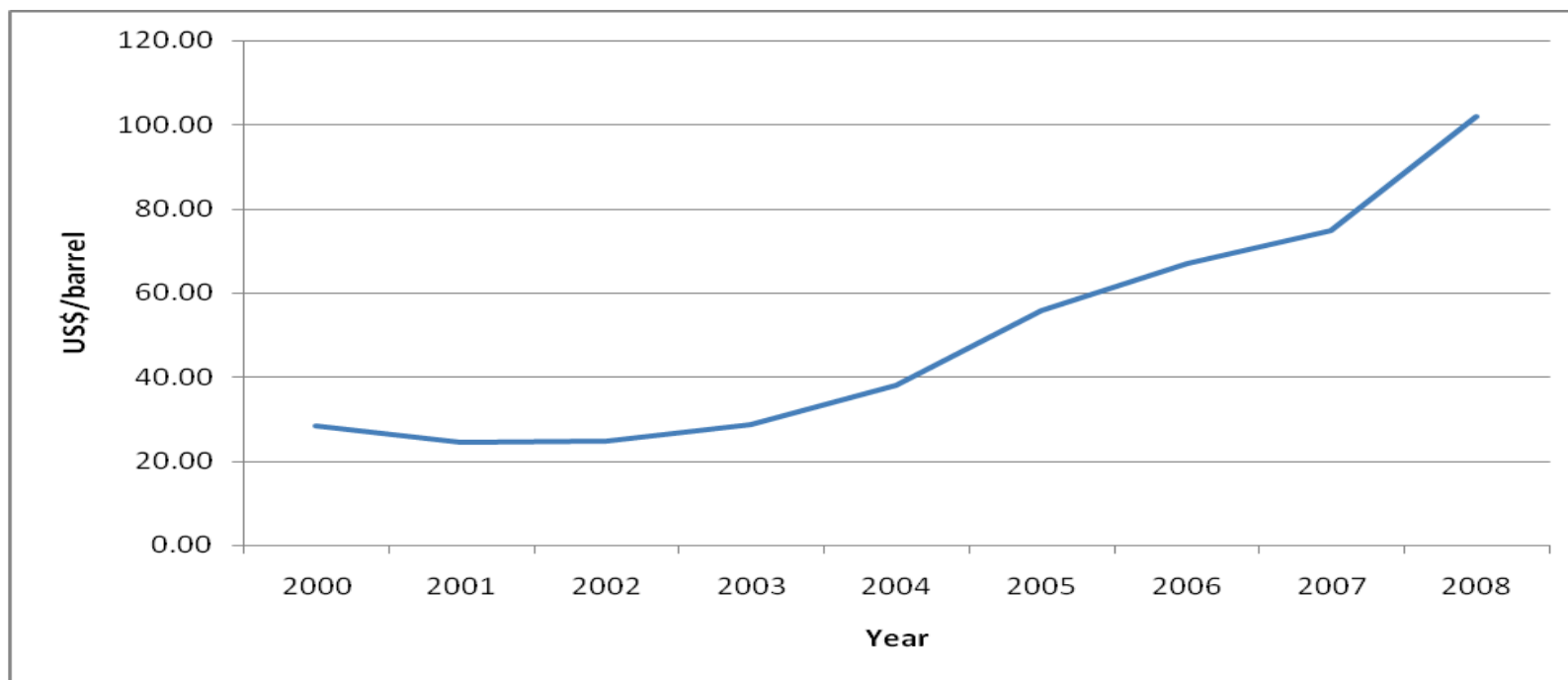
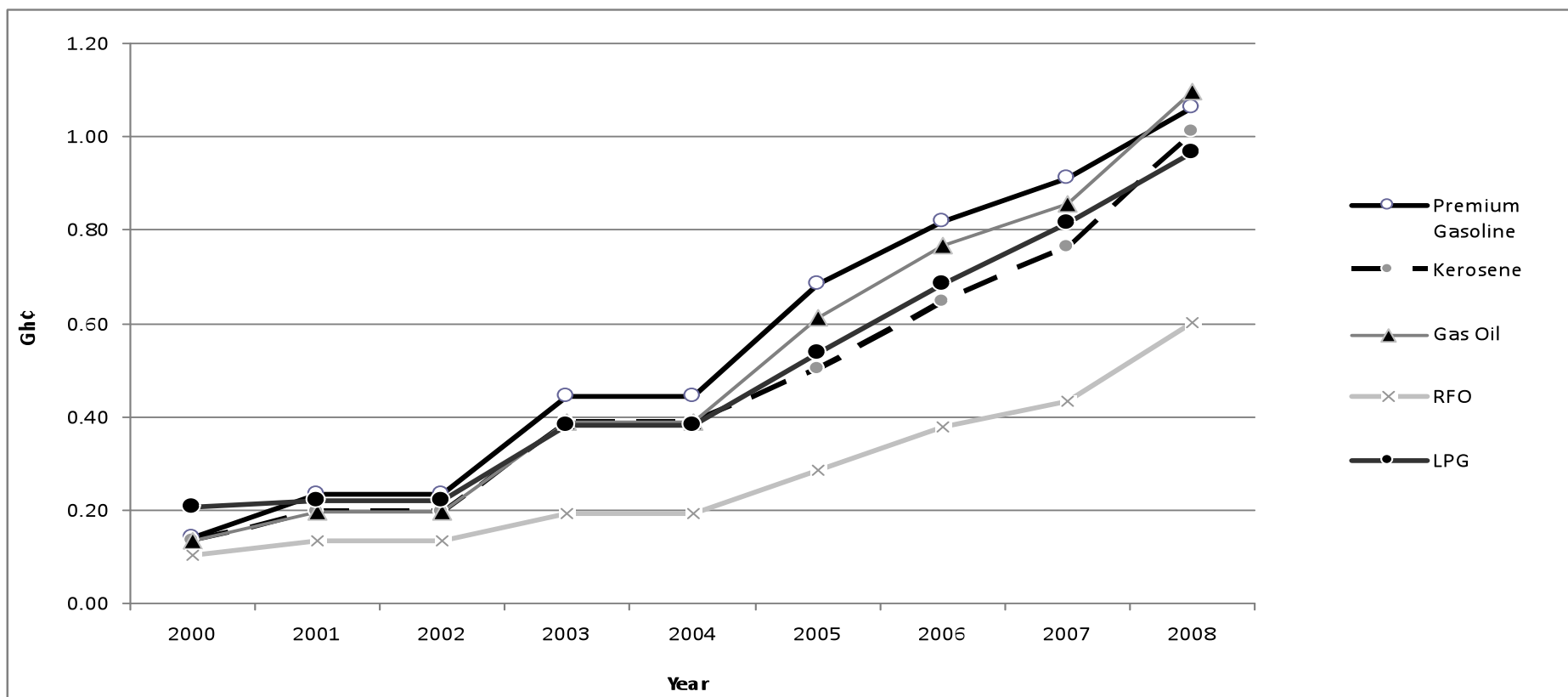


Table 5.1.2: Annual Average Local Petroleum Prices

Product	Unit	2000	2001	2002	2003	2004	2005	2006	2007	2008
Premium Gasoline	Gh¢/Litre	0.14	0.23	0.23	0.44	0.44	0.69	0.82	0.91	1.06
Kerosene	'	0.13	0.20	0.20	0.39	0.39	0.50	0.64	0.76	1.01
Gas Oil		0.13	0.20	0.20	0.39	0.39	0.61	0.77	0.85	1.10
RFO		0.10	0.13	0.13	0.19	0.19	0.28	0.38	0.43	0.60
LPG	Gh¢/kg	0.21	0.22	0.22	0.38	0.38	0.53	0.68	0.82	0.97

Figure 5.1.2: Trend in Local Petroleum Product Prices



5.2 Electricity Prices

Table 5.2.1: Electricity End User Tariff (Ghp/kWh)

Charges	2001	2002	2003	2004	2005	2006	2007	2008
BST	1.94	3.59	4.27	4.25	4.25	4.94	6.11	6.11
DSC	1.96	2.64	2.92	3.15	3.15	4.5	5.85	5.85
EUT	3.9	6.23	7.19	7.4	7.4	9.44	11.96	11.96

Fig 5.2.3: Trend in Electricity End User tariff

