



# **NATIONAL ENERGY STATISTICS 2000-2011**

**APRIL, 2012**

## FOREWORD

This is the 2012 publication of Ghana's Energy Statistics by the Energy Commission. It provides a time series data on Ghana's energy supply and use situation in most cases from 2000 to 2011.

This publication was prepared with data from by the main energy sector institutions, including the Ministry of Energy, Volta River Authority (VRA), Ghana Grid Company (GRIDCo), Ghana National Petroleum Corporation (GNPC), National Petroleum Authority (NPA), Tema Oil Refinery (TOR), Public Utility Regulatory Commission (PURC), Electricity Company of Ghana (ECG), Northern Electricity Distribution Company (NEDCo), West African Gas Pipeline Company (WAGPCo). West African Gas Pipeline Authority (WAGPA) as well as data from the Bank of Ghana (BoG) and the Ghana Statistical Service (GSS). The cooperation and assistance of all these organisations are gratefully acknowledged.

It is our expectation that, the statistics contained in this publication will prove to be 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.

This publication is available on our website [www.energycom.gov.gh](http://www.energycom.gov.gh)

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## TABLE OF CONTENT

FOREWORD.....	ii
TABLE OF CONTENT .....	iii
LIST OF TABLES .....	iv
LIST OF FIGURES.....	v
ABBREVIATIONS.....	vi
CONVERSION FACTORS.....	vii
GLOSSARY .....	x
SECTION ONE: ENERGY BALANCE AND INDICATORS.....	1
SECTION TWO: ELECTRICITY .....	3
SECTION THREE: PETROLEUM .....	16
SECTION FOUR: WOODFUEL.....	22
SECTION FIVE: ENERGY PRICES .....	24

## LIST OF TABLES

Table 1.1: Energy Balance, 2011 (ktoe) .....	1
Table 1.2: Energy Indicators, 2000 – 2011.....	2
Table 2.1: Installed Electricity Generation Capacity (End of December 2011).....	3
Table 2.2: Electricity Generation by Plant (GWh).....	4
Table 2.3: Shares in Electricity Generation by Plant (%) .....	4
Table 2.4: Electricity Export and Import (GWh) .....	6
Table 2.5: Transmission Losses.....	7
Table 2.6: Electricity Purchases and Sales by ECG(GWh) .....	8
Table 2.7: Electricity Purchases and Sales by NEDCo(GWh).....	9
Table 2.8: Electricity Consumption by Customer Class (GWh) .....	10
Table 2.9: Proportion of Electricity Consumption by Customer Class (%).....	10
Table 2.10: ECG and NEDCo Customer Population .....	12
Table 2.11: Ghana Load at Peak and System Peak (MW).....	13
Table 2.12: Akosombo Dam Month End Elevation (feet) .....	14
Table 3.1: Crude Oil Production and Import (kilotonnes) .....	16
Table 3.2: Natural Gas Production and Import (MMBtu).....	16
Table 3.3: Petroleum Products Production (kilotonnes) .....	18
Table 3.4: Petroleum Products Production (%) .....	18
Table 3.5: Petroleum Product Import (kilotonnes) .....	19
Table 3.6: Petroleum Product Import (%) .....	19
Table 3.7: Petroleum Product Export (kilotonnes).....	20
Table 3.8: Petroleum Product Export (%) .....	20
Table 3.9: Petroleum Product Consumption (kilotonnes).....	21
Table 3.10: Petroleum Product Consumption (%).....	21
Table 4.1: Woodfuel Supply (kilotonnes) .....	22
Table 4.2: Firewood and Charcoal Consumption (kilotonnes) .....	22
Table 4.3: Charcoal Export.....	23
Table 5.1: Monthly Average Crude Oil Prices (US\$/barrel) .....	24
Table 5.2: Retail Prices of Major Petroleum Products.....	25
Table 5.3: Average Electricity End User Tariff (Ghc/kWh).....	27
Table 5.4: Mean Charcoal Prices by Region.....	28
Table 5.5: Average Price per kg(Ghana cedis) .....	28
Table 5.6: High and Low Price Districts .....	29

## LIST OF FIGURES

Figure 2.1: Proportion of Electricity Generation by Source .....	5
Figure 2.2: Electricity Import and Export.....	6
Figure 2.3: Trend in Transmission Losses .....	7
Figure 2.4: Trend in ECG Electricity Losses .....	8
Figure 2.4: Trend in NEDCo Electricity Losses .....	9
Figure 2.5: Proportion of Electricity Consumption by Customer Class .....	11
Figure 2.7: Trend in Customer Population Changes .....	12
Figure 2.8: Trend in Ghana Load at Peak and System Peak.....	13
Figure 2.9: Trend in Akosombo Dam Month End Elevation (2000– 2011).....	15
Figure 3.1: Trend in Crude Oil Import.....	17
Figure 3.2: Trend in Petroleum Products Production.....	18
Figure 3.3: Trend in Petroleum Product Import .....	19
Figure 3.4: Trend in Petroleum Product Export.....	20
Figure 3.5: Trend in Petroleum Products Consumption .....	21
Figure 4.1: Trend in Firewood and Charcoal Consumption .....	22
Figure 4.2: Trend in Charcoal Export .....	23
Figure 5.1: Trend in Crude Oil Prices (Jan 2005 – Dec 2011).....	24
Figure 5.2: Trend in Retail Price of Major Petroleum Products.....	26
Figure 5.3: Trend in Average Electricity End User Tariff.....	27

## ABBREVIATIONS

bbbl	Barrel
bcf / scf	Billion Cubic Feet / standard cubic feet
Cal	Calories
g / kg	Gramme / kilogramme
GJ	Gigajoule
GW	Gigawatt
GWh	Gigawatt-hour
kJ	kilojoule
kWh	kilowatt-hour
m / m <sup>2</sup> / m <sup>3</sup>	metre / square metre / cubic metre
MBTU	Thousand British Thermal Unit
MJ	Megajoule
mmbo	Million barrels of oil
MMBTU	Million British Thermal Unit
mmscf	Million Standard Cubic Feet
MPa	Million Pascal
mscf	Thousand Standard Cubic Feet
MW	Megawatt
MWh	Megawatt-hour
W / kW	Watt / kilowatt
ATK/DPK	Aviation Turbine Kerosene/Dual Purpose Kerosene
ECG	Electricity Company of Ghana
GNPC	Ghana National Petroleum Corporation
LCO	Light Crude Oil
LPG	Liquefied Petroleum Gas
NEDCo	Northern Electricity Distribution Company
RFO	Residual Fuel Oil
TAPCO	Takoradi Power Company Ltd
TICO	Takoradi International Company
TOE	Tonnes of Oil Equivalent
TOR	Tema Oil Refinery
VALCO	Volta Aluminium Company
VRA	Volta River Authority
WAGP	West African Gas Pipeline
WAGPA	West African Gas Pipeline Authority

## CONVERSION FACTORS

### Ghana Standard Figures

#### Petroleum

Crude Oil	1 Tonne	1.01- 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
7 barrels of crude Oil	1 Tonne of crude oil	
1 cubic metre	6.29 barrels	
1 barrel	36 imperial gallons	163.66 Litres
<b>Natural Gas (NG)</b>		
1 GJ of gas	1.05 MMBTU	1.07 Mscf
1 MMBTU of gas	37.55 cubic metres ( m <sup>3</sup> )	
1 MMBTU of gas	5.82 bbl of crude oil equivalent	
1000 W	1 kW	
1000 kW	1 MW	
1000 MW	1 GW	
1000 kWh	1 MWh	
1000 MWh	1 GWh	
1 GWh	86 TOE	
1 GWh	3600 GJ	
1 TOE	41.86 GJ	

### Density of Fuel

LPG	0.54 kg/litre
Gasoline	0.75 kg/litre
Diesel	0.84 kg/litre
ATK	0.71 kg/litre
Kerosene	0.80 kg/litre
Crude Oil	0.87 kg/litre

### Density of Fuel

Crude oil (depending on source)	5.81 – 6.04 GJ/bbl	40.67–42.28 GJ/tonne
Natural gas (depending on source)	39.6 GJ/1000 m <sup>3</sup>	1122 Btu/ scf
WAGP Natural gas from Nigeria	34.7 GJ/1000 m <sup>3</sup>	983 Btu/ scf
Residual fuel oil	40.7 GJ/ton	40.05 GJ/tonne
Diesel / Gas oil	42.7 GJ/ton	42.03 GJ/tonne
Gasoline (Premium)	43.8 GJ/ton	43.11 GJ/tonne
Kerosene	43.1 GJ/ton	42.44 GJ/tonne
LPG	27.8 MJ/litre	45.22 GJ/tonne
Firewood / Fuelwood	12.8 – 15.3 GJ/ton	12.5 - 15 GJ/tonne
Charcoal	28.9 – 31.5 GJ/ton	28.5 - 31 GJ/tonne
Sawdust/sawmill residues /chips	9.1 – 11.2 GJ/ton	9 - 11 GJ/tonne
	1 ton	1.016 tonne



### Charcoal

Charcoal Source	Average Weight (kg)		Moisture Content
	Mini Bag	Maxi Bag	
1. Saw mill residues	21 - 22	44 - 45	Up to 40%
2. Savanna	30 -32	55 - 60	Up to 20%
3. Acacia plantation	31 - 32	57 - 63	Up to 20%
4. All other woods	25 - 27	50 - 55	Up to 25%

## GLOSSARY

Conversion factors	Factors used to convert quantities from original physical unit into a common accounting unit for the purpose of aggregating different energy sources. The 'tonnes of oil equivalent' has been adopted as the accounting unit
Energy Balance	Shows in a consistent accounting framework, the production, transformation and final consumption of all forms of energy for a given country in a given period of time, with quantities expressed in terms of a single accounting unit for purposes of comparison and aggregation. The Energy balance present an overview of the energy produced and consumed in a system, matching input and output for a specific period of time, usually one year.
Final Energy Consumption	Energy Consumption by final user, i.e. energy which is not being used for transformation into other forms of energy
Production	It is the production of primary energy, i.e. crude oil, natural gas, hydro, renewable that is extracted from the ambient environment
Import and export	Import and export comprise quantities having crossed the national territorial boundaries of a country
International Marine Bunkers	Covers those quantities delivered to ships that are engaged in international navigation
Stock changes	Reflects the differences between opening stock levels on the first day of the year and closing levels on the last day of the year of stocks on national territory held by producers, importers, energy transformation industries and large consumers. A stock build is shown as negative number and a stock draw as a positive number
Total Primary Energy Supply (TPES)	It is made up of production + import - export - international marine bunkers +/- stock changes
Statistical differences	It include the sum of the unexplained differences for individual fuels as they appear in the energy statistics

Electricity Plants	Refers to plants which are designed to produce electricity only
Petroleum refinery	Shows the use of primary energy for the manufacture of finished petroleum products and corresponding outputs
Own Use	It is the primary and secondary energy consumed by transformation industries for heating, pumping, lighting and other purposes

## SECTION ONE: ENERGY BALANCE AND INDICATORS

Table 1.1: Energy Balance, 2011 (ktoe)

SUPPLY AND CONSUMPTION	Crude Oil	Natural Gas	LPG	Gasoline	Kerosene/ATK	Premix	Gas Oil	RFO	Firewood*	Charcoal*	Hydro	Electricity	TOTAL
Indigenous Production	3,461.9	56.0	-	-	-	-	-	-	6,138.0	-	650.2	-	10,306.1
Imports	1,530.3	772.3	192.0	748.4	-	-	1,296.6	-	-	-	-	7.0	4,546.6
Exports	-3,562.8	-	-	-271.0	-18.5	-	-445.2	-42.2	-	0.0	-	-59.4	-4,399.1
Stock Changes	-	-	-0.1	-11.4	-6.8	0.7	-56.5	-	-	-	-	-	-74.1
Total Primary Energy Supply	1,429.4	828.3	191.9	466.0	-25.3	0.7	794.9	-42.2	6,138.0	0.0	650.2	-52.4	10,379.5
Statistical Difference	-103.8	-50.3	8.4	-44.5	-65.0	-12.8	-441.5	5.3	-612.2	917.7	-	-1.0	-399.0
Electricity Plants	-288.4	-777.2	-	-	-	-	-6.7	-	-	-	-650.2	963.2	-759.3
Oil Refinery	-1,113.0	-	48.2	361.1	173.8	35.6	316.0	88.0	-	-	-	-	-90.3
Other Transformation	-	-	-	-	-	-	-	-	-3,003.0	1,668.5	-	-	-1,334.5
Own Use	-102.0	-	-	-	-	-	-	-	-	-	-	-3.4	-105.4
Losses	-29.8	-101.4	-	-	-	-	-	-	-	-	-	-222.6	-353.8
Final Energy Consumption	-	-	231.7	871.6	213.5	49.1	1,545.7	40.5	3,747.2	750.8	0.0	685.8	8,135.9
Residential	-	-	-	-	-	-	-	-	-	-	-	237.4	237.4
Industrial	-	-	-	-	-	-	-	40.5	-	-	-	335.4 <sup>2</sup>	375.9
Agriculture & Fisheries	-	-	-	-	-	49.1	-	-	-	-	-	-	49.1
Commercial & Services	-	-	-	-	-	-	-	-	-	-	-	89.4	89.4
Other	-	-	-	-	-	-	-	-	-	-	-	23.6	7,384.1

<sup>1</sup>Projection

<sup>2</sup>Special Load tariff customers of ECG and NED and bulk customers of VRA

NB: Woodfuel and petroleum consumption data not disaggregated due to unavailability of data

Table 1.2: Energy Indicators, 2000 – 2011

	Unit	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total Primary Energy Supplied	ktoe	6,875.3	7,421.2	7,759.6	7,864.0	7,966.0	7,985.3	8,801.5	9,004.1	9,043.4	8,769.8	9,840.0	10,379.5
Total Energy Consumed	ktoe	5,536.3	5,895.2	6,109.0	6,048.2	6,338.1	6,505.1	7,131.7	7,407.6	7,526.3	8,160.4	8349.9	8,877.1
Total Electricity Generated	GWh	7,223	7,859	7,273	5,882	6,039	6,789	8,430	6,978	8,324	8,958	10,167	11,200
Total Electricity Consumed	GWh	6,336	6,528	6,219	4,552	4,593	5,259	6,656	5,720	6,330	6,408	6,124	7,976
Population	Million	18.9	19.4	19.8	20.3	20.8	21.3	21.8	22.3	22.9	23.4	24.2	24.8
GDP (Constant 2000 US\$)	Million US\$	4,977.5	5,176.6	5,409.5	5,690.8	6,009.5	6,364.1	6,771.4	7,208.8	7,816.5	8,180.6	8,722.2	9,890.9
Energy Intensity	toe/US\$1,000 of GDP	1.11	1.14	1.13	1.06	1.05	1.02	1.05	1.03	0.96	1.00	0.96	0.90
Total Primary Energy Supplied /GDP	toe/US\$1,000 of GDP	1.38	1.43	1.43	1.38	1.33	1.25	1.30	1.25	1.16	1.07	1.13	1.05
Total Primary Energy Supplied/Capita	toe/capita	0.36	0.38	0.39	0.39	0.38	0.38	0.40	0.40	0.40	0.37	0.41	0.42
Total Electricity Generated/capita	kWh/capita	381.9	405.8	366.8	289.7	290.4	318.8	386.6	312.5	364.1	382.6	419.7	451.5
Total Electricity Consumed/capita	kWh/capita	335.0	337.1	314.1	224.2	220.8	246.9	305.2	256.5	276.4	273.8	294.4	321.6
Total Electricity Consumed/GDP	kWh/US\$1,000 of GDP	1,272.9	1,261.1	1,141.9	799.9	764.3	826.4	983.0	793.5	809.8	783.3	816.8	806.4

## SECTION TWO: ELECTRICITY

Table 2.1: Installed Electricity Generation Capacity (End of December 2011)

Plant	Fuel Type	Installed Capacity (MW)
Hydro Generation		
Akosombo	Water	1,020
Kpong	Water	160
<i>Sub-Total</i>		<i>1,180</i>
Thermal Generation		
Takoradi Power Company (TAPCO)	LCO/Natural Gas	330
Takoradi International Company (TICO)	LCO/Natural Gas	220
SunonAsogli Power (Ghana) Limited	Natural Gas	200
Tema Thermal 1 Power Plant (TT1PP)	LCO/Natural Gas	110
Mines Reserve Plant (MRP)	Diesel	80
Tema Thermal 2 Power Plant (TT2PP)	Natural Gas	49.5
<i>Sub - Total</i>		<i>989.5</i>
Total		2,169.5

Table 2.2: Electricity Generation by Plant (GWh)

Plant	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Hydro												
Akosombo	5,557	5,524	4,178	3,211	4,404	4,718	4,690	3,104	5,254	5,842	5,961	6,495
Kpong	1,052	1,085	858	675	877	911	929	623	941	1,035	1,035	1,066
<i>Sub-total</i>	<i>6,609</i>	<i>6,609</i>	<i>5,036</i>	<i>3,886</i>	<i>5,281</i>	<i>5,629</i>	<i>5,619</i>	<i>3,727</i>	<i>6,195</i>	<i>6,877</i>	<i>6,996</i>	<i>7,561</i>
Thermal												
TAPCO	346	740	874	1,328	536	831	1,416	1,521	874	453	1,234	1,137
TICO	268	510	1,363	668	222	328	1,395	1,417	1,063	1,040	1,160	657
TT1PP	NA	NA	NA	NA	NA	NA	NA	NA	NA	570	591	559
TRPP	NA	NA	NA	NA	NA	NA	NA	162	85	NA	NA	NA
ERPP	NA	NA	NA	NA	NA	NA	NA	80	45	NA	NA	NA
KRPP	NA	NA	NA	NA	NA	NA	NA	33	16	NA	NA	NA
MRP	NA	NA	NA	NA	NA	NA	NA	38	46	18	20	12
TT2PP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	28	50
SAPP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	138	1,224
<i>Sub-total</i>	<i>614</i>	<i>1,250</i>	<i>2,237</i>	<i>1,996</i>	<i>758</i>	<i>1,159</i>	<i>2,811</i>	<i>3,251</i>	<i>2,129</i>	<i>2,081</i>	<i>3,171</i>	<i>3,639</i>
Grand Total	7,223	7,859	7,273	5,882	6,039	6,788	8,430	6,978	8,324	8,958	10,166	11,200

Source: GRIDCo and VRA

Table 2.3: Shares in Electricity Generation by Plant (%)

Plant	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Hydro												
Akosombo	77	70	57	55	73	70	56	44	63	65	59	58
Kpong	15	14	12	11	15	13	11	9	11	12	10	10
<i>Sub-total</i>	<i>92</i>	<i>84</i>	<i>69</i>	<i>66</i>	<i>88</i>	<i>83</i>	<i>67</i>	<i>53</i>	<i>74</i>	<i>77</i>	<i>69</i>	<i>68</i>
Thermal												
TAPCO	5	9	12	23	9	12	17	22	11	5	12	10
TICO	4	6	19	11	4	5	17	20	13	12	11	6
TT1PP	NA	NA	NA	NA	NA	NA	NA	NA	NA	6	6	5
TRPP	NA	NA	NA	NA	NA	NA	NA	2	1	NA	NA	NA
ERPP	NA	NA	NA	NA	NA	NA	NA	1	1	NA	NA	NA
KRPP	NA	NA	NA	NA	NA	NA	NA	0	0	NA	NA	NA
MRP	NA	NA	NA	NA	NA	NA	NA	1	1	0	0	0
TT2PP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0	0
SAPP	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	1	11
<i>Sub-total</i>	<i>9</i>	<i>16</i>	<i>31</i>	<i>34</i>	<i>13</i>	<i>17</i>	<i>33</i>	<i>47</i>	<i>26</i>	<i>23</i>	<i>31</i>	<i>32</i>
Grand Total	100	100	100	100	100	100	100	100	100	100	100	100

NB: All figures are rounded to the nearest whole number

Figure 2.1: Proportion of Electricity Generation by Source

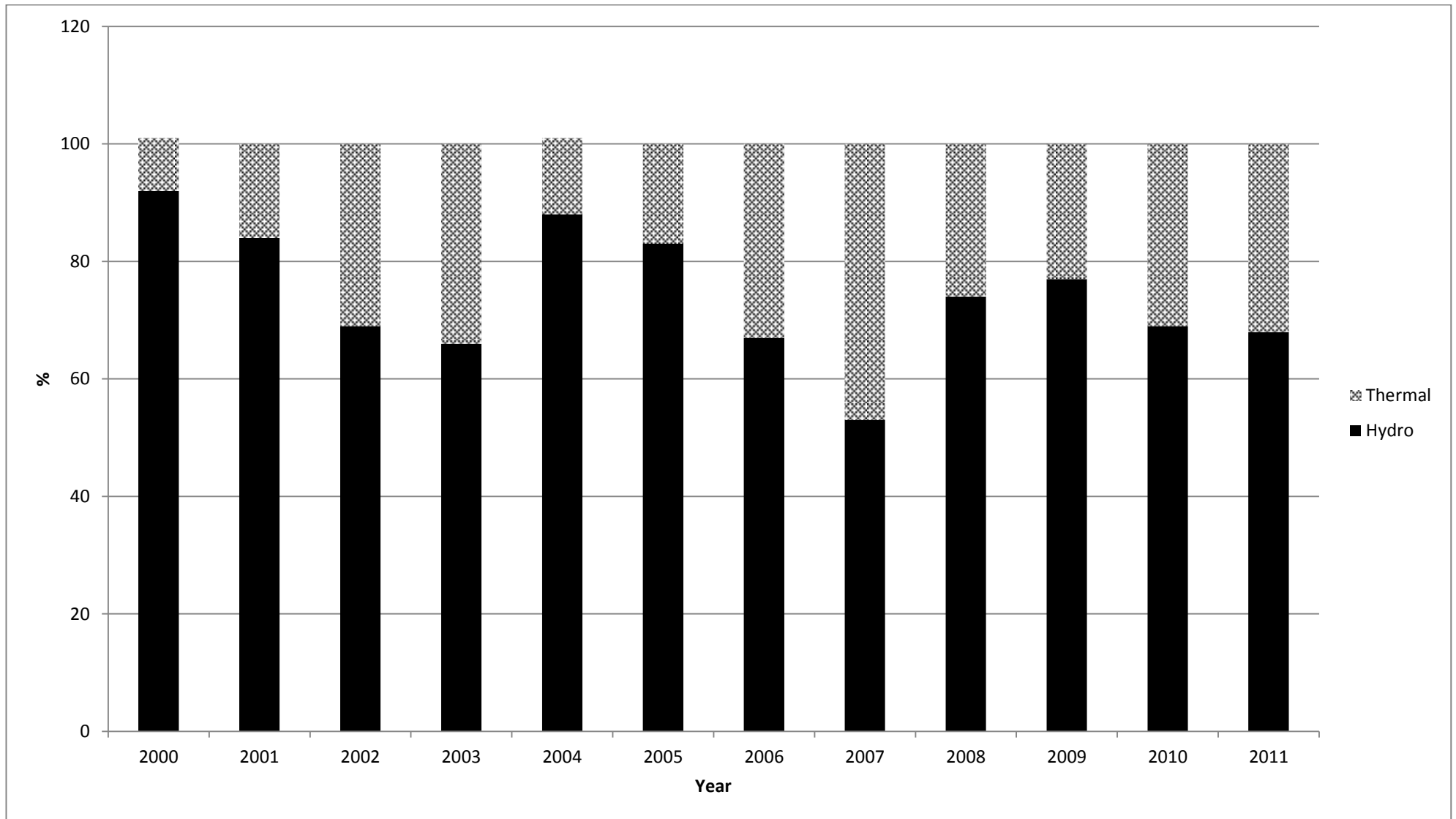




Table 2.4: Electricity Export and Import (GWh)

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Import	864	462	1,146	940	878	815	629	435	275	198	106	81
Export	392	302	612	604	665	639	754	246	538	752	1,036	691
Net Import	472	160	534	336	213	176	-125	189	-263	-554	-930	-610

Source: GRIDCo and VRA

NB: Negative net import means net export

Figure 2.2: Electricity Import and Export

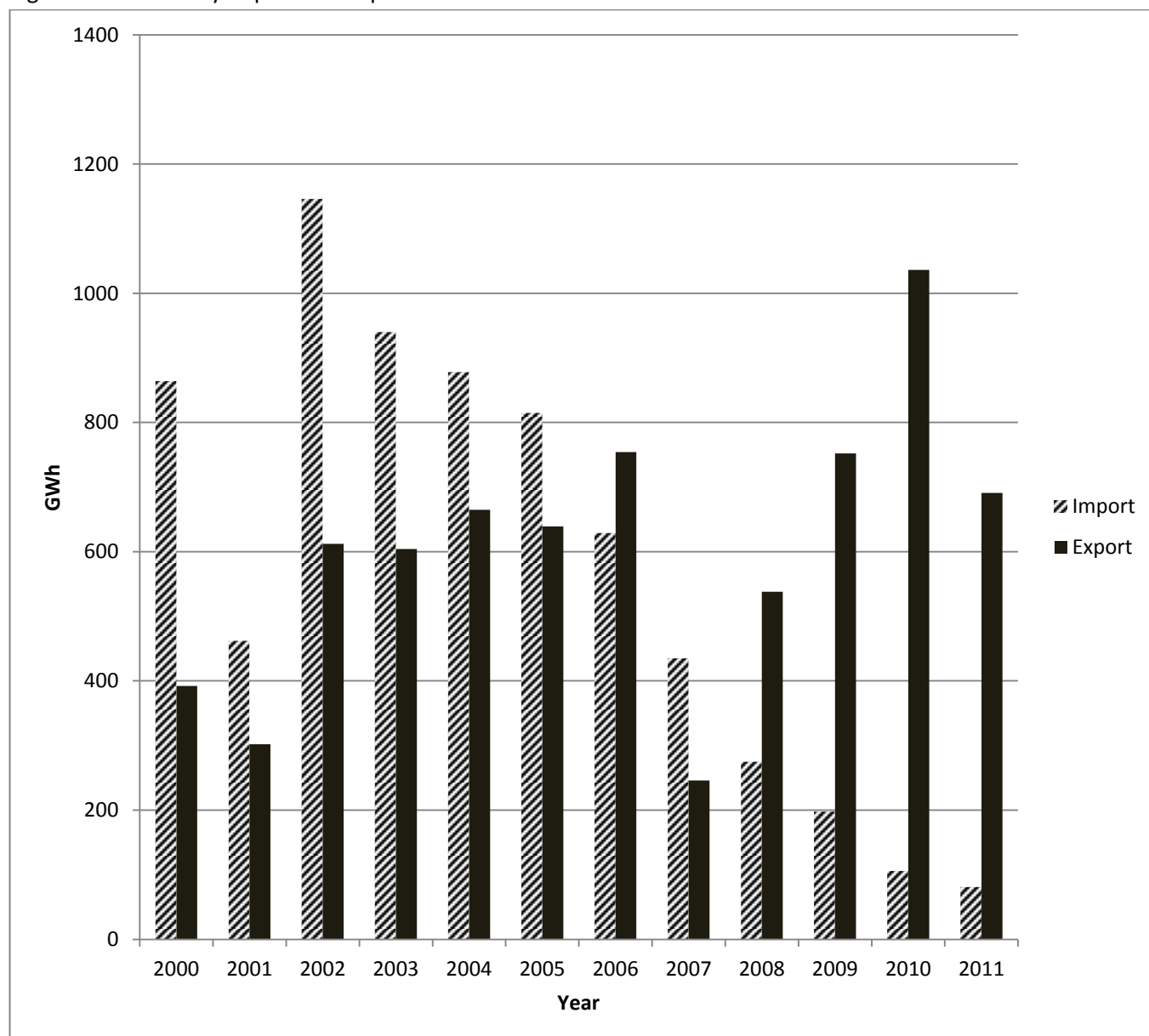


Table 2.5: Transmission Losses

Item	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Transmission Losses (GWh)	229	259	368	402	205	249	318	256	303	343	380	531
Losses as a % of Net Generation	2.8	3.1	4.4	5.9	3.0	3.3	3.5	3.8	3.7	3.8	3.7	4.7

Source: VRA and GRIDCo

Figure 2.3: Trend in Transmission Losses

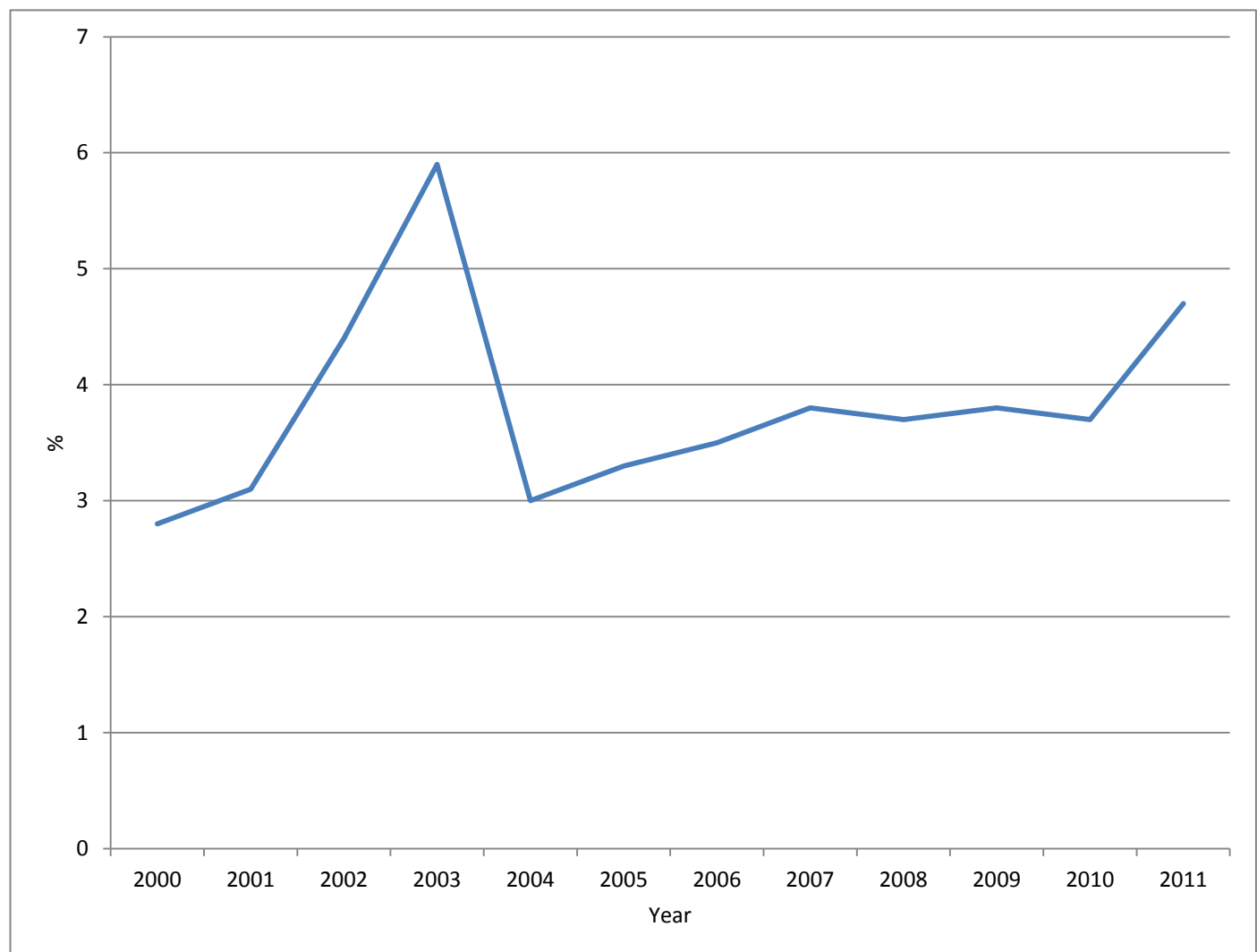


Table 2.6: Electricity Purchases and Sales by ECG(GWh)

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total Purchase (GWh)	3,989	4,175	4,326	4,496	4,818	5,045	5,253	5,146	5,799	6,052	6,771	7,259
Total Sales (GWh)	2,910	3,080	3,200	3,343	3,542	3,762	3,978	3,906	4,335	4,442	4,952	5,339
Distribution Losses (GWh) *	1,079	1,095	1,126	1,153	1,276	1,283	1,275	1,240	1,464	1,610	1,819	1,920
Percentage Losses	27	26.2	26	25.6	26.5	25.4	24.3	24.1	25.2	26.6	26.9	26.5

\* Technical & Commercial losses

Figure 2.4: Trend in ECG Electricity Losses

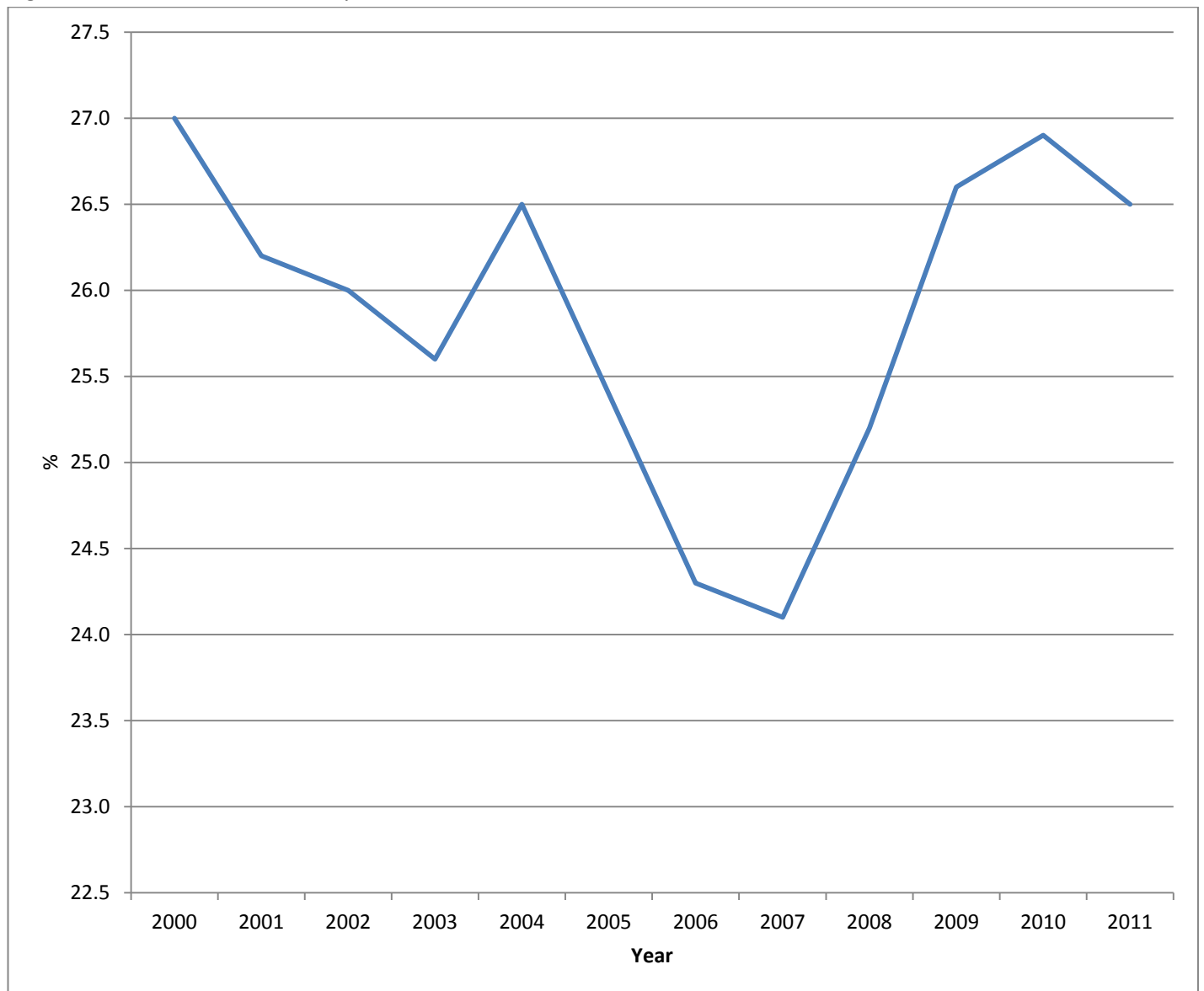


Table 2.7: Electricity Purchases and Sales by NEDCo(GWh)

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Total Purchase (GWh)	330	355	383	426	473	501	507	494	529	566	635	719
Total Sales (GWh)	232	250	265	283	323	365	356	365	392	404	473	581
Distribution Losses (GWh)*	98	105	118	143	150	136	151	129	137	162	162	138
Percentage Losses	29.7	29.6	30.8	33.6	31.7	27.1	29.8	26.1	25.9	28.6	25.5	19.3

Figure 2.4: Trend in NEDCo Electricity Losses

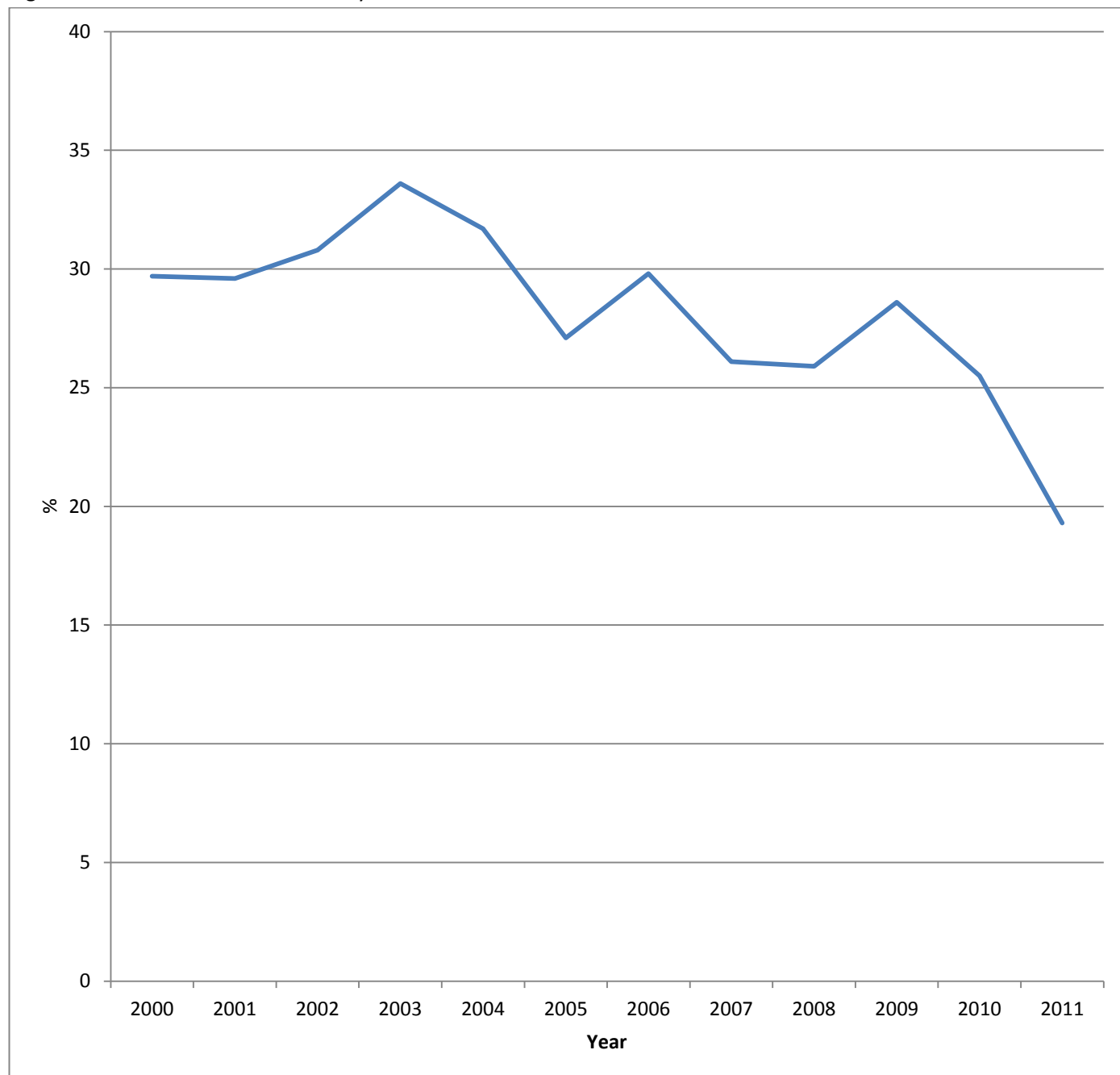


Table 2.8: Electricity Consumption by Customer Class (GWh)

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Residential	1,479	1,612	1,671	1,727	1,840	1,956	2,130	2,094	2,269	2,420	2,738	2,761
Non-residential*	551	579	602	620	661	676	789	802	927	884	966	1,040
Industrial**	4,306	4,337	3,904	2,206	2,029	2,542	3,593	2,687	2,963	2,920	3,156	3,900
Street Lighting	31	36	42	50	63	85	144	137	171	184	264	274
Total	6,367	6,564	6,219	4,603	4,593	5,259	6,656	5,720	6,330	6,408	7,124	7,976

\* Revised

\*\* Special Load Tariff customers of ECG and NED, as well as bulk customers of VRA

Does not include transmission and distribution losses

All figures are rounded to the nearest whole number

Source: ECG, NEDCO, VRA and GRIDCo

Table 2.9: Proportion of Electricity Consumption by Customer Class (%)

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Residential	23.3	24.7	26.9	37.9	40.1	37.2	32.0	36.6	35.8	37.8	38.4	34.6
Non-residential	8.2	8.3	9.7	12.5	14.4	12.9	11.9	14.0	14.6	13.8	13.6	13.0
Industrial**	68.0	66.4	62.8	48.5	44.2	48.3	54.0	47.0	46.8	45.6	44.3	48.9
Street Lighting	0.5	0.6	0.7	1.1	1.4	1.6	2.2	2.4	2.7	2.9	3.7	3.4
Total	100	100	100	100	100	100	100	100	100	100	100	100

NB: Sum may not add up to 100 due to rounding of figures

Figure 2.5: Proportion of Electricity Consumption by Customer Class

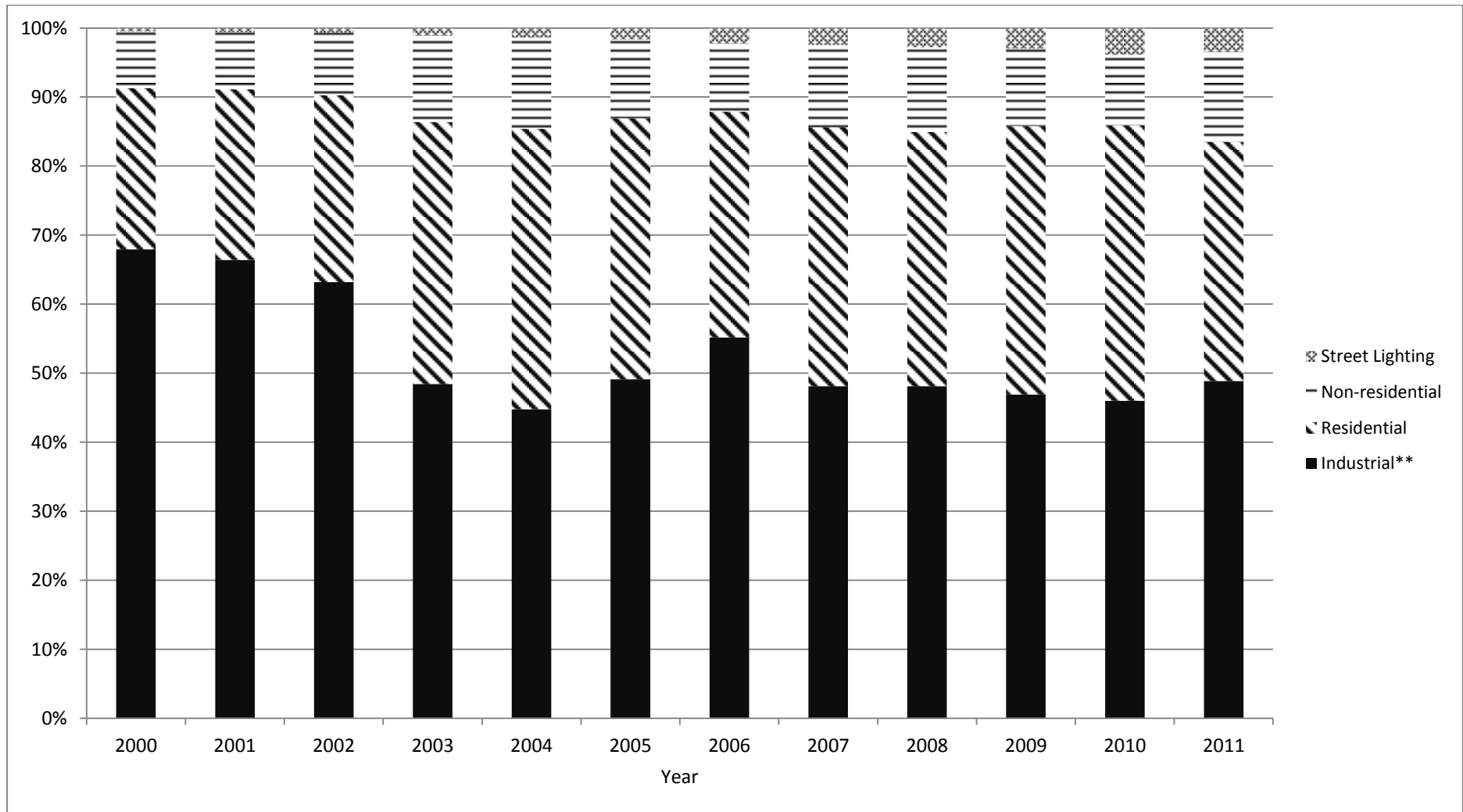


Table 2.10: ECG and NEDCo Customer Population

Year	Number of Customers		Total	% Change Over Previous Year
	ECG	NED		
2000	817,325	115,273	932,598	10.3
2001	893,880	128,967	1,022,847	9.7
2002	969,674	139,683	1,109,357	8.5
2003	1,093,494	152,441	1,245,935	12.3
2004	1,225,810	174,146	1,399,956	12.4
2005	1,321,595	202,758	1,524,353	8.9
2006	1,413,964	230,127	1,644,091	7.9
2007	1,539,056	248,297	1,787,353	8.7
2008	1,723,526	278,472	2,001,998	12
2009	1,947,568	307,871	2,255,439	12.7
2010	2,118,042	342,207	2,460,249	9.1
2011	2,353,765	335,633	2,689,398	9.3

Source: ECG and NEDCo

Figure 2.7: Trend in Customer Population Changes

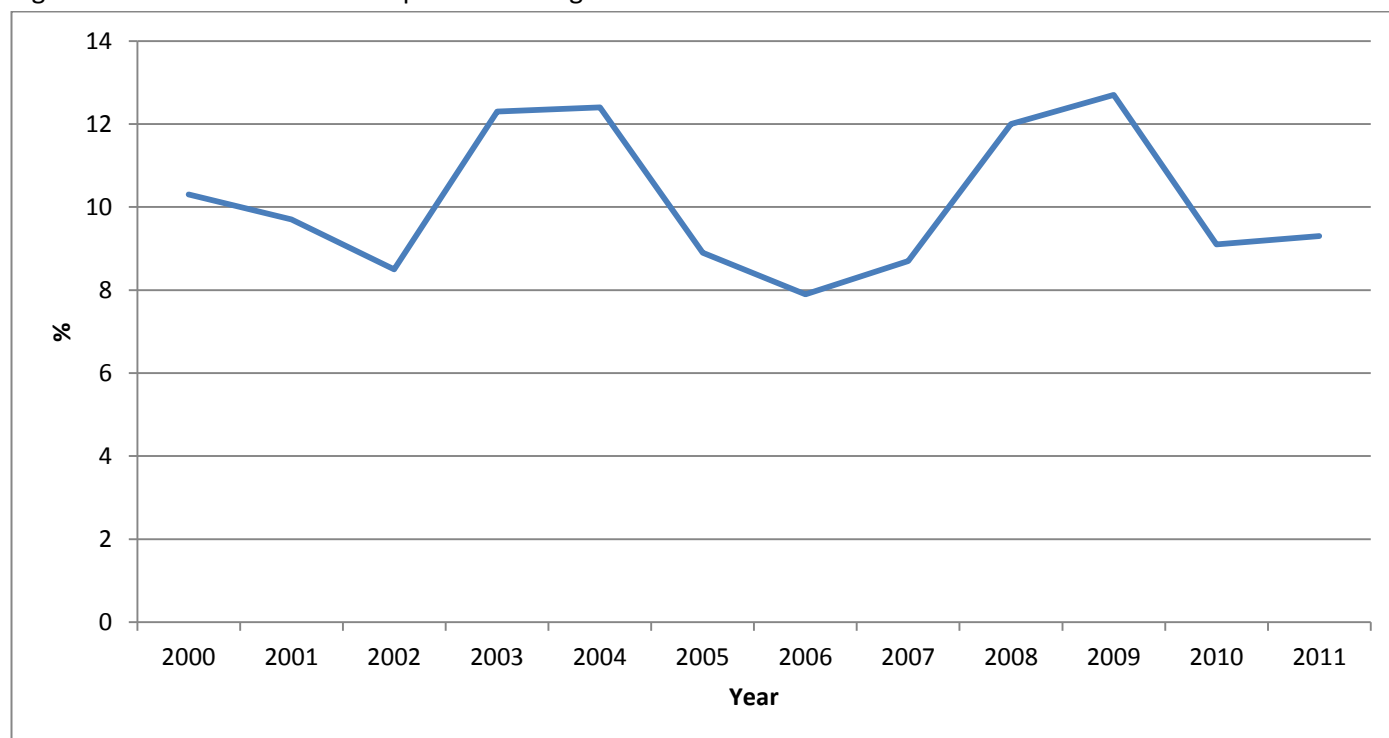


Table 2.11: Ghana Load at Peak and System Peak (MW)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Ghana Load at Peak	820	854	879	925	985	1,064	1,104	1,158	1,208	1,263	1,391	1,520
System Peak	1,161	1,190	1,227	1,135	1,049	1,325	1,393	1,274	1,367	1,423	1,506	1,665

Source: VRA and NEDCo

NOTE

Ghana Load at Peak: Maximum Demand for Ghana (excluding Export and VALCO Load)

System Peak: Ghana Load at Peak + VALCO Load + Export

Figure 2.8: Trend in Ghana Load at Peak and System Peak

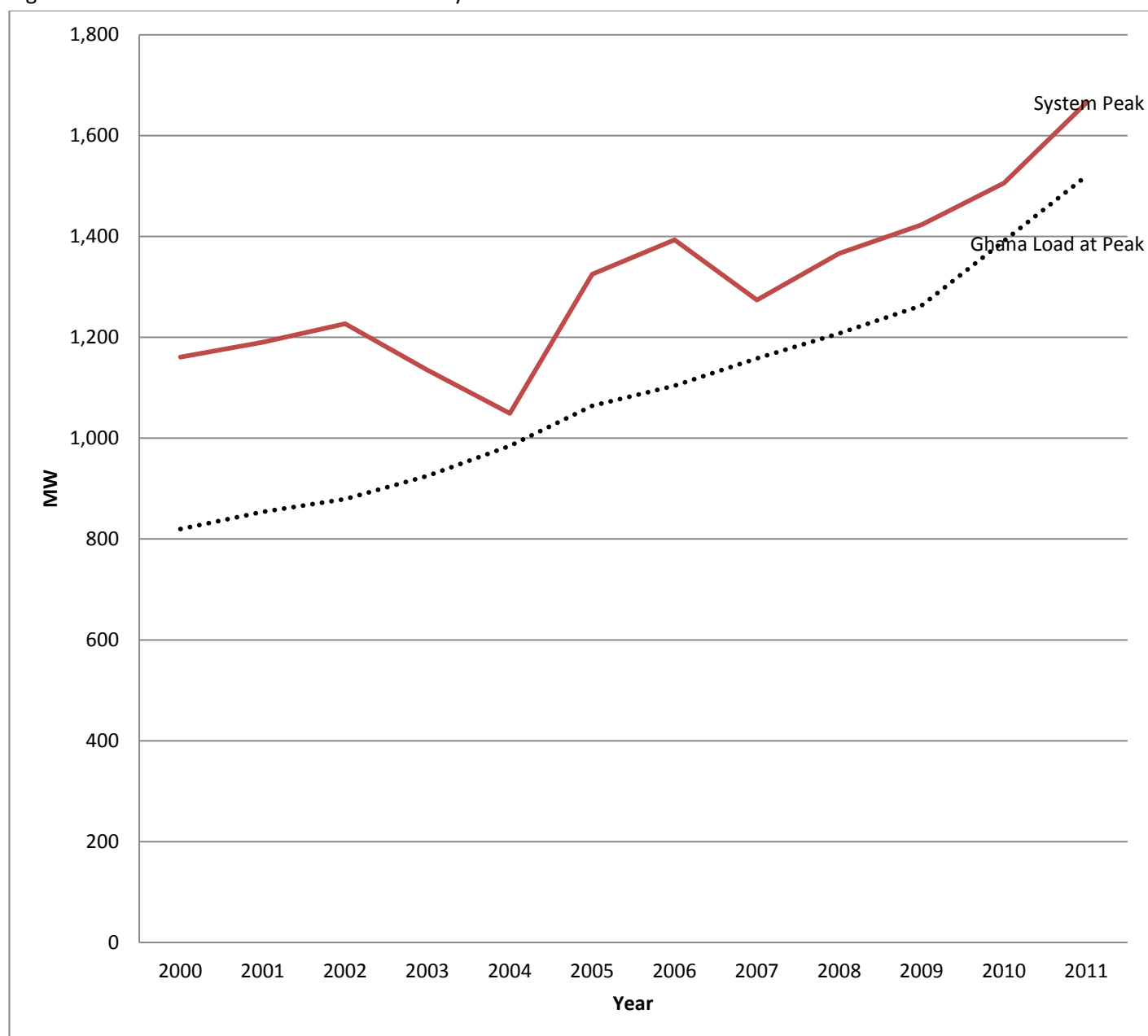


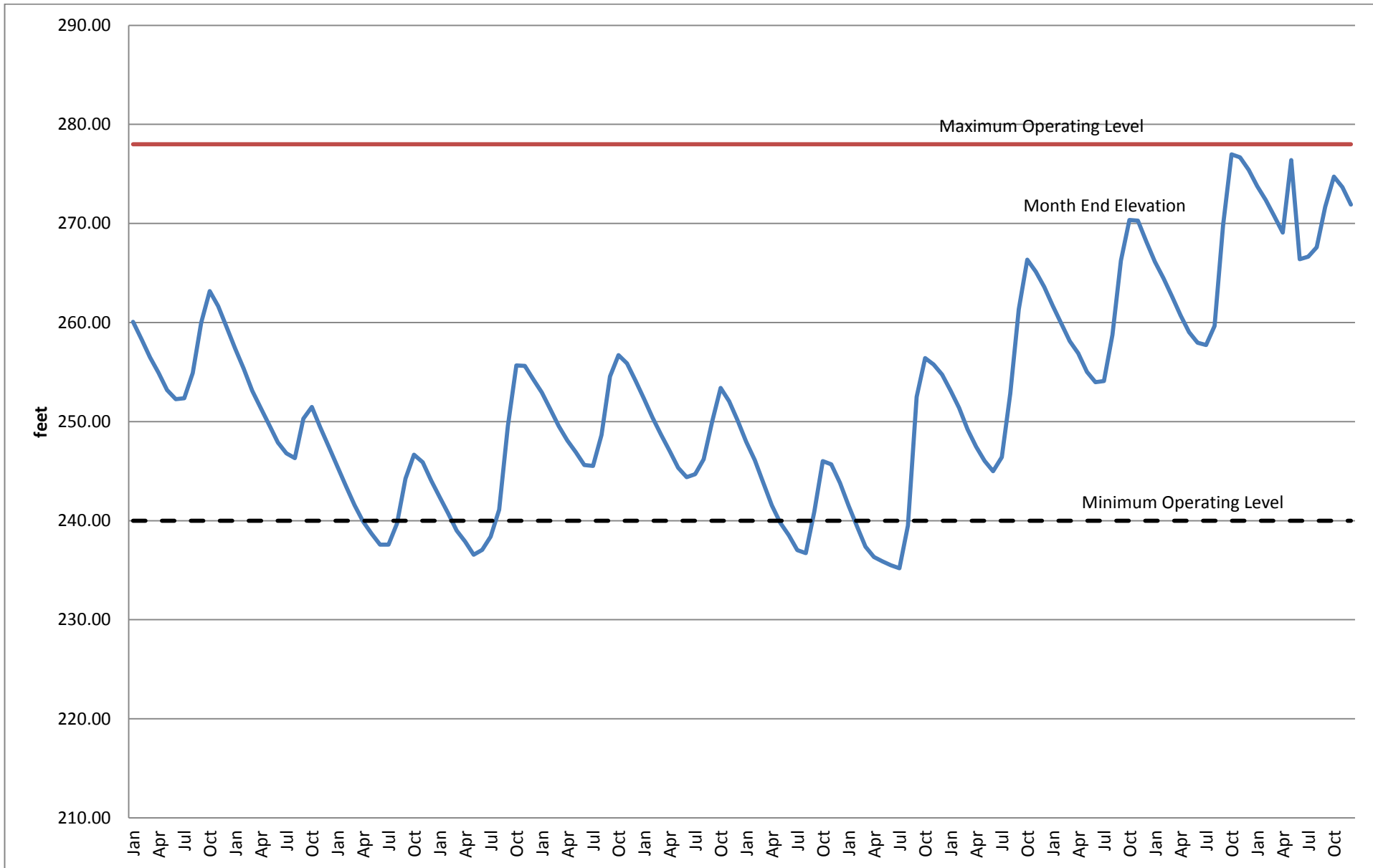


Table 2.12: Akosombo Dam Month End Elevation (feet)

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
January	260.06	257.36	245.47	242.38	252.93	252.30	247.97	241.54	253.11	261.69	266.14	273.75
February	258.30	255.35	243.46	240.73	251.25	250.40	246.11	239.43	251.38	259.90	264.45	272.36
March	256.48	253.13	241.56	239.00	249.52	248.70	243.82	237.37	249.21	258.13	262.62	270.75
April	254.92	251.34	239.93	237.88	248.10	247.04	241.53	236.33	247.48	256.90	260.72	269.08
May	253.20	249.62	238.69	236.55	246.92	245.33	239.78	235.88	246.04	255.03	259.02	276.39
June	252.26	247.88	237.58	237.04	245.62	244.40	238.53	235.50	245.00	253.98	257.97	266.40
July	252.36	246.80	237.58	238.38	245.52	244.68	237.03	235.20	246.40	254.09	257.72	266.65
August	254.90	246.30	239.70	241.10	248.65	246.20	236.73	239.50	252.85	258.75	259.65	267.59
September	260.00	250.30	244.25	249.56	254.55	250.00	240.90	252.50	261.35	266.25	269.80	271.67
October	263.17	251.47	246.67	255.67	256.70	253.40	246.00	256.40	266.35	270.35	276.98	274.73
November	261.64	249.38	245.90	255.61	255.87	252.05	245.69	255.75	265.13	270.27	276.68	273.66
December	259.52	247.45	244.03	254.25	254.15	250.10	243.82	254.74	263.58	268.16	275.40	271.90

Source: VRA and GRIDCo

Figure 2.9: Trend in Akosombo Dam Month End Elevation (2000– 2011)



### SECTION THREE: PETROLEUM

Table 3.1: Crude Oil Production and Import (kilotonnes)

Year	Production	Import		
		For Refinery	For Electricity Generation	Total
2000	NA	1,131.8	153.1	1,284.9
2001	NA	1,262.9	275.9	1,538.8
2002	7.4	1,179.4	601.6	1,781.0
2003	10.3	1,406.2	527.6	1,933.8
2004	22.9	1,813.5	163.4	1,976.9
2005	NA	1,645.5	322.0	1,967.5
2006	NA	962.2	750.6	1,712.8
2007	NA	1,242.5	811.2	2,053.7
2008	NA	1,396.7	579.1	1,975.8
2009	NA	441.4	541.4	982.8
2010	181.1	902.5	700.5	1,603.0
2011	3,394.0	1,242.9	257.4	1,500.3

Table 3.2: Natural Gas Production and Import (MMBtu)

Year	Production	Import
2000	NA	NA
2001	NA	NA
2002	154,280	NA
2003	255,360	NA
2004	692,664	NA
2005	NA	NA
2006	NA	NA
2007	NA	NA
2008	NA	NA
2009	NA	197,977
2010	2,155,664	15,616,648
2011	31,852,968	30,524,558

Source: GNPC and WAPCo

Figure 3.1: Trend in Crude Oil Import

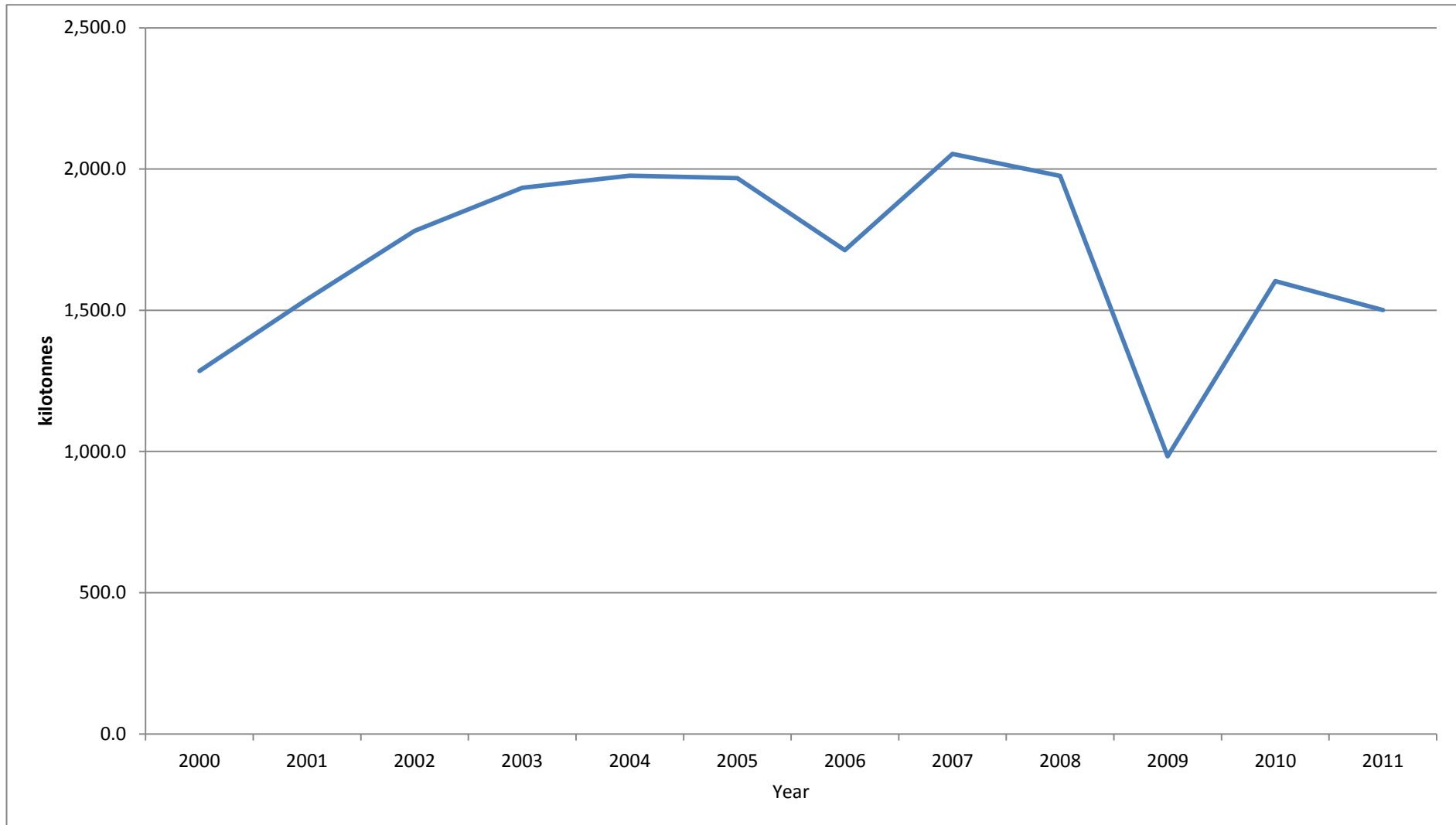


Table 3.3: Petroleum Products Production (kilotonnes)

Product	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
LPG	9.7	7.0	24.4	52.6	65.5	75.3	35.8	67.3	54.6	14	31.6	44.6
Gasoline	238.6	286.3	346.2	433.8	553.1	567.1	294.4	493	391.2	135	337.7	343.9
Kerosene	51.8	98.1	61.1	109.6	111.1	87.7	65.1	122	168.6	48.7	71.0	52.6
ATK	108.3	64.0	81.6	85.6	106.9	119	46.2	65.8	21.3	1.3	116.7	116.1
Gas Oil	358.1	353.5	446.5	506.6	568.4	486.3	294.2	398.2	360.5	102.8	292.6	309.8
Fuel Oil	261.9	261.1	195.7	163.5	199.1	205.4	155.5	48.7	225.4	25.3	96.8	90.7
TOTAL	1,028.4	1,070.0	1,155.5	1,351.7	1,604.1	1,540.8	891.2	1,195.0	1,221.5	327.1	946.4	957.7

Source: Tema Oil Refinery

Table 3.4: Petroleum Products Production (%)

Product	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
LPG	0.9	0.7	2.1	3.9	4.1	4.9	4.0	5.6	4.5	4.3	3.3	4.7
Gasoline	23.2	26.8	30.0	32.1	34.5	36.8	33.0	41.3	32.0	41.3	35.7	35.9
Kerosene	5.0	9.2	5.3	8.1	6.9	5.7	7.3	10.2	13.8	14.9	7.5	5.5
ATK	10.5	6.0	7.1	6.3	6.7	7.7	5.2	5.5	1.7	0.4	12.3	12.1
Gas Oil	34.8	33.0	38.6	37.5	35.4	31.6	33.0	33.3	29.5	31.4	30.9	32.3
Fuel Oil	25.5	24.4	16.9	12.1	12.4	13.3	17.4	4.1	18.5	7.7	10.2	9.5
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100

NB: Sum may not add up to 100 due to rounding of figures

Figure 3.2: Trend in Petroleum Products Production

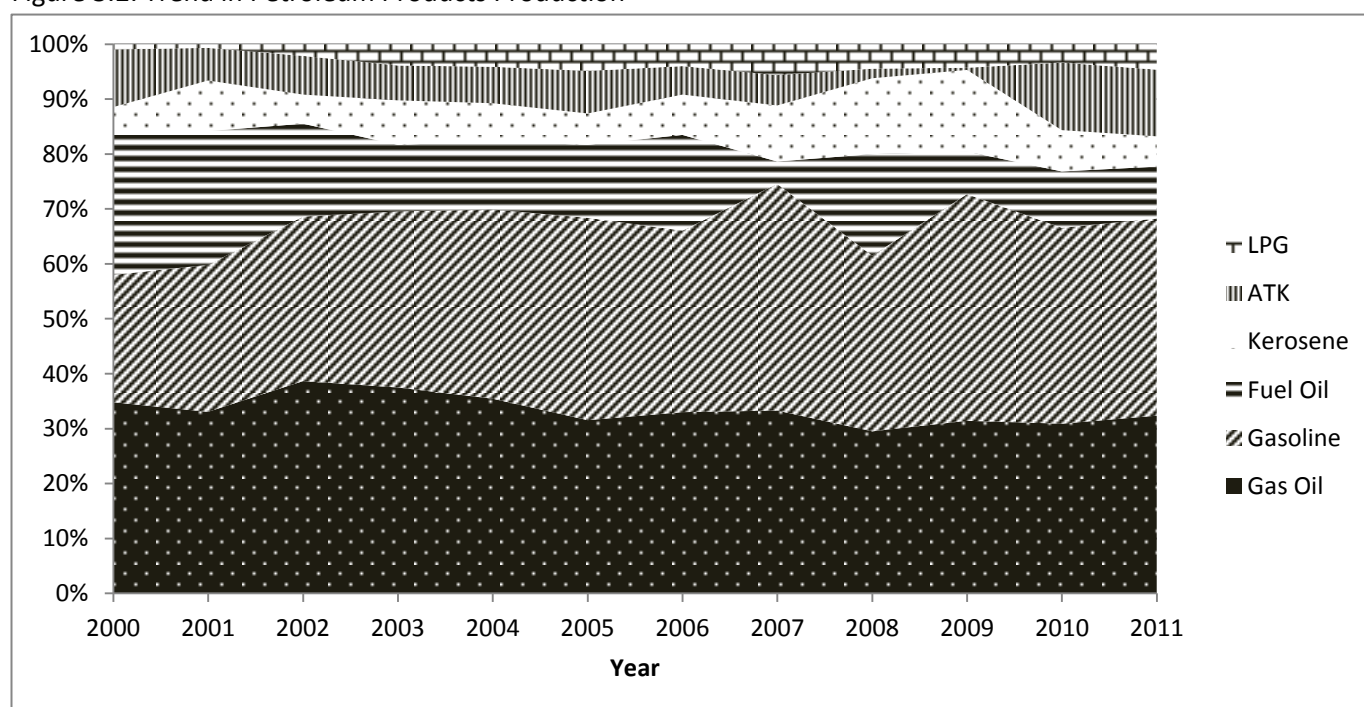


Table 3.5: Petroleum Product Import (kilotonnes)

Product	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
LPG	35.4	35.6	32	16.7	11	7.1	67.8	47.2	67.8	150.6	148	177.8
Gasoline	387	389.4	370.8	232.1	255.4	167.5	360.5	274.9	254.5	563.4	570.1	712.8
Kerosene	30.4	21.5	48.8	34.6	0.0	0.0	99.9	66.7	136.4	77.7	0.0	0.0
Gas Oil	363.2	354.3	298	285.7	313.1	403.7	780	806.9	579	969.5	871.7	1,200.6
DPK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	17.5
RFO	0.3	0.1	0.1	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total</b>	<b>816.3</b>	<b>800.9</b>	<b>749.7</b>	<b>569.1</b>	<b>579.5</b>	<b>578.3</b>	<b>1,308.2</b>	<b>1,195.7</b>	<b>1,037.7</b>	<b>1,761.2</b>	<b>1,589.8</b>	<b>2,108.7</b>

Source: Tema Oil Refinery and National Petroleum Authority

Table 3.6: Petroleum Product Import (%)

Product	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
LPG	4.3	4.4	4.3	2.9	1.9	1.2	5.2	3.9	6.5	8.6	9.3	8.4
Gasoline	47.4	48.6	49.5	40.8	44.1	29.0	27.6	23.0	24.5	32.0	35.9	33.8
Kerosene	3.7	2.7	6.5	6.1	0.0	0.0	7.6	5.6	13.1	4.4	0.0	0.0
Gas Oil	44.5	44.2	39.7	50.2	54.0	69.8	59.6	67.5	55.8	55.0	54.8	56.9
DPK	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.8
RFO	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>100</b>

NB: Sum may not add up to 100 due to rounding of figures

Figure 3.3: Trend in Petroleum Product Import

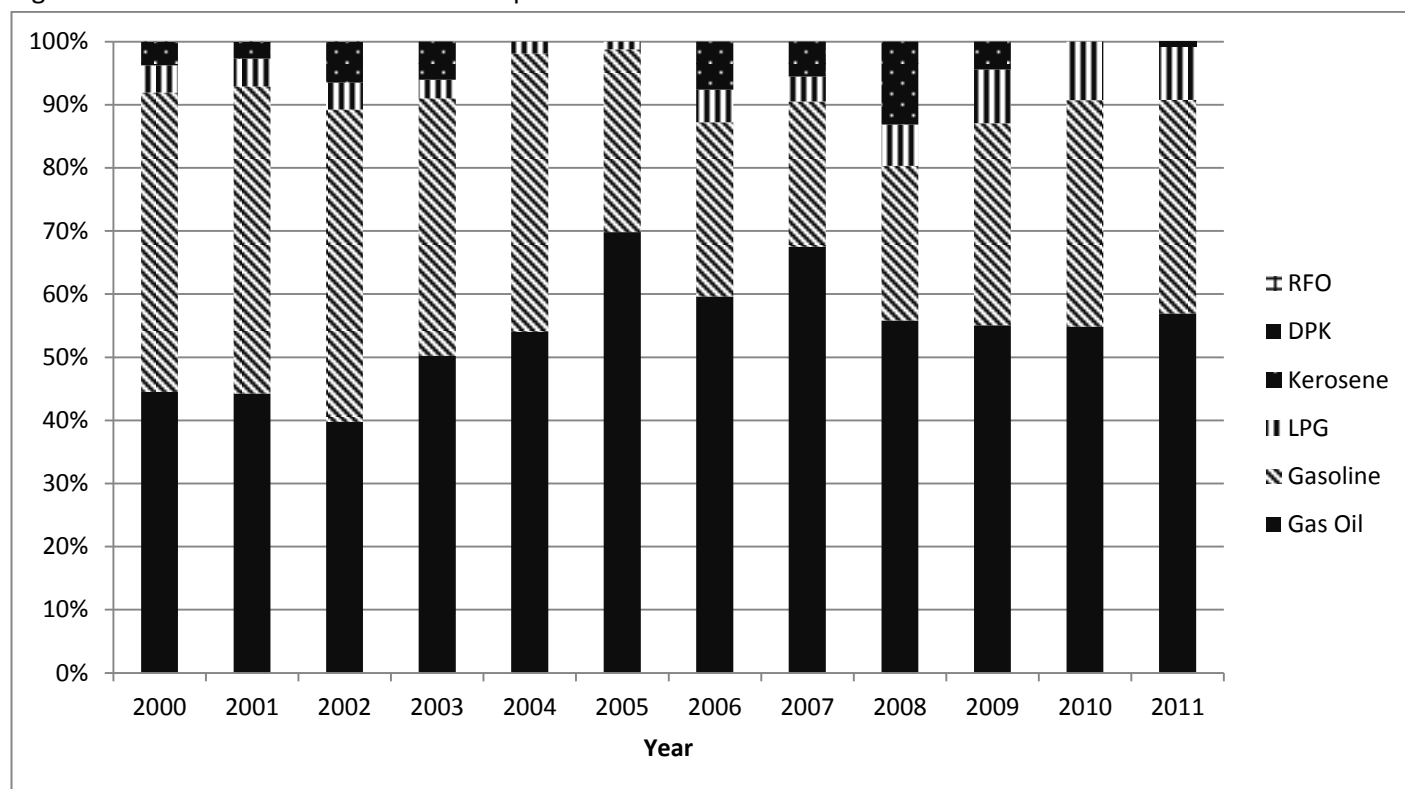


Table 3.7: Petroleum Product Export (kilotonnes)

Product	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
LPG	6.2	1.2	4.5	11.2	6.0	12.5	10.4	9.6	5.0	1.1	0.0	0.0
Gas Oil	0.6	1.0	1.9	12	42.4	37.7	66.1	52.7	88.4	381.9	304.3	426.8
RFO	190.7	215.7	151.7	89.4	168.9	162.8	45.9	26.2	148.4	30.2	40.6	43.5
ATK	0.0	0.0	0.0	0.8	0.0	0.1	0.4	2.5	0.3	0.0	0.0	18
Gasoline	97.1	126.7	129.2	104	150.8	203.8	113.4	163.8	111.8	72.1	213	258.1
TOTAL	294.6	344.6	287.3	217.4	368.1	416.9	236.2	254.8	353.9	485.3	557.9	746.4

Source: Tema Oil Refinery

Table 3.8: Petroleum Product Export (%)

Product	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
LPG	2.1	0.3	1.6	5.2	1.6	3.0	4.4	3.8	1.4	0.2	0.0	0.0
Gas Oil	0.2	0.3	0.7	5.5	11.5	9.0	28.0	20.7	25.0	78.7	54.5	57.2
RFO	64.7	62.6	52.8	41.1	45.9	39.1	19.4	10.3	41.9	6.2	7.3	5.8
ATK	0.0	0.0	0.0	0.4	0.0	0.0	0.2	1.0	0.1	0.0	0.0	2.4
Gasoline	33.0	36.8	45.0	47.8	41.0	48.9	48.0	64.3	31.6	14.9	38.2	34.6
TOTAL	100	100	100	100	100	100	100	100	100	100	100	100

NB: Sum may not add up to 100 due to rounding of figures

Figure 3.4: Trend in Petroleum Product Export

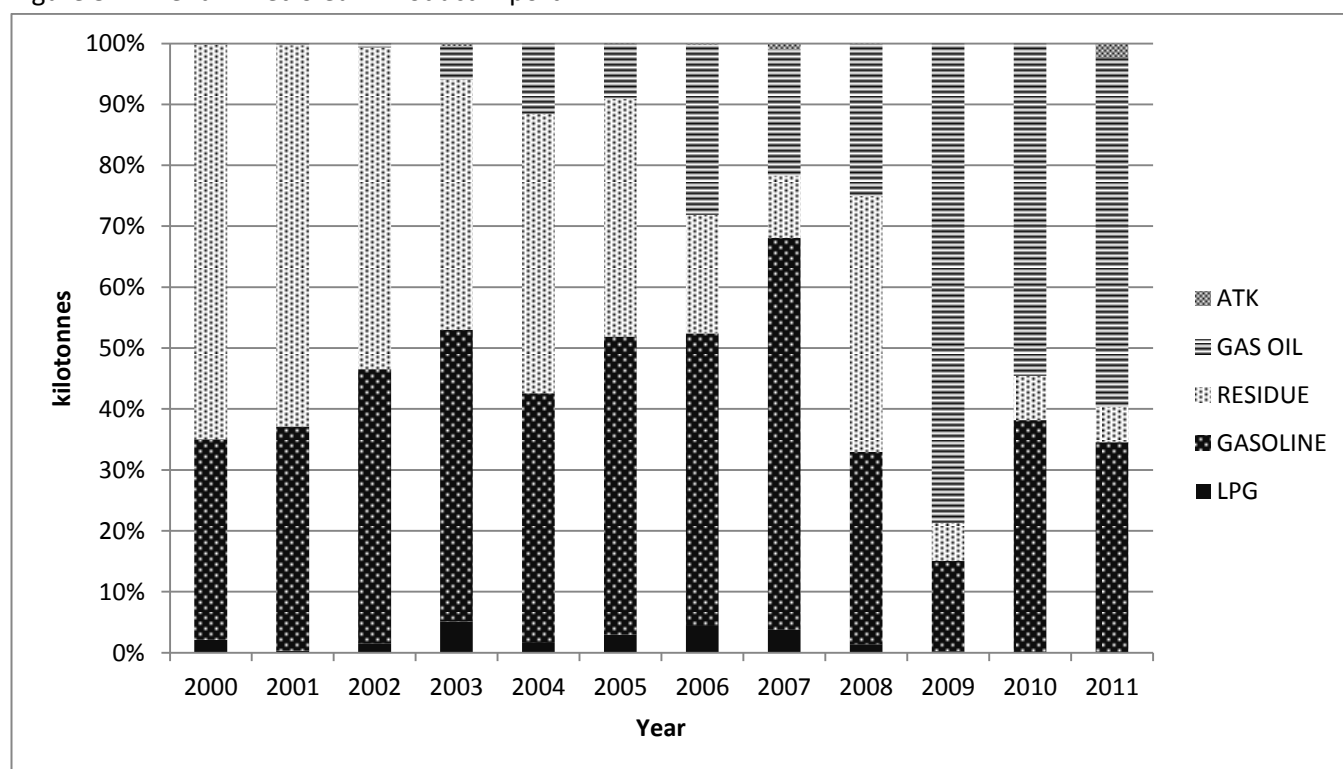


Table 3.9: Petroleum Product Consumption (kilotonnes)

Product	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
LPG	45.0	42.5	50.0	56.7	65.7	70.5	88.0	93.3	117.6	220.6	178.4	214.5
Gasoline	524.4	535.1	570.2	479.8	575.6	537.8	511.9	544.2	545	701.4	737.8	807.0
Premix	30.6	27.0	26.8	28.9	27.5	31.4	33.7	41.0	50.7	55.1	32.4	45.5
Kerosene	67.6	70.5	74.8	68.8	73.2	74.3	76.5	63.3	34.6	89.3	49.3	62.4
ATK	96.9	76.4	90.5	89.8	107.4	119.3	114.7	122.8	119.2	124.7	108.4	135.3
Gas Oil	665.8	685.4	717.8	755.3	848.9	880.4	934	1,147.0	1,092.1	1,280.0	1,271.9	1,431.2
RFO	57.1	52.0	51.9	45.7	45.2	47.8	56.8	51.3	47.9	40.3	30.9	37.5
Total	1,487.4	1,488.9	1,582.0	1,525.0	1,743.5	1,761.5	1,815.6	2,062.9	2,007.1	2,511.4	2,409.1	2,733.4

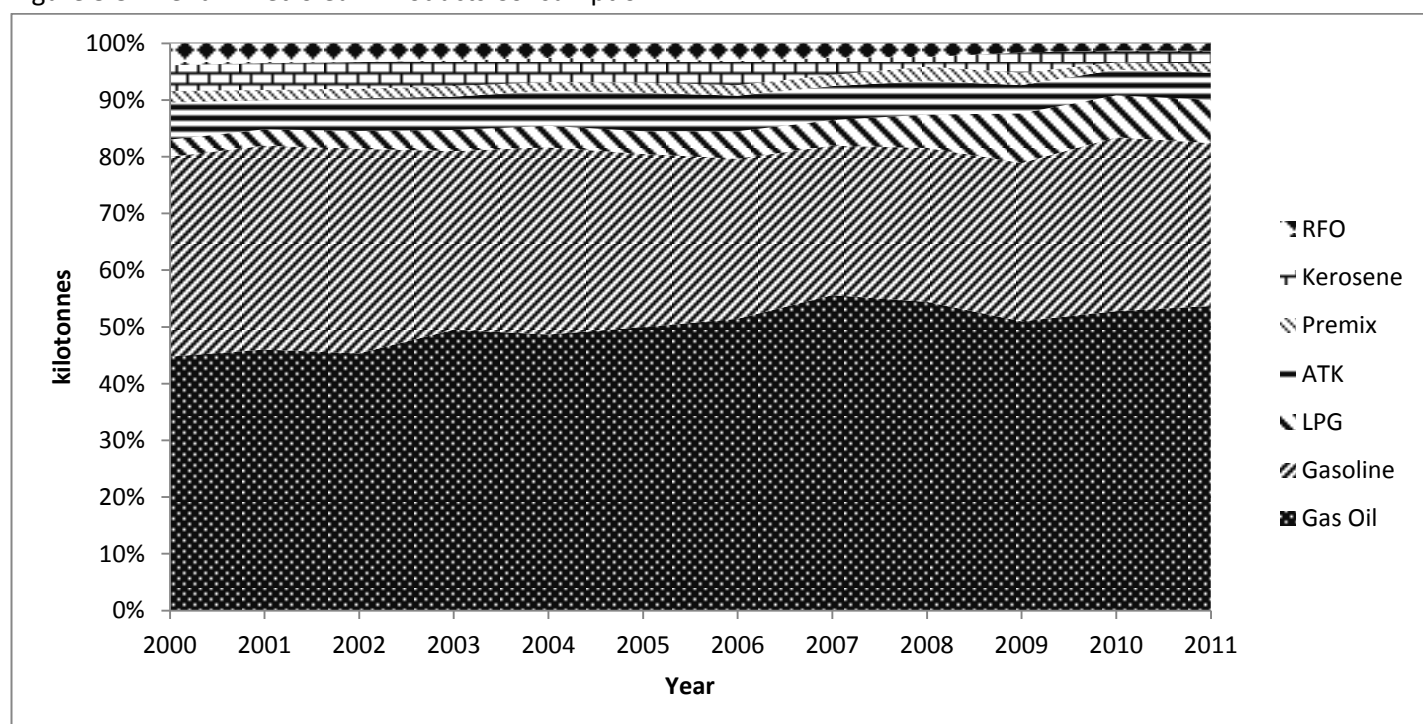
Source: National Petroleum Authority

Table 3.10: Petroleum Product Consumption (%)

Product	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
LPG	3.0	2.9	3.2	3.7	3.8	4.0	4.8	4.5	5.9	8.8	7.4	7.8
Gasoline	35.3	35.9	36.0	31.5	33.0	30.5	28.2	26.4	27.2	27.9	30.6	29.5
Premix	2.1	1.8	1.7	1.9	1.6	1.8	1.9	2.0	2.5	2.2	1.3	1.7
Kerosene	4.5	4.7	4.7	4.5	4.2	4.2	4.2	3.1	1.7	3.6	2.0	2.3
ATK	6.5	5.1	5.7	5.9	6.2	6.8	6.3	6.0	5.9	5.0	4.5	4.9
Gas Oil	44.8	46.0	45.4	49.5	48.7	50.0	51.4	55.6	54.4	51.0	52.8	52.4
RFO	3.8	3.5	3.3	3.0	2.6	2.7	3.1	2.5	2.4	1.6	1.3	1.4
Total	100	100	100	100	100	100	100	100	100	100	100	100

NB: Sum may not add up to 100 due to rounding of figures

Figure 3.5: Trend in Petroleum Products Consumption





## SECTION FOUR: WOODFUEL

Table 4.1: Woodfuel Supply (kilotonnes)

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
For firewood*	7,100	8,000	8,300	8,600	8,700	8,800	8,900	9,000	9,100	9,200	9,400	9,500
For Charcoal*	6,250	6,500	6,750	7,000	7,150	7,300	7,700	8,000	8,500	8,700	8,900	9,100
Total	13,350	14,500	15,050	15,600	15,850	16,100	16,600	17,000	17,600	17,900	18,300	18,600

\*2005 onwards are projections

Table 4.2: Firewood and Charcoal Consumption (kilotonnes)

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Firewood*	7,100	8,000	8,300	8,600	8,700	8,900	10,050	10,200	10,300	10,500	11,025	11,355
Charcoal*	1,563	1,625	1,688	1,750	1,788	1,825	1,925	2,000	2,125	2,175	2,262	2,275
Total	8,663	9,625	9,988	10,350	10,488	10,725	11,975	12,200	12,425	12,675	13,287	13,630

\*2005 onwards are projections

Figure 4.1: Trend in Firewood and Charcoal Consumption

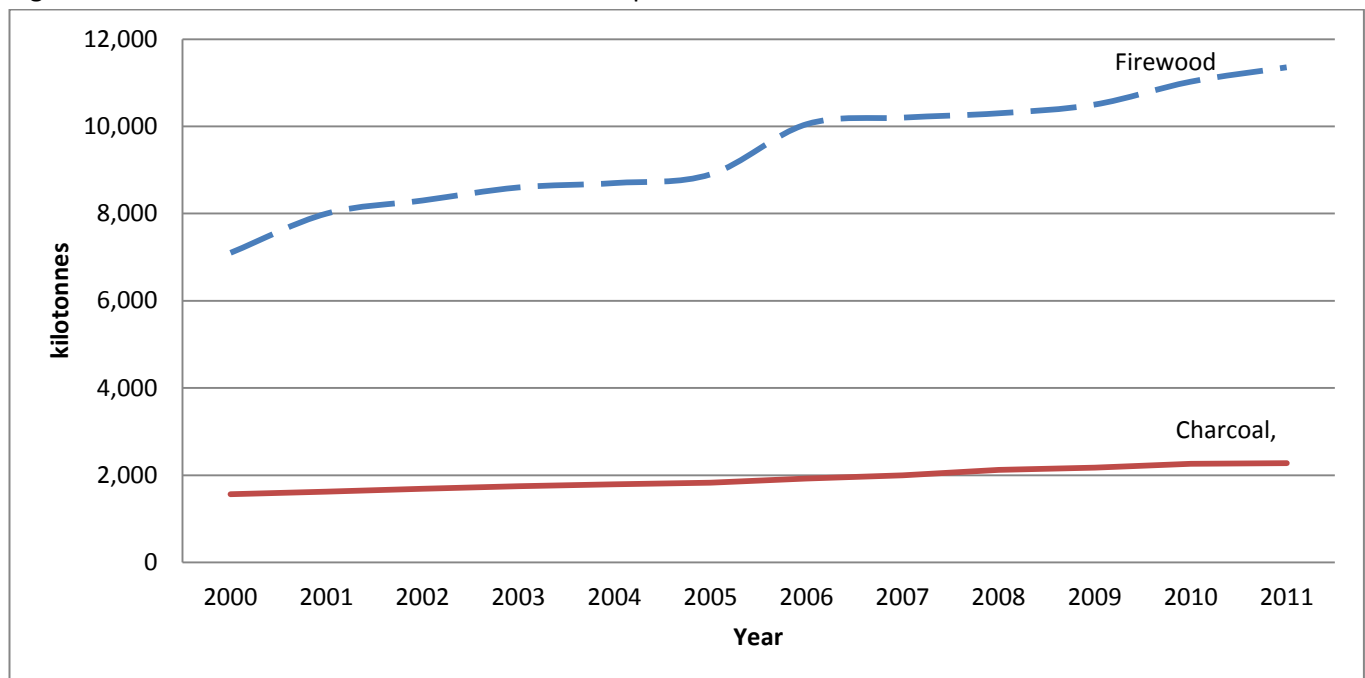
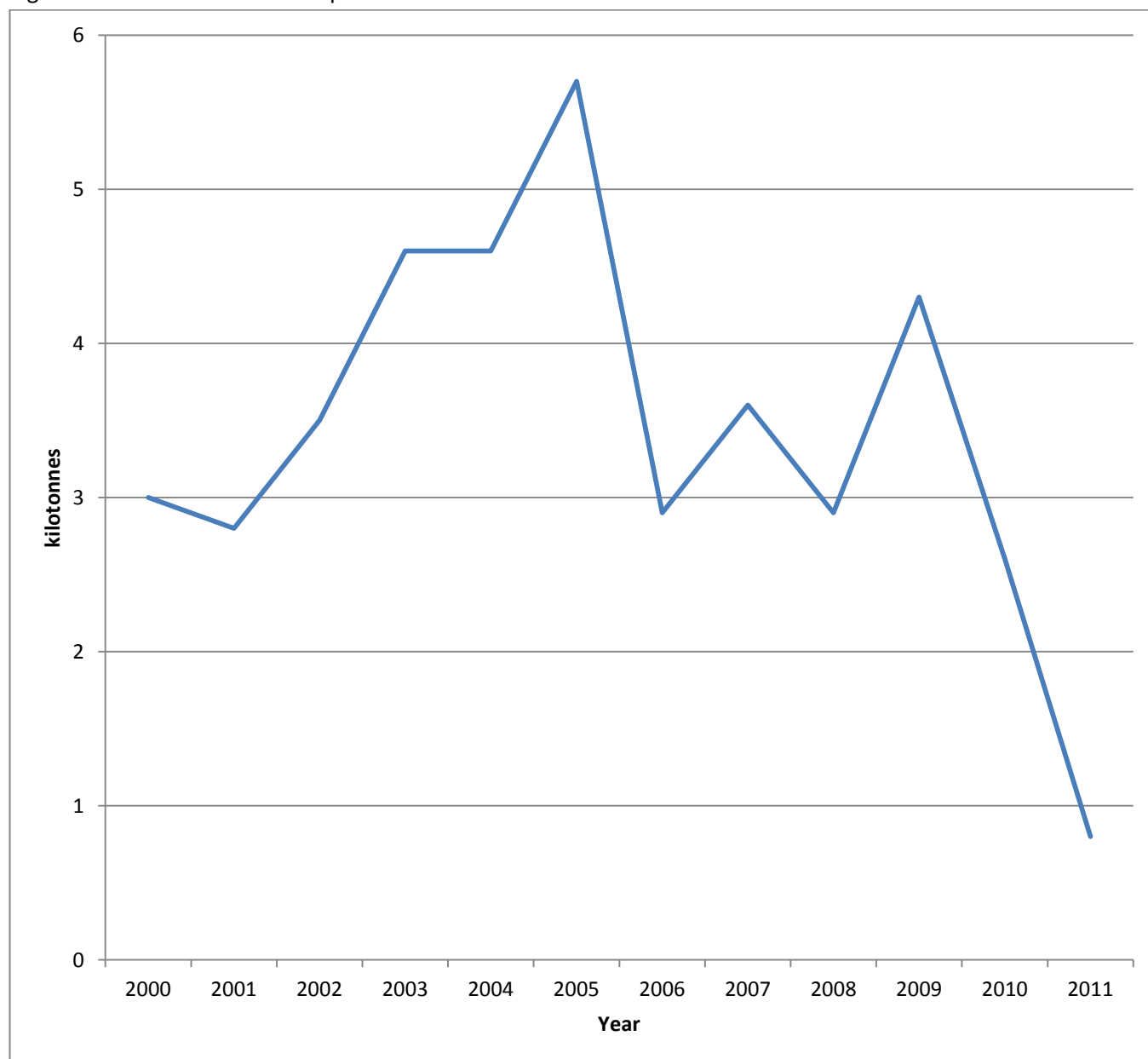


Table 4.3: Charcoal Export

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Quantity (kilotonnes)	3.0	2.8	3.5	4.6	4.6	5.7	2.9	3.6	2.9	4.3	2.6	0.8
Growth Rate (%)	-	-6.7	25.0	31.4	0.0	23.0	-48.8	24.1	-19.4	48.3	-39.5	-69.2

Figure 4.2: Trend in Charcoal Export



## SECTION FIVE: ENERGY PRICES

Table 5.1: Monthly Average Crude Oil Prices (US\$/barrel)

Month	2005	2006	2007	2008	2009	2010	2011
January	44.88	63.86	54.56	91.92	45.62	76.92	96.82
February	45.85	61.10	58.96	94.49	43.73	74.74	104.09
March	53.28	63.06	62.36	103.00	47.32	79.90	114.62
April	53.22	70.56	67.49	110.43	51.23	85.68	123.13
May	49.85	71.00	67.92	124.61	58.57	76.99	114.53
June	55.60	69.74	70.60	133.47	69.34	75.66	113.91
July	57.93	74.24	75.84	134.79	65.76	75.49	116.68
August	63.84	73.87	71.17	115.22	73.07	77.11	109.82
September	63.72	63.49	77.00	100.75	68.19	78.21	109.96
October	59.44	60.13	82.47	73.60	73.87	83.49	108.80
November	56.21	60.00	92.06	55.05	77.50	86.11	110.61
December	57.61	62.54	91.51	43.29	75.24	92.35	107.72
Annual Average	55.12	66.13	72.66	98.39	62.45	80.22	110.89

Source: Bank of Ghana

Figure 5.1: Trend in Crude Oil Prices (Jan 2005 – Dec 2011)

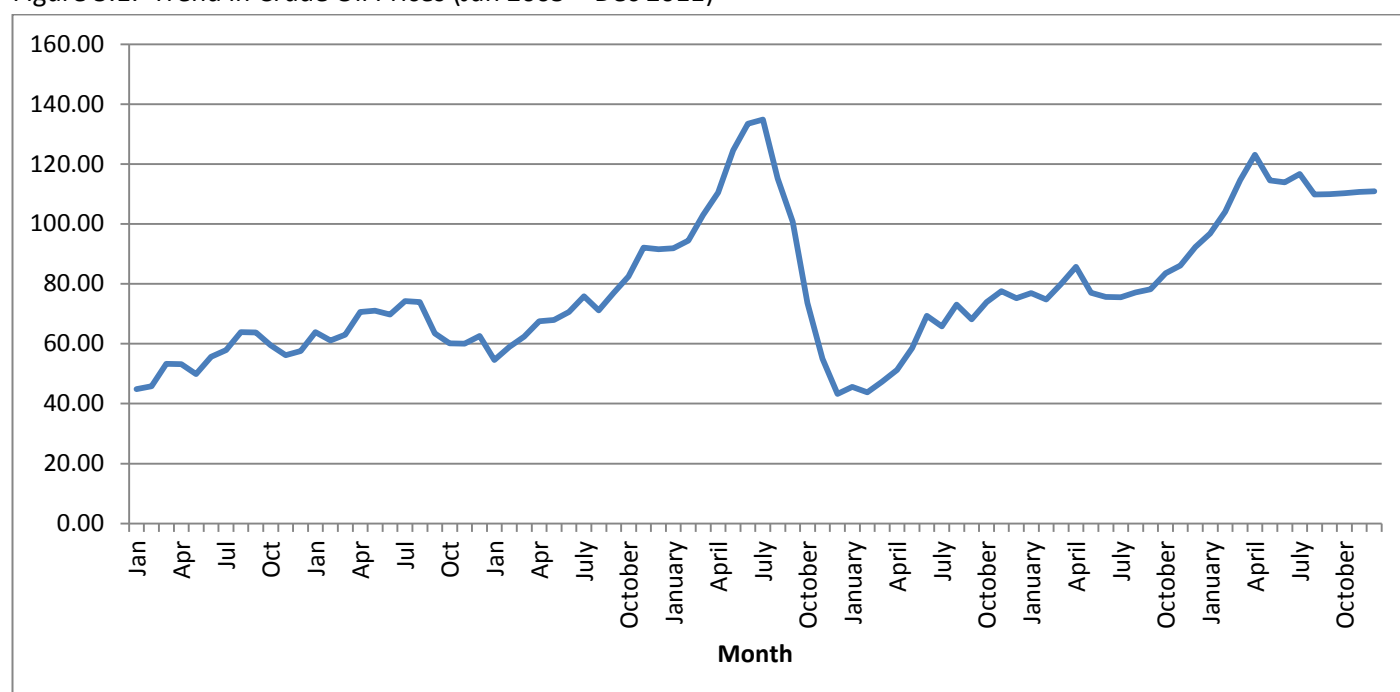


Table 5.2: Retail Prices of Major Petroleum Products

Effective Date	Exchange Rate (Ghc/US\$)	Premium Gasoline (Ghc/Lt)	Gas Oil (Ghc/Lt)	Kerosene (Ghc/Lt)	LPG (Ghc/kg)	RFO (Ghc/Lt)
01-Dec-07	0.95	1.04	1.03	0.94	1.01	0.58
16-Dec-07	0.96	1.02	1.03	0.94	1.06	0.56
02-Jan-08	0.96	1.03	1.02	0.93	1.05	0.57
16-Jan-08	0.97	1.07	1.04	0.94	1.02	0.60
01-Feb-08	0.97	1.03	1.02	0.93	1.02	0.57
16-Feb-08	0.98	1.04	1.04	0.94	1.02	0.57
01-Mar-08	0.98	1.09	1.11	1.01	1.04	0.59
16-Mar-08	0.98	1.11	1.16	1.09	1.05	0.60
01-Apr-08	0.98	1.11	1.18	1.20	1.05	0.61
16-Apr-08	0.98	1.14	1.21	1.17	1.01	0.65
03-May-08	0.98	1.19	1.25	1.19	1.00	0.67
26-May-08	0.98	1.19	1.20	1.14	1.00	0.67
16-Oct-08	1.14	1.19	1.20	1.14	1.00	0.67
01-Nov-08	1.15	1.07	1.10	1.02	0.92	0.58
16-Nov-08	1.16	1.03	1.08	1.00	0.88	0.55
01-Dec-08	1.17	0.99	1.04	0.97	0.84	0.53
12-Dec-08	1.20	0.82	0.89	0.7	0.65	0.40
09-Mar-09	1.33	0.78	0.85	0.67	0.59	0.38
16-Mar-09	1.36	0.78	0.85	0.67	0.59	0.38
01-Apr-09	1.38	0.86	0.86	0.67	0.61	0.21
16-Apr-09	1.40	0.86	0.86	0.67	0.61	0.43
06-Jun-09	1.44	1.11	1.12	0.86	0.80	0.56
16-Jul-09	1.49	1.11	1.12	0.86	0.80	0.64
31-Oct-09	1.45	1.17	1.18	0.91	0.84	0.67
04-Jan-11	1.46	1.52	1.53	0.91	1.05	0.84
29-Dec-11	1.55	1.76	1.77	0.91	1.36	0.84

Source: National Petroleum Authority

Figure 5.2: Trend in Retail Price of Major Petroleum Products

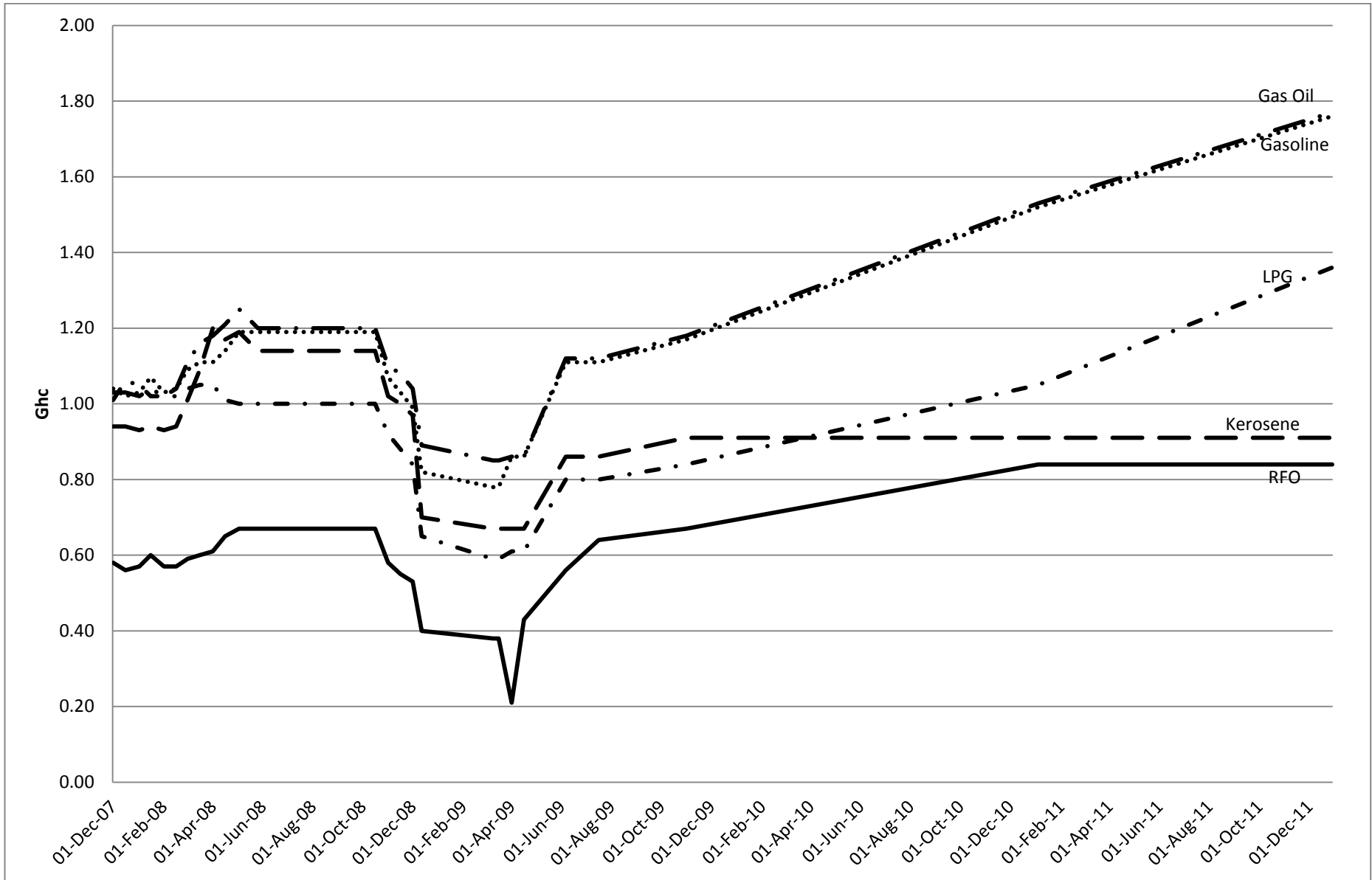


Table 5.3: Average Electricity End User Tariff (Ghc/kWh)

Year	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011
Average End User Tariff	0.017	0.034	0.065	0.071	0.074	0.073	0.078	0.097	0.148	0.148	0.211	0.245

Figure 5.3: Trend in Average Electricity End User Tariff

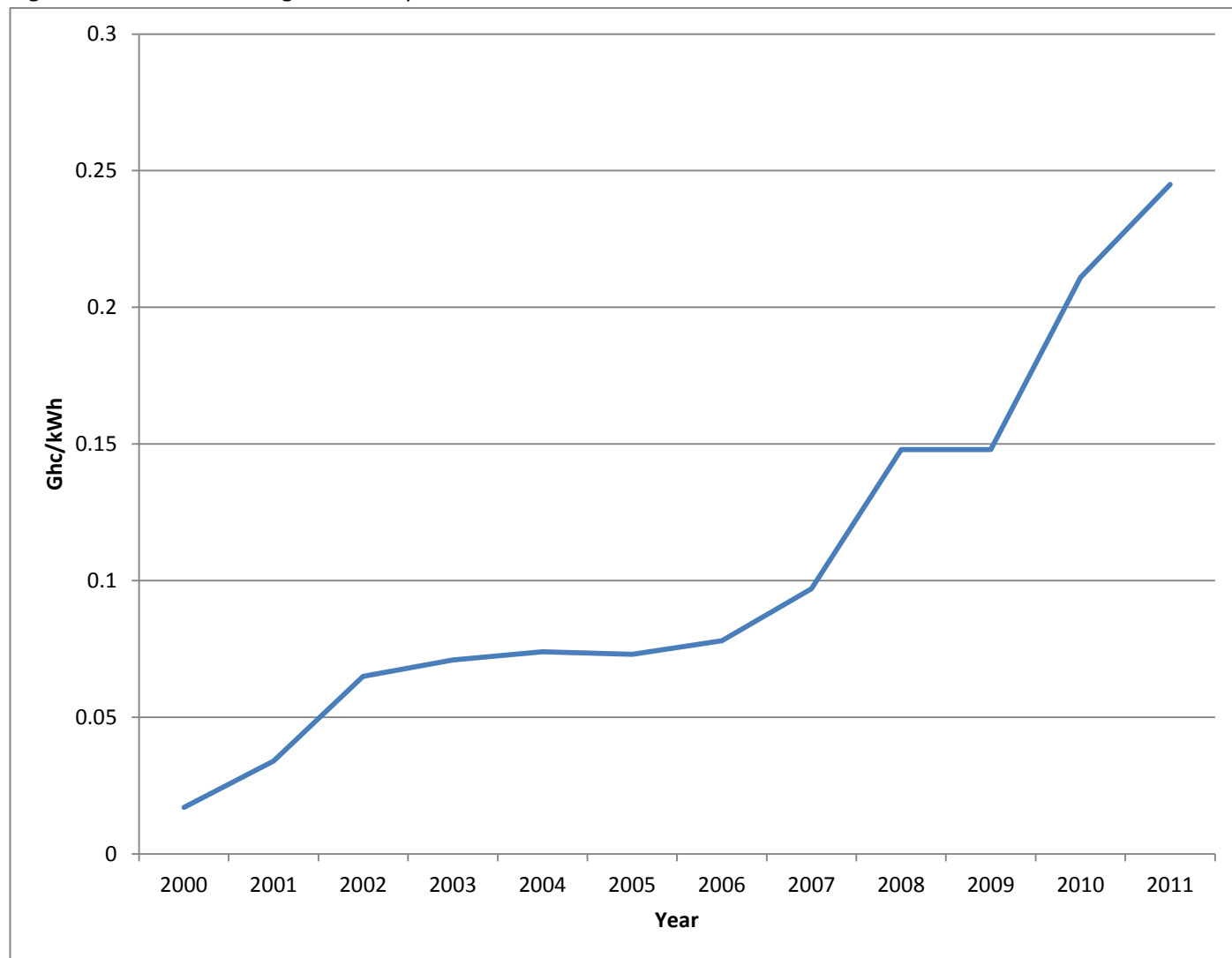


Table 5.4: Mean Charcoal Prices by Region

Region	Mean Charcoal Price in Ghana Cedis - 2011	
	Maxi Bag	Mini Bag
Greater Accra	20.17	13.13
Ashanti	12.36	06.09
Western	15.33	10.37
Eastern	12.00	07.00
Central	21.33	11.41
Volta	19.18	10.36
BrongAhafo	09.39	04.75
Northern	14.11	09.42
Upper East	10.00	05.11
Upper West	10.00	05.11
Country Average	15.23	08.83

Table 5.5: Average Price per kg(Ghana cedis)

Region	Average Price per kg in Ghana Cedis - 2011		
	Mini Bag	Maxi Bag	Mean
Gt. Accra	0.50	0.38	0.44
Ashanti	0.27	0.27	0.27
Western	0.38	0.29	0.34
Eastern	0.27	0.23	0.25
Central	0.35	0.35	0.35
Volta	0.38	0.38	0.38
BrongAhafo	0.19	0.19	0.19
Northern	0.29	0.27	0.28
Upper East	0.20	0.19	0.19
Upper West	0.19	0.19	0.19

Table 5.6: High and Low Price Districts

Region	High Price Districts	Low Price Districts
Greater Accra	Dangme West, Dangme East	Ga East
Ashanti	BosomeFreho	Bosomtwe, EjuraSekyere
Western	MpohorWassa East, Bibiani, Ahanta West	Amenfi East
Eastern	New Juaben	Birim Central
Central	Assin South, Cape Coast	Upper Denkyira East
Volta	Keta	Nkonya, South Dayi
BrongAhafo	Asunafo North (Goaso)	Jaman South, Asutifi
Northern	Tamale, Bole	Wulensi, Bunkprugu
Upper West	Wa	Lawra, Lambusie - Karni